ANALYTICAL REPORT

Job Number: 410-78012-1

Job Description: USACE ANG SI Rochester AASF #2

For:
EA Engineering, Science, and Technology
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Attention: Tara Lamond

Approved for release.
Vanessa Badman
Project Manager
4/14/2022 6:14 PM

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04/14/2022

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Job Number: 410-78012-1

Job Description: USACE ANG SI Rochester AASF #2

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
M	Manual integrated compound.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Job Narrative
410-78012-1

Receipt
The sample was received on 3/30/2022 12:44 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The Field Sampler was not listed on the Chain of Custody.

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

Detection Summary

Client: EA Engineering, Science, and Technology
Project/Site: USACE ANG SI Rochester AASF #2

Job ID: 410-78012-1

Client Sample ID: AOI01-04-GW

Lab Sample ID: 410-78012-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid	2.4	J M	2.8	0.70	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanoic acid	0.86	J M	2.8	0.70	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorooctanesulfonamide	0.84	J	2.8	0.70	ng/L	1		EPA 537(Mod)	Total/NA
Perfluorobutanoic acid	41		7.0	2.8	ng/L	1		EPA 537(Mod)	Total/NA
Perfluoropentanoic acid	32		2.8	0.70	ng/L	1		EPA 537(Mod)	Total/NA
6:2 Fluorotelomer sulfonic acid	7.1		7.0	2.8	ng/L	1		EPA 537(Mod)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AOI01-04-GW
Lab Sample ID: 410-78012-1

Date Collected: 03/25/22 07:05
Matrix: Water

Date Received: 03/30/22 12:44

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	**2.4**	**J M**	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluoroheptanoic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorooctanoic acid	**0.86**	**J M**	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorononanoic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorodecanoic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorotridecanoic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorotetradecanoic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorobutanesulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorohexanesulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorooctanesulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
NEtFOSAA	1.4	U	4.2	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
NMeFOSAA	1.7	U	2.8	0.84	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluoropentanesulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluoroheptanesulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorononanesulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorodecanesulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorooctanesulfonamide	**0.84**	**J**	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorobutanoic acid	**41**		7.0	2.8	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluoropentanoic acid	**32**		2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluoroundecanoic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
Perfluorododecanoic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1
6:2 Fluorotelomer sulfonic acid	**7.1**		7.0	2.8	ng/L		04/06/22 07:05	04/07/22 18:42	1
8:2 Fluorotelomer sulfonic acid	2.8	U	4.2	1.4	ng/L		04/06/22 07:05	04/07/22 18:42	1
4:2 Fluorotelomer sulfonic acid	1.4	U	2.8	0.70	ng/L		04/06/22 07:05	04/07/22 18:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*153*	*5+	*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
M2-8:2 FTS	*86*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
M2-6:2 FTS	*122*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C5 PFHxA	*115*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C4 PFHpA	*114*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C8 PFOA	*102*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C9 PFNA	*93*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C6 PFDA	*85*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C7 PFUnA	*62*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C2-PFDoDA	*38*	*5-	*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C2 PFTeDA	*5*	*5-	*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C3 PFBS	*107*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C3 PFHxS	*109*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C8 PFOS	*91*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
d3-NMeFOSAA	*71*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
d5-NEtFOSAA	*64*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C8 FOSA	*66*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C4 PFBA	*49*	*5-	*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*
13C5 PFPeA	*106*		*50 - 150*	*04/06/22 07:05*	*04/07/22 18:42*	*1*

Default Detection Limits

Client: EA Engineering, Science, and Technology
Project/Site: USACE ANG SI Rochester AASF #2

Job ID: 410-78012-1

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Prep: PFAS by QSM B15

Analyte	LOQ	DL	Units
4:2 Fluorotelomer sulfonic acid	2.0	0.50	ng/L
6:2 Fluorotelomer sulfonic acid	5.0	2.0	ng/L
8:2 Fluorotelomer sulfonic acid	3.0	1.0	ng/L
NEtFOSAA	3.0	0.50	ng/L
NMeFOSAA	2.0	0.60	ng/L
Perfluorobutanesulfonic acid	2.0	0.50	ng/L
Perfluorobutanoic acid	5.0	2.0	ng/L
Perfluorodecanesulfonic acid	2.0	0.50	ng/L
Perfluorodecanoic acid	2.0	0.50	ng/L
Perfluorododecanoic acid	2.0	0.50	ng/L
Perfluoroheptanesulfonic acid	2.0	0.50	ng/L
Perfluoroheptanoic acid	2.0	0.50	ng/L
Perfluorohexanesulfonic acid	2.0	0.50	ng/L
Perfluorohexanoic acid	2.0	0.50	ng/L
Perfluorononanesulfonic acid	2.0	0.50	ng/L
Perfluorononanoic acid	2.0	0.50	ng/L
Perfluorooctanesulfonamide	2.0	0.50	ng/L
Perfluorooctanesulfonic acid	2.0	0.50	ng/L
Perfluorooctanoic acid	2.0	0.50	ng/L
Perfluoropentanesulfonic acid	2.0	0.50	ng/L
Perfluoropentanoic acid	2.0	0.50	ng/L
Perfluorotetradecanoic acid	2.0	0.50	ng/L
Perfluorotridecanoic acid	2.0	0.50	ng/L
Perfluoroundecanoic acid	2.0	0.50	ng/L

Isotope Dilution Summary

Client: EA Engineering, Science, and Technology
Job ID: 410-78012-1
Project/Site: USACE ANG SI Rochester AASF #2

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M242FTS (50-150)	M282FTS (50-150)	M262FTS (50-150)	13C5PHA (50-150)	C4PFHA (50-150)	C8PFOA (50-150)	C9PFNA (50-150)	C6PFDA (50-150)
410-78012-1	AOI01-04-GW	153 *5+	86	122	115	114	102	93	85
LCS 410-241437/3-A	Lab Control Sample	123	111	115	110	106	103	102	108
LCSD 410-241437/4-A	Lab Control Sample Dup	126	113	120	115	110	107	105	110
MB 410-241437/1-A	Method Blank	130	116	121	115	119	113	109	117

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	13C7PUA (50-150)	PFDoDA (50-150)	PFTDA (50-150)	C3PFBS (50-150)	C3PFHS (50-150)	C8PFOS (50-150)	d3NMFOS (50-150)	d5NEFOS (50-150)
410-78012-1	AOI01-04-GW	62	38 *5-	5 *5-	107	109	91	71	64
LCS 410-241437/3-A	Lab Control Sample	106	101	93	105	106	107	109	111
LCSD 410-241437/4-A	Lab Control Sample Dup	106	100	95	103	107	107	109	111
MB 410-241437/1-A	Method Blank	107	104	90	105	115	111	111	114

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOSA (50-150)	PFBA (50-150)	PFPeA (50-150)					
410-78012-1	AOI01-04-GW	66	49 *5-	106					
LCS 410-241437/3-A	Lab Control Sample	95	110	106					
LCSD 410-241437/4-A	Lab Control Sample Dup	97	107	106					
MB 410-241437/1-A	Method Blank	94	111	111					

Surrogate Legend

M242FTS = M2-4:2 FTS
M282FTS = M2-8:2 FTS
M262FTS = M2-6:2 FTS
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15

Lab Sample ID: MB 410-241437/1-A
Matrix: Water
Analysis Batch: 242084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 241437

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluoroheptanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorooctanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorononanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorodecanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorotridecanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorotetradecanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorobutanesulfonic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorohexanesulfonic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorooctanesulfonic acid	0.653	J M	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
NEtFOSAA	1.0	U	3.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
NMeFOSAA	1.2	U	2.0	0.60	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluoropentanesulfonic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluoroheptanesulfonic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorononanesulfonic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorodecanesulfonic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorooctanesulfonamide	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorobutanoic acid	4.0	U	5.0	2.0	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluoropentanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluoroundecanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
Perfluorododecanoic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1
6:2 Fluorotelomer sulfonic acid	4.0	U	5.0	2.0	ng/L		04/06/22 07:05	04/07/22 17:49	1
8:2 Fluorotelomer sulfonic acid	2.0	U	3.0	1.0	ng/L		04/06/22 07:05	04/07/22 17:49	1
4:2 Fluorotelomer sulfonic acid	1.0	U	2.0	0.50	ng/L		04/06/22 07:05	04/07/22 17:49	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*130*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
M2-8:2 FTS	*116*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
M2-6:2 FTS	*121*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C5 PFHxA	*115*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C4 PFHpA	*119*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C8 PFOA	*113*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C9 PFNA	*109*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C6 PFDA	*117*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C7 PFUnA	*107*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C2-PFDoDA	*104*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C2 PFTeDA	*90*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C3 PFBS	*105*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C3 PFHxS	*115*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C8 PFOS	*111*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
d3-NMeFOSAA	*111*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
d5-NEtFOSAA	*114*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C8 FOSA	*94*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C4 PFBA	*111*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*
13C5 PFPeA	*111*		*50 - 150*	*04/06/22 07:05*	*04/07/22 17:49*	*1*

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCS 410-241437/3-A
Matrix: Water
Analysis Batch: 242084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 241437

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanoic acid	25.6	28.2		ng/L		110	72 - 129
Perfluoroheptanoic acid	25.6	27.1		ng/L		106	72 - 130
Perfluorooctanoic acid	25.6	28.1		ng/L		110	71 - 133
Perfluorononanoic acid	25.6	27.5		ng/L		107	69 - 130
Perfluorodecanoic acid	25.6	28.1		ng/L		110	71 - 129
Perfluorotridecanoic acid	25.6	26.7		ng/L		104	65 - 144
Perfluorotetradecanoic acid	25.6	26.4		ng/L		103	71 - 132
Perfluorobutanesulfonic acid	22.7	24.9		ng/L		110	72 - 130
Perfluorohexanesulfonic acid	23.3	25.0		ng/L		107	68 - 131
Perfluorooctanesulfonic acid	23.7	25.2		ng/L		106	65 - 140
NEtFOSAA	25.6	24.4		ng/L		95	61 - 135
NMeFOSAA	25.6	24.5		ng/L		96	65 - 136
Perfluoropentanesulfonic acid	24.0	25.5		ng/L		106	71 - 127
Perfluoroheptanesulfonic acid	24.4	24.3		ng/L		100	69 - 134
Perfluorononanesulfonic acid	24.6	25.0		ng/L		102	69 - 127
Perfluorodecanesulfonic acid	24.7	24.3		ng/L		98	53 - 142
Perfluorooctanesulfonamide	25.6	27.2		ng/L		106	67 - 137
Perfluorobutanoic acid	25.6	27.0		ng/L		105	73 - 129
Perfluoropentanoic acid	25.6	23.2		ng/L		91	72 - 129
Perfluoroundecanoic acid	25.6	28.5		ng/L		111	69 - 133
Perfluorododecanoic acid	25.6	27.6		ng/L		108	72 - 134
6:2 Fluorotelomer sulfonic acid	24.3	23.1		ng/L		95	64 - 140
8:2 Fluorotelomer sulfonic acid	24.5	23.8		ng/L		97	67 - 138
4:2 Fluorotelomer sulfonic acid	23.9	23.0		ng/L		96	63 - 143

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*123*		*50 - 150*
M2-8:2 FTS	*111*		*50 - 150*
M2-6:2 FTS	*115*		*50 - 150*
13C5 PFHxA	*110*		*50 - 150*
13C4 PFHpA	*106*		*50 - 150*
13C8 PFOA	*103*		*50 - 150*
13C9 PFNA	*102*		*50 - 150*
13C6 PFDA	*108*		*50 - 150*
13C7 PFUnA	*106*		*50 - 150*
13C2-PFDoDA	*101*		*50 - 150*
13C2 PFTeDA	*93*		*50 - 150*
13C3 PFBS	*105*		*50 - 150*
13C3 PFHxS	*106*		*50 - 150*
13C8 PFOS	*107*		*50 - 150*
d3-NMeFOSAA	*109*		*50 - 150*
d5-NEtFOSAA	*111*		*50 - 150*
13C8 FOSA	*95*		*50 - 150*
13C4 PFBA	*110*		*50 - 150*
13C5 PFPeA	*106*		*50 - 150*

Method: EPA 537(Mod) - PFAS for QSM 5.3, Table B-15 (Continued)

Lab Sample ID: LCSD 410-241437/4-A
Matrix: Water
Analysis Batch: 242084

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 241437

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanoic acid			25.6	27.5		ng/L		108	72 - 129	2	30
Perfluoroheptanoic acid			25.6	27.5		ng/L		107	72 - 130	1	30
Perfluorooctanoic acid			25.6	27.5		ng/L		107	71 - 133	2	30
Perfluorononanoic acid			25.6	28.5		ng/L		111	69 - 130	4	30
Perfluorodecanoic acid			25.6	26.3		ng/L		103	71 - 129	7	30
Perfluorotridecanoic acid			25.6	27.5		ng/L		107	65 - 144	3	30
Perfluorotetradecanoic acid			25.6	26.3		ng/L		103	71 - 132	0	30
Perfluorobutanesulfonic acid			22.7	25.1		ng/L		111	72 - 130	1	30
Perfluorohexanesulfonic acid			23.3	25.8		ng/L		110	68 - 131	3	30
Perfluorooctanesulfonic acid			23.7	26.4		ng/L		111	65 - 140	5	30
NEtFOSAA			25.6	24.6		ng/L		96	61 - 135	1	30
NMeFOSAA			25.6	24.5		ng/L		96	65 - 136	0	30
Perfluoropentanesulfonic acid			24.0	26.2		ng/L		109	71 - 127	3	30
Perfluoroheptanesulfonic acid			24.4	25.2		ng/L		103	69 - 134	3	30
Perfluorononanesulfonic acid			24.6	25.3		ng/L		103	69 - 127	1	30
Perfluorodecanesulfonic acid			24.7	24.2		ng/L		98	53 - 142	0	30
Perfluorooctanesulfonamide			25.6	26.3		ng/L		103	67 - 137	4	30
Perfluorobutanoic acid			25.6	27.9		ng/L		109	73 - 129	3	30
Perfluoropentanoic acid			25.6	23.7		ng/L		93	72 - 129	2	30
Perfluoroundecanoic acid			25.6	26.9		ng/L		105	69 - 133	6	30
Perfluorododecanoic acid			25.6	28.1		ng/L		110	72 - 134	2	30
6:2 Fluorotelomer sulfonic acid			24.3	22.5		ng/L		93	64 - 140	2	30
8:2 Fluorotelomer sulfonic acid			24.5	23.9		ng/L		97	67 - 138	1	30
4:2 Fluorotelomer sulfonic acid			23.9	21.7		ng/L		91	63 - 143	6	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-4:2 FTS	*126*		*50 - 150*
M2-8:2 FTS	*113*		*50 - 150*
M2-6:2 FTS	*120*		*50 - 150*
13C5 PFHxA	*115*		*50 - 150*
13C4 PFHpA	*110*		*50 - 150*
13C8 PFOA	*107*		*50 - 150*
13C9 PFNA	*105*		*50 - 150*
13C6 PFDA	*110*		*50 - 150*
13C7 PFUnA	*106*		*50 - 150*
13C2-PFDoDA	*100*		*50 - 150*
13C2 PFTeDA	*95*		*50 - 150*
13C3 PFBS	*103*		*50 - 150*
13C3 PFHxS	*107*		*50 - 150*
13C8 PFOS	*107*		*50 - 150*
d3-NMeFOSAA	*109*		*50 - 150*
d5-NEtFOSAA	*111*		*50 - 150*
13C8 FOSA	*97*		*50 - 150*
13C4 PFBA	*107*		*50 - 150*
13C5 PFPeA	*106*		*50 - 150*

LCMS

Prep Batch: 239491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-78012-1 - RE	AOI01-04-GW	Total/NA	Water	PFAS by QSM B15	
MB 410-239491/1-A	Method Blank	Total/NA	Water	PFAS by QSM B15	
LCS 410-239491/2-A	Lab Control Sample	Total/NA	Water	PFAS by QSM B15	

Analysis Batch: 240466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-78012-1 - RE	AOI01-04-GW	Total/NA	Water	EPA 537(Mod)	239491
MB 410-239491/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	239491
LCS 410-239491/2-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	239491

Prep Batch: 241437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-78012-1	AOI01-04-GW	Total/NA	Water	PFAS by QSM B15	
MB 410-241437/1-A	Method Blank	Total/NA	Water	PFAS by QSM B15	
LCS 410-241437/3-A	Lab Control Sample	Total/NA	Water	PFAS by QSM B15	
LCSD 410-241437/4-A	Lab Control Sample Dup	Total/NA	Water	PFAS by QSM B15	

Analysis Batch: 242084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-78012-1	AOI01-04-GW	Total/NA	Water	EPA 537(Mod)	241437
MB 410-241437/1-A	Method Blank	Total/NA	Water	EPA 537(Mod)	241437
LCS 410-241437/3-A	Lab Control Sample	Total/NA	Water	EPA 537(Mod)	241437
LCSD 410-241437/4-A	Lab Control Sample Dup	Total/NA	Water	EPA 537(Mod)	241437

Lab Chronicle

Client: EA Engineering, Science, and Technology
Project/Site: USACE ANG SI Rochester AASF #2

Job ID: 410-78012-1

Client Sample ID: AOI01-04-GW

Date Collected: 03/25/22 07:05
Date Received: 03/30/22 12:44

Lab Sample ID: 410-78012-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PFAS by QSM B15	RE		239491	03/31/22 06:58	PR5J	ELLE
Total/NA	Analysis	EPA 537(Mod)	RE	1	240466	04/04/22 11:37	UUV6	ELLE
Total/NA	Prep	PFAS by QSM B15			241437	04/06/22 07:05	RC3V	ELLE
Total/NA	Analysis	EPA 537(Mod)		1	242084	04/07/22 18:42	UUV6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: EA Engineering, Science, and Technology
Job ID: 410-78012-1
Project/Site: USACE ANG SI Rochester AASF #2

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22

Method Summary

Client: EA Engineering, Science, and Technology
Project/Site: USACE ANG SI Rochester AASF #2

Job ID: 410-78012-1

Method	Method Description	Protocol	Laboratory
EPA 537(Mod)	PFAS for QSM 5.3, Table B-15	EPA	ELLE
PFAS by QSM B15	PFAS by LCMSMS Compliant with Table B-15 QSM 5.1 or latest version	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: EA Engineering, Science, and Technology
Project/Site: USACE ANG SI Rochester AASF #2

Job ID: 410-78012-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-78012-1	AOI01-04-GW	Water	03/25/22 07:05	03/30/22 12:44

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Analysis Batch Number: 240108

Lab Sample ID: IC 410-240108/1 Client Sample ID:

Date Analyzed: 04/03/22 17:12 Lab File ID: 22APR03DCAL-41.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3:3 FTCA	4.17	Baseline	polaskia	04/03/22 21:04
Perfluoropentanoic acid	4.18	Baseline	polaskia	04/03/22 21:05
Perfluorohexanoic acid	4.58	Baseline	polaskia	04/03/22 21:05
Perfluorooctanoic acid	5.34	Baseline	polaskia	04/03/22 21:06
Perfluorooctanesulfonic acid	5.67	Shouldering	polaskia	04/03/22 21:06
Perfluorononanoic acid	5.69	Shouldering	polaskia	04/03/22 21:06
7:3 FTCA	5.79	Missed Peak	polaskia	04/03/22 21:06
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	5.86	Shouldering	polaskia	04/03/22 21:06
Perfluorononanesulfonic acid	5.98	Shouldering	polaskia	04/03/22 21:07
NMeFOSAA	6.15	Missed Peak	polaskia	04/03/22 21:07
Perfluoroundecanoic acid	6.28	Shouldering	polaskia	04/03/22 21:07
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	6.57	Shouldering	polaskia	04/03/22 21:07
NMeFOSA	6.57	Shouldering	polaskia	04/03/22 21:07
N-ethylperfluoro-1-octanesulfonamide	6.75	Shouldering	polaskia	04/03/22 21:08

Lab Sample ID: IC 410-240108/2 Client Sample ID:

Date Analyzed: 04/03/22 17:23 Lab File ID: 22APR03DCAL-42.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3:3 FTCA	4.16	Baseline	polaskia	04/03/22 21:09
8:2 Fluorotelomer sulfonic acid	6.00	Shouldering	polaskia	04/03/22 21:09
Perfluorodecanoic acid	6.00	Shouldering	polaskia	04/03/22 21:09
NMeFOSAA	6.16	Missed Peak	polaskia	04/03/22 21:09
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	6.57	Shouldering	polaskia	04/03/22 21:08

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Analysis Batch Number: 240108

Lab Sample ID: ICB 410-240108/8 Client Sample ID:

Date Analyzed: 04/03/22 18:26 Lab File ID: 22APR03DCAL-48.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid	4.22	Missed Peak	polaskia	04/03/22 21:13
Perfluorooctanoic acid	5.34	Missed Peak	polaskia	04/03/22 21:13

Lab Sample ID: WDM 410-240108/10 Client Sample ID:

Date Analyzed: 04/03/22 18:47 Lab File ID: 22APR03DCAL-50.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid	5.34	Missed Peak	polaskia	04/03/22 21:14

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Analysis Batch Number: 240466

Lab Sample ID: CCVIS 410-240466/1 Client Sample ID:

Date Analyzed: 04/04/22 07:32 Lab File ID: 22APR04-01.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid	5.36	Incomplete Integration	carpenter	04/04/22 08:10

Lab Sample ID: 410-78012-1 RE Client Sample ID: AOI01-04-GW RE

Date Analyzed: 04/04/22 11:37 Lab File ID: 22APR04-24.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanoic acid	4.59	Baseline	matthewsl	04/04/22 15:39
Perfluoroheptanoic acid	4.98	Baseline	matthewsl	04/04/22 15:40
Perfluorohexanesulfonic acid	4.98	Baseline	matthewsl	04/04/22 15:42

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Analysis Batch Number: 242022

Lab Sample ID: IC 410-242022/1 Client Sample ID:

Date Analyzed: 04/07/22 09:52 Lab File ID: 22APR07-19.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid	5.35	Incomplete Integration	carpenter	04/07/22 10:18
7:3 FTCA	5.80	Incomplete Integration	carpenter	04/07/22 10:10
NMeFOSAA	6.15	Incomplete Integration	carpenter	04/07/22 10:10
Perfluorododecanesulfonic acid (PFDoS)	6.70	Incomplete Integration	carpenter	04/07/22 10:11

Lab Sample ID: IC 410-242022/2 Client Sample ID:

Date Analyzed: 04/07/22 10:02 Lab File ID: 22APR07-20.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid	5.36	Incomplete Integration	carpenter	04/07/22 10:19
Perfluorodecanoic acid	6.01	Incomplete Integration	carpenter	04/07/22 10:20
Perfluorododecanoic acid	6.53	Incomplete Integration	carpenter	04/07/22 10:20

Lab Sample ID: ICIS 410-242022/3 Client Sample ID:

Date Analyzed: 04/07/22 10:13 Lab File ID: 22APR07-21.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
NMeFOSAA	6.16	Incomplete Integration	carpenter	04/07/22 10:27

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Analysis Batch Number: 242084

Lab Sample ID: CCVIS 410-242084/1 Client Sample ID:

Date Analyzed: 04/07/22 12:09 Lab File ID: 22APR07-32.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid	5.35	Incomplete Integration	carpenter	04/07/22 12:26
7:3 FTCA	5.80	Incomplete Integration	carpenter	04/07/22 12:26
NMeFOSAA	6.15	Incomplete Integration	carpenter	04/07/22 12:27
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	6.56	Incomplete Integration	carpenter	04/07/22 12:27
NMeFOSA	6.57	Incomplete Integration	carpenter	04/07/22 12:27
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	6.73	Incomplete Integration	carpenter	04/07/22 12:27

Lab Sample ID: CCV 410-242084/30 Client Sample ID:

Date Analyzed: 04/07/22 17:17 Lab File ID: 22APR07-61.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
NMeFOSAA	6.15	Baseline	matthewsl	04/07/22 17:37

Lab Sample ID: MB 410-241437/1-A Client Sample ID:

Date Analyzed: 04/07/22 17:49 Lab File ID: 22APR07-64.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanesulfonic acid	5.68	Baseline	matthewsl	04/07/22 19:52

PFAS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Analysis Batch Number: 242084

Lab Sample ID: 410-78012-1 Client Sample ID: AOI01-04-GW

Date Analyzed: 04/07/22 18:42 Lab File ID: 22APR07-69.d GC Column: Gemini C18 50 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorohexanoic acid	4.58	Baseline	matthewsl	04/07/22 20:00
Perfluorooctanoic acid	5.34	Baseline	matthewsl	04/07/22 20:01

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
PFC_ICV_MOD_00040	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ng/mL
							d5-NEtPFOSA	10 ng/mL
							d3-NMePFOSA	10 ng/mL
							M2-4:2 FTS	9.34 ng/mL
							13C3 HFPO-DA	10 ng/mL
							M2-8:2 FTS	9.58 ng/mL
							M2-6:2 FTS	9.5 ng/mL
							13C8 FOSA	10 ng/mL
							d3-NMeFOSAA	10 ng/mL
							d7-N-MeFOSE-M	10 ng/mL
							d9-N-EtFOSE-M	10 ng/mL
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ng/mL
							13C2-PFDoDA	10 ng/mL
							13C3 PFBS	9.3 ng/mL
							13C3 PFHxS	9.46 ng/mL
							13C4 PFBA	10 ng/mL
							13C4 PFHpA	10 ng/mL
							13C5 PFHxA	10 ng/mL
							13C5 PFPeA	10 ng/mL
							13C6 PFDA	10 ng/mL
							13C7 PFUnA	10 ng/mL
							13C8 PFOA	10 ng/mL
							13C8 PFOS	9.56 ng/mL
							13C9 PFNA	10 ng/mL
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_ICV_MOD_00040	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00608	1 mL	Perfluoropentanesulfonic acid	1.876 ng/mL
							Perfluorodecanesulfonic acid	1.928 ng/mL
							Perfluorooctanesulfonamide	2 ng/mL
							4:2 Fluorotelomer sulfonic acid	1.868 ng/mL
							6:2 Fluorotelomer sulfonic acid	1.896 ng/mL
							8:2 Fluorotelomer sulfonic acid	1.916 ng/mL
							Perfluorobutanoic acid	2 ng/mL
							Perfluoroheptanesulfonic acid	1.904 ng/mL
							Perfluorononanesulfonic acid	1.92 ng/mL
							Perfluoropentanoic acid	2 ng/mL
							NEtFOSAA	2 ng/mL
							NMeFOSAA	2 ng/mL
							Perfluorobutanesulfonic acid	1.77 ng/mL
							Perfluorodecanoic acid	2 ng/mL
							Perfluorododecanoic acid	2 ng/mL
							Perfluoroheptanoic acid	2 ng/mL
							Perfluorohexanesulfonic acid	1.824 ng/mL
							Perfluorohexanoic acid	2 ng/mL
							Perfluorononanoic acid	2 ng/mL
							Perfluorooctanesulfonic acid	1.851 ng/mL
							Perfluorooctanoic acid	2 ng/mL
							Perfluorotetradecanoic acid	2 ng/mL
							Perfluorotridecanoic acid	2 ng/mL
							Perfluoroundecanoic acid	2 ng/mL
.PFC_IN_00608	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00607	0.2 mL	Perfluoropentanesulfonic acid	18.76 ppb
							Perfluorodecanesulfonic acid	19.28 ppb
							Perfluorooctanesulfonamide	20 ppb

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4:2 Fluorotelomer sulfonic acid	18.68 ppb
							6:2 Fluorotelomer sulfonic acid	18.96 ppb
							8:2 Fluorotelomer sulfonic acid	19.16 ppb
							Perfluorobutanoic acid	20 ppb
							Perfluoroheptanesulfonic acid	19.04 ppb
							Perfluorononanesulfonic acid	19.2 ppb
							Perfluoropentanoic acid	20 ppb
							NEtFOSAA	20 ppb
							NMeFOSAA	20 ppb
							Perfluorobutanesulfonic acid	17.7 ppb
							Perfluorodecanoic acid	20 ppb
							Perfluorododecanoic acid	20 ppb
							Perfluoroheptanoic acid	20 ppb
							Perfluorohexanesulfonic acid	18.24 ppb
							Perfluorohexanoic acid	20 ppb
							Perfluorononanoic acid	20 ppb
							Perfluorooctanesulfonic acid	18.51 ppb
							Perfluorooctanoic acid	20 ppb
							Perfluorotetradecanoic acid	20 ppb
							Perfluorotridecanoic acid	20 ppb
							Perfluoroundecanoic acid	20 ppb
..PFC_IN_00607	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00605	1.25 mL	Perfluoropentanesulfonic acid	469 ppb
							Perfluorodecanesulfonic acid	482 ppb
							Perfluorooctanesulfonamide	500 ppb
							4:2 Fluorotelomer sulfonic acid	467 ppb
							6:2 Fluorotelomer sulfonic acid	474 ppb
							8:2 Fluorotelomer sulfonic acid	479 ppb
							Perfluorobutanoic acid	500 ppb
							Perfluoroheptanesulfonic acid	476 ppb
							Perfluorononanesulfonic acid	480 ppb
							Perfluoropentanoic acid	500 ppb
					PFC_ST_01222	1.25 mL	NEtFOSAA	500 ppb
							NMeFOSAA	500 ppb
							Perfluorobutanesulfonic acid	442.5 ppb
							Perfluorodecanoic acid	500 ppb
							Perfluorododecanoic acid	500 ppb
							Perfluoroheptanoic acid	500 ppb
							Perfluorohexanesulfonic acid	456 ppb
							Perfluorohexanoic acid	500 ppb
							Perfluorononanoic acid	500 ppb
							Perfluorooctanesulfonic acid	462.75 ppb
							Perfluorooctanoic acid	500 ppb
							Perfluorotetradecanoic acid	500 ppb

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorotridecanoic acid	500 ppb
							Perfluoroundecanoic acid	500 ppb
...PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL
....PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
....PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
....PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
....PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
....PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
....PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
....PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
....PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
....PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
....PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
...PFC_ST_01222	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
PFC_LB_MOD_00029	06/22/22	03/22/22	Methanol, Lot 216546	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ng/mL
							d5-NEtPFOSA	10 ng/mL
							d3-NMePFOSA	10 ng/mL
							M2-4:2 FTS	9.34 ng/mL
							13C3 HFPO-DA	10 ng/mL
							M2-8:2 FTS	9.58 ng/mL

REAGENT TRACEABILITY SUMMARY

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							M2-6:2 FTS	9.5 ng/mL
							13C8 FOSA	10 ng/mL
							d3-NMeFOSAA	10 ng/mL
							d7-N-MeFOSE-M	10 ng/mL
							d9-N-EtFOSE-M	10 ng/mL
					PFC_IN_00630	0.04 mL	Perfluorooctanoic acid	2 ng/mL
					PFC_ST_01219	0.05 mL	13C2 PFTeDA	10 ng/mL
							13C2-PFDoDA	10 ng/mL
							13C3 PFBS	9.3 ng/mL
							13C3 PFHxS	9.46 ng/mL
							13C4 PFBA	10 ng/mL
							13C4 PFHpA	10 ng/mL
							13C5 PFHxA	10 ng/mL
							13C5 PFPeA	10 ng/mL
							13C6 PFDA	10 ng/mL
							13C7 PFUnA	10 ng/mL
							13C8 PFOA	10 ng/mL
							13C8 PFOS	9.56 ng/mL
							13C9 PFNA	10 ng/mL
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00630	07/22/22	03/22/22	MeOH, Lot 216546	2 mL	PFC_ST_01013	0.02 mL	Perfluorooctanoic acid	500 ng/mL
..PFC_ST_01013	01/08/26	Wellington Laboratories, Lot TPFOA0121			(Purchased Reagent)		Perfluorooctanoic acid	50000 ng/mL

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Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.PFC_ST_01219	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_MS_MODWX_00129	05/23/22	03/23/22	Methanol, Lot ED260-US	10 mL	PFC_IN_00570	0.8 mL	R-EVE	160 ng/mL
							R-PSDA	160 ng/mL
							Hydrolyzed PSDA	160 ng/mL
							PMPA	160 ng/mL
							NVHOS	160 ng/mL
							PEPA	160 ng/mL
							PFO3OA	160 ng/mL
							PFO4DA	160 ng/mL
							Hydro-EVE Acid	160 ng/mL
							EVE Acid	160 ng/mL
							R-PSDCA	160 ng/mL
							TAF	160 ng/mL
							PFO2HxA	160 ng/mL
							PFECA G	160 ng/mL
							Hydro-PS Acid	160 ng/mL
							PFMOAA	160 ng/mL
							PPF Acid	160 ng/mL
							MTP	160 ng/mL
							PS Acid	160 ng/mL
					PFC_IN_00616	0.8 mL	N,N-Bis(2-hydroxyethyl)perfluorobutanesulfonamide	160 ng/mL
							Perfluoro(2,5,8-trimethyl-3,6,9-trioxadodecan)amide	633.6 ng/mL
							Perfluoro-2,5-dimethyl-3,6-dioxanonanoic acid (HFPO-TrA)	640 ng/mL
							3:3 FTCA	160 ng/mL
							5:3 FTCA	160 ng/mL
							7:3 FTCA	160 ng/mL
							6:2 FTCA	160 ng/mL
							8:2 FTUCA	160 ng/mL
							PES	142.4 ng/mL
							8:2 FTCA	160 ng/mL
							10:2 FTCA	160 ng/mL
							6:2 FTUCA	160 ng/mL
							10:2 FTUCA	160 ng/mL

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							PFECA F	160 ng/mL
							PFECA A	160 ng/mL
							PFECHS	147.52 ng/mL
							PFPrS	146.56 ng/mL
							PFECA B	160 ng/mL
							FHxSA	160 ng/mL
							FBSA	160 ng/mL
							Sodium trifluoromethanesulfonate	156.8 ng/mL
					PFC_IN_00631	0.8 mL	NMeFOSA	160 ng/mL
							N-ethylperfluoro-1-octanesulfonamide	160 ng/mL
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	160 ng/mL
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	160 ng/mL
							Perfluorooctanesulfonamide	160 ng/mL
							Perfluorohexadecanoic acid	160 ng/mL
							Perfluorooctadecanoic acid	160 ng/mL
							Perfluorododecanesulfonic acid (PFDoS)	154.88 ng/mL
							Perfluoropentanesulfonic acid	150.08 ng/mL
							Perfluoroheptanesulfonic acid	152.32 ng/mL
							Perfluorononanesulfonic acid	153.6 ng/mL
							Perfluorodecanesulfonic acid	154.24 ng/mL
							Perfluorobutanoic acid	160 ng/mL
							Perfluoropentanoic acid	160 ng/mL
							4:2 Fluorotelomer sulfonic acid	149.44 ng/mL
							6:2 Fluorotelomer sulfonic acid	151.68 ng/mL
							8:2 Fluorotelomer sulfonic acid	153.28 ng/mL
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	154.24 ng/mL
					PFC_ST_01072	0.8 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	148.8 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	148.8 ng/mL
							DONA	151.2 ng/mL
							NEtFOSAA	160 ng/mL
							NMeFOSAA	160 ng/mL
							Perfluoro(2-propoxypropanoic) acid	160 ng/mL
							Perfluorobutanesulfonic acid	141.6 ng/mL
							Perfluorodecanoic acid	160 ng/mL
							Perfluorododecanoic acid	160 ng/mL

REAGENT TRACEABILITY SUMMARY

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid	160 ng/mL
							Perfluorohexanesulfonic acid	145.92 ng/mL
							Perfluorohexanoic acid	160 ng/mL
							Perfluorononanoic acid	160 ng/mL
							Perfluorooctanesulfonic acid	148.08 ng/mL
							Perfluorooctanoic acid	160 ng/mL
							Perfluorotetradecanoic acid	160 ng/mL
							Perfluorotridecanoic acid	160 ng/mL
							Perfluoroundecanoic acid	160 ng/mL
.PFC_IN_00570	06/13/22	01/13/22	Methanol, Lot EB577-US	8 mL	PFC_IN_00574	1.6 mL	R-EVE	2000 ppb
							R-PSDA	2000 ppb
							Hydrolyzed PSDA	2000 ppb
							PMPA	2000 ppb
							NVHOS	2000 ppb
							PEPA	2000 ppb
							PFO3OA	2000 ppb
							PFO4DA	2000 ppb
							Hydro-EVE Acid	2000 ppb
							EVE Acid	2000 ppb
							R-PSDCA	2000 ppb
							TAF	2000 ppb
							PFO2HxA	2000 ppb
							PFECA G	2000 ppb
							Hydro-PS Acid	2000 ppb
							PFMOAA	2000 ppb
							PPF Acid	2000 ppb
							MTP	2000 ppb
							PS Acid	2000 ppb
..PFC_IN_00574	06/13/22	01/13/22	Methanol, Lot EB577-US	10 mL	PFC_ST_00120	0.1 mL	R-EVE	10000 ppb
					PFC_ST_00121	0.1 mL	R-PSDA	10000 ppb
					PFC_ST_00122	0.1 mL	Hydrolyzed PSDA	10000 ppb
					PFC_ST_00123	0.1 mL	PMPA	10000 ppb
					PFC_ST_00124	0.1 mL	NVHOS	10000 ppb
					PFC_ST_00125	0.1 mL	PEPA	10000 ppb
					PFC_ST_00126	0.1 mL	PFO3OA	10000 ppb
					PFC_ST_00127	0.1 mL	PFO4DA	10000 ppb
					PFC_ST_00128	0.1 mL	Hydro-EVE Acid	10000 ppb
					PFC_ST_00129	0.1 mL	EVE Acid	10000 ppb
					PFC_ST_00130	0.1 mL	R-PSDCA	10000 ppb
					PFC_ST_00131	0.1 mL	TAF	10000 ppb
					PFC_ST_00196	0.1 mL	PFO2HxA	10000 ppb
					PFC_ST_00199	0.1 mL	PFECA G	10000 ppb
					PFC_ST_00200	0.1 mL	Hydro-PS Acid	10000 ppb
					PFC_ST_00202	0.1 mL	PFMOAA	10000 ppb
					PFC_ST_00329	0.1 mL	PPF Acid	10000 ppb
					PFC_ST_00332	0.1 mL	MTP	10000 ppb
					PFC_ST_00378	0.1 mL	PS Acid	10000 ppb
...PFC_ST_00120	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		R-EVE	1000000 ug/L

REAGENT TRACEABILITY SUMMARY

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...PFC_ST_00121	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		R-PSDA	1000000 ug/L
...PFC_ST_00122	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		Hydrolyzed PSDA	1000000 ug/L
...PFC_ST_00123	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		PMPA	1000000 ug/L
...PFC_ST_00124	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		NVHOS	1000000 ug/L
...PFC_ST_00125	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		PEPA	1000000 ug/L
...PFC_ST_00126	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		PFO3OA	1000000 ug/L
...PFC_ST_00127	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		PFO4DA	1000000 ug/L
...PFC_ST_00128	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		Hydro-EVE Acid	1000000 ug/L
...PFC_ST_00129	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		EVE Acid	1000000 ug/L
...PFC_ST_00130	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		R-PSDCA	1000000 ug/L
...PFC_ST_00131	12/05/22		Chemours, Lot N/A		(Purchased Reagent)		TAF	1000000 ug/L
...PFC_ST_00196	02/26/23		Chemours, Lot N/A		(Purchased Reagent)		PFO2HxA	1000000 ug/L
...PFC_ST_00199	02/26/23		Chemours, Lot N/A		(Purchased Reagent)		PFECA G	1000000 ug/L
...PFC_ST_00200	02/26/23		Chemours, Lot N/A		(Purchased Reagent)		Hydro-PS Acid	1000000 ug/L
...PFC_ST_00202	02/26/23		Chemours, Lot N/A		(Purchased Reagent)		PFMOAA	1000000 ug/L
...PFC_ST_00329	02/26/23		Chemours, Lot N/A		(Purchased Reagent)		PPF Acid	1000000 ug/L
...PFC_ST_00332	02/26/23		Chemours, Lot N/A		(Purchased Reagent)		MTP	1000000 ug/L
...PFC_ST_00378	06/11/23		Chemours, Lot N/A		(Purchased Reagent)		PS Acid	1000000 ug/L
.PFC_IN_00616	07/21/22	02/23/22	Methanol, Lot EC058-4	8 mL	FBSEE_20ppm_00001	0.8 mL	N,N-Bis(2-hydroxyethyl)perfluorobutanesulfonamide	2000 ppb
					HFPO_TeA_Int1_00002	0.064 mL	Perfluoro(2,5,8-trimethyl-3,6,9-trioxadodecan)amide	7920 ppb
					PFC_HFPO_TrA_00001	0.64 mL	Perfluoro-2,5-dimethyl-3,6-dioxanonanoic acid (HFPO-TrA)	8000 ppb
					PFC_ST_00997	0.32 mL	3:3 FTCA	2000 ppb
					PFC_ST_00998	0.32 mL	5:3 FTCA	2000 ppb
					PFC_ST_00999	0.32 mL	7:3 FTCA	2000 ppb
					PFC_ST_01000	0.32 mL	6:2 FTCA	2000 ppb
					PFC_ST_01004	0.32 mL	8:2 FTUCA	2000 ppb
					PFC_ST_01008	0.32 mL	PES	1780 ppb
					PFC_ST_01190	0.32 mL	8:2 FTCA	2000 ppb
					PFC_ST_01191	0.32 mL	10:2 FTCA	2000 ppb
					PFC_ST_01192	0.32 mL	6:2 FTUCA	2000 ppb
					PFC_ST_01193	0.32 mL	10:2 FTUCA	2000 ppb
					PFC_ST_01194	0.32 mL	PFECA F	2000 ppb
					PFC_ST_01195	0.32 mL	PFECA A	2000 ppb
					PFC_ST_01196	0.32 mL	PFECHS	1844 ppb
					PFC_ST_01197	0.32 mL	PFPrS	1832 ppb
					PFC_ST_01198	0.32 mL	PFECA B	2000 ppb
					PFC_ST_01406	0.32 mL	FHxSA	2000 ppb
					PFC_ST_01407	0.32 mL	FBSA	2000 ppb
					PFC_TFMS_Int_00002	0.016 mL	Sodium trifluoromethanesulfonate	1960 ppb
..FBSEE_20ppm_00001	02/03/23	02/03/22	Methanol, Lot 204513	10 mL	FBSEE_00002	10 uL	N,N-Bis(2-hydroxyethyl)perfluorobutanesulfonamide	20 ppm
...FBSEE_00002	02/03/25		Synquest Laboratories, Lot 629500		(Purchased Reagent)		N,N-Bis(2-hydroxyethyl)perfluorobutanesulfonamide	20000 ppm
..HFPO_TeA_Int1_00002	08/25/22	02/25/22	Methanol, Lot EC058-US	10 mL	HFPO_TeA_Int1_00001	1 mL	Perfluoro(2,5,8-trimethyl-3,6,9-trioxadodecan)amide	990000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...HFPO_TeA_Int1_00001	09/29/22	09/29/21	Methanol, Lot 204513	10 mL	PFC_HFPO_TeA_00002	0.1 mL	Perfluoro(2,5,8-trimethyl-3,6,9-trioxadodecan)amide	9900000 ppb
....PFC_HFPO_TeA_00002	09/29/22	Synquest Laboratories, Lot Q177-06			(Purchased Reagent)		Perfluoro(2,5,8-trimethyl-3,6,9-trioxadodecan)amide	99 %
..PFC_HFPO_TrA_00001	11/15/22	11/15/21	Methanol, Lot 204513	10 mL	HFPO-TrA_00001	8 uL	Perfluoro-2,5-dimethyl-3,6-dioxanonanoic acid (HFPO-TrA)	100 ppm
...HFPO-TrA_00001	11/15/23	Toronto Research Chemicals, Lot 21-JPO-57-1			(Purchased Reagent)		Perfluoro-2,5-dimethyl-3,6-dioxanonanoic acid (HFPO-TrA)	125 mg/mL
..PFC_ST_00997	07/21/22	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
..PFC_ST_00998	07/21/22	Wellington Laboratories, Lot FPePA1120			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
..PFC_ST_00999	07/21/22	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
..PFC_ST_01000	07/21/22	Wellington Laboratories, Lot FHEA0321			(Purchased Reagent)		6:2 FTCA	50000 ng/mL
..PFC_ST_01004	07/21/22	Wellington Laboratories, Lot FOUEA0321			(Purchased Reagent)		8:2 FTUCA	50000 ng/mL
..PFC_ST_01008	07/21/22	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
..PFC_ST_01190	07/21/22	Wellington Laboratories, Lot FOEA0821			(Purchased Reagent)		8:2 FTCA	50000 ng/mL
..PFC_ST_01191	07/21/22	Wellington Laboratories, Lot FDEA0921			(Purchased Reagent)		10:2 FTCA	50000 ng/mL
..PFC_ST_01192	07/21/22	Wellington Laboratories, Lot FHUEA0921			(Purchased Reagent)		6:2 FTUCA	50000 ng/mL
..PFC_ST_01193	07/21/22	Wellington Laboratories, Lot FDUEA01021			(Purchased Reagent)		10:2 FTUCA	50000 ng/mL
..PFC_ST_01194	07/21/22	Wellington Laboratories, Lot PF4OPeA0921			(Purchased Reagent)		PFECA F	50000 ng/mL
..PFC_ST_01195	07/21/22	Wellington Laboratories, Lot PF5OHxA1021			(Purchased Reagent)		PFECA A	50000 ng/mL
..PFC_ST_01196	07/21/22	Wellington Laboratoires, Lot PFECHS1021			(Purchased Reagent)		PFECHS	46100 ppb
..PFC_ST_01197	07/21/22	Wellington Laboratories, Lot LPFPrS0721			(Purchased Reagent)		PFPrS	45800 ppb
..PFC_ST_01198	07/21/22	Wellington Laboratories, Lot 36OPFHpA0921			(Purchased Reagent)		PFECA B	50000 ng/mL
..PFC_ST_01406	02/23/23	Wellington Laboratories, Lot FHxSA1221I			(Purchased Reagent)		FHxSA	50000 ng/mL
..PFC_ST_01407	02/23/23	Wellington Laboratories, Lot FBSA1121I			(Purchased Reagent)		FBSA	50000 ng/mL
..PFC_TFMS_Int_00002	08/25/22	02/25/22	Methanol, Lot 204513	10 mL	PFC_TFMS_Int_00001	1 mL	Sodium trifluoromethanesulfonate	980 ppm
...PFC_TFMS_Int_00001	09/29/22	09/29/21	Methanol, Lot 204513	10 mL	PFC_TFMS_PS_00001	0.1 g	Sodium trifluoromethanesulfonate	9800 ppm
....PFC_TFMS_PS_00001	09/29/22	Sigma-Aldrich, Lot MKCM0418			(Purchased Reagent)		Sodium trifluoromethanesulfonate	98 %
.PFC_IN_00631	09/23/22	03/23/22	Methanol, Lot ED260-US	8 mL	PFC_ST_01417	0.32 mL	NMeFOSA	2000 ng/mL
					PFC_ST_01418	0.32 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_01419	0.32 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01420	0.32 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01422	0.32 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_01423	0.32 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_01424	0.32 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_01425	0.32 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
					PFC_ST_01426	0.32 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_01427	0.32 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01428	0.32 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01429	0.32 mL	Perfluorodecanesulfonic acid	1928 ng/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_01430	0.32 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01431	0.32 mL	Perfluoropentanoic acid	2000 ng/mL
					PFC_ST_01432	0.32 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_01433	0.32 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_01434	0.32 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_01435	0.32 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
..PFC_ST_01417	03/23/23	Wellington Laboratories, Lot NMeFOSA0721M			(Purchased Reagent)		NMeFOSA	50000 ng/mL
..PFC_ST_01418	03/23/23	Wellington Laboratories, Lot NEtFOSA0821M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
..PFC_ST_01419	03/23/23	Wellington Laboratories, Lot NMeFOSE0921M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01420	03/23/23	Wellington Laboratories, Lot NEtFOSE0921M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01422	03/23/23	Wellington Laboratories, Lot FOSA0721I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
..PFC_ST_01423	03/23/23	Wellington Laboratories, Lot PFHxDA0421			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
..PFC_ST_01424	03/23/23	Wellington Laboratories, Lot PFODA0821			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
..PFC_ST_01425	03/23/23	Wellington Laboratories, Lot LPFDoS1021			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
..PFC_ST_01426	03/23/23	Wellington Laboratories, Lot LPFPeS0721			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
..PFC_ST_01427	03/23/23	Wellington Laboratories, Lot LPFHpS0721			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
..PFC_ST_01428	03/23/23	Wellington Laboratories, Lot LPFNS1021			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
..PFC_ST_01429	03/23/23	Wellington Laboratories, Lot LPFDS0821			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
..PFC_ST_01430	03/23/23	Wellington Laboratories, Lot PFBA1021			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
..PFC_ST_01431	03/23/23	Wellington Laboratories, Lot PFPeA0721			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
..PFC_ST_01432	03/23/23	Wellington Laboratories, Lot 42FTS0921			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
..PFC_ST_01433	03/23/23	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
..PFC_ST_01434	03/23/23	Wellington Laboratories, Lot 82FTS0821			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
..PFC_ST_01435	03/23/23	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
.PFC_ST_01072	08/09/22	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
PFC_SS_MODX_00228	06/10/22	03/10/22	Methanol, Lot EC203-US	25 mL	PFC_IN_00622	5 mL	d7-N-MeFOSE-M	400 ng/mL
							13C4 PFHpA	400 ng/mL
							d5-NEtFOSAA	400 ng/mL
							d9-N-EtFOSE-M	400 ng/mL
							13C3 PFBS	372 ng/mL
							13C3 PFHxS	378.4 ng/mL
							13C8 PFOS	382.4 ng/mL
							13C4 PFBA	400 ng/mL
							13C5 PFPeA	400 ng/mL
							13C8 PFOA	400 ng/mL
							13C9 PFNA	400 ng/mL
							13C6 PFDA	400 ng/mL
							13C7 PFUnA	400 ng/mL
							13C2-PFDoDA	400 ng/mL
							13C2 PFTeDA	400 ng/mL
							d3-NMePFOSA	400 ng/mL
							d5-NEtPFOSA	400 ng/mL
							d3-NMeFOSAA	400 ng/mL
							13C3 HFPO-DA	400 ng/mL
							M2-4:2 FTS	373.6 ng/mL
							M2-6:2 FTS	380 ng/mL
							M2-8:2 FTS	383.2 ng/mL
							13C5 PFHxA	400 ng/mL
							13C8 FOSA	400 ng/mL
.PFC_IN_00622	09/10/22	03/10/22	Methanol, Lot EC203-US	25 mL	PFC_ST_01293	1 mL	d7-N-MeFOSE-M	2000 ng/mL
					PFC_ST_01298	1 mL	13C4 PFHpA	2000 ng/mL
					PFC_ST_01300	1 mL	d5-NEtFOSAA	2000 ng/mL
					PFC_ST_01316	1 mL	d9-N-EtFOSE-M	2000 ng/mL
					PFC_ST_01330	1 mL	13C3 PFBS	1860 ng/mL
					PFC_ST_01331	1 mL	13C3 PFHxS	1892 ng/mL
					PFC_ST_01332	1 mL	13C8 PFOS	1912 ng/mL
					PFC_ST_01333	1 mL	13C4 PFBA	2000 ng/mL
					PFC_ST_01334	1 mL	13C5 PFPeA	2000 ng/mL
					PFC_ST_01337	1 mL	13C8 PFOA	2000 ng/mL
					PFC_ST_01338	1 mL	13C9 PFNA	2000 ng/mL
					PFC_ST_01339	1 mL	13C6 PFDA	2000 ng/mL
					PFC_ST_01340	1 mL	13C7 PFUnA	2000 ng/mL
					PFC_ST_01341	1 mL	13C2-PFDoDA	2000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_01342	1 mL	13C2 PFTeDA	2000 ng/mL
					PFC_ST_01344	1 mL	d3-NMePFOSA	2000 ng/mL
					PFC_ST_01345	1 mL	d5-NEtPFOSA	2000 ng/mL
					PFC_ST_01348	1 mL	d3-NMeFOSAA	2000 ng/mL
					PFC_ST_01350	1 mL	13C3 HFPO-DA	2000 ng/mL
					PFC_ST_01351	1 mL	M2-4:2 FTS	1868 ng/mL
					PFC_ST_01352	1 mL	M2-6:2 FTS	1900 ng/mL
					PFC_ST_01353	1 mL	M2-8:2 FTS	1916 ng/mL
					PFC_ST_01445	1 mL	13C5 PFHxA	2000 ng/mL
					PFC_ST_01453	1 mL	13C8 FOSA	2000 ng/mL
..PFC_ST_01293	02/10/23	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01298	03/10/23	Wellington Laboratories, Lot M4PFHpA1121			(Purchased Reagent)		13C4 PFHpA	50000 ng/mL
..PFC_ST_01300	03/10/23	Wellington Laboratories, Lot d5NEtFOSAA0921			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_01316	02/18/23	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ng/mL
..PFC_ST_01330	02/28/23	Wellington Laboratories, Lot M3PFBS0821			(Purchased Reagent)		13C3 PFBS	46500 ng/mL
..PFC_ST_01331	02/28/23	Wellington Laboratories, Lot M3PFHxS1221			(Purchased Reagent)		13C3 PFHxS	47300 ng/mL
..PFC_ST_01332	02/28/23	Wellington Laboratories, Lot M8PFOS0721			(Purchased Reagent)		13C8 PFOS	47800 ng/mL
..PFC_ST_01333	02/28/23	Wellington Laboratories, Lot MPFBA0621			(Purchased Reagent)		13C4 PFBA	50000 ng/mL
..PFC_ST_01334	02/28/23	Wellington Laboratories, Lot M5PFPeA0821			(Purchased Reagent)		13C5 PFPeA	50000 ng/mL
..PFC_ST_01337	02/28/23	Wellington Laboratories, Lot M8PFOA1221			(Purchased Reagent)		13C8 PFOA	50000 ng/mL
..PFC_ST_01338	02/28/23	Wellington Laboratories, Lot M9PFNA0621			(Purchased Reagent)		13C9 PFNA	50000 ng/mL
..PFC_ST_01339	02/28/23	Wellington Laboratories, Lot M6PFDA0721			(Purchased Reagent)		13C6 PFDA	50000 ng/mL
..PFC_ST_01340	02/28/23	Wellington Laboratories, Lot M7PFUdA0821			(Purchased Reagent)		13C7 PFUnA	50000 ng/mL
..PFC_ST_01341	02/28/23	Wellington Laboratories, Lot MPFDoA0821			(Purchased Reagent)		13C2-PFDoDA	50000 ng/mL
..PFC_ST_01342	02/18/23	Wellington Laboratories, Lot M2PFTeDA1121			(Purchased Reagent)		13C2 PFTeDA	50000 ng/mL
..PFC_ST_01344	02/28/23	Wellington Laboratories, Lot dNMeFOSA1021M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_01345	02/28/23	Wellington Laboratories, Lot dNEtFOSA0821M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_01348	02/28/23	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01350	02/28/23	Wellington Laboratories, Lot M3HFPODA1121			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_01351	02/28/23	Wellington Laboratories, Lot M242FTS01021			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_01352	02/28/23	Wellington Laboratories, Lot M262FTS01021			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_01353	02/28/23	Wellington Laboratories, Lot M282FTS1121			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_01445	03/10/23	Wellington Laboratories, Lot M5PFHxA1021			(Purchased Reagent)		13C5 PFHxA	50000 ng/mL
..PFC_ST_01453	03/10/23	Wellington Laboratories, Lot M8FOSA0921I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
PFC_SS_MODX_00231	06/22/22	03/22/22	Methanol, Lot ED260-US	25 mL	PFC_IN_00627	5 mL	13C3 PFBS	372 ng/mL
							13C3 PFHxS	378.4 ng/mL
							13C8 PFOS	382.4 ng/mL
							13C4 PFBA	400 ng/mL
							13C5 PFPeA	400 ng/mL
							13C5 PFHxA	400 ng/mL
							13C4 PFHpA	400 ng/mL
							13C8 PFOA	400 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C9 PFNA	400 ng/mL
							13C6 PFDA	400 ng/mL
							13C7 PFUnA	400 ng/mL
							13C2-PFDoDA	400 ng/mL
							13C2 PFTeDA	400 ng/mL
							13C8 FOSA	400 ng/mL
							d3-NMePFOSA	400 ng/mL
							d5-NEtPFOSA	400 ng/mL
							d7-N-MeFOSE-M	400 ng/mL
							d9-N-EtFOSE-M	400 ng/mL
							d3-NMeFOSAA	400 ng/mL
							d5-NEtFOSAA	400 ng/mL
							13C3 HFPO-DA	400 ng/mL
							M2-4:2 FTS	373.6 ng/mL
							M2-6:2 FTS	380 ng/mL
							M2-8:2 FTS	383.2 ng/mL
					PFC_IN_00629	5 mL	13C-6:2 FTCA	400 ng/mL
							13C-8:2 FTCA	400 ng/mL
							13C-10:2 FTCA	400 ng/mL
							13C-6:2 FTUCA	400 ng/mL
							13C-8:2 FTUCA	400 ng/mL
							13C-10:2 FTUCA	400 ng/mL
.PFC_IN_00627	09/22/22	03/22/22	Methanol, Lot ED260-US	25 mL	PFC_ST_01330	1 mL	13C3 PFBS	1860 ng/mL
					PFC_ST_01331	1 mL	13C3 PFHxS	1892 ng/mL
					PFC_ST_01332	1 mL	13C8 PFOS	1912 ng/mL
					PFC_ST_01333	1 mL	13C4 PFBA	2000 ng/mL
					PFC_ST_01334	1 mL	13C5 PFPeA	2000 ng/mL
					PFC_ST_01335	1 mL	13C5 PFHxA	2000 ng/mL
					PFC_ST_01336	1 mL	13C4 PFHpA	2000 ng/mL
					PFC_ST_01337	1 mL	13C8 PFOA	2000 ng/mL
					PFC_ST_01338	1 mL	13C9 PFNA	2000 ng/mL
					PFC_ST_01339	1 mL	13C6 PFDA	2000 ng/mL
					PFC_ST_01340	1 mL	13C7 PFUnA	2000 ng/mL
					PFC_ST_01341	1 mL	13C2-PFDoDA	2000 ng/mL
					PFC_ST_01342	1 mL	13C2 PFTeDA	2000 ng/mL
					PFC_ST_01343	1 mL	13C8 FOSA	2000 ng/mL
					PFC_ST_01344	1 mL	d3-NMePFOSA	2000 ng/mL
					PFC_ST_01345	1 mL	d5-NEtPFOSA	2000 ng/mL
					PFC_ST_01346	1 mL	d7-N-MeFOSE-M	2000 ng/mL
					PFC_ST_01347	1 mL	d9-N-EtFOSE-M	2000 ng/mL
					PFC_ST_01348	1 mL	d3-NMeFOSAA	2000 ng/mL
					PFC_ST_01349	1 mL	d5-NEtFOSAA	2000 ng/mL
					PFC_ST_01350	1 mL	13C3 HFPO-DA	2000 ng/mL
					PFC_ST_01351	1 mL	M2-4:2 FTS	1868 ng/mL
					PFC_ST_01352	1 mL	M2-6:2 FTS	1900 ng/mL
					PFC_ST_01353	1 millivolts	M2-8:2 FTS	1916 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_01330	02/28/23	Wellington Laboratories, Lot M3PFBS0821			(Purchased Reagent)		13C3 PFBS	46500 ng/mL
..PFC_ST_01331	02/28/23	Wellington Laboratories, Lot M3PFHxS1221			(Purchased Reagent)		13C3 PFHxS	47300 ng/mL
..PFC_ST_01332	02/28/23	Wellington Laboratories, Lot M8PFOS0721			(Purchased Reagent)		13C8 PFOS	47800 ng/mL
..PFC_ST_01333	02/28/23	Wellington Laboratories, Lot MPFBA0621			(Purchased Reagent)		13C4 PFBA	50000 ng/mL
..PFC_ST_01334	02/28/23	Wellington Laboratories, Lot M5PFPeA0821			(Purchased Reagent)		13C5 PFPeA	50000 ng/mL
..PFC_ST_01335	02/28/23	Wellington Laboratories, Lot M5PFHxA1021			(Purchased Reagent)		13C5 PFHxA	50000 ng/mL
..PFC_ST_01336	02/28/23	Wellington Laboratories, Lot M4PFHpA1121			(Purchased Reagent)		13C4 PFHpA	50000 ng/mL
..PFC_ST_01337	02/28/23	Wellington Laboratories, Lot M8PFOA1221			(Purchased Reagent)		13C8 PFOA	50000 ng/mL
..PFC_ST_01338	02/28/23	Wellington Laboratories, Lot M9PFNA0621			(Purchased Reagent)		13C9 PFNA	50000 ng/mL
..PFC_ST_01339	02/28/23	Wellington Laboratories, Lot M6PFDA0721			(Purchased Reagent)		13C6 PFDA	50000 ng/mL
..PFC_ST_01340	02/28/23	Wellington Laboratories, Lot M7PFUdA0821			(Purchased Reagent)		13C7 PFUnA	50000 ng/mL
..PFC_ST_01341	02/28/23	Wellington Laboratories, Lot MPFDoA0821			(Purchased Reagent)		13C2-PFDoDA	50000 ng/mL
..PFC_ST_01342	02/18/23	Wellington Laboratories, Lot M2PFTeDA1121			(Purchased Reagent)		13C2 PFTeDA	50000 ng/mL
..PFC_ST_01343	02/28/23	Wellington Laboratories, Lot M8FOSA0921I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01344	02/28/23	Wellington Laboratories, Lot dNMeFOSA1021M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_01345	02/28/23	Wellington Laboratories, Lot dNEtFOSA0821M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_01346	02/28/23	Wellington Laboratories, Lot d7NMeFOSE1221M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01347	02/28/23	Wellington Laboratories, Lot d9NEtFOSE1221M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ng/mL
..PFC_ST_01348	02/28/23	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01349	02/28/23	Wellington Laboratories, Lot d5NEtFOSAA0921			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_01350	02/28/23	Wellington Laboratories, Lot M3HFPODA1121			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_01351	02/28/23	Wellington Laboratories, Lot M242FTS01021			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_01352	02/28/23	Wellington Laboratories, Lot M262FTS01021			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_01353	02/28/23	Wellington Laboratories, Lot M282FTS1121			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
.PFC_IN_00629	09/22/22	03/22/22	Methanol, Lot ED260-US	25 mL	PFC_ST_01464	1 mL	13C-6:2 FTCA	2000 ppb
					PFC_ST_01465	1 mL	13C-8:2 FTCA	2000 ppb
					PFC_ST_01466	1 mL	13C-10:2 FTCA	2000 ppb
					PFC_ST_01467	1 mL	13C-6:2 FTUCA	2000 ppb
					PFC_ST_01468	1 mL	13C-8:2 FTUCA	2000 ppb
					PFC_ST_01469	1 mL	13C-10:2 FTUCA	2000 ppb
..PFC_ST_01464	03/22/23	Wellington Laboratories, Lot MFHEA0921			(Purchased Reagent)		13C-6:2 FTCA	50000 ppb
..PFC_ST_01465	03/22/23	Wellington Laboratories, Lot MFOEA1121			(Purchased Reagent)		13C-8:2 FTCA	50000 ppb
..PFC_ST_01466	03/22/23	Wellington Laboratories, Lot MFDEA0921			(Purchased Reagent)		13C-10:2 FTCA	50000 ppb
..PFC_ST_01467	03/22/23	Wellington Laboratories, Lot MFHUEA0322			(Purchased Reagent)		13C-6:2 FTUCA	50000 ppb
..PFC_ST_01468	03/22/23	Wellington Laboratories, Lot MFOUEA1121			(Purchased Reagent)		13C-8:2 FTUCA	50000 ppb
..PFC_ST_01469	03/22/23	Wellington Laboratories, Lot MFDUEA1221			(Purchased Reagent)		13C-10:2 FTUCA	50000 ppb
PFC_SS_MODX_00232	06/22/22	03/22/22	Methanol, Lot ED260-US	25 mL	PFC_IN_00627	5 mL	13C3 PFBS	372 ng/mL
							13C3 PFHxS	378.4 ng/mL
							13C8 PFOS	382.4 ng/mL
							13C4 PFBA	400 ng/mL
							13C5 PFPeA	400 ng/mL
							13C5 PFHxA	400 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C4 PFHpA	400 ng/mL
							13C8 PFOA	400 ng/mL
							13C9 PFNA	400 ng/mL
							13C6 PFDA	400 ng/mL
							13C7 PFUnA	400 ng/mL
							13C2-PFDoDA	400 ng/mL
							13C2 PFTeDA	400 ng/mL
							13C8 FOSA	400 ng/mL
							d3-NMePFOSA	400 ng/mL
							d5-NEtPFOSA	400 ng/mL
							d7-N-MeFOSE-M	400 ng/mL
							d9-N-EtFOSE-M	400 ng/mL
							d3-NMeFOSAA	400 ng/mL
							d5-NEtFOSAA	400 ng/mL
							13C3 HFPO-DA	400 ng/mL
							M2-4:2 FTS	373.6 ng/mL
							M2-6:2 FTS	380 ng/mL
							M2-8:2 FTS	383.2 ng/mL
					PFC_IN_00629	5 mL	13C-6:2 FTCA	400 ng/mL
							13C-8:2 FTCA	400 ng/mL
							13C-10:2 FTCA	400 ng/mL
							13C-6:2 FTUCA	400 ng/mL
							13C-8:2 FTUCA	400 ng/mL
							13C-10:2 FTUCA	400 ng/mL
.PFC_IN_00627	09/22/22	03/22/22	Methanol, Lot ED260-US	25 mL	PFC_ST_01330	1 mL	13C3 PFBS	1860 ng/mL
					PFC_ST_01331	1 mL	13C3 PFHxS	1892 ng/mL
					PFC_ST_01332	1 mL	13C8 PFOS	1912 ng/mL
					PFC_ST_01333	1 mL	13C4 PFBA	2000 ng/mL
					PFC_ST_01334	1 mL	13C5 PFPeA	2000 ng/mL
					PFC_ST_01335	1 mL	13C5 PFHxA	2000 ng/mL
					PFC_ST_01336	1 mL	13C4 PFHpA	2000 ng/mL
					PFC_ST_01337	1 mL	13C8 PFOA	2000 ng/mL
					PFC_ST_01338	1 mL	13C9 PFNA	2000 ng/mL
					PFC_ST_01339	1 mL	13C6 PFDA	2000 ng/mL
					PFC_ST_01340	1 mL	13C7 PFUnA	2000 ng/mL
					PFC_ST_01341	1 mL	13C2-PFDoDA	2000 ng/mL
					PFC_ST_01342	1 mL	13C2 PFTeDA	2000 ng/mL
					PFC_ST_01343	1 mL	13C8 FOSA	2000 ng/mL
					PFC_ST_01344	1 mL	d3-NMePFOSA	2000 ng/mL
					PFC_ST_01345	1 mL	d5-NEtPFOSA	2000 ng/mL
					PFC_ST_01346	1 mL	d7-N-MeFOSE-M	2000 ng/mL
					PFC_ST_01347	1 mL	d9-N-EtFOSE-M	2000 ng/mL
					PFC_ST_01348	1 mL	d3-NMeFOSAA	2000 ng/mL
					PFC_ST_01349	1 mL	d5-NEtFOSAA	2000 ng/mL
					PFC_ST_01350	1 mL	13C3 HFPO-DA	2000 ng/mL
					PFC_ST_01351	1 mL	M2-4:2 FTS	1868 ng/mL
					PFC_ST_01352	1 mL	M2-6:2 FTS	1900 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_01353	1 millivolts	M2-8:2 FTS	1916 ng/mL
..PFC_ST_01330	02/28/23	Wellington Laboratories, Lot M3PFBS0821			(Purchased Reagent)		13C3 PFBS	46500 ng/mL
..PFC_ST_01331	02/28/23	Wellington Laboratories, Lot M3PFHxS1221			(Purchased Reagent)		13C3 PFHxS	47300 ng/mL
..PFC_ST_01332	02/28/23	Wellington Laboratories, Lot M8PFOS0721			(Purchased Reagent)		13C8 PFOS	47800 ng/mL
..PFC_ST_01333	02/28/23	Wellington Laboratories, Lot MPFBA0621			(Purchased Reagent)		13C4 PFBA	50000 ng/mL
..PFC_ST_01334	02/28/23	Wellington Laboratories, Lot M5PFPeA0821			(Purchased Reagent)		13C5 PFPeA	50000 ng/mL
..PFC_ST_01335	02/28/23	Wellington Laboratories, Lot M5PFHxA1021			(Purchased Reagent)		13C5 PFHxA	50000 ng/mL
..PFC_ST_01336	02/28/23	Wellington Laboratories, Lot M4PFHpA1121			(Purchased Reagent)		13C4 PFHpA	50000 ng/mL
..PFC_ST_01337	02/28/23	Wellington Laboratories, Lot M8PFOA1221			(Purchased Reagent)		13C8 PFOA	50000 ng/mL
..PFC_ST_01338	02/28/23	Wellington Laboratories, Lot M9PFNA0621			(Purchased Reagent)		13C9 PFNA	50000 ng/mL
..PFC_ST_01339	02/28/23	Wellington Laboratories, Lot M6PFDA0721			(Purchased Reagent)		13C6 PFDA	50000 ng/mL
..PFC_ST_01340	02/28/23	Wellington Laboratories, Lot M7PFUdA0821			(Purchased Reagent)		13C7 PFUnA	50000 ng/mL
..PFC_ST_01341	02/28/23	Wellington Laboratories, Lot MPFDoA0821			(Purchased Reagent)		13C2-PFDoDA	50000 ng/mL
..PFC_ST_01342	02/18/23	Wellington Laboratories, Lot M2PFTeDA1121			(Purchased Reagent)		13C2 PFTeDA	50000 ng/mL
..PFC_ST_01343	02/28/23	Wellington Laboratories, Lot M8FOSA0921I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01344	02/28/23	Wellington Laboratories, Lot dNMeFOSA1021M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_01345	02/28/23	Wellington Laboratories, Lot dNEtFOSA0821M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_01346	02/28/23	Wellington Laboratories, Lot d7NMeFOSE1221M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01347	02/28/23	Wellington Laboratories, Lot d9NEtFOSE1221M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ng/mL
..PFC_ST_01348	02/28/23	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01349	02/28/23	Wellington Laboratories, Lot d5NEtFOSAA0921			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_01350	02/28/23	Wellington Laboratories, Lot M3HFPODA1121			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_01351	02/28/23	Wellington Laboratories, Lot M242FTS01021			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_01352	02/28/23	Wellington Laboratories, Lot M262FTS01021			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_01353	02/28/23	Wellington Laboratories, Lot M282FTS1121			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
.PFC_IN_00629	09/22/22	03/22/22	Methanol, Lot ED260-US	25 mL	PFC_ST_01464	1 mL	13C-6:2 FTCA	2000 ppb
					PFC_ST_01465	1 mL	13C-8:2 FTCA	2000 ppb
					PFC_ST_01466	1 mL	13C-10:2 FTCA	2000 ppb
					PFC_ST_01467	1 mL	13C-6:2 FTUCA	2000 ppb
					PFC_ST_01468	1 mL	13C-8:2 FTUCA	2000 ppb
					PFC_ST_01469	1 mL	13C-10:2 FTUCA	2000 ppb
..PFC_ST_01464	03/22/23	Wellington Laboratories, Lot MFHEA0921			(Purchased Reagent)		13C-6:2 FTCA	50000 ppb
..PFC_ST_01465	03/22/23	Wellington Laboratories, Lot MFOEA1121			(Purchased Reagent)		13C-8:2 FTCA	50000 ppb
..PFC_ST_01466	03/22/23	Wellington Laboratories, Lot MFDEA0921			(Purchased Reagent)		13C-10:2 FTCA	50000 ppb
..PFC_ST_01467	03/22/23	Wellington Laboratories, Lot MFHUEA0322			(Purchased Reagent)		13C-6:2 FTUCA	50000 ppb
..PFC_ST_01468	03/22/23	Wellington Laboratories, Lot MFOUEA1121			(Purchased Reagent)		13C-8:2 FTUCA	50000 ppb
..PFC_ST_01469	03/22/23	Wellington Laboratories, Lot MFDUEA1221			(Purchased Reagent)		13C-10:2 FTUCA	50000 ppb
PFC_STD_XMOD1_00013	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ppb
							d5-NEtPFOSA	10 ppb
							d3-NMePFOSA	10 ppb

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							M2-4:2 FTS	9.34 ppb
							13C3 HFPO-DA	10 ppb
							M2-8:2 FTS	9.58 ppb
							M2-6:2 FTS	9.5 ppb
							13C8 FOSA	10 ppb
							d3-NMeFOSAA	10 ppb
							d7-N-MeFOSE-M	10 ppb
							d9-N-EtFOSE-M	10 ppb
					PFC_IN_00608	0.1 mL	Perfluorooctadecanoic acid	0.2 ppb
							Perfluorohexadecanoic acid	0.2 ppb
							Perfluoropentanesulfonic acid	0.1876 ppb
							Perfluorodecanesulfonic acid	0.1928 ppb
							N-ethylperfluoro-1-octanesulfonamide	0.2 ppb
							NMeFOSA	0.2 ppb
							Perfluorooctanesulfonamide	0.2 ppb
							4:2 Fluorotelomer sulfonic acid	0.1868 ppb
							6:2 Fluorotelomer sulfonic acid	0.1896 ppb
							8:2 Fluorotelomer sulfonic acid	0.1916 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	0.1928 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	0.2 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	0.2 ppb
							Perfluorobutanoic acid	0.2 ppb
							Perfluoroheptanesulfonic acid	0.1904 ppb
							Perfluorononanesulfonic acid	0.192 ppb
							Perfluoropentanoic acid	0.2 ppb
							Perfluorododecanesulfonic acid (PFDoS)	0.1936 ppb
							3:3 FTCA	0.2 ppb
							PFECA A	0.2 ppb
							PES	0.178 ppb
							5:3 FTCA	0.2 ppb
							7:3 FTCA	0.2 ppb
							PFECA F	0.2 ppb
							PFECA B	0.2 ppb
							11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.186 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.186 ppb
							DONA	0.189 ppb
							NEtFOSAA	0.2 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NMeFOSAA	0.2 ppb
							Perfluoro(2-propoxypropanoic) acid	0.2 ppb
							Perfluorobutanesulfonic acid	0.177 ppb
							Perfluorodecanoic acid	0.2 ppb
							Perfluorododecanoic acid	0.2 ppb
							Perfluoroheptanoic acid	0.2 ppb
							Perfluorohexanesulfonic acid	0.1824 ppb
							Perfluorohexanoic acid	0.2 ppb
							Perfluorononanoic acid	0.2 ppb
							Perfluorooctanesulfonic acid	0.1851 ppb
							Perfluorooctanoic acid	0.2 ppb
							Perfluorotetradecanoic acid	0.2 ppb
							Perfluorotridecanoic acid	0.2 ppb
							Perfluoroundecanoic acid	0.2 ppb
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ppb
							13C2-PFDoDA	10 ppb
							13C3 PFBS	9.3 ppb
							13C3 PFHxS	9.46 ppb
							13C4 PFBA	10 ppb
							13C4 PFHpA	10 ppb
							13C5 PFHxA	10 ppb
							13C5 PFPeA	10 ppb
							13C6 PFDA	10 ppb
							13C7 PFUnA	10 ppb
							13C8 PFOA	10 ppb
							13C8 PFOS	9.56 ppb
							13C9 PFNA	10 ppb
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00608	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00607	0.2 mL	Perfluorooctadecanoic acid	20 ppb
							Perfluorohexadecanoic acid	20 ppb
							Perfluoropentanesulfonic acid	18.76 ppb
							Perfluorodecanesulfonic acid	19.28 ppb
							N-ethylperfluoro-1-octanesulfonamide	20 ppb
							NMeFOSA	20 ppb
							Perfluorooctanesulfonamide	20 ppb
							4:2 Fluorotelomer sulfonic acid	18.68 ppb
							6:2 Fluorotelomer sulfonic acid	18.96 ppb
							8:2 Fluorotelomer sulfonic acid	19.16 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	19.28 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	20 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	20 ppb
							Perfluorobutanoic acid	20 ppb
							Perfluoroheptanesulfonic acid	19.04 ppb
							Perfluorononanesulfonic acid	19.2 ppb
							Perfluoropentanoic acid	20 ppb
							Perfluorododecanesulfonic acid (PFDoS)	19.36 ppb
							3:3 FTCA	20 ppb
							PFECA A	20 ppb
							PES	17.8 ppb
							5:3 FTCA	20 ppb
							7:3 FTCA	20 ppb
							PFECA F	20 ppb
							PFECA B	20 ppb
							11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	18.6 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	18.6 ppb
							DONA	18.9 ppb
							NEtFOSAA	20 ppb

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NMeFOSAA	20 ppb
							Perfluoro(2-propoxypropanoic) acid	20 ppb
							Perfluorobutanesulfonic acid	17.7 ppb
							Perfluorodecanoic acid	20 ppb
							Perfluorododecanoic acid	20 ppb
							Perfluoroheptanoic acid	20 ppb
							Perfluorohexanesulfonic acid	18.24 ppb
							Perfluorohexanoic acid	20 ppb
							Perfluorononanoic acid	20 ppb
							Perfluorooctanesulfonic acid	18.51 ppb
							Perfluorooctanoic acid	20 ppb
							Perfluorotetradecanoic acid	20 ppb
							Perfluorotridecanoic acid	20 ppb
							Perfluoroundecanoic acid	20 ppb
..PFC_IN_00607	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00605	1.25 mL	Perfluorooctadecanoic acid	500 ppb
							Perfluorohexadecanoic acid	500 ppb
							Perfluoropentanesulfonic acid	469 ppb
							Perfluorodecanesulfonic acid	482 ppb
							N-ethylperfluoro-1-octanesulfonamide	500 ppb
							NMeFOSA	500 ppb
							Perfluorooctanesulfonamide	500 ppb
							4:2 Fluorotelomer sulfonic acid	467 ppb
							6:2 Fluorotelomer sulfonic acid	474 ppb
							8:2 Fluorotelomer sulfonic acid	479 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	482 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	500 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	500 ppb
							Perfluorobutanoic acid	500 ppb
							Perfluoroheptanesulfonic acid	476 ppb
							Perfluorononanesulfonic acid	480 ppb
							Perfluoropentanoic acid	500 ppb
							Perfluorododecanesulfonic acid (PFDoS)	484 ppb
					PFC_IN_00606	1.25 mL	3:3 FTCA	500 ppb
							PFECA A	500 ppb
							PES	445 ppb
							5:3 FTCA	500 ppb
							7:3 FTCA	500 ppb
							PFECA F	500 ppb

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							PFECA B	500 ppb
					PFC_ST_01222	1.25 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	465 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	465 ppb
							DONA	472.5 ppb
							NEtFOSAA	500 ppb
							NMeFOSAA	500 ppb
							Perfluoro(2-propoxypropanoic) acid	500 ppb
							Perfluorobutanesulfonic acid	442.5 ppb
							Perfluorodecanoic acid	500 ppb
							Perfluorododecanoic acid	500 ppb
							Perfluoroheptanoic acid	500 ppb
							Perfluorohexanesulfonic acid	456 ppb
							Perfluorohexanoic acid	500 ppb
							Perfluorononanoic acid	500 ppb
							Perfluorooctanesulfonic acid	462.75 ppb
							Perfluorooctanoic acid	500 ppb
							Perfluorotetradecanoic acid	500 ppb
							Perfluorotridecanoic acid	500 ppb
							Perfluoroundecanoic acid	500 ppb
...PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00747	0.2 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_00748	0.2 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL
					PFC_ST_00971	0.2 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_00972	0.2 mL	NMeFOSA	2000 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_00977	0.2 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
					PFC_ST_01073	0.2 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01082	0.2 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_01224	0.2 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
....PFC_ST_00747	11/13/25	Wellington Laboratories, Lot PFODA1020			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
....PFC_ST_00748	08/25/25	Wellington Laboratories, Lot PFHxDA0820			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
....PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
....PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
....PFC_ST_00971	11/23/25	Wellington Laboratories, Lot NEtFOSA1120M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
....PFC_ST_00972	10/20/25	Wellington Laboratories, Lot NMeFOSA1020M			(Purchased Reagent)		NMeFOSA	50000 ng/mL
....PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
....PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
....PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
....PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
....PFC_ST_00977	03/03/26	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
....PFC_ST_01073	06/02/26	Wellington Laboratories, Lot NEtFOSE0521M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
....PFC_ST_01082	06/02/26	Wellington Laboratories, Lot NMeFOSE0521M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
....PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
....PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
....PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
....PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
....PFC_ST_01224	02/16/23	Wellington Laboratories, Lot LPFDoS0721			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
...PFC_IN_00606	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00761	0.2 mL	3:3 FTCA	2000 ppb
					PFC_ST_00765	0.2 mL	PFECA A	2000 ppb
					PFC_ST_00768	0.2 mL	PES	1780 ppb
					PFC_ST_00769	0.2 mL	5:3 FTCA	2000 ppb
					PFC_ST_00770	0.2 mL	7:3 FTCA	2000 ppb
					PFC_ST_00775	0.2 mL	PFECA F	2000 ppb
					PFC_ST_00988	0.2 mL	PFECA B	2000 ppb
....PFC_ST_00761	11/12/25	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
....PFC_ST_00765	03/31/25	Wellington Laboratories, Lot PF5OHxA0320			(Purchased Reagent)		PFECA A	50000 ng/mL
....PFC_ST_00768	05/13/25	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
....PFC_ST_00769	10/05/23	Wellington Laboratories, Lot FPePA0920			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
....PFC_ST_00770	11/12/25	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
....PFC_ST_00775	03/31/25	Wellington Laboratories, Lot PF4OPeA0320			(Purchased Reagent)		PFECA F	50000 ng/mL
....PFC_ST_00988	03/31/25	Wellington Laboratories, Lot 36OPFHpA0320			(Purchased Reagent)		PFECA B	50000 ng/mL
...PFC_ST_01222	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_STD_XMOD2_00013	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ppb
							d5-NEtPFOSA	10 ppb
							d3-NMePFOSA	10 ppb
							M2-4:2 FTS	9.34 ppb
							13C3 HFPO-DA	10 ppb
							M2-8:2 FTS	9.58 ppb
							M2-6:2 FTS	9.5 ppb
							13C8 FOSA	10 ppb
							d3-NMeFOSAA	10 ppb
							d7-N-MeFOSE-M	10 ppb
							d9-N-EtFOSE-M	10 ppb
					PFC_IN_00608	0.25 mL	Perfluorooctadecanoic acid	0.5 ppb
							Perfluorohexadecanoic acid	0.5 ppb
							Perfluoropentanesulfonic acid	0.469 ppb
							Perfluorodecanesulfonic acid	0.482 ppb
							N-ethylperfluoro-1-octanesulfonamide	0.5 ppb
							NMeFOSA	0.5 ppb
							Perfluorooctanesulfonamide	0.5 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4:2 Fluorotelomer sulfonic acid	0.467 ppb
							6:2 Fluorotelomer sulfonic acid	0.474 ppb
							8:2 Fluorotelomer sulfonic acid	0.479 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	0.482 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	0.5 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	0.5 ppb
							Perfluorobutanoic acid	0.5 ppb
							Perfluoroheptanesulfonic acid	0.476 ppb
							Perfluorononanesulfonic acid	0.48 ppb
							Perfluoropentanoic acid	0.5 ppb
							Perfluorododecanesulfonic acid (PFDoS)	0.484 ppb
							3:3 FTCA	0.5 ppb
							PFECA A	0.5 ppb
							PES	0.445 ppb
							5:3 FTCA	0.5 ppb
							7:3 FTCA	0.5 ppb
							PFECA F	0.5 ppb
							PFECA B	0.5 ppb
							11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.465 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.465 ppb
							DONA	0.4725 ppb
							NEtFOSAA	0.5 ppb
							NMeFOSAA	0.5 ppb
							Perfluoro(2-propoxypropanoic) acid	0.5 ppb
							Perfluorobutanesulfonic acid	0.4425 ppb
							Perfluorodecanoic acid	0.5 ppb
							Perfluorododecanoic acid	0.5 ppb
							Perfluoroheptanoic acid	0.5 ppb
							Perfluorohexanesulfonic acid	0.456 ppb
							Perfluorohexanoic acid	0.5 ppb
							Perfluorononanoic acid	0.5 ppb
							Perfluorooctanesulfonic acid	0.46275 ppb
							Perfluorooctanoic acid	0.5 ppb
							Perfluorotetradecanoic acid	0.5 ppb
							Perfluorotridecanoic acid	0.5 ppb
							Perfluoroundecanoic acid	0.5 ppb
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ppb

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SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C2-PFDoDA	10 ppb
							13C3 PFBS	9.3 ppb
							13C3 PFHxS	9.46 ppb
							13C4 PFBA	10 ppb
							13C4 PFHpA	10 ppb
							13C5 PFHxA	10 ppb
							13C5 PFPeA	10 ppb
							13C6 PFDA	10 ppb
							13C7 PFUnA	10 ppb
							13C8 PFOA	10 ppb
							13C8 PFOS	9.56 ppb
							13C9 PFNA	10 ppb
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00608	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00607	0.2 mL	Perfluorooctadecanoic acid	20 ppb
							Perfluorohexadecanoic acid	20 ppb
							Perfluoropentanesulfonic acid	18.76 ppb
							Perfluorodecanesulfonic acid	19.28 ppb
							N-ethylperfluoro-1-octanesulfonamide	20 ppb
							NMeFOSA	20 ppb
							Perfluorooctanesulfonamide	20 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4:2 Fluorotelomer sulfonic acid	18.68 ppb
							6:2 Fluorotelomer sulfonic acid	18.96 ppb
							8:2 Fluorotelomer sulfonic acid	19.16 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	19.28 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	20 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	20 ppb
							Perfluorobutanoic acid	20 ppb
							Perfluoroheptanesulfonic acid	19.04 ppb
							Perfluorononanesulfonic acid	19.2 ppb
							Perfluoropentanoic acid	20 ppb
							Perfluorododecanesulfonic acid (PFDoS)	19.36 ppb
							3:3 FTCA	20 ppb
							PFECA A	20 ppb
							PES	17.8 ppb
							5:3 FTCA	20 ppb
							7:3 FTCA	20 ppb
							PFECA F	20 ppb
							PFECA B	20 ppb
							11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	18.6 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	18.6 ppb
							DONA	18.9 ppb
							NEtFOSAA	20 ppb
							NMeFOSAA	20 ppb
							Perfluoro(2-propoxypropanoic) acid	20 ppb
							Perfluorobutanesulfonic acid	17.7 ppb
							Perfluorodecanoic acid	20 ppb
							Perfluorododecanoic acid	20 ppb
							Perfluoroheptanoic acid	20 ppb
							Perfluorohexanesulfonic acid	18.24 ppb
							Perfluorohexanoic acid	20 ppb
							Perfluorononanoic acid	20 ppb
							Perfluorooctanesulfonic acid	18.51 ppb
							Perfluorooctanoic acid	20 ppb
							Perfluorotetradecanoic acid	20 ppb
							Perfluorotridecanoic acid	20 ppb
							Perfluoroundecanoic acid	20 ppb
..PFC_IN_00607	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00605	1.25 mL	Perfluorooctadecanoic acid	500 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexadecanoic acid	500 ppb
							Perfluoropentanesulfonic acid	469 ppb
							Perfluorodecanesulfonic acid	482 ppb
							N-ethylperfluoro-1-octanesulfonamide	500 ppb
							NMeFOSA	500 ppb
							Perfluorooctanesulfonamide	500 ppb
							4:2 Fluorotelomer sulfonic acid	467 ppb
							6:2 Fluorotelomer sulfonic acid	474 ppb
							8:2 Fluorotelomer sulfonic acid	479 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	482 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	500 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	500 ppb
							Perfluorobutanoic acid	500 ppb
							Perfluoroheptanesulfonic acid	476 ppb
							Perfluorononanesulfonic acid	480 ppb
							Perfluoropentanoic acid	500 ppb
							Perfluorododecanesulfonic acid (PFDoS)	484 ppb
					PFC_IN_00606	1.25 mL	3:3 FTCA	500 ppb
							PFECA A	500 ppb
							PES	445 ppb
							5:3 FTCA	500 ppb
							7:3 FTCA	500 ppb
							PFECA F	500 ppb
							PFECA B	500 ppb
					PFC_ST_01222	1.25 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	465 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	465 ppb
							DONA	472.5 ppb
							NEtFOSAA	500 ppb
							NMeFOSAA	500 ppb
							Perfluoro(2-propoxypropanoic) acid	500 ppb
							Perfluorobutanesulfonic acid	442.5 ppb
							Perfluorodecanoic acid	500 ppb
							Perfluorododecanoic acid	500 ppb
							Perfluoroheptanoic acid	500 ppb
							Perfluorohexanesulfonic acid	456 ppb
							Perfluorohexanoic acid	500 ppb

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorononanoic acid	500 ppb
							Perfluorooctanesulfonic acid	462.75 ppb
							Perfluorooctanoic acid	500 ppb
							Perfluorotetradecanoic acid	500 ppb
							Perfluorotridecanoic acid	500 ppb
							Perfluoroundecanoic acid	500 ppb
...PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00747	0.2 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_00748	0.2 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL
					PFC_ST_00971	0.2 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_00972	0.2 mL	NMeFOSA	2000 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_00977	0.2 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
					PFC_ST_01073	0.2 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01082	0.2 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL
					PFC_ST_01224	0.2 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
....PFC_ST_00747	11/13/25	Wellington Laboratories, Lot PFODA1020			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
....PFC_ST_00748	08/25/25	Wellington Laboratories, Lot PFHxDA0820			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
....PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
....PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
....PFC_ST_00971	11/23/25	Wellington Laboratories, Lot NEtFOSA1120M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
....PFC_ST_00972	10/20/25	Wellington Laboratories, Lot NMeFOSA1020M			(Purchased Reagent)		NMeFOSA	50000 ng/mL
....PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
....PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
....PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
....PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
....PFC_ST_00977	03/03/26	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
....PFC_ST_01073	06/02/26	Wellington Laboratories, Lot NEtFOSE0521M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
....PFC_ST_01082	06/02/26	Wellington Laboratories, Lot NMeFOSE0521M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
....PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
....PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
....PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
....PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
....PFC_ST_01224	02/16/23	Wellington Laboratories, Lot LPFDoS0721			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
...PFC_IN_00606	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00761	0.2 mL	3:3 FTCA	2000 ppb
					PFC_ST_00765	0.2 mL	PFECA A	2000 ppb
					PFC_ST_00768	0.2 mL	PES	1780 ppb
					PFC_ST_00769	0.2 mL	5:3 FTCA	2000 ppb
					PFC_ST_00770	0.2 mL	7:3 FTCA	2000 ppb
					PFC_ST_00775	0.2 mL	PFECA F	2000 ppb
					PFC_ST_00988	0.2 mL	PFECA B	2000 ppb
....PFC_ST_00761	11/12/25	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
....PFC_ST_00765	03/31/25	Wellington Laboratories, Lot PF5OHxA0320			(Purchased Reagent)		PFECA A	50000 ng/mL
....PFC_ST_00768	05/13/25	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
....PFC_ST_00769	10/05/23	Wellington Laboratories, Lot FPePA0920			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
....PFC_ST_00770	11/12/25	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
....PFC_ST_00775	03/31/25	Wellington Laboratories, Lot PF4OPeA0320			(Purchased Reagent)		PFECA F	50000 ng/mL
....PFC_ST_00988	03/31/25	Wellington Laboratories, Lot 36OPFHpA0320			(Purchased Reagent)		PFECA B	50000 ng/mL
...PFC_ST_01222	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_STD_XMOD3_00015	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ppb
							d5-NEtPFOSA	10 ppb
							d3-NMePFOSA	10 ppb
							M2-4:2 FTS	9.34 ppb
							13C3 HFPO-DA	10 ppb
							M2-8:2 FTS	9.58 ppb
							M2-6:2 FTS	9.5 ppb
							13C8 FOSA	10 ppb
							d3-NMeFOSAA	10 ppb
							d7-N-MeFOSE-M	10 ppb
							d9-N-EtFOSE-M	10 ppb
					PFC_IN_00608	1 mL	Perfluorooctadecanoic acid	2 ppb
							Perfluorohexadecanoic acid	2 ppb
							Perfluoropentanesulfonic acid	1.876 ppb
							Perfluorodecanesulfonic acid	1.928 ppb
							N-ethylperfluoro-1-octanesulfonamide	2 ppb
							NMeFOSA	2 ppb
							Perfluorooctanesulfonamide	2 ppb
							4:2 Fluorotelomer sulfonic acid	1.868 ppb
							6:2 Fluorotelomer sulfonic acid	1.896 ppb
							8:2 Fluorotelomer sulfonic acid	1.916 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1.928 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2 ppb
							Perfluorobutanoic acid	2 ppb
							Perfluoroheptanesulfonic acid	1.904 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorononanesulfonic acid	1.92 ppb
							Perfluoropentanoic acid	2 ppb
							Perfluorododecanesulfonic acid (PFDoS)	1.936 ppb
							3:3 FTCA	2 ppb
							PFECA A	2 ppb
							PES	1.78 ppb
							5:3 FTCA	2 ppb
							7:3 FTCA	2 ppb
							PFECA F	2 ppb
							PFECA B	2 ppb
							11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.86 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.86 ppb
							DONA	1.89 ppb
							NEtFOSAA	2 ppb
							NMeFOSAA	2 ppb
							Perfluoro(2-propoxypropanoic) acid	2 ppb
							Perfluorobutanesulfonic acid	1.77 ppb
							Perfluorodecanoic acid	2 ppb
							Perfluorododecanoic acid	2 ppb
							Perfluoroheptanoic acid	2 ppb
							Perfluorohexanesulfonic acid	1.824 ppb
							Perfluorohexanoic acid	2 ppb
							Perfluorononanoic acid	2 ppb
							Perfluorooctanesulfonic acid	1.851 ppb
							Perfluorooctanoic acid	2 ppb
							Perfluorotetradecanoic acid	2 ppb
							Perfluorotridecanoic acid	2 ppb
							Perfluoroundecanoic acid	2 ppb
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ppb
							13C2-PFDoDA	10 ppb
							13C3 PFBS	9.3 ppb
							13C3 PFHxS	9.46 ppb
							13C4 PFBA	10 ppb
							13C4 PFHpA	10 ppb
							13C5 PFHxA	10 ppb
							13C5 PFPeA	10 ppb
							13C6 PFDA	10 ppb
							13C7 PFUnA	10 ppb
							13C8 PFOA	10 ppb
							13C8 PFOS	9.56 ppb
							13C9 PFNA	10 ppb
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00608	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00607	0.2 mL	Perfluorooctadecanoic acid	20 ppb
							Perfluorohexadecanoic acid	20 ppb
							Perfluoropentanesulfonic acid	18.76 ppb
							Perfluorodecanesulfonic acid	19.28 ppb
							N-ethylperfluoro-1-octanesulfonamide	20 ppb
							NMeFOSA	20 ppb
							Perfluorooctanesulfonamide	20 ppb
							4:2 Fluorotelomer sulfonic acid	18.68 ppb
							6:2 Fluorotelomer sulfonic acid	18.96 ppb
							8:2 Fluorotelomer sulfonic acid	19.16 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	19.28 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	20 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	20 ppb
							Perfluorobutanoic acid	20 ppb
							Perfluoroheptanesulfonic acid	19.04 ppb

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorononanesulfonic acid	19.2 ppb
							Perfluoropentanoic acid	20 ppb
							Perfluorododecanesulfonic acid (PFDoS)	19.36 ppb
							3:3 FTCA	20 ppb
							PFECA A	20 ppb
							PES	17.8 ppb
							5:3 FTCA	20 ppb
							7:3 FTCA	20 ppb
							PFECA F	20 ppb
							PFECA B	20 ppb
							11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	18.6 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	18.6 ppb
							DONA	18.9 ppb
							NEtFOSAA	20 ppb
							NMeFOSAA	20 ppb
							Perfluoro(2-propoxypropanoic) acid	20 ppb
							Perfluorobutanesulfonic acid	17.7 ppb
							Perfluorodecanoic acid	20 ppb
							Perfluorododecanoic acid	20 ppb
							Perfluoroheptanoic acid	20 ppb
							Perfluorohexanesulfonic acid	18.24 ppb
							Perfluorohexanoic acid	20 ppb
							Perfluorononanoic acid	20 ppb
							Perfluorooctanesulfonic acid	18.51 ppb
							Perfluorooctanoic acid	20 ppb
							Perfluorotetradecanoic acid	20 ppb
							Perfluorotridecanoic acid	20 ppb
							Perfluoroundecanoic acid	20 ppb
..PFC_IN_00607	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_IN_00605	1.25 mL	Perfluorooctadecanoic acid	500 ppb
							Perfluorohexadecanoic acid	500 ppb
							Perfluoropentanesulfonic acid	469 ppb
							Perfluorodecanesulfonic acid	482 ppb
							N-ethylperfluoro-1-octanesulfonamide	500 ppb
							NMeFOSA	500 ppb
							Perfluorooctanesulfonamide	500 ppb
							4:2 Fluorotelomer sulfonic acid	467 ppb
							6:2 Fluorotelomer sulfonic acid	474 ppb
							8:2 Fluorotelomer sulfonic acid	479 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	482 ppb

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	500 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	500 ppb
							Perfluorobutanoic acid	500 ppb
							Perfluoroheptanesulfonic acid	476 ppb
							Perfluorononanesulfonic acid	480 ppb
							Perfluoropentanoic acid	500 ppb
							Perfluorododecanesulfonic acid (PFDoS)	484 ppb
					PFC_IN_00606	1.25 mL	3:3 FTCA	500 ppb
							PFECA A	500 ppb
							PES	445 ppb
							5:3 FTCA	500 ppb
							7:3 FTCA	500 ppb
							PFECA F	500 ppb
							PFECA B	500 ppb
					PFC_ST_01222	1.25 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	465 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	465 ppb
							DONA	472.5 ppb
							NEtFOSAA	500 ppb
							NMeFOSAA	500 ppb
							Perfluoro(2-propoxypropanoic) acid	500 ppb
							Perfluorobutanesulfonic acid	442.5 ppb
							Perfluorodecanoic acid	500 ppb
							Perfluorododecanoic acid	500 ppb
							Perfluoroheptanoic acid	500 ppb
							Perfluorohexanesulfonic acid	456 ppb
							Perfluorohexanoic acid	500 ppb
							Perfluorononanoic acid	500 ppb
							Perfluorooctanesulfonic acid	462.75 ppb
							Perfluorooctanoic acid	500 ppb
							Perfluorotetradecanoic acid	500 ppb
							Perfluorotridecanoic acid	500 ppb
							Perfluoroundecanoic acid	500 ppb
...PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00747	0.2 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_00748	0.2 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL
					PFC_ST_00971	0.2 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_00972	0.2 mL	NMeFOSA	2000 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_00977	0.2 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
					PFC_ST_01073	0.2 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01082	0.2 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL
					PFC_ST_01224	0.2 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
....PFC_ST_00747	11/13/25	Wellington Laboratories, Lot PFODA1020			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
....PFC_ST_00748	08/25/25	Wellington Laboratories, Lot PFHxDA0820			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
....PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
....PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
....PFC_ST_00971	11/23/25	Wellington Laboratories, Lot NEtFOSA1120M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
....PFC_ST_00972	10/20/25	Wellington Laboratories, Lot NMeFOSA1020M			(Purchased Reagent)		NMeFOSA	50000 ng/mL
....PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
....PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
....PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
....PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
....PFC_ST_00977	03/03/26	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
....PFC_ST_01073	06/02/26	Wellington Laboratories, Lot NEtFOSE0521M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
....PFC_ST_01082	06/02/26	Wellington Laboratories, Lot NMeFOSE0521M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
....PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
....PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
....PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
....PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
....PFC_ST_01224	02/16/23	Wellington Laboratories, Lot LPFDoS0721			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
...PFC_IN_00606	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00761	0.2 mL	3:3 FTCA	2000 ppb
					PFC_ST_00765	0.2 mL	PFECA A	2000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_00768	0.2 mL	PES	1780 ppb
					PFC_ST_00769	0.2 mL	5:3 FTCA	2000 ppb
					PFC_ST_00770	0.2 mL	7:3 FTCA	2000 ppb
					PFC_ST_00775	0.2 mL	PFECA F	2000 ppb
					PFC_ST_00988	0.2 mL	PFECA B	2000 ppb
....PFC_ST_00761	11/12/25	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
....PFC_ST_00765	03/31/25	Wellington Laboratories, Lot PF5OHxA0320			(Purchased Reagent)		PFECA A	50000 ng/mL
....PFC_ST_00768	05/13/25	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
....PFC_ST_00769	10/05/23	Wellington Laboratories, Lot FPePA0920			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
....PFC_ST_00770	11/12/25	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
....PFC_ST_00775	03/31/25	Wellington Laboratories, Lot PF4OPeA0320			(Purchased Reagent)		PFECA F	50000 ng/mL
....PFC_ST_00988	03/31/25	Wellington Laboratories, Lot 36OPFHpA0320			(Purchased Reagent)		PFECA B	50000 ng/mL
...PFC_ST_01222	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_STD_XMOD4_00014	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ppb
							d5-NEtPFOSA	10 ppb

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							d3-NMePFOSA	10 ppb
							M2-4:2 FTS	9.34 ppb
							13C3 HFPO-DA	10 ppb
							M2-8:2 FTS	9.58 ppb
							M2-6:2 FTS	9.5 ppb
							13C8 FOSA	10 ppb
							d3-NMeFOSAA	10 ppb
							d7-N-MeFOSE-M	10 ppb
							d9-N-EtFOSE-M	10 ppb
					PFC_IN_00605	0.04 mL	Perfluorooctadecanoic acid	8 ppb
							Perfluorohexadecanoic acid	8 ppb
							Perfluoropentanesulfonic acid	7.504 ppb
							Perfluorodecanesulfonic acid	7.712 ppb
							N-ethylperfluoro-1-octanesulfonamide	8 ppb
							NMeFOSA	8 ppb
							Perfluorooctanesulfonamide	8 ppb
							4:2 Fluorotelomer sulfonic acid	7.472 ppb
							6:2 Fluorotelomer sulfonic acid	7.584 ppb
							8:2 Fluorotelomer sulfonic acid	7.664 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	7.712 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	8 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	8 ppb
							Perfluorobutanoic acid	8 ppb
							Perfluoroheptanesulfonic acid	7.616 ppb
							Perfluorononanesulfonic acid	7.68 ppb
							Perfluoropentanoic acid	8 ppb
							Perfluorododecanesulfonic acid (PFDoS)	7.744 ppb
					PFC_IN_00606	0.04 mL	3:3 FTCA	8 ppb
							PFECA A	8 ppb
							PES	7.12 ppb
							5:3 FTCA	8 ppb
							7:3 FTCA	8 ppb
							PFECA F	8 ppb
							PFECA B	8 ppb
					PFC_ST_01221	0.04 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	7.44 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	7.44 ppb
							DONA	7.56 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							NEtFOSAA	8 ppb
							NMeFOSAA	8 ppb
							Perfluoro(2-propoxypropanoic) acid	8 ppb
							Perfluorobutanesulfonic acid	7.08 ppb
							Perfluorodecanoic acid	8 ppb
							Perfluorododecanoic acid	8 ppb
							Perfluoroheptanoic acid	8 ppb
							Perfluorohexanesulfonic acid	7.296 ppb
							Perfluorohexanoic acid	8 ppb
							Perfluorononanoic acid	8 ppb
							Perfluorooctanesulfonic acid	7.404 ppb
							Perfluorooctanoic acid	8 ppb
							Perfluorotetradecanoic acid	8 ppb
							Perfluorotridecanoic acid	8 ppb
							Perfluoroundecanoic acid	8 ppb
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ppb
							13C2-PFDoDA	10 ppb
							13C3 PFBS	9.3 ppb
							13C3 PFHxS	9.46 ppb
							13C4 PFBA	10 ppb
							13C4 PFHpA	10 ppb
							13C5 PFHxA	10 ppb
							13C5 PFPeA	10 ppb
							13C6 PFDA	10 ppb
							13C7 PFUnA	10 ppb
							13C8 PFOA	10 ppb
							13C8 PFOS	9.56 ppb
							13C9 PFNA	10 ppb
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00747	0.2 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_00748	0.2 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL
					PFC_ST_00971	0.2 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_00972	0.2 mL	NMeFOSA	2000 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_00977	0.2 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
					PFC_ST_01073	0.2 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01082	0.2 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL
					PFC_ST_01224	0.2 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
..PFC_ST_00747	11/13/25	Wellington Laboratories, Lot PFODA1020			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
..PFC_ST_00748	08/25/25	Wellington Laboratories, Lot PFHxDA0820			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
..PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
..PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
..PFC_ST_00971	11/23/25	Wellington Laboratories, Lot NEtFOSA1120M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
..PFC_ST_00972	10/20/25	Wellington Laboratories, Lot NMeFOSA1020M			(Purchased Reagent)		NMeFOSA	50000 ng/mL
..PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
..PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
..PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
..PFC_ST_00977	03/03/26	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
..PFC_ST_01073	06/02/26	Wellington Laboratories, Lot NEtFOSE0521M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01082	06/02/26	Wellington Laboratories, Lot NMeFOSE0521M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
..PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
..PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
..PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
..PFC_ST_01224	02/16/23	Wellington Laboratories, Lot LPFDoS0721			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
.PFC_IN_00606	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00761	0.2 mL	3:3 FTCA	2000 ppb
					PFC_ST_00765	0.2 mL	PFECA A	2000 ppb
					PFC_ST_00768	0.2 mL	PES	1780 ppb
					PFC_ST_00769	0.2 mL	5:3 FTCA	2000 ppb
					PFC_ST_00770	0.2 mL	7:3 FTCA	2000 ppb
					PFC_ST_00775	0.2 mL	PFECA F	2000 ppb
					PFC_ST_00988	0.2 mL	PFECA B	2000 ppb
..PFC_ST_00761	11/12/25	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
..PFC_ST_00765	03/31/25	Wellington Laboratories, Lot PF5OHxA0320			(Purchased Reagent)		PFECA A	50000 ng/mL
..PFC_ST_00768	05/13/25	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
..PFC_ST_00769	10/05/23	Wellington Laboratories, Lot FPePA0920			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
..PFC_ST_00770	11/12/25	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
..PFC_ST_00775	03/31/25	Wellington Laboratories, Lot PF4OPeA0320			(Purchased Reagent)		PFECA F	50000 ng/mL
..PFC_ST_00988	03/31/25	Wellington Laboratories, Lot 36OPFHpA0320			(Purchased Reagent)		PFECA B	50000 ng/mL
.PFC_ST_01221	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_STD_XMOD5_00014	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ppb
							d5-NEtPFOSA	10 ppb
							d3-NMePFOSA	10 ppb
							M2-4:2 FTS	9.34 ppb
							13C3 HFPO-DA	10 ppb
							M2-8:2 FTS	9.58 ppb
							M2-6:2 FTS	9.5 ppb
							13C8 FOSA	10 ppb
							d3-NMeFOSAA	10 ppb
							d7-N-MeFOSE-M	10 ppb
							d9-N-EtFOSE-M	10 ppb
					PFC_IN_00605	0.1 mL	Perfluorooctadecanoic acid	20 ppb
							Perfluorohexadecanoic acid	20 ppb
							Perfluoropentanesulfonic acid	18.76 ppb
							Perfluorodecanesulfonic acid	19.28 ppb
							N-ethylperfluoro-1-octanesulfonamide	20 ppb
							NMeFOSA	20 ppb
							Perfluorooctanesulfonamide	20 ppb
							4:2 Fluorotelomer sulfonic acid	18.68 ppb
							6:2 Fluorotelomer sulfonic acid	18.96 ppb
							8:2 Fluorotelomer sulfonic acid	19.16 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	19.28 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	20 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	20 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorobutanoic acid	20 ppb
							Perfluoroheptanesulfonic acid	19.04 ppb
							Perfluorononanesulfonic acid	19.2 ppb
							Perfluoropentanoic acid	20 ppb
							Perfluorododecanesulfonic acid (PFDoS)	19.36 ppb
					PFC_IN_00606	0.1 mL	3:3 FTCA	20 ppb
							PFECA A	20 ppb
							PES	17.8 ppb
							5:3 FTCA	20 ppb
							7:3 FTCA	20 ppb
							PFECA F	20 ppb
							PFECA B	20 ppb
					PFC_ST_01221	0.1 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	18.6 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	18.6 ppb
							DONA	18.9 ppb
							NEtFOSAA	20 ppb
							NMeFOSAA	20 ppb
							Perfluoro(2-propoxypropanoic) acid	20 ppb
							Perfluorobutanesulfonic acid	17.7 ppb
							Perfluorodecanoic acid	20 ppb
							Perfluorododecanoic acid	20 ppb
							Perfluoroheptanoic acid	20 ppb
							Perfluorohexanesulfonic acid	18.24 ppb
							Perfluorohexanoic acid	20 ppb
							Perfluorononanoic acid	20 ppb
							Perfluorooctanesulfonic acid	18.51 ppb
							Perfluorooctanoic acid	20 ppb
							Perfluorotetradecanoic acid	20 ppb
							Perfluorotridecanoic acid	20 ppb
							Perfluoroundecanoic acid	20 ppb
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ppb
							13C2-PFDoDA	10 ppb
							13C3 PFBS	9.3 ppb
							13C3 PFHxS	9.46 ppb
							13C4 PFBA	10 ppb
							13C4 PFHpA	10 ppb
							13C5 PFHxA	10 ppb
							13C5 PFPeA	10 ppb
							13C6 PFDA	10 ppb
							13C7 PFUnA	10 ppb
							13C8 PFOA	10 ppb
							13C8 PFOS	9.56 ppb
							13C9 PFNA	10 ppb
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00747	0.2 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_00748	0.2 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL
					PFC_ST_00971	0.2 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_00972	0.2 mL	NMeFOSA	2000 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_00977	0.2 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
					PFC_ST_01073	0.2 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01082	0.2 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL
					PFC_ST_01224	0.2 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
..PFC_ST_00747	11/13/25	Wellington Laboratories, Lot PFODA1020			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
..PFC_ST_00748	08/25/25	Wellington Laboratories, Lot PFHxDA0820			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
..PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
..PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
..PFC_ST_00971	11/23/25	Wellington Laboratories, Lot NEtFOSA1120M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
..PFC_ST_00972	10/20/25	Wellington Laboratories, Lot NMeFOSA1020M			(Purchased Reagent)		NMeFOSA	50000 ng/mL
..PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
..PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
..PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
..PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
..PFC_ST_00977	03/03/26	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
..PFC_ST_01073	06/02/26	Wellington Laboratories, Lot NEtFOSE0521M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01082	06/02/26	Wellington Laboratories, Lot NMeFOSE0521M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
..PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
..PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
..PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
..PFC_ST_01224	02/16/23	Wellington Laboratories, Lot LPFDoS0721			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
.PFC_IN_00606	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00761	0.2 mL	3:3 FTCA	2000 ppb
					PFC_ST_00765	0.2 mL	PFECA A	2000 ppb
					PFC_ST_00768	0.2 mL	PES	1780 ppb
					PFC_ST_00769	0.2 mL	5:3 FTCA	2000 ppb
					PFC_ST_00770	0.2 mL	7:3 FTCA	2000 ppb
					PFC_ST_00775	0.2 mL	PFECA F	2000 ppb
					PFC_ST_00988	0.2 mL	PFECA B	2000 ppb
..PFC_ST_00761	11/12/25	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
..PFC_ST_00765	03/31/25	Wellington Laboratories, Lot PF5OHxA0320			(Purchased Reagent)		PFECA A	50000 ng/mL
..PFC_ST_00768	05/13/25	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
..PFC_ST_00769	10/05/23	Wellington Laboratories, Lot FPePA0920			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
..PFC_ST_00770	11/12/25	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
..PFC_ST_00775	03/31/25	Wellington Laboratories, Lot PF4OPeA0320			(Purchased Reagent)		PFECA F	50000 ng/mL
..PFC_ST_00988	03/31/25	Wellington Laboratories, Lot 36OPFHpA0320			(Purchased Reagent)		PFECA B	50000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.PFC_ST_01221	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_STD_XMOD6_00014	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ppb
							d5-NEtPFOSA	10 ppb
							d3-NMePFOSA	10 ppb
							M2-4:2 FTS	9.34 ppb
							13C3 HFPO-DA	10 ppb
							M2-8:2 FTS	9.58 ppb
							M2-6:2 FTS	9.5 ppb
							13C8 FOSA	10 ppb
							d3-NMeFOSAA	10 ppb
							d7-N-MeFOSE-M	10 ppb
							d9-N-EtFOSE-M	10 ppb
					PFC_IN_00605	0.25 mL	Perfluorooctadecanoic acid	50 ppb
							Perfluorohexadecanoic acid	50 ppb
							Perfluoropentanesulfonic acid	46.9 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorodecanesulfonic acid	48.2 ppb
							N-ethylperfluoro-1-octanesulfonamide	50 ppb
							NMeFOSA	50 ppb
							Perfluorooctanesulfonamide	50 ppb
							4:2 Fluorotelomer sulfonic acid	46.7 ppb
							6:2 Fluorotelomer sulfonic acid	47.4 ppb
							8:2 Fluorotelomer sulfonic acid	47.9 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48.2 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50 ppb
							Perfluorobutanoic acid	50 ppb
							Perfluoroheptanesulfonic acid	47.6 ppb
							Perfluorononanesulfonic acid	48 ppb
							Perfluoropentanoic acid	50 ppb
							Perfluorododecanesulfonic acid (PFDoS)	48.4 ppb
					PFC_IN_00606	0.25 mL	3:3 FTCA	50 ppb
							PFECA A	50 ppb
							PES	44.5 ppb
							5:3 FTCA	50 ppb
							7:3 FTCA	50 ppb
							PFECA F	50 ppb
							PFECA B	50 ppb
					PFC_ST_01221	0.25 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	46.5 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	46.5 ppb
							DONA	47.25 ppb
							NEtFOSAA	50 ppb
							NMeFOSAA	50 ppb
							Perfluoro(2-propoxypropanoic) acid	50 ppb
							Perfluorobutanesulfonic acid	44.25 ppb
							Perfluorodecanoic acid	50 ppb
							Perfluorododecanoic acid	50 ppb
							Perfluoroheptanoic acid	50 ppb
							Perfluorohexanesulfonic acid	45.6 ppb
							Perfluorohexanoic acid	50 ppb
							Perfluorononanoic acid	50 ppb
							Perfluorooctanesulfonic acid	46.275 ppb

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorooctanoic acid	50 ppb
							Perfluorotetradecanoic acid	50 ppb
							Perfluorotridecanoic acid	50 ppb
							Perfluoroundecanoic acid	50 ppb
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ppb
							13C2-PFDoDA	10 ppb
							13C3 PFBS	9.3 ppb
							13C3 PFHxS	9.46 ppb
							13C4 PFBA	10 ppb
							13C4 PFHpA	10 ppb
							13C5 PFHxA	10 ppb
							13C5 PFPeA	10 ppb
							13C6 PFDA	10 ppb
							13C7 PFUnA	10 ppb
							13C8 PFOA	10 ppb
							13C8 PFOS	9.56 ppb
							13C9 PFNA	10 ppb
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00747	0.2 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_00748	0.2 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_00971	0.2 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_00972	0.2 mL	NMeFOSA	2000 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_00977	0.2 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
					PFC_ST_01073	0.2 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01082	0.2 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL
					PFC_ST_01224	0.2 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
..PFC_ST_00747	11/13/25	Wellington Laboratories, Lot PFODA1020			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
..PFC_ST_00748	08/25/25	Wellington Laboratories, Lot PFHxDA0820			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
..PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
..PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
..PFC_ST_00971	11/23/25	Wellington Laboratories, Lot NEtFOSA1120M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
..PFC_ST_00972	10/20/25	Wellington Laboratories, Lot NMeFOSA1020M			(Purchased Reagent)		NMeFOSA	50000 ng/mL
..PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
..PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
..PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
..PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
..PFC_ST_00977	03/03/26	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
..PFC_ST_01073	06/02/26	Wellington Laboratories, Lot NEtFOSE0521M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01082	06/02/26	Wellington Laboratories, Lot NMeFOSE0521M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
..PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
..PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
..PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_01224	02/16/23	Wellington Laboratories, Lot LPFDoS0721			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
.PFC_IN_00606	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00761	0.2 mL	3:3 FTCA	2000 ppb
					PFC_ST_00765	0.2 mL	PFECA A	2000 ppb
					PFC_ST_00768	0.2 mL	PES	1780 ppb
					PFC_ST_00769	0.2 mL	5:3 FTCA	2000 ppb
					PFC_ST_00770	0.2 mL	7:3 FTCA	2000 ppb
					PFC_ST_00775	0.2 mL	PFECA F	2000 ppb
					PFC_ST_00988	0.2 mL	PFECA B	2000 ppb
..PFC_ST_00761	11/12/25	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
..PFC_ST_00765	03/31/25	Wellington Laboratories, Lot PF5OHxA0320			(Purchased Reagent)		PFECA A	50000 ng/mL
..PFC_ST_00768	05/13/25	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
..PFC_ST_00769	10/05/23	Wellington Laboratories, Lot FPePA0920			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
..PFC_ST_00770	11/12/25	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
..PFC_ST_00775	03/31/25	Wellington Laboratories, Lot PF4OPeA0320			(Purchased Reagent)		PFECA F	50000 ng/mL
..PFC_ST_00988	03/31/25	Wellington Laboratories, Lot 36OPFHpA0320			(Purchased Reagent)		PFECA B	50000 ng/mL
.PFC_ST_01221	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb
PFC_STD_XMOD7_00015	04/17/22	02/17/22	Methanol, Lot EC203-US	10 mL	PFC_IN_00601	0.05 mL	d5-NEtFOSAA	10 ppb
							d5-NEtPFOSA	10 ppb
							d3-NMePFOSA	10 ppb
							M2-4:2 FTS	9.34 ppb
							13C3 HFPO-DA	10 ppb
							M2-8:2 FTS	9.58 ppb
							M2-6:2 FTS	9.5 ppb
							13C8 FOSA	10 ppb
							d3-NMeFOSAA	10 ppb
							d7-N-MeFOSE-M	10 ppb
							d9-N-EtFOSE-M	10 ppb
					PFC_IN_00605	0.5 mL	Perfluorooctadecanoic acid	100 ppb
							Perfluorohexadecanoic acid	100 ppb
							Perfluoropentanesulfonic acid	93.8 ppb
							Perfluorodecanesulfonic acid	96.4 ppb
							N-ethylperfluoro-1-octanesulfonamide	100 ppb
							NMeFOSA	100 ppb
							Perfluorooctanesulfonamide	100 ppb
							4:2 Fluorotelomer sulfonic acid	93.4 ppb
							6:2 Fluorotelomer sulfonic acid	94.8 ppb
							8:2 Fluorotelomer sulfonic acid	95.8 ppb
							1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	96.4 ppb
							2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	100 ppb
							2-(N-methylperfluoro-1-octanesulfonamido) ethanol	100 ppb
							Perfluorobutanoic acid	100 ppb
							Perfluoroheptanesulfonic acid	95.2 ppb
							Perfluorononanesulfonic acid	96 ppb
							Perfluoropentanoic acid	100 ppb
							Perfluorododecanesulfonic acid (PFDoS)	96.8 ppb
					PFC_IN_00606	0.5 mL	3:3 FTCA	100 ppb
							PFECA A	100 ppb
							PES	89 ppb
							5:3 FTCA	100 ppb
							7:3 FTCA	100 ppb
							PFECA F	100 ppb
							PFECA B	100 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					PFC_ST_01221	0.5 mL	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	93 ppb
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	93 ppb
							DONA	94.5 ppb
							NEtFOSAA	100 ppb
							NMeFOSAA	100 ppb
							Perfluoro(2-propoxypropanoic) acid	100 ppb
							Perfluorobutanesulfonic acid	88.5 ppb
							Perfluorodecanoic acid	100 ppb
							Perfluorododecanoic acid	100 ppb
							Perfluoroheptanoic acid	100 ppb
							Perfluorohexanesulfonic acid	91.2 ppb
							Perfluorohexanoic acid	100 ppb
							Perfluorononanoic acid	100 ppb
							Perfluorooctanesulfonic acid	92.55 ppb
							Perfluorooctanoic acid	100 ppb
							Perfluorotetradecanoic acid	100 ppb
							Perfluorotridecanoic acid	100 ppb
							Perfluoroundecanoic acid	100 ppb
					PFC_ST_01360	0.05 mL	13C2 PFTeDA	10 ppb
							13C2-PFDoDA	10 ppb
							13C3 PFBS	9.3 ppb
							13C3 PFHxS	9.46 ppb
							13C4 PFBA	10 ppb
							13C4 PFHpA	10 ppb
							13C5 PFHxA	10 ppb
							13C5 PFPeA	10 ppb
							13C6 PFDA	10 ppb
							13C7 PFUnA	10 ppb
							13C8 PFOA	10 ppb
							13C8 PFOS	9.56 ppb
							13C9 PFNA	10 ppb
.PFC_IN_00601	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00980	0.2 mL	d5-NEtFOSAA	2000 ppb
					PFC_ST_00981	0.2 mL	d5-NEtPFOSA	2000 ppb
					PFC_ST_00982	0.2 mL	d3-NMePFOSA	2000 ppb
					PFC_ST_00983	0.2 mL	M2-4:2 FTS	1868 ppb
					PFC_ST_00984	0.2 mL	13C3 HFPO-DA	2000 ppb
					PFC_ST_00985	0.2 mL	M2-8:2 FTS	1916 ppb
					PFC_ST_00986	0.2 mL	M2-6:2 FTS	1900 ppb
					PFC_ST_00987	0.2 mL	13C8 FOSA	2000 ppb
					PFC_ST_01034	0.2 mL	d3-NMeFOSAA	2000 ppb
					PFC_ST_01075	0.2 mL	d7-N-MeFOSE-M	2000 ppb
					PFC_ST_01076	0.2 mL	d9-N-EtFOSE-M	2000 ppb
..PFC_ST_00980	03/02/26	Wellington Laboratories, Lot d5NEtFOSAA0321			(Purchased Reagent)		d5-NEtFOSAA	50000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_00981	11/23/25	Wellington Laboratories, Lot dNEtFOSA1120M			(Purchased Reagent)		d5-NEtPFOSA	50000 ng/mL
..PFC_ST_00982	04/20/26	Wellington Laboratories, Lot dNMeFOSA0421M			(Purchased Reagent)		d3-NMePFOSA	50000 ng/mL
..PFC_ST_00983	06/24/26	Wellington Laboratories, Lot M242FTS0621			(Purchased Reagent)		M2-4:2 FTS	46700 ng/mL
..PFC_ST_00984	05/13/24	Wellington Laboratories, Lot M3HFPODA0521			(Purchased Reagent)		13C3 HFPO-DA	50000 ng/mL
..PFC_ST_00985	12/17/25	Wellington Laboratories, Lot M282FTS1220			(Purchased Reagent)		M2-8:2 FTS	47900 ng/mL
..PFC_ST_00986	05/14/26	Wellington Laboratories, Lot M262FTS0521			(Purchased Reagent)		M2-6:2 FTS	47500 ng/mL
..PFC_ST_00987	03/02/26	Wellington Laboratories, Lot M8FOSA0221I			(Purchased Reagent)		13C8 FOSA	50000 ng/mL
..PFC_ST_01034	06/08/26	Wellington Laboratories, Lot d3NMeFOSAA0521			(Purchased Reagent)		d3-NMeFOSAA	50000 ng/mL
..PFC_ST_01075	01/06/26	Wellington Laboratories, Lot d7NMeFOSE1220M			(Purchased Reagent)		d7-N-MeFOSE-M	50000 ng/mL
..PFC_ST_01076	12/30/25	Wellington Laboratories, Lot d9NEtFOSE1220M			(Purchased Reagent)		d9-N-EtFOSE-M	50000 ppb
.PFC_IN_00605	08/16/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00747	0.2 mL	Perfluorooctadecanoic acid	2000 ng/mL
					PFC_ST_00748	0.2 mL	Perfluorohexadecanoic acid	2000 ng/mL
					PFC_ST_00751	0.2 mL	Perfluoropentanesulfonic acid	1876 ng/mL
					PFC_ST_00753	0.2 mL	Perfluorodecanesulfonic acid	1928 ng/mL
					PFC_ST_00971	0.2 mL	N-ethylperfluoro-1-octanesulfonamide	2000 ng/mL
					PFC_ST_00972	0.2 mL	NMeFOSA	2000 ng/mL
					PFC_ST_00973	0.2 mL	Perfluorooctanesulfonamide	2000 ng/mL
					PFC_ST_00974	0.2 mL	4:2 Fluorotelomer sulfonic acid	1868 ng/mL
					PFC_ST_00975	0.2 mL	6:2 Fluorotelomer sulfonic acid	1896 ng/mL
					PFC_ST_00976	0.2 mL	8:2 Fluorotelomer sulfonic acid	1916 ng/mL
					PFC_ST_00977	0.2 mL	1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1928 ng/mL
					PFC_ST_01073	0.2 mL	2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01082	0.2 mL	2-(N-methylperfluoro-1-octanesulfonamido) ethanol	2000 ng/mL
					PFC_ST_01088	0.2 mL	Perfluorobutanoic acid	2000 ng/mL
					PFC_ST_01089	0.2 mL	Perfluoroheptanesulfonic acid	1904 ng/mL
					PFC_ST_01090	0.2 mL	Perfluorononanesulfonic acid	1920 ng/mL
					PFC_ST_01091	0.2 mL	Perfluoropentanoic acid	2000 ng/mL
					PFC_ST_01224	0.2 mL	Perfluorododecanesulfonic acid (PFDoS)	1936 ng/mL
..PFC_ST_00747	11/13/25	Wellington Laboratories, Lot PFODA1020			(Purchased Reagent)		Perfluorooctadecanoic acid	50000 ng/mL
..PFC_ST_00748	08/25/25	Wellington Laboratories, Lot PFHxDA0820			(Purchased Reagent)		Perfluorohexadecanoic acid	50000 ng/mL
..PFC_ST_00751	12/17/25	Wellington Laboratories, Lot LPFPeS1220			(Purchased Reagent)		Perfluoropentanesulfonic acid	46900 ng/mL
..PFC_ST_00753	08/17/25	Wellington Laboratories, Lot LPFDS0820			(Purchased Reagent)		Perfluorodecanesulfonic acid	48200 ng/mL
..PFC_ST_00971	11/23/25	Wellington Laboratories, Lot NEtFOSA1120M			(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50000 ng/mL
..PFC_ST_00972	10/20/25	Wellington Laboratories, Lot NMeFOSA1020M			(Purchased Reagent)		NMeFOSA	50000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..PFC_ST_00973	11/04/25	Wellington Laboratories, Lot FOSA1020I			(Purchased Reagent)		Perfluorooctanesulfonamide	50000 ng/mL
..PFC_ST_00974	01/14/26	Wellington Laboratories, Lot 42FTS0121			(Purchased Reagent)		4:2 Fluorotelomer sulfonic acid	46700 ng/mL
..PFC_ST_00975	06/09/26	Wellington Laboratories, Lot 62FTS0521			(Purchased Reagent)		6:2 Fluorotelomer sulfonic acid	47400 ng/mL
..PFC_ST_00976	12/01/25	Wellington Laboratories, Lot 82FTS1120			(Purchased Reagent)		8:2 Fluorotelomer sulfonic acid	47900 ng/mL
..PFC_ST_00977	03/03/26	Wellington Laboratories, Lot 102FTS0221			(Purchased Reagent)		1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	48200 ng/mL
..PFC_ST_01073	06/02/26	Wellington Laboratories, Lot NEtFOSE0521M			(Purchased Reagent)		2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01082	06/02/26	Wellington Laboratories, Lot NMeFOSE0521M			(Purchased Reagent)		2-(N-methylperfluoro-1-octanesulfonamido) ethanol	50000 ng/mL
..PFC_ST_01088	09/17/25	Wellington Laboratories, Lot PFBA0920			(Purchased Reagent)		Perfluorobutanoic acid	50000 ng/mL
..PFC_ST_01089	09/17/25	Wellington Laboratories, Lot LPFHpS1020			(Purchased Reagent)		Perfluoroheptanesulfonic acid	47600 ng/mL
..PFC_ST_01090	09/17/25	Wellington Laboratories, Lot LPFNS0920			(Purchased Reagent)		Perfluorononanesulfonic acid	48000 ng/mL
..PFC_ST_01091	09/17/25	Wellington Laboratories, Lot PFPeA0121			(Purchased Reagent)		Perfluoropentanoic acid	50000 ng/mL
..PFC_ST_01224	02/16/23	Wellington Laboratories, Lot LPFDoS0721			(Purchased Reagent)		Perfluorododecanesulfonic acid (PFDoS)	48400 ng/mL
.PFC_IN_00606	04/17/22	02/16/22	Methanol, Lot EC203-US	5 mL	PFC_ST_00761	0.2 mL	3:3 FTCA	2000 ppb
					PFC_ST_00765	0.2 mL	PFECA A	2000 ppb
					PFC_ST_00768	0.2 mL	PES	1780 ppb
					PFC_ST_00769	0.2 mL	5:3 FTCA	2000 ppb
					PFC_ST_00770	0.2 mL	7:3 FTCA	2000 ppb
					PFC_ST_00775	0.2 mL	PFECA F	2000 ppb
					PFC_ST_00988	0.2 mL	PFECA B	2000 ppb
..PFC_ST_00761	11/12/25	Wellington Laboratories, Lot FPrPA1020			(Purchased Reagent)		3:3 FTCA	50000 ng/mL
..PFC_ST_00765	03/31/25	Wellington Laboratories, Lot PF5OHxA0320			(Purchased Reagent)		PFECA A	50000 ng/mL
..PFC_ST_00768	05/13/25	Wellington Laboratories, Lot PFEESA0520			(Purchased Reagent)		PES	44500 ppb
..PFC_ST_00769	10/05/23	Wellington Laboratories, Lot FPePA0920			(Purchased Reagent)		5:3 FTCA	50000 ng/mL
..PFC_ST_00770	11/12/25	Wellington Laboratories, Lot FHpPA1020			(Purchased Reagent)		7:3 FTCA	50000 ng/mL
..PFC_ST_00775	03/31/25	Wellington Laboratories, Lot PF4OPeA0320			(Purchased Reagent)		PFECA F	50000 ng/mL
..PFC_ST_00988	03/31/25	Wellington Laboratories, Lot 36OPFHpA0320			(Purchased Reagent)		PFECA B	50000 ng/mL
.PFC_ST_01221	06/01/24	Wellington Laboratories, Lot 537PDSR10521			(Purchased Reagent)		11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1860 ng/mL
							9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1860 ng/mL
							DONA	1890 ng/mL
							NEtFOSAA	2000 ng/mL
							NMeFOSAA	2000 ng/mL
							Perfluoro(2-propoxypropanoic) acid	2000 ng/mL
							Perfluorobutanesulfonic acid	1770 ng/mL
							Perfluorodecanoic acid	2000 ng/mL
							Perfluorododecanoic acid	2000 ng/mL
							Perfluoroheptanoic acid	2000 ng/mL
							Perfluorohexanesulfonic acid	1824 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorohexanoic acid	2000 ng/mL
							Perfluorononanoic acid	2000 ng/mL
							Perfluorooctanesulfonic acid	1851 ng/mL
							Perfluorooctanoic acid	2000 ng/mL
							Perfluorotetradecanoic acid	2000 ng/mL
							Perfluorotridecanoic acid	2000 ng/mL
							Perfluoroundecanoic acid	2000 ng/mL
.PFC_ST_01360	01/13/26	Wellington Laboratories, Lot MPFACCES0121			(Purchased Reagent)		13C2 PFTeDA	2000 ppb
							13C2-PFDoDA	2000 ppb
							13C3 PFBS	1860 ppb
							13C3 PFHxS	1892 ppb
							13C4 PFBA	2000 ppb
							13C4 PFHpA	2000 ppb
							13C5 PFHxA	2000 ppb
							13C5 PFPeA	2000 ppb
							13C6 PFDA	2000 ppb
							13C7 PFUnA	2000 ppb
							13C8 PFOA	2000 ppb
							13C8 PFOS	1912 ppb
							13C9 PFNA	2000 ppb

Reagent

PFC_ST_00761

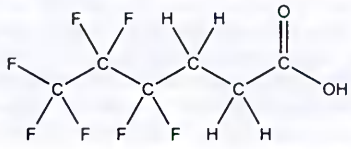
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
LOT NUMBER: FPrPA1020
COMPOUND: 3-Perfluoropropyl propanoic acid

STRUCTURE:

CAS #: 356-02-5



410-1108786

MOLECULAR FORMULA:	$C_6H_5F_7O_2$	**MOLECULAR WEIGHT:**	242.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/12/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/12/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/27/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

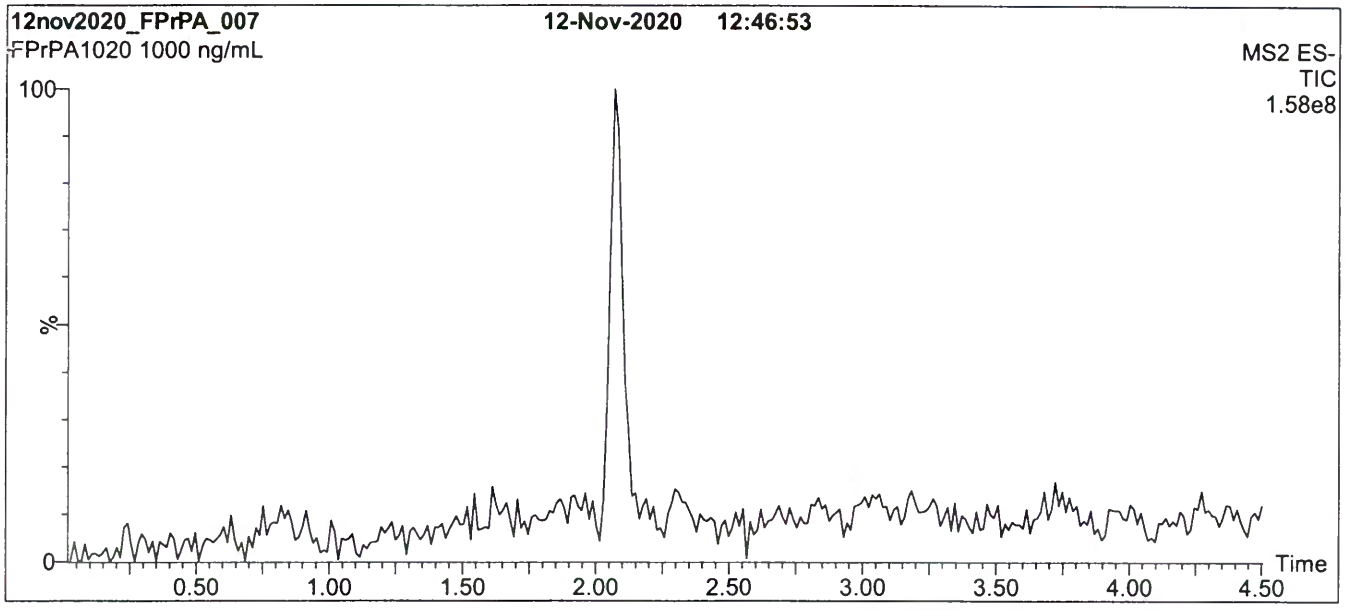
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

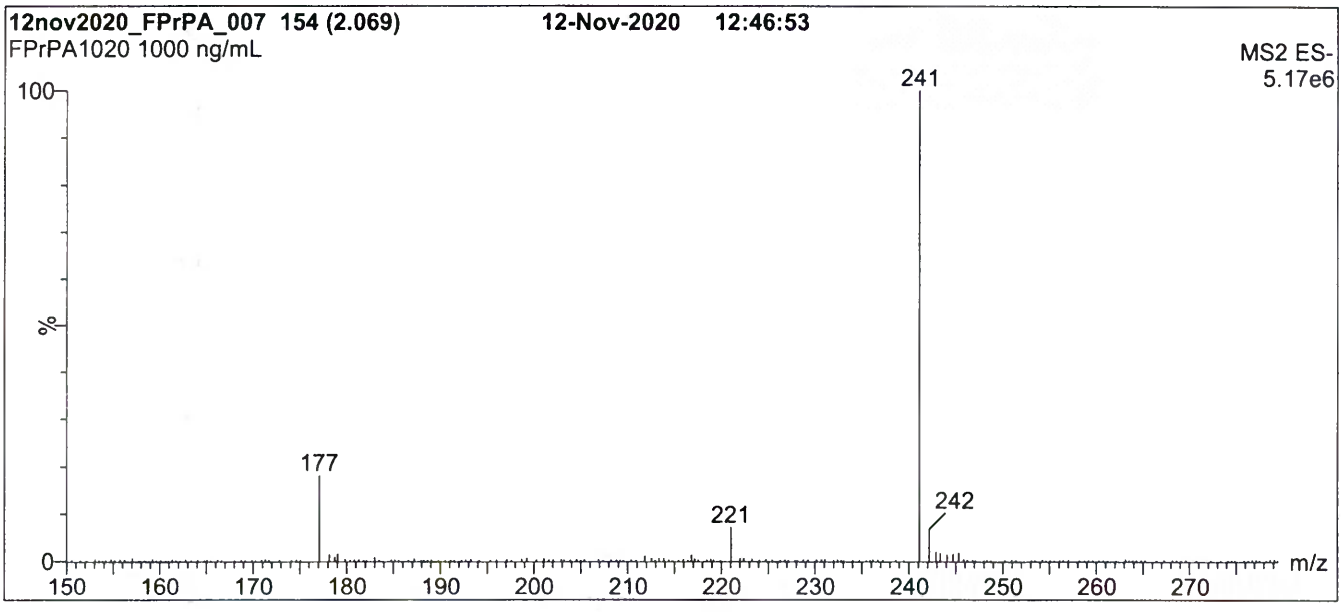
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **FPrPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

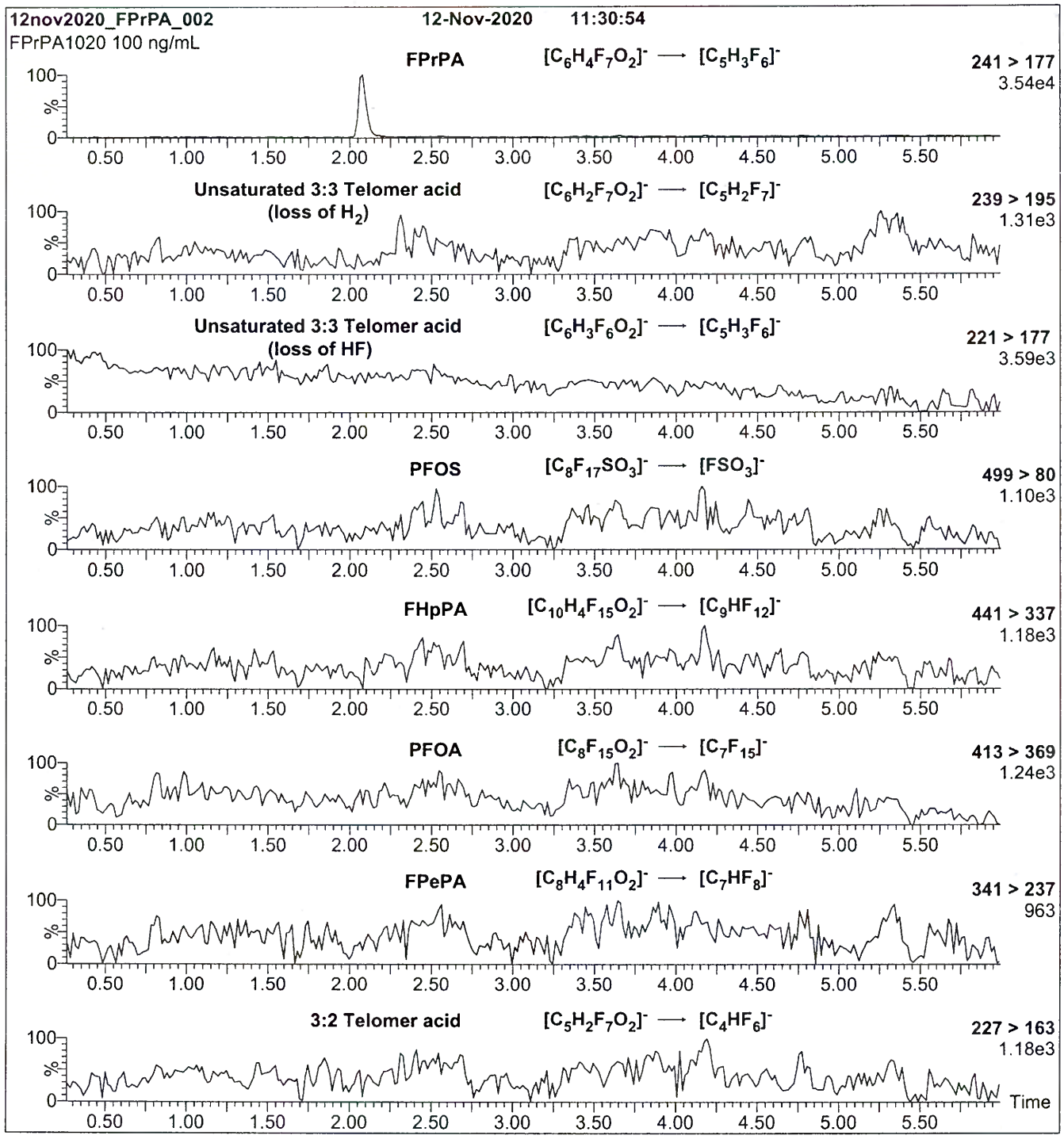
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FPrPA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 10

Reagent

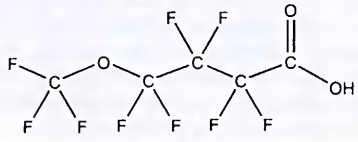
PFC_ST_00765

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PF5OHxA	**LOT NUMBER:**	PF5OHxA0320
COMPOUND:	Perfluoro-5-oxahexanoic acid		
SYNONYM:	Perfluoro-4-methoxybutanoic acid (PFMBA)		
STRUCTURE:		**CAS #:**	863090-89-5

410-1108852



MOLECULAR FORMULA:	$C_5HF_9O_3$	**MOLECULAR WEIGHT:**	280.05
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/31/2020		
EXPIRY DATE: (mm/dd/yyyy)	03/31/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/21/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

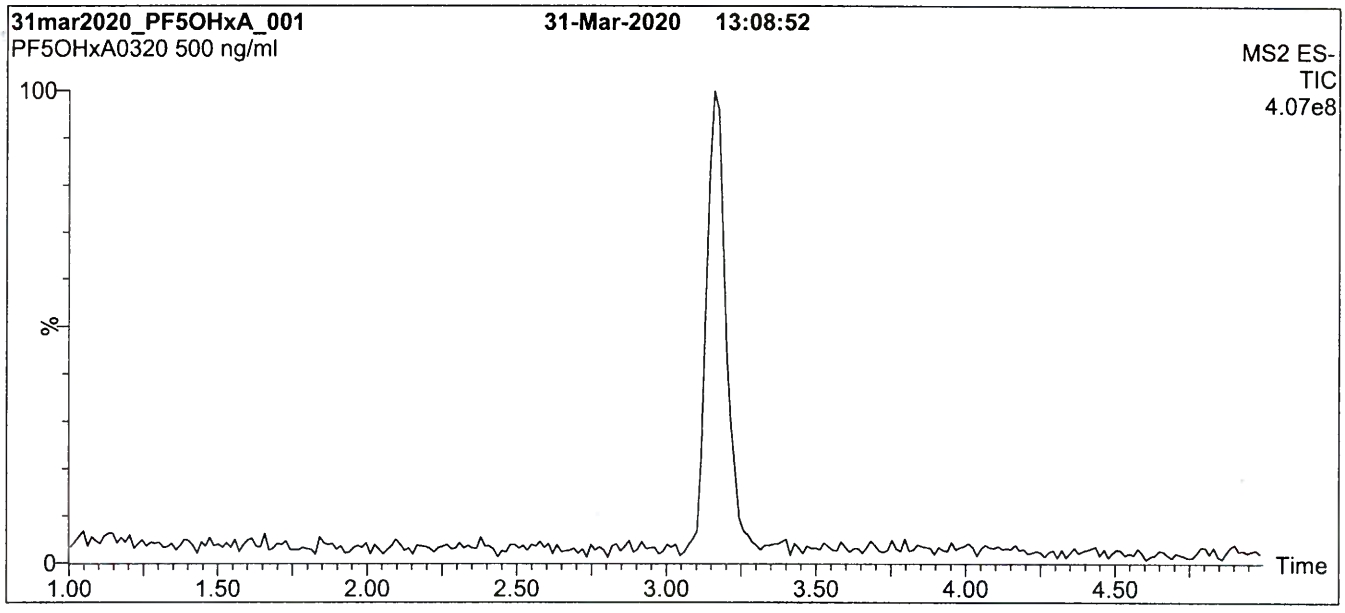
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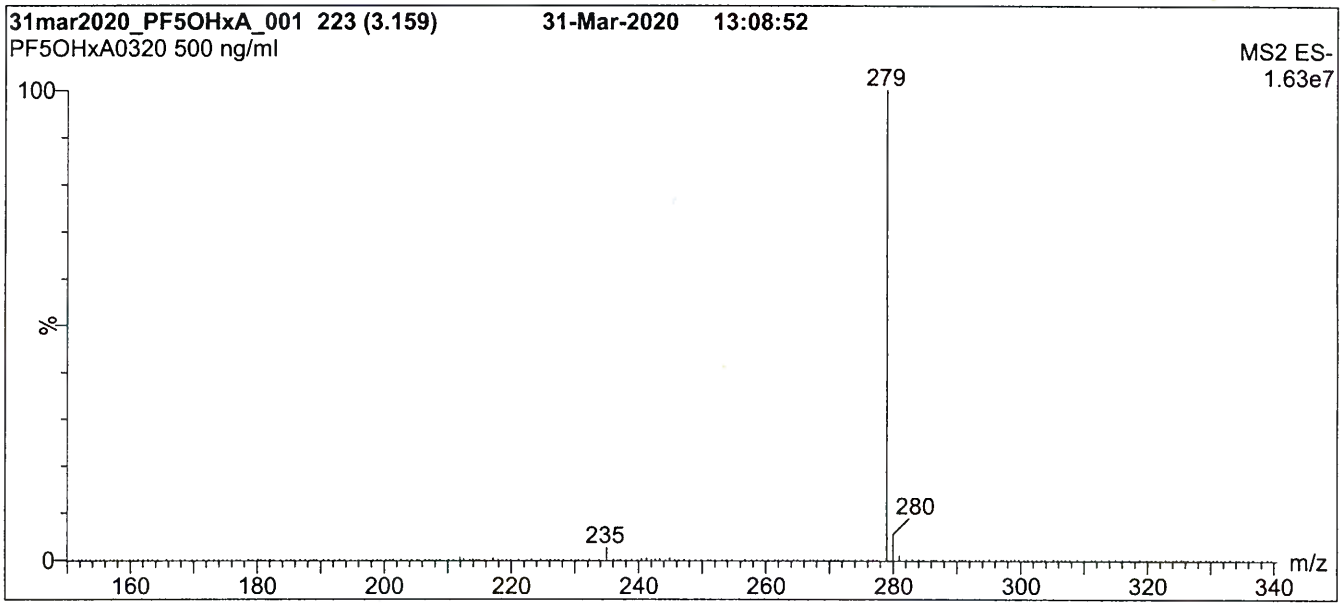
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED #AR1523/14 REFERENCE MATERIAL PRODUCER

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Figure 1: **PF5OHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

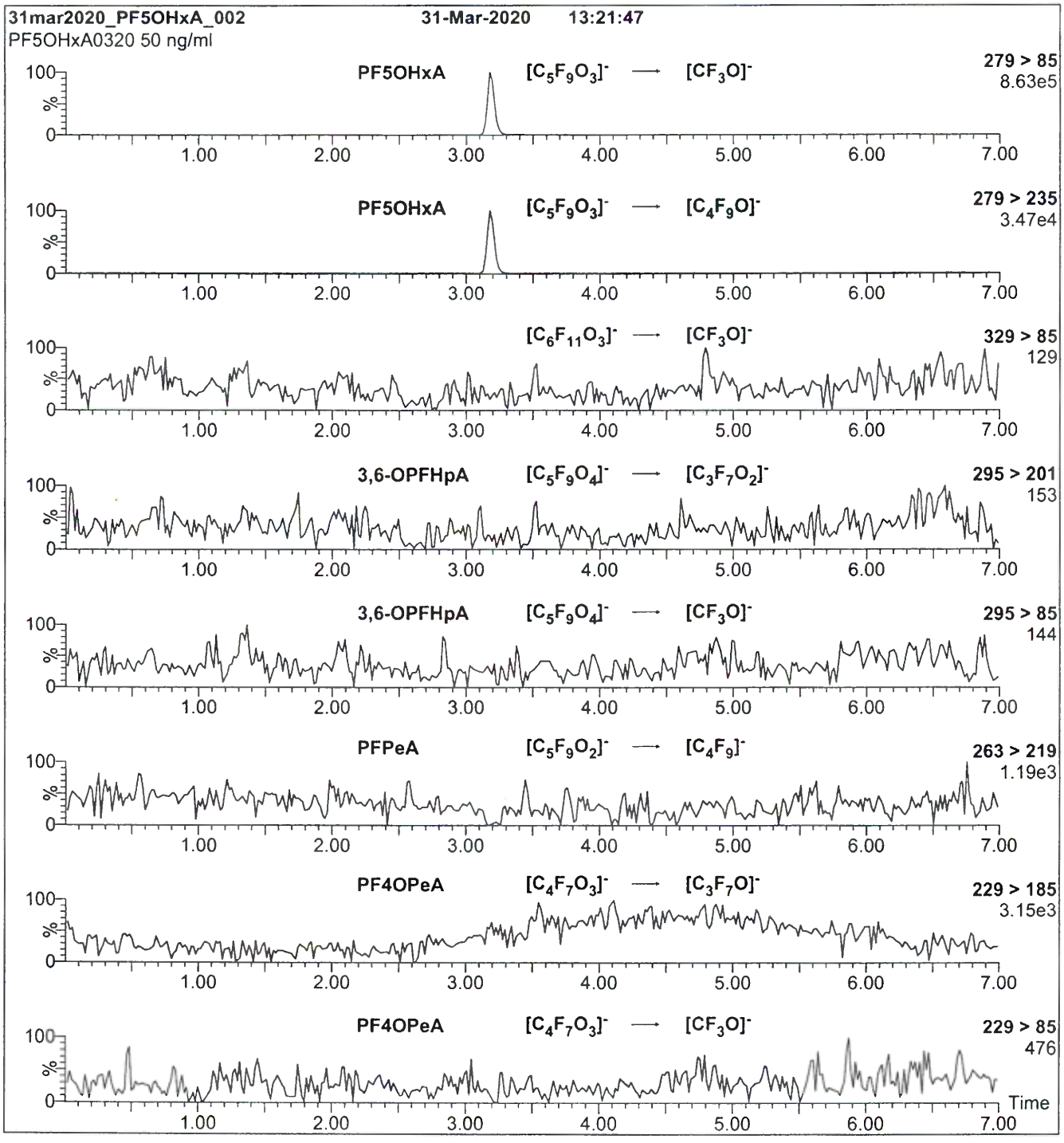
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 14.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **PF5OHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PF5OHxA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_00768

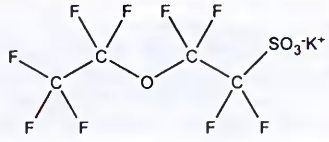
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFEESA **LOT NUMBER:** PFEESA0520

COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE: **CAS #:** 117205-07-9



410-1108860

MOLECULAR FORMULA:	$C_4F_9SO_4K$	**MOLECULAR WEIGHT:**	354.19
CONCENTRATION:	50.0 ± 2.5 µg/ml (K salt)	**SOLVENT(S):**	Methanol
	44.6 ± 2.2 µg/ml (PFEESA acid)		
	44.5 ± 2.2 µg/ml (PFEESA anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	05/13/2020		
EXPIRY DATE: (mm/dd/yyyy)	05/13/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/29/2020 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

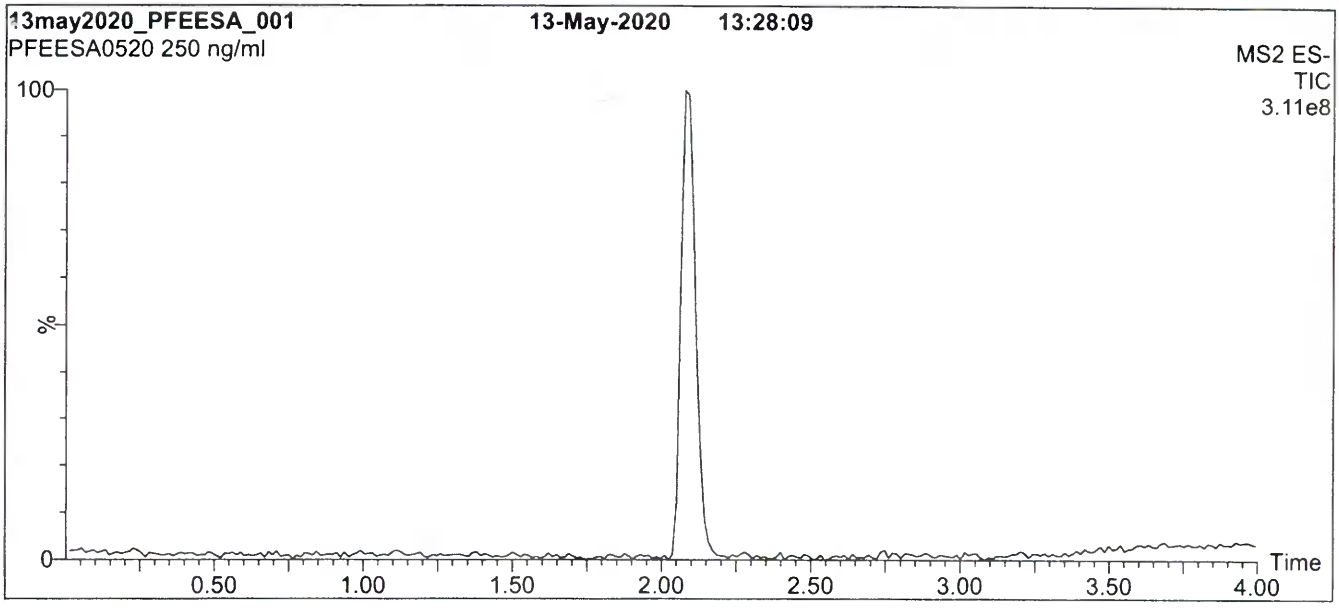
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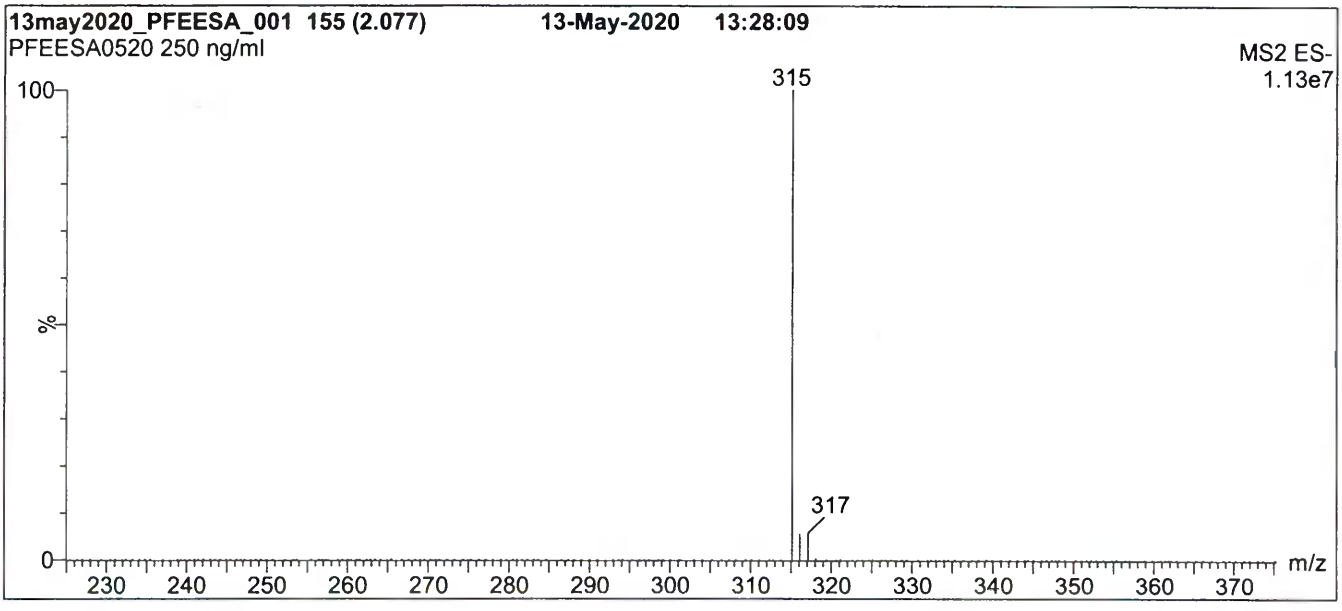
CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **PFEESA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% (80:20 MeOH:ACN) / 50% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

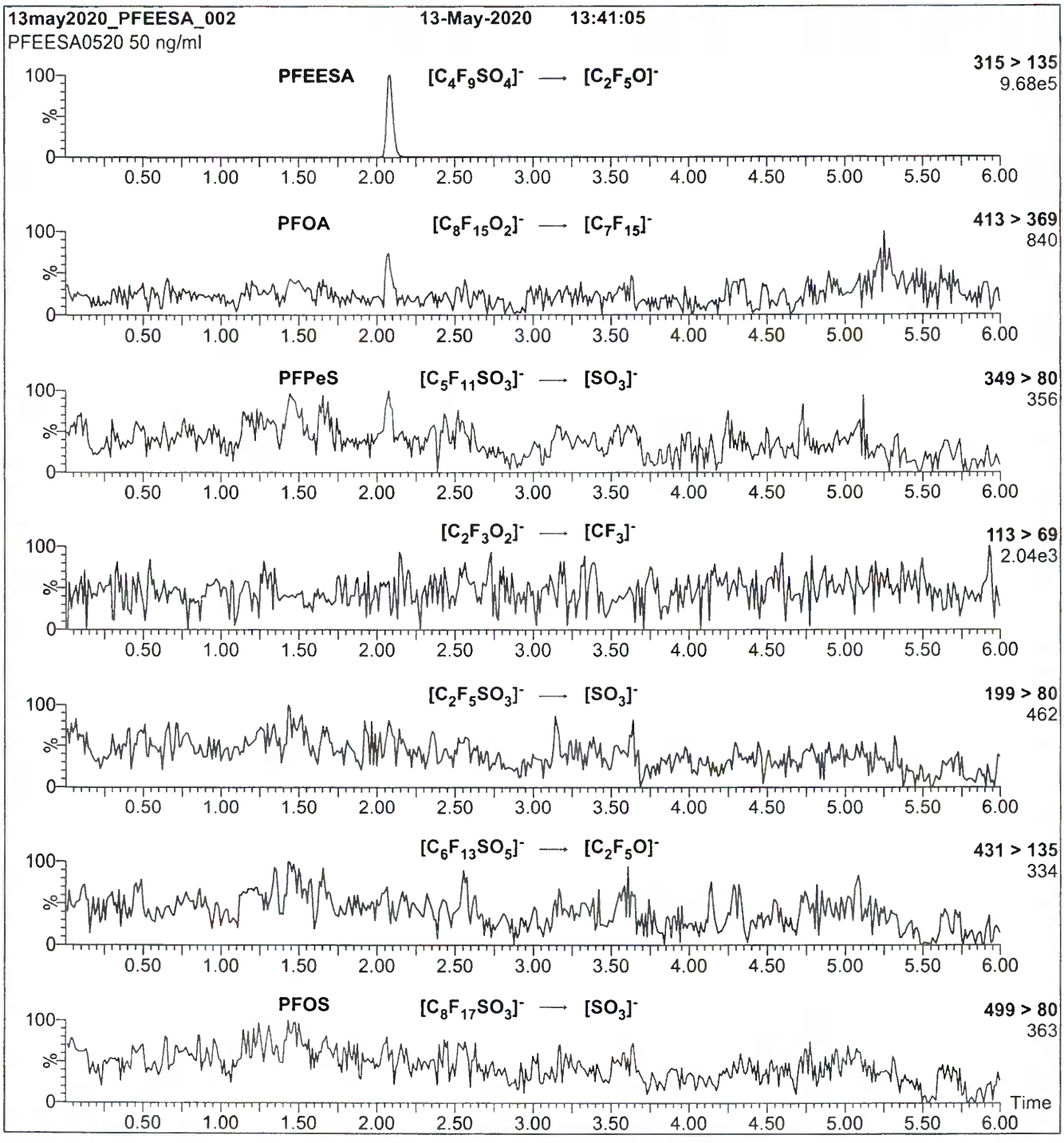
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 38.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Figure 2: **PFEESA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFEESA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 22

Reagent

PFC_ST_00769

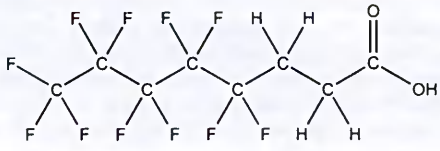
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid
LOT NUMBER: FPePA0920

STRUCTURE:
CAS #: 914637-49-3

410-1108903



MOLECULAR FORMULA:	$C_8H_5F_{11}O_2$	**MOLECULAR WEIGHT:**	342.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/05/2020		
EXPIRY DATE: (mm/dd/yyyy)	10/05/2023		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/13/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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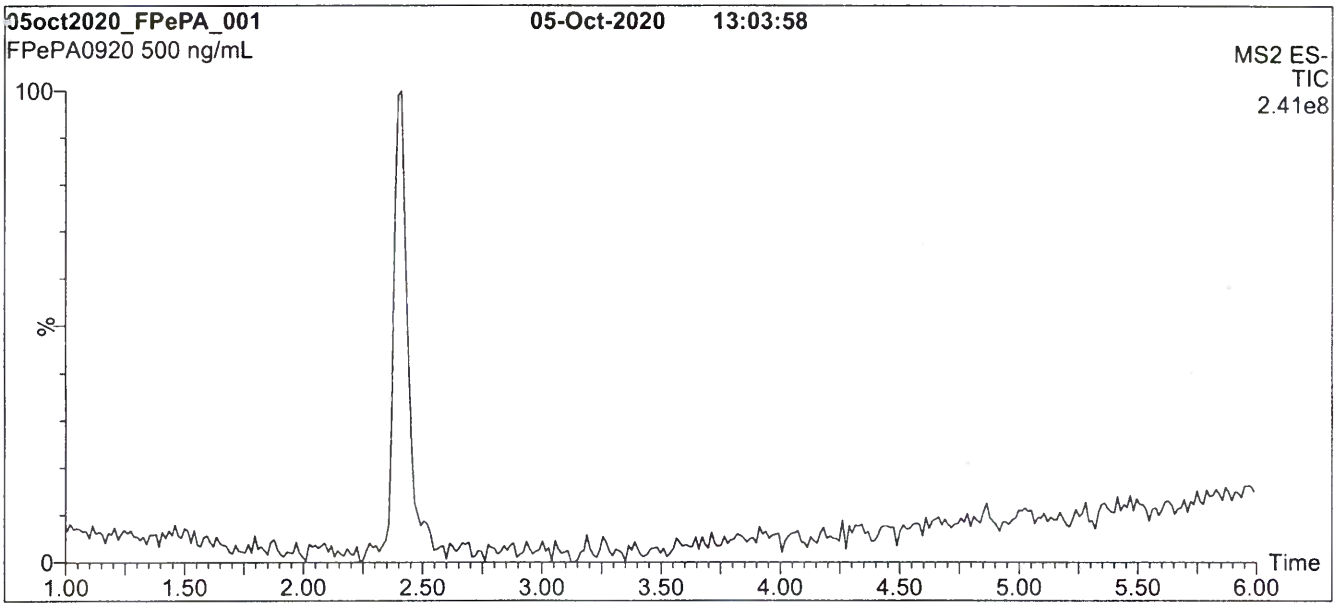
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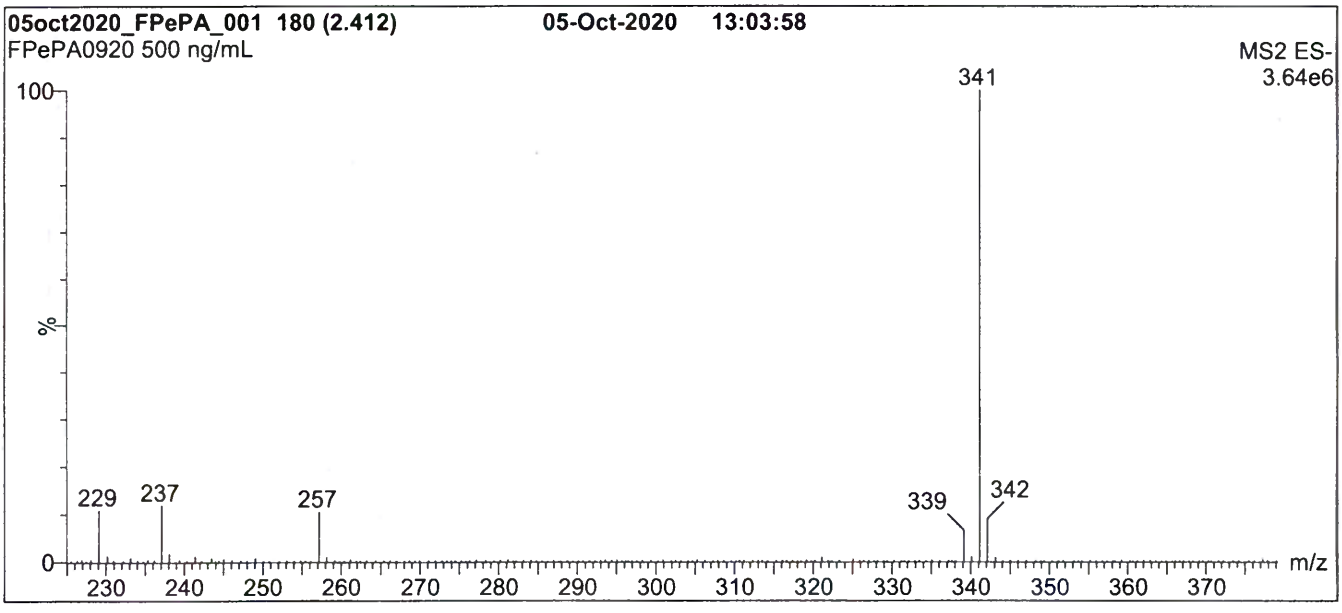
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **FPePA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

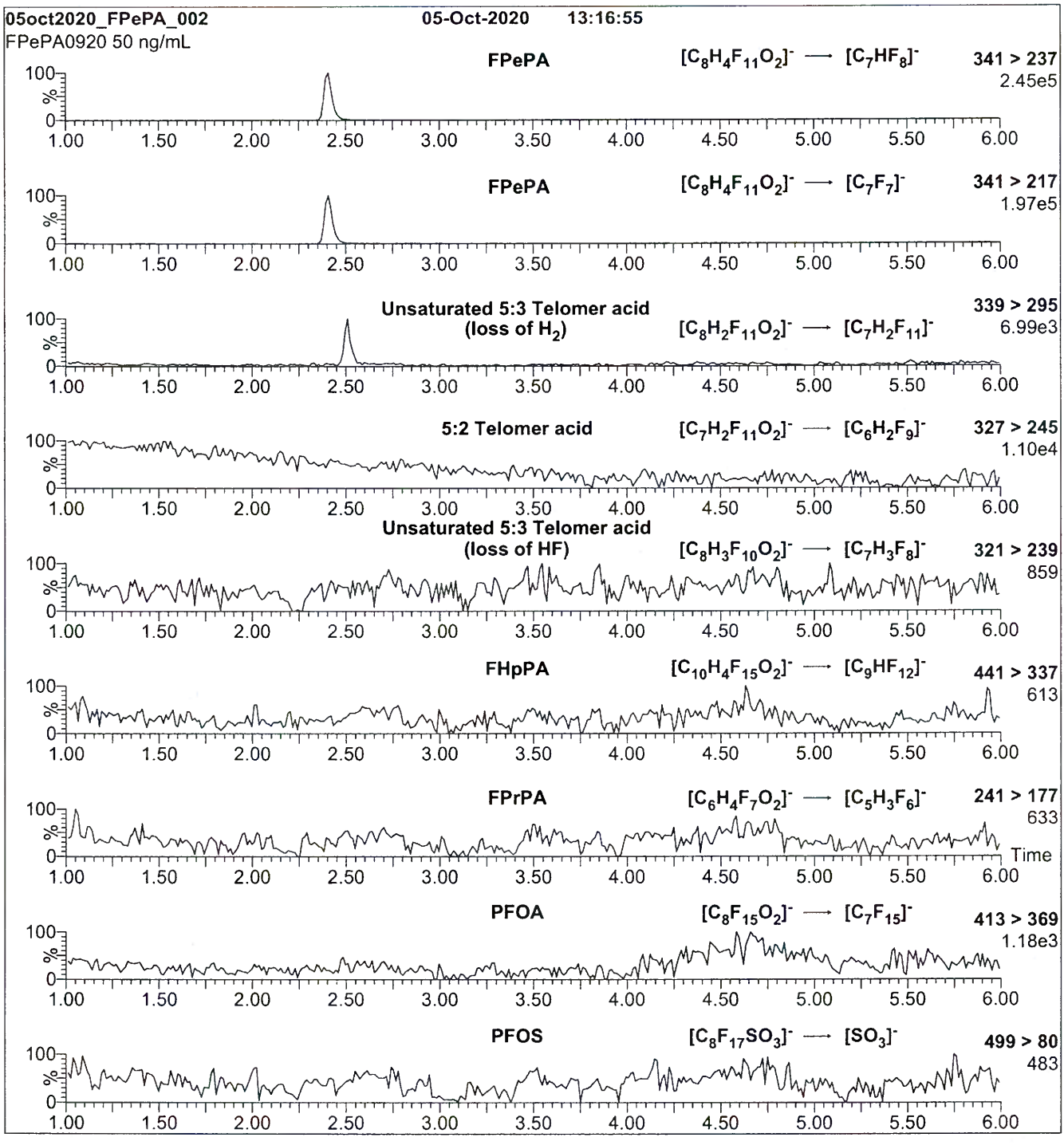
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FPePA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 10

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPePA
LOT NUMBER: FPePA0920

COMPOUND: 3-Perfluoropentyl propanoic acid

STRUCTURE:

CAS #: 914637-49-3

410-110890303

MOLECULAR FORMULA: $C_8H_5F_{11}O_2$
MOLECULAR WEIGHT: 342.11

CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 10/05/2020

EXPIRY DATE: (mm/dd/yyyy) 10/05/2023

RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 10/13/2020 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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Form#:27, Issued 2004-11-10
Revision#:8, Revised 2020-09-10
FPePA0920 (2 of 4)
rev0

Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)

Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP$_{18}$
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

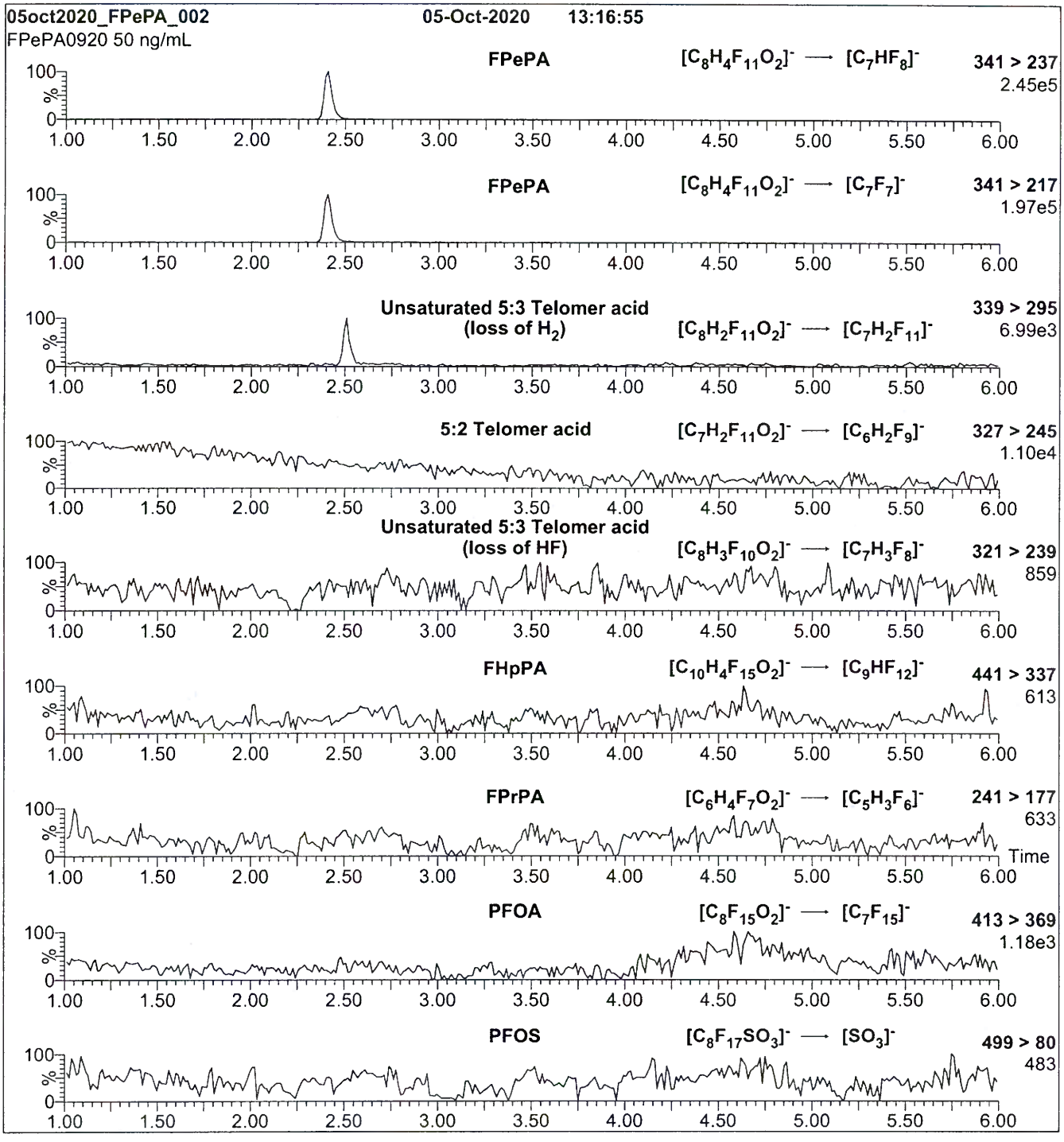
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FPePA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_00770

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FHpPA
LOT NUMBER: FHpPA1020

COMPOUND: 3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #: 812-70-4

410-109385

MOLECULAR FORMULA: $C_{10}H_5F_{15}O_2$
MOLECULAR WEIGHT: 442.12

CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 11/12/2020

EXPIRY DATE: (mm/dd/yyyy) 11/12/2025

RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 11/27/2020 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Form#:27, Issued 2004-11-10
Revision#:8, Revised 2020-09-10
FHPA1020 (2 of 4)
rev0

Figure 1: **FHpPA; LC/MS Data (TIC and Mass Spectrum)**

Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

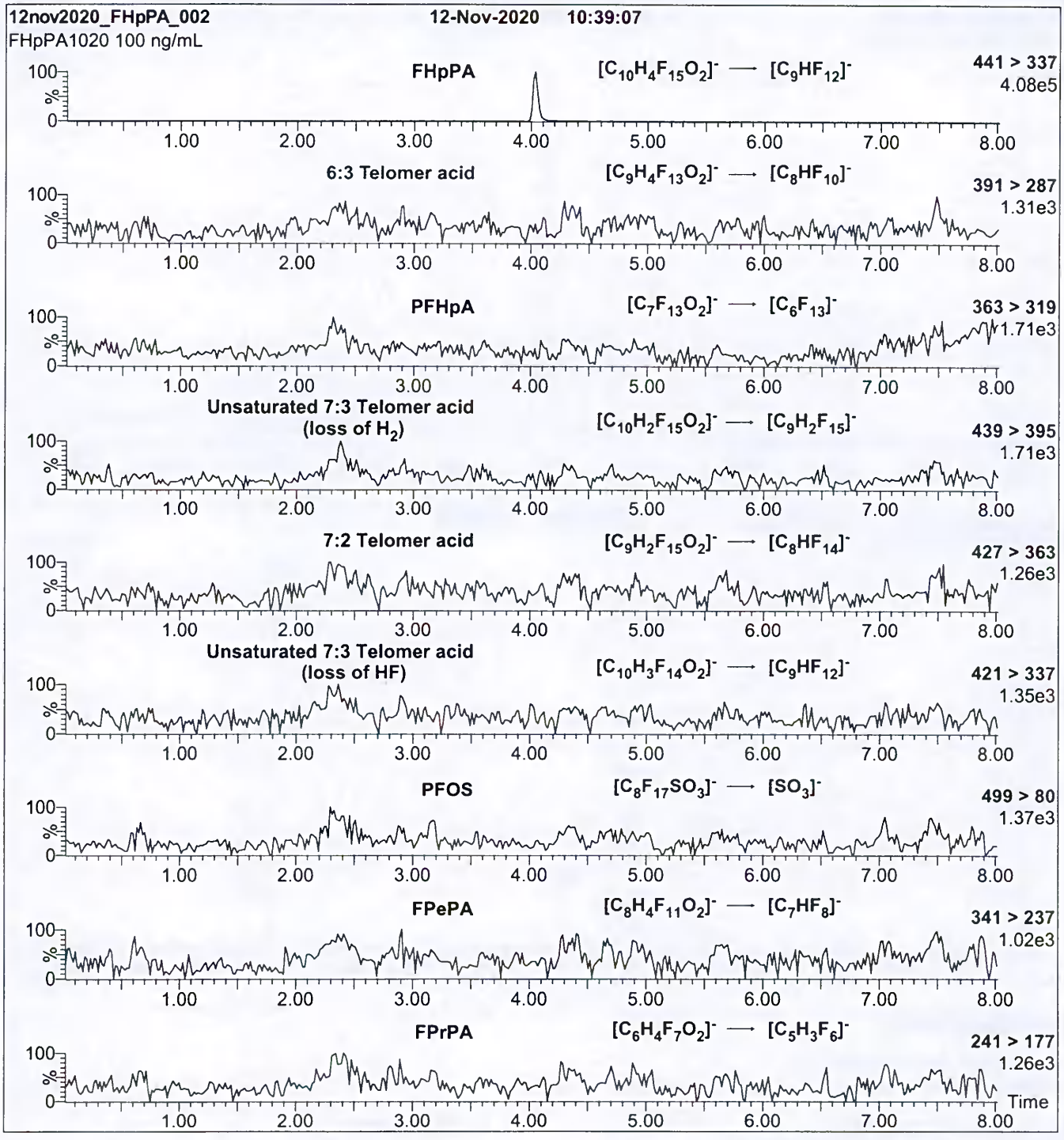
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FHpPA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 8

Reagent

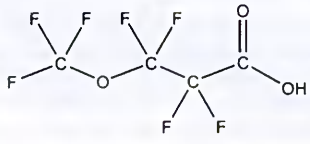
PFC_ST_00775

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PF4OPeA	**LOT NUMBER:**	PF4OPeA0320
COMPOUND:	Perfluoro-4-oxapentanoic acid		
SYNONYM:	Perfluoro-3-methoxypropanoic acid (PFMPA)		
STRUCTURE:		**CAS #:**	377-73-1

410-1109404



MOLECULAR FORMULA:	$C_4HF_7O_3$	**MOLECULAR WEIGHT:**	230.04
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/31/2020		
EXPIRY DATE: (mm/dd/yyyy)	03/31/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/21/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

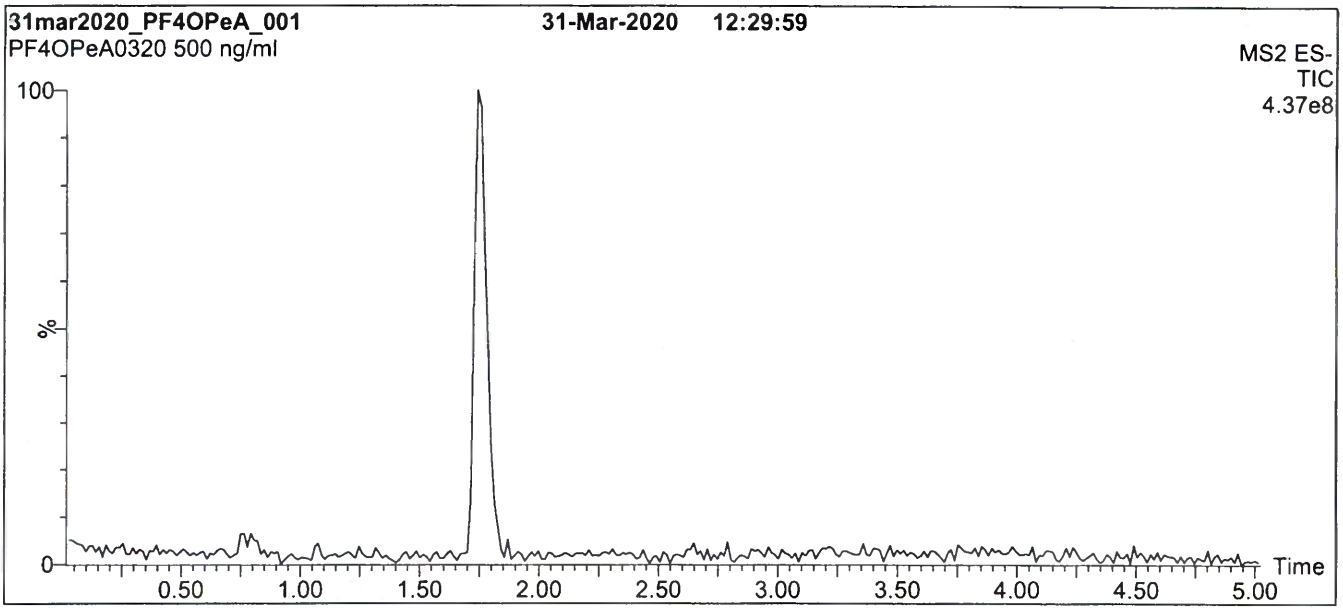
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

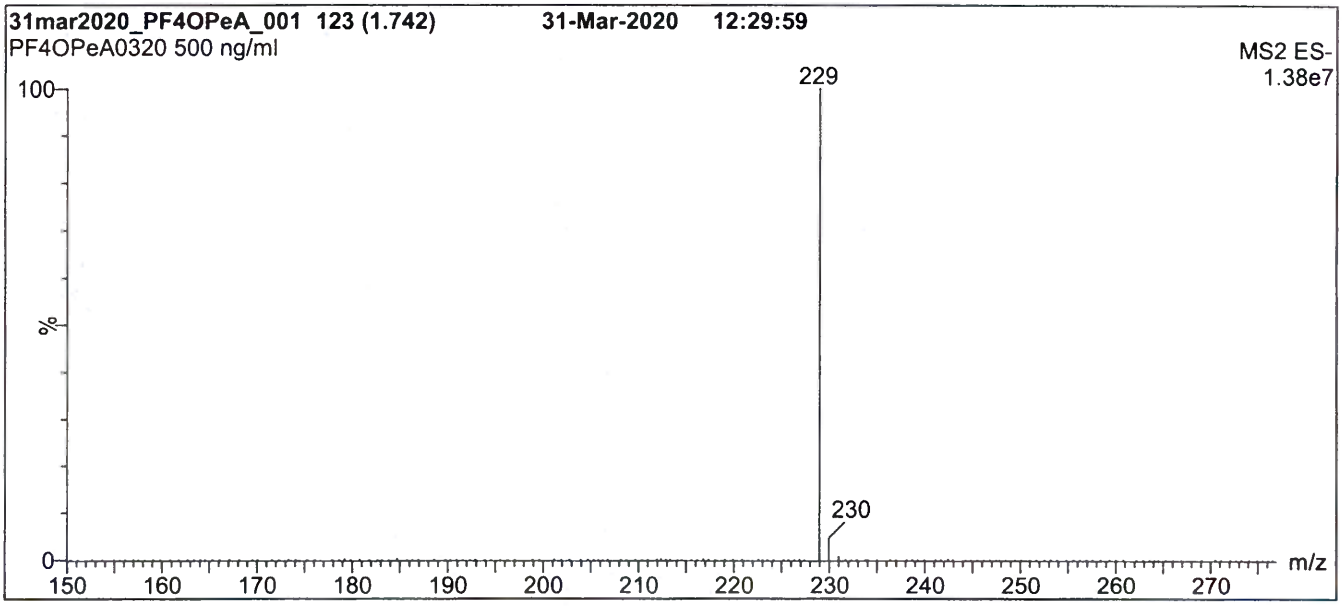
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **PF4OPeA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

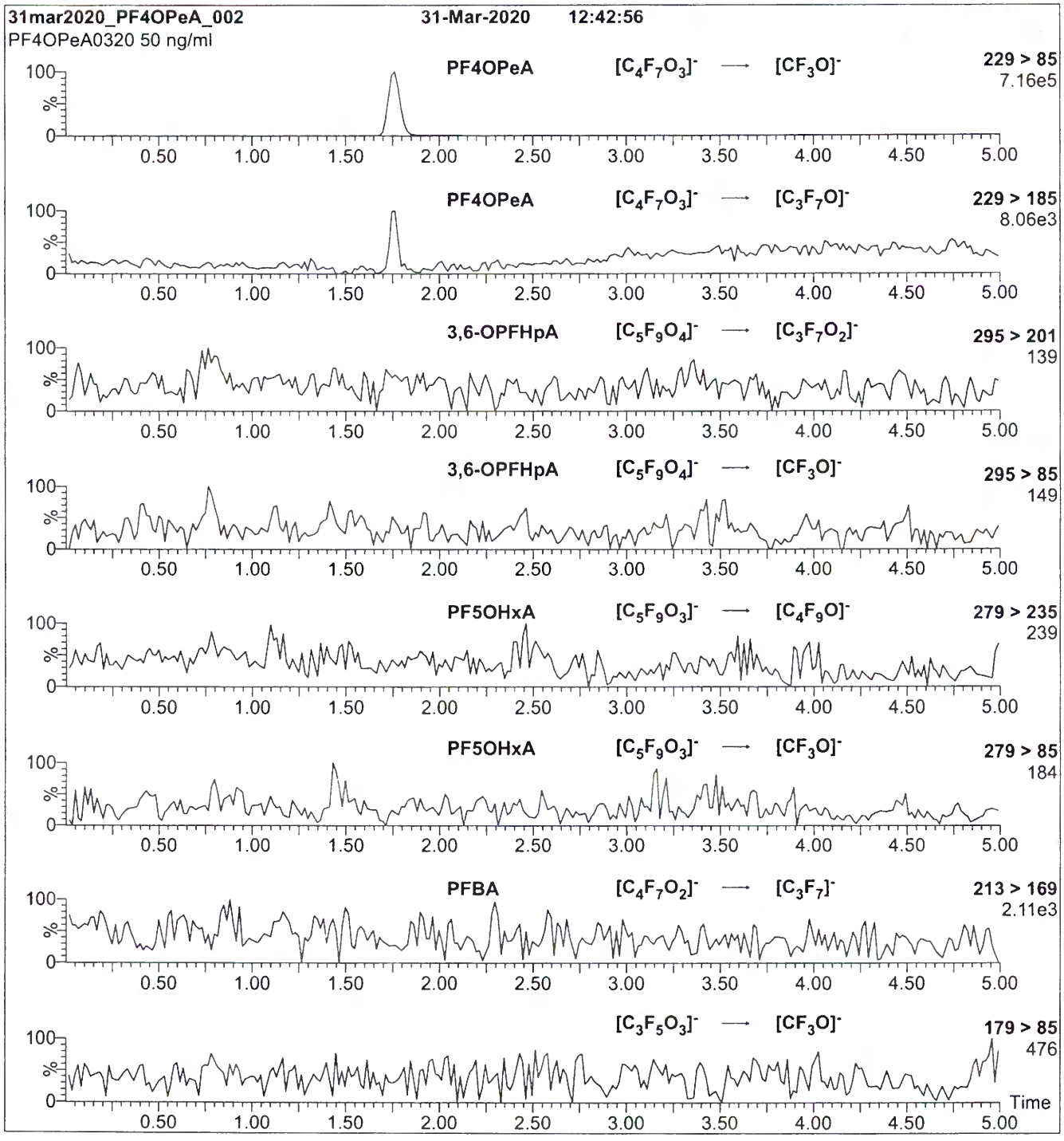
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 9.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **PF4OPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PF4OPeA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.27e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_00971

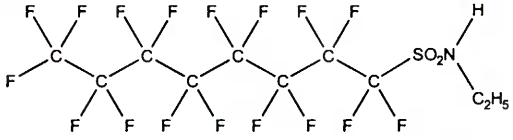
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFC_ST_00971

PRODUCT CODE: N-EtFOSA-M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide
LOT NUMBER: NEtFOSA1120M

STRUCTURE:
CAS #: 4151-50-2



MOLECULAR FORMULA:	$C_{10}H_6F_{17}NO_2S$	**MOLECULAR WEIGHT:**	527.20
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/23/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/23/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.5% branched isomers of N-ethylperfluorooctanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/15/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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where x is expressed as a relative standard uncertainty of the individual parameter.

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QUALITY MANAGEMENT:

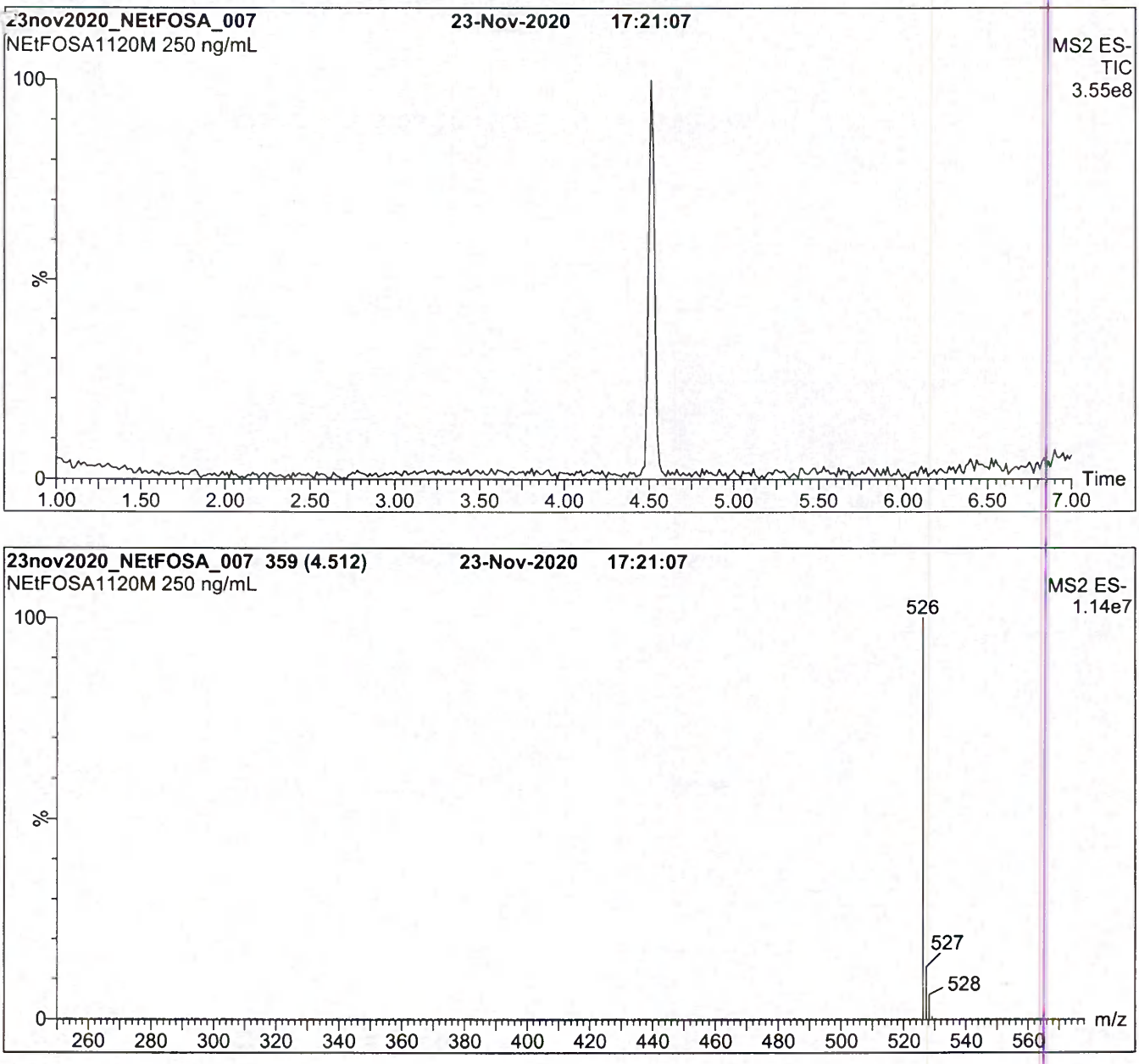
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 95% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

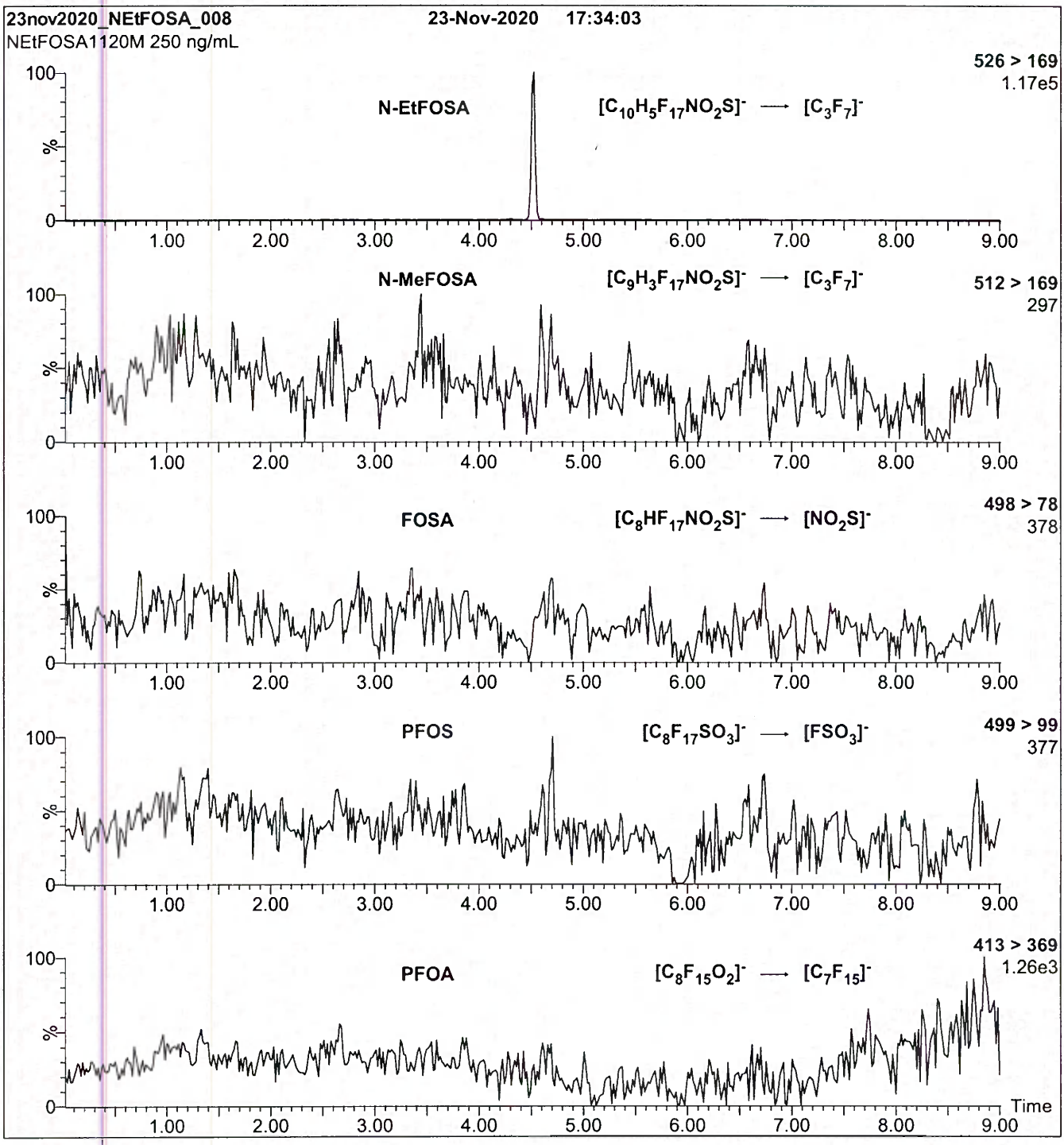
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 24

Reagent

PFC_ST_00972

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

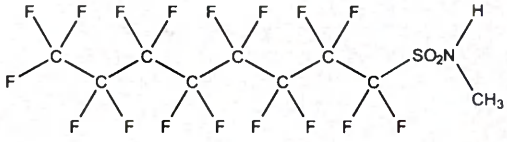
PFC-ST-00972

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA1020M

STRUCTURE:

CAS #: 31506-32-8



MOLECULAR FORMULA:	$C_9H_4F_{17}NO_2S$	**MOLECULAR WEIGHT:**	513.17
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/20/2020		
EXPIRY DATE: (mm/dd/yyyy)	10/20/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/21/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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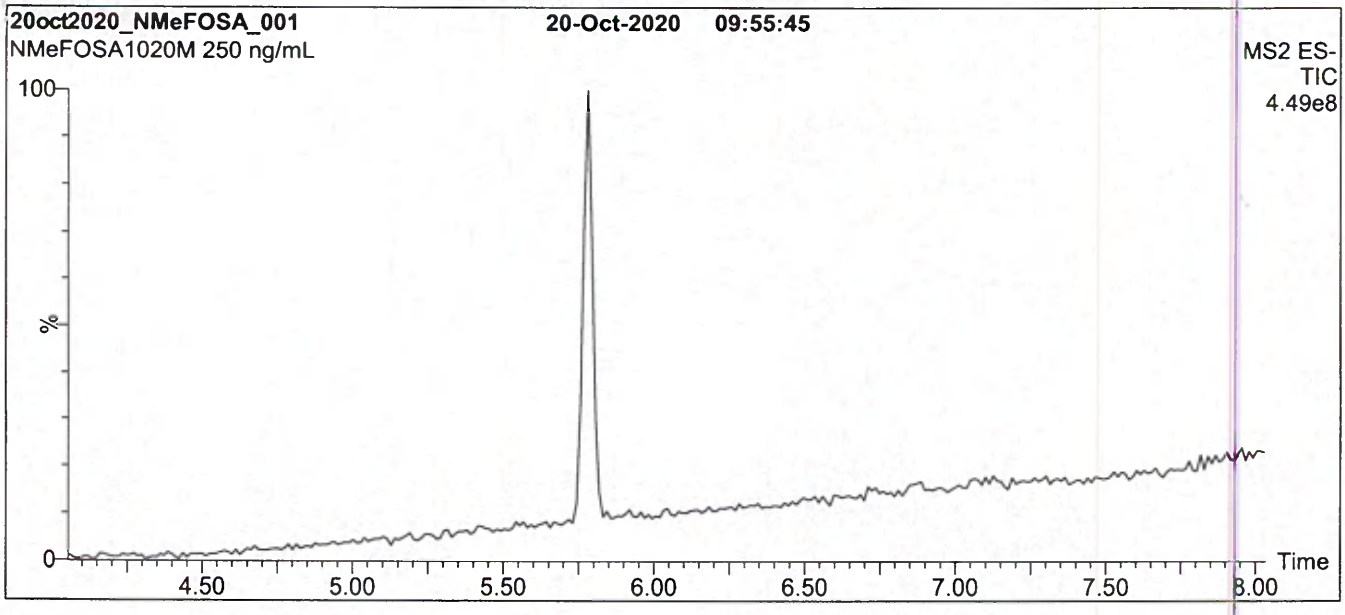
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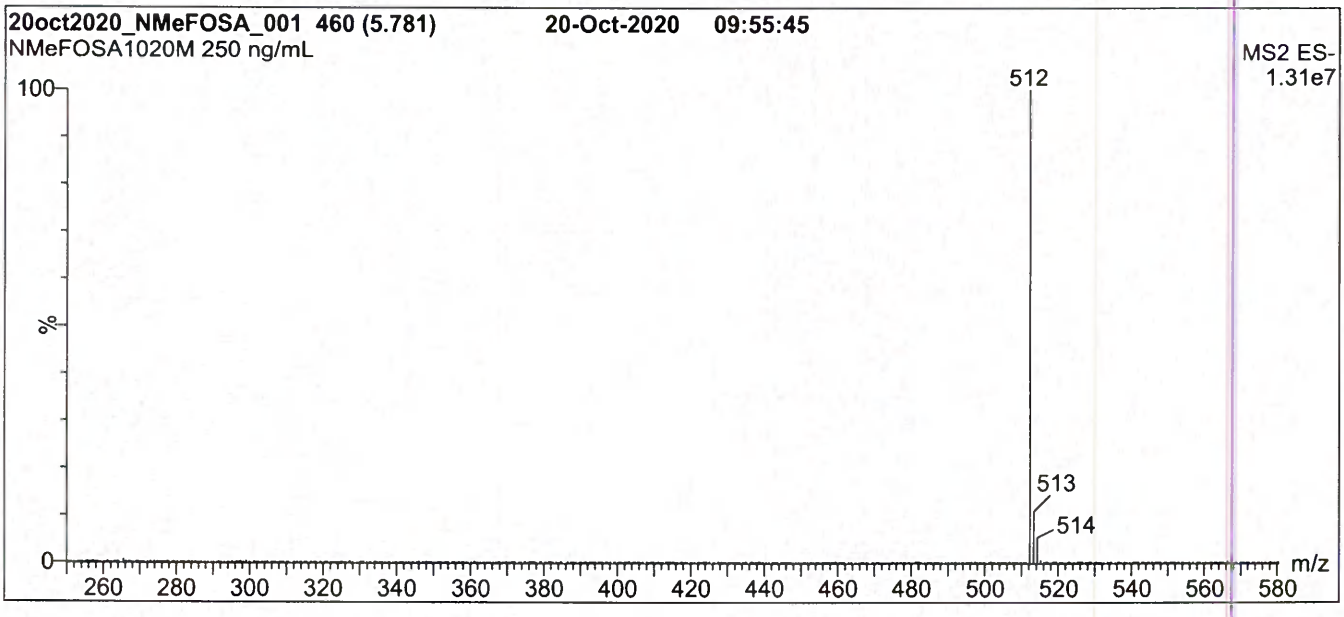
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

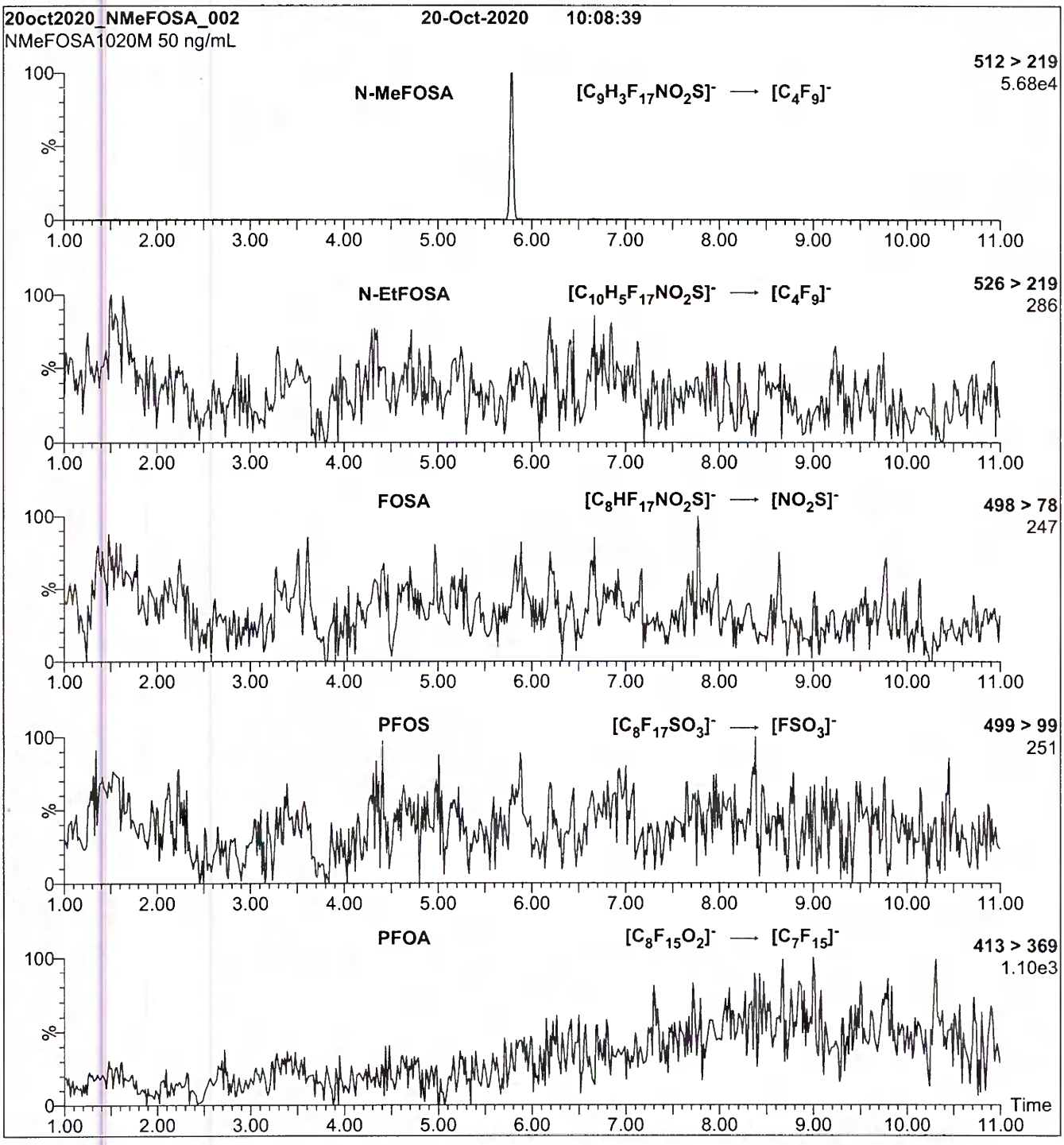
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 24

Reagent

PFC_ST_00973

410-1525501

WELLINGTON LABORATORIES

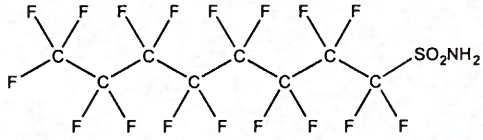
CERTIFICATE OF ANALYSIS DOCUMENTATION

PFC_ST_00973

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide
LOT NUMBER: FOSA1020I

STRUCTURE:

CAS #: 754-91-6



MOLECULAR FORMULA:	$C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	499.14
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/04/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/04/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/15/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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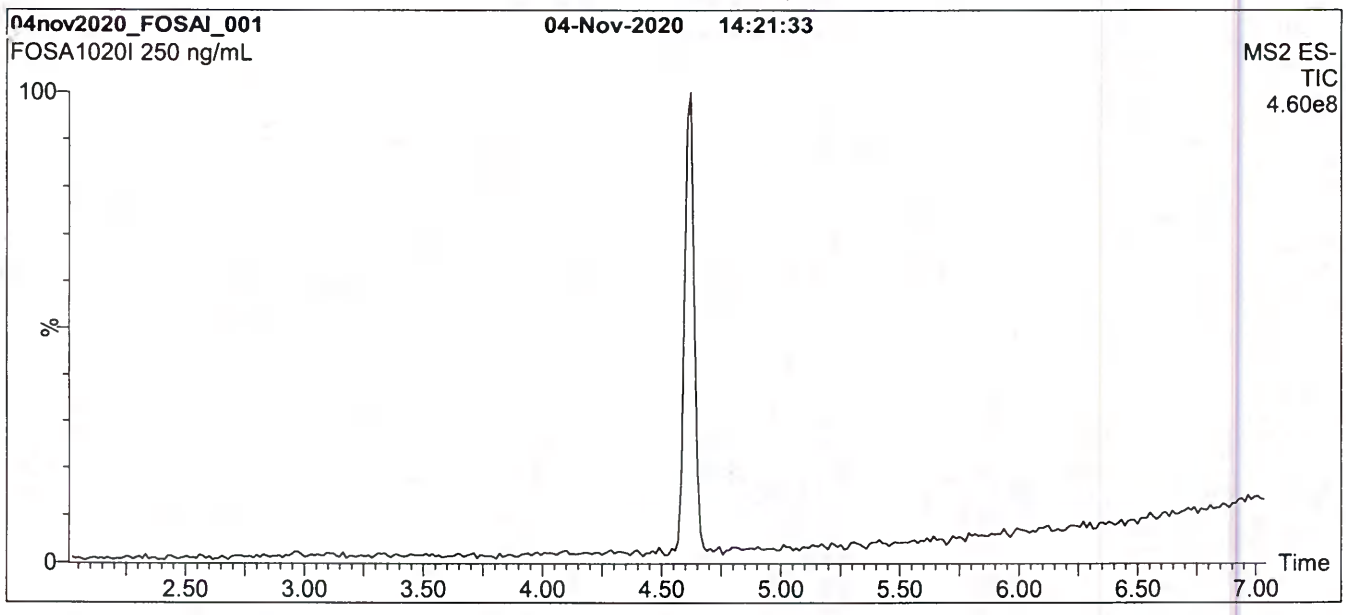
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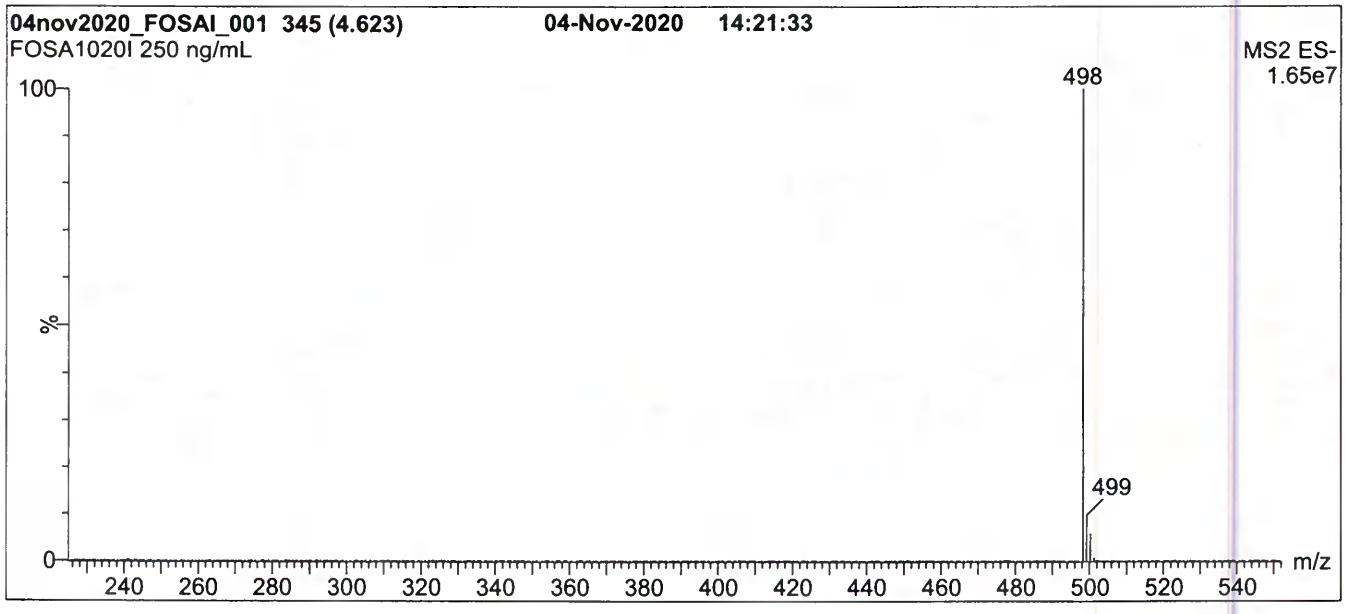
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

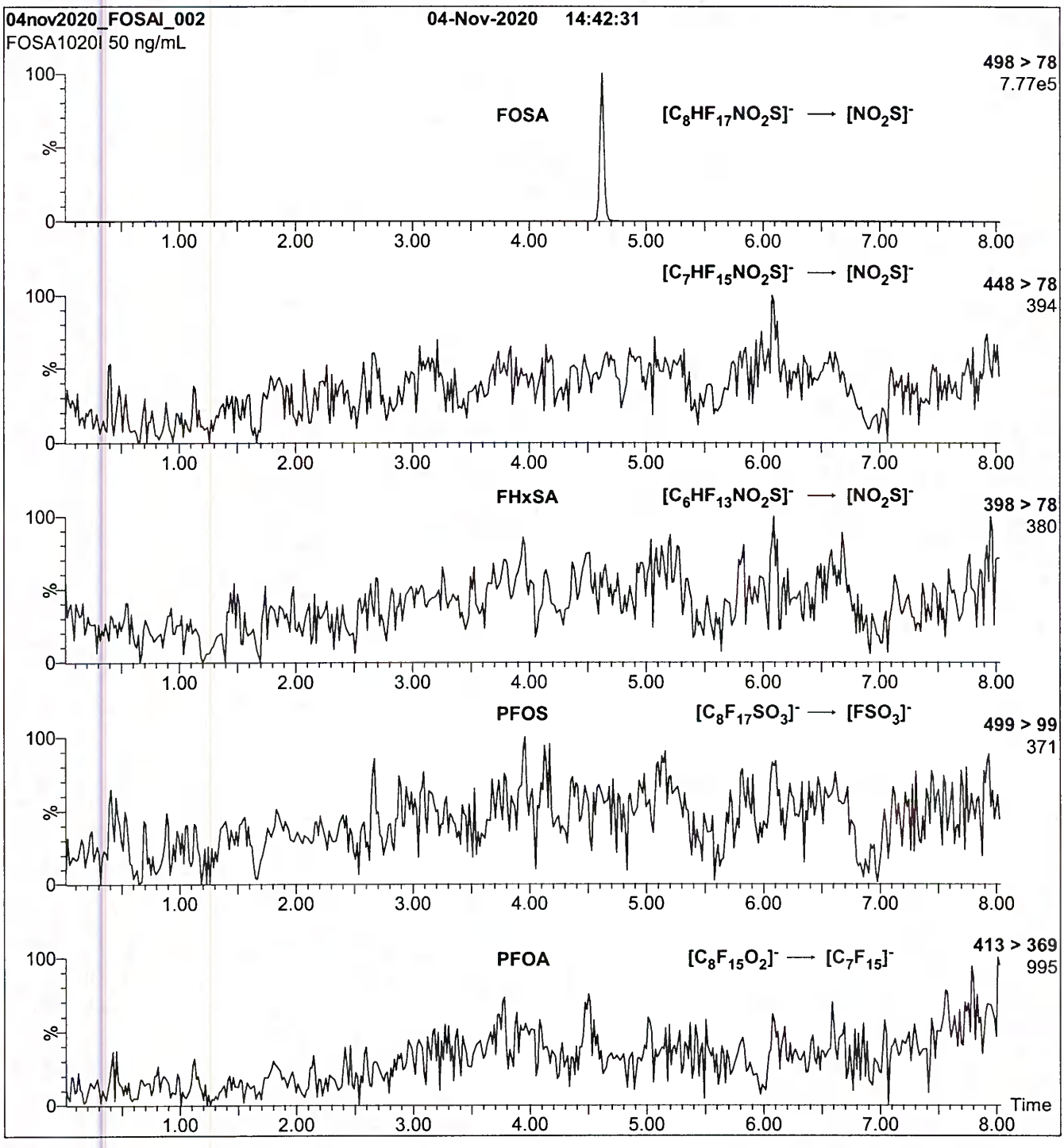
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 30

Reagent

PFC_ST_00977

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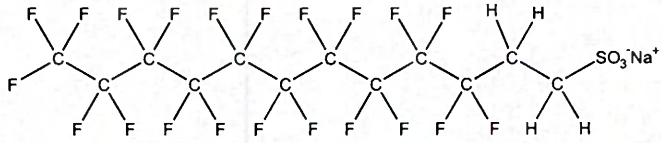
CERTIFICATE OF ANALYSIS DOCUMENTATION

PFC-ST-02977

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221

COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: $C_{12}H_4F_{21}SO_3Na$ **MOLECULAR WEIGHT:** 650.18

CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/03/2021

EXPIRY DATE: (mm/dd/yyyy) 03/03/2026

RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/05/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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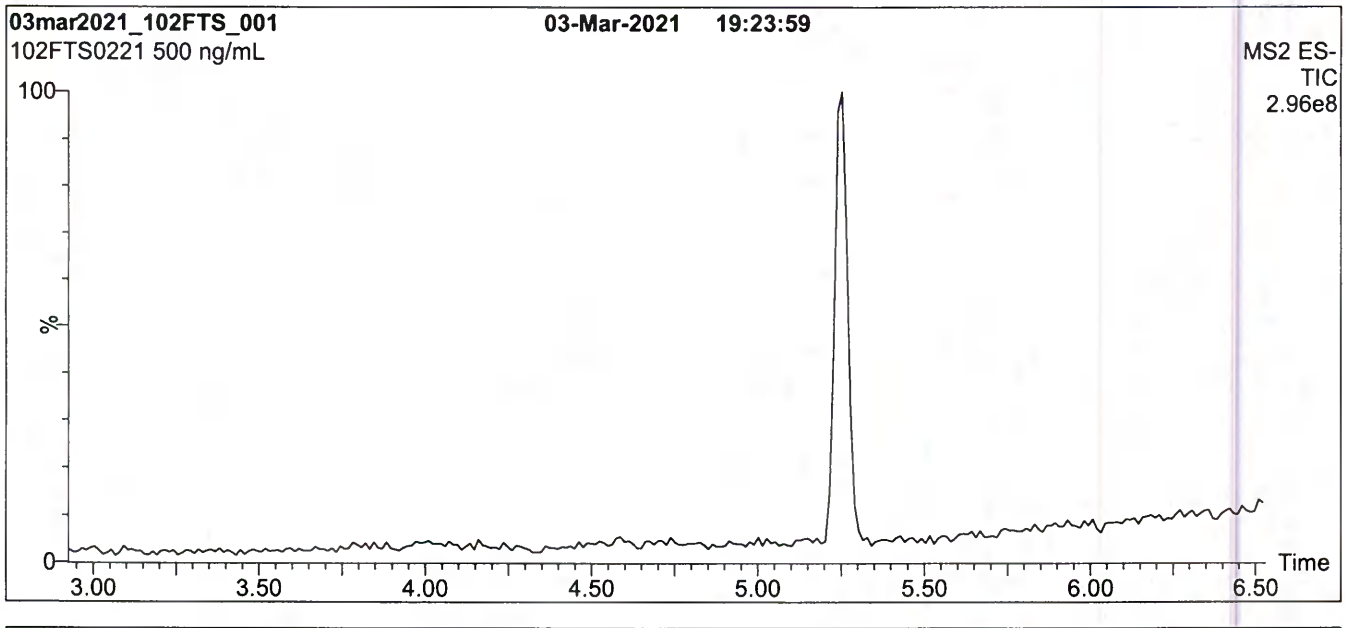
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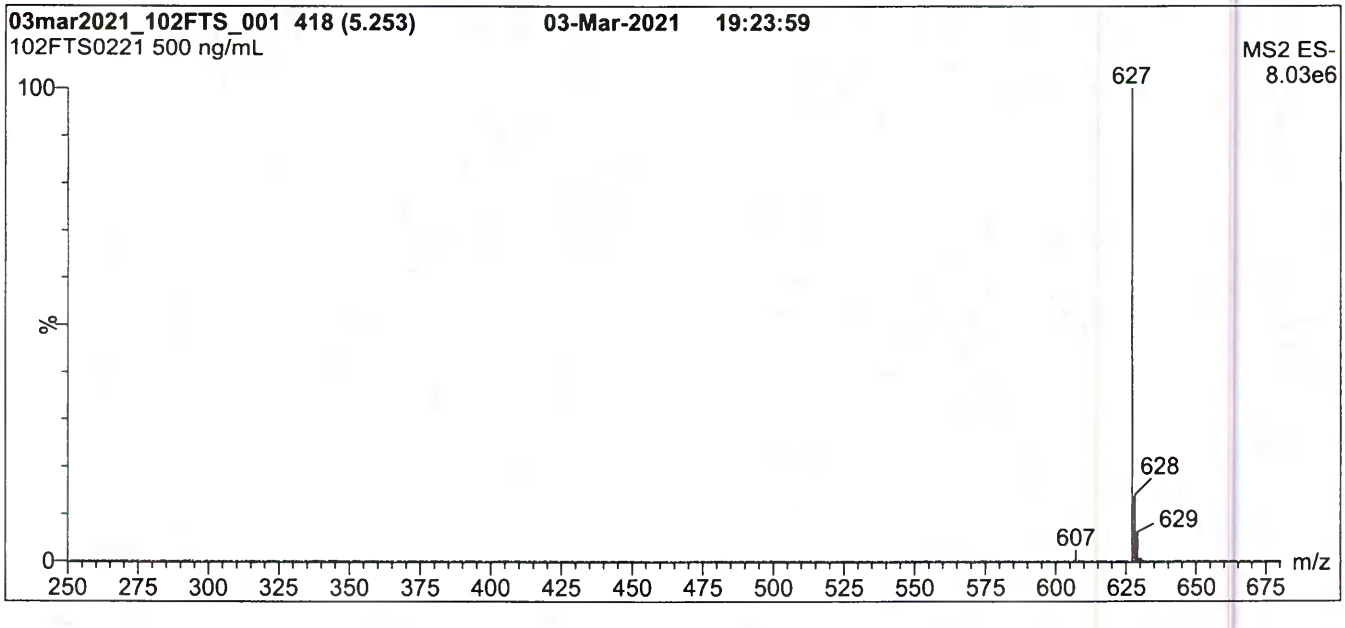
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Figure 1: **10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

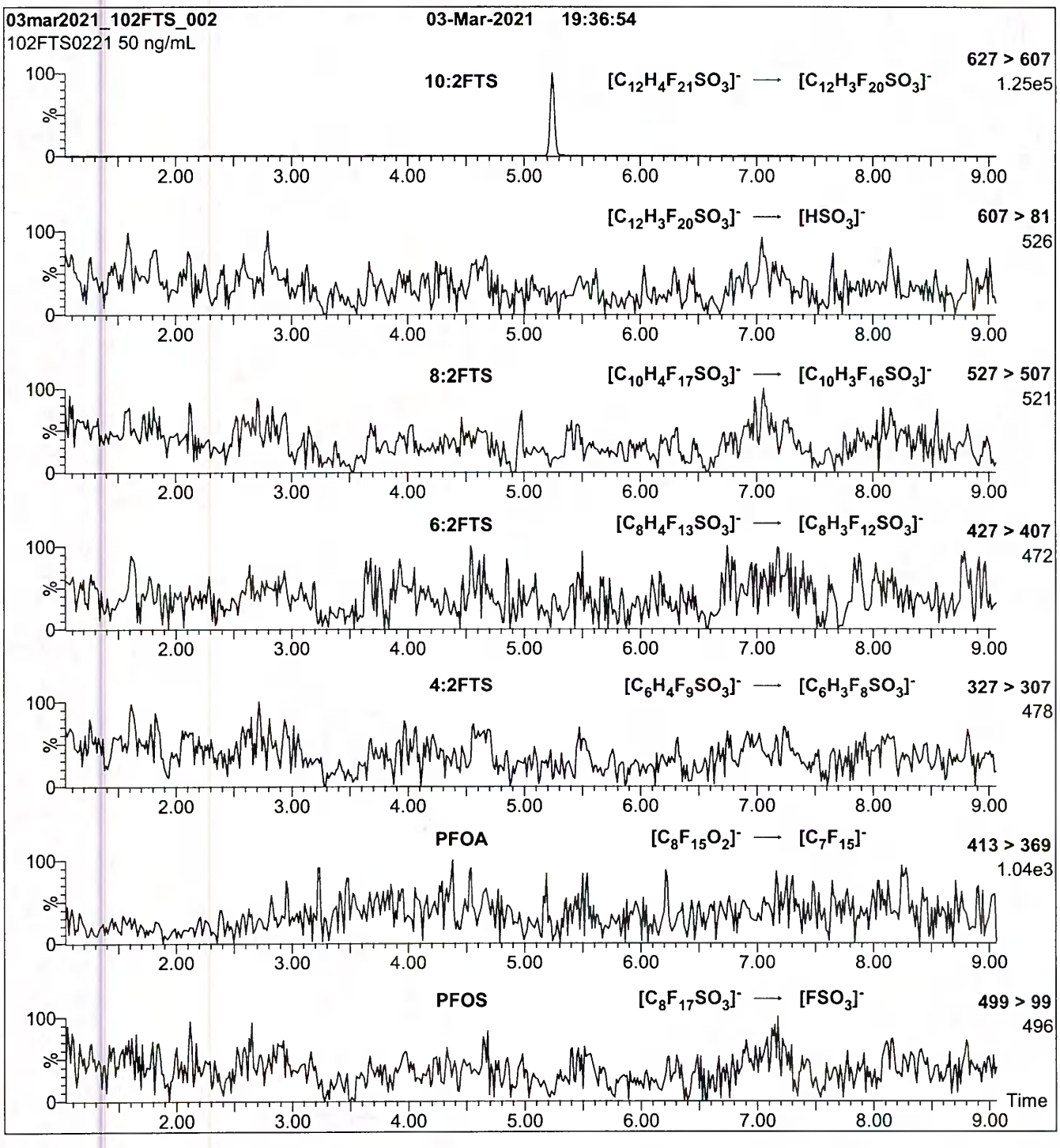
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **10:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (10:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 25

Reagent

PFC_ST_00980

410-1525564

WELLINGTON LABORATORIES

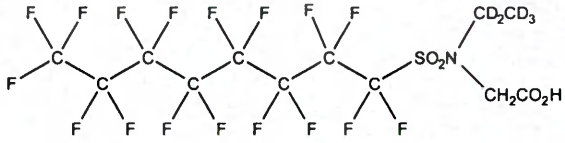
CERTIFICATE OF ANALYSIS DOCUMENTATION

PFC-ST-00980

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0321

COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $C_{12}D_5H_3F_{17}NO_4S$ **MOLECULAR WEIGHT:** 590.26

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol, Water (<1%)

CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥98% $^2H_5$

LAST TESTED: (mm/dd/yyyy) 03/02/2021

EXPIRY DATE: (mm/dd/yyyy) 03/02/2026

RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/05/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

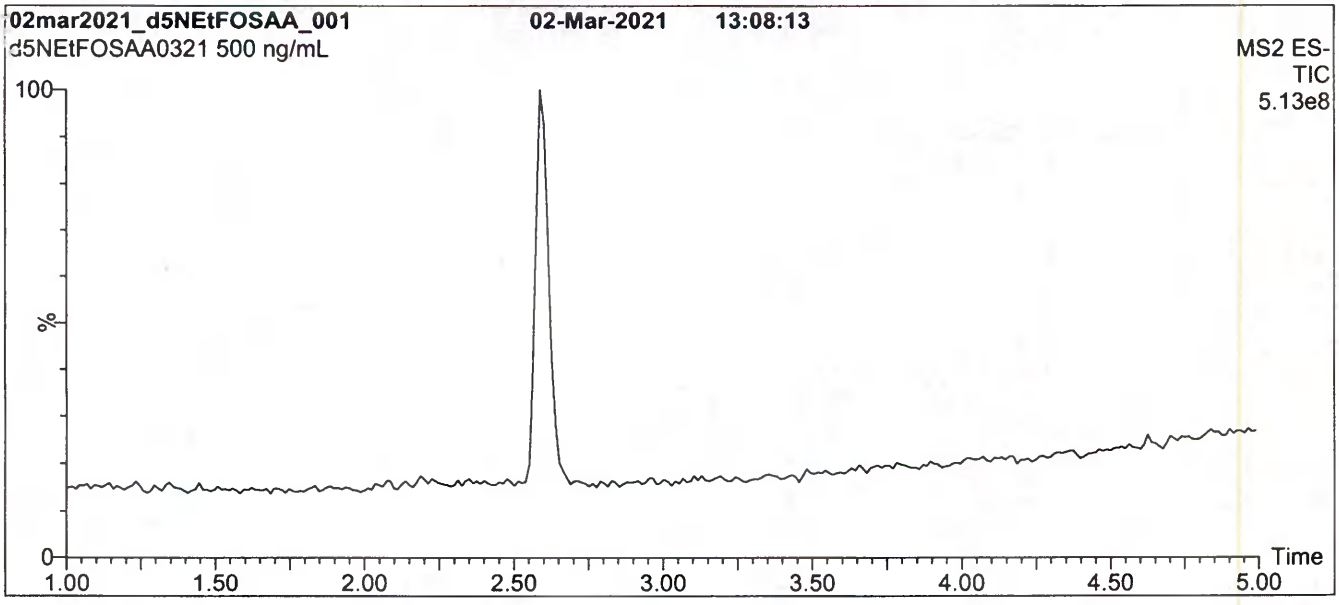
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

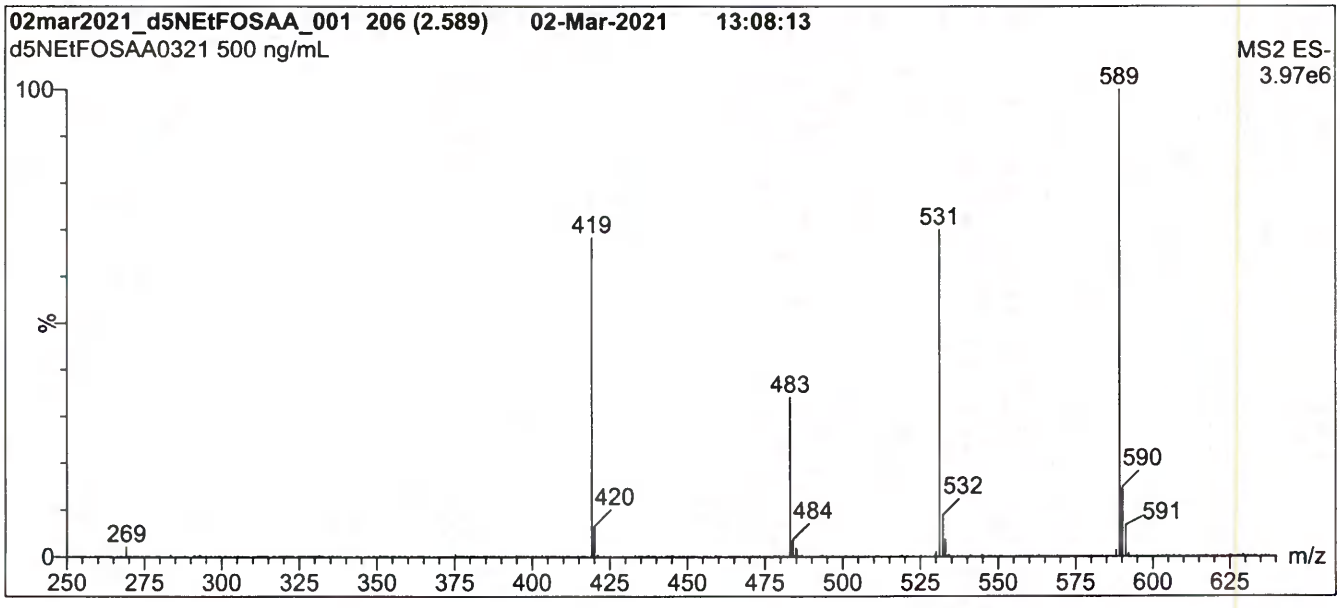
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **d5-N-EtFOSAA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 100% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

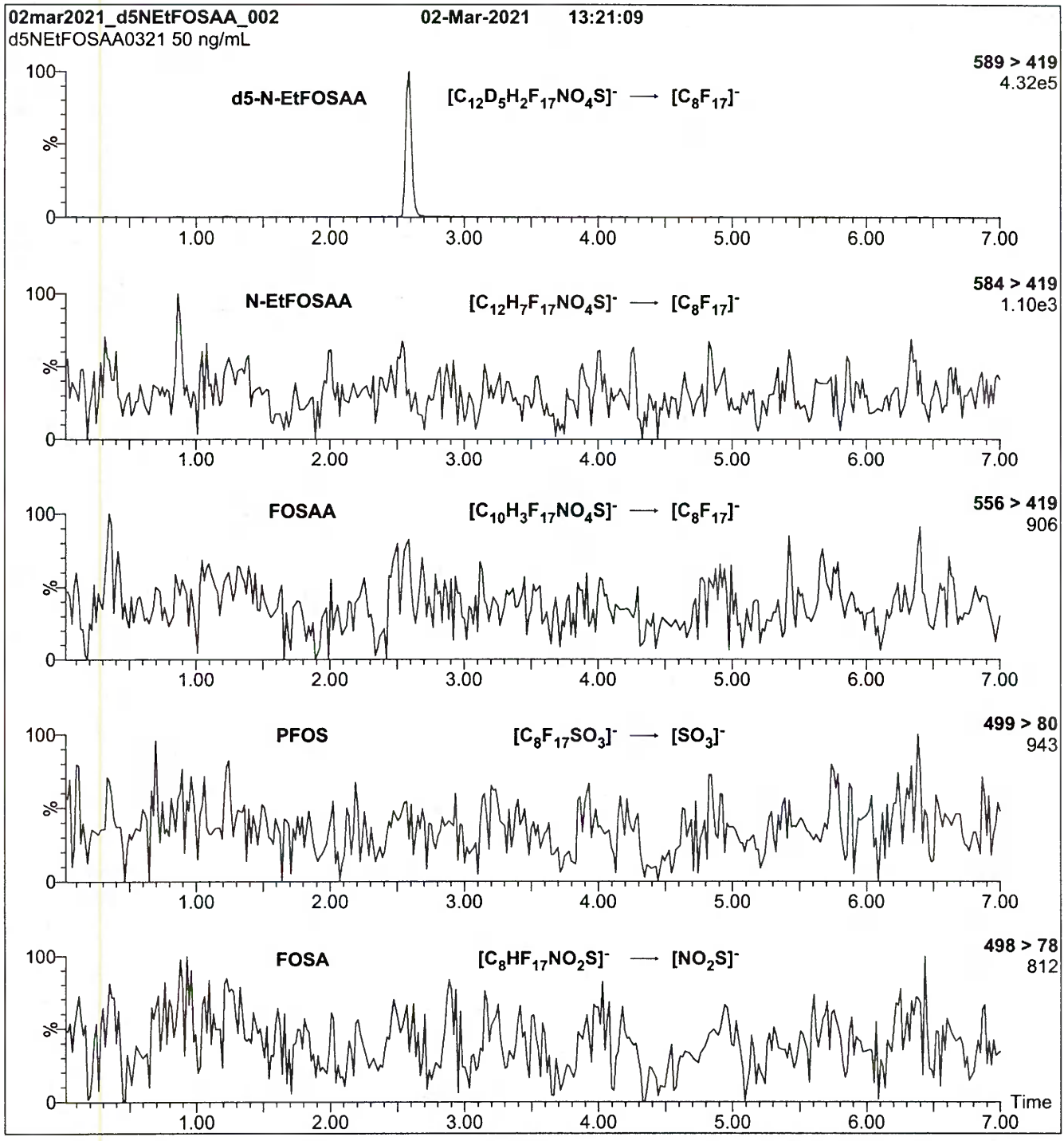
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 64.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 750

Figure 2: **d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d5-N-EtFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 18

Reagent

PFC_ST_00981

410-1525576

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

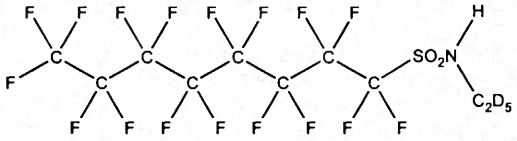
PFC-ST-000981

PRODUCT CODE: d-N-EtFOSA-M
COMPOUND: N-ethyl-d_5-perfluoro-1-octanesulfonamide

LOT NUMBER: dNEtFOSA1120M

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$C_{10}D_5HF_{17}NO_2S$	**MOLECULAR WEIGHT:**	532.23
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_5$
LAST TESTED: (mm/dd/yyyy)	11/23/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/23/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/15/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

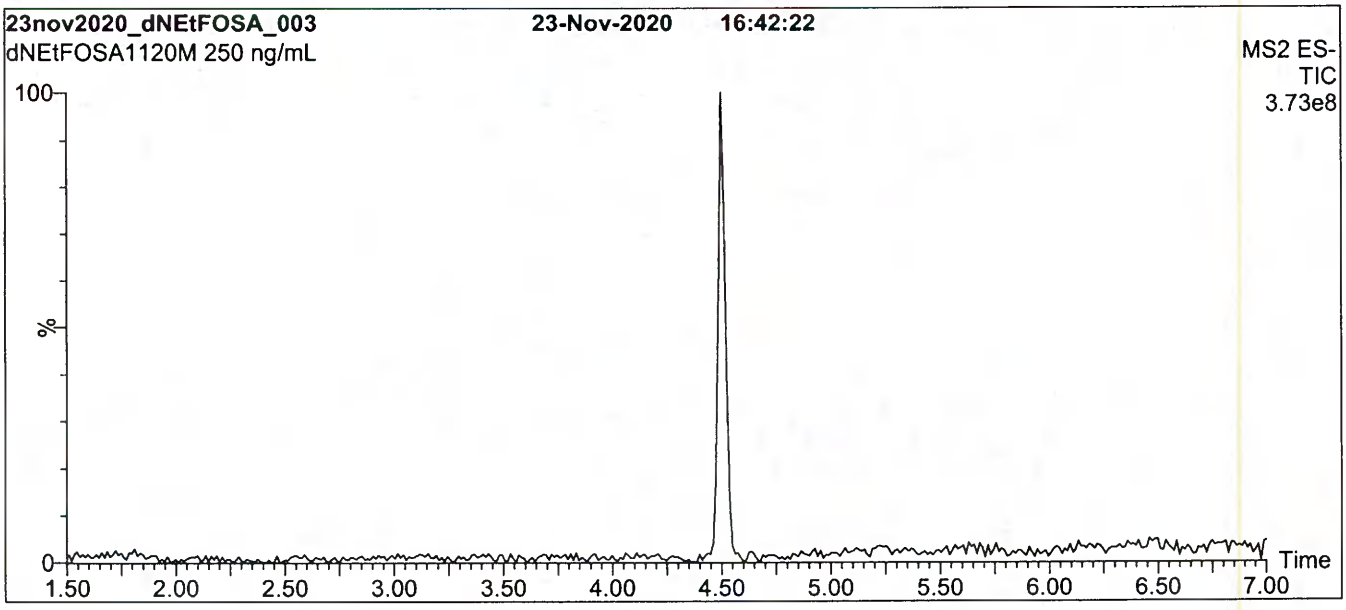
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

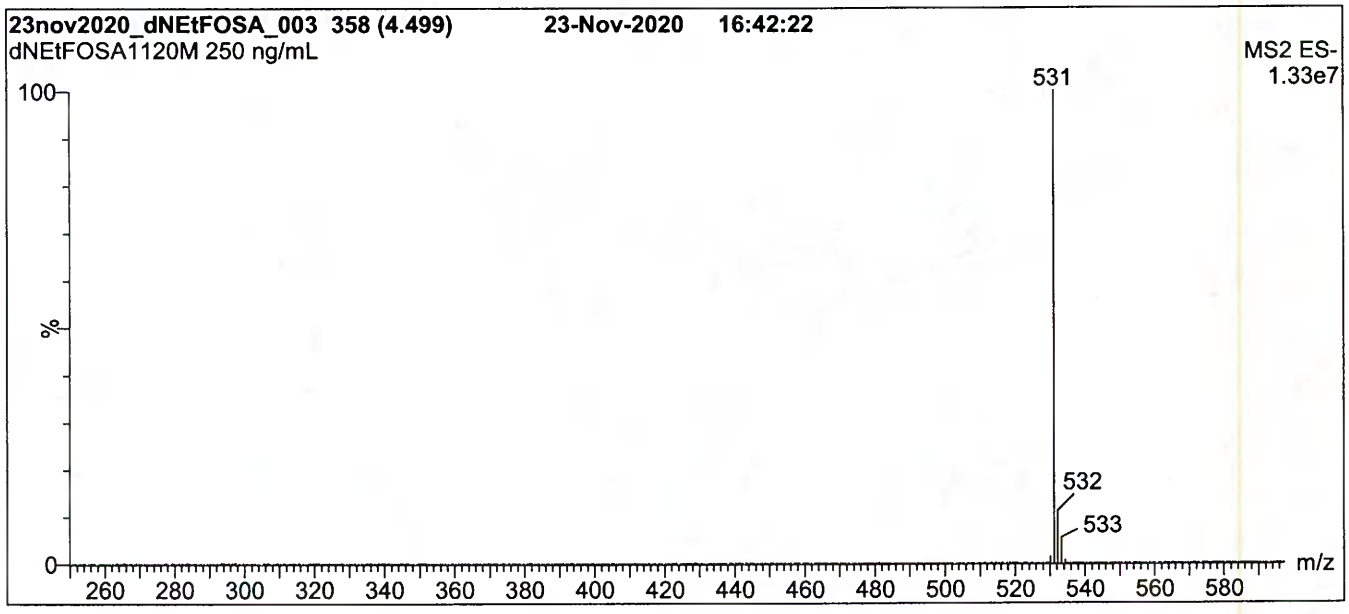
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **d-N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 95% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

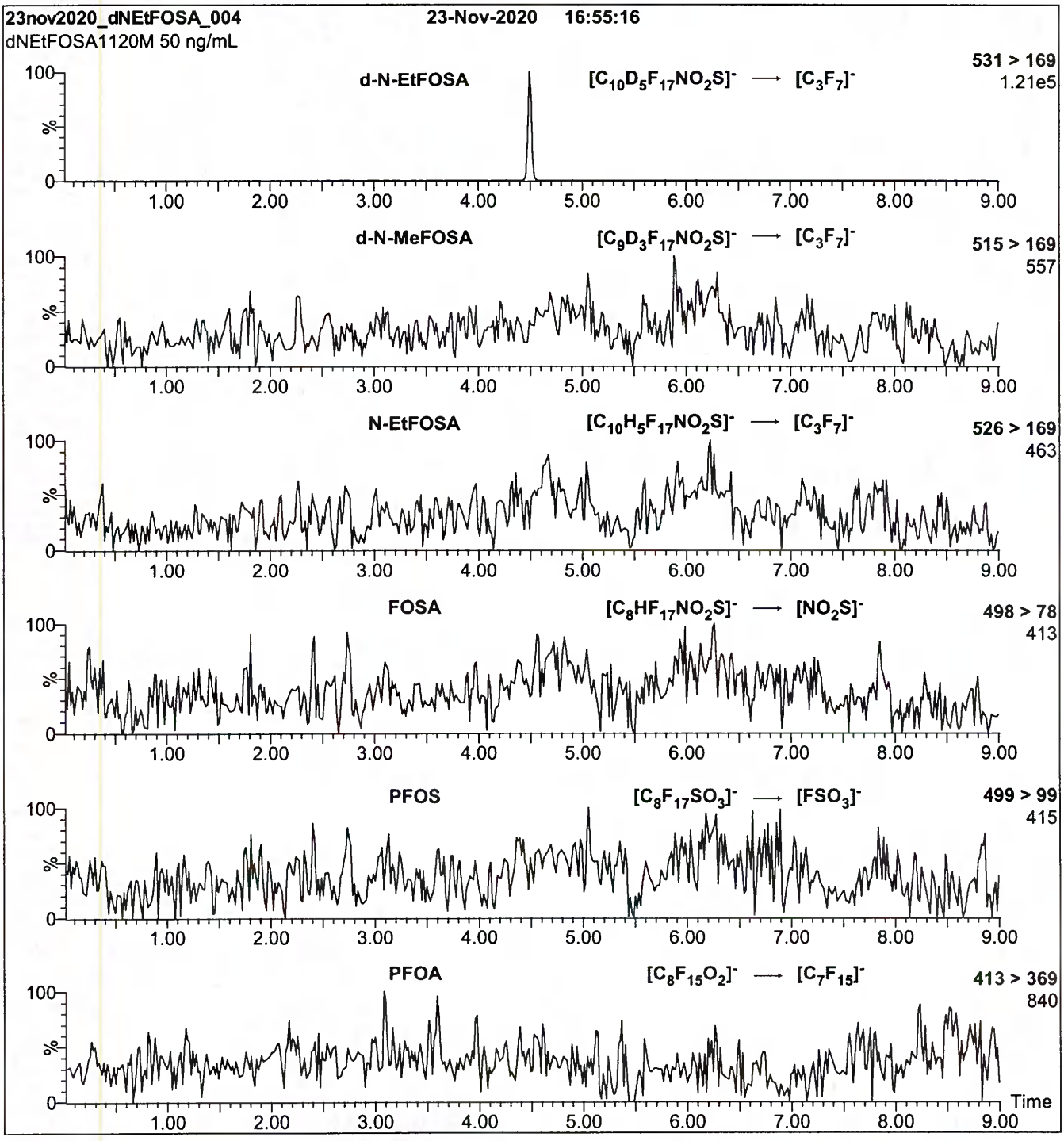
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **d-N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d-N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 24

Reagent

PFC_ST_00982

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

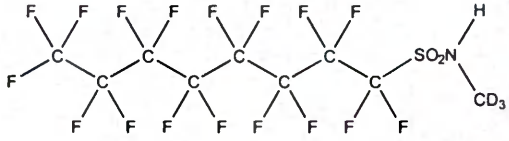
PFC_ST_00982

PRODUCT CODE: d-N-MeFOSA-M
COMPOUND: N-methyl-d_3-perfluoro-1-octanesulfonamide

LOT NUMBER: dNMeFOSA0421M

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$C_9D_3HF_{17}NO_2S$	**MOLECULAR WEIGHT:**	516.19
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_3$
LAST TESTED: (mm/dd/yyyy)	04/20/2021		
EXPIRY DATE: (mm/dd/yyyy)	04/20/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/23/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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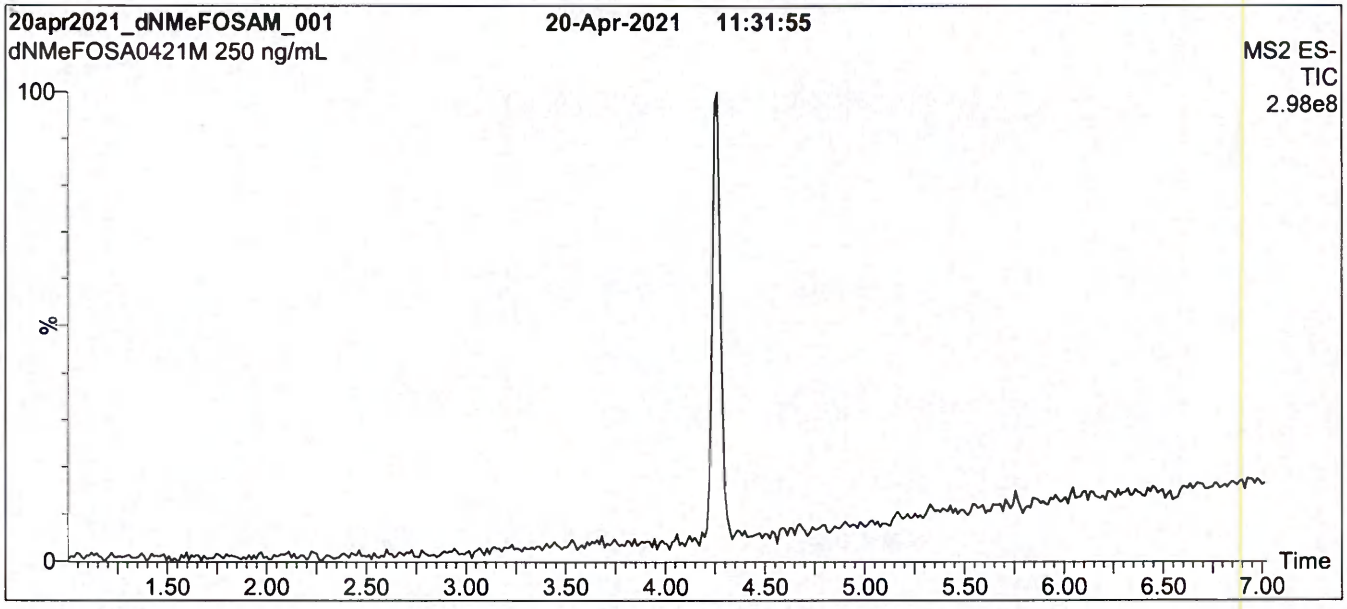
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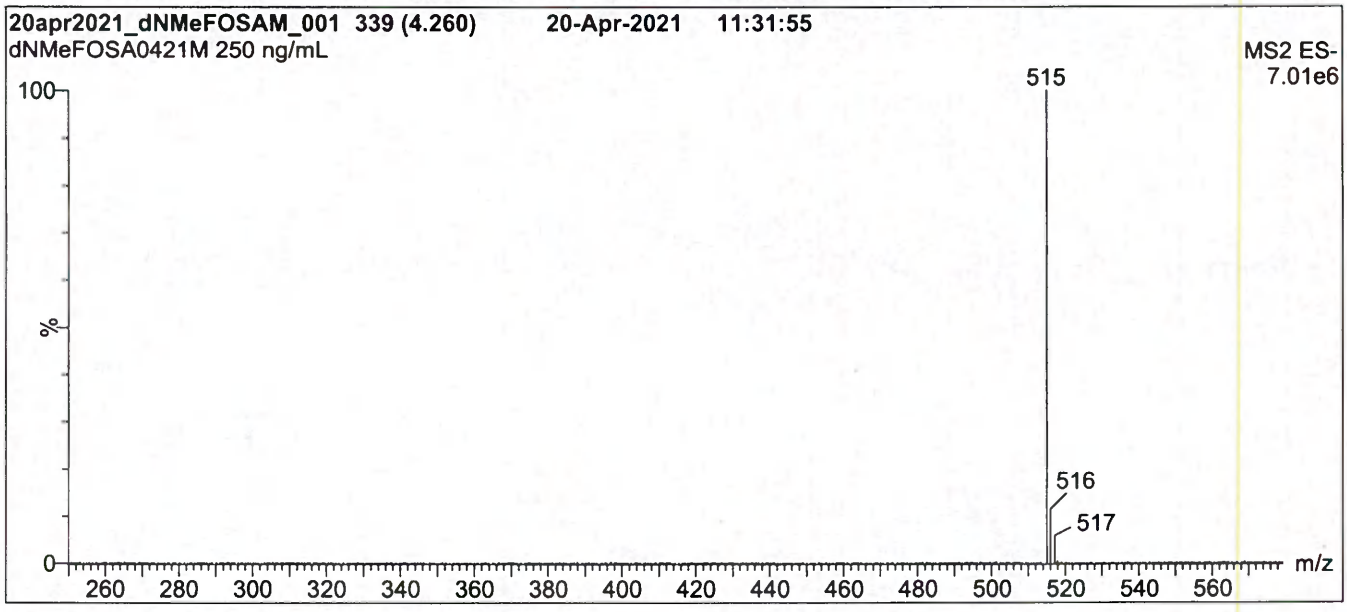
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **d-N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

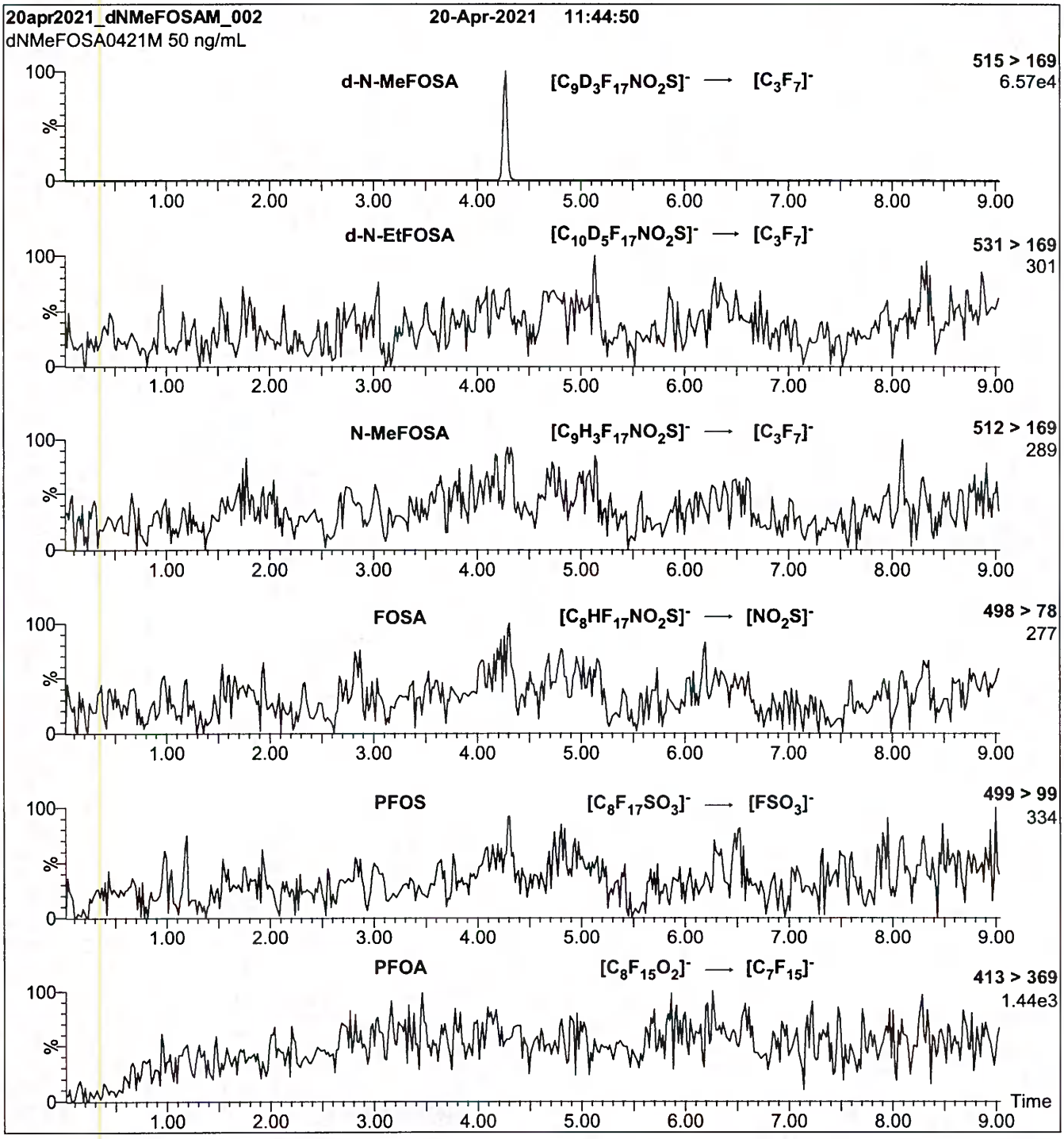
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d-N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.64e-3
Collision Energy (eV) = 24

Reagent

PFC_ST_00987

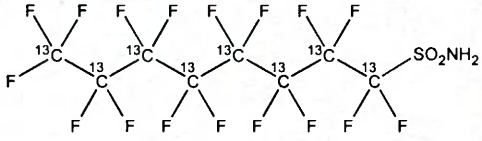
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFC-ST_00987

PRODUCT CODE: M8FOSA-I
LOT NUMBER: M8FOSA0221I
COMPOUND: Perfluoro-1-($^{13}C_8$)octanesulfonamide

STRUCTURE:
CAS #: 1365803-60-6



MOLECULAR FORMULA:	$^{13}C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	507.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	03/02/2021		
EXPIRY DATE: (mm/dd/yyyy)	03/02/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~1.0% of perfluoro-1-($^{13}C_4$)octanesulfonamide and ~0.2% of perfluoro-1-($^{13}C_7$)heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/17/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

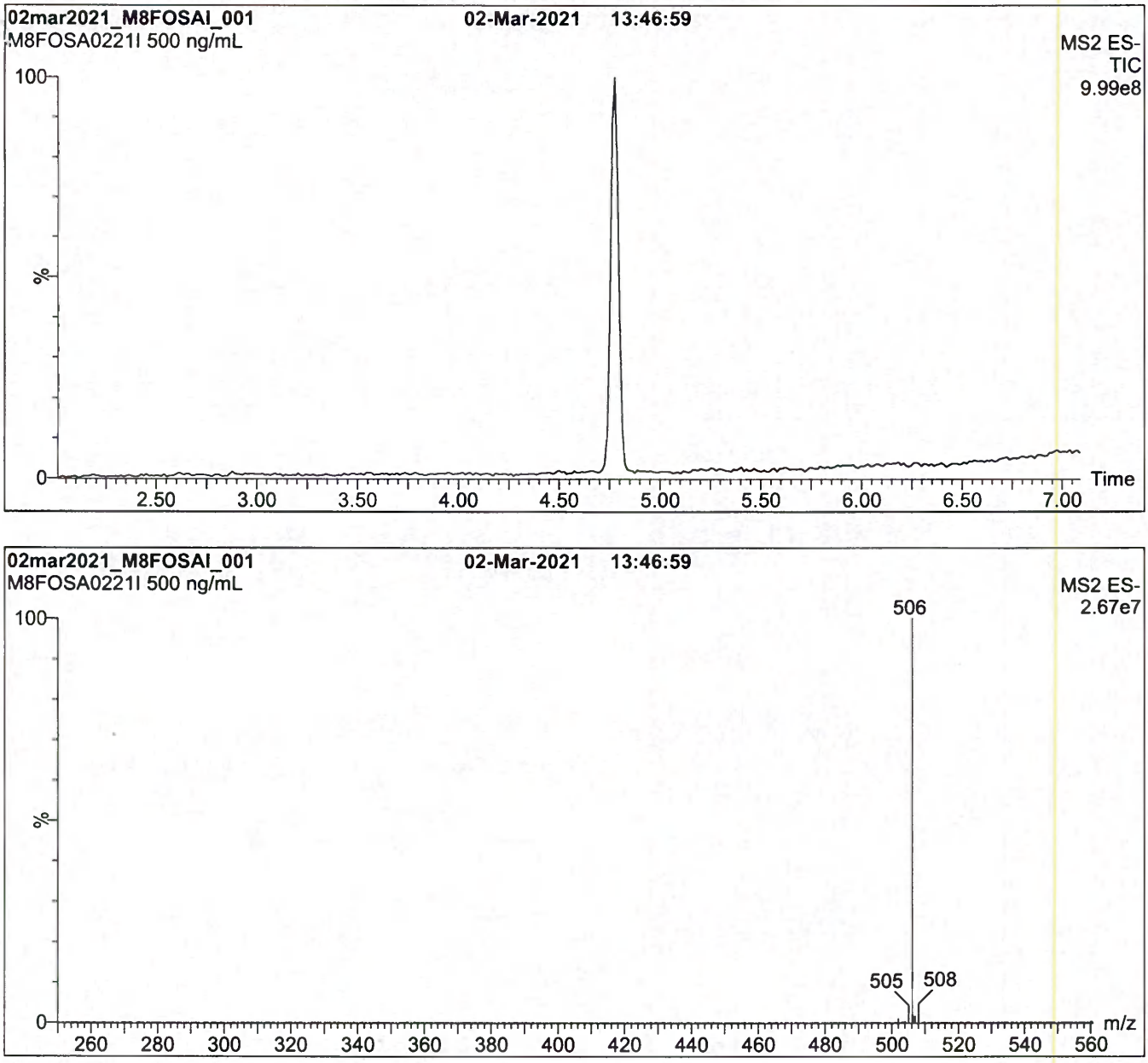
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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **M8FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

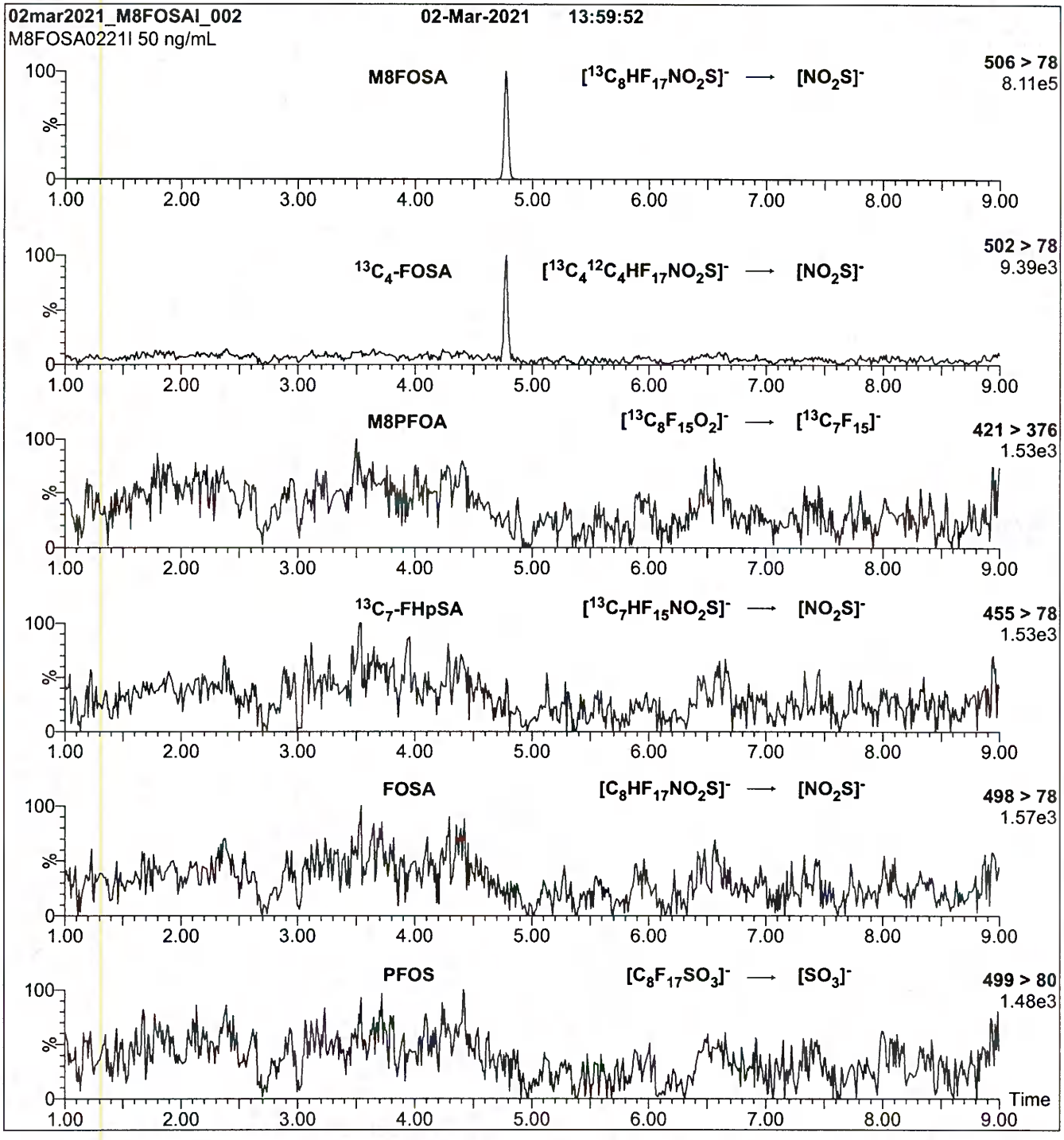
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 30

Reagent

PFC_ST_00997

997

410-1563131

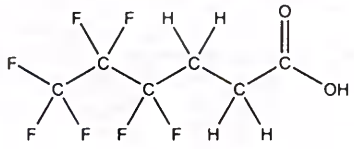
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid
LOT NUMBER: FPrPA1020

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA:	$C_6H_5F_7O_2$	**MOLECULAR WEIGHT:**	242.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/12/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/12/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/27/2020 (mm/dd/yyyy)
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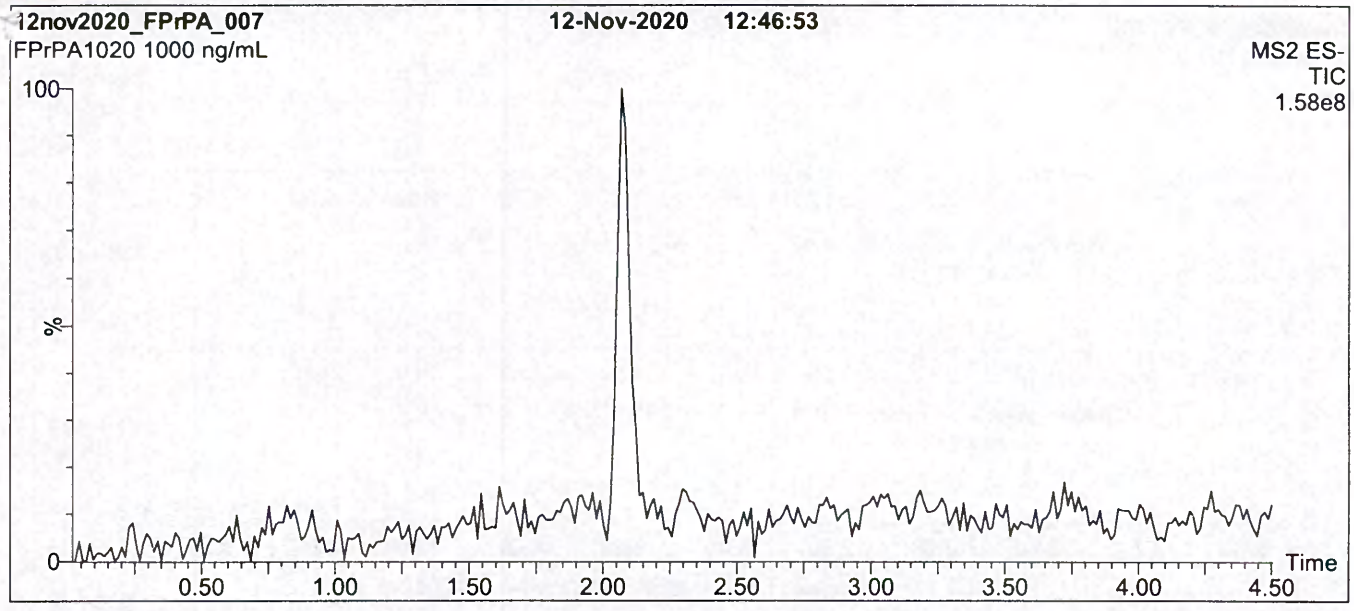
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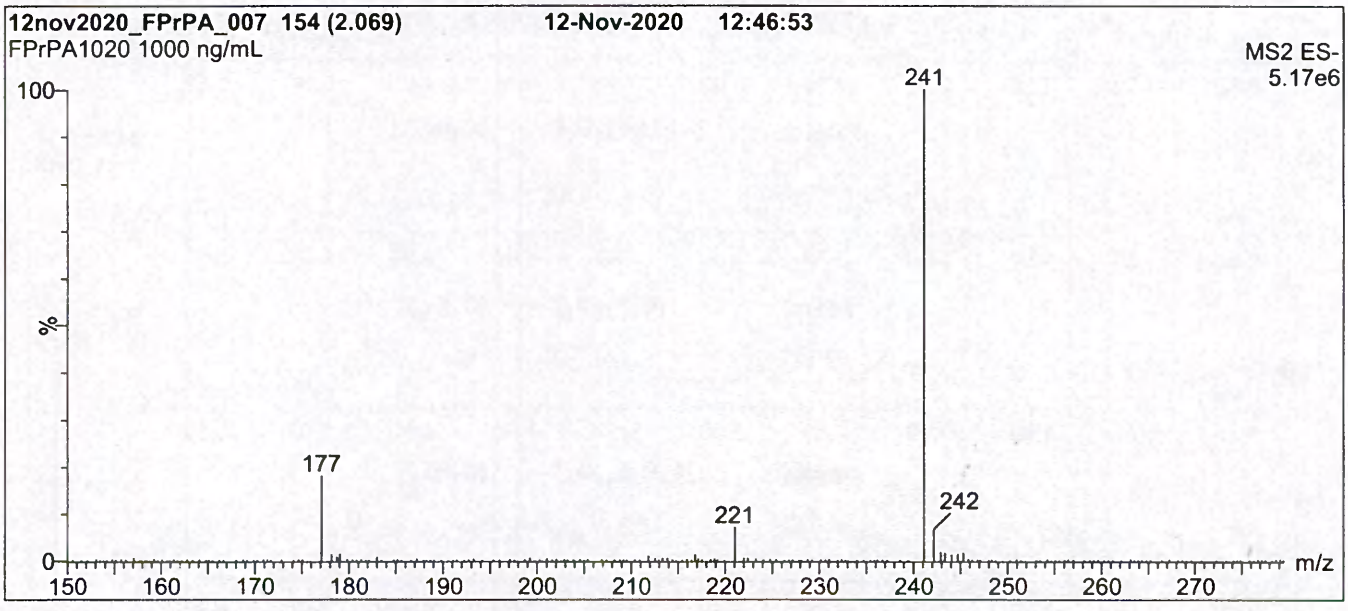
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **FPrPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

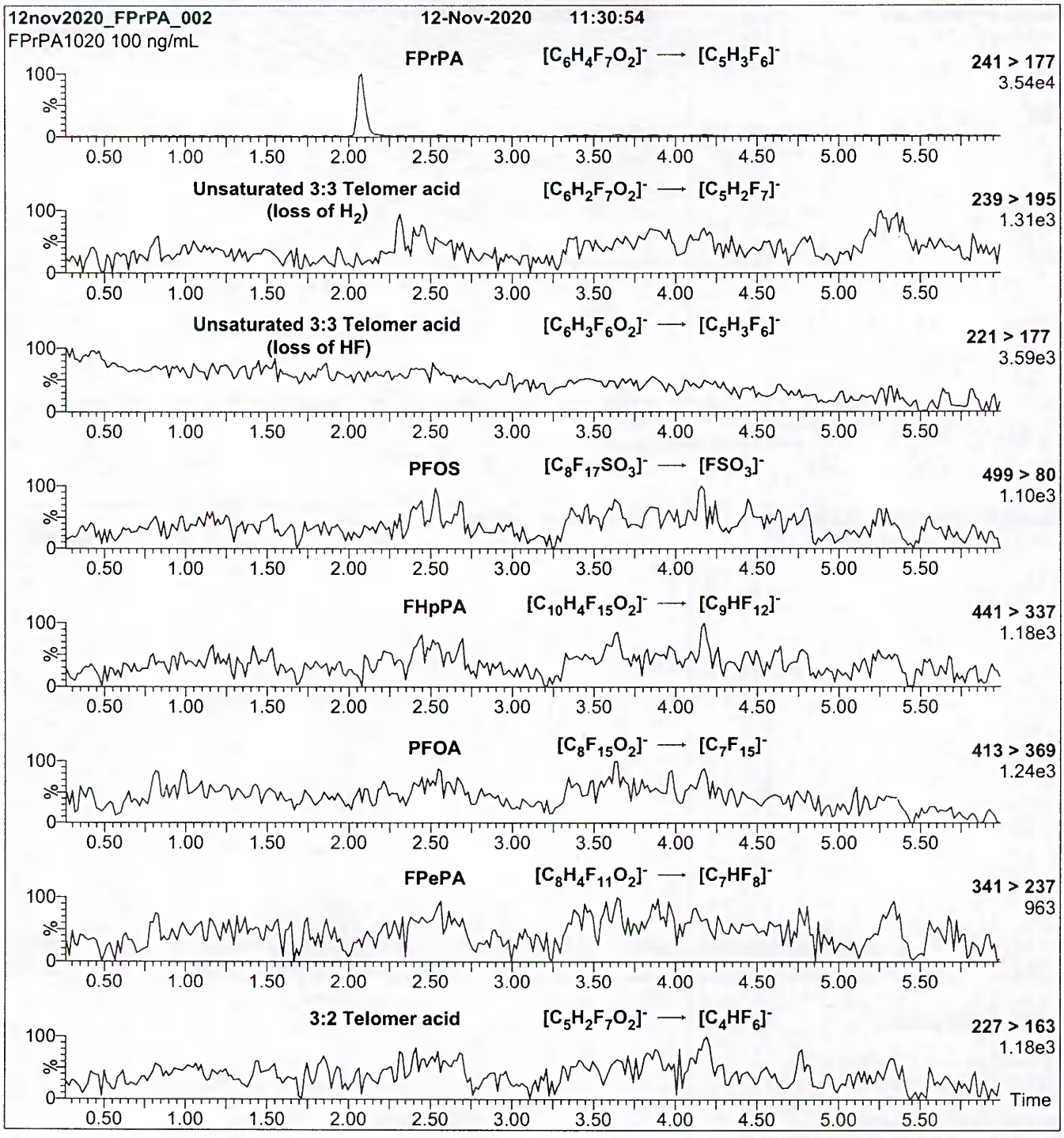
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FPrPA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_00998

998

410-1560134

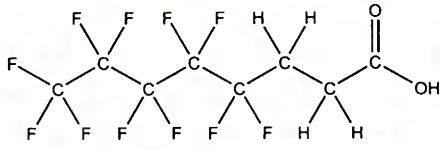
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid
LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA:	$C_8H_5F_{11}O_2$	**MOLECULAR WEIGHT:**	342.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/11/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/11/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/27/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

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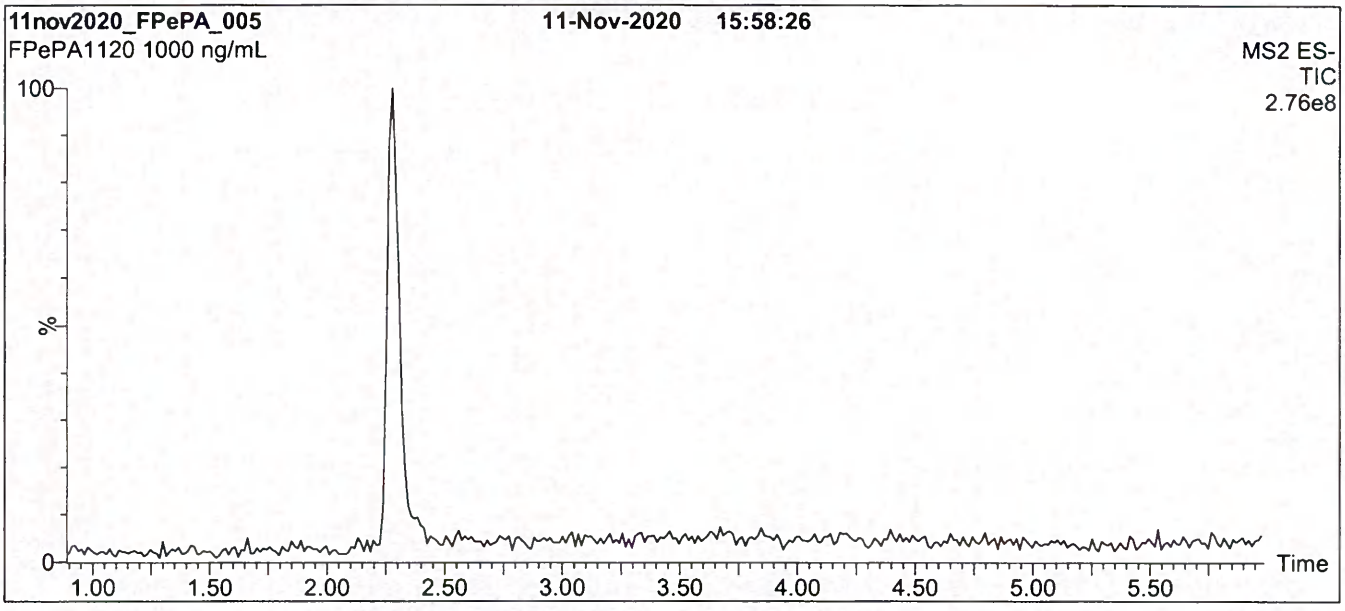
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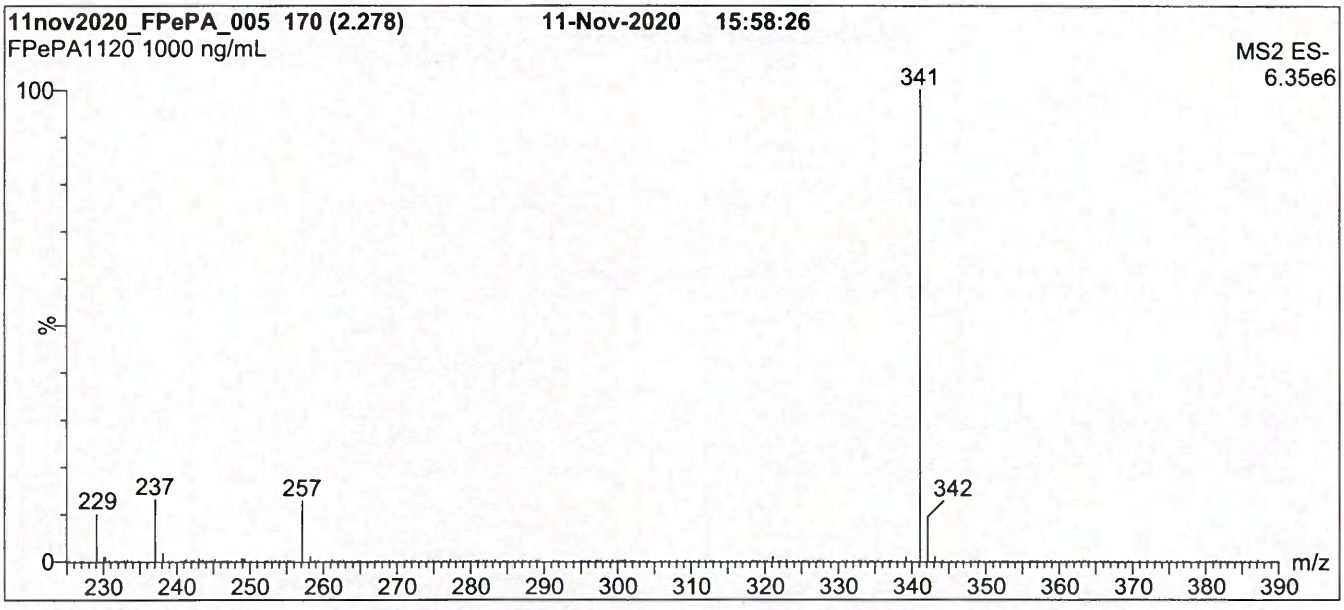
CALA Testing Accreditation No. A1226

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Figure 1: **FPePA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

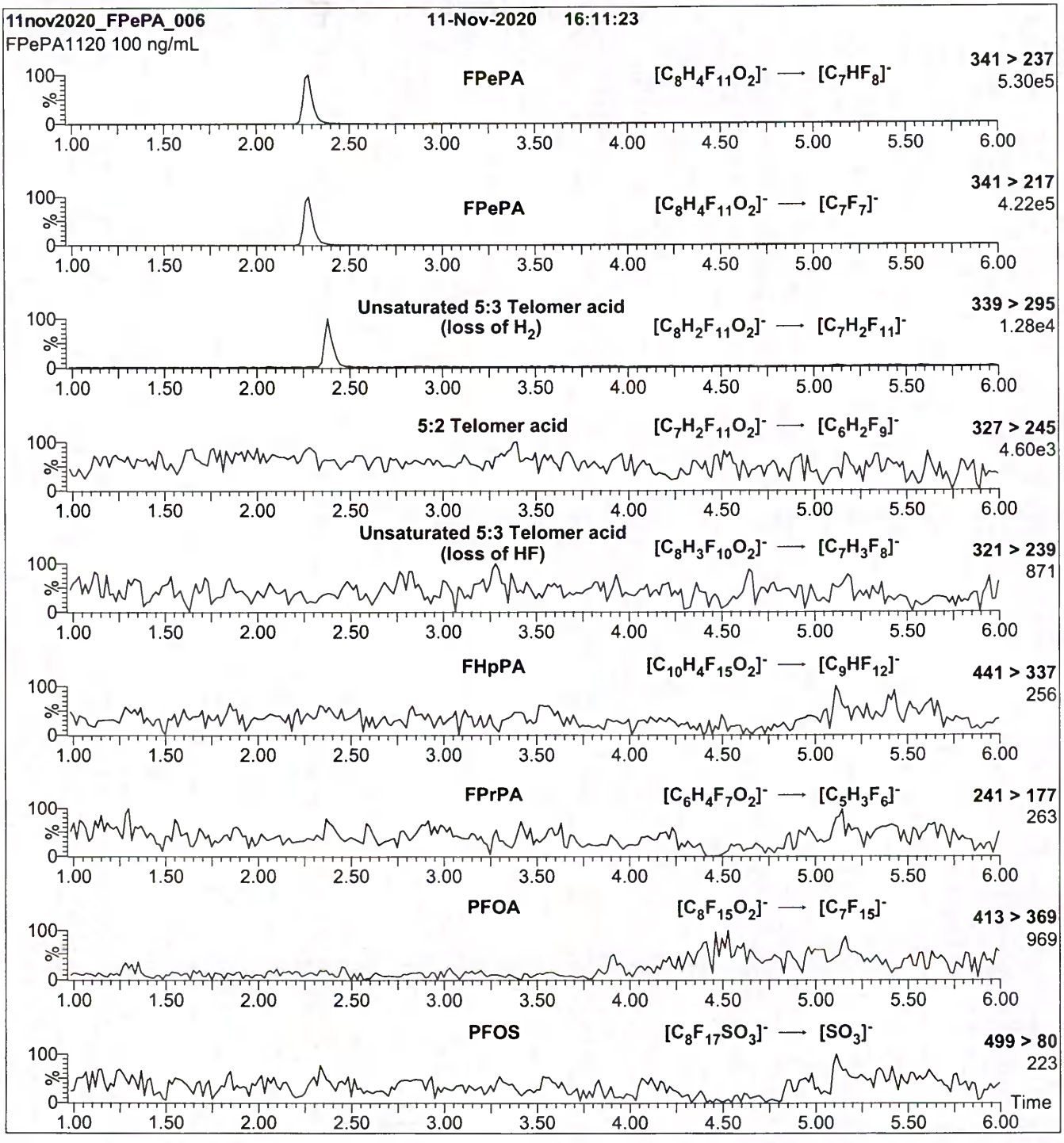
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FPePA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 10

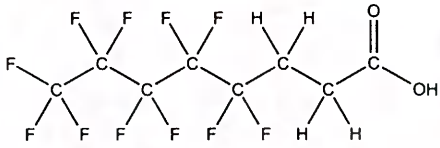
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid
LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA:	$C_8H_5F_{11}O_2$	**MOLECULAR WEIGHT:**	342.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/11/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/11/2025		
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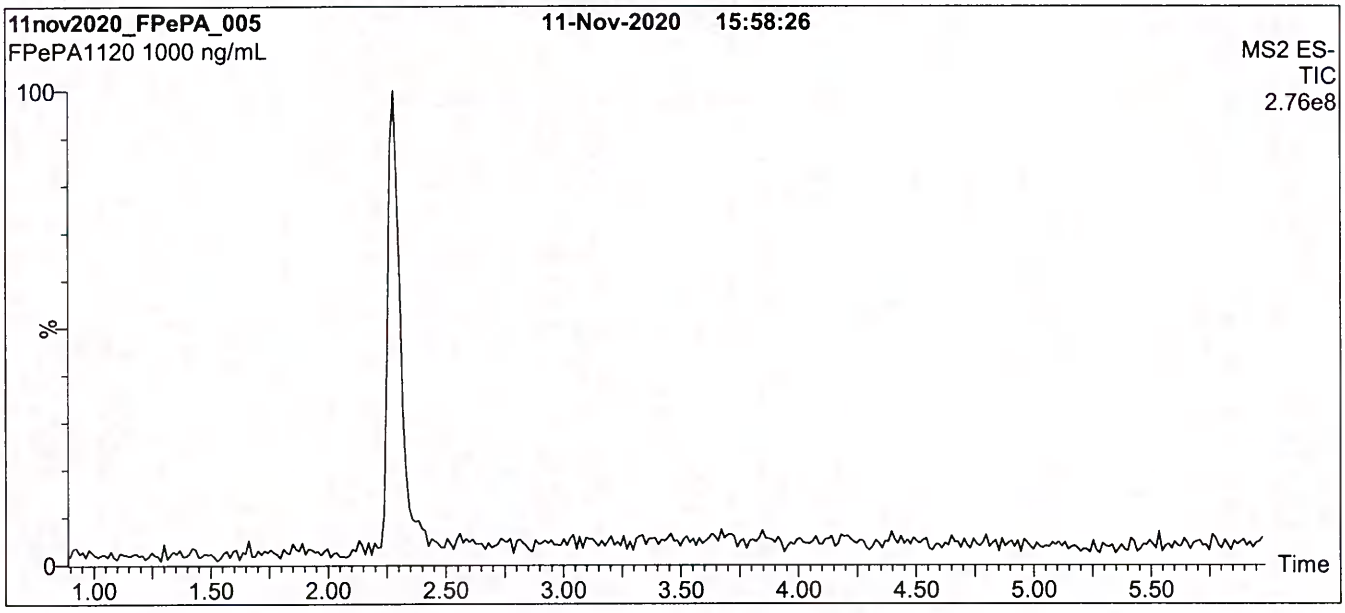
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

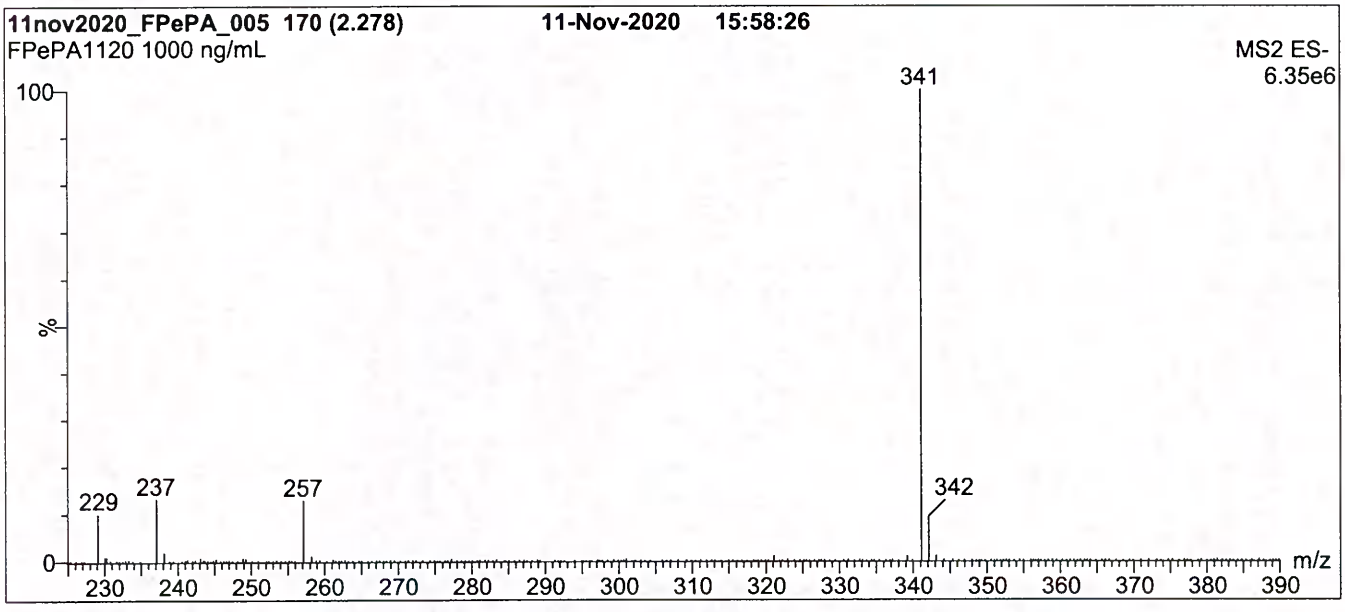
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **FPePA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

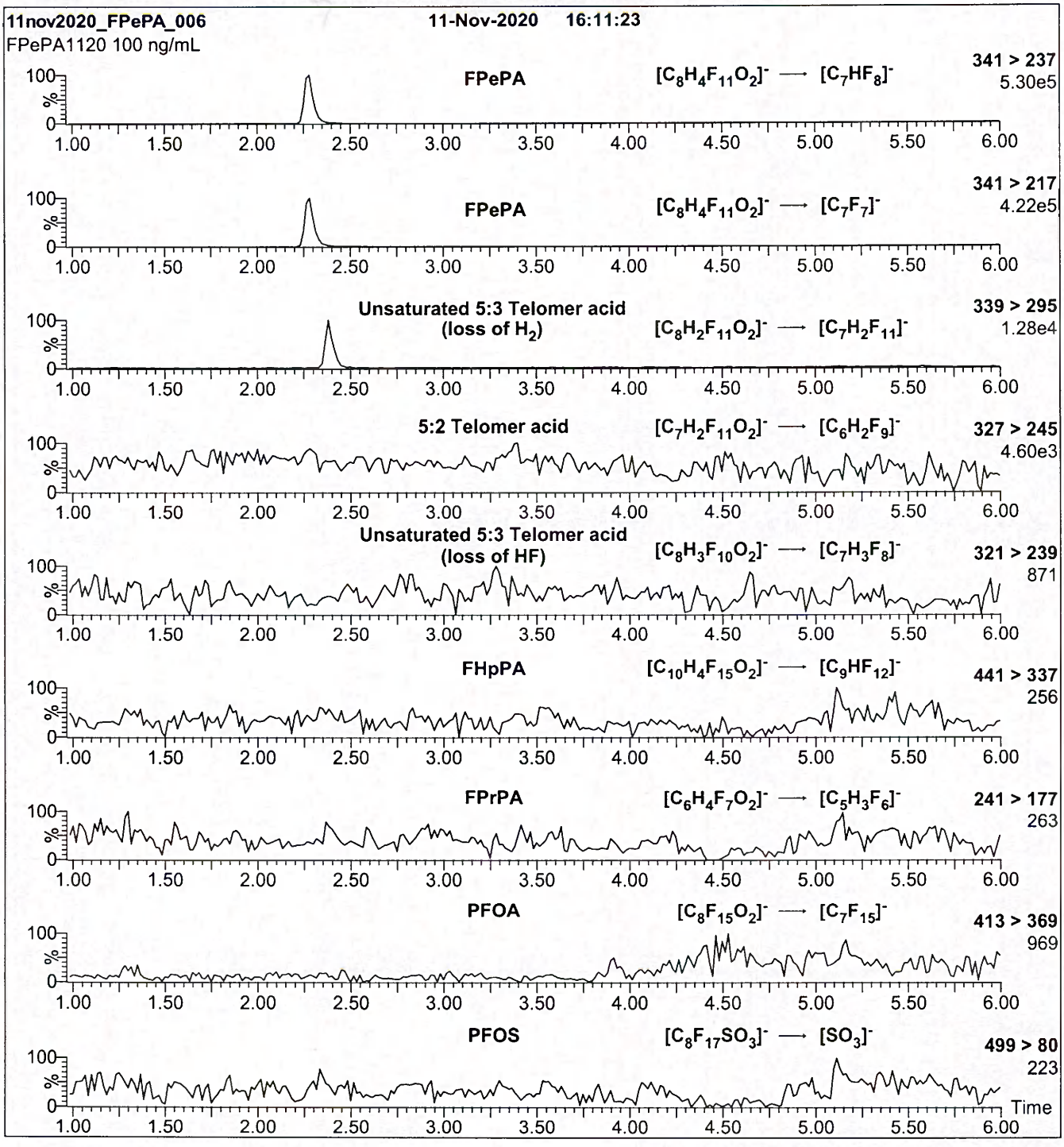
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FPePA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_00999

410-1563138

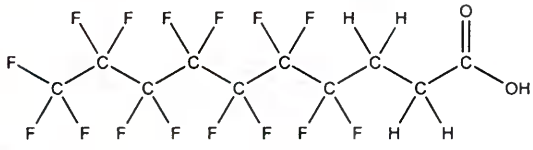
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FHpPA
COMPOUND: 3-Perfluoroheptyl propanoic acid
LOT NUMBER: FHpPA1020

STRUCTURE:

CAS #: 812-70-4



MOLECULAR FORMULA: $C_{10}H_5F_{15}O_2$
MOLECULAR WEIGHT: 442.12
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/12/2020
EXPIRY DATE: (mm/dd/yyyy) 11/12/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/27/2020
(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

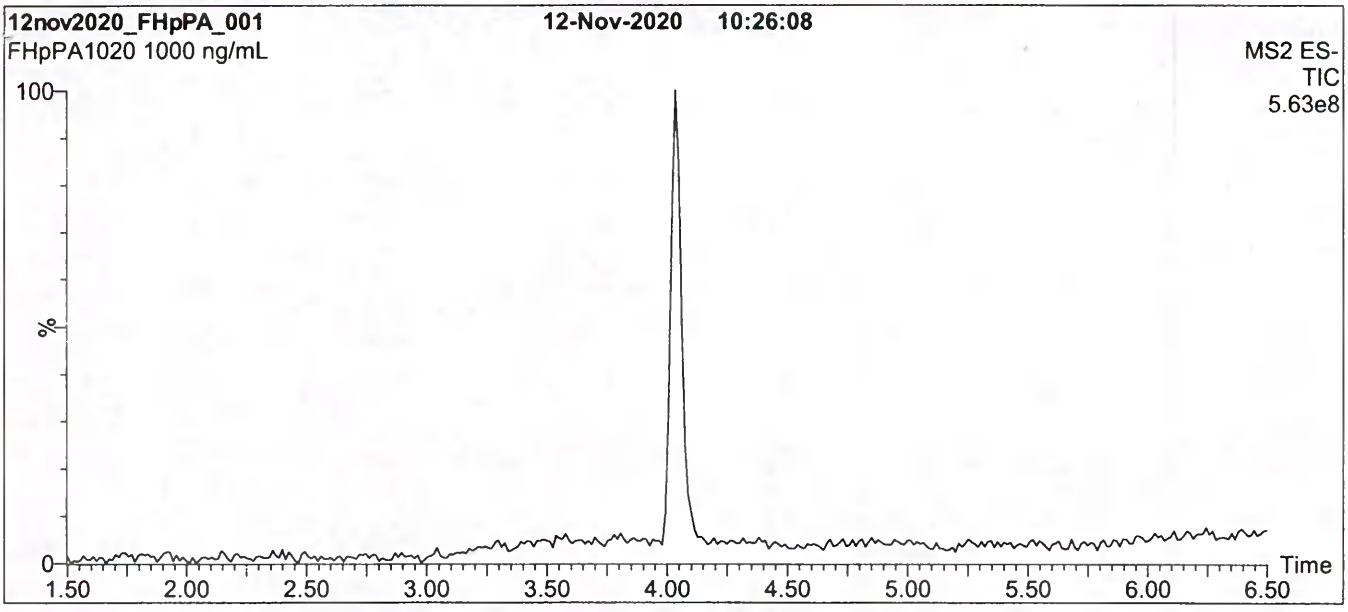
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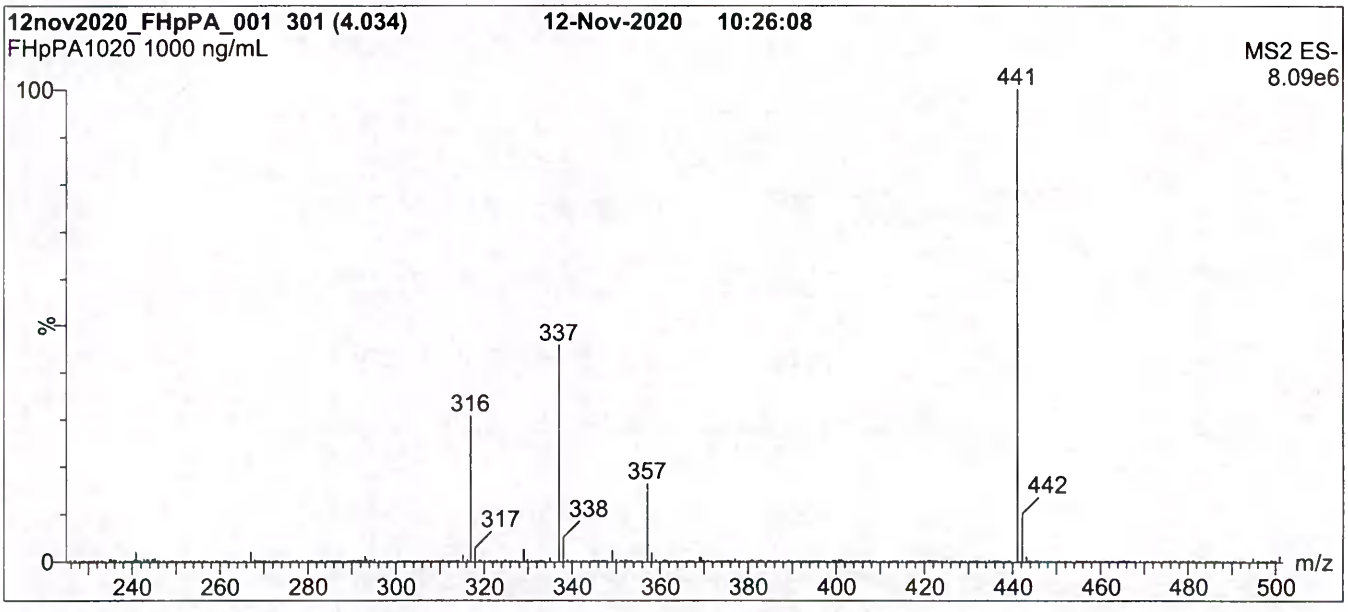
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **FHpPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

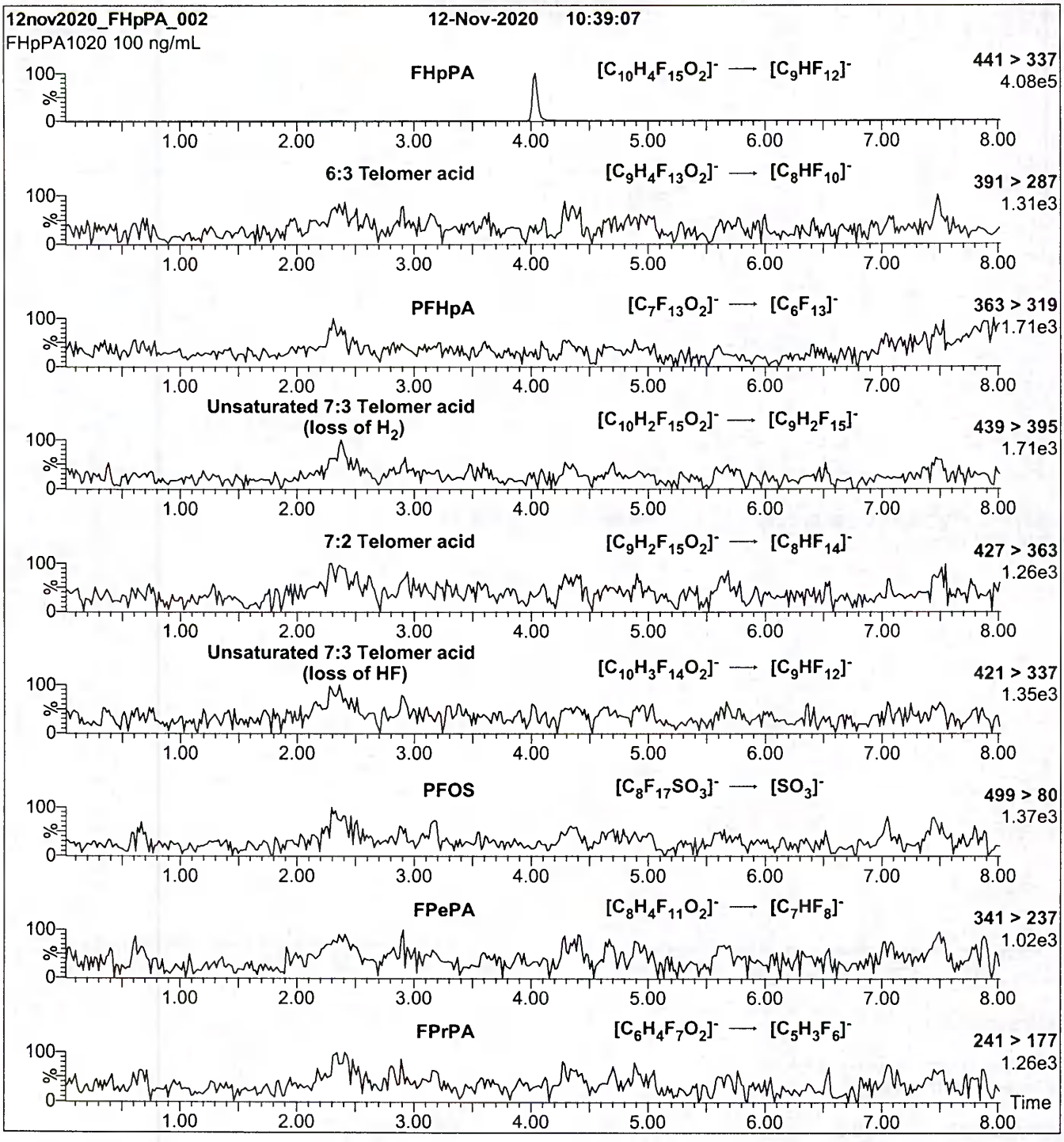
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FHpPA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 8

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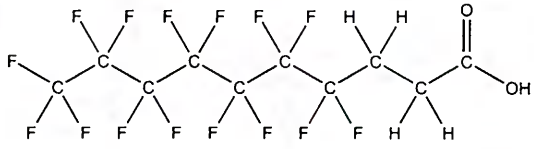
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FHpPA
COMPOUND: 3-Perfluoroheptyl propanoic acid
LOT NUMBER: FHpPA1020

STRUCTURE:

CAS #: 812-70-4



MOLECULAR FORMULA:	$C_{10}H_5F_{15}O_2$	**MOLECULAR WEIGHT:**	442.12
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/12/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/12/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/27/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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SYNTHESIS / CHARACTERIZATION:

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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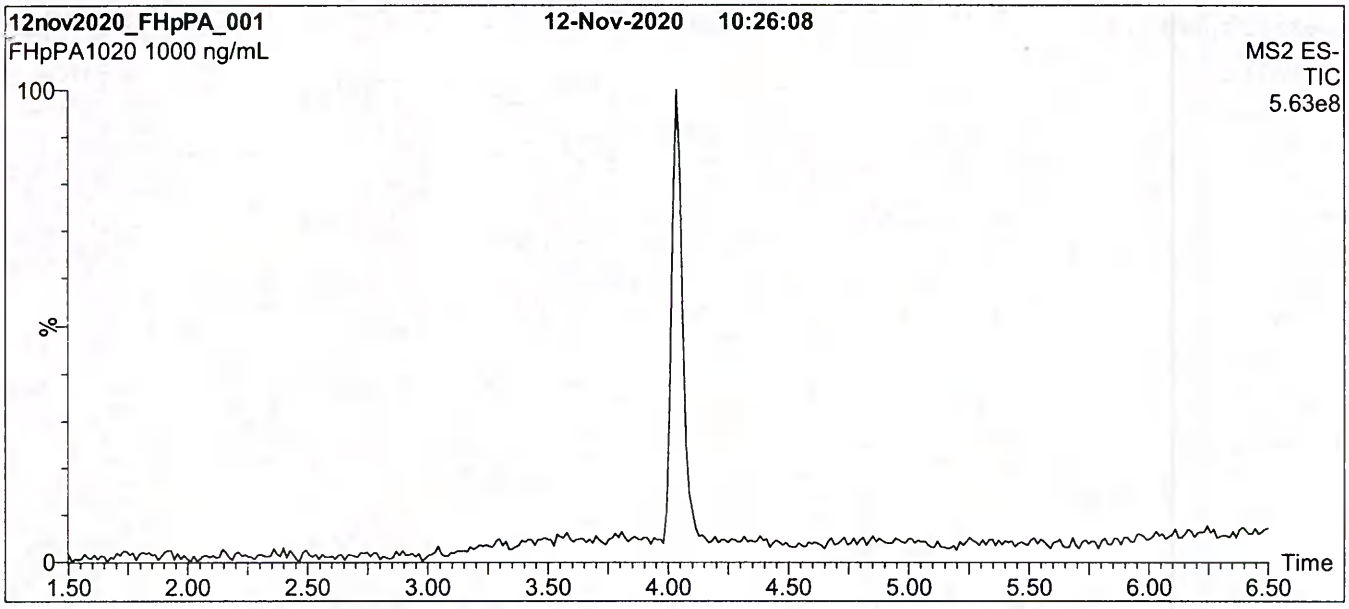
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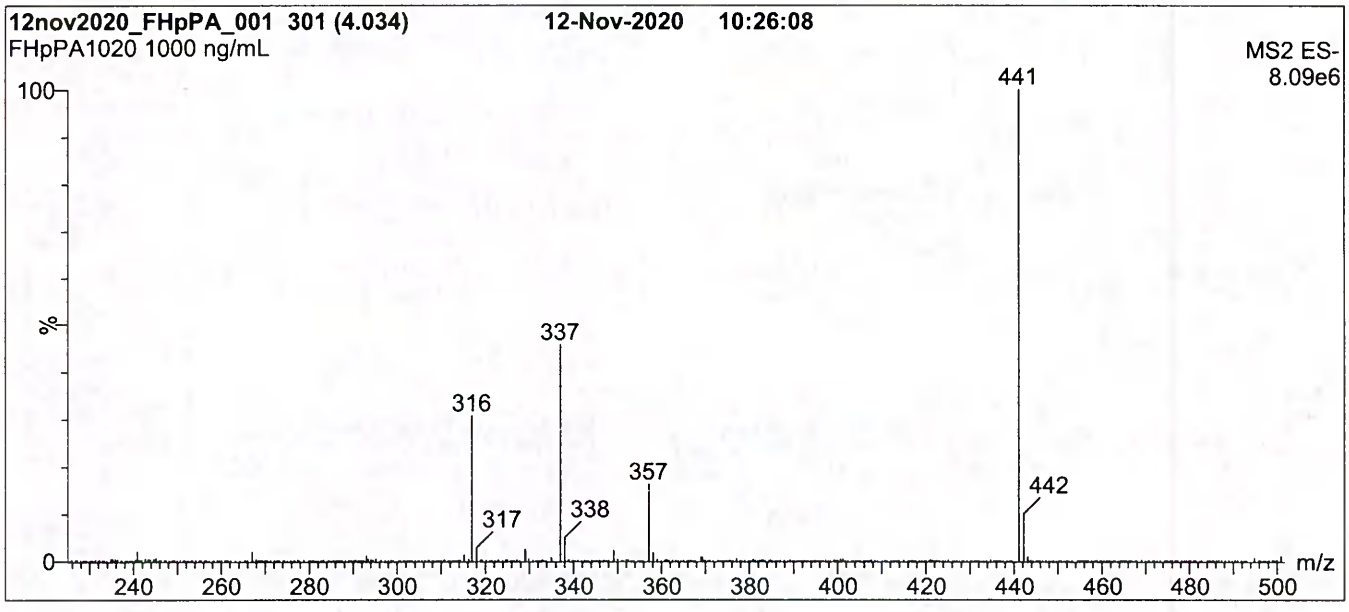
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **FHpPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

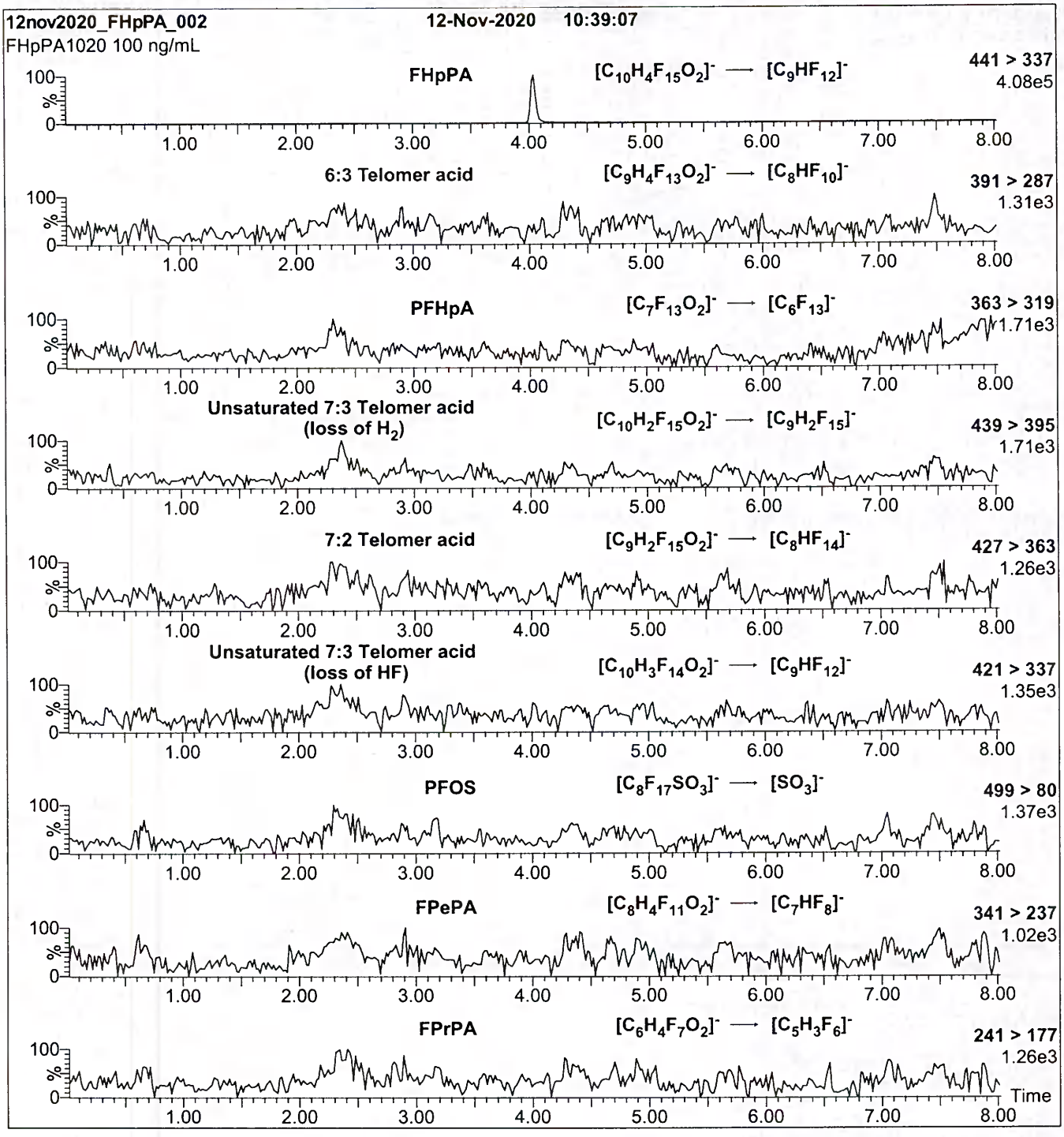
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FHpPA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 8

Reagent

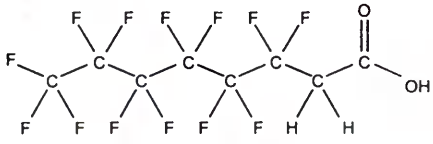
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10000

410-1563139

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FHEA	**LOT NUMBER:**	FHEA0321
COMPOUND:	2-Perfluorohexyl ethanoic acid		
STRUCTURE:		**CAS #:**	53826-12-3
MOLECULAR FORMULA:	$C_8H_3F_{13}O_2$	**MOLECULAR WEIGHT:**	378.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/08/2021		
EXPIRY DATE: (mm/dd/yyyy)	03/08/2024		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.3% of 2H-Perfluoro-2-octenoic acid (FHUEA).
- This solution contains 3 molar equivalents of HCl to minimize degradation.
- The saturated telomer acid very slowly degrades to FHUEA in isopropanol. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/10/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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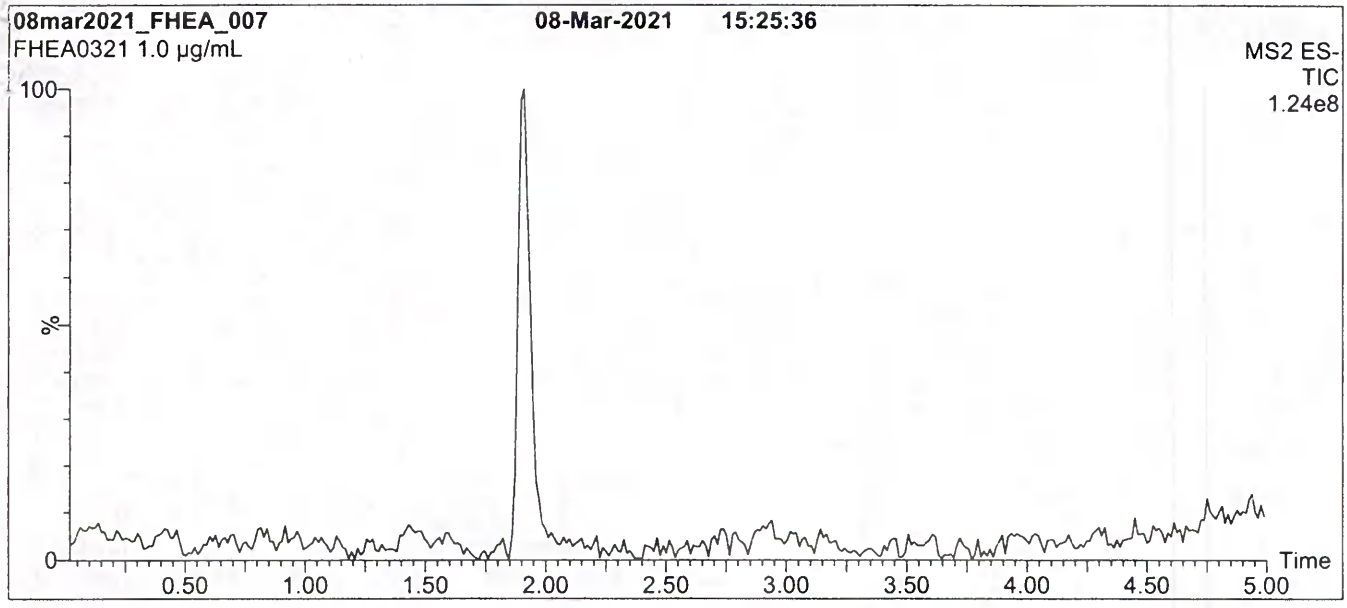
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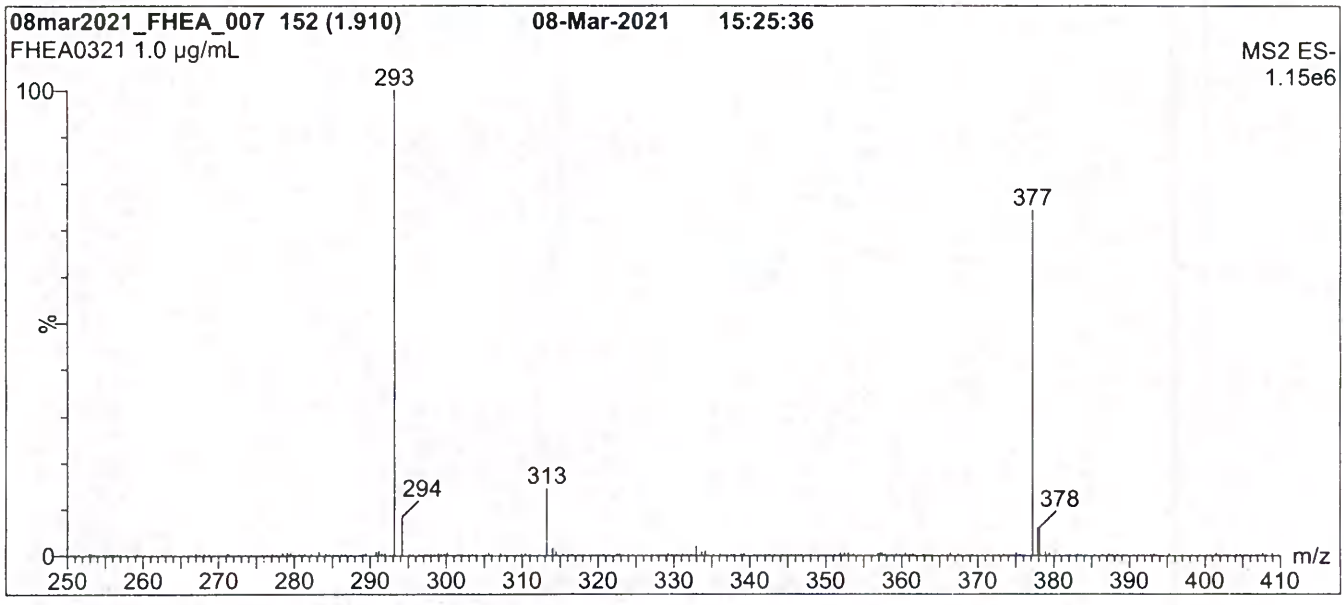
CALA Testing Accreditation No. A1226

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Figure 1: **FHEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min before returning to initial conditions in 0.75 min.
Time: 12 min

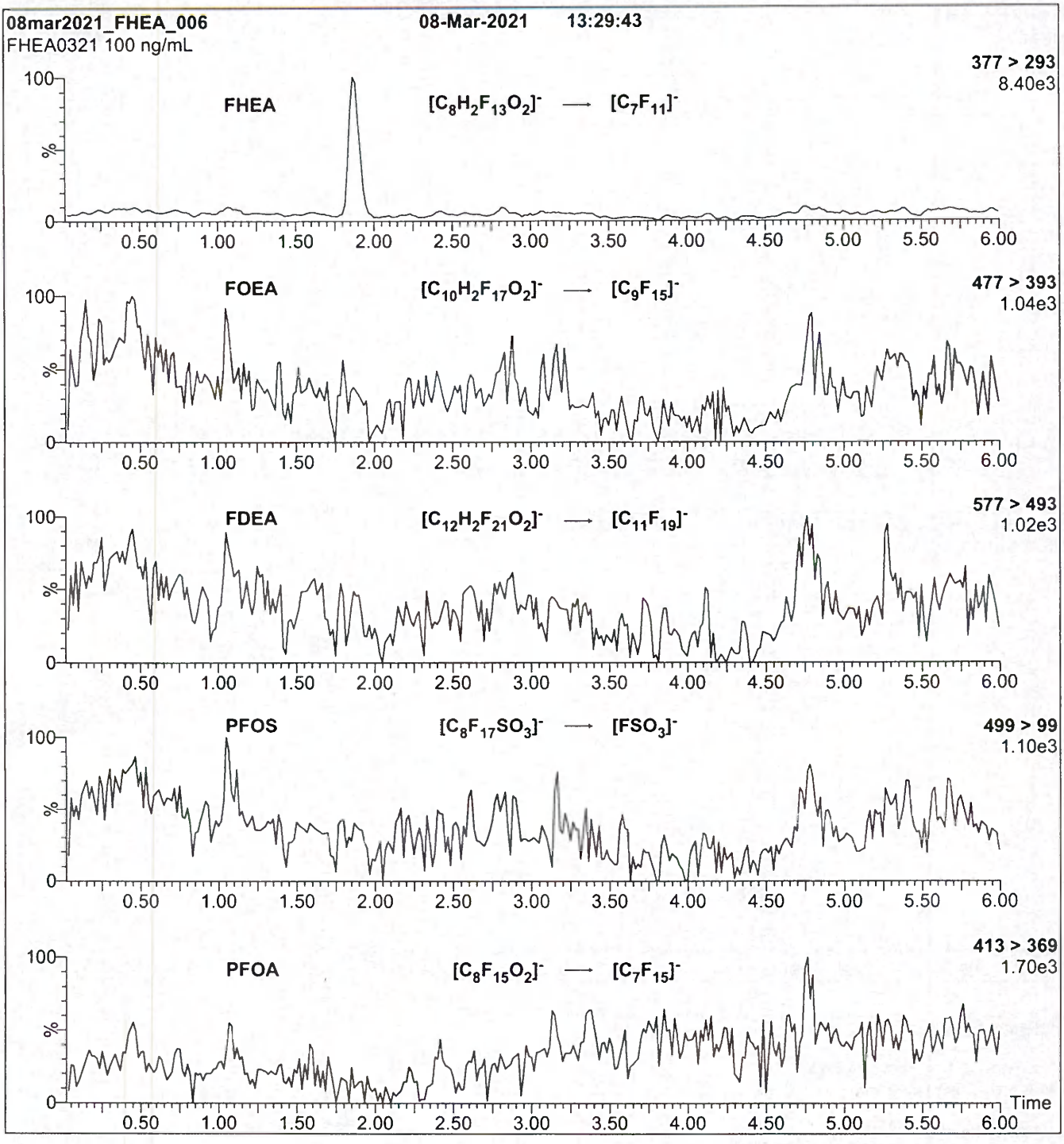
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FHEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FHEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_01004

1004

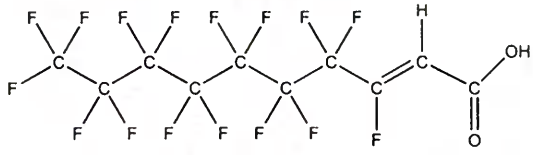
410-1563147

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FOUEA
LOT NUMBER: FOUEA0321
COMPOUND: 2H-Perfluoro-2-decenoic acid

STRUCTURE:
CAS #: 70887-84-2



MOLECULAR FORMULA:	$C_{10}H_2F_{16}O_2$	**MOLECULAR WEIGHT:**	458.10
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Anhydrous Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/29/2021		
EXPIRY DATE: (mm/dd/yyyy)	03/29/2023		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-decenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.
- Contains < 0.1% of 2H-perfluoro-2-octenoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/01/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

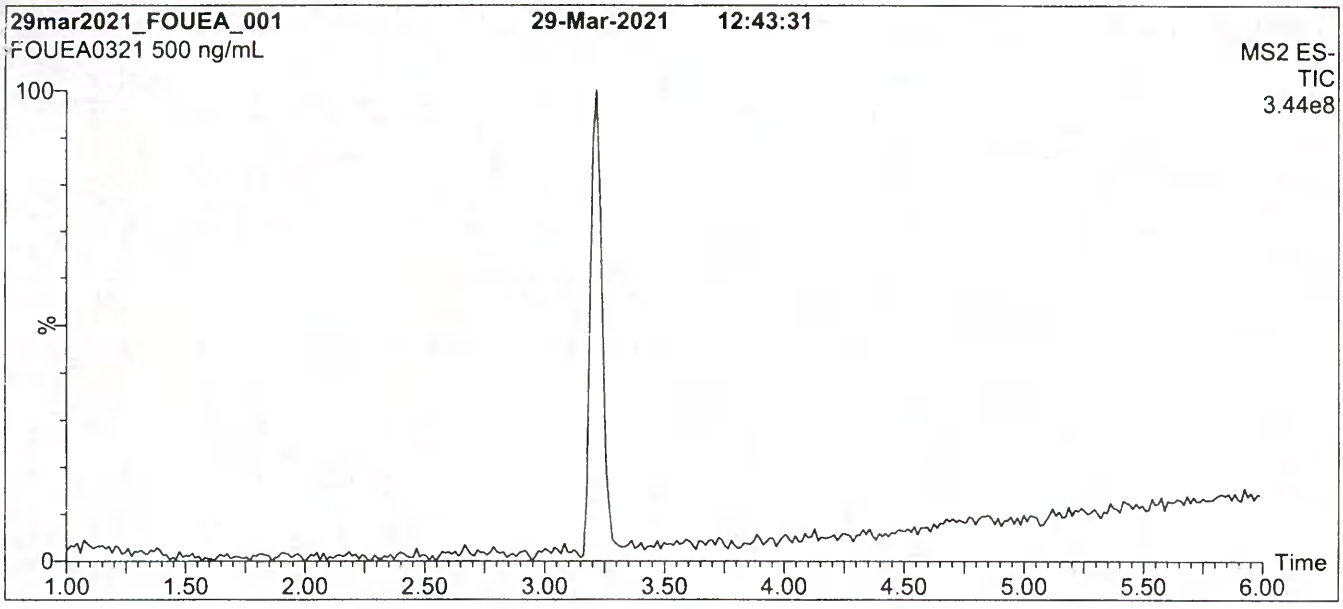
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

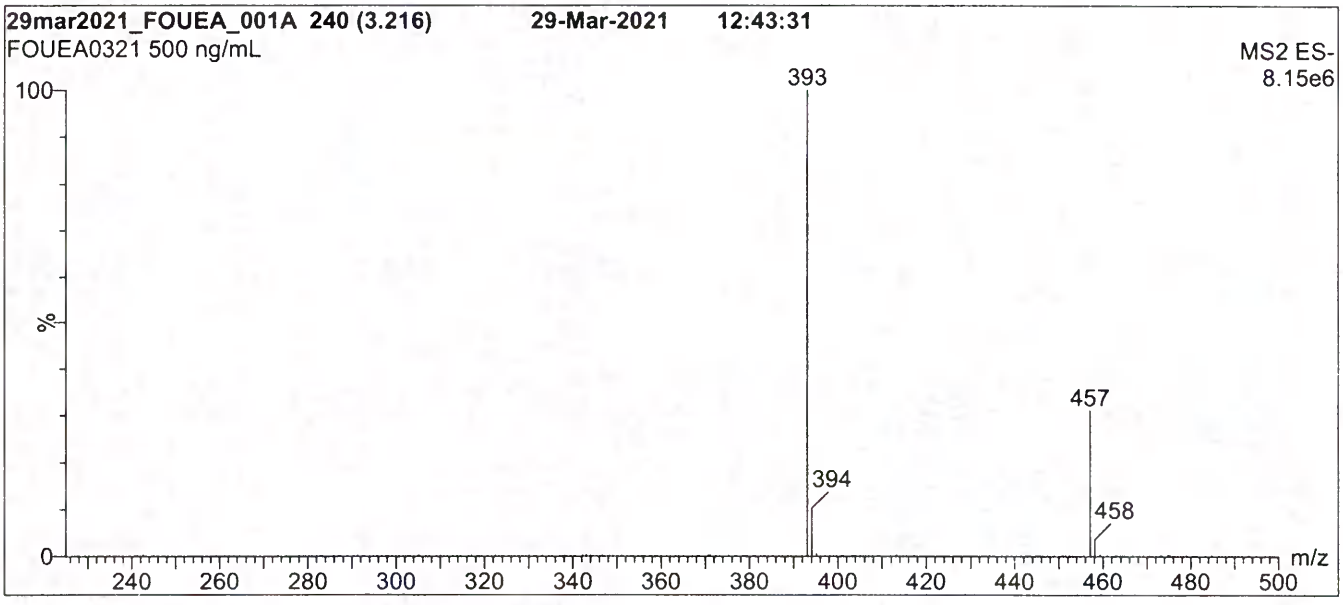
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **FOUEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

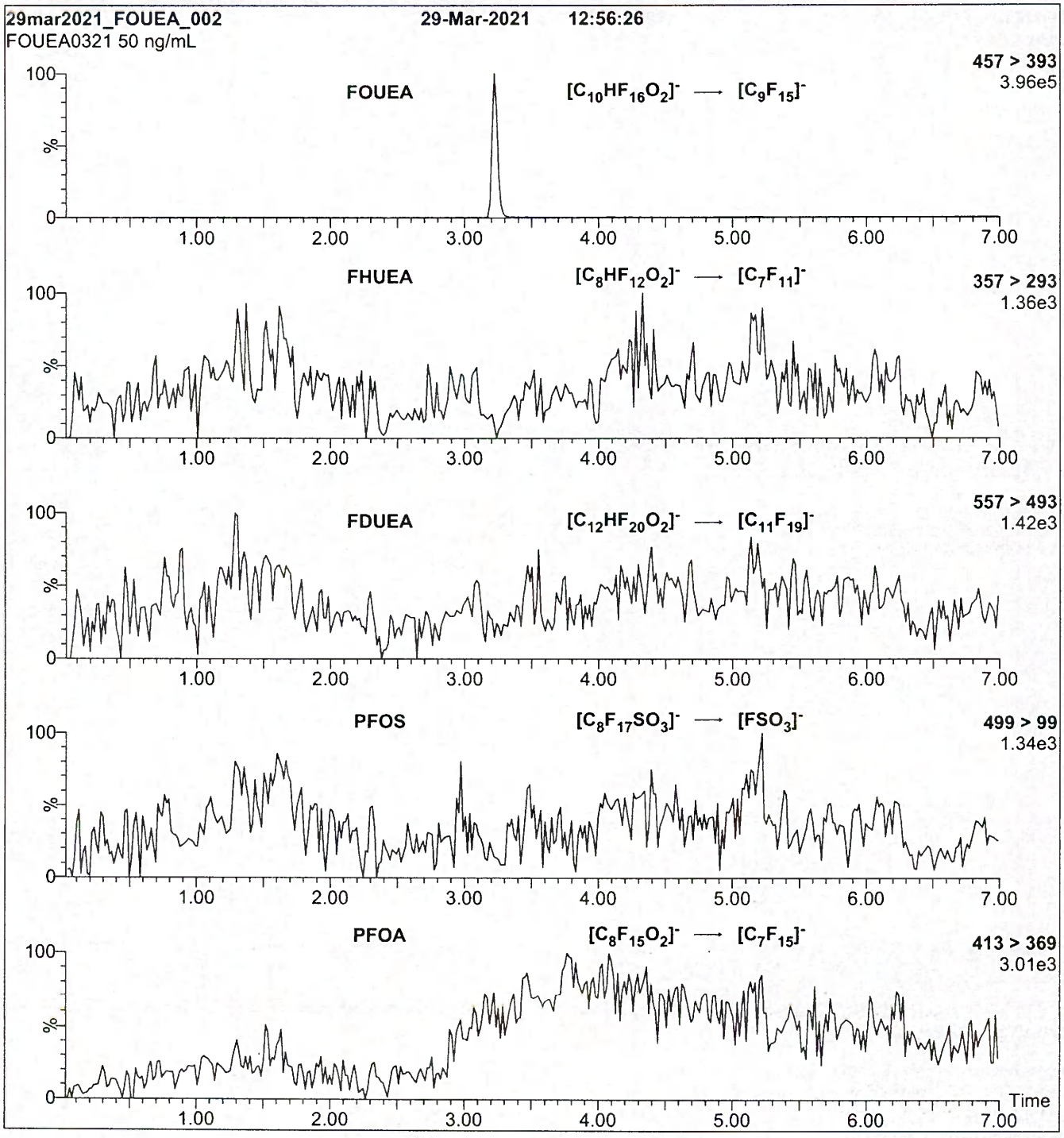
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FOUEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FOUEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_01013

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	T-PFOA	**LOT NUMBER:**	TPFOA0121
COMPOUND:	Ammonium perfluorooctanoate (Technical Grade)		
STRUCTURE:	(see Table A)	**CAS #:**	3825-26-1 (for linear ammonium perfluorooctanoate)
MOLECULAR FORMULA:	$C_8F_{15}O_2NH_4$		
CONCENTRATION:	50.0 ± 2.5 µg/mL (gravimetric)		
CHEMICAL PURITY:	Technical material		
SOLVENT(S):	Methanol/Water (<1%)		
LAST TESTED: (mm/dd/yyyy)	01/08/2021		
EXPIRY DATE: (mm/dd/yyyy)	01/08/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

410-1589366

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)
Figure 4: LC/MS Elution Profile of the Perfluorooctanoic Acid Isomers

ADDITIONAL INFORMATION:

- See page 2 for further details.
- This technical mixture is >97% ammonium perfluorooctanoate (branched and linear isomers). The remaining 3% consists of common impurities such as the perfluoroheptanoic and perfluorohexanoic acids.
- It is recommended that this solution be used as a *qualitative or semi-quantitative standard only*.
- Contains 4 mole eq. of NaOH to prevent conversion of any carboxylic acids to their corresponding methyl esters.
- The molecular weight of perfluoro-n-octanoic acid is 414.07 g/mol.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/17/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used for the identification and/or quantification of the specific chemical compound(s) it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

CHARACTERIZATION / HOMOGENEITY:

This product is a technical mixture obtained from an industrial manufacturer. It has been characterized as to its content and components using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Testing of samples in solution has shown it to be homogeneous. As this product is a technical mixture, it should be used to quantitate the listed components at the end user's discretion. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **T-PFOA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR
1	Ammonium perfluoro-n-octanoate		79
2	Ammonium 6-trifluoromethylperfluoroheptanoate		9.0
3	Ammonium 5-trifluoromethylperfluoroheptanoate		4.5
4	Ammonium 4-trifluoromethylperfluoroheptanoate		4.0
5	Ammonium 3-trifluoromethylperfluoroheptanoate		3.0
6	Ammonium 2-trifluoromethylperfluoroheptanoate		0.50
7	Ammonium 5,5-bis(trifluoromethyl)perfluorohexanoate		
8	Ammonium 4,4-bis(trifluoromethyl)perfluorohexanoate		
9	Ammonium 4,5-bis(trifluoromethyl)perfluorohexanoate		
10	Ammonium 3,5-bis(trifluoromethyl)perfluorohexanoate		

* Percent Composition was determined by ^{19}F-NMR. The percentages displayed are of total ammonium perfluorooctanoate isomers only (isomers are labelled in Figure 4).

Figure 1: **T-PFOA; LC/MS Data (Full Scan and Mass Spectrum)**

Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP$_{18}$
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 10 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **T-PFOA; LC/MS Data (SIR)**

Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP$_{18}$
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 10 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR of 9 channels

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-6)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **T-PFOA; LC/MS/MS Data (Selected MRM Transitions)**

Conditions for Figure 3:

Injection: On-column (T-PFOA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3

Collision Energy (eV) = 8

Figure 4: **T-PFOA; LC/MS Elution Profile of the Perfluorooctanoic Acid Isomers**

Conditions for Figure 4:

Waters Acquity Ultra Performance LC	Micromass Quattro *micro* API MS

Chromatographic Conditions:

Column:	Acquity UPLC BEH Shield RP$_{18}$ (1.7 µm, 2.1 x 100 mm)
Mobile phase:	54% H_2O / 46% (80:20 MeOH:ACN) (both with 10 mM NH_4OAc buffer) Ramp to 49% organic over 6 min and hold for 17 min. Ramp to 90% organic over 0.5 min and hold for 1 min (flush). Return to initial conditions (Total time: 26 min)
Flow:	350 µL/min

Reagent

PFC_ST_01034

Received 8/13/2021

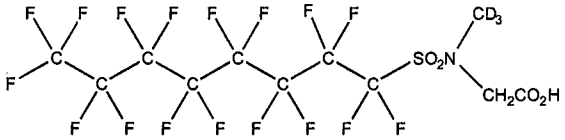
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA0521

COMPOUND: N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE:



CAS #: 1400690-70-1

537-DW-6-12-#35

B-

(3.6 mL)

410-1665574

MOLECULAR FORMULA:	$C_{11}D_3H_3F_{17}NO_4S$	**MOLECULAR WEIGHT:**	574.23
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_3$
LAST TESTED: (mm/dd/yyyy)	06/08/2021		
EXPIRY DATE: (mm/dd/yyyy)	06/08/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

C:

1673765
D: PFC_ST_01034
Exp: 06/08/26 Prpd: PY4D
Labeled d3-N-MeFOSAA Stoc

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

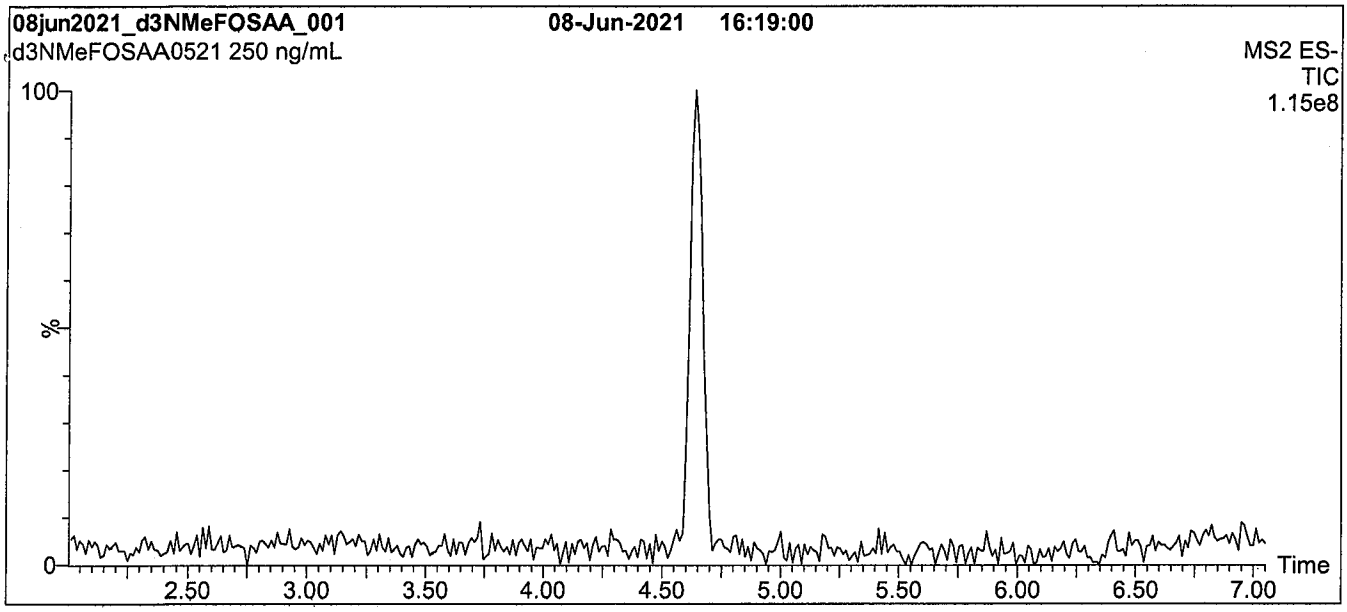
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

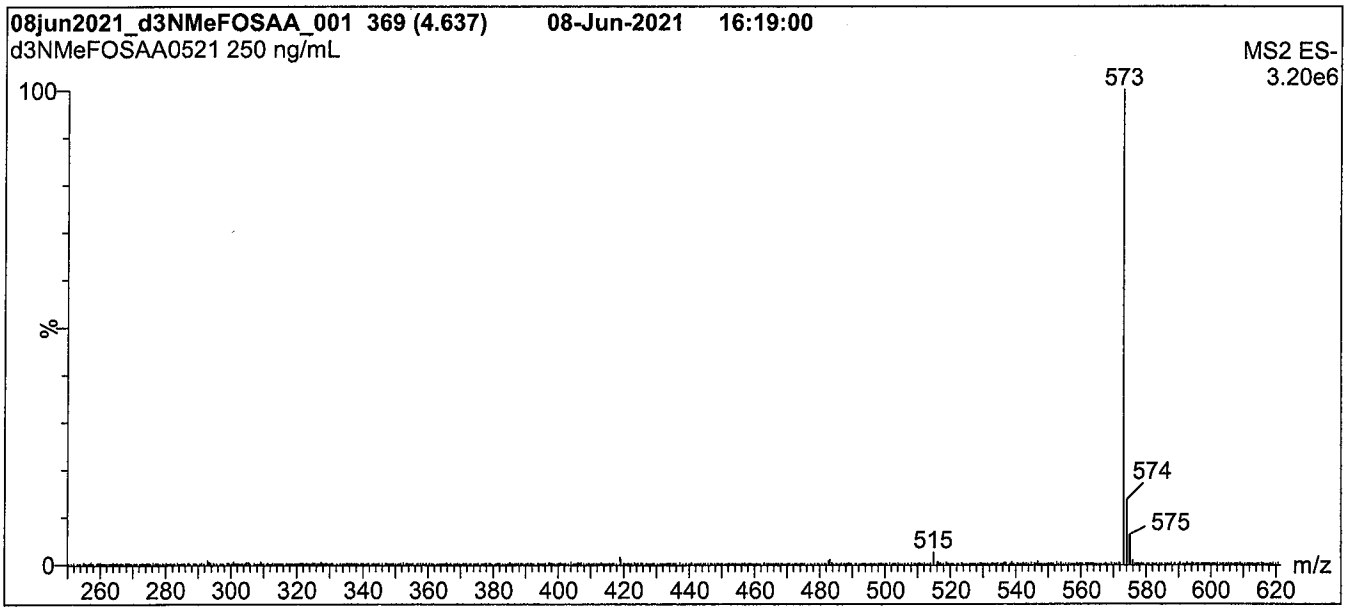
Certified By: _____ **Date:** 06/16/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 1: **d3-N-MeFOSAA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Reagent

PFC_ST_01072

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-537PDS-R1

Native PFAS Primary Dilution Standard Solution/Mixture

PRODUCT CODE:	EPA-537PDS-R1
LOT NUMBER:	537PDSR10521
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	05/25/2021
LAST TESTED: (mm/dd/yyyy)	06/01/2021
EXPIRY DATE: (mm/dd/yyyy)	06/01/2024
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

EPA-537PDS-R1 is a solution/mixture of native linear perfluoroalkylcarboxylic acids (PFCAs; C_6-C_{14}), native perfluoroalkylsulfonates (PFSAs; C_4 linear; C_6 and C_8 linear and branched), native N-substituted perfluorooctanesulfonamidoacetic acids (N-MeFOSAA and N-EtFOSAA; linear and branched), GenX (HFPO-DA), the main components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and the sodium salt of ADONA (NaDONA). The components and their concentrations are given in Table A.

The components of this solution/mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-537PDS-R1; Components and Concentrations (± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-hexanoic acid	PFHxA	2000	B
Perfluoro-n-heptanoic acid	PFHpA	2000	D
Perfluoro-n-octanoic acid	PFOA	2000	H
Perfluoro-n-nonanoic acid	PFNA	2000	I
Perfluoro-n-decanoic acid	PFDA	2000	M
Perfluoro-n-undecanoic acid	PFUdA	2000	R
Perfluoro-n-dodecanoic acid	PFDoA	2000	T
Perfluoro-n-tridecanoic acid	PFTrDA	2000	U
Perfluoro-n-tetradecanoic acid	PFTeDA	2000	V
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000	C
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	1520	O
	N-MeFOSAA: ∑ branched isomers	480	N
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	1550	Q
	N-EtFOSAA: ∑ branched isomers	450	P

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	A
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	1620	1480	G
	PFHxSK: ∑ branched isomers	378	345	F
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	1580	1460	K
	PFOSK: ∑ branched isomers	422	392	J
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	E
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	L
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	S

* Concentrations have been rounded to three significant figures.

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

Table B: **N-MeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: **N-EtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	0.3	
9	Other Unidentified Isomers		1.3	

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**

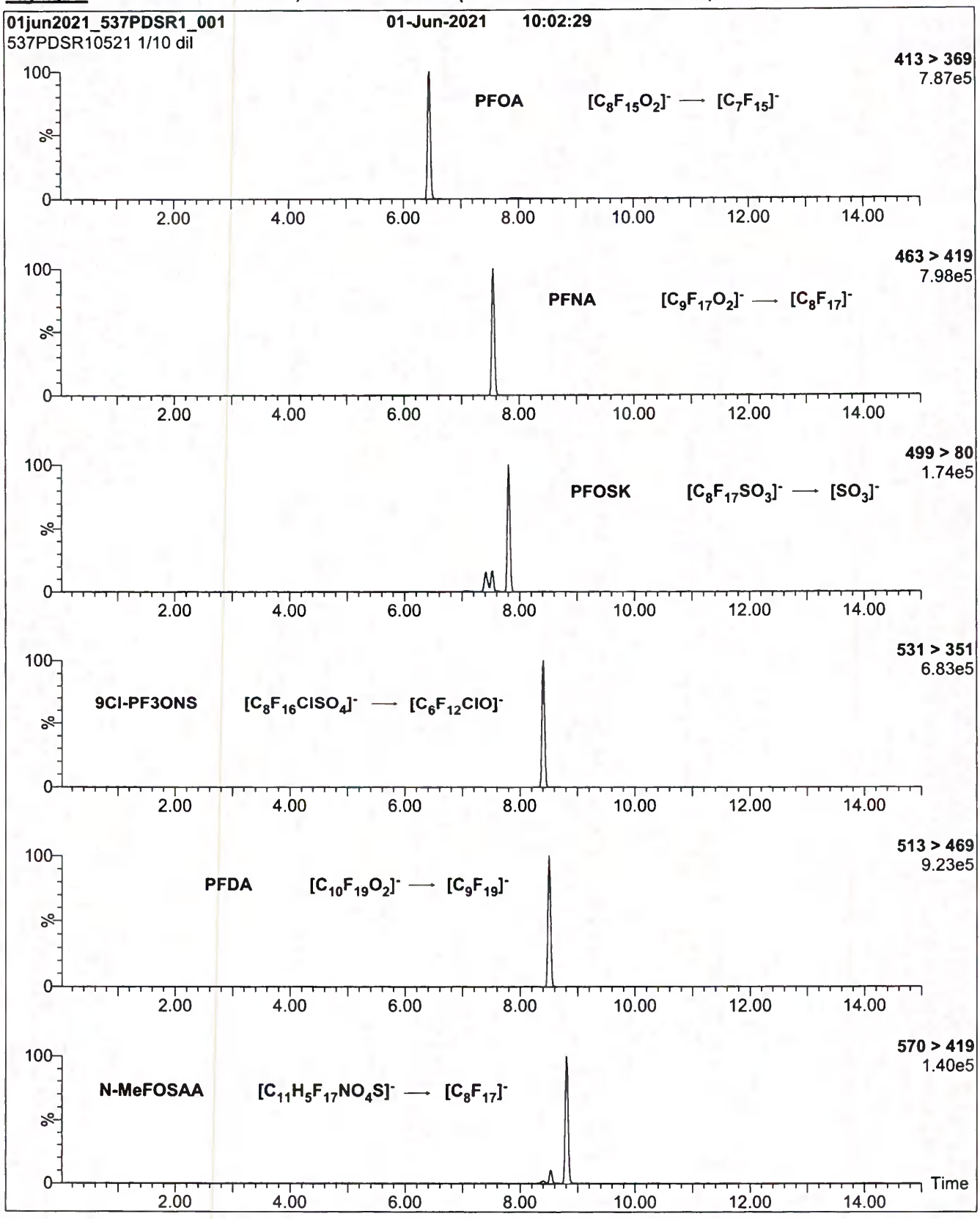
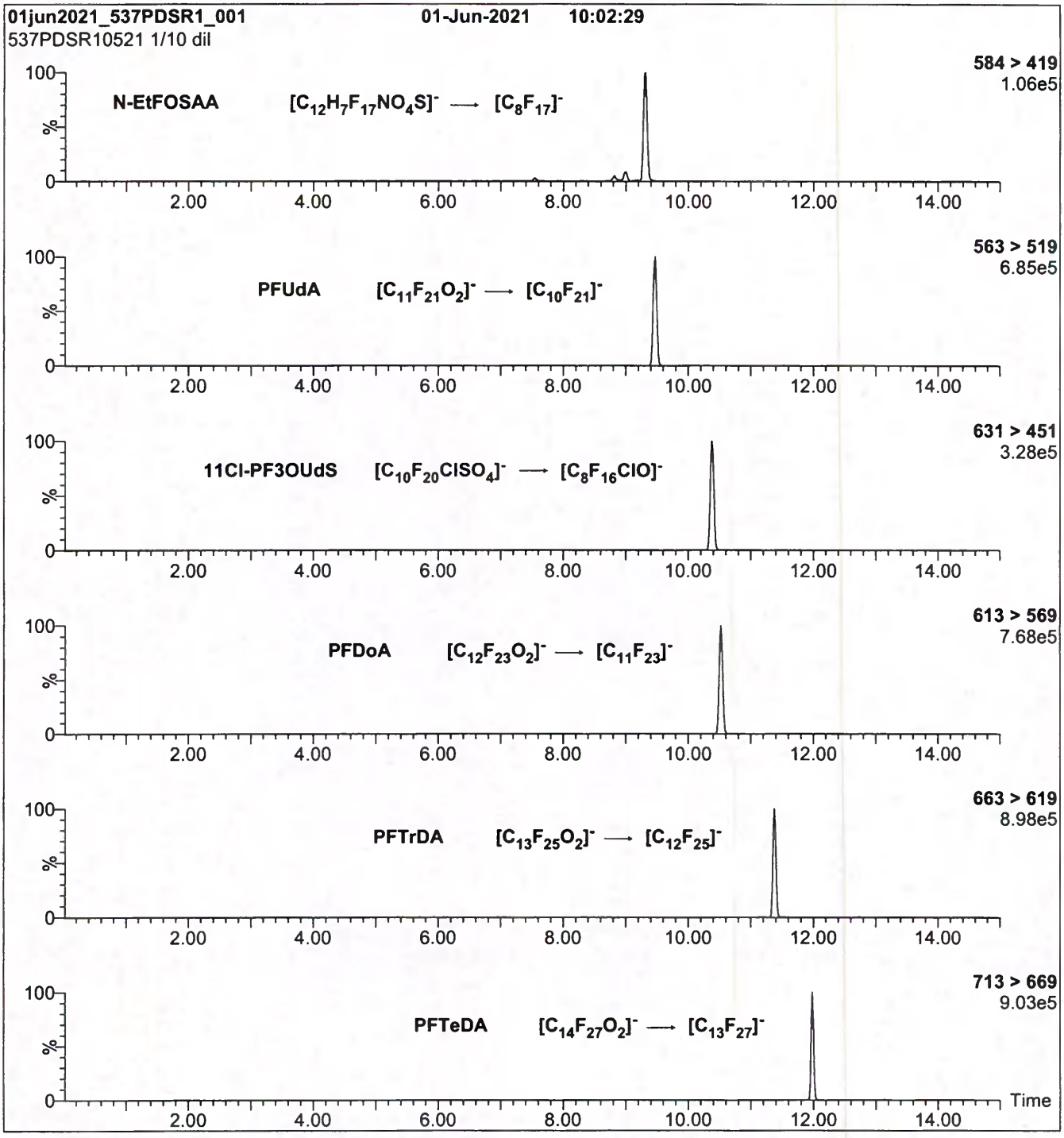


Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (EPA-537PDS-R1)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 4-64 (variable)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-537PDS-R1

Native PFAS Primary Dilution Standard Solution/Mixture

PRODUCT CODE:	EPA-537PDS-R1
LOT NUMBER:	537PDSR10521
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	05/25/2021
LAST TESTED: (mm/dd/yyyy)	06/01/2021
EXPIRY DATE: (mm/dd/yyyy)	06/01/2024
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

EPA-537PDS-R1 is a solution/mixture of native linear perfluoroalkylcarboxylic acids (PFCAs; C_6-C_{14}), native perfluoroalkylsulfonates (PFSAs; C_4 linear; C_6 and C_8 linear and branched), native N-substituted perfluorooctanesulfonamidoacetic acids (N-MeFOSAA and N-EtFOSAA; linear and branched), GenX (HFPO-DA), the main components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and the sodium salt of ADONA (NaDONA). The components and their concentrations are given in Table A.

The components of this solution/mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-537PDS-R1; Components and Concentrations (± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-hexanoic acid	PFHxA	2000	B
Perfluoro-n-heptanoic acid	PFHpA	2000	D
Perfluoro-n-octanoic acid	PFOA	2000	H
Perfluoro-n-nonanoic acid	PFNA	2000	I
Perfluoro-n-decanoic acid	PFDA	2000	M
Perfluoro-n-undecanoic acid	PFUdA	2000	R
Perfluoro-n-dodecanoic acid	PFDoA	2000	T
Perfluoro-n-tridecanoic acid	PFTrDA	2000	U
Perfluoro-n-tetradecanoic acid	PFTeDA	2000	V
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000	C
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	1520	O
	N-MeFOSAA: ∑ branched isomers	480	N
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	1550	Q
	N-EtFOSAA: ∑ branched isomers	450	P

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	A
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	1620	1480	G
	PFHxSK: ∑ branched isomers	378	345	F
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	1580	1460	K
	PFOSK: ∑ branched isomers	422	392	J
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	E
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	L
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	S

* Concentrations have been rounded to three significant figures.

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

Table B: **N-MeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: **N-EtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2NCH_2CO_2H$ C_2H_5	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_2)_2SO_2NCH_2CO_2H$ CF_3 C_2H_5	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_2)_3SO_2NCH_2CO_2H$ CF_3 C_2H_5	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_2)_4SO_2NCH_2CO_2H$ CF_3 C_2H_5	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_2)_5SO_2NCH_2CO_2H$ CF_3 C_2H_5	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_2)_4SO_2NCH_2CO_2H$ CF_3 CF_3 C_2H_5	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CFCF(CF_2)_3SO_2NCH_2CO_2H$ CF_3 CF_3 C_2H_5	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CFCF_2CF(CF_2)_2SO_2NCH_2CO_2H$ CF_3 CF_3 C_2H_5	0.3	
9	Other Unidentified Isomers		1.3	

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Table D: **PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)_2CF_2CF_2SO_3^-K^+$	0.2	
7	Other Unidentified Isomers		0.5	

* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Table E: **PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

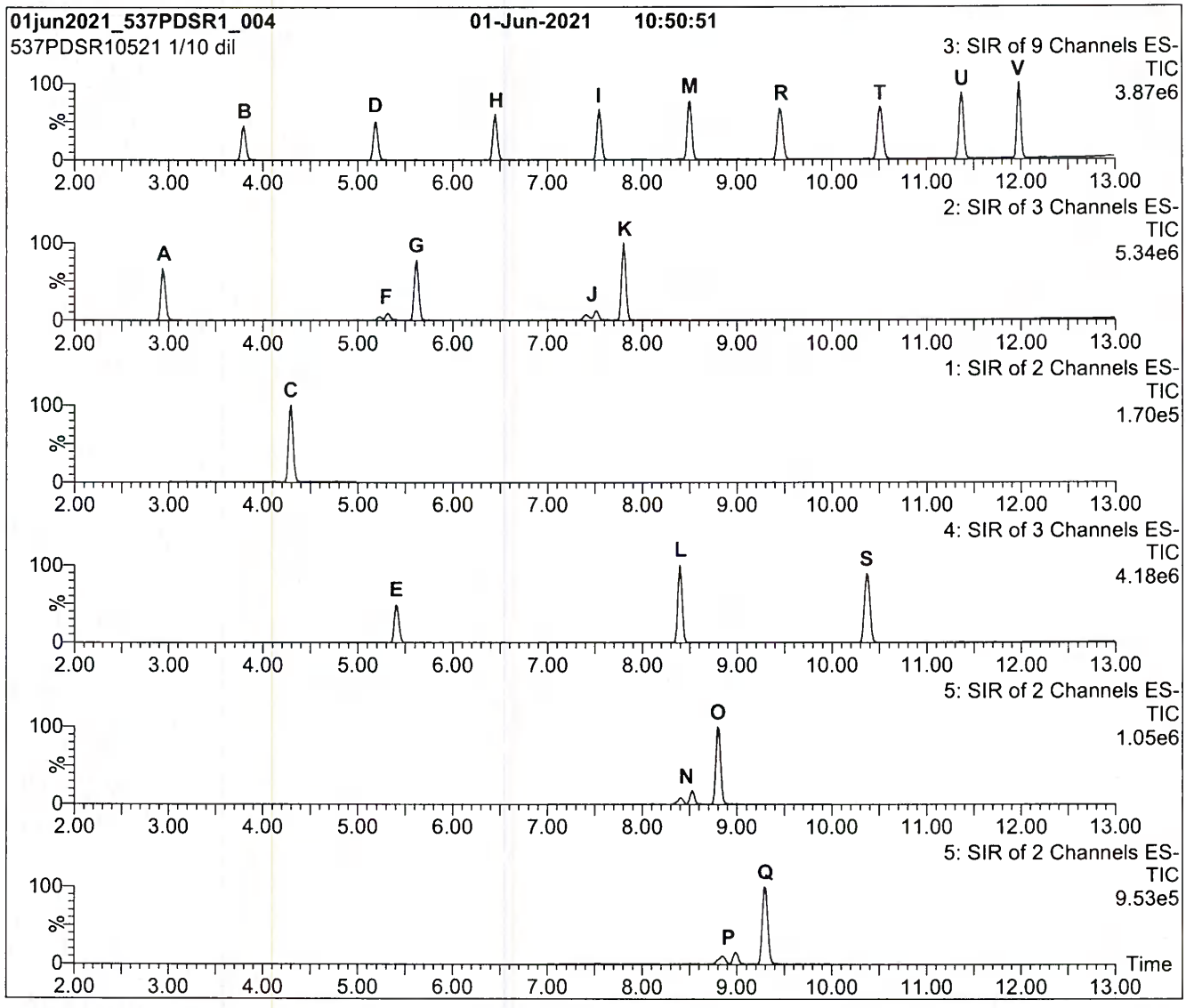
Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07	

* Percent of total perfluorooctanesulfonate isomers only.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: _____ **Date:** 06/02/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **EPA-537PDS-R1; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 70% organic over 7 min then ramp to 90% organic over 4.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**

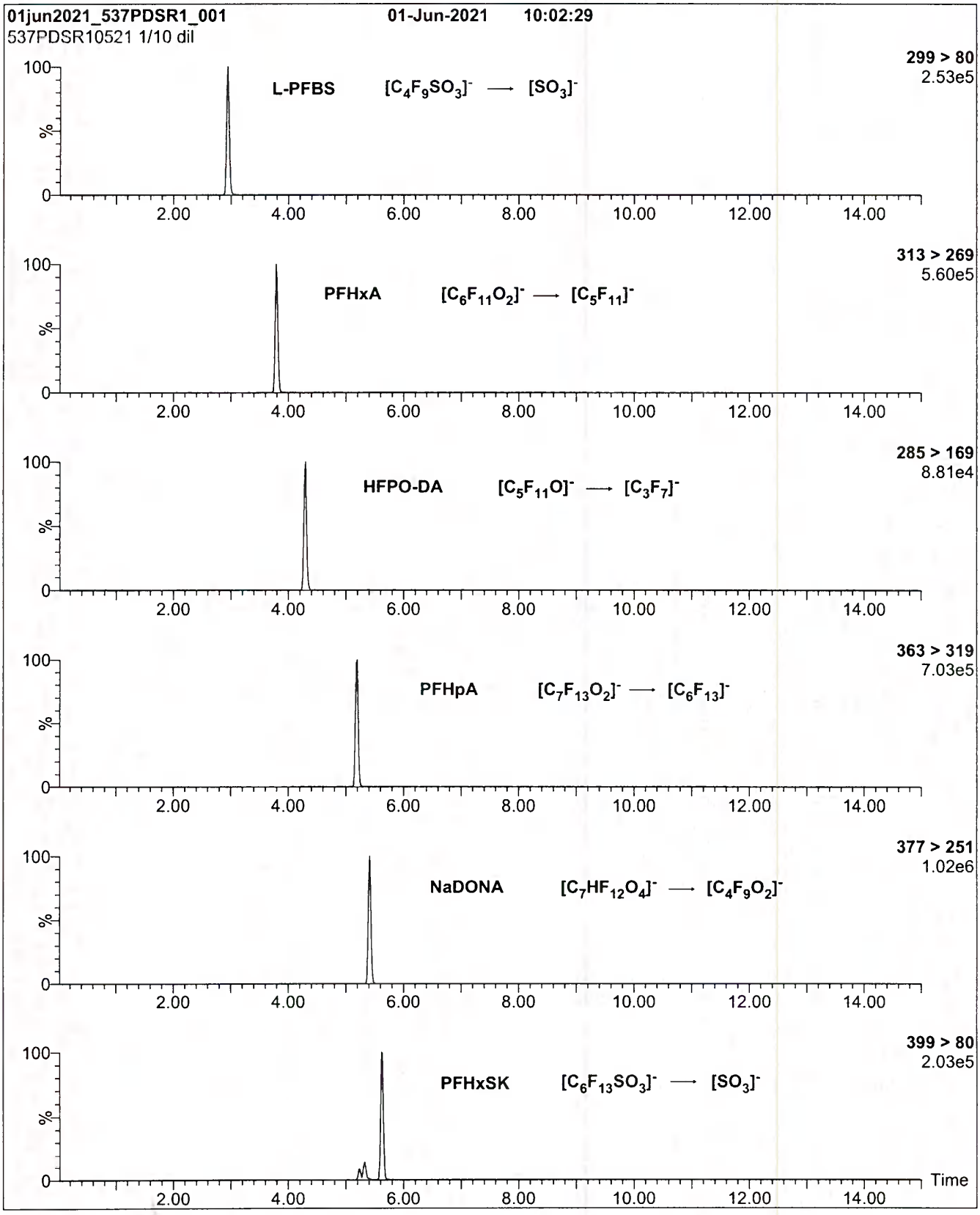


Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**

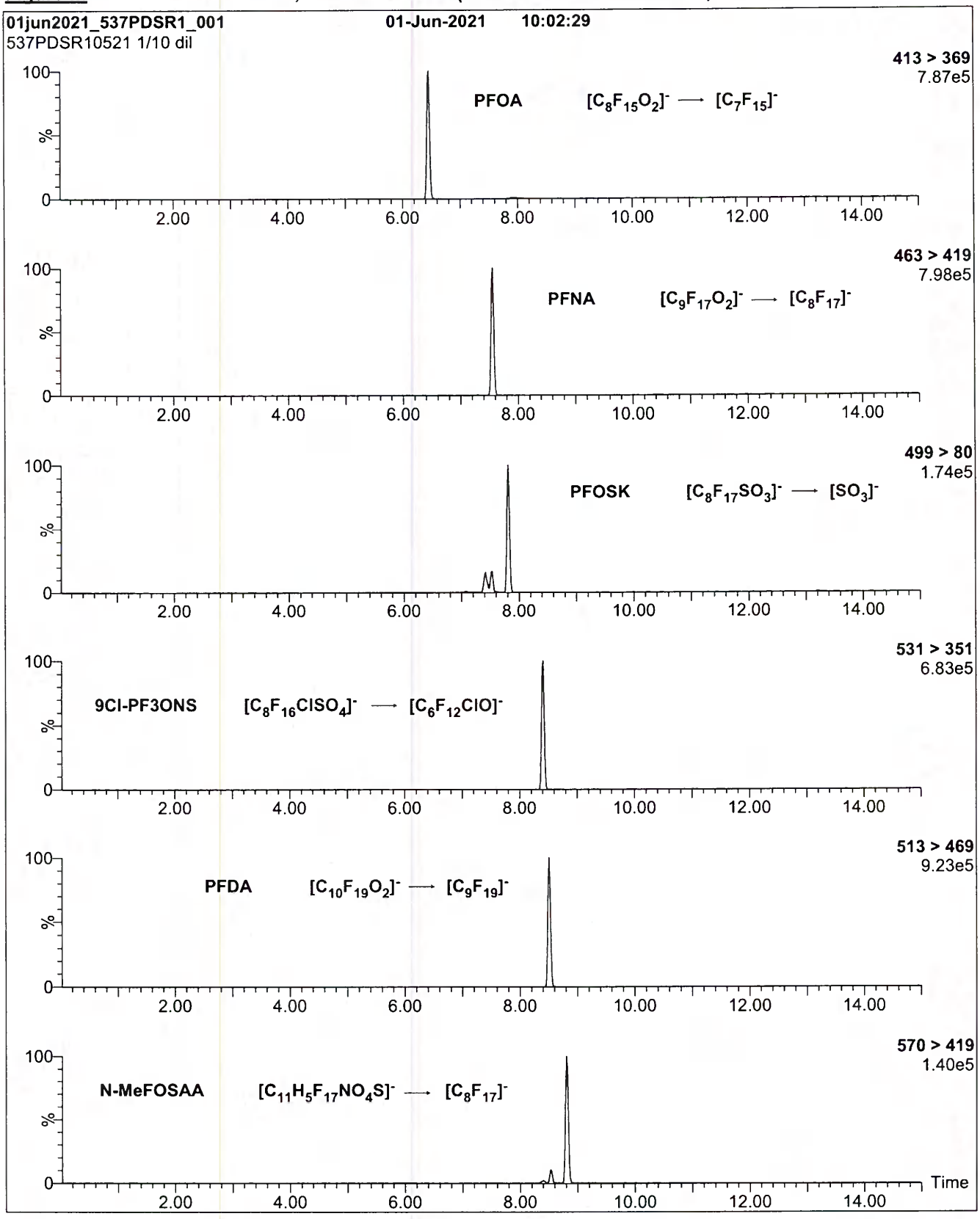
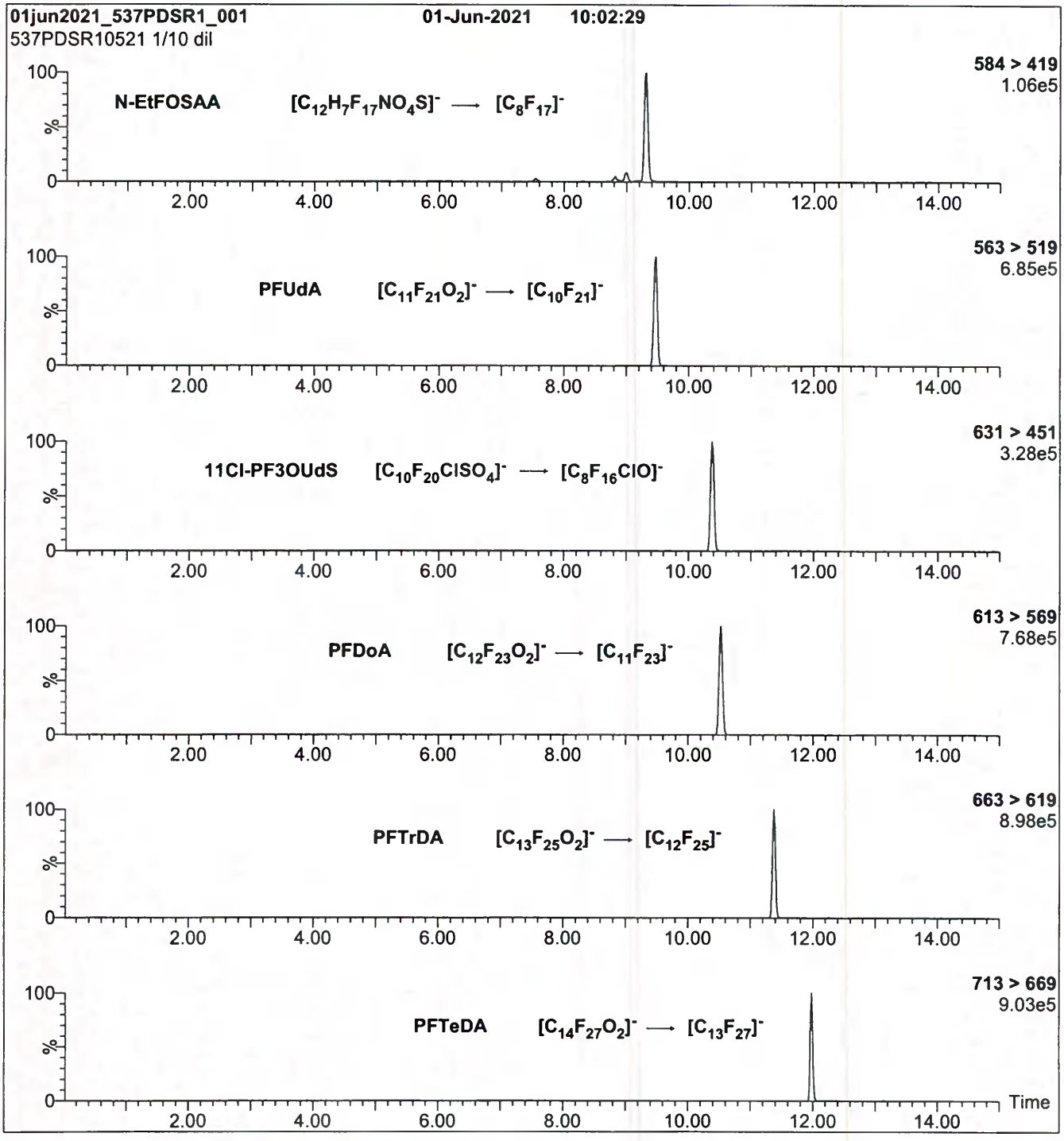


Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (EPA-537PDS-R1)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 4-64 (variable)

Reagent

PFC_ST_01073

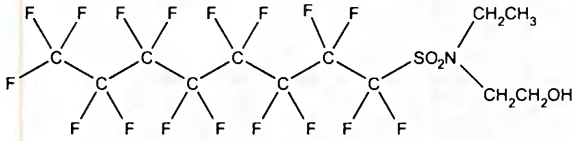
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0521M

COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 1691-99-2



410-1760669

MOLECULAR FORMULA:	$C_{12}H_{10}F_{17}NO_3S$	**MOLECULAR WEIGHT:**	571.25
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	06/01/2021 (HRGC/LRMS) 06/02/2021 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	06/02/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/21/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

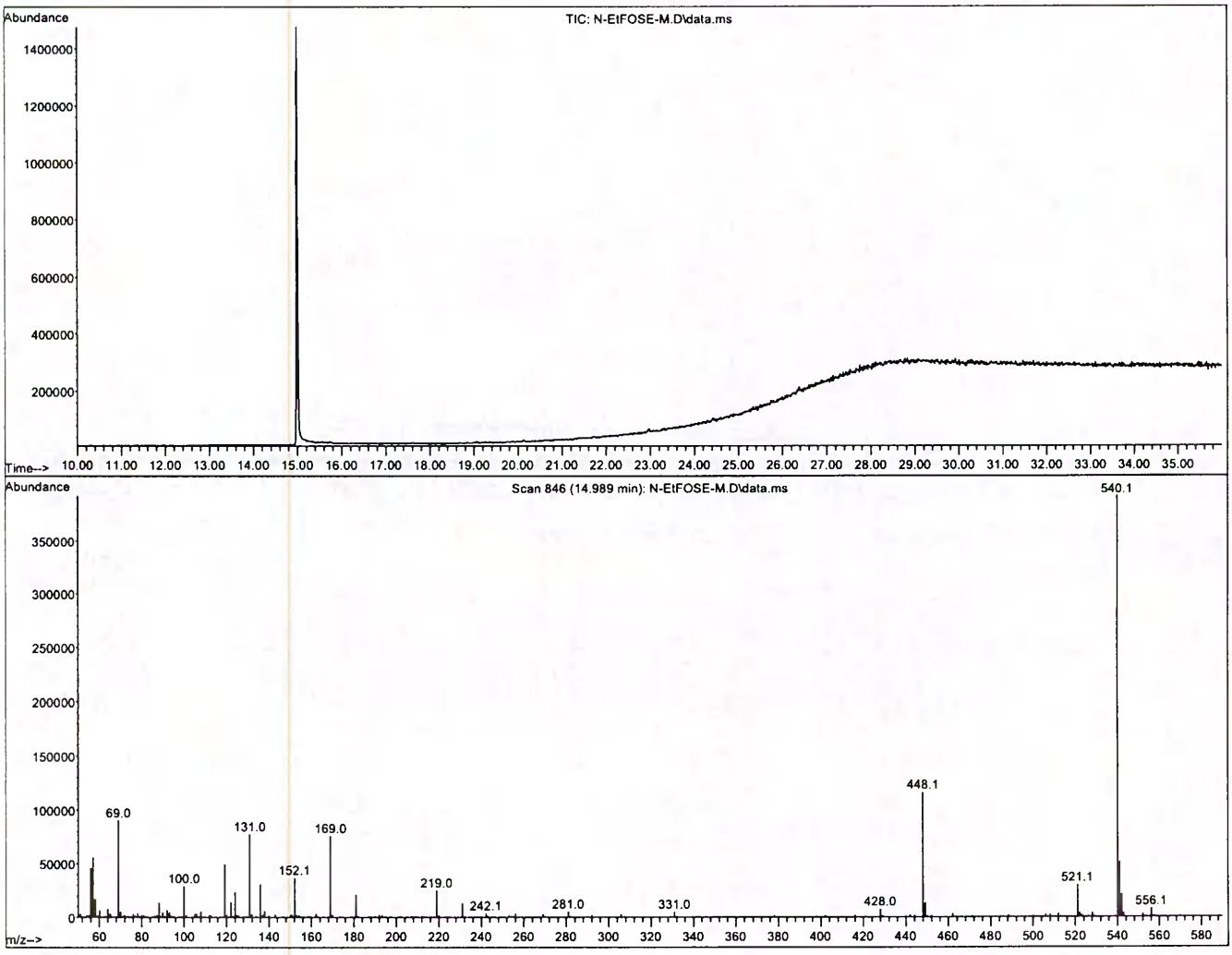
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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



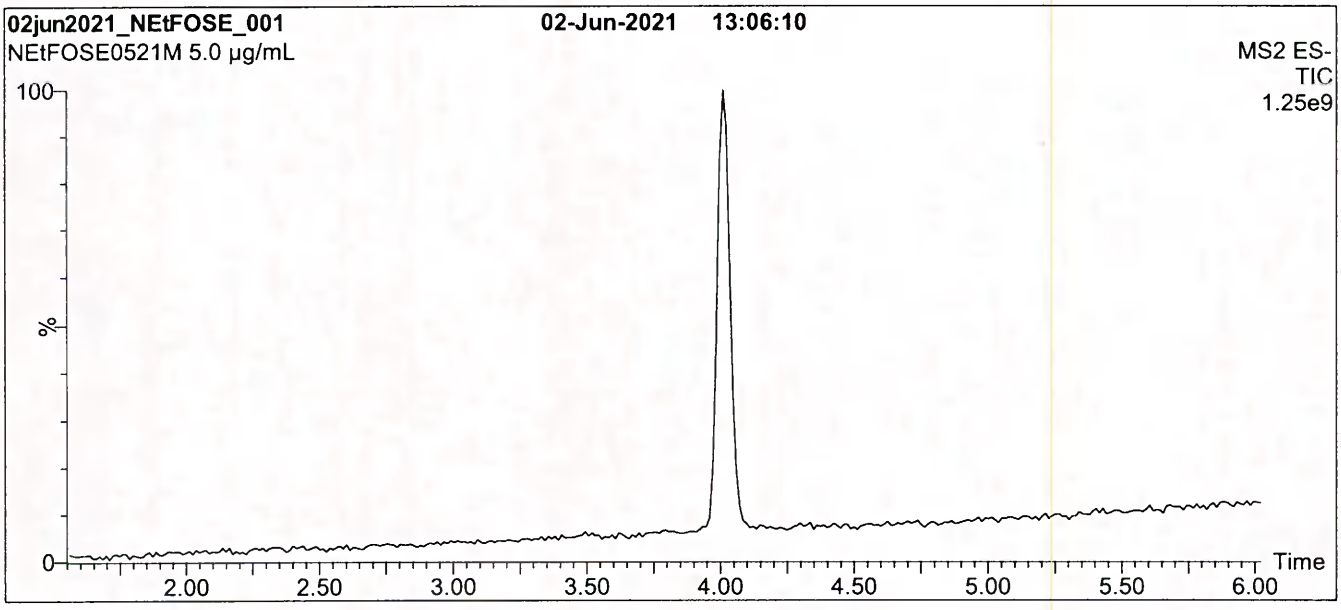
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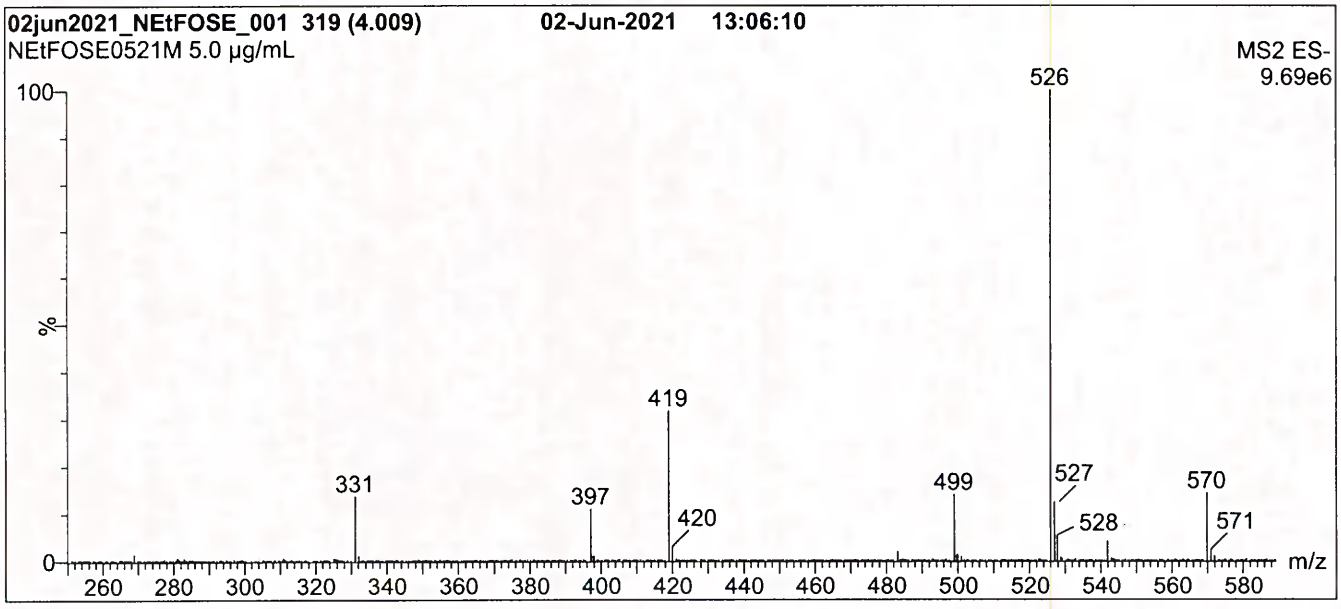
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1.4 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 310°C 310°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

Figure 2: **N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

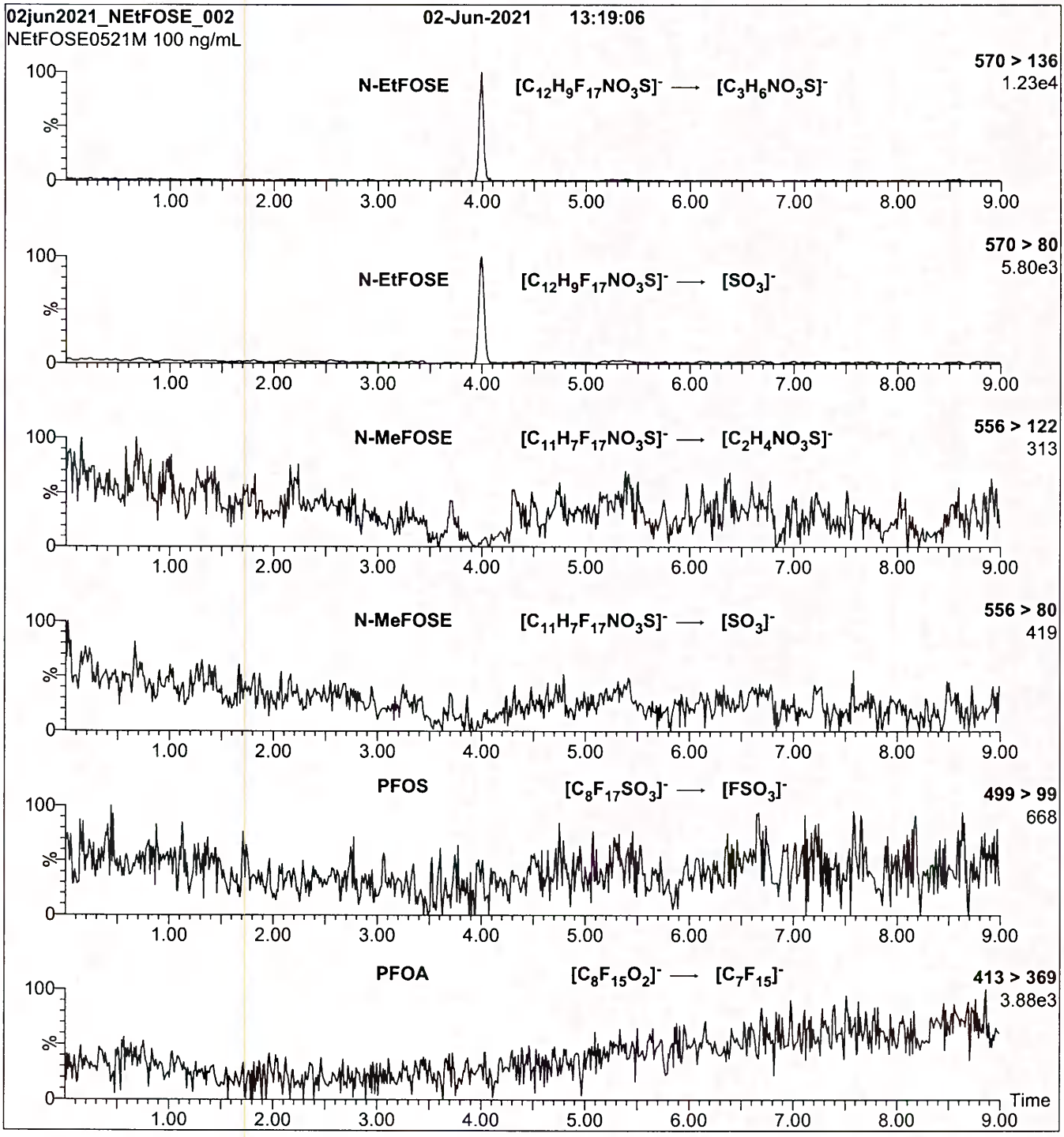
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 32

Reagent

PFC_ST_01075

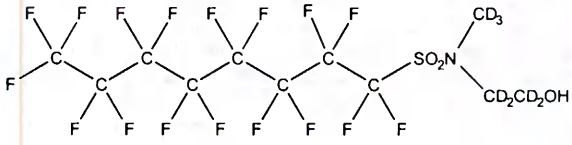
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d7-N-MeFOSE-M **LOT NUMBER:** d7NMeFOSE1220M

COMPOUND: 2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE: **CAS #:** 1265205-95-5



410-1761106

MOLECULAR FORMULA:	$C_{11}D_7HF_{17}NO_3S$	**MOLECULAR WEIGHT:**	564.27
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_7$
LAST TESTED: (mm/dd/yyyy)	01/06/2021 (HRGC/LRMS) 12/23/2020 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	01/06/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 01/18/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

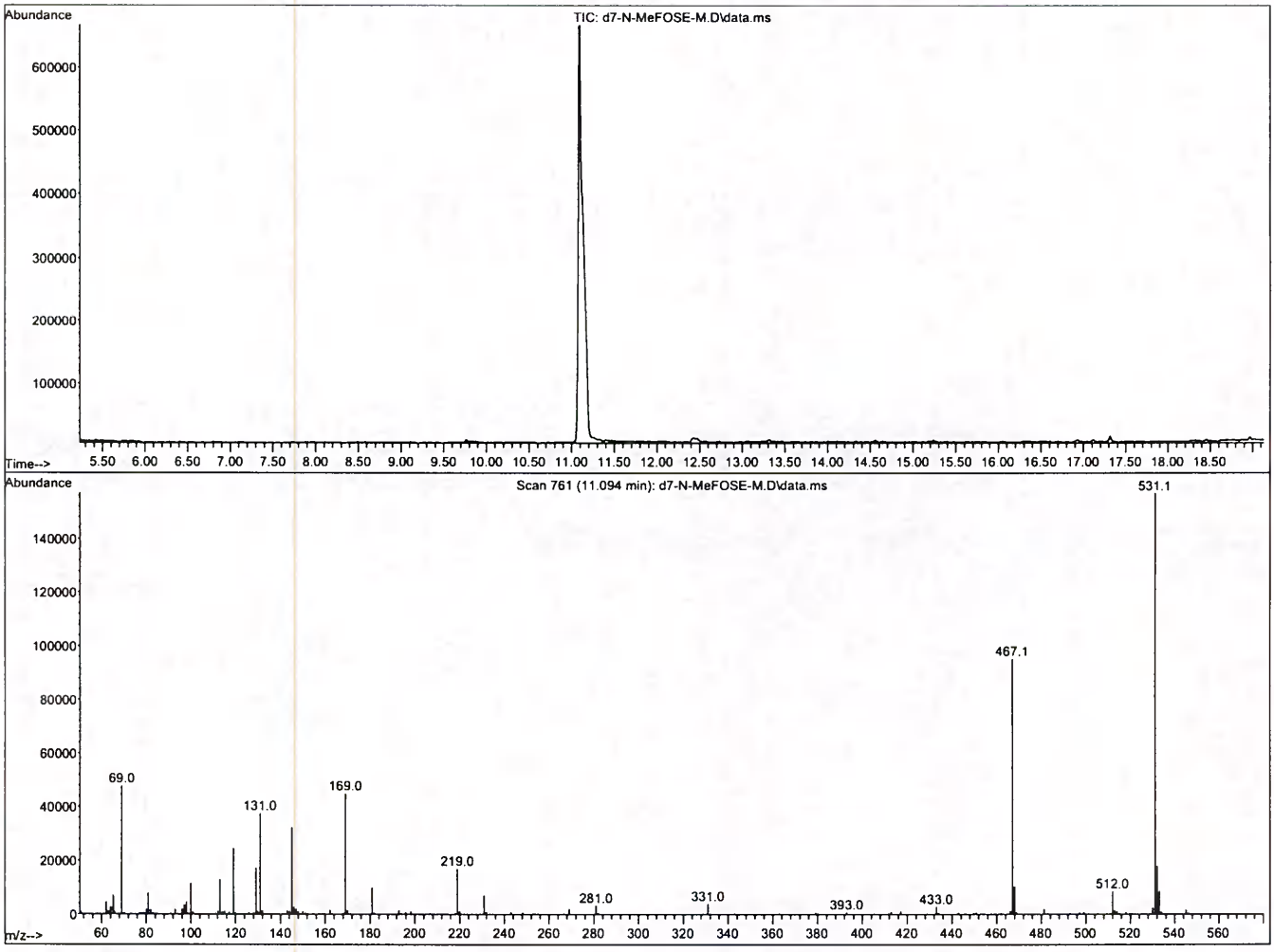
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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **d7-N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



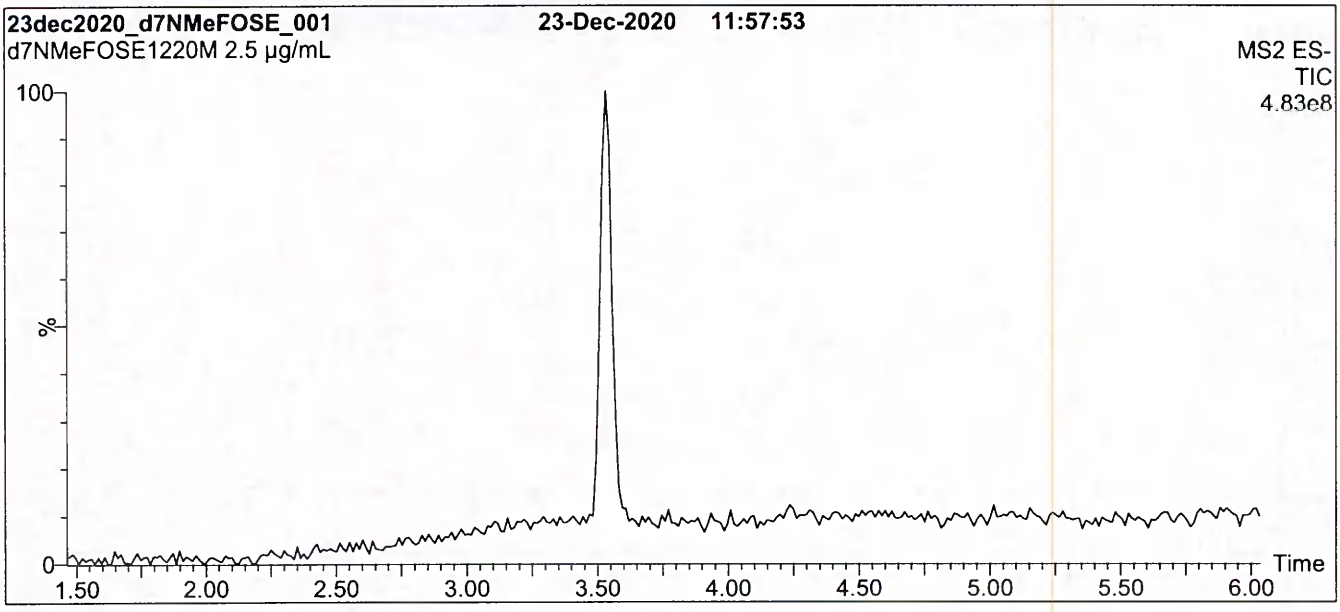
Conditions for Figure 1:

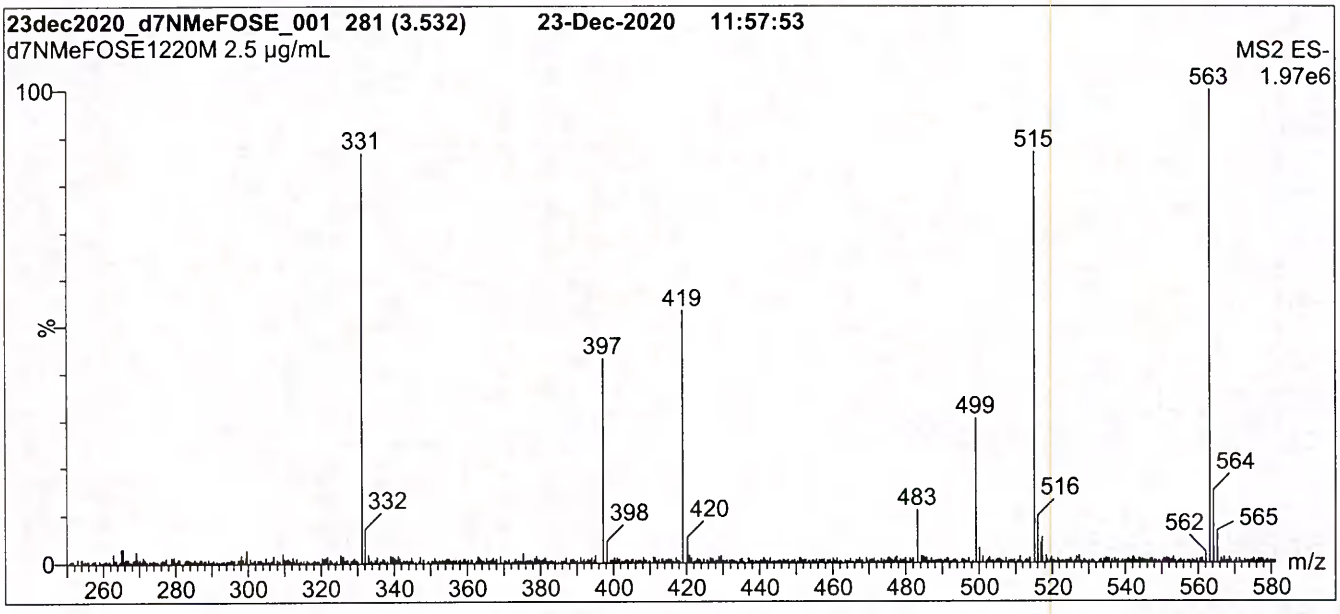
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 325°C 325°C (10 min)
Ionization:	EI+
Detector:	250°C Full Scan (50-1000 amu)

Figure 2: **d7-N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

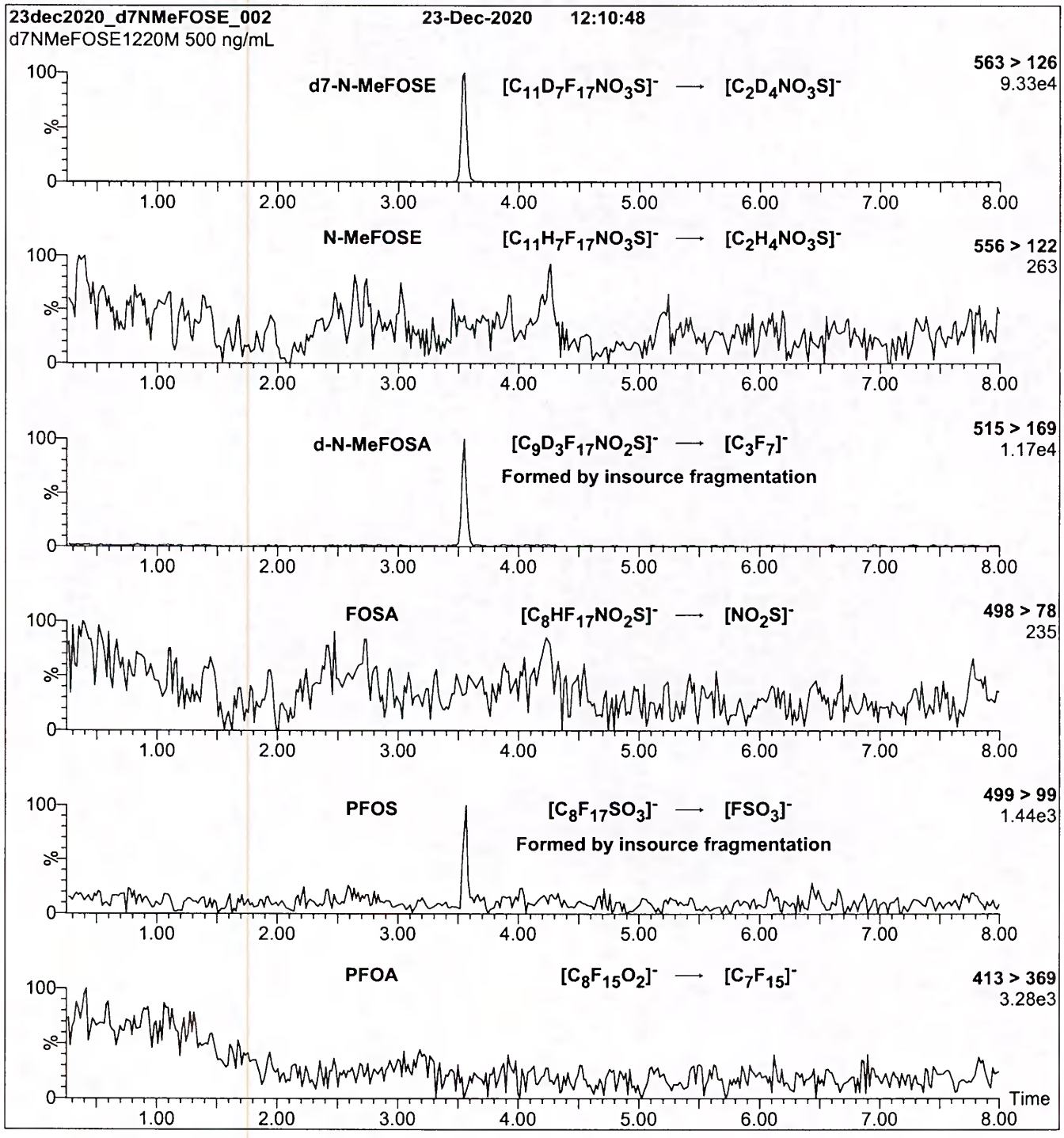
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **d7-N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (d7-N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 36

Reagent

PFC_ST_01076

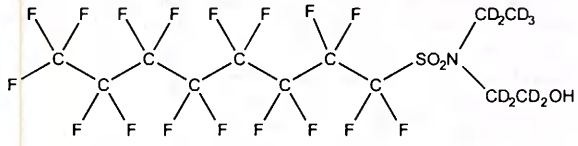
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d9-N-EtFOSE-M **LOT NUMBER:** d9NEtFOSE1220M

COMPOUND: 2-(N-ethyl-d5-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE: **CAS #:** Not available



410-1761109

MOLECULAR FORMULA:	$C_{12}D_9HF_{17}NO_3S$	**MOLECULAR WEIGHT:**	580.31
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_9$
LAST TESTED: (mm/dd/yyyy)	12/30/2020 (HRGC/LRMS) 12/23/2020 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	12/30/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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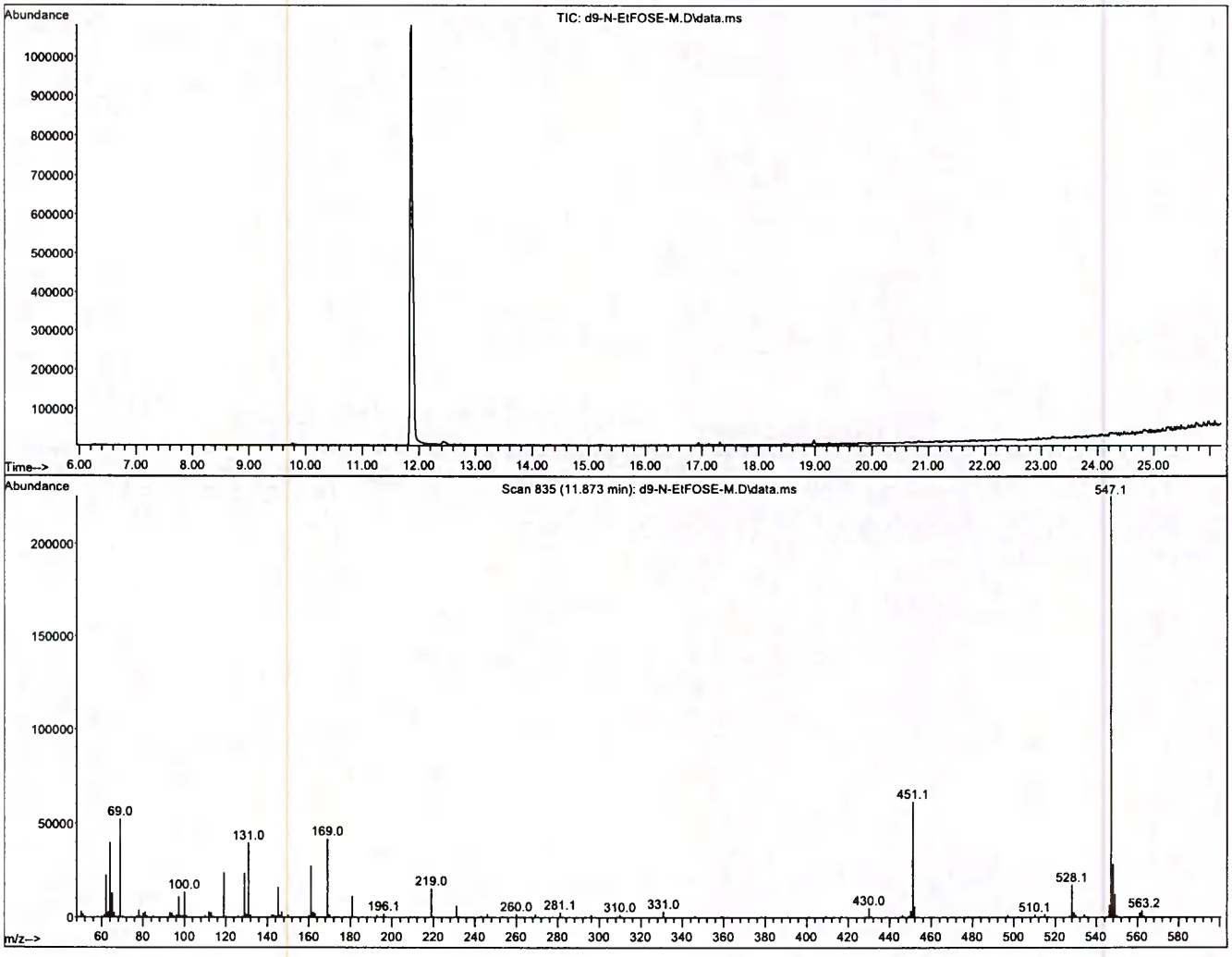
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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **d9-N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



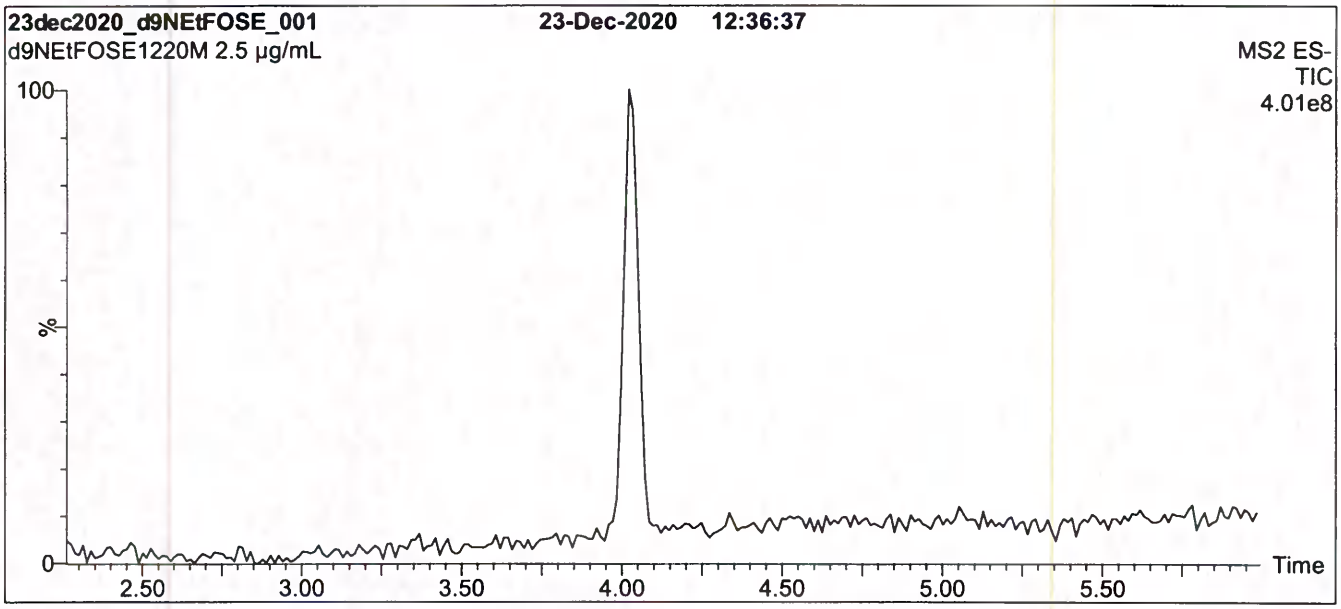
Conditions for Figure 1:

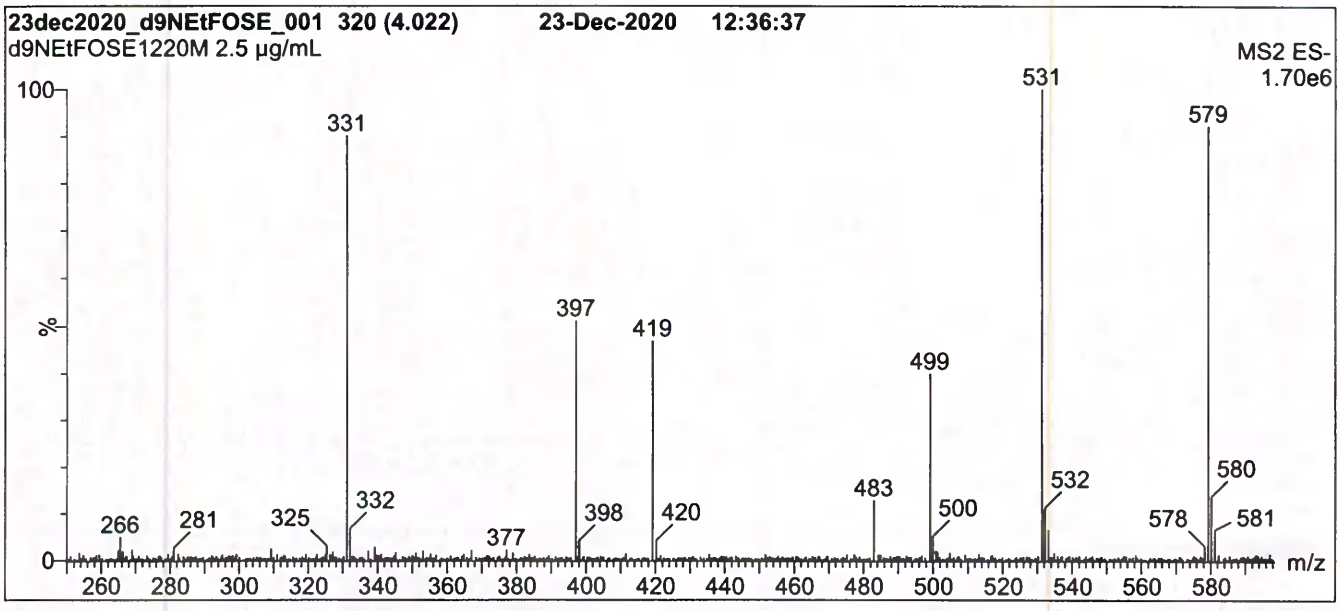
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 325°C 325°C (10 min)
Ionization:	EI+
Detector:	250°C Full Scan (50-1000 amu)

Figure 2: **d9-N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
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Time: 12 min

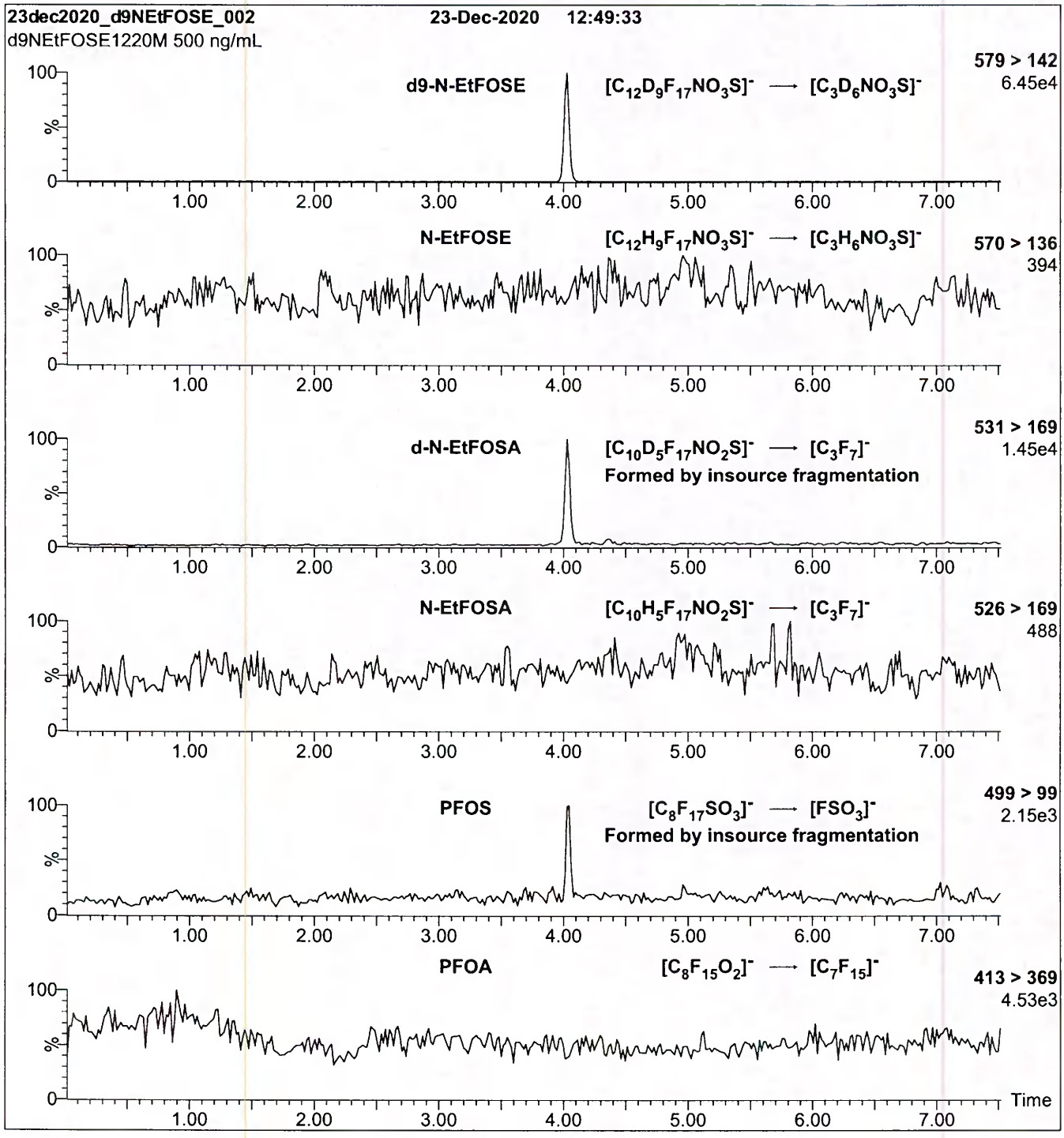
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **d9-N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (d9-N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 32

Reagent

PFC_ST_01082

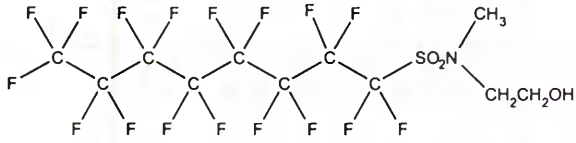
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0521M

COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 24448-09-7



410-1771315

MOLECULAR FORMULA:	$C_{11}H_8F_{17}NO_3S$	**MOLECULAR WEIGHT:**	557.22
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	06/01/2021 (HRGC/LRMS) 06/02/2021 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	06/02/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By: _____ **Date:** 06/11/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

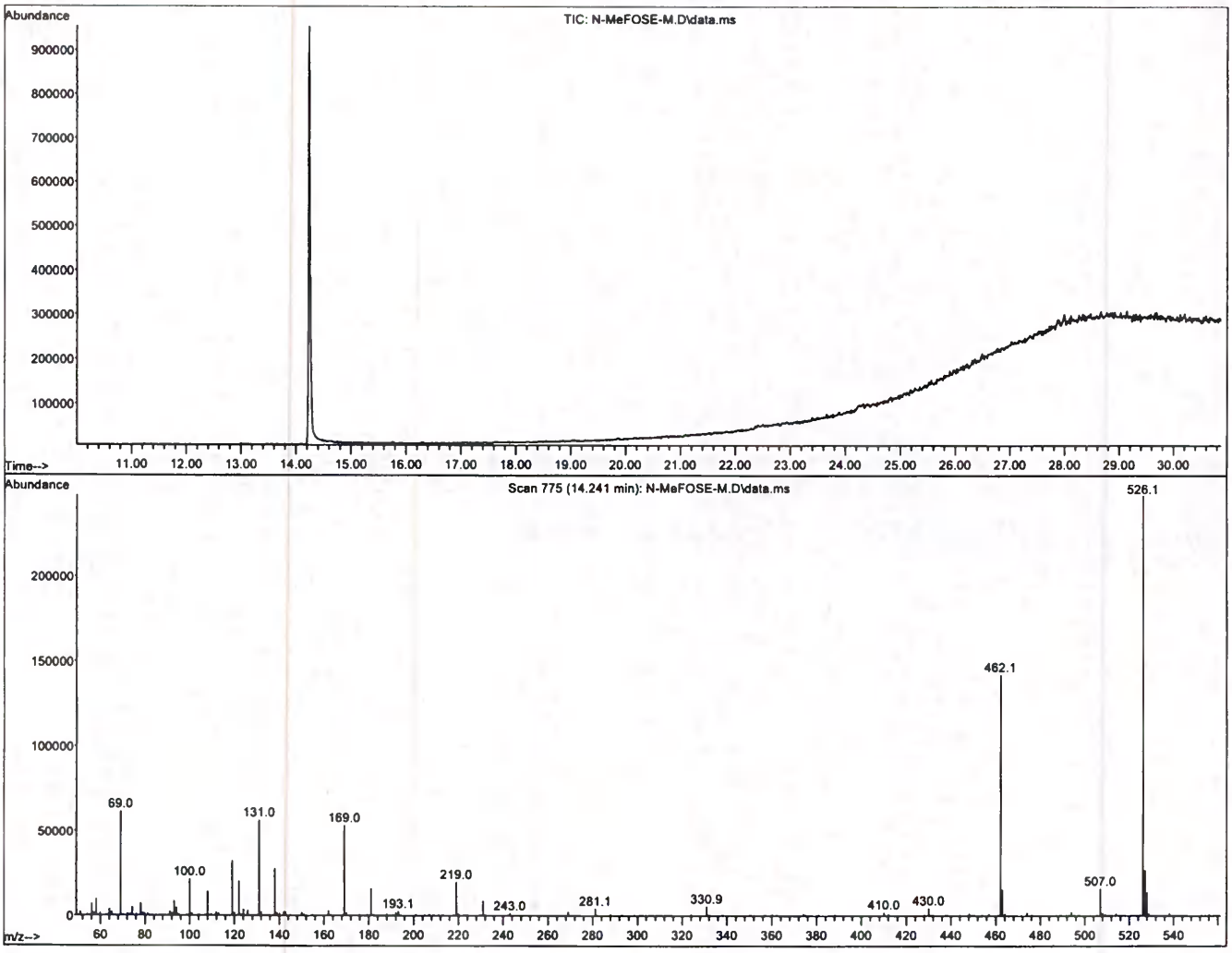
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



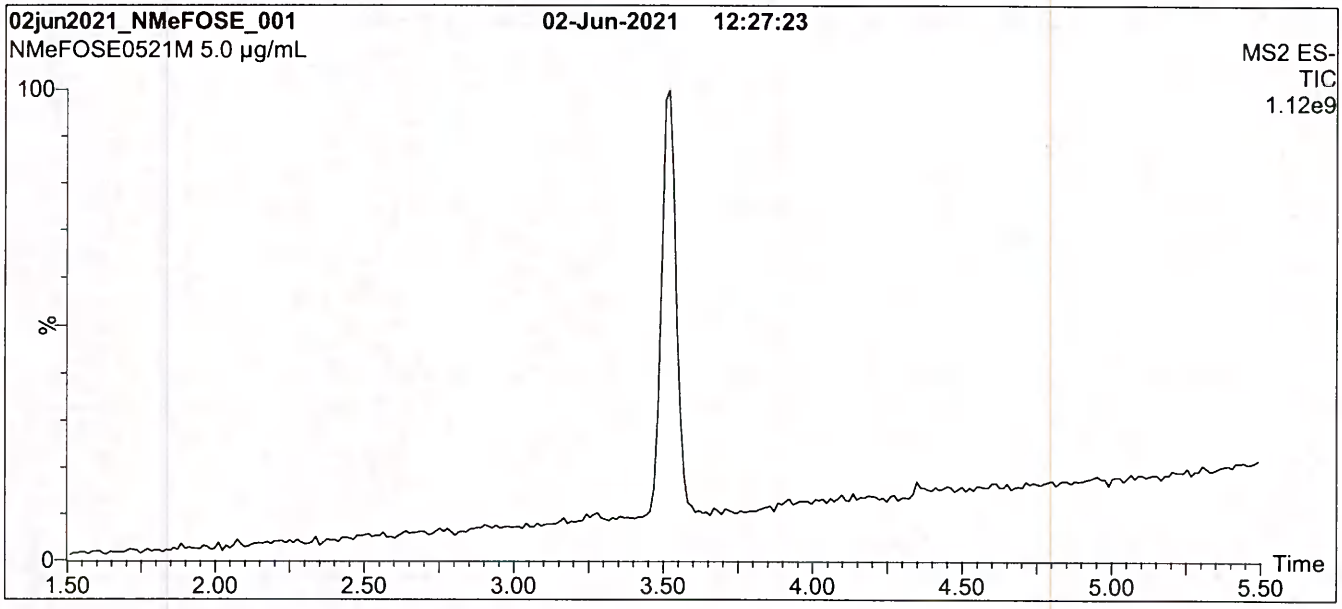
Conditions for Figure 1:

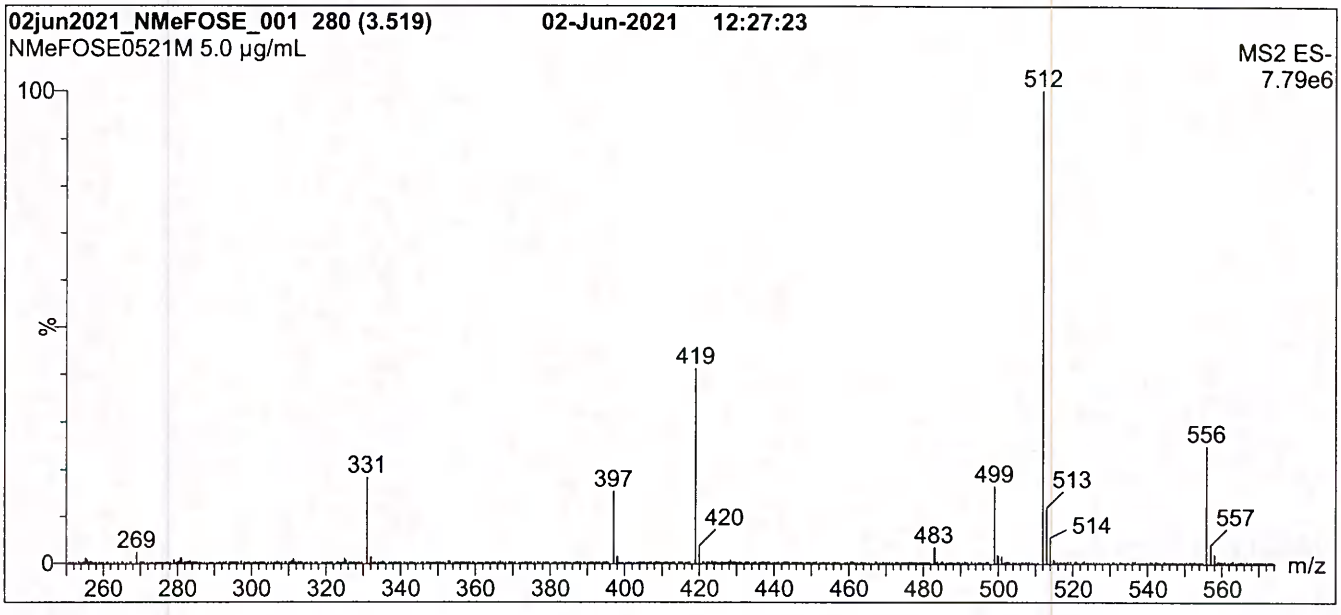
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1.4 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 310°C 310°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

Figure 2: **N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

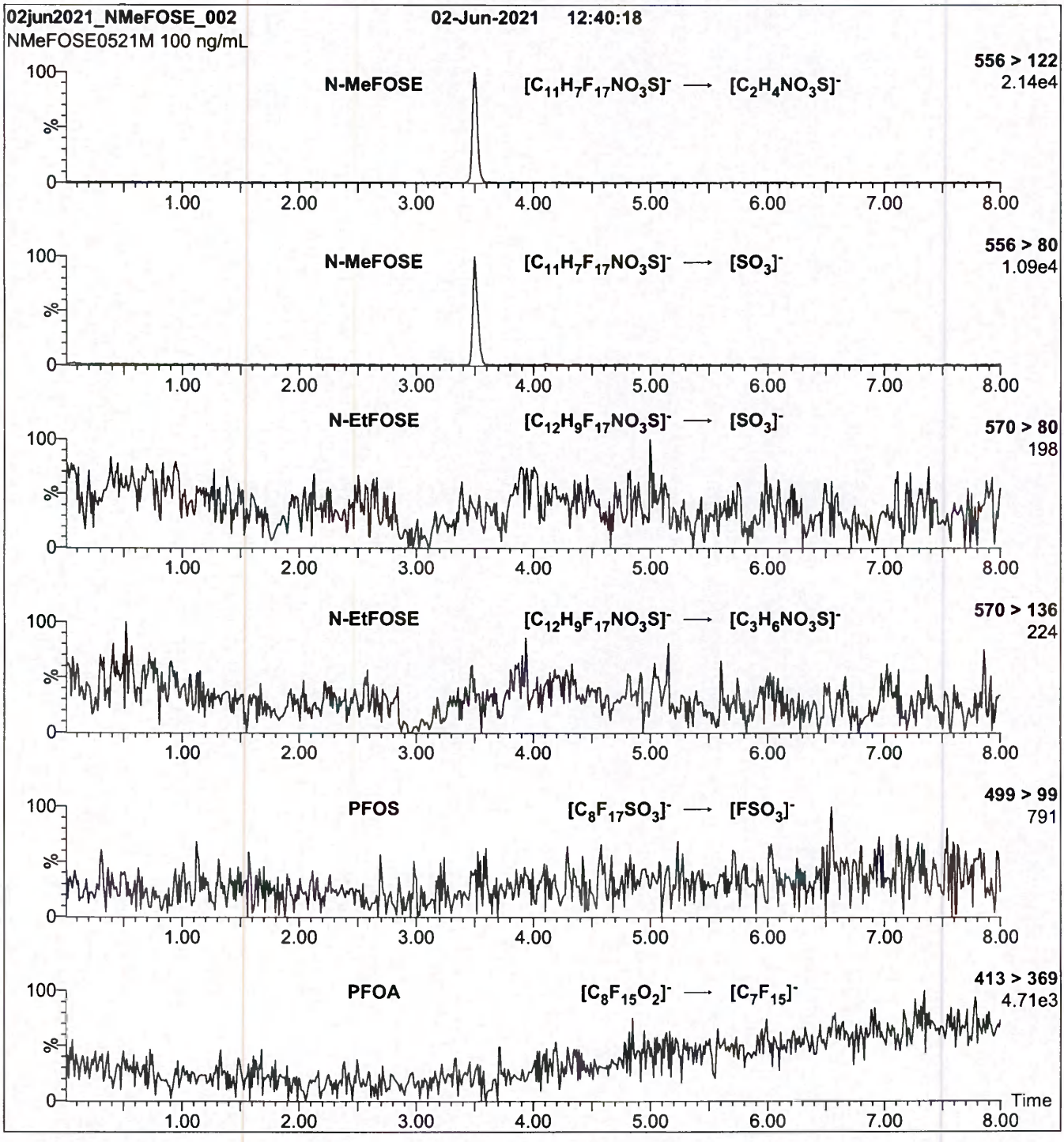
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 36

Reagent

PFC_ST_01088

Recieved 5/6/21

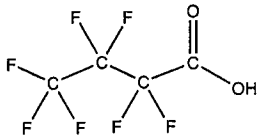
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFBA
COMPOUND: Perfluoro-n-butanoic acid

LOT NUMBER: PFBA0920

STRUCTURE:



CAS #: 375-22-4

1869047
ID: PFC_ST_01088
Exp:09/17/25 Prpd:PY4D Opn:10/01/21
Native PFBA Stock

MOLECULAR FORMULA: $C_4HF_7O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 214.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/17/2020
EXPIRY DATE: (mm/dd/yyyy) 09/17/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

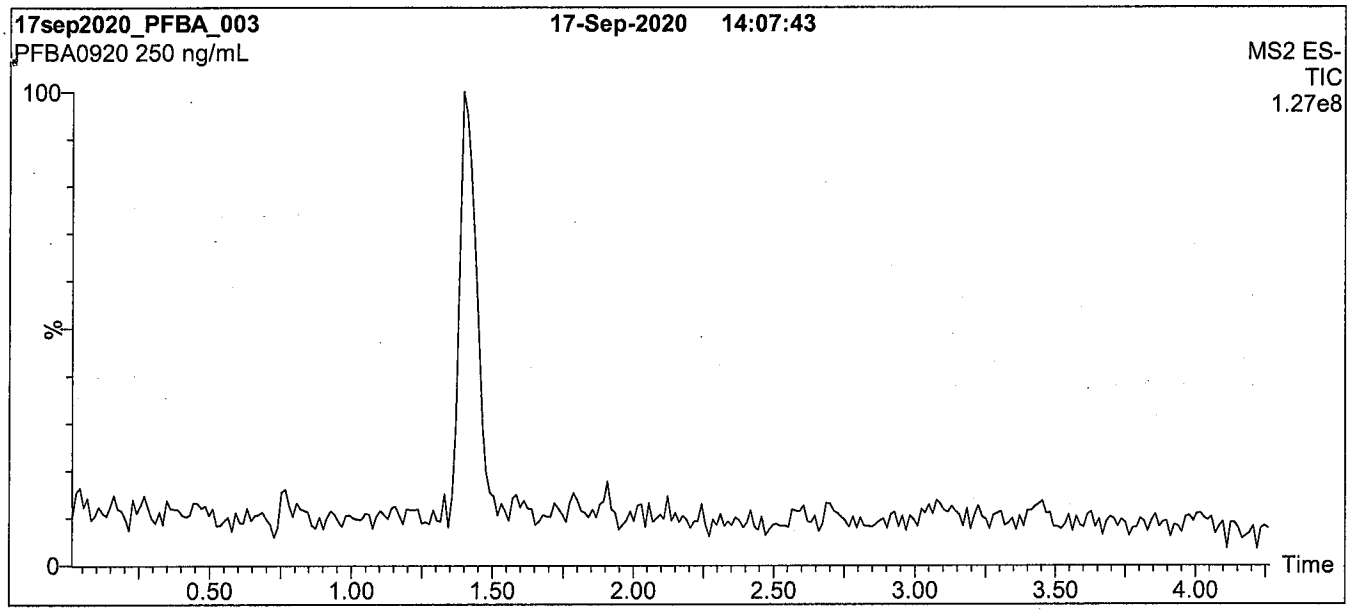
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

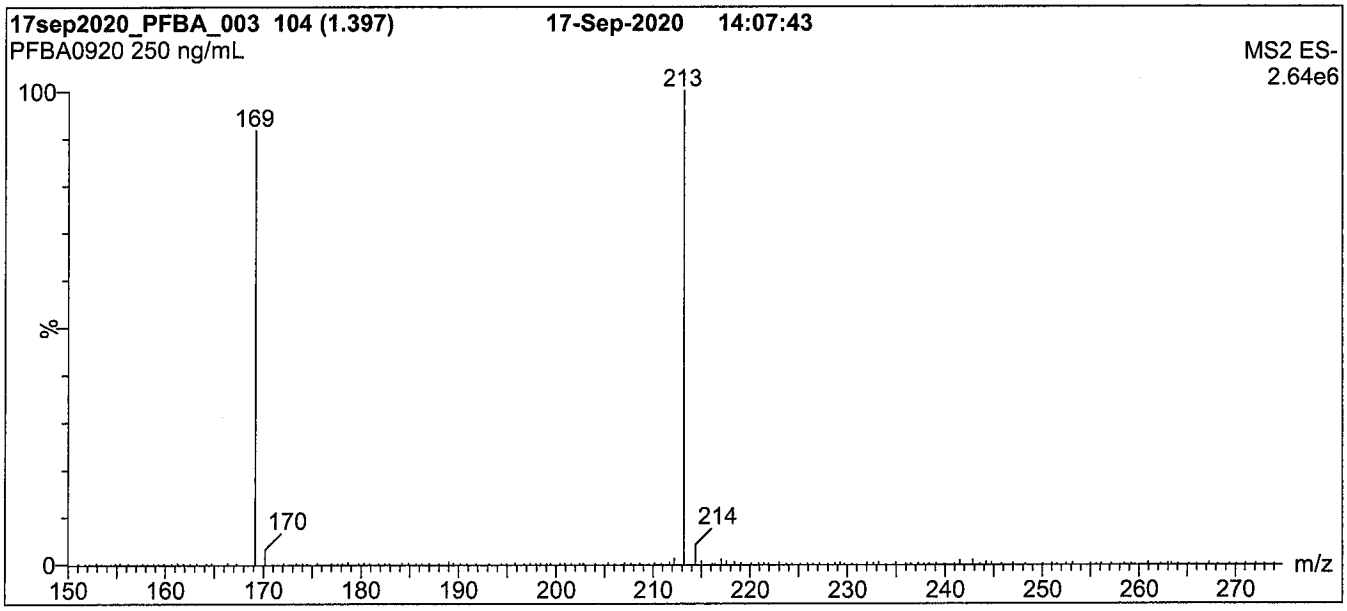
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Certified By: _____ **Date:** 10/09/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Figure 1: **PFBA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Hold for 2 min. Ramp to 90% organic over 6 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Reagent

PFC_ST_01089

Recieved 5/6/21

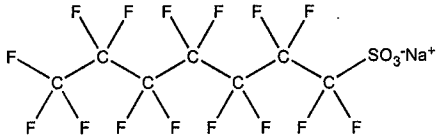
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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFHpS
COMPOUND: Sodium perfluoro-1-heptanesulfonate

LOT NUMBER: LPFHpS1020

STRUCTURE:



CAS #: 21934-50-9

1869053
ID: PFC_ST_01089
Exp:09/17/25 Prpd:PY4D Opn:10/01/21
Native PFHpS Stock

MOLECULAR FORMULA:	$C_7F_{15}SO_3Na$
MOLECULAR WEIGHT:	472.10
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt)
	47.7 ± 2.4 µg/mL (PFHpS acid)
	47.6 ± 2.4 µg/mL (PFHpS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	11/04/2020
EXPIRY DATE: (mm/dd/yyyy)	11/04/2025
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

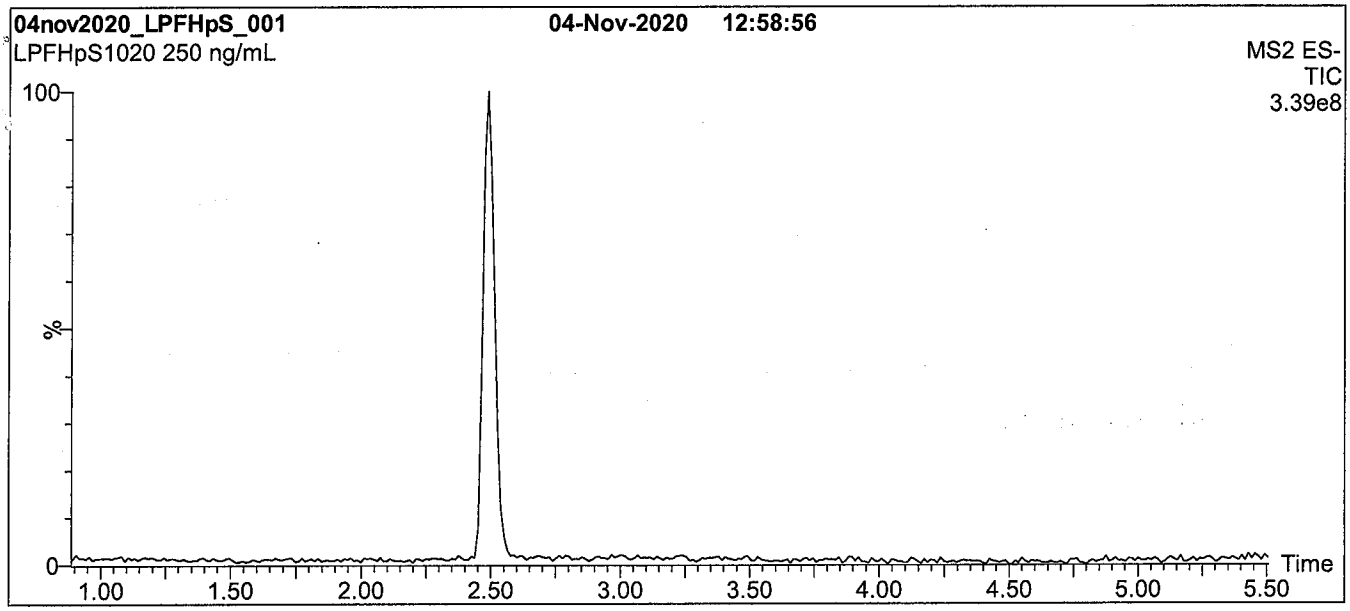
- See page 2 for further details.

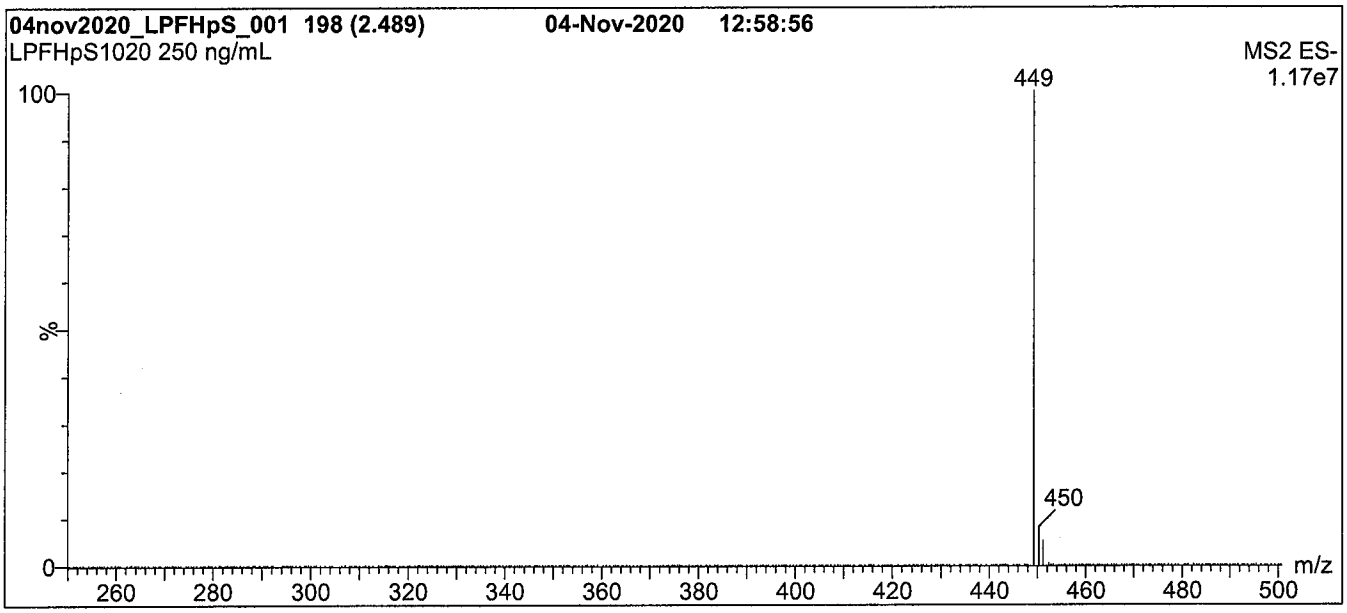
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Certified By: _____ **Date:** 11/25/2020 (mm/dd/yyyy)
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Figure 1: **L-PFHpS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Reagent

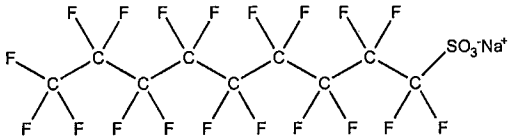
PFC_ST_01090

Recieved 5/6/21

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFNS
LOT NUMBER: LPFNS0920
COMPOUND: Sodium perfluoro-1-nonanesulfonate
STRUCTURE:
CAS #: 98789-57-2



1869054
ID: PFC_ST_01090
Exp:09/17/25 Prpd:PY4D Opn:10/01/21
Native PFNS Stock

MOLECULAR FORMULA:	$C_9F_{19}SO_3Na$	**MOLECULAR WEIGHT:**	572.12
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.1 ± 2.4 µg/mL (PFNS acid) 48.0 ± 2.4 µg/mL (PFNS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/18/2020		
EXPIRY DATE: (mm/dd/yyyy)	09/18/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

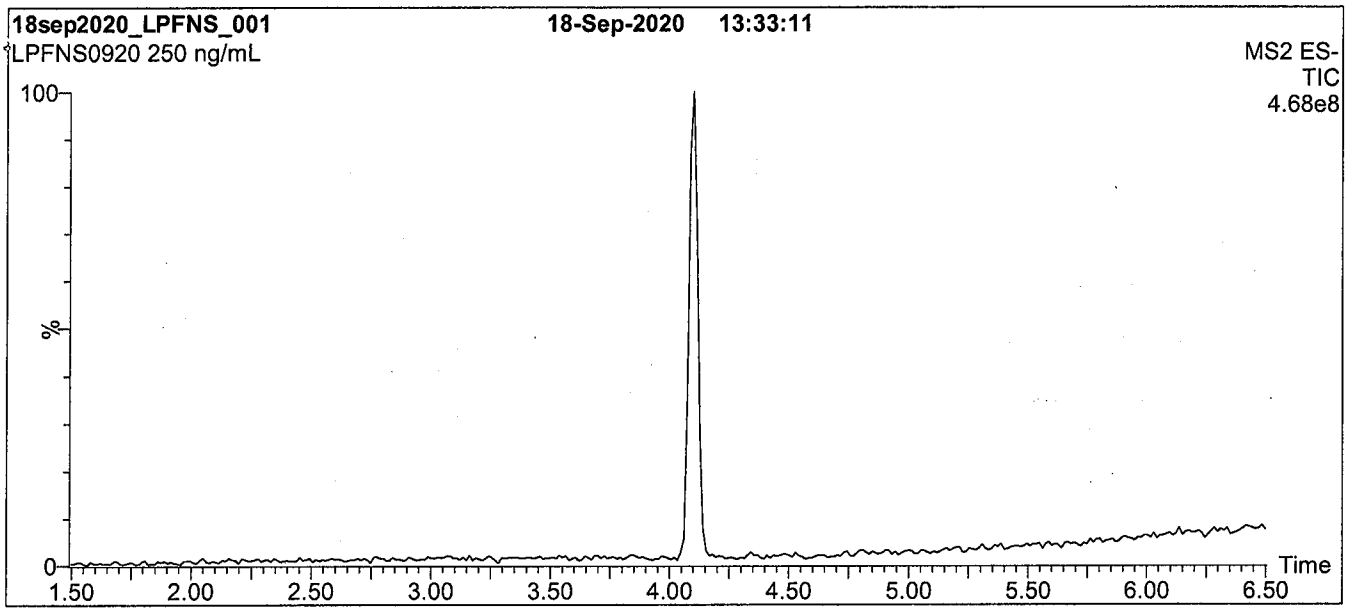
- See page 2 for further details.

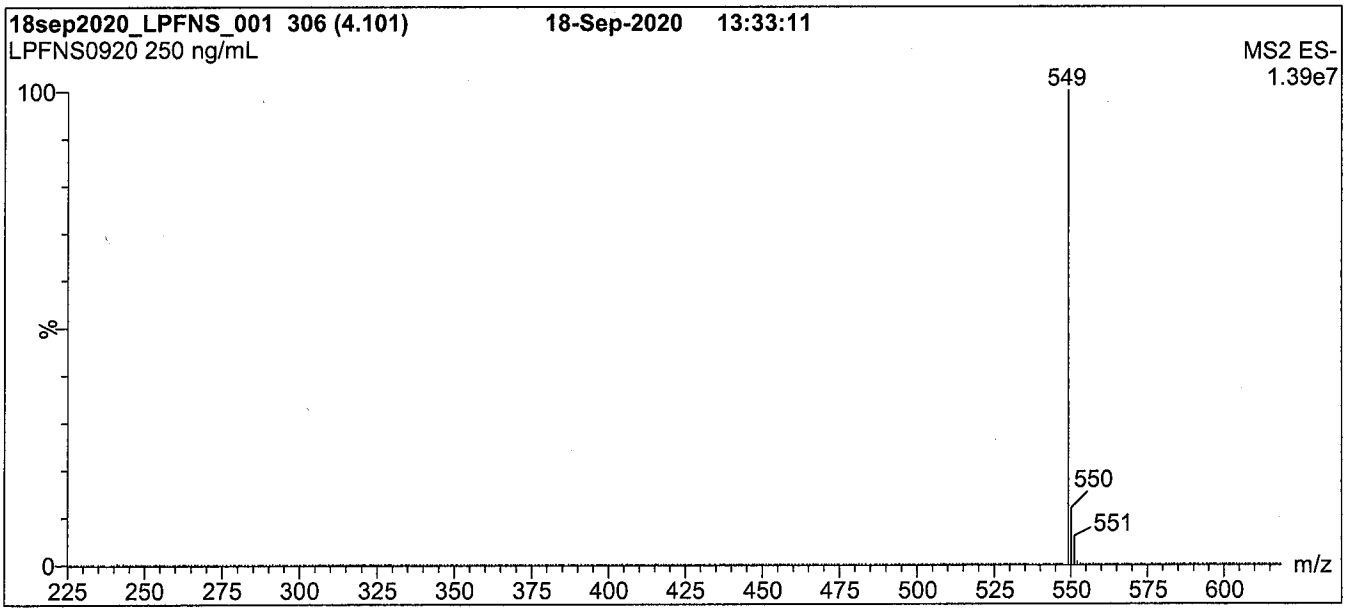
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Certified By: _____ **Date:** 10/13/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Figure 1: **L-PFNS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Cone Gas Flow (°C) = 500
Desolvation Gas Flow (L/hr) =1000

Reagent

PFC_ST_01091

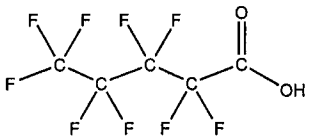
Received 5/6/2021

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFPeA
LOT NUMBER: PFPeA0121
COMPOUND: Perfluoro-n-pentanoic acid

STRUCTURE:



CAS #: 2706-90-3

A: 410-1619660

MOLECULAR FORMULA: $C_5HF_9O_2$
MOLECULAR WEIGHT: 264.05
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/14/2021
EXPIRY DATE: (mm/dd/yyyy) 01/14/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

B: 1869055
ID: PFC_ST_01091
Exp:09/17/25 Prpd:PY4D Opn:10/01/21
Native PFPeA Stock

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

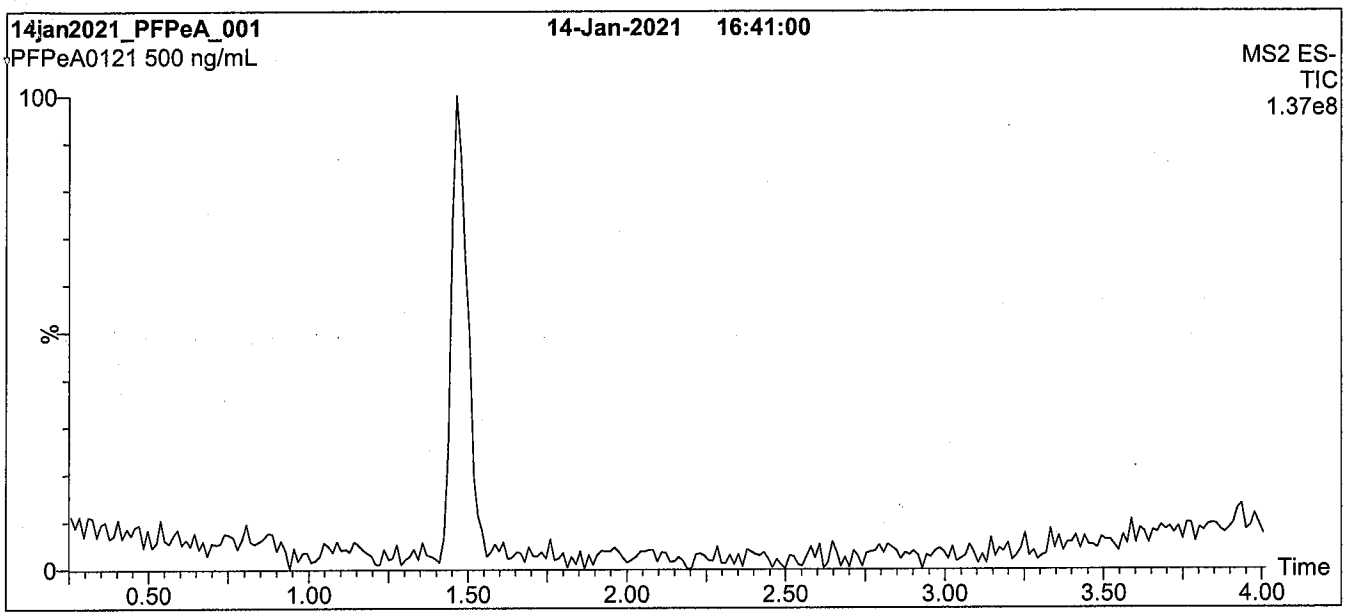
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

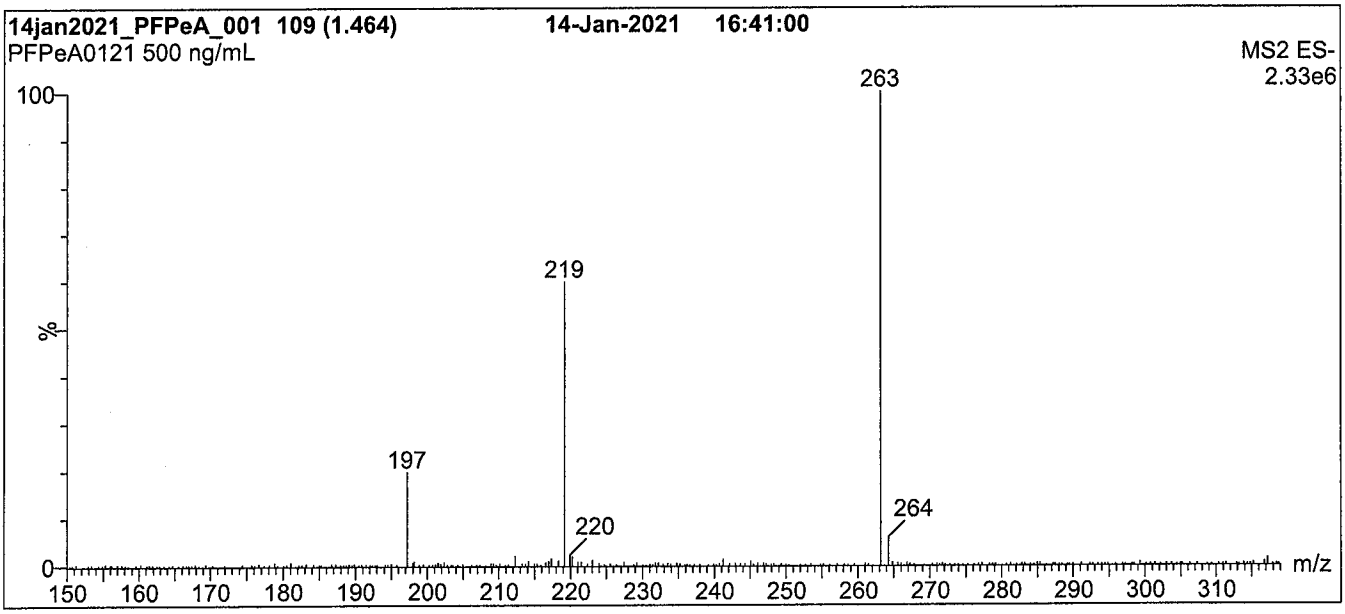
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Certified By: _____ **Date:** 02/01/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Figure 1: **PFPeA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Reagent

PFC_ST_01219

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

~~PFC-IS-012109~~ ⑧ HMK 27321 1/6/22
PFC-ST-012109

MPFAC-C-ES

Mass-Labelled Perfluorinated Compound Extraction Standards Solution

PRODUCT CODE:	MPFAC-C-ES
LOT NUMBER:	MPFACCES0121
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/11/2021
LAST TESTED: (mm/dd/yyyy)	01/13/2021
EXPIRY DATE: (mm/dd/yyyy)	01/13/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-C-ES is a solution/mixture of mass-labelled (^{13}C) perfluoroalkylcarboxylic acids and mass-labelled (^{13}C) perfluoroalkylsulfonates. The components and their concentrations are given in Table A.

MPFAC-C-ES was designed for, and prepared to be used with, PFC-CVS-C.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkylsulfonates all have chemical purities of >98% and isotopic purities of ≥99%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- All mass-labelled perfluoroalkylsulfonate compound concentrations are reported as the salt.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

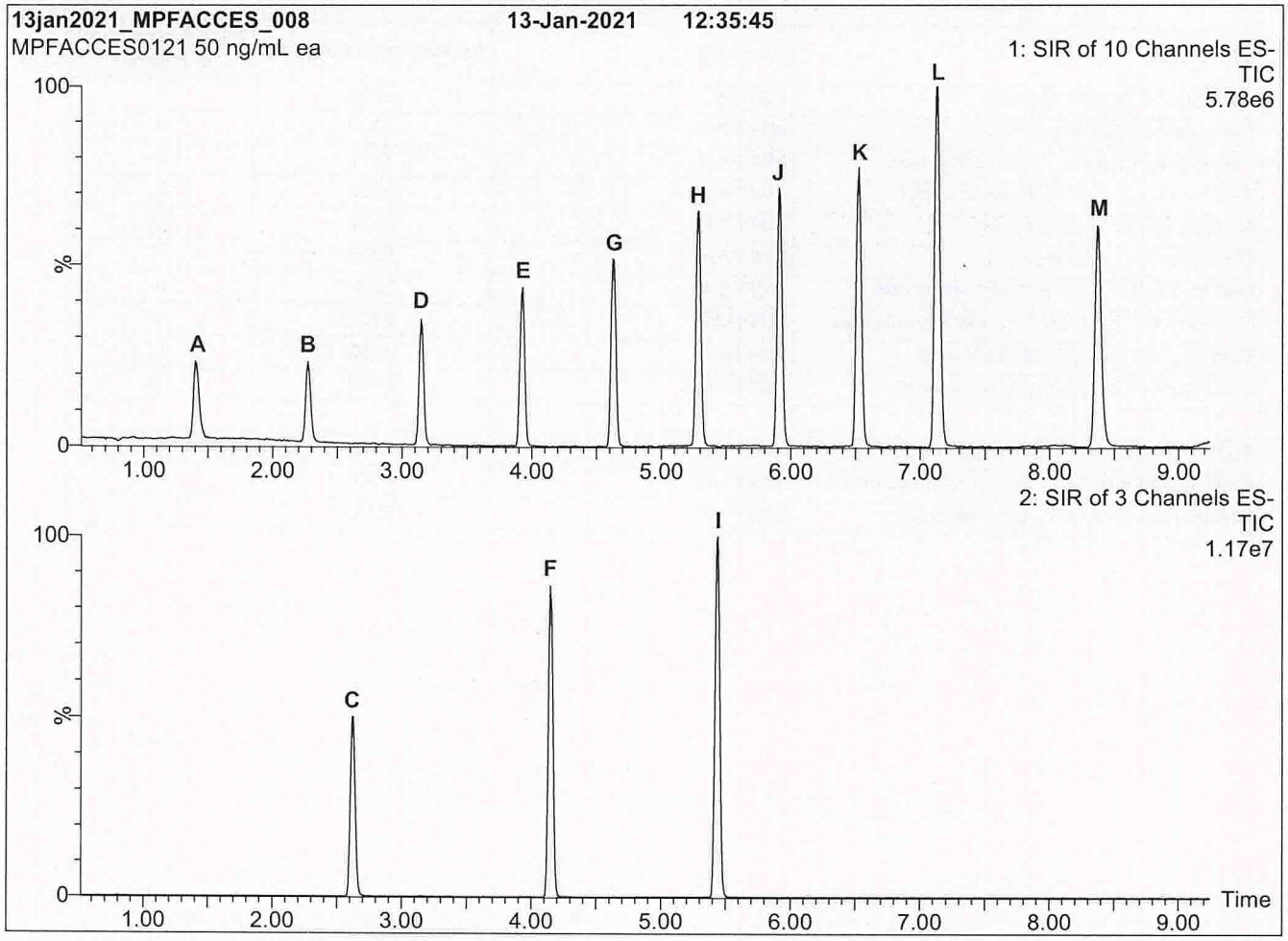
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **MPFAC-C-ES; Components and Concentrations (ng/mL; ± 5% in Methanol / Water (<1%))**

Compound	Acronym	Concentration (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-[$^{13}C_4$]butanoic acid	MPFBA	2000	A
Perfluoro-n-[$^{13}C_5$]pentanoic acid	M5PFPeA	2000	B
Perfluoro-n-[1,2,3,4,6-$^{13}C_5$]hexanoic acid	M5PFHxA	2000	D
Perfluoro-n-[1,2,3,4-$^{13}C_4$]heptanoic acid	M4PFHpA	2000	E
Perfluoro-n-[$^{13}C_8$]octanoic acid	M8PFOA	2000	G
Perfluoro-n-[$^{13}C_9$]nonanoic acid	M9PFNA	2000	H
Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid	M6PFDA	2000	J
Perfluoro-n-[1,2,3,4,5,6,7-$^{13}C_7$]undecanoic acid	M7PFUdA	2000	K
Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid	MPFDoA	2000	L
Perfluoro-n-[1,2-$^{13}C_2$]tetradecanoic acid	M2PFTeDA	2000	M
Sodium perfluoro-1-[2,3,4-$^{13}C_3$]butanesulfonate	M3PFBS	2000	C
Sodium perfluoro-1-[1,2,3-$^{13}C_3$]hexanesulfonate	M3PFHxS	2000	F
Sodium perfluoro-1-[$^{13}C_8$]octanesulfonate	M8PFOS	2000	I

Certified By: _____ **Date:** 01/18/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **MPFAC-C-ES; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR (13 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-10)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MPFAC-C-ES; LC/MS/MS Data (Selected MRM Transitions)**

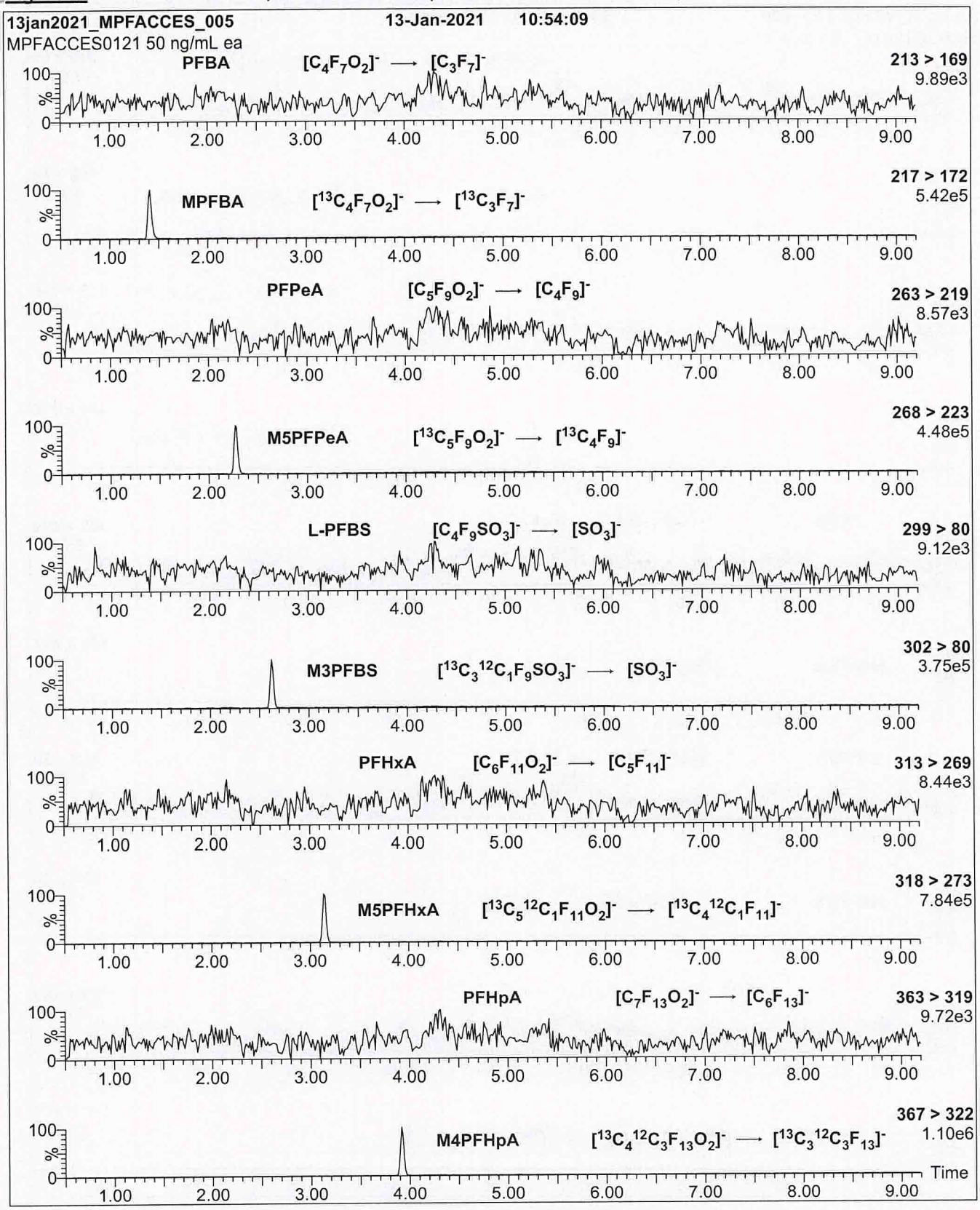


Figure 2: **MPFAC-C-ES; LC/MS/MS Data (Selected MRM Transitions)**

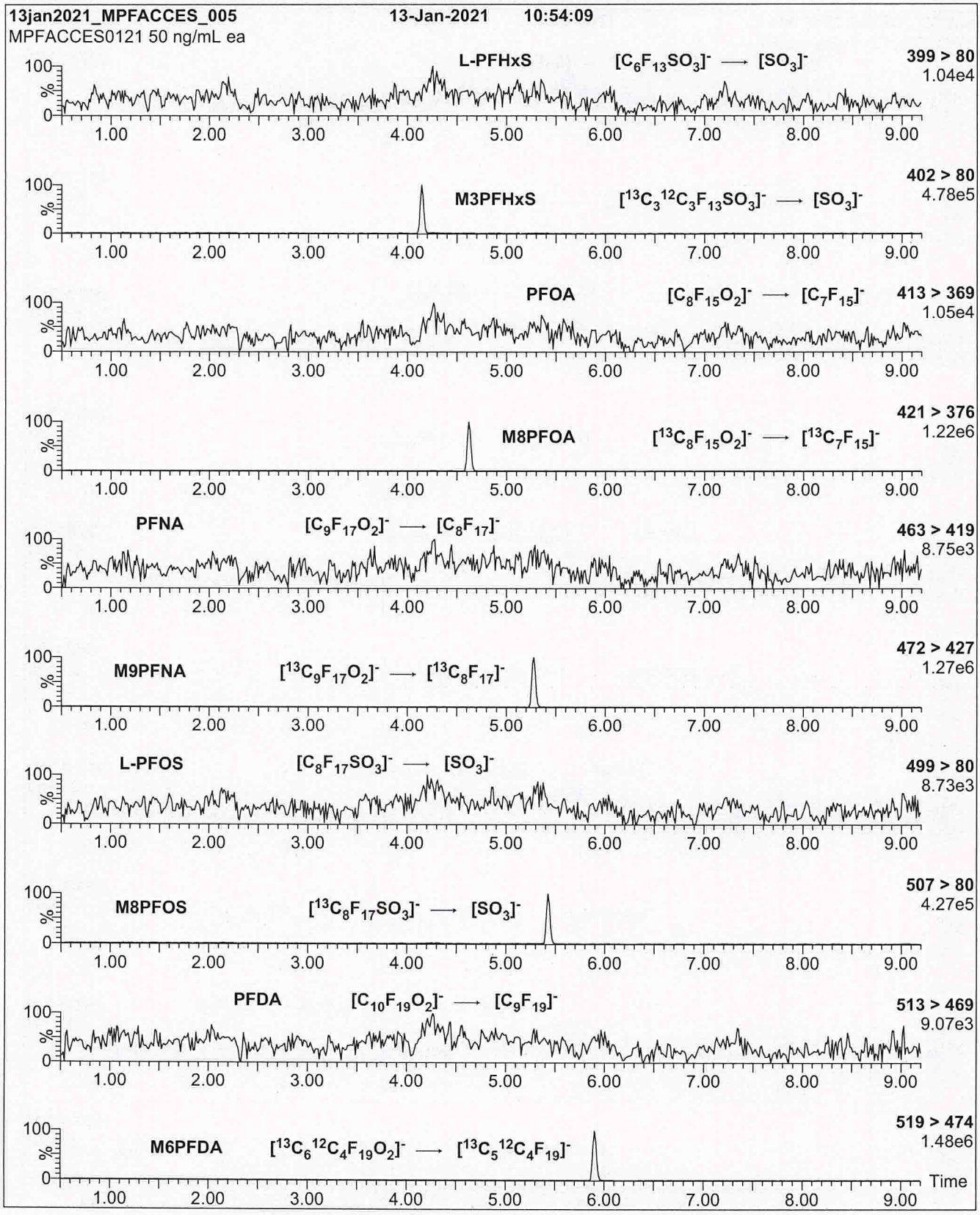
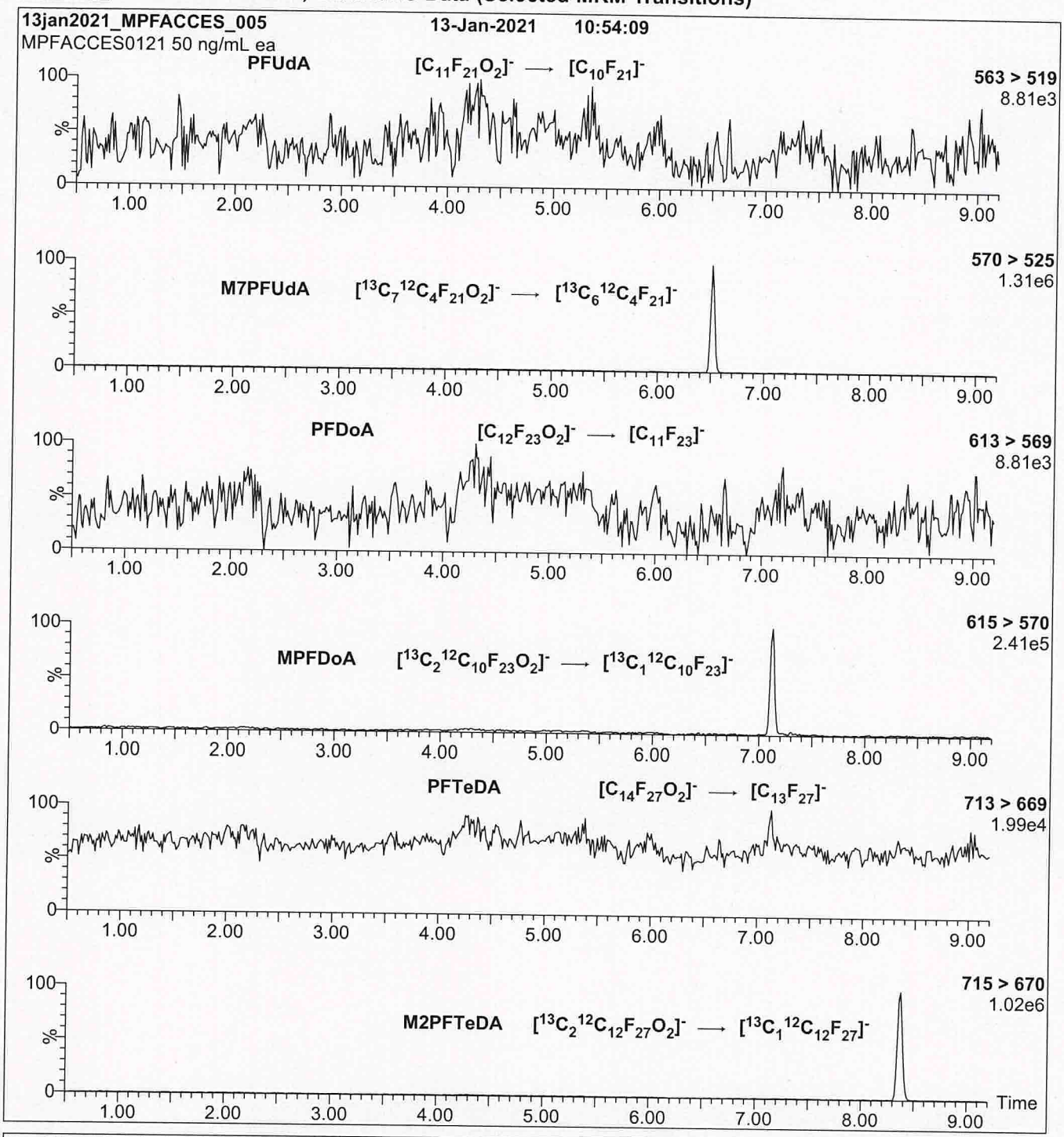


Figure 2: **MPFAC-C-ES; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFAC-C-ES)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3

Collision Energy (eV) = 8-64 (variable)

Reagent

PFC_ST_01221

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

~~PFC_TS~~ (8) HWR24321
PFC_ST_01221 1/6/22

EPA-537PDS-R1

Native PFAS Primary Dilution Standard Solution/Mixture

PRODUCT CODE:	EPA-537PDS-R1
LOT NUMBER:	537PDSR10521
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	05/25/2021
LAST TESTED: (mm/dd/yyyy)	06/01/2021
EXPIRY DATE: (mm/dd/yyyy)	06/01/2024
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

EPA-537PDS-R1 is a solution/mixture of native linear perfluoroalkylcarboxylic acids (PFCAs; C_6-C_{14}), native perfluoroalkylsulfonates (PFSAs; C_4 linear; C_6 and C_8 linear and branched), native N-substituted perfluorooctanesulfonamidoacetic acids (N-MeFOSAA and N-EtFOSAA; linear and branched), GenX (HFPO-DA), the main components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and the sodium salt of ADONA (NaDONA). The components and their concentrations are given in Table A.

The components of this solution/mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-537PDS-R1; Components and Concentrations (± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-hexanoic acid	PFHxA	2000	B
Perfluoro-n-heptanoic acid	PFHpA	2000	D
Perfluoro-n-octanoic acid	PFOA	2000	H
Perfluoro-n-nonanoic acid	PFNA	2000	I
Perfluoro-n-decanoic acid	PFDA	2000	M
Perfluoro-n-undecanoic acid	PFUdA	2000	R
Perfluoro-n-dodecanoic acid	PFDoA	2000	T
Perfluoro-n-tridecanoic acid	PFTrDA	2000	U
Perfluoro-n-tetradecanoic acid	PFTeDA	2000	V
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000	C
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	1520	O
	N-MeFOSAA: ∑ branched isomers	480	N
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	1550	Q
	N-EtFOSAA: ∑ branched isomers	450	P

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	A
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	1620	1480	G
	PFHxSK: ∑ branched isomers	378	345	F
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	1580	1460	K
	PFOSK: ∑ branched isomers	422	392	J
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	E
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	L
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	S

* Concentrations have been rounded to three significant figures.

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

Table B: **N-MeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: **N-EtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2NCH_2CO_2H$ C_2H_5	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_2)_2SO_2NCH_2CO_2H$ CF_3 C_2H_5	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_2)_3SO_2NCH_2CO_2H$ CF_3 C_2H_5	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_2)_4SO_2NCH_2CO_2H$ CF_3 C_2H_5	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_2)_5SO_2NCH_2CO_2H$ CF_3 C_2H_5	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_2)_4SO_2NCH_2CO_2H$ CF_3 CF_3 C_2H_5	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CFCF(CF_2)_3SO_2NCH_2CO_2H$ CF_3 CF_3 C_2H_5	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CFCF_2CF(CF_2)_2SO_2NCH_2CO_2H$ CF_3 CF_3 C_2H_5	0.3	
9	Other Unidentified Isomers		1.3	

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Table D: **PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)CF_2CF_2SO_3^-K^+$	0.2	
7	Other Unidentified Isomers		0.5	

* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

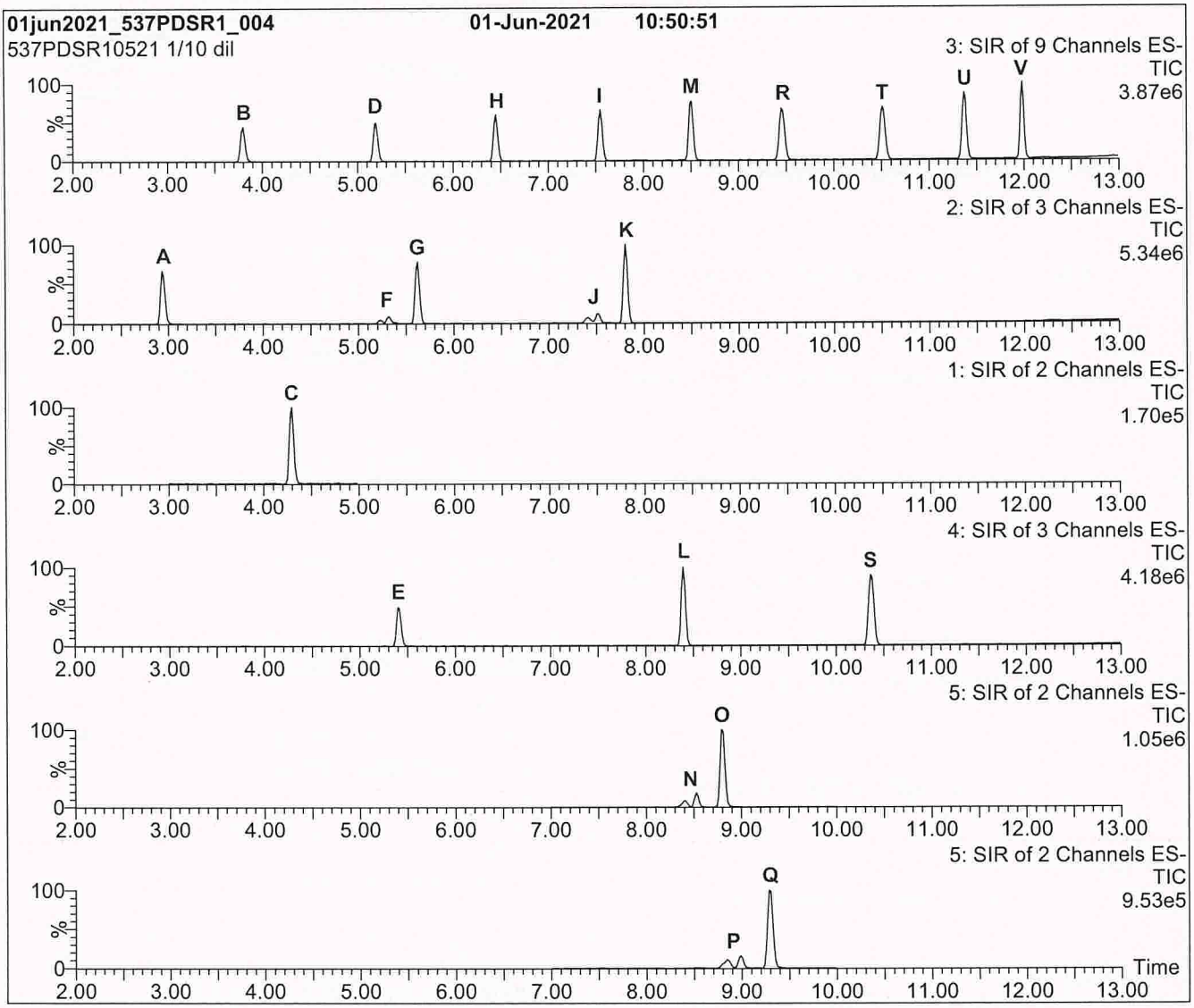
Table E: **PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07	

* Percent of total perfluorooctanesulfonate isomers only.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: _____ **Date:** 06/02/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **EPA-537PDS-R1; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 70% organic over 7 min then ramp to 90% organic over 4.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (L/hr) = 1000

Figure 2: EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)

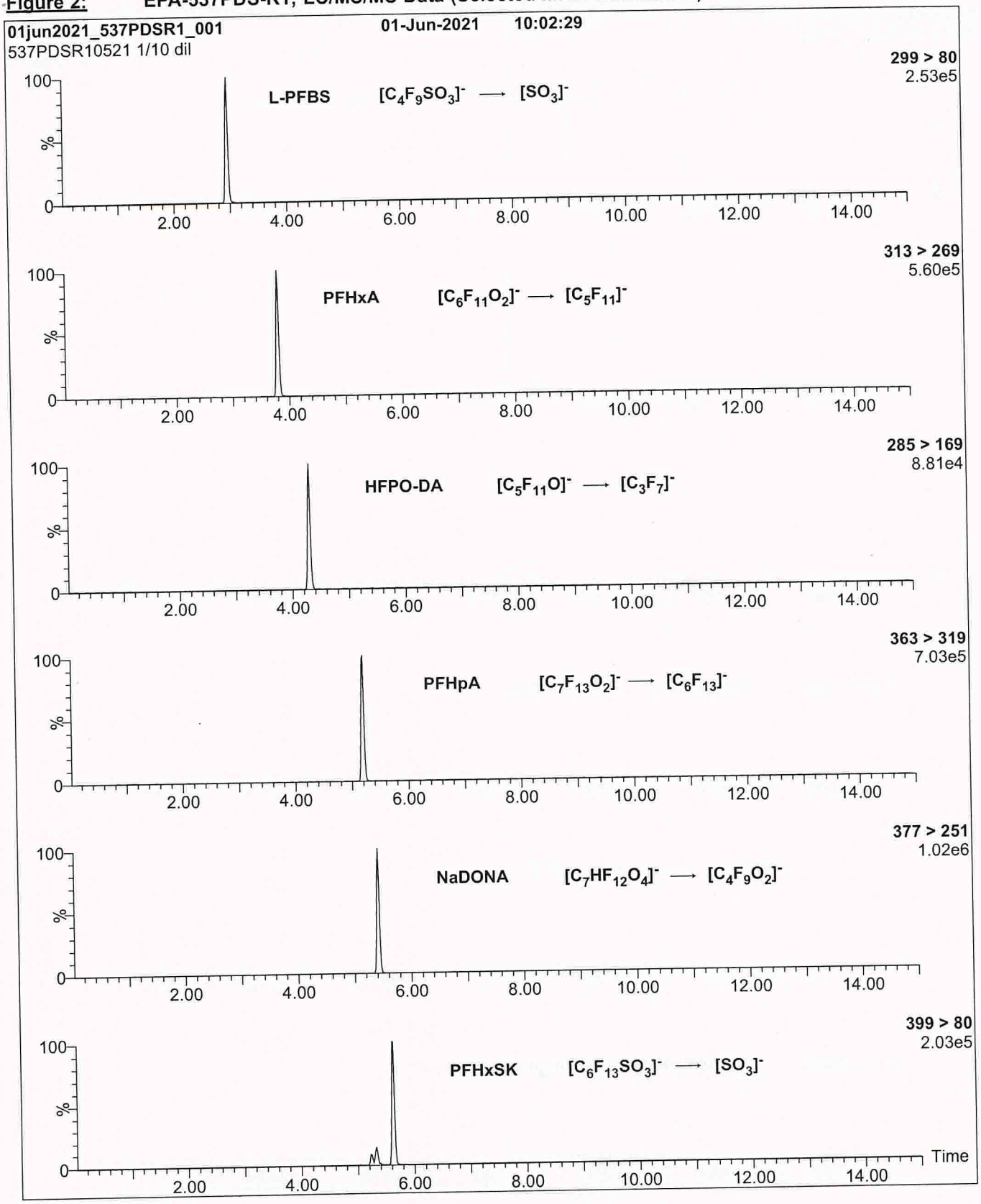


Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**

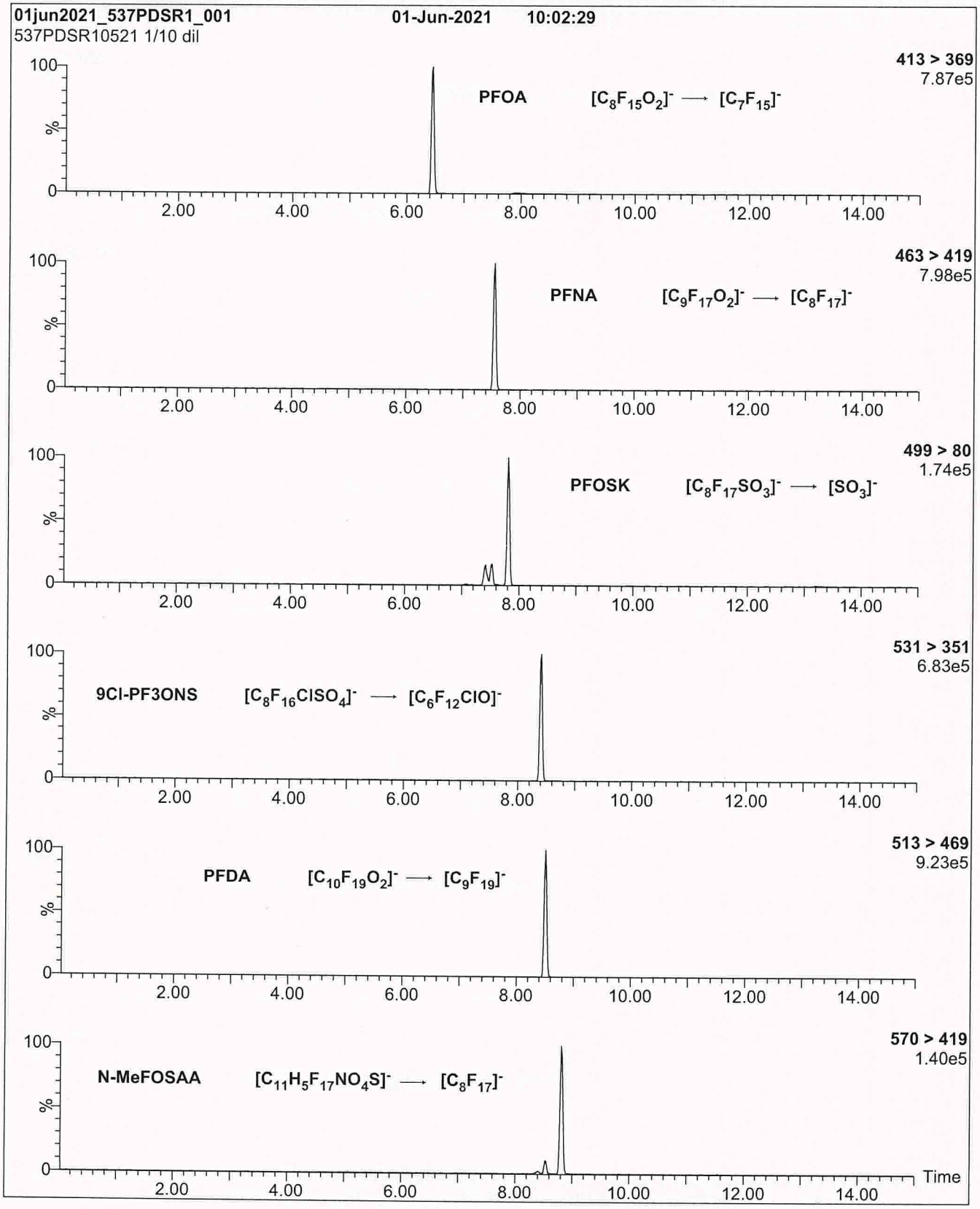
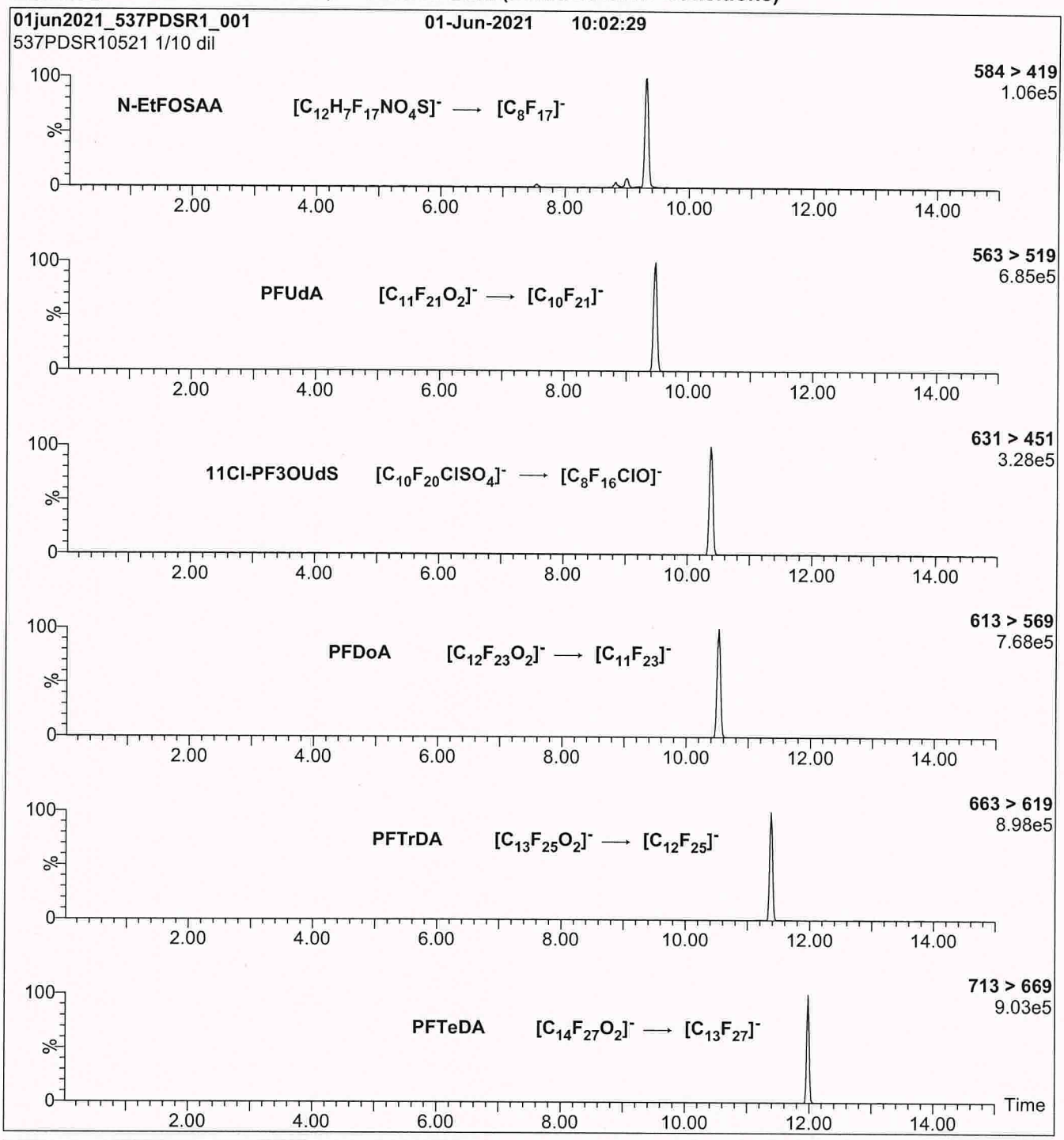


Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (EPA-537PDS-R1)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 4-64 (variable)

Reagent

PFC_ST_01222

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFC-ST-01222

EPA-537PDS-R1

Native PFAS Primary Dilution Standard Solution/Mixture

PRODUCT CODE:	EPA-537PDS-R1
LOT NUMBER:	537PDSR10521
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	05/25/2021
LAST TESTED: (mm/dd/yyyy)	06/01/2021
EXPIRY DATE: (mm/dd/yyyy)	06/01/2024
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

EPA-537PDS-R1 is a solution/mixture of native linear perfluoroalkylcarboxylic acids (PFCAs; C_6-C_{14}), native perfluoroalkylsulfonates (PFSAs; C_4 linear; C_6 and C_8 linear and branched), native N-substituted perfluorooctanesulfonamidoacetic acids (N-MeFOSAA and N-EtFOSAA; linear and branched), GenX (HFPO-DA), the main components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and the sodium salt of ADONA (NaDONA). The components and their concentrations are given in Table A.

The components of this solution/mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-537PDS-R1; Components and Concentrations (± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-hexanoic acid	PFHxA	2000	B
Perfluoro-n-heptanoic acid	PFHpA	2000	D
Perfluoro-n-octanoic acid	PFOA	2000	H
Perfluoro-n-nonanoic acid	PFNA	2000	I
Perfluoro-n-decanoic acid	PFDA	2000	M
Perfluoro-n-undecanoic acid	PFUdA	2000	R
Perfluoro-n-dodecanoic acid	PFDoA	2000	T
Perfluoro-n-tridecanoic acid	PFTrDA	2000	U
Perfluoro-n-tetradecanoic acid	PFTeDA	2000	V
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000	C
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	1520	O
	N-MeFOSAA: ∑ branched isomers	480	N
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	1550	Q
	N-EtFOSAA: ∑ branched isomers	450	P

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	A
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	1620	1480	G
	PFHxSK: ∑ branched isomers	378	345	F
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	1580	1460	K
	PFOSK: ∑ branched isomers	422	392	J
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	E
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	L
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	S

* Concentrations have been rounded to three significant figures.

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

Table B: **N-MeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: **N-EtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	0.3	
9	Other Unidentified Isomers		1.3	

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Table D: **PFHxSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3C(CF_3)CF_2CF_2SO_3^-K^+$	0.2	
7	Other Unidentified Isomers		0.5	

* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Table E: **PFOSK; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

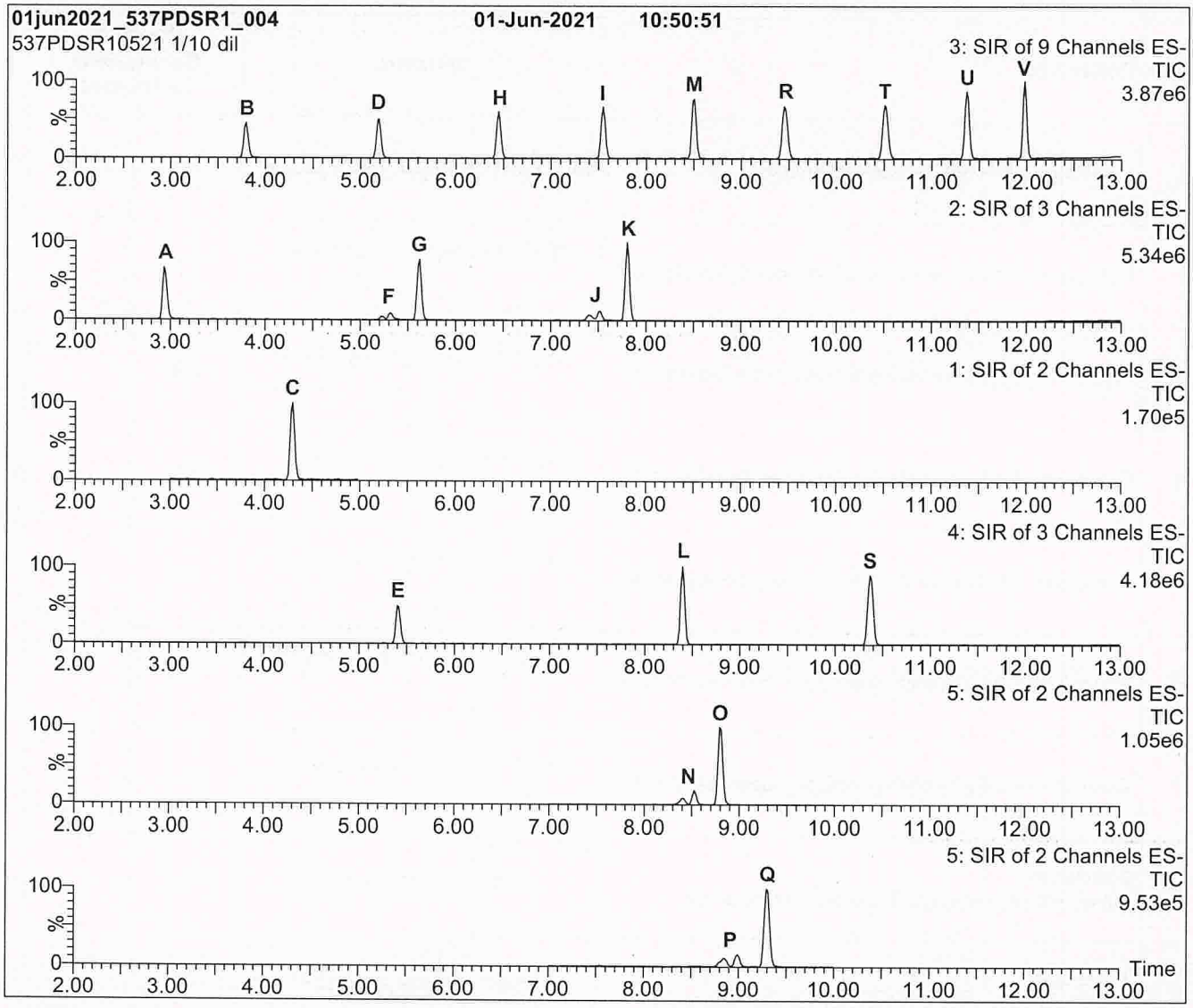
Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)_2CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)_2CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07	

* Percent of total perfluorooctanesulfonate isomers only.
** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Certified By: _____ **Date:** 06/02/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **EPA-537PDS-R1; LC/MS Data (SIR)**



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 70% organic over 7 min then ramp to 90% organic over 4.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**

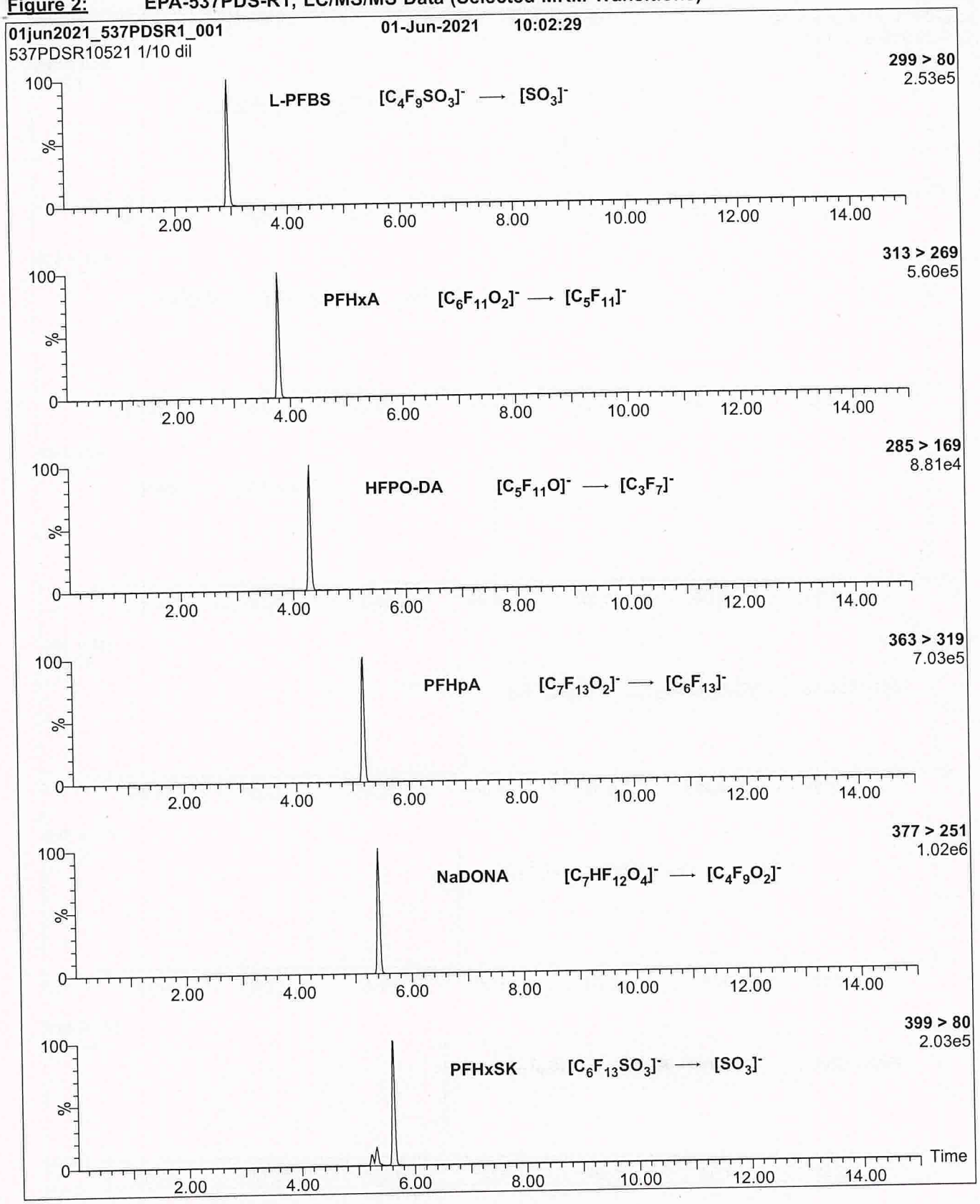


Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**

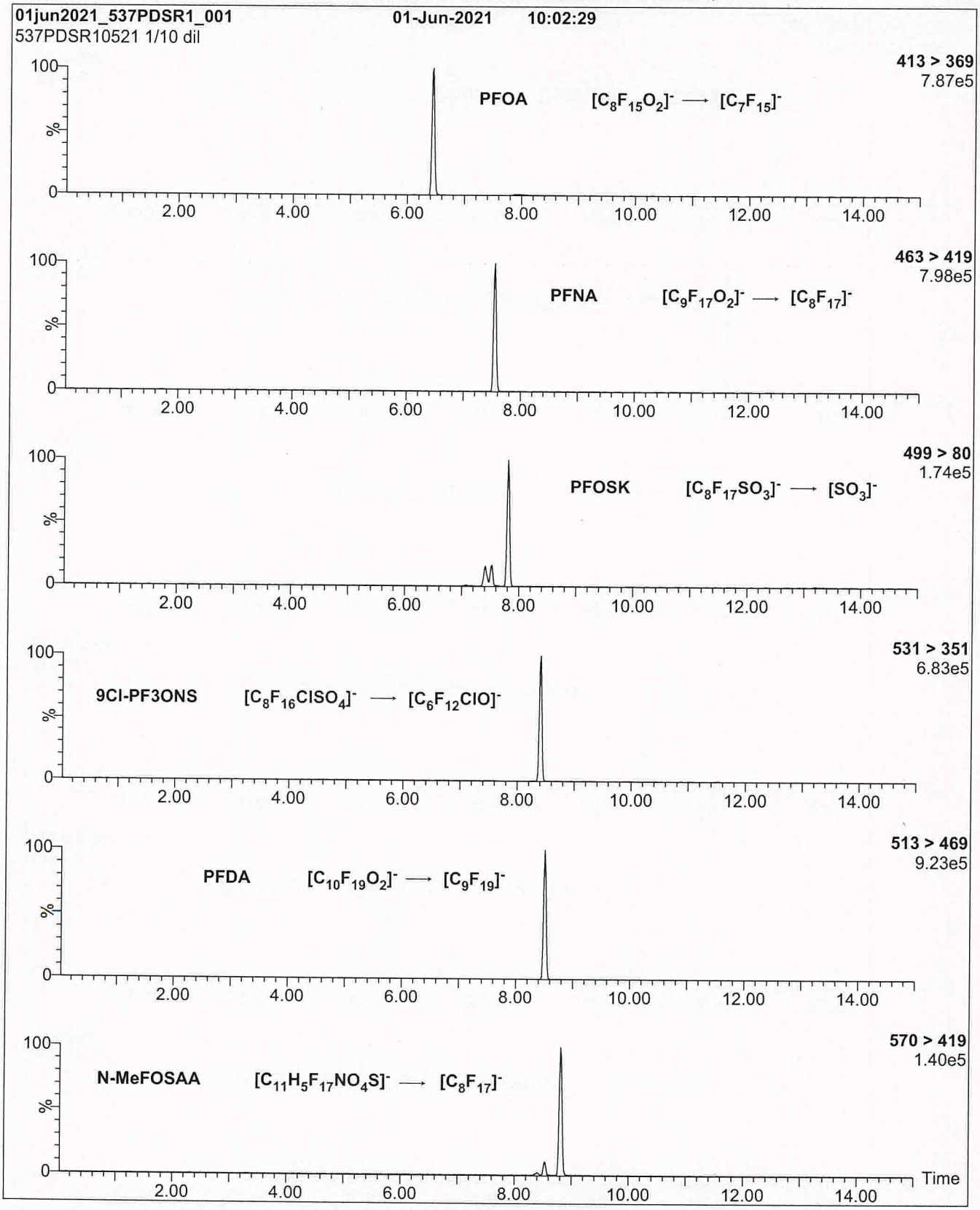
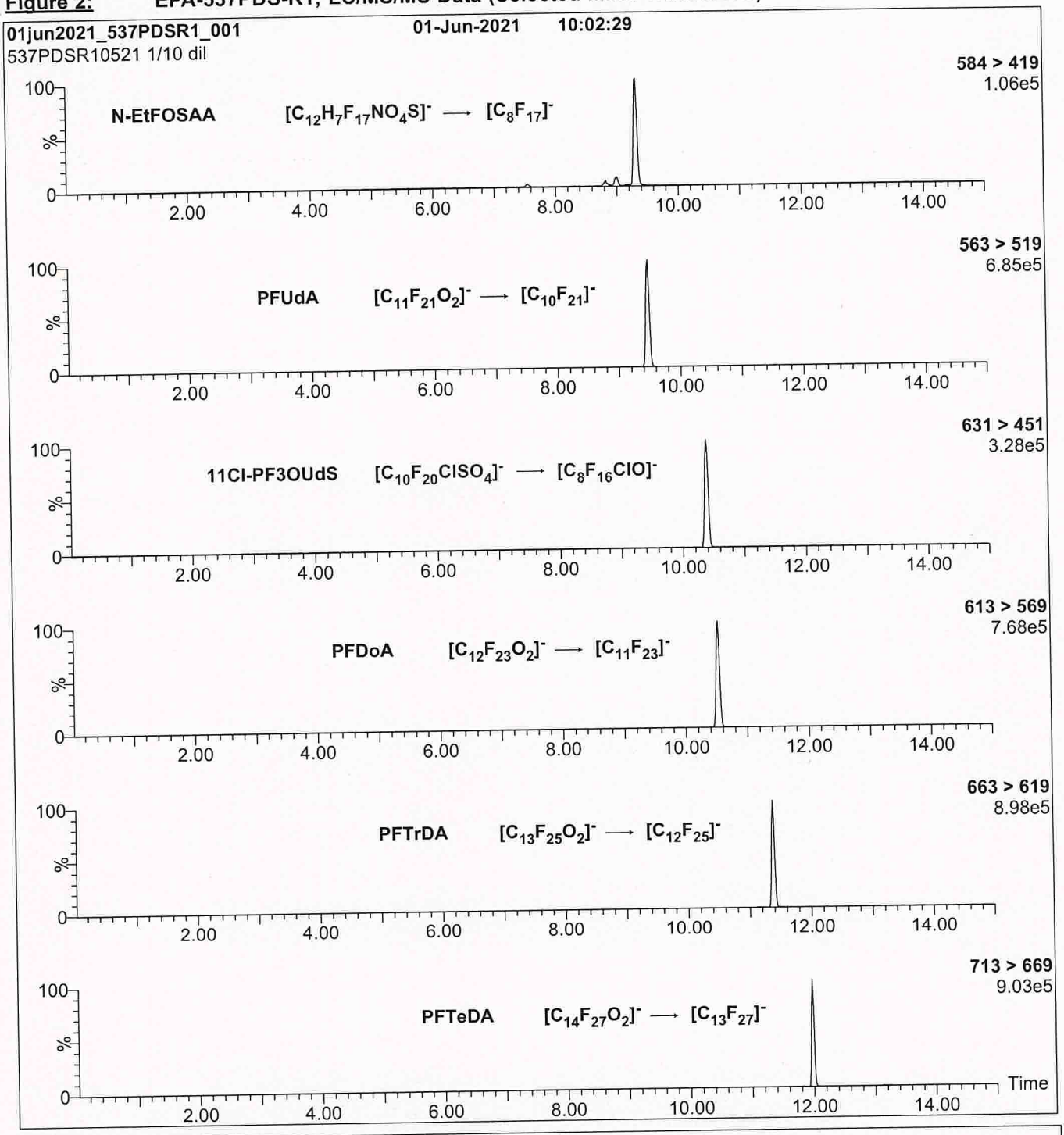


Figure 2: **EPA-537PDS-R1; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (EPA-537PDS-R1)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:
Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 4-64 (variable)

Reagent

PFC_ST_01224

WELLINGTON LABORATORIES

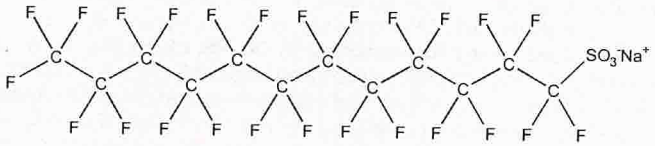
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFC_ST_01224

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate
LOT NUMBER: LPFDoS1021

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: $C_{12}F_{25}SO_3Na$
MOLECULAR WEIGHT: 722.14
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
48.5 ± 2.4 µg/mL (PFDoS acid)
48.4 ± 2.4 µg/mL (PFDoS anion)
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/19/2021
EXPIRY DATE: (mm/dd/yyyy) 10/19/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: B.G. Chittim, General Manager **Date:** 10/22/2021 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

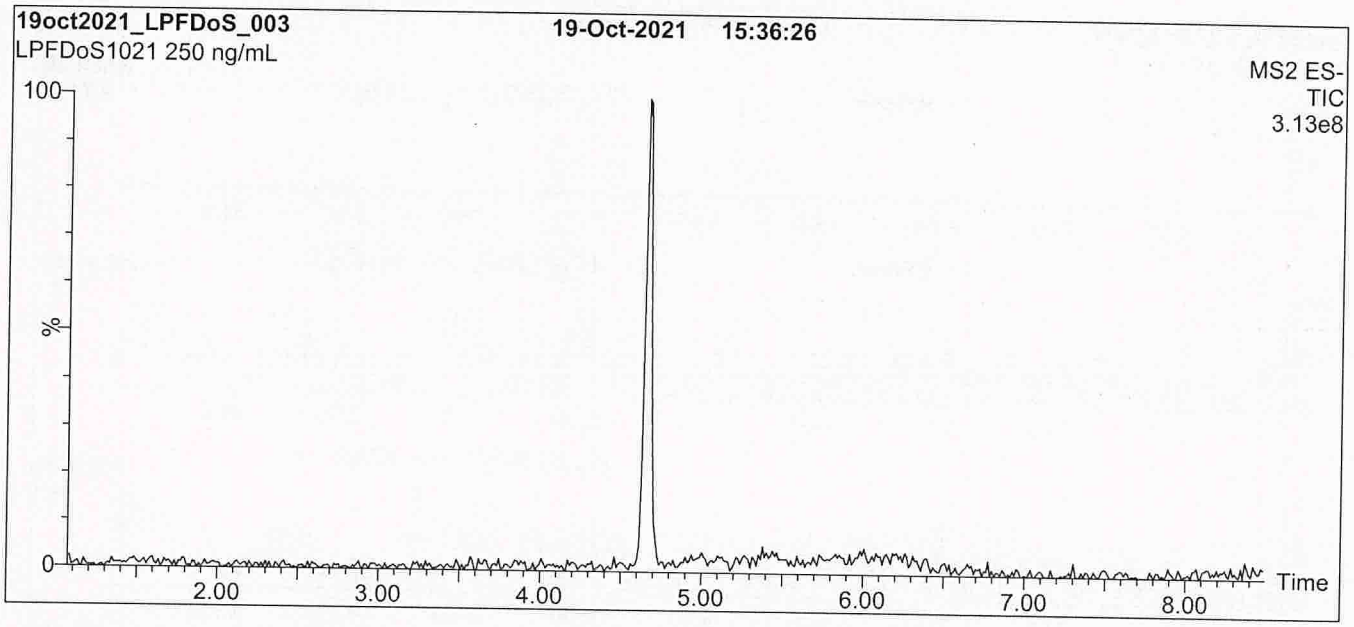
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

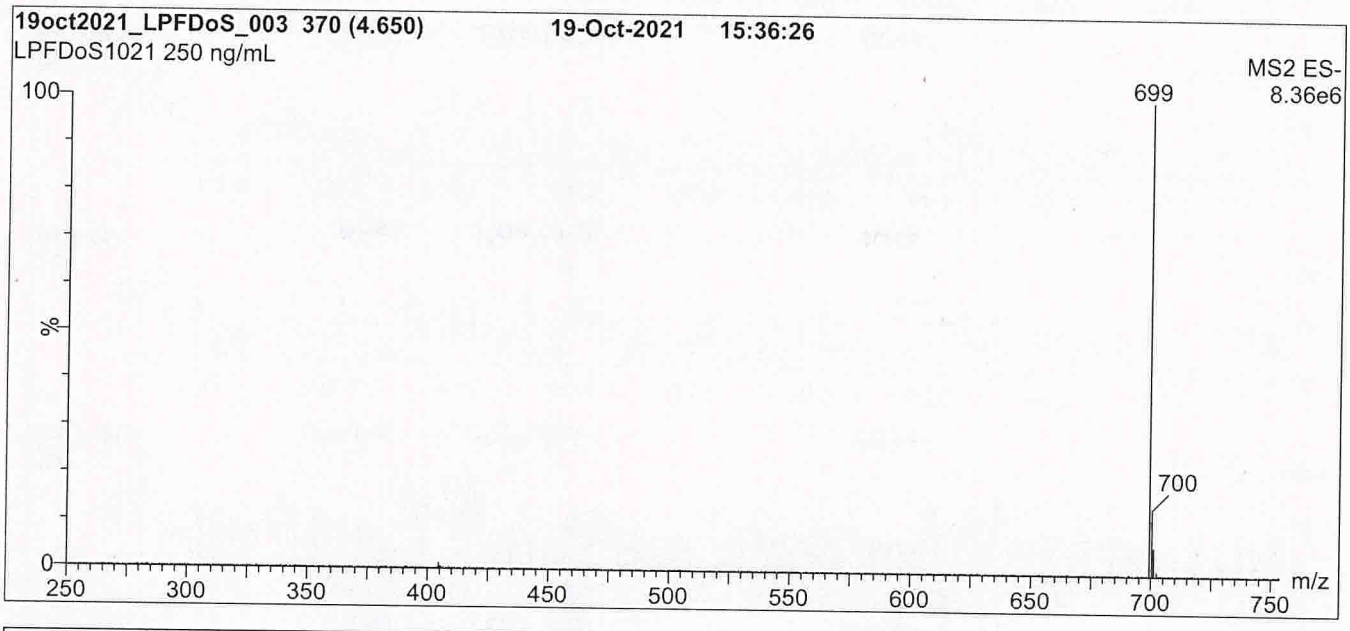
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **L-PFDoS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

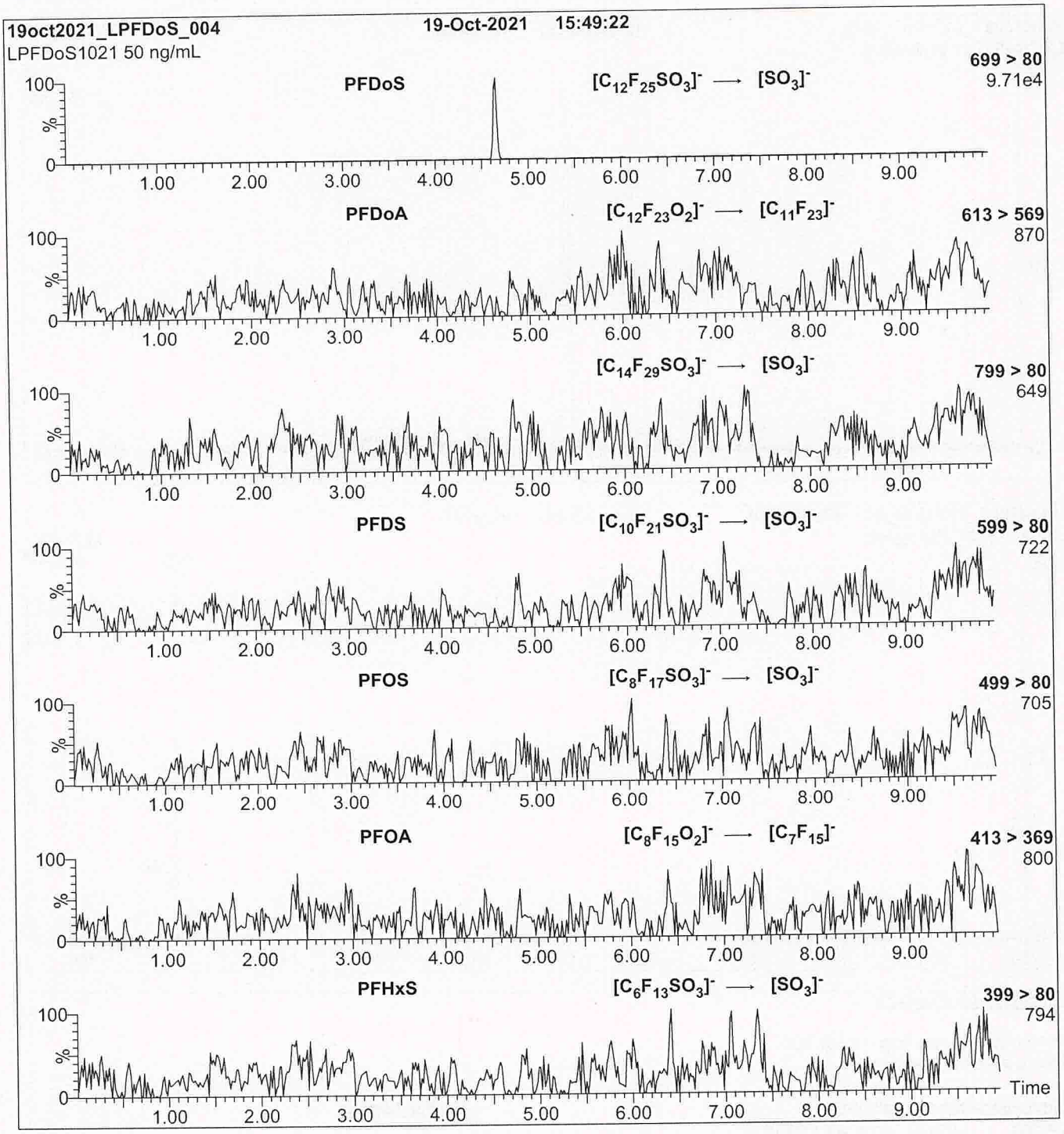
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **L-PFDoS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFDoS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 60

Reagent

PFC_ST_01293

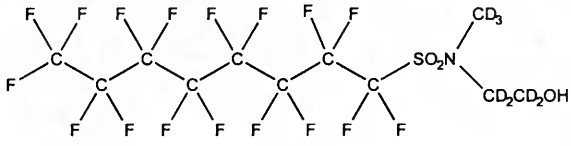
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d7-N-MeFOSE-M **LOT NUMBER:** d7NMeFOSE1220M

COMPOUND: 2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE: **CAS #:** 1265205-95-5



410-2375588

MOLECULAR FORMULA:	$C_{11}D_7HF_{17}NO_3S$	**MOLECULAR WEIGHT:**	564.27
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_7$
LAST TESTED: (mm/dd/yyyy)	01/06/2021 (HRGC/LRMS) 12/23/2020 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	01/06/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 01/18/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

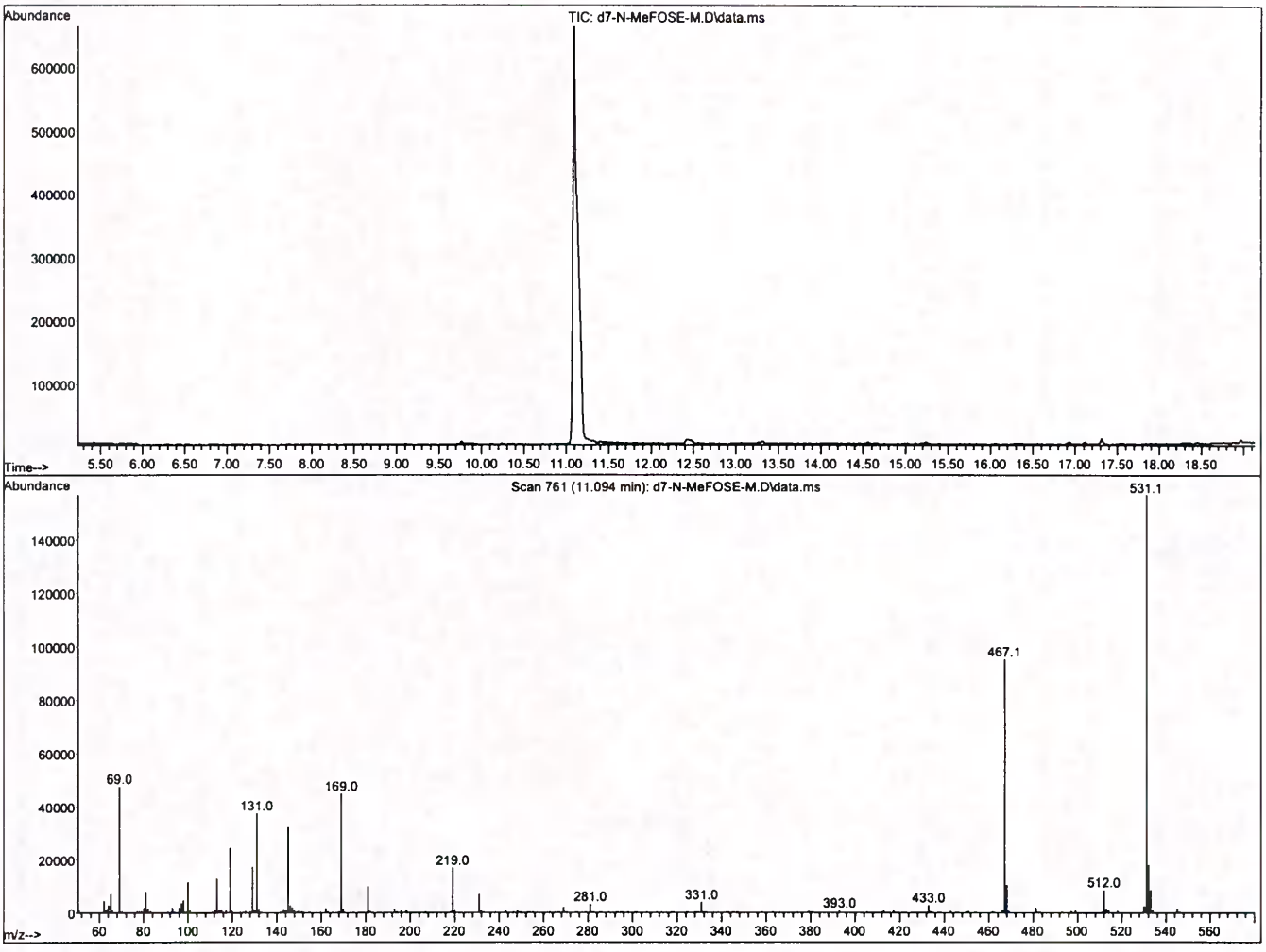
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **d7-N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



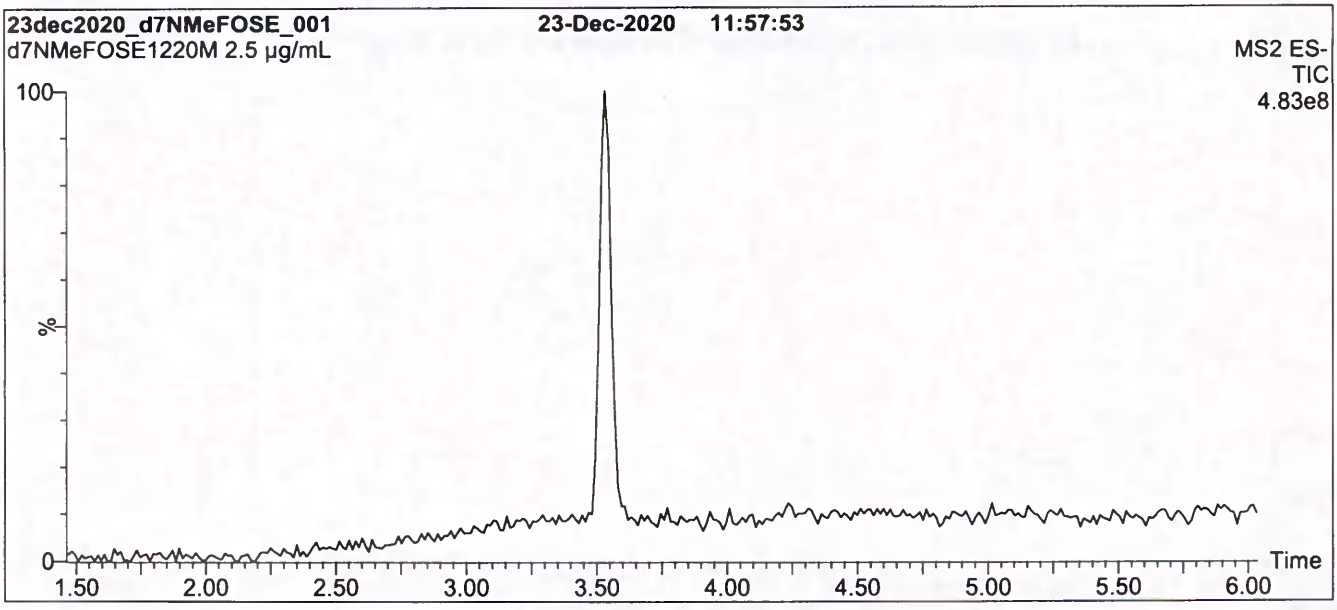
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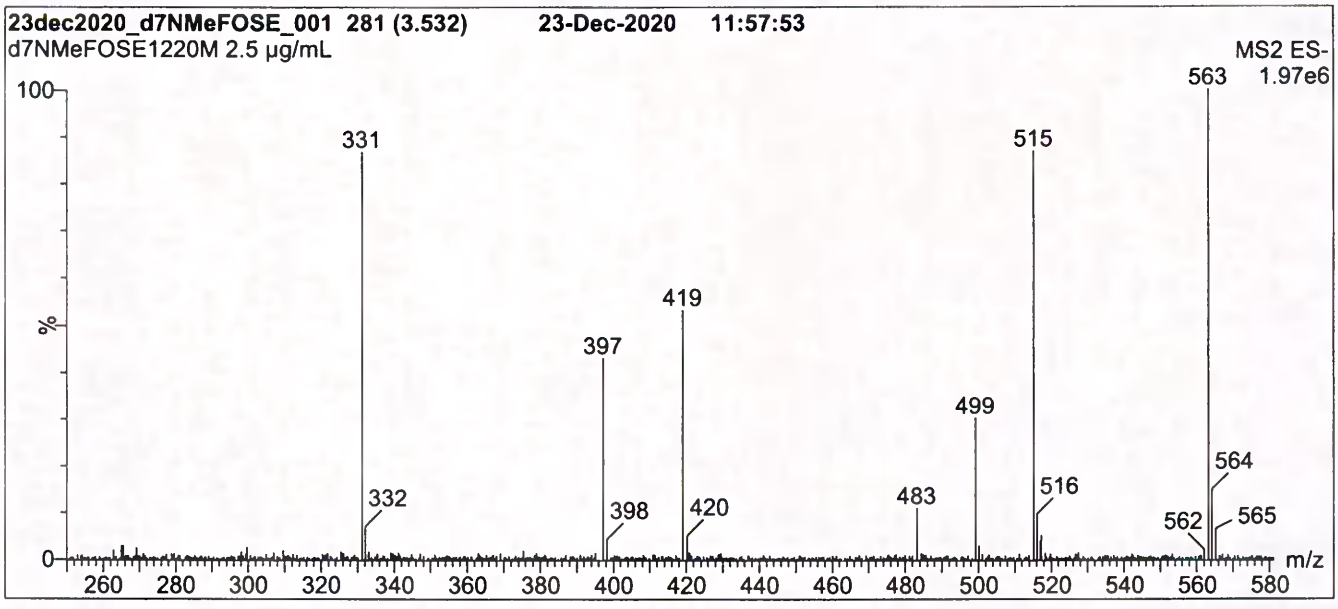
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 325°C 325°C (10 min)
Ionization:	EI+
Detector:	250°C Full Scan (50-1000 amu)

Figure 2: **d7-N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

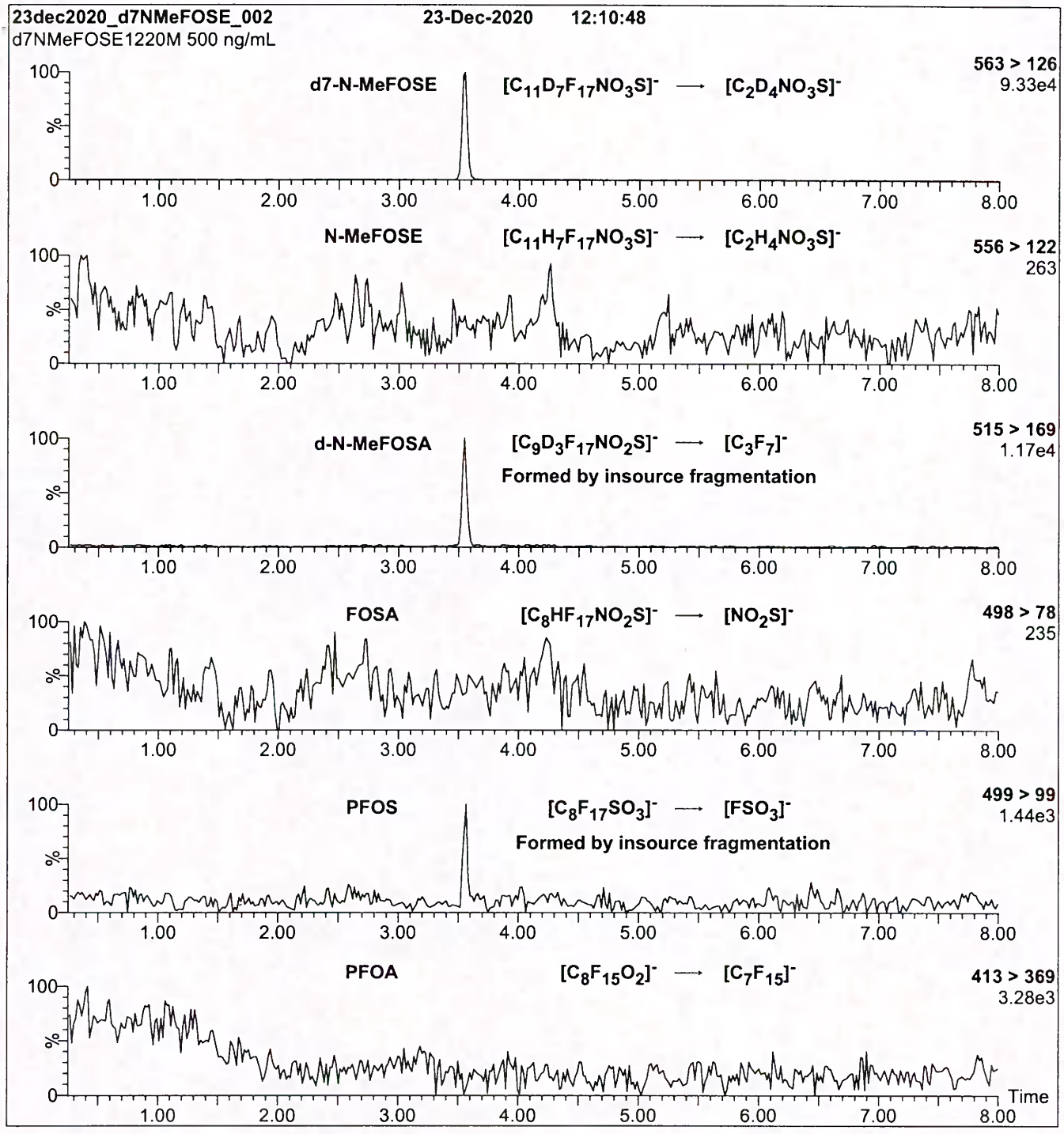
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **d7-N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (d7-N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 36

Reagent

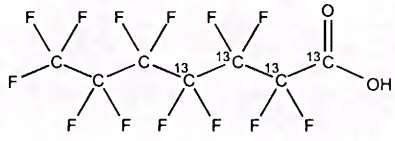
PFC_ST_01298

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M4PFHpA
LOT NUMBER: M4PFHpA1121
COMPOUND: Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid

STRUCTURE:



CAS #: 2328024-55-9

410-2376050

MOLECULAR FORMULA: $^{13}C_4{}^{12}C_3HF_{13}O_2$
MOLECULAR WEIGHT: 368.03
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)
CHEMICAL PURITY: >98%
ISOTOPIC PURITY: ≥99% ^{13}C ($1,2,3,4$-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy) 12/07/2021
EXPIRY DATE: (mm/dd/yyyy) 12/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.03% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/22/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

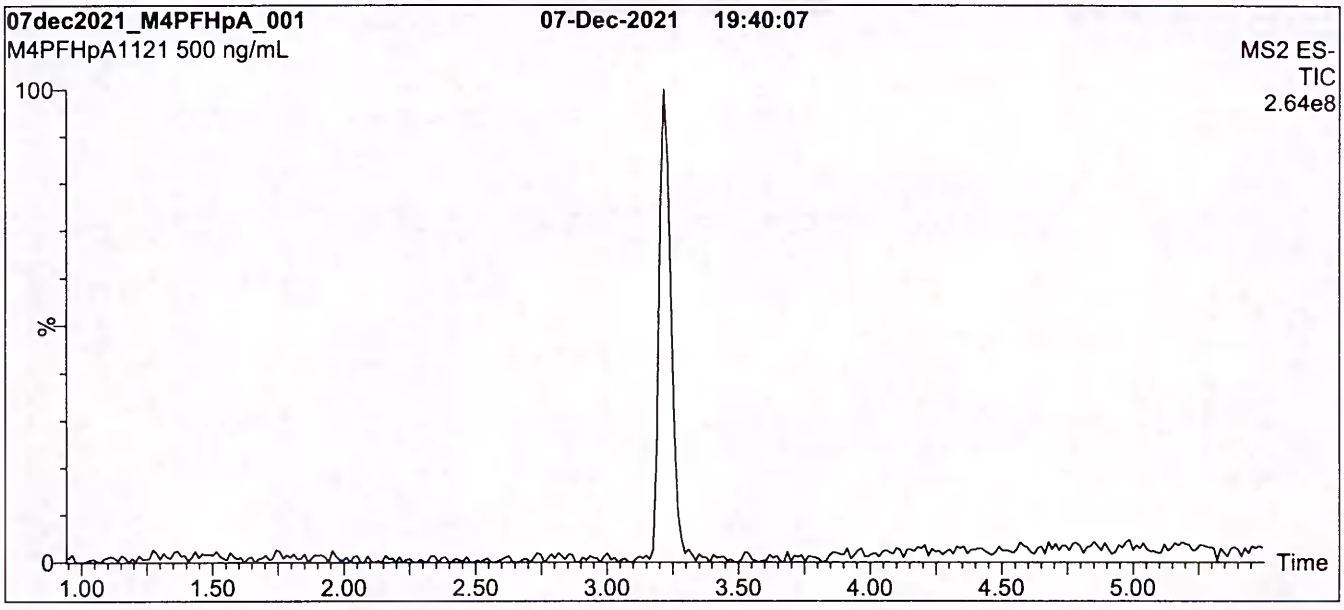
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

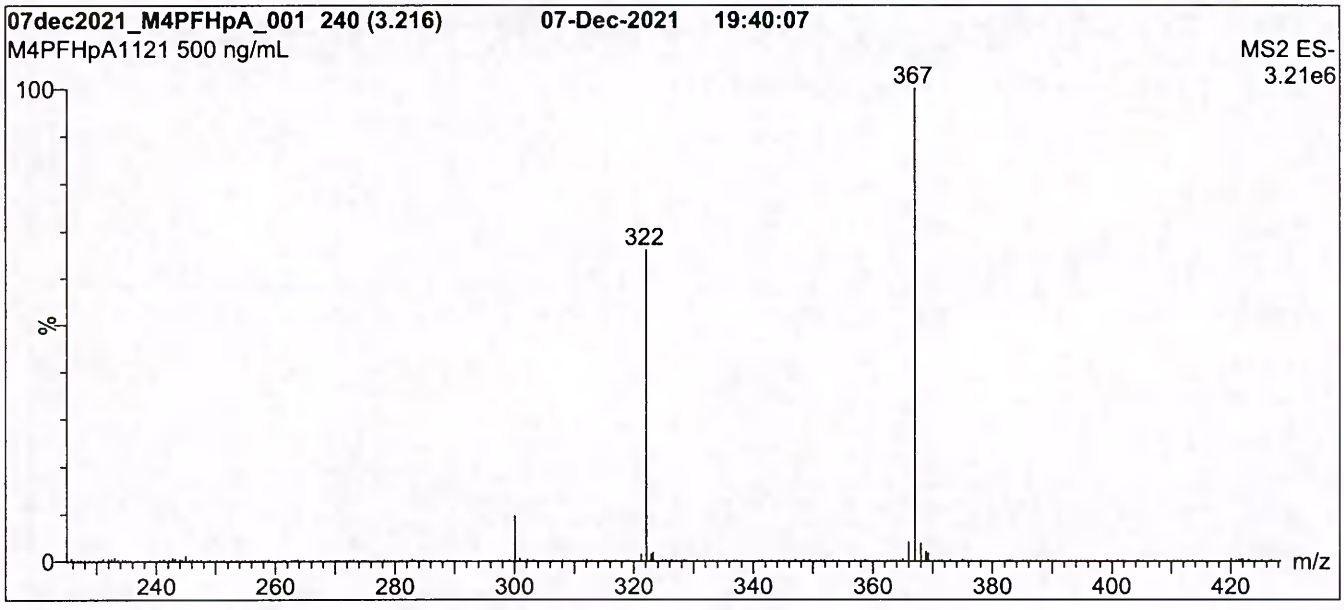
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **M4PFHpA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

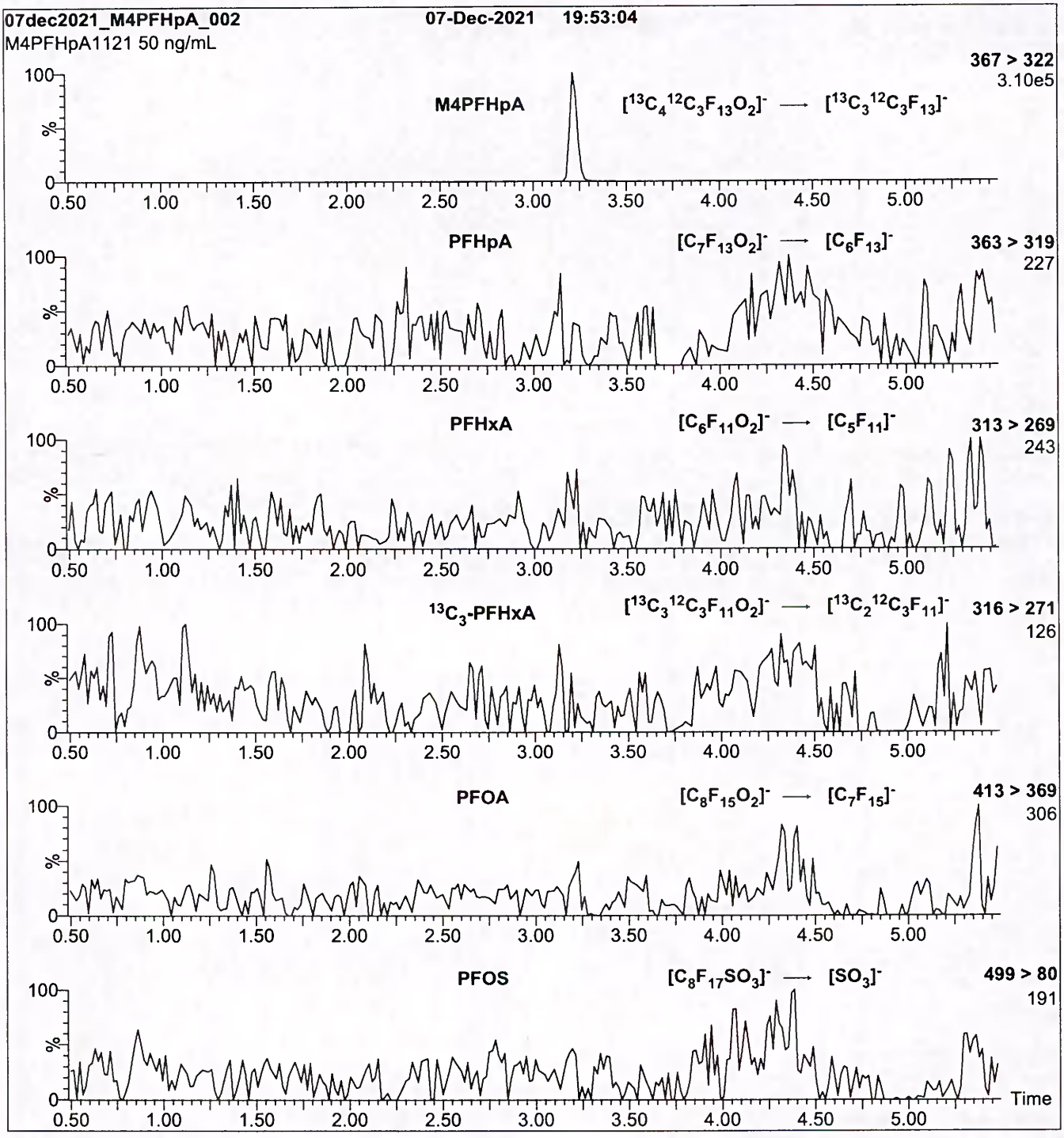
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M4PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 8

Reagent

PFC_ST_01300

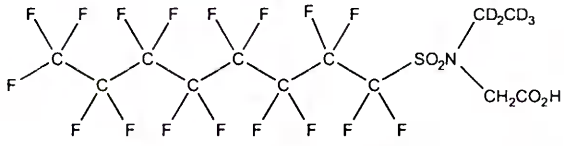
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0921

COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



410-2376054

MOLECULAR FORMULA:	$C_{12}D_5H_3F_{17}NO_4S$	**MOLECULAR WEIGHT:**	590.26
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_5$
LAST TESTED: (mm/dd/yyyy)	09/28/2021		
EXPIRY DATE: (mm/dd/yyyy)	09/28/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/01/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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QUALITY MANAGEMENT:

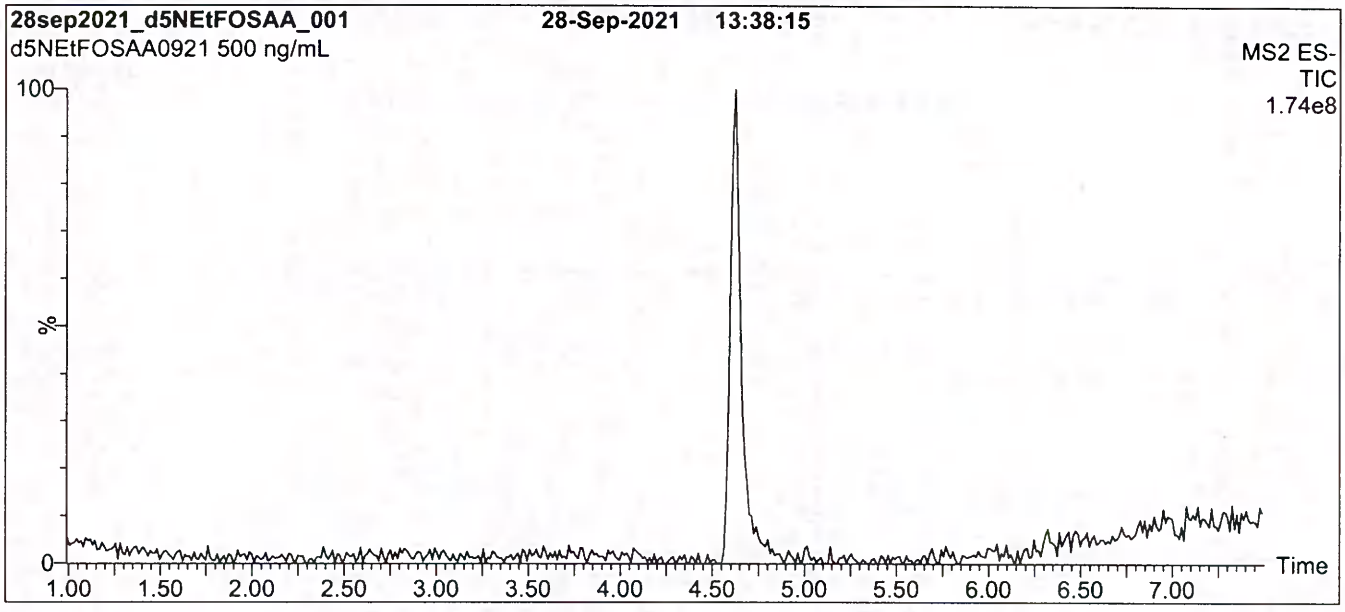
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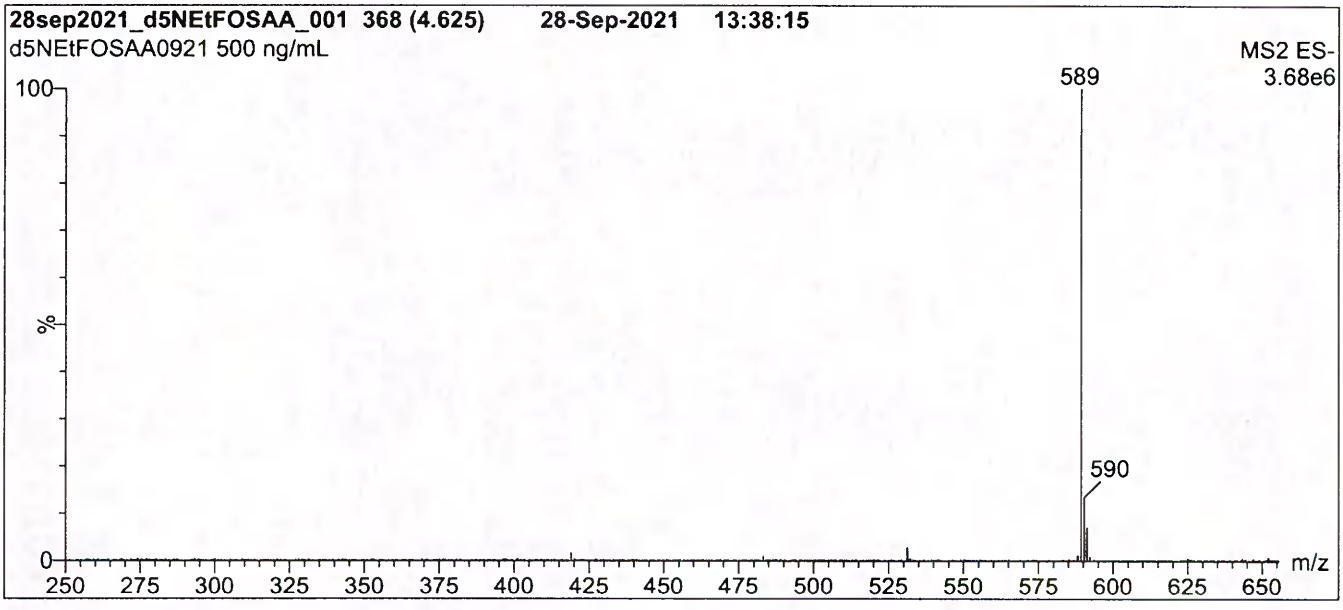
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **d5-N-EtFOSAA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

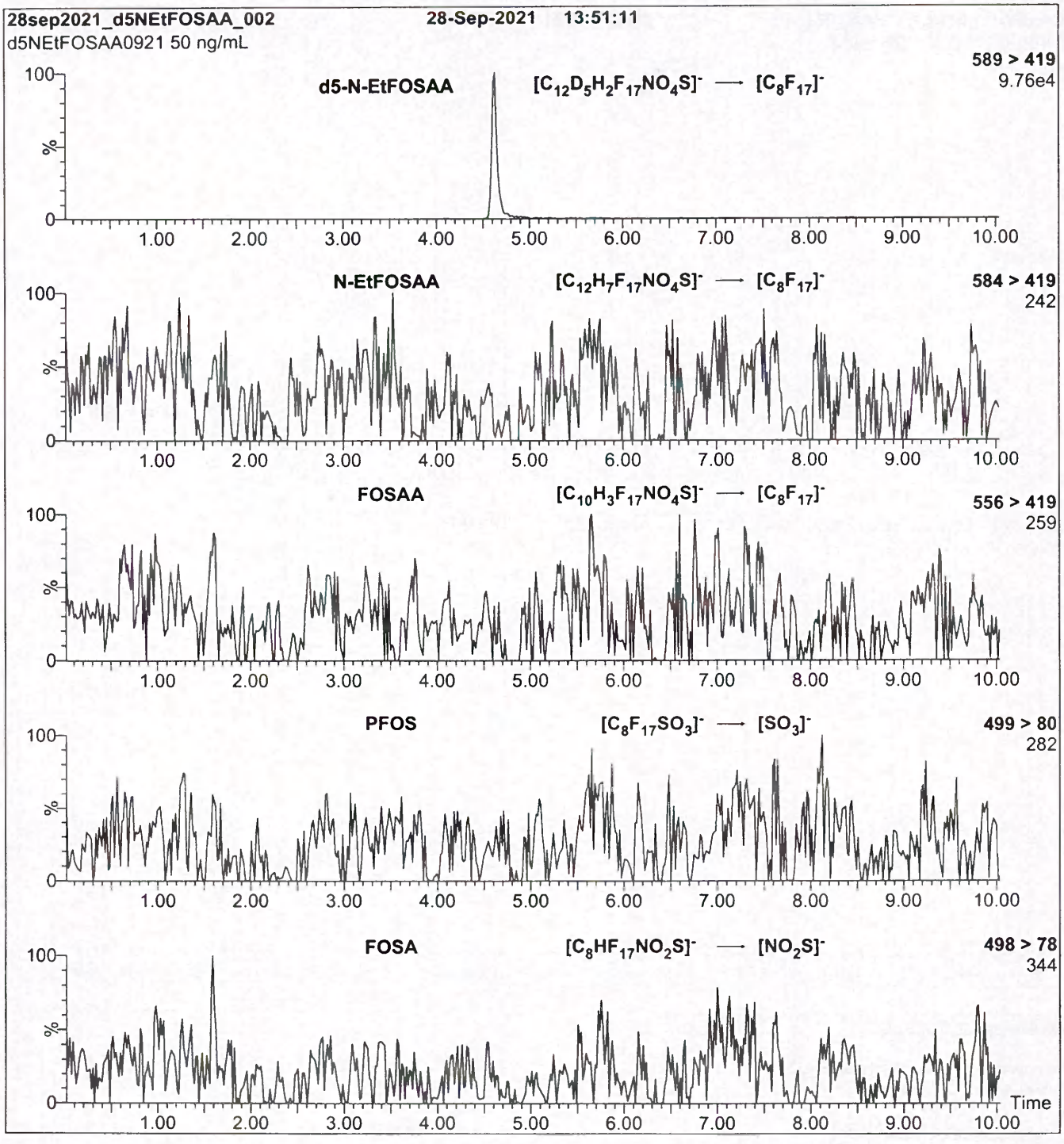
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d5-N-EtFOSAA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 18

Reagent

PFC_ST_01316

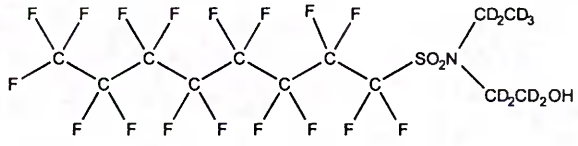
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d9-N-EtFOSE-M **LOT NUMBER:** d9NEtFOSE1220M

COMPOUND: 2-(N-ethyl-d5-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE: **CAS #:** Not available





410-2376085

MOLECULAR FORMULA:	$C_{12}D_9HF_{17}NO_3S$	**MOLECULAR WEIGHT:**	580.31
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_9$
LAST TESTED: (mm/dd/yyyy)	12/30/2020 (HRGC/LRMS) 12/23/2020 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	12/30/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 01/11/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

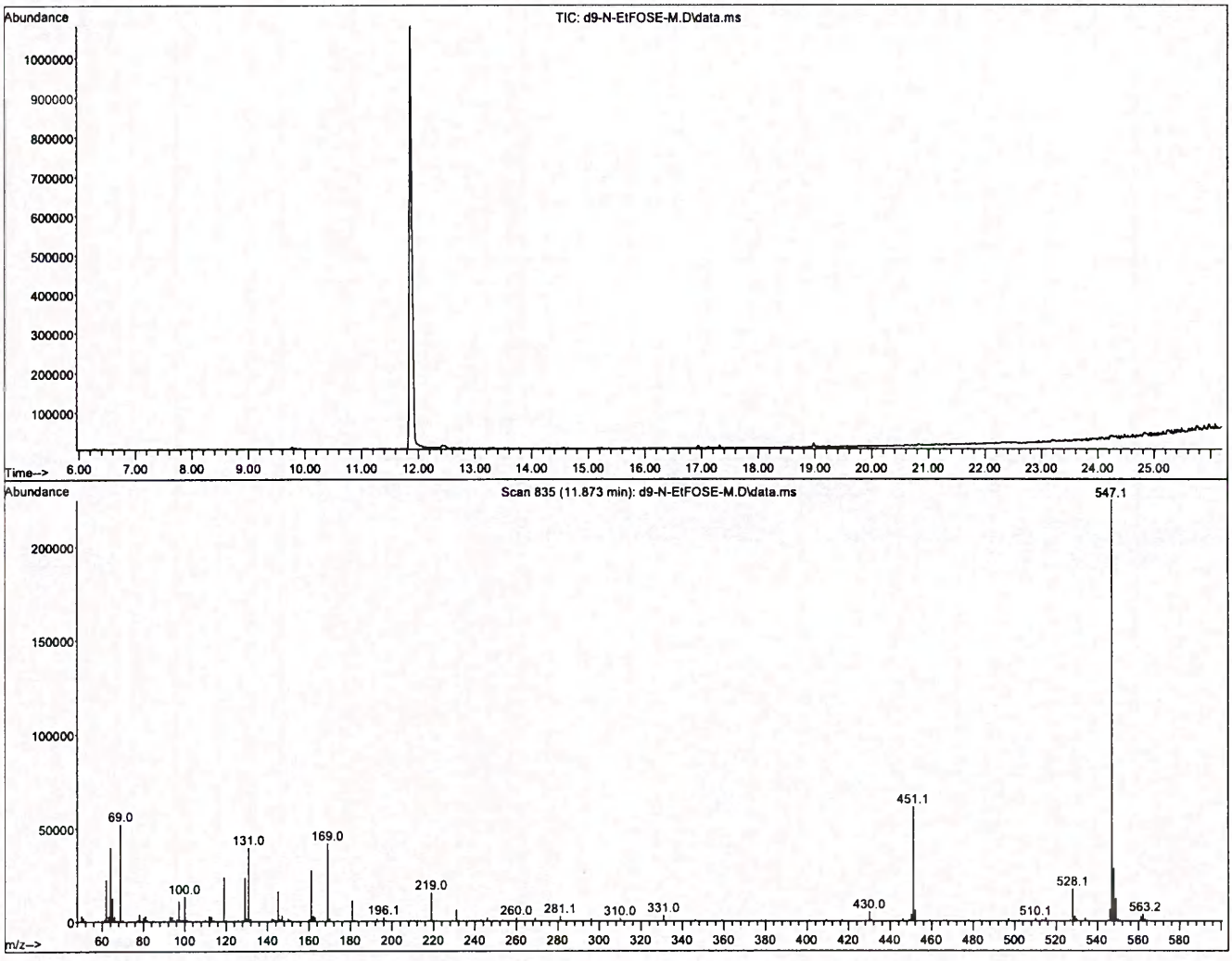
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **d9-N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



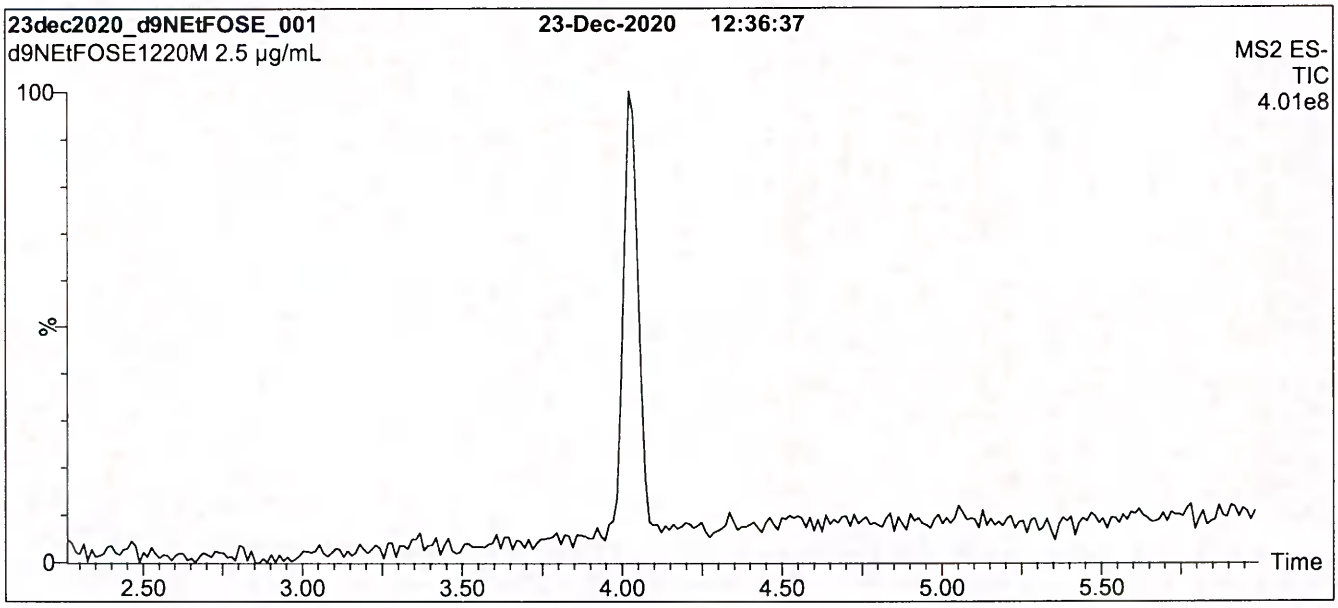
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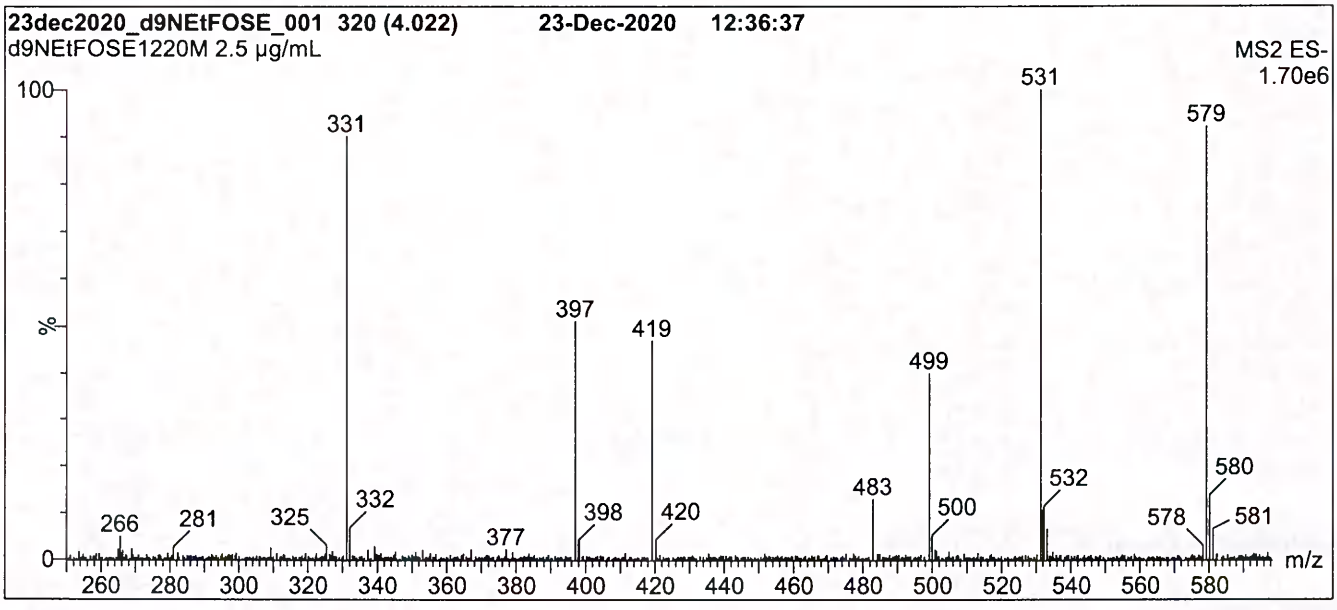
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 325°C 325°C (10 min)
Ionization:	EI+
Detector:	250°C Full Scan (50-1000 amu)

Figure 2: **d9-N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

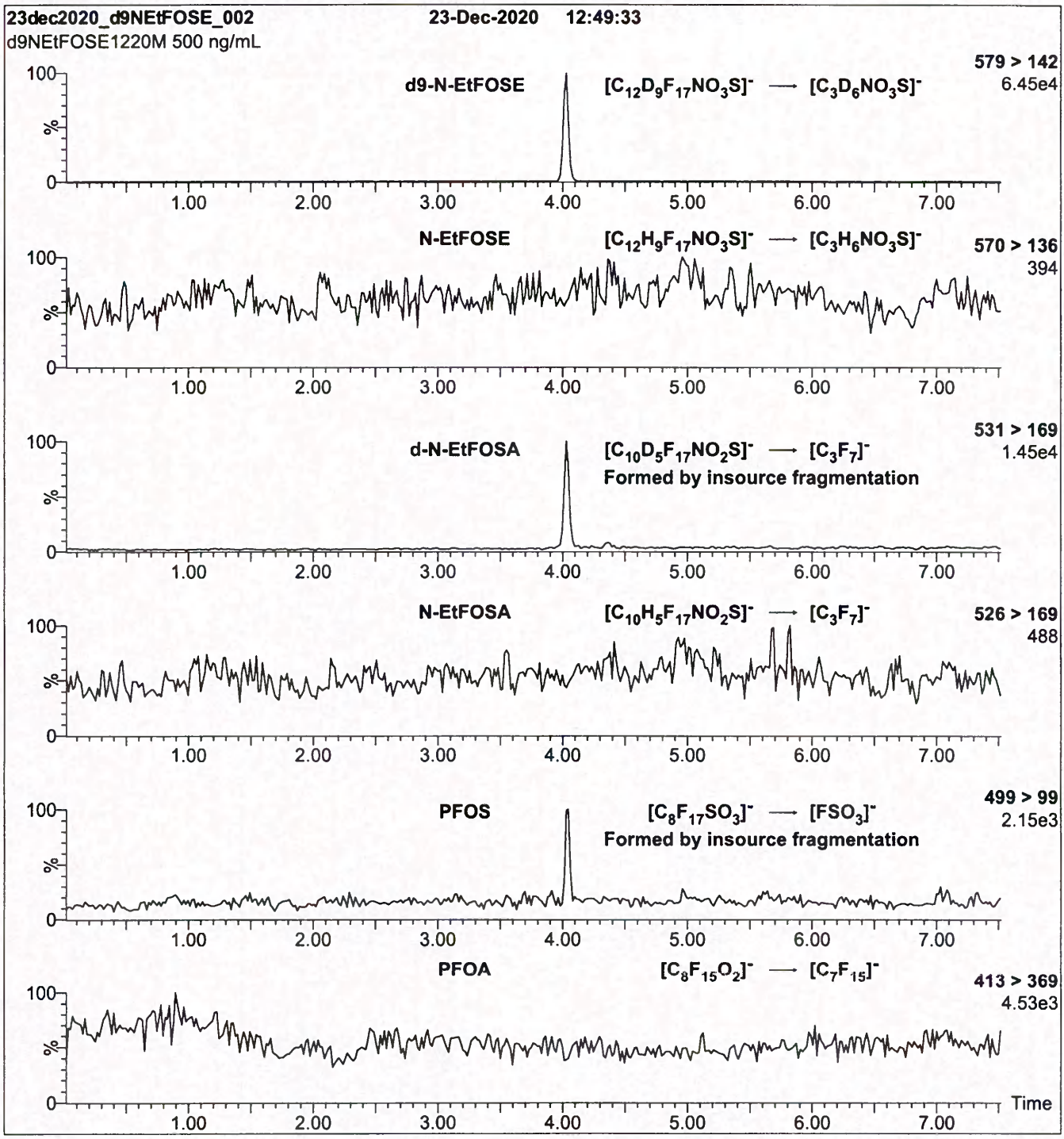
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: d9-N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 3:

Injection: On-column (d9-N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 32

Reagent

PFC_ST_01333

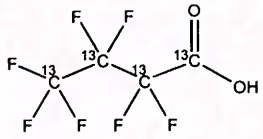
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFBA
COMPOUND: Perfluoro-n-(1,2,3,4-$^{13}C_4$)butanoic acid

LOT NUMBER: MPFBA0621

STRUCTURE:



CAS #: Not available

410-2395620

MOLECULAR FORMULA: $^{13}C_4HF_7O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/12/2021
EXPIRY DATE: (mm/dd/yyyy) 07/12/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 218.01
SOLVENT(S): Methanol
Water (<1%)
ISOTOPIC PURITY: ≥99% ^{13}C ($1,2,3,4\text{-}^{13}C_4$)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/26/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

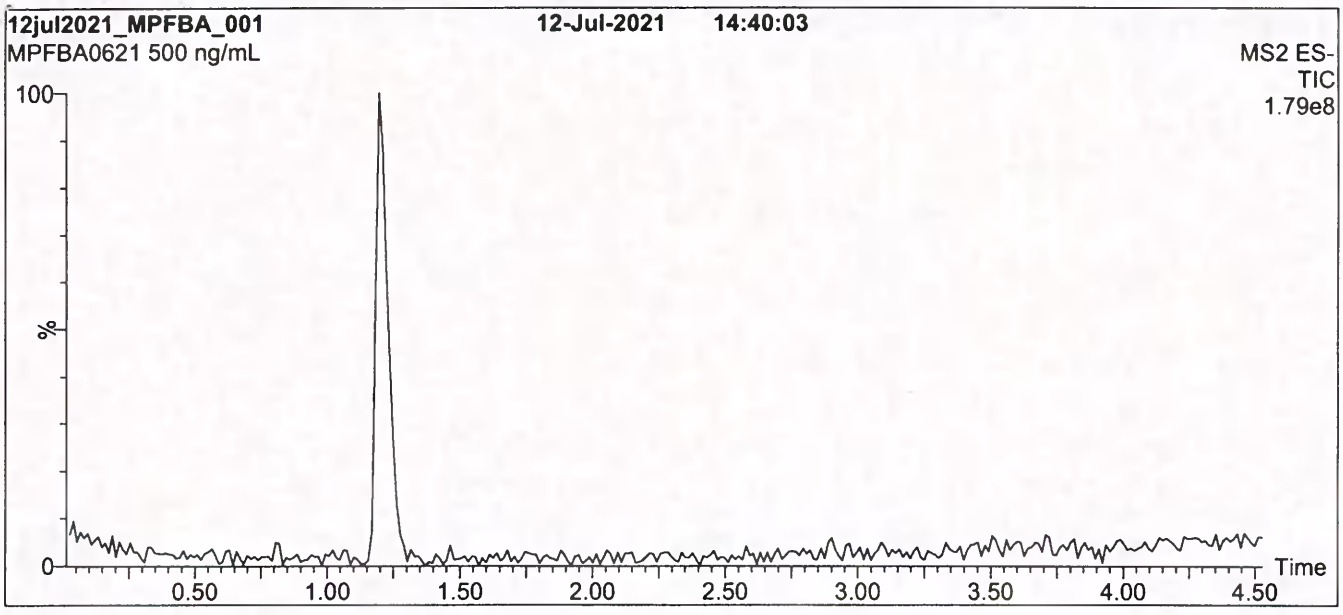
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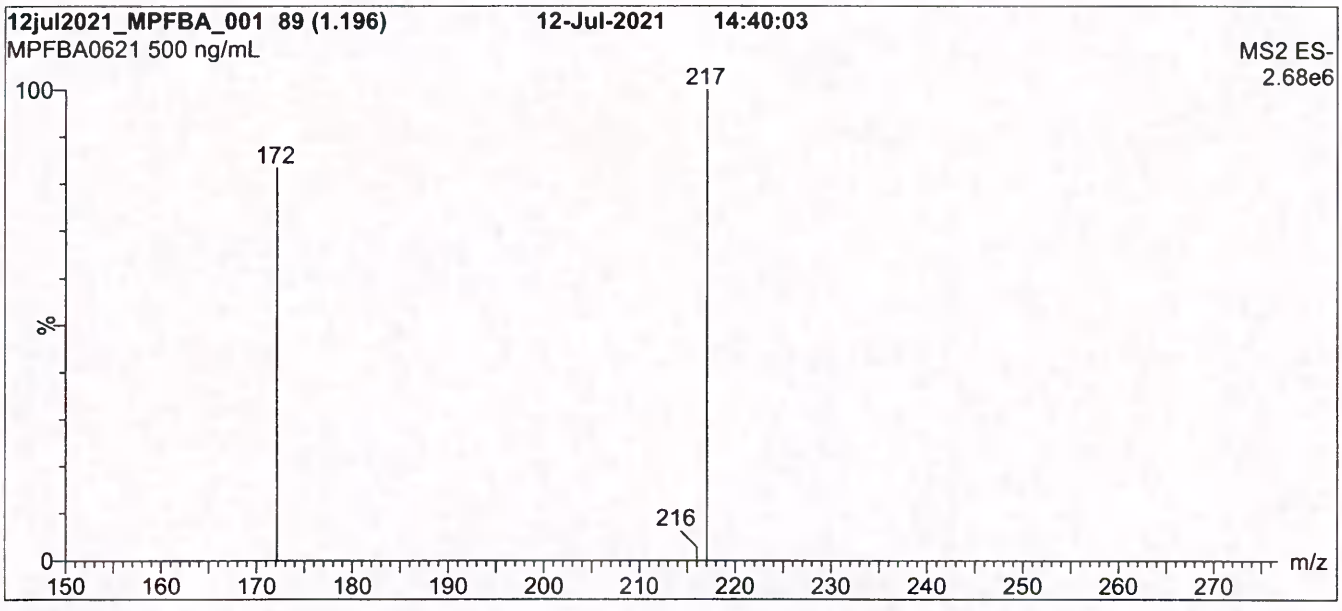
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **MPFBA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 55% H_2O / 45% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

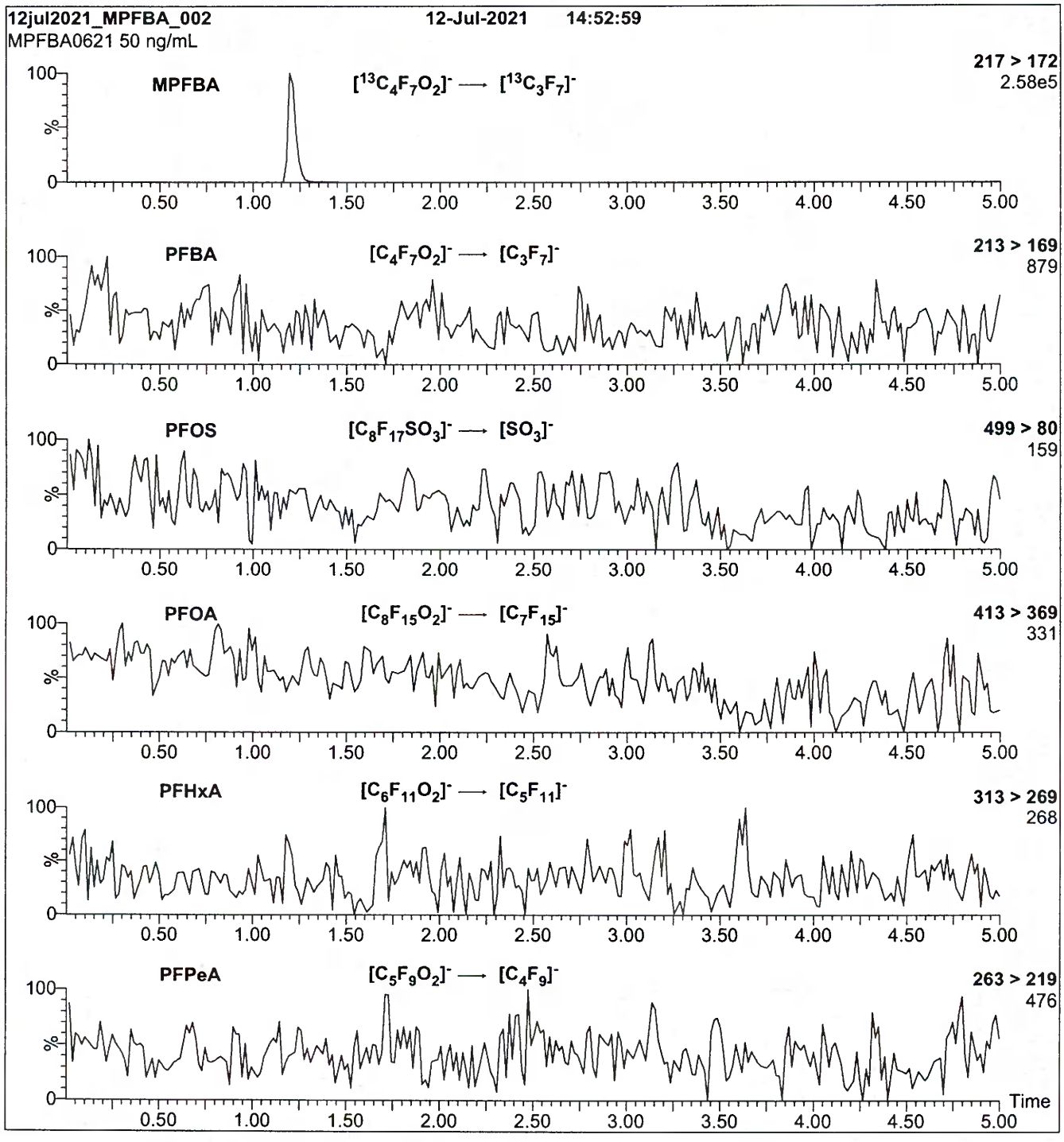
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MPFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFBA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 8

Reagent

PFC_ST_01334

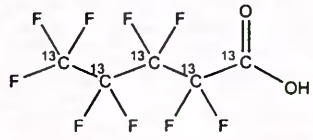
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFPeA
COMPOUND: Perfluoro-n-($^{13}C_5$)pentanoic acid

LOT NUMBER: M5PFPeA0821

STRUCTURE:



CAS #: 2283397-79-3

410-2395621

MOLECULAR FORMULA:	$^{13}C_5HF_9O_2$	**MOLECULAR WEIGHT:**	269.01
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	08/10/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/10/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/19/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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QUALITY MANAGEMENT:

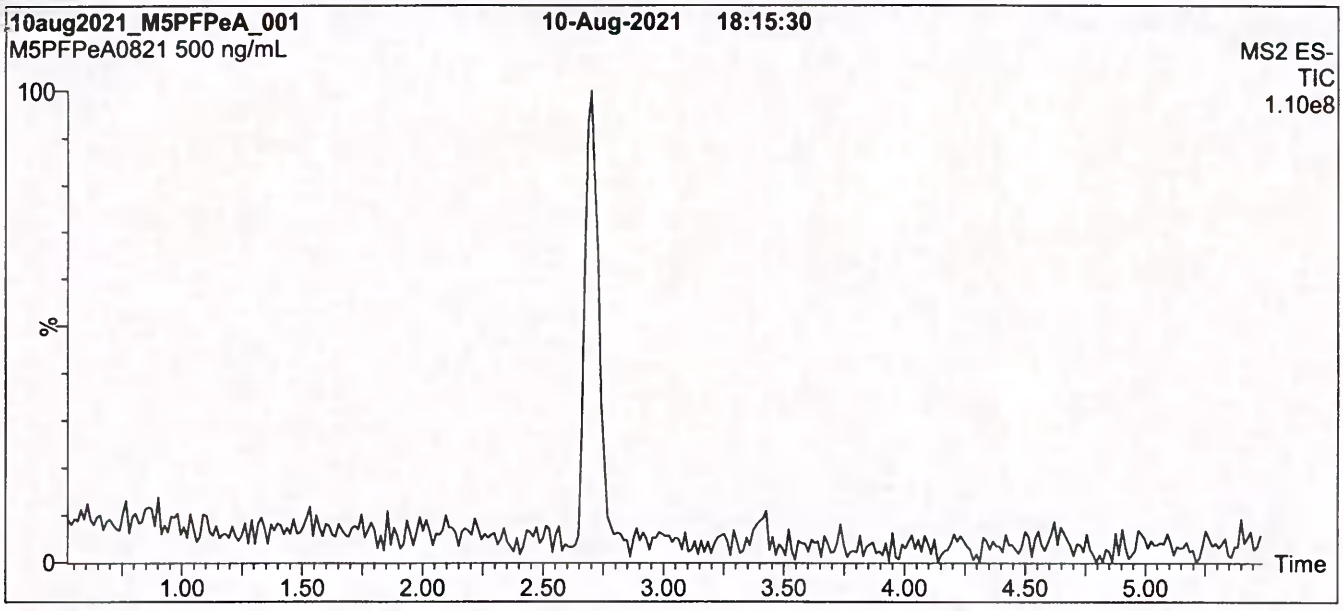
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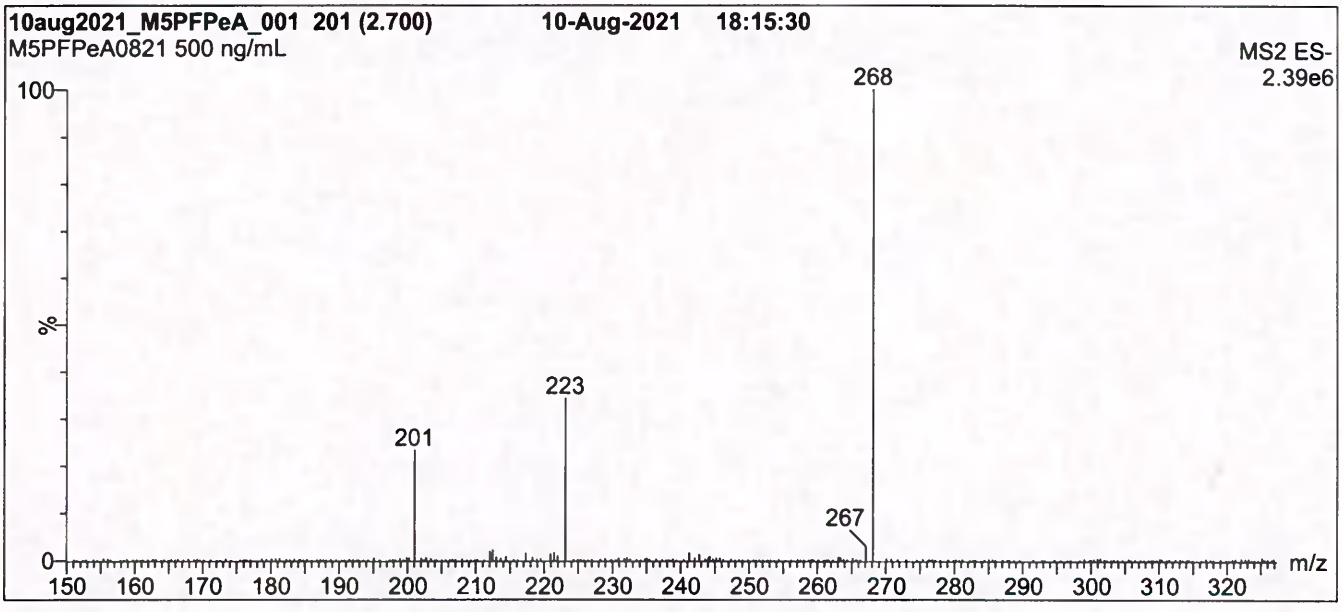
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **M5PFPeA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

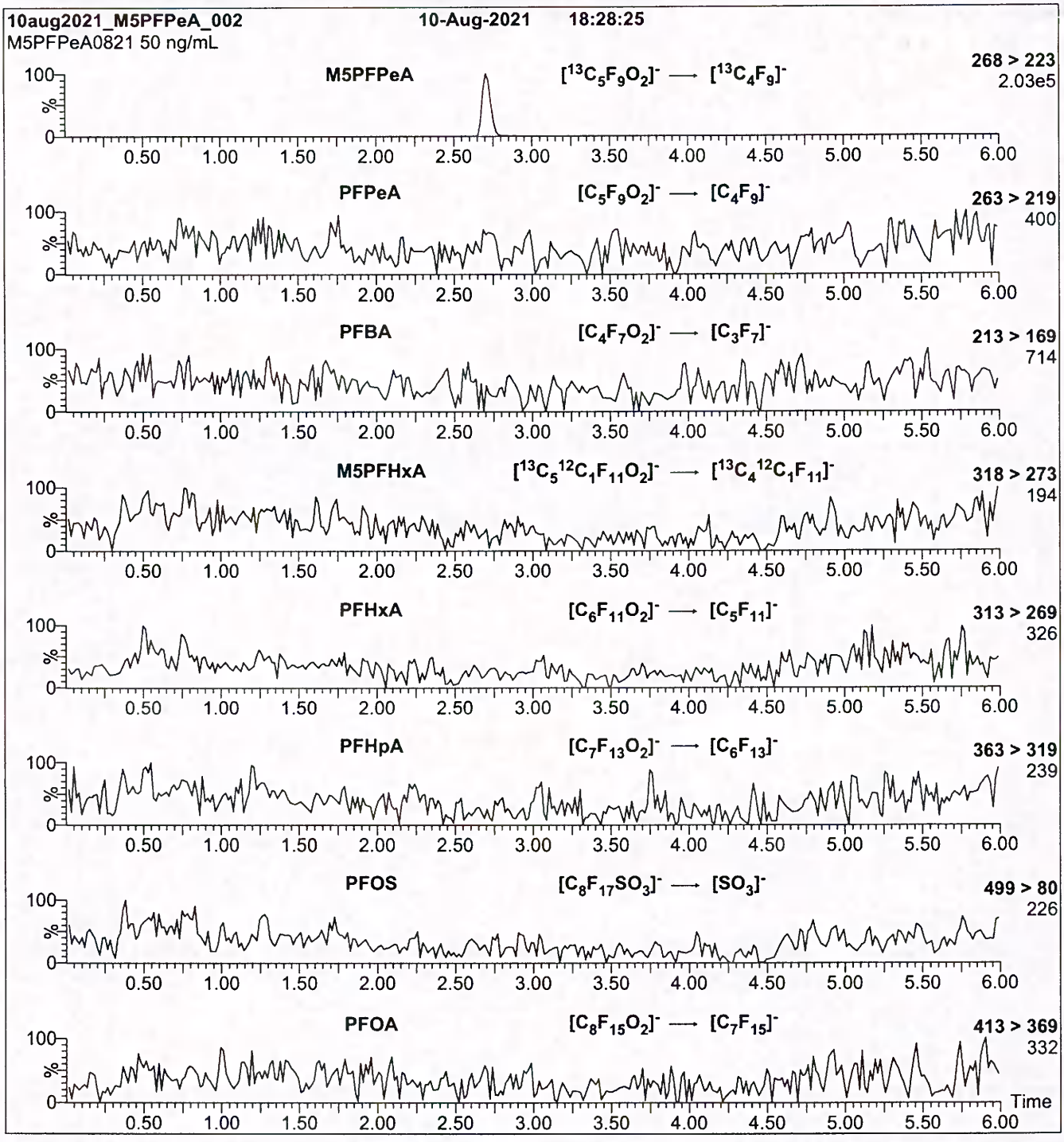
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M5PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M5PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 8

Reagent

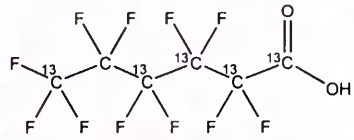
PFC_ST_01335

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFHxA
LOT NUMBER: M5PFHxA1021
COMPOUND: Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid

STRUCTURE:



CAS #: 2328024-54-8

410-2395632

MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_1HF_{11}O_2$	**MOLECULAR WEIGHT:**	319.02
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4,6-$^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	10/29/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/29/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/11/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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HOMOGENEITY:

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UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

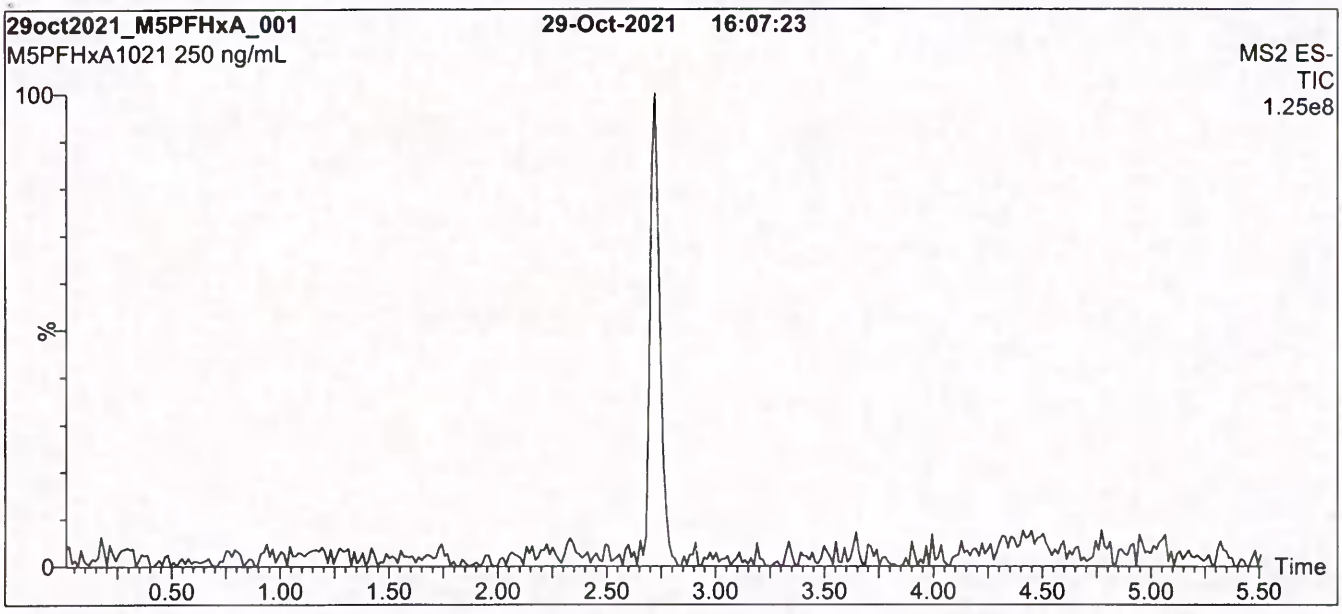
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

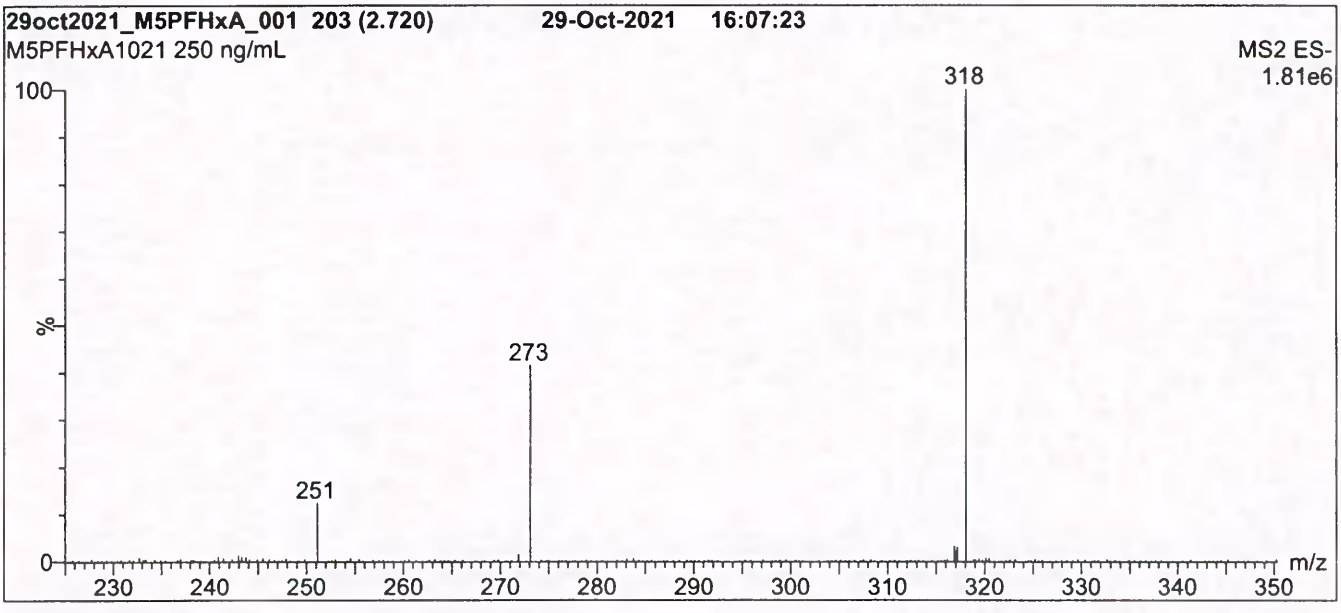
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **M5PFHxA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

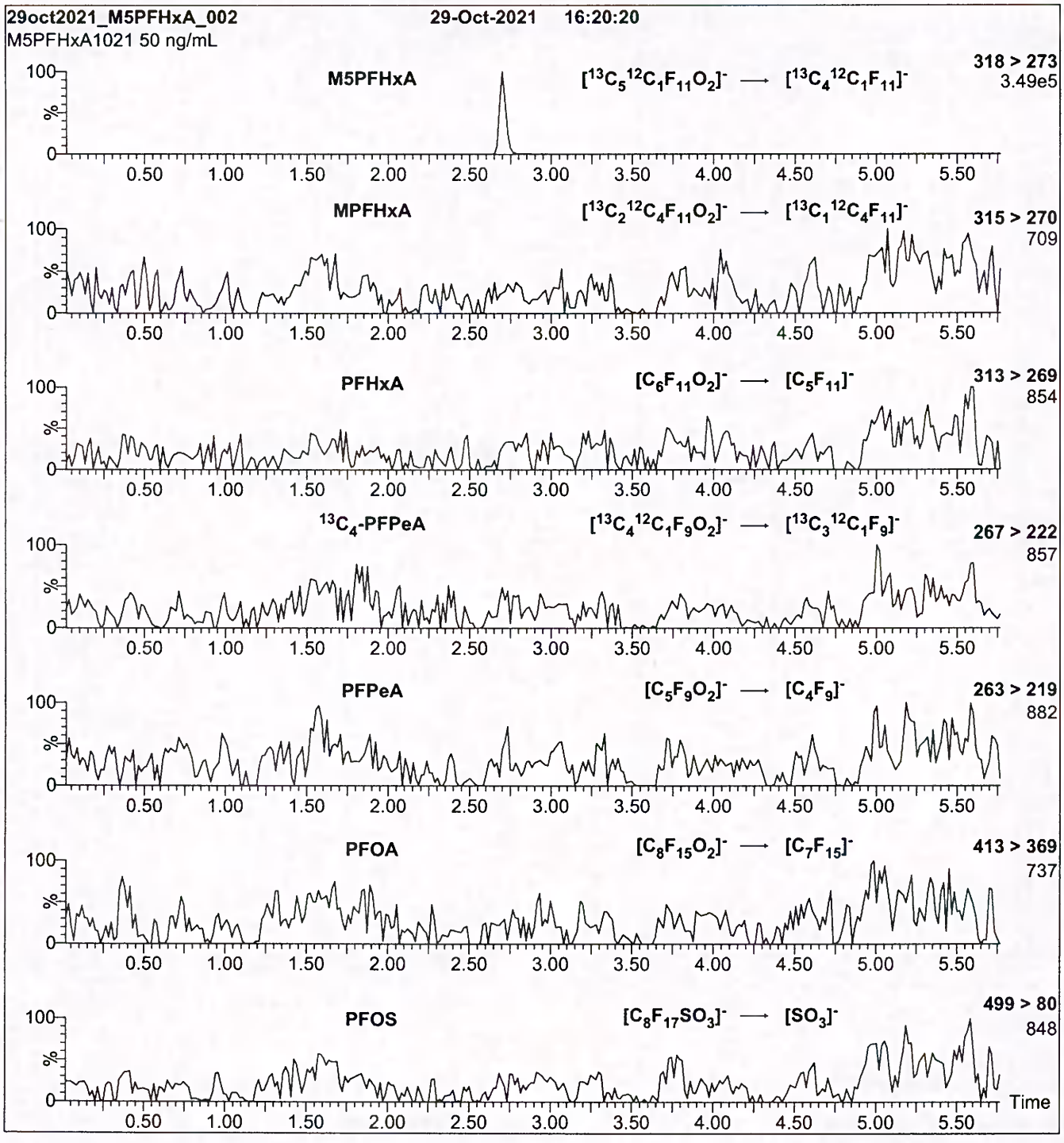
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M5PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M5PFHxA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.18e-3
Collision Energy (eV) = 8

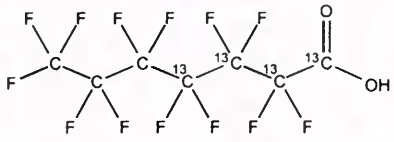
Reagent

PFC_ST_01336

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M4PFHpA	**LOT NUMBER:**	M4PFHpA1121
COMPOUND:	Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid		
STRUCTURE:		**CAS #:**	2328024-55-9



410-2395639

MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_3HF_{13}O_2$	**MOLECULAR WEIGHT:**	368.03
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	12/07/2021		
EXPIRY DATE: (mm/dd/yyyy)	12/07/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.03% of perfluoro-n-heptanoic acid (PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/22/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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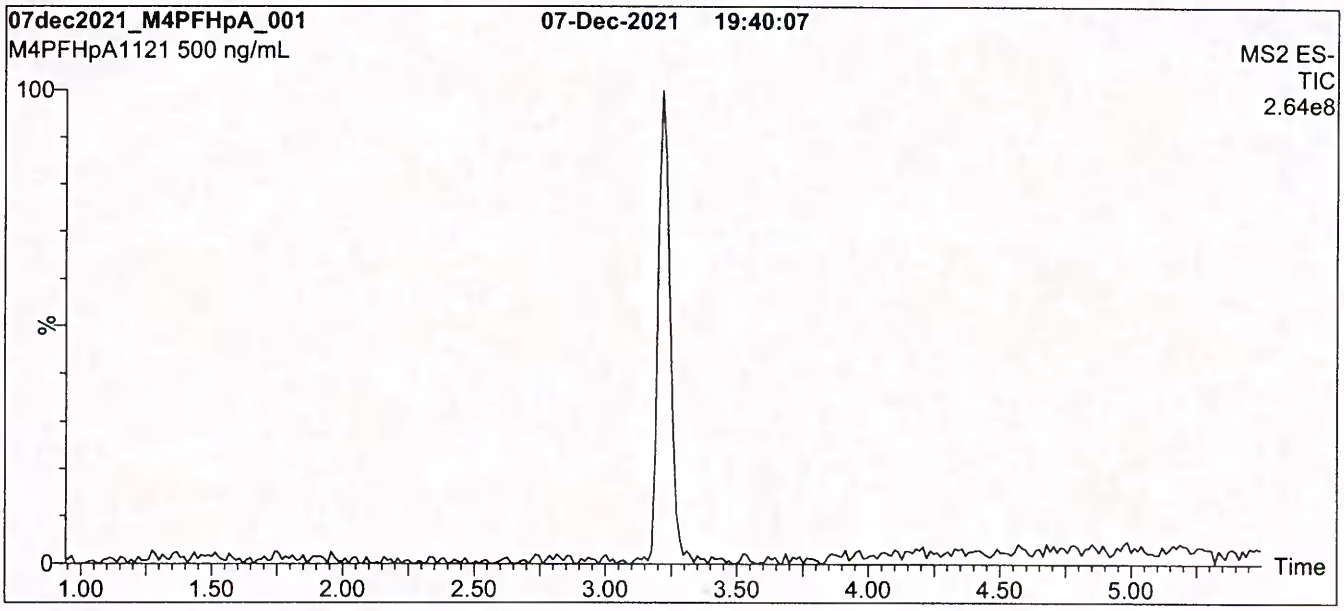
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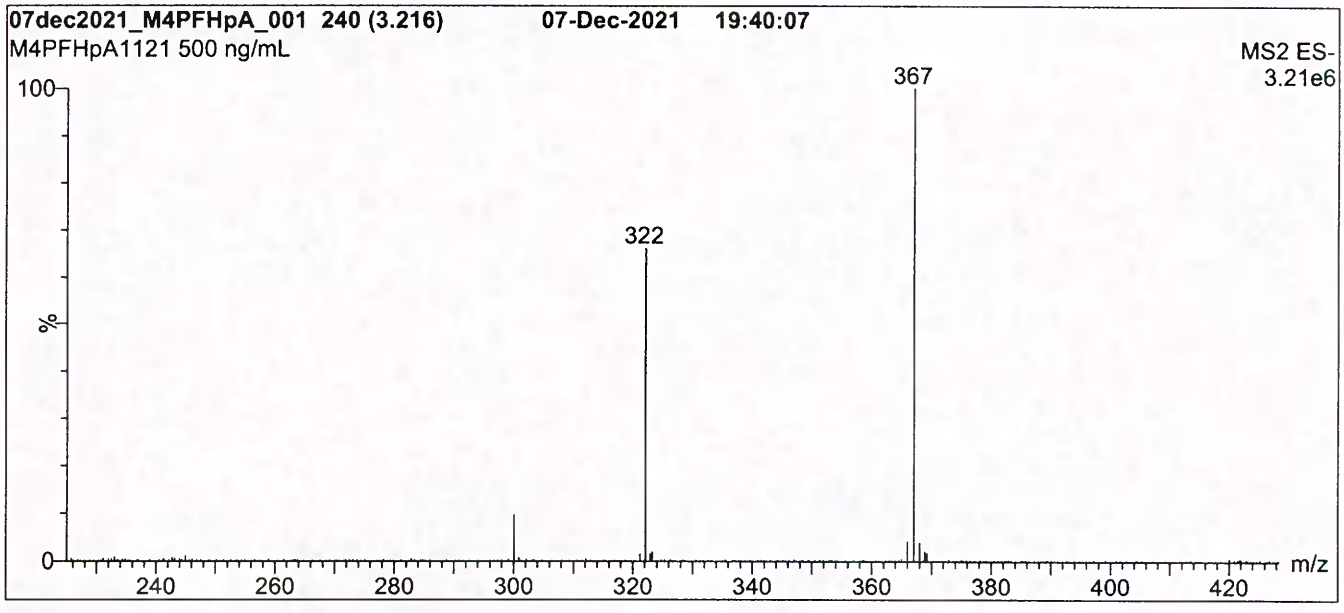
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **M4PFHpA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

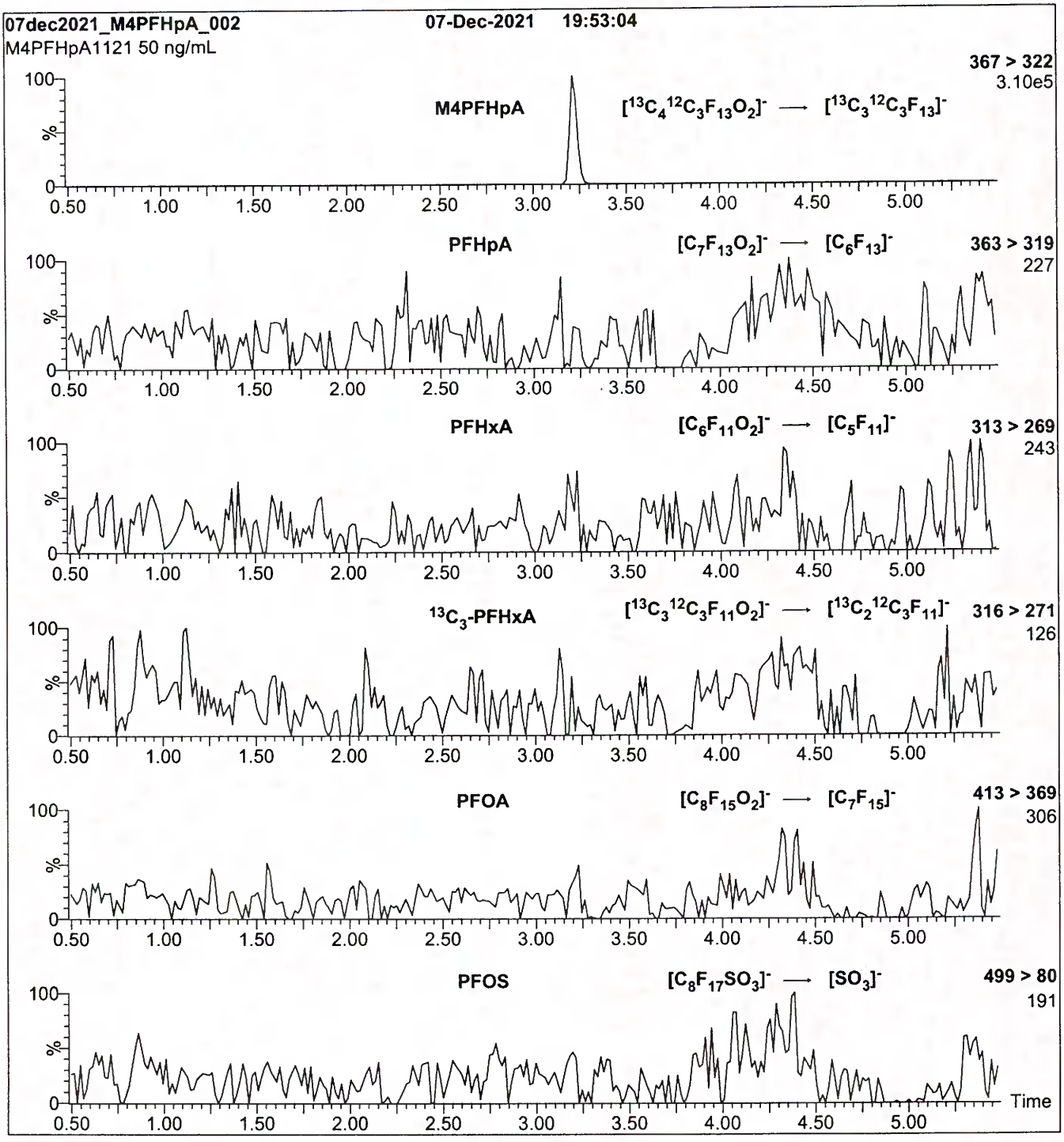
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M4PFHpA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 8

Reagent

PFC_ST_01337

WELLINGTON LABORATORIES

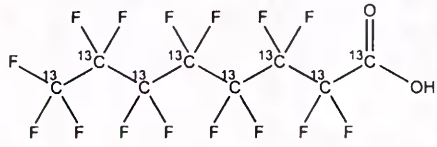
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8PFOA
COMPOUND: Perfluoro-n-($^{13}C_8$)octanoic acid

LOT NUMBER: M8PFOA1221

STRUCTURE:

CAS #: 1350614-84-4



410-2395724

MOLECULAR FORMULA:	$^{13}C_8HF_{15}O_2$	**MOLECULAR WEIGHT:**	422.01
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	12/07/2021		
EXPIRY DATE: (mm/dd/yyyy)	12/07/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~1.0% of perfluoro-n-($^{13}C_4$)octanoic acid (MPFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/23/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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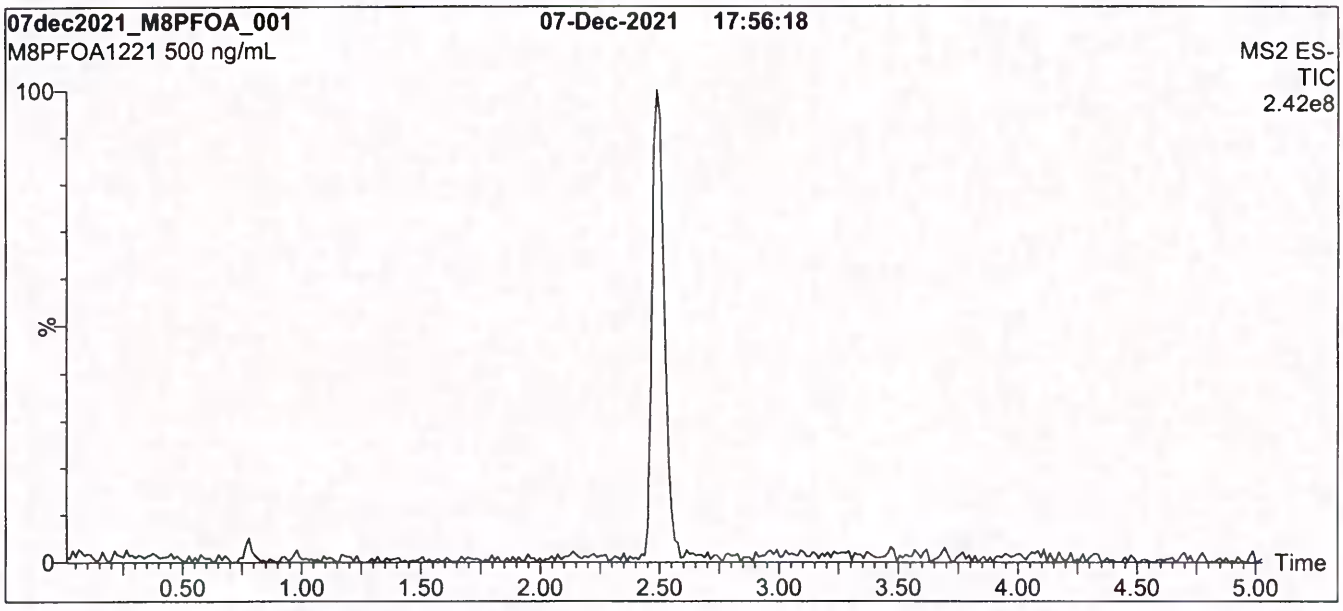
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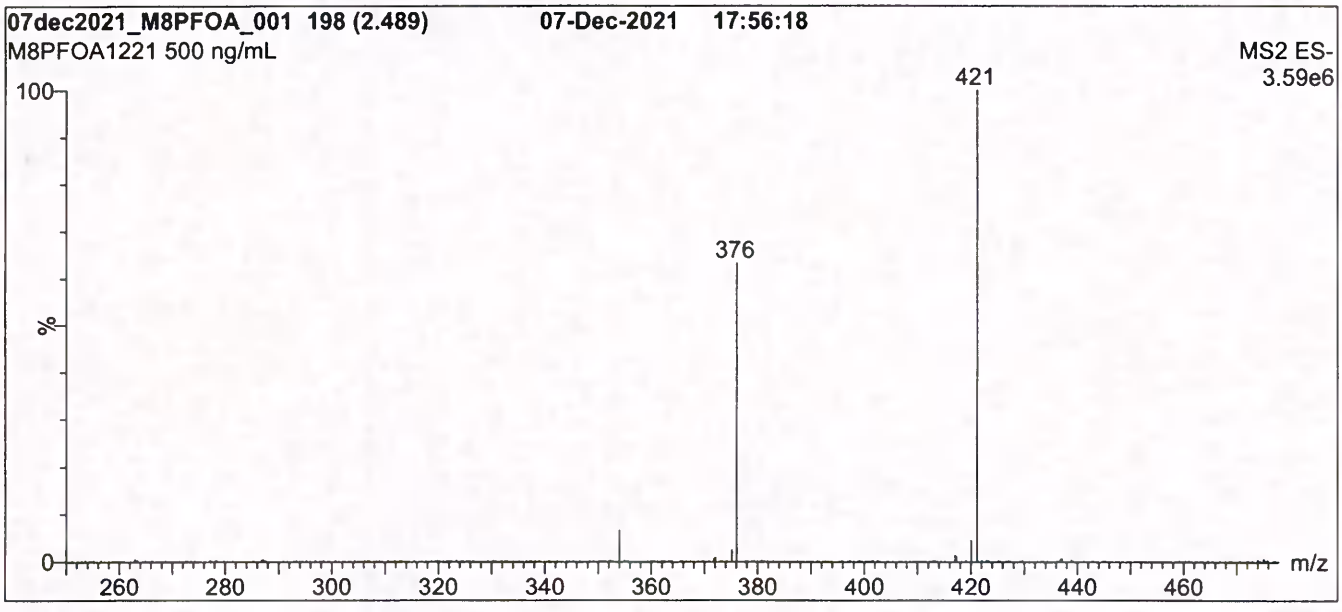
CALA Testing Accreditation No. A1226

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Figure 1: **M8PFOA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

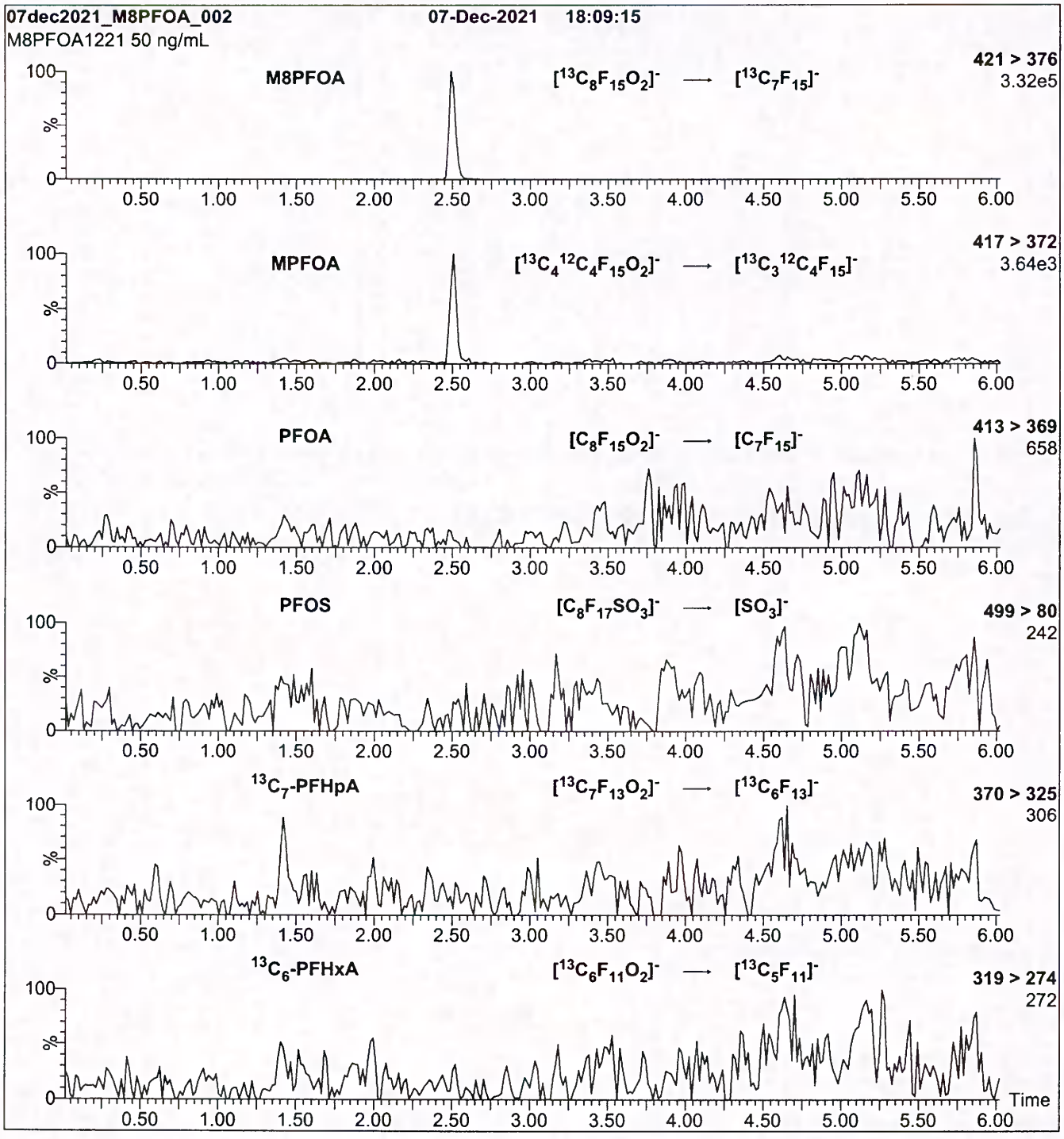
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M8PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8PFOA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 8

Reagent

PFC_ST_01338

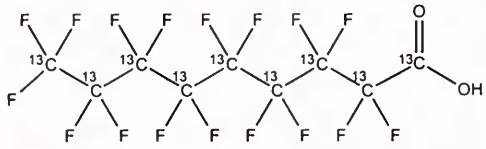
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M9PFNA
COMPOUND: Perfluoro-n-($^{13}C_9$)nonanoic acid

LOT NUMBER: M9PFNA0621

STRUCTURE:



CAS #: Not available

410-2395725

MOLECULAR FORMULA:	$^{13}C_9HF_{17}O_2$	**MOLECULAR WEIGHT:**	473.01
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_9$)
LAST TESTED: (mm/dd/yyyy)	06/24/2021		
EXPIRY DATE: (mm/dd/yyyy)	06/24/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
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Certified By: _____ **Date:** 07/27/2021 (mm/dd/yyyy)
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QUALITY MANAGEMENT:

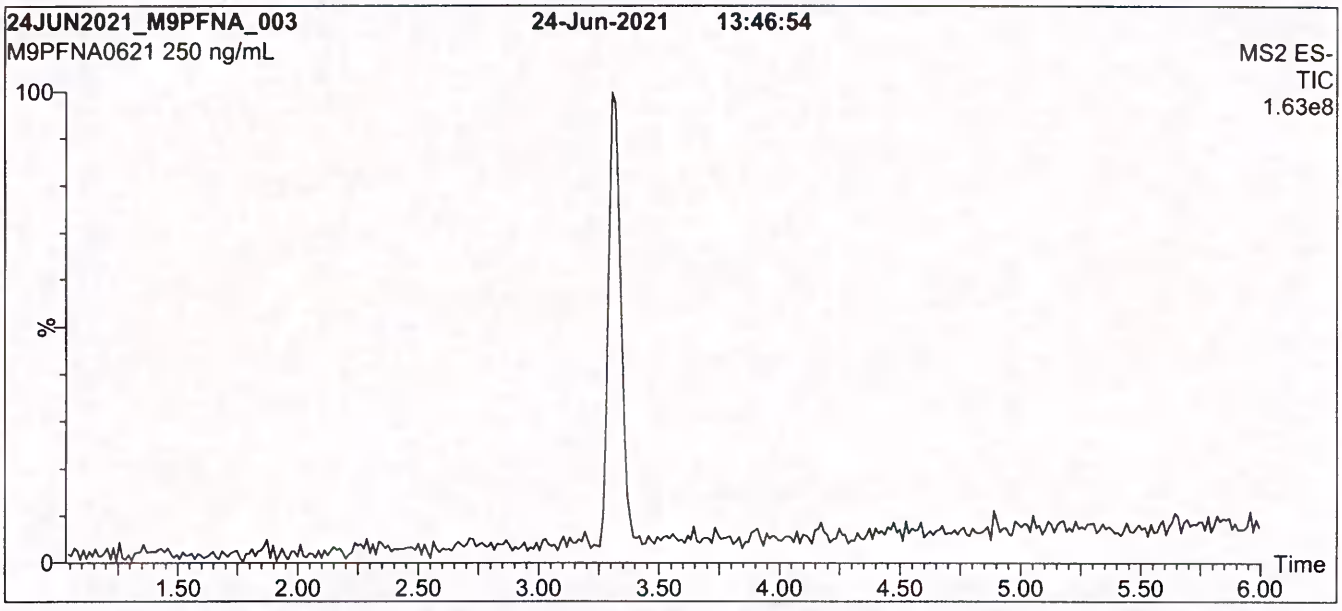
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

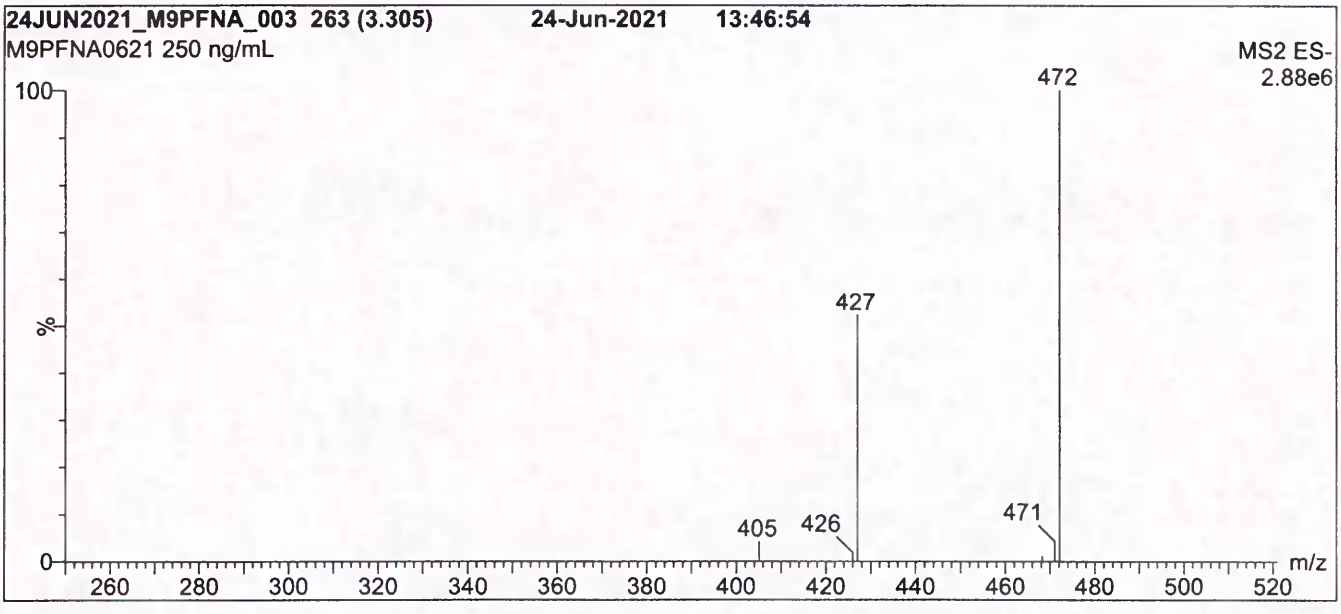
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **M9PFNA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

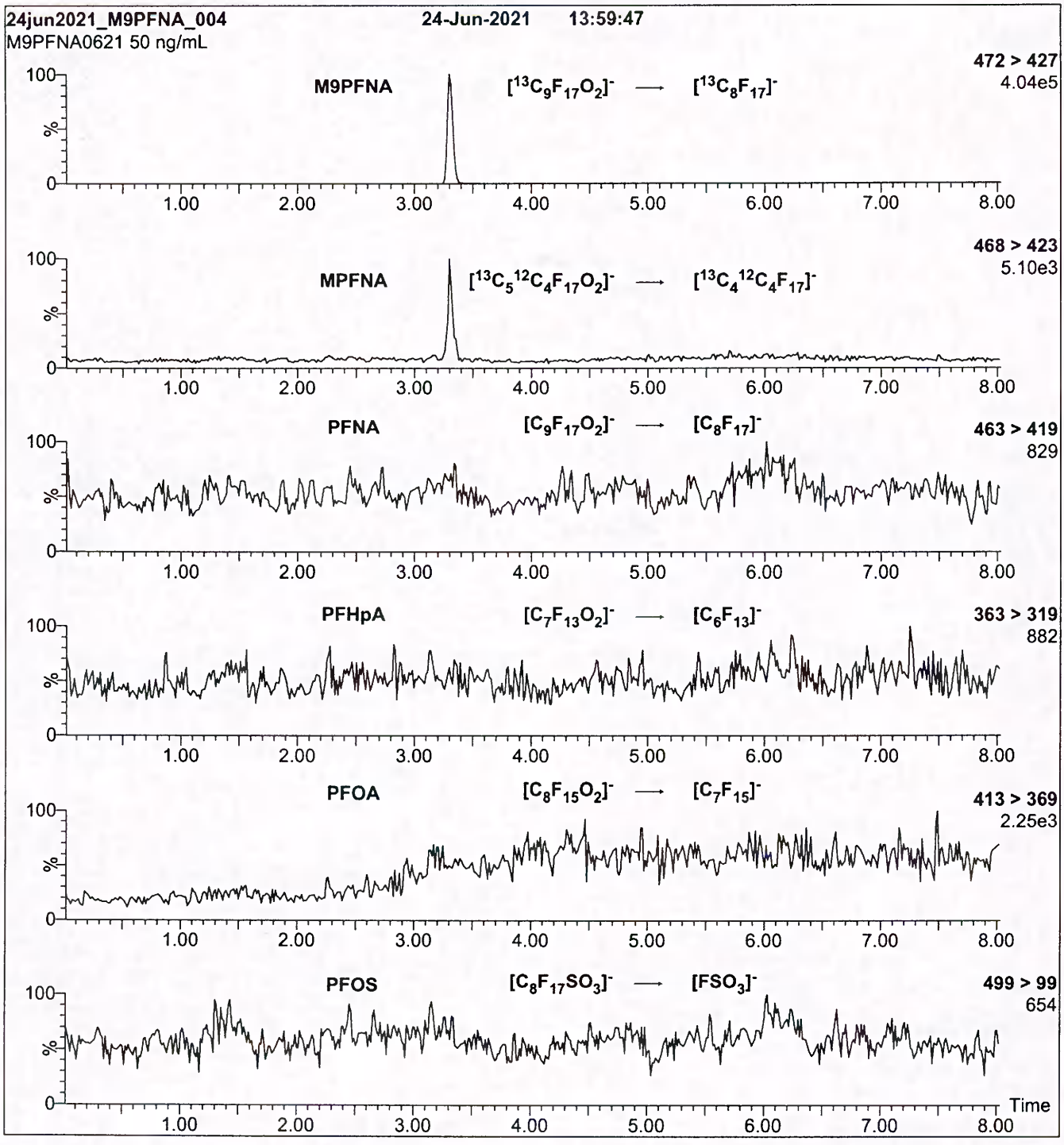
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M9PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M9PFNA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.47e-3
Collision Energy (eV) = 10

Reagent

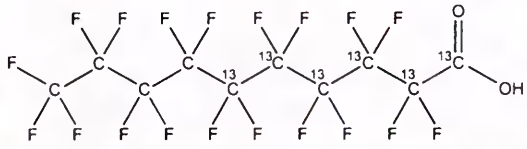
PFC_ST_01339

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M6PFDA
LOT NUMBER: M6PFDA0721
COMPOUND: Perfluoro-n-(1,2,3,4,5,6-$^{13}C_6$)decanoic acid

STRUCTURE:



CAS #: 2328024-56-0

410-2395728

MOLECULAR FORMULA:	$^{13}C_6{}^{12}C_4HF_{19}O_2$	**MOLECULAR WEIGHT:**	520.04
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C
LAST TESTED: (mm/dd/yyyy)	07/20/2021		(1,2,3,4,5,6-$^{13}C_6$)
EXPIRY DATE: (mm/dd/yyyy)	07/20/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/09/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

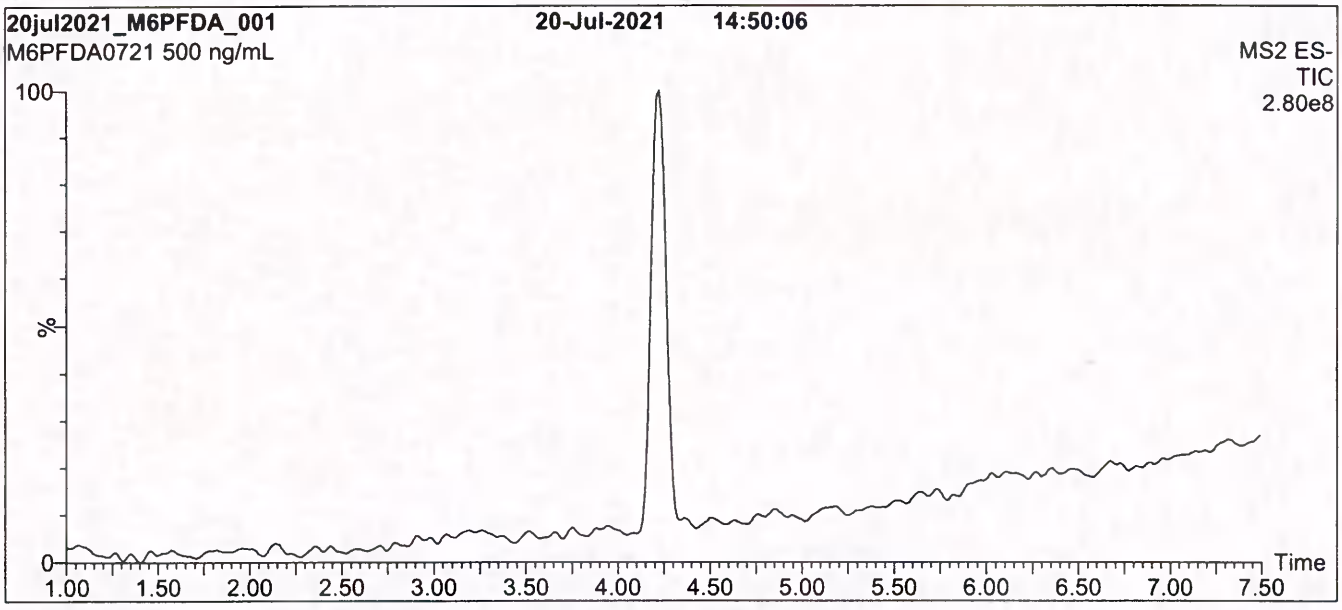
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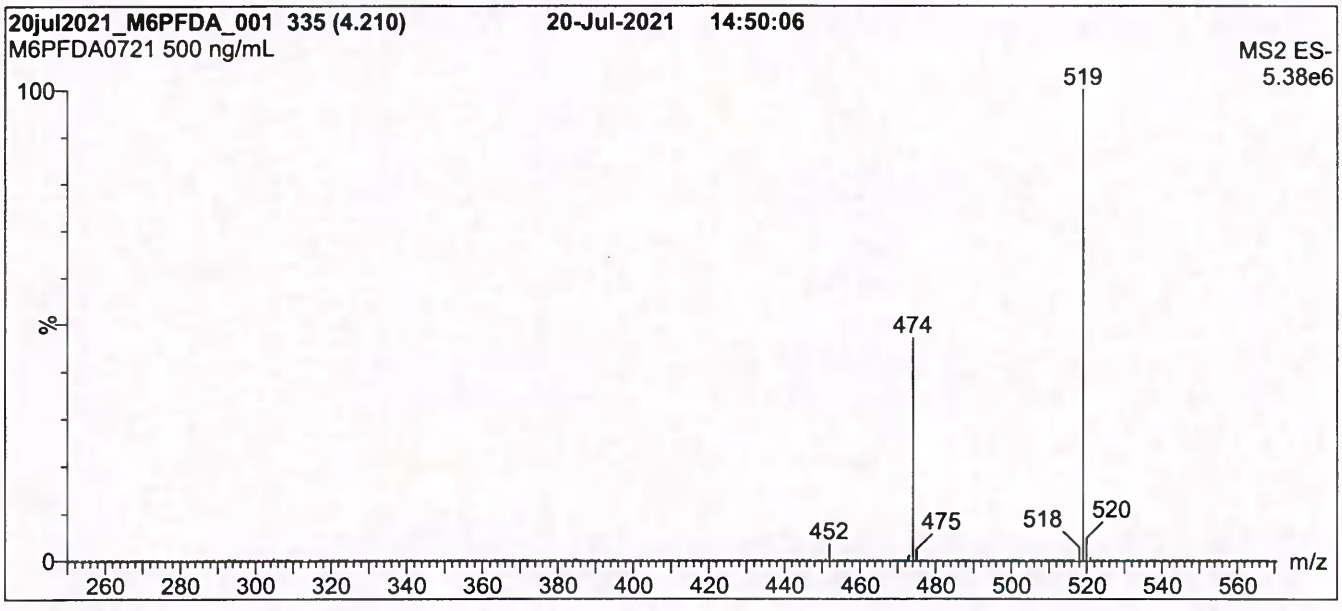
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **M6PFDA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

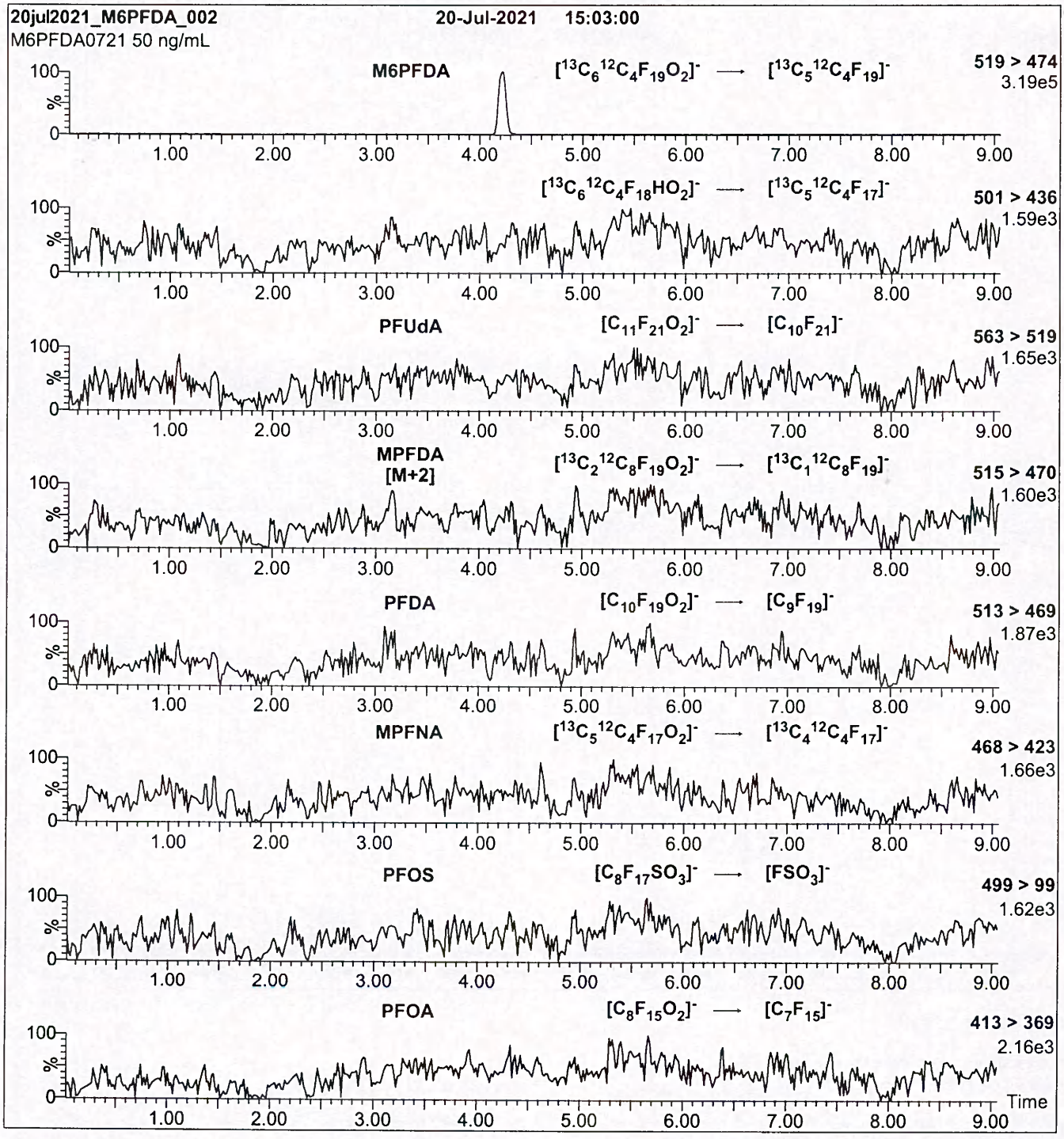
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M6PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M6PFDA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.47e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_01340

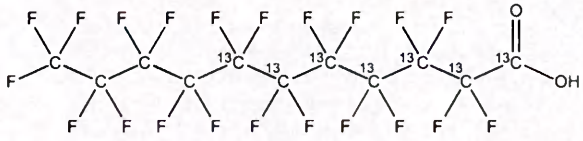
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M7PFUdA **LOT NUMBER:** M7PFUdA0821

COMPOUND: Perfluoro-n-(1,2,3,4,5,6,7-$^{13}C_7$)undecanoic acid

STRUCTURE: **CAS #:** Not available



410-2395765

MOLECULAR FORMULA:	$^{13}C_7{}^{12}C_4HF_{21}O_2$	**MOLECULAR WEIGHT:**	571.04
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4,5,6,7\text{-}^{13}C_7$)
LAST TESTED: (mm/dd/yyyy)	08/18/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/18/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/31/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

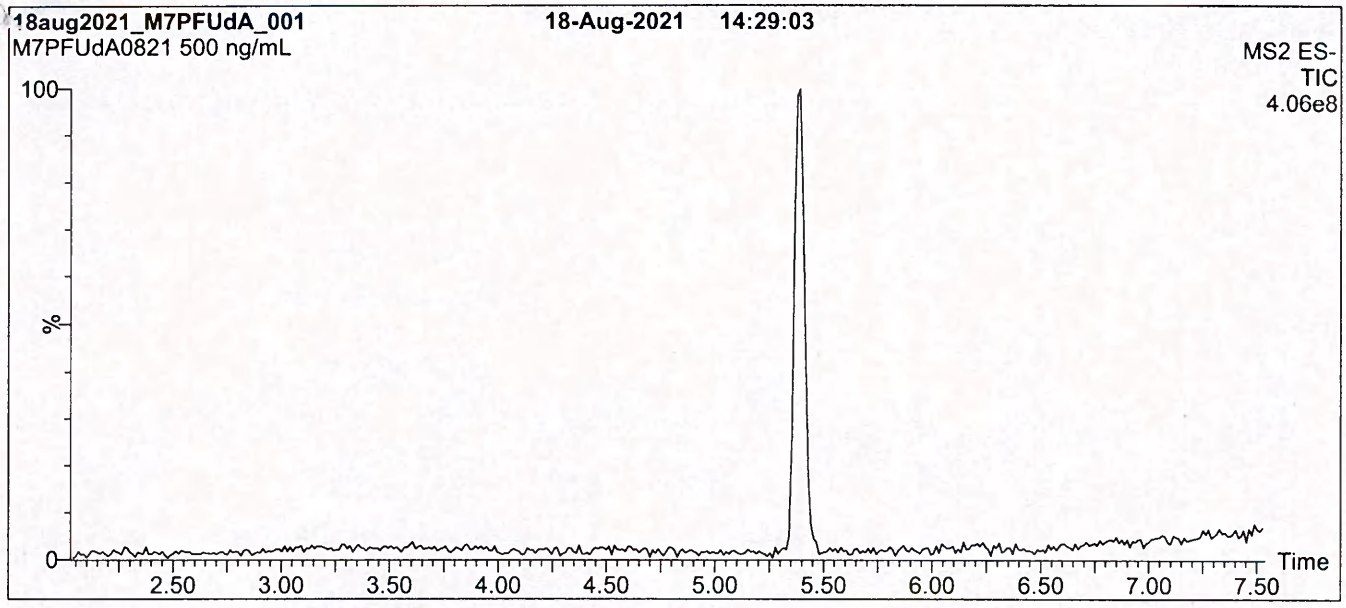
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

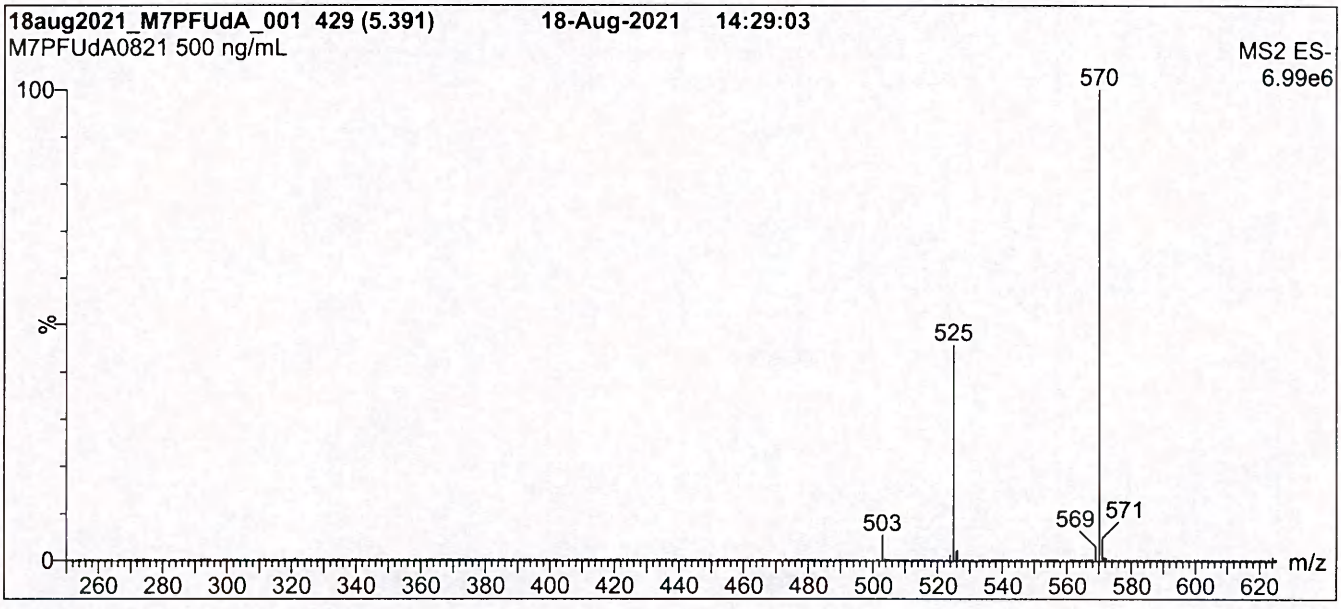
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: M7PFUdA; LC/MS Data (Full Scan and Mass Spectrum)





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

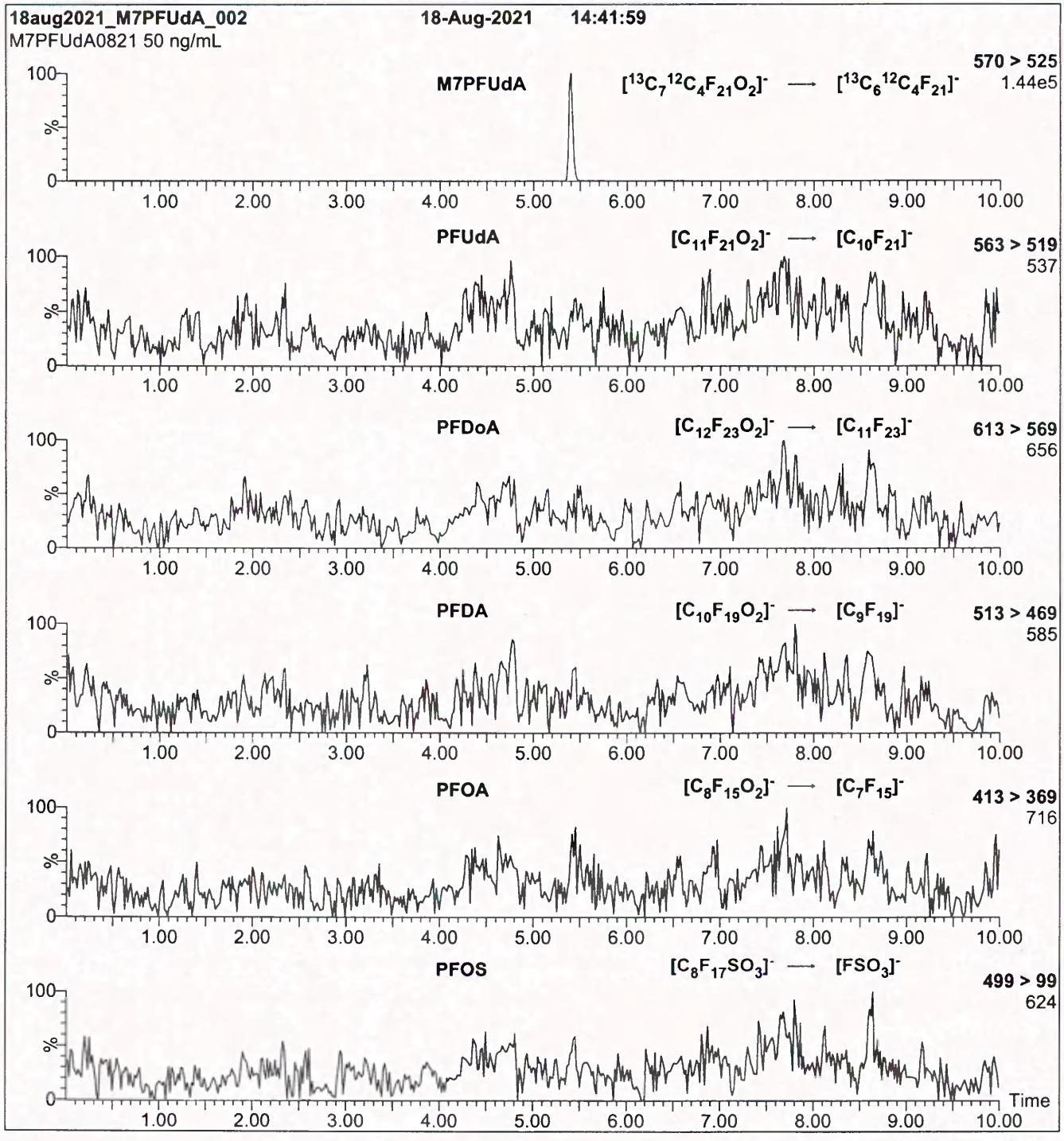
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M7PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M7PFUdA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 12

Reagent

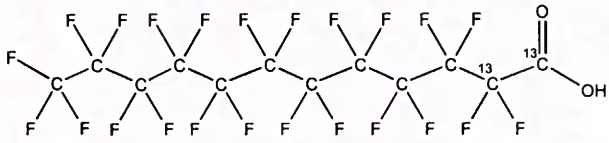
PFC_ST_01341

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDoA
LOT NUMBER: MPFDoA0821
COMPOUND: Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid

STRUCTURE:



CAS #: 960315-52-0

410-2395767

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{10}HF_{23}O_2$	**MOLECULAR WEIGHT:**	616.08
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	09/03/2021		
EXPIRY DATE: (mm/dd/yyyy)	09/03/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/08/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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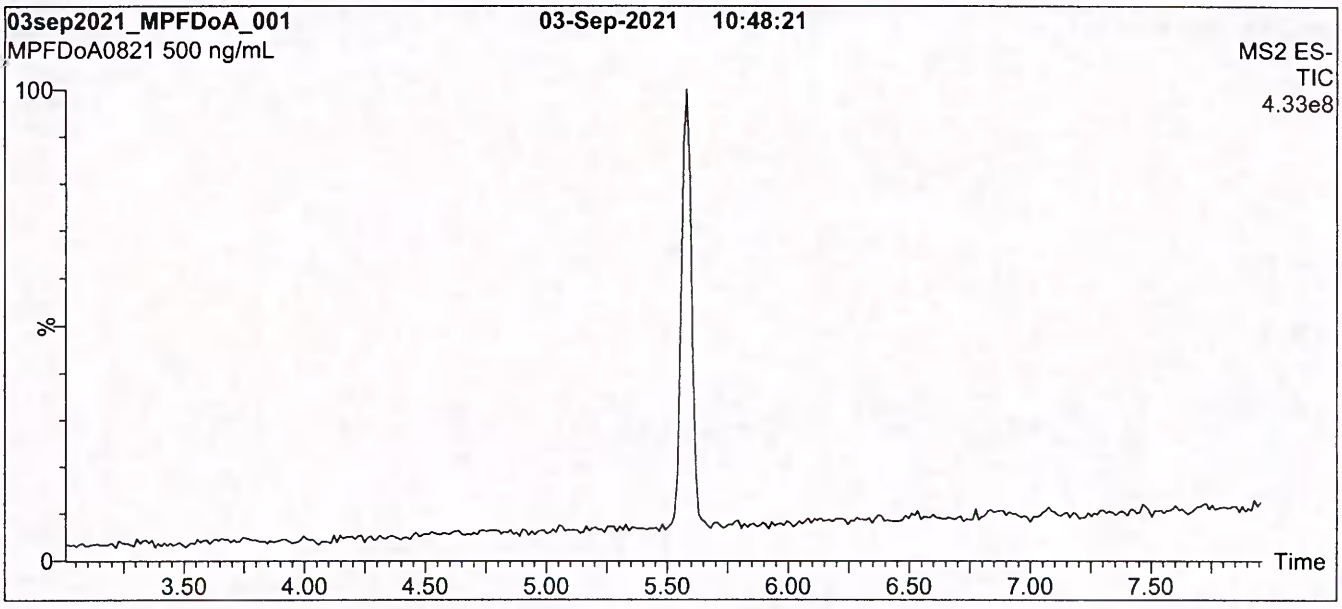
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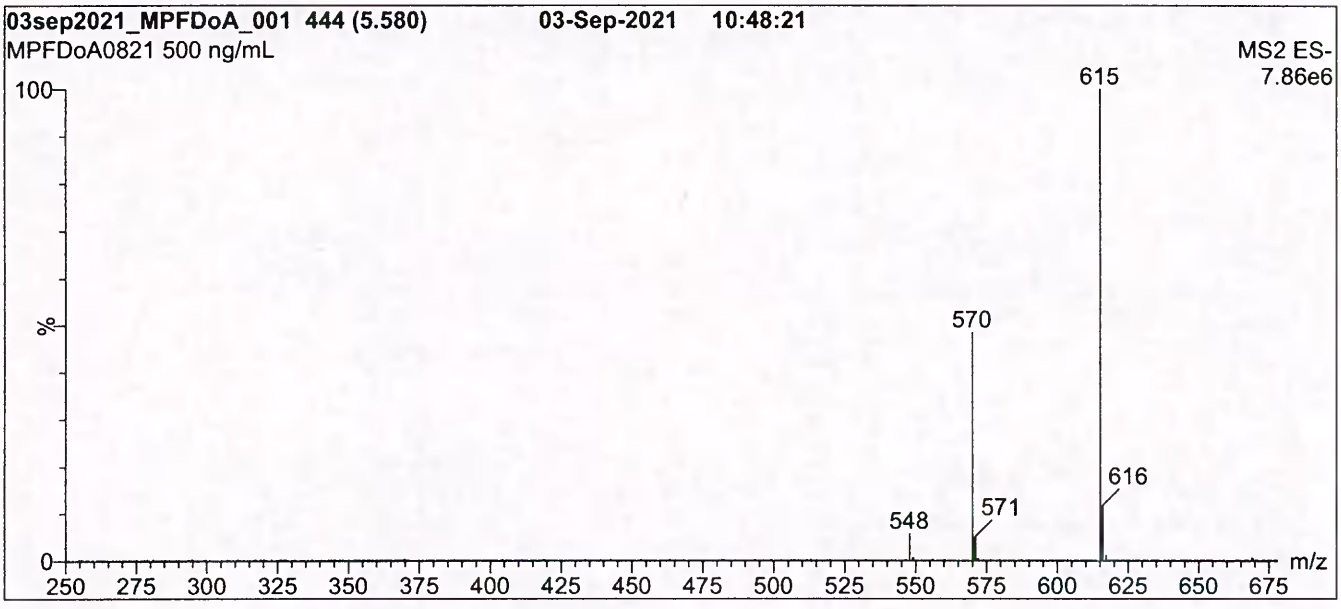
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **MPFDoA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 8 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

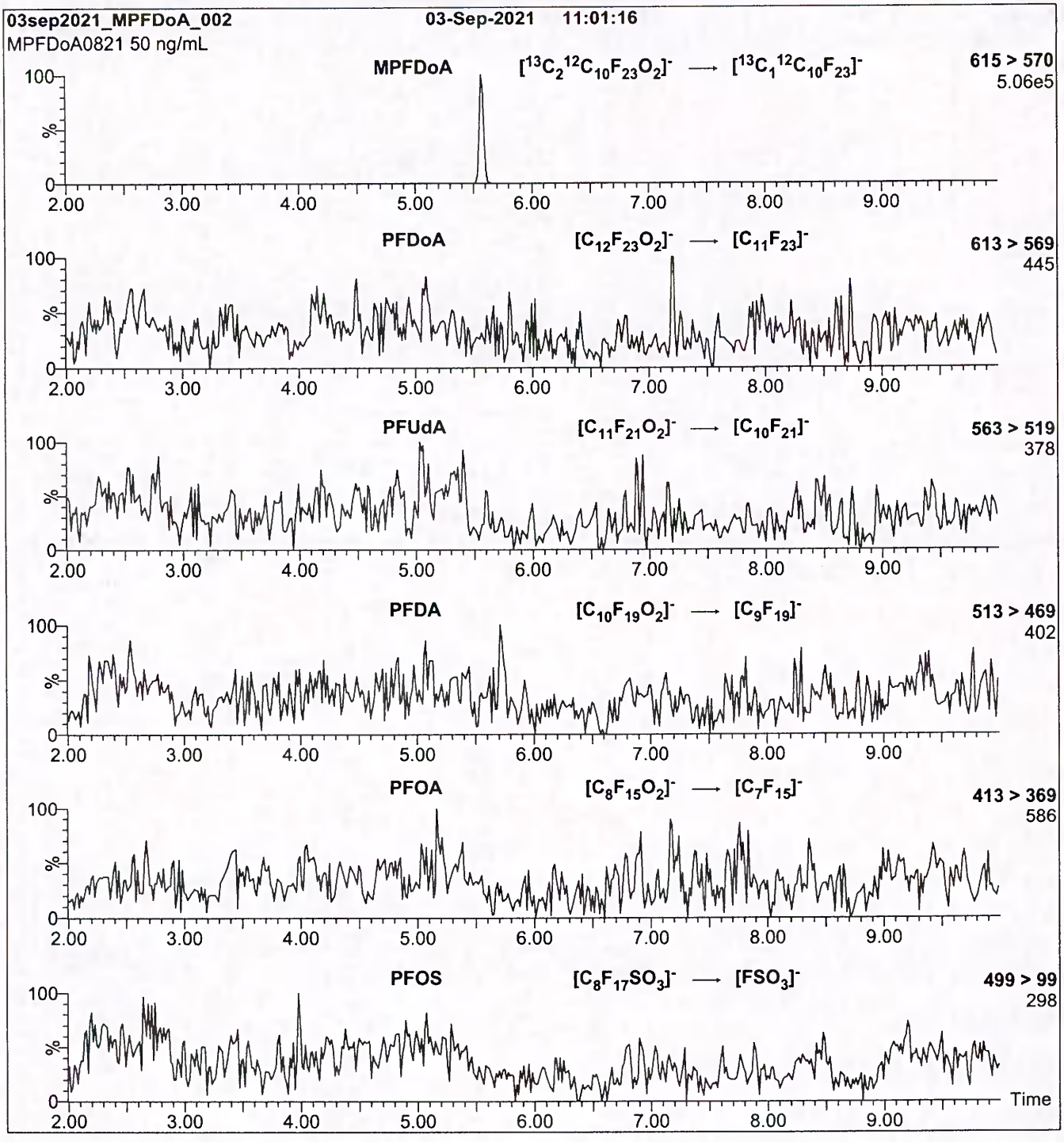
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MPFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDoA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 12

Reagent

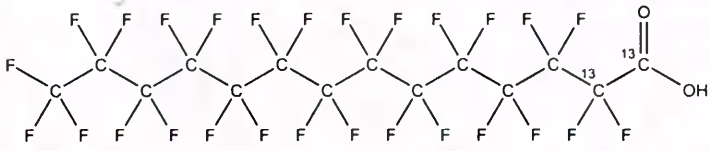
PFC_ST_01342

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFTeDA
LOT NUMBER: M2PFTeDA1121
COMPOUND: Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid

STRUCTURE:
CAS #: Not available



410-2395770

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{12}HF_{27}O_2$	**MOLECULAR WEIGHT:**	716.10
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/22/2021		
EXPIRY DATE: (mm/dd/yyyy)	11/22/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/08/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

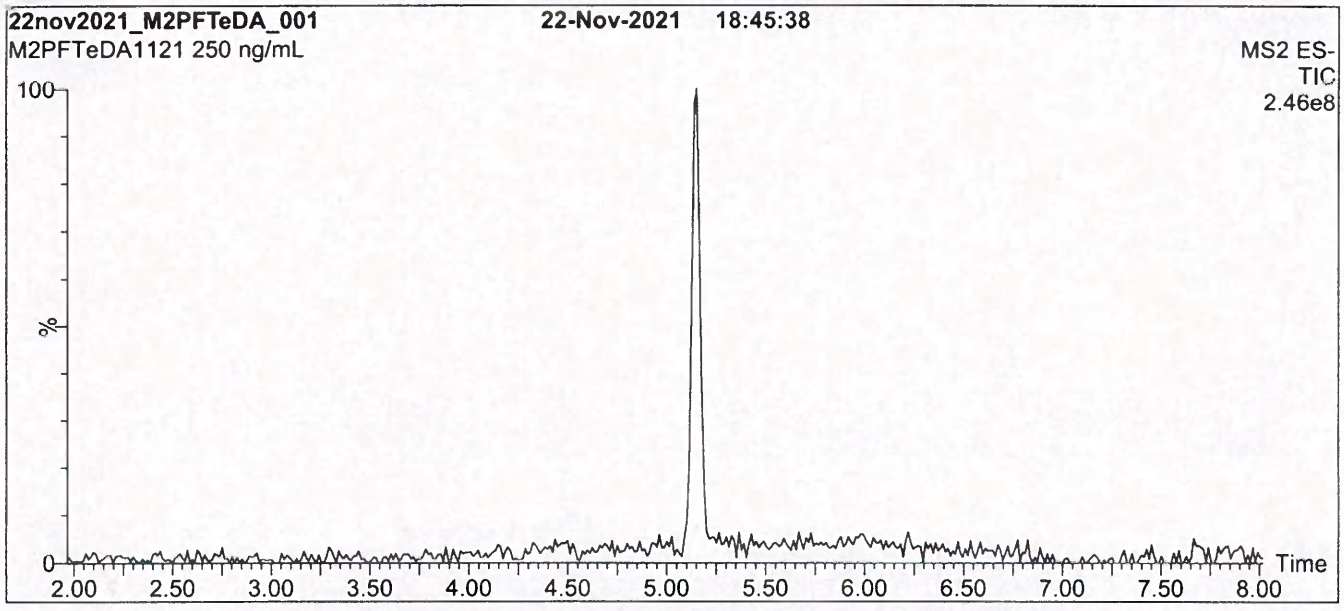
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

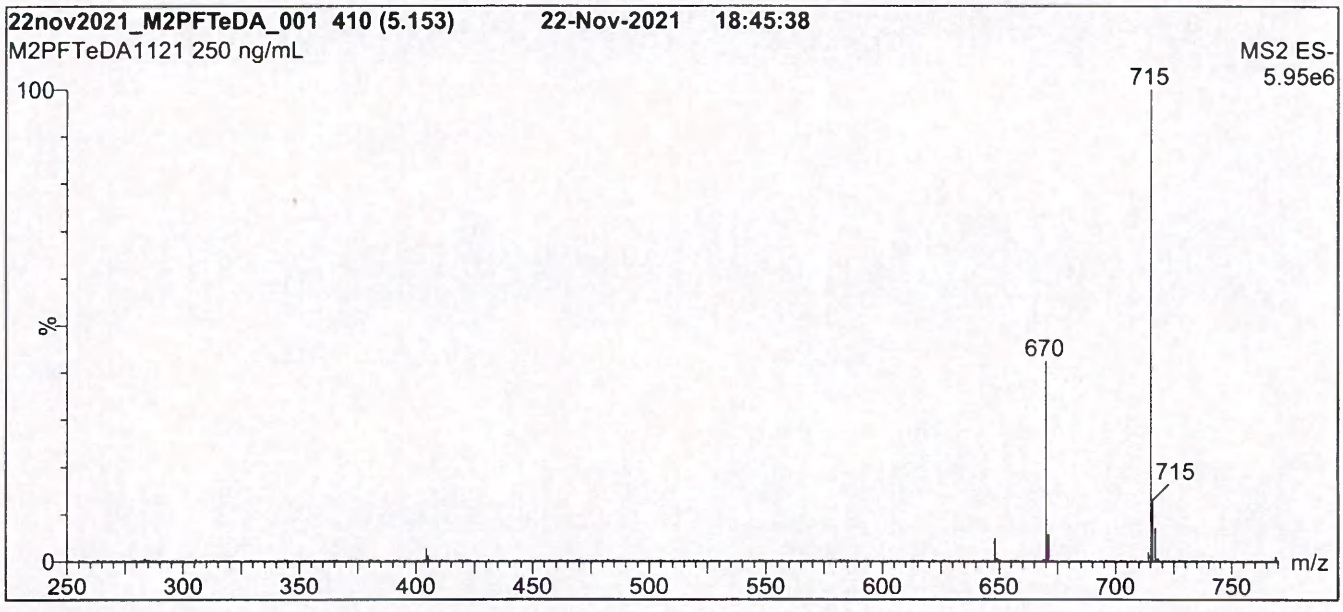
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **M2PFTeDA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

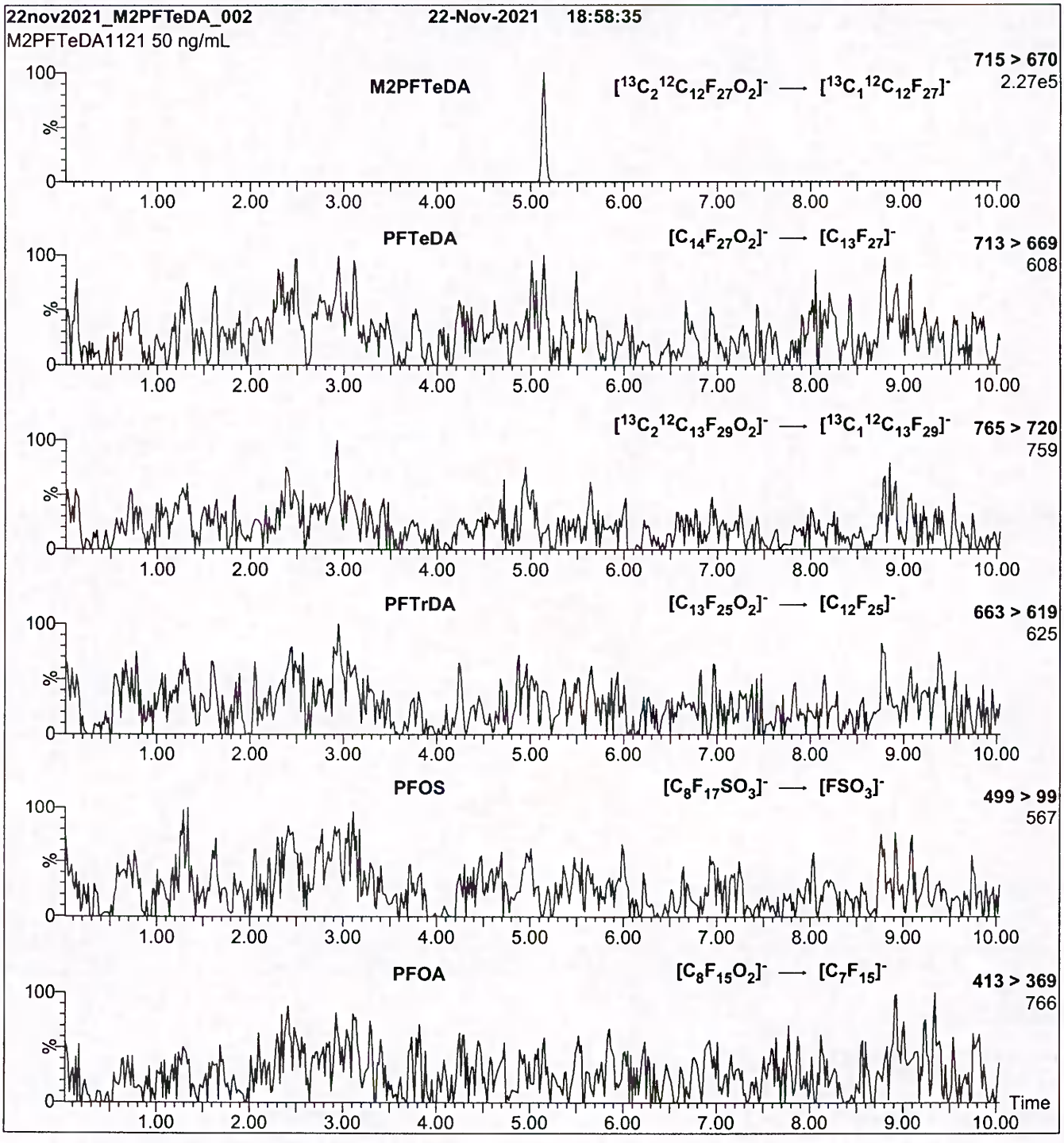
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2PFTeDA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 14

Reagent

PFC_ST_01343

WELLINGTON LABORATORIES

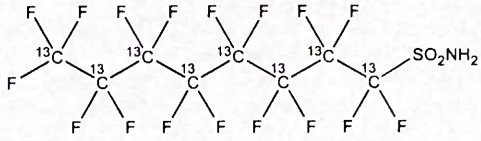
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I
COMPOUND: Perfluoro-1-($^{13}C_8$)octanesulfonamide

LOT NUMBER: M8FOSA0921I

STRUCTURE:

CAS #: 1365803-60-6



410-2395772

MOLECULAR FORMULA:	$^{13}C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	507.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	10/12/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/12/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~1.0% of perfluoro-1-($^{13}C_4$)octanesulfonamide and ~0.2% of perfluoro-1-($^{13}C_7$)heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/14/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

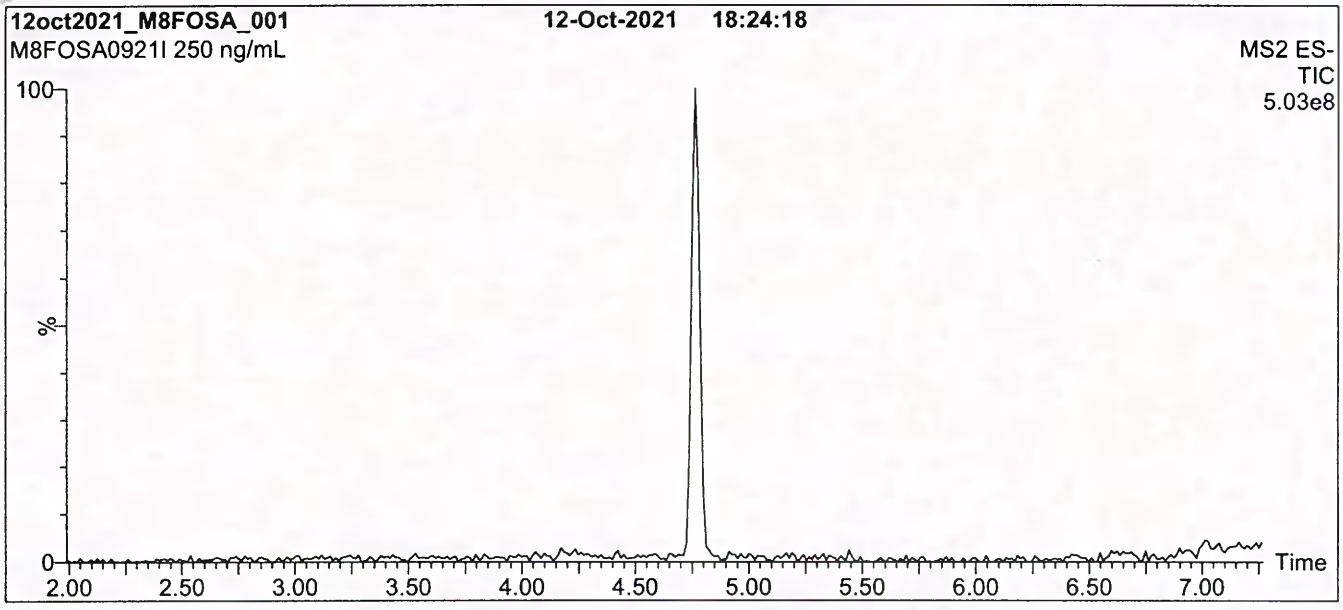
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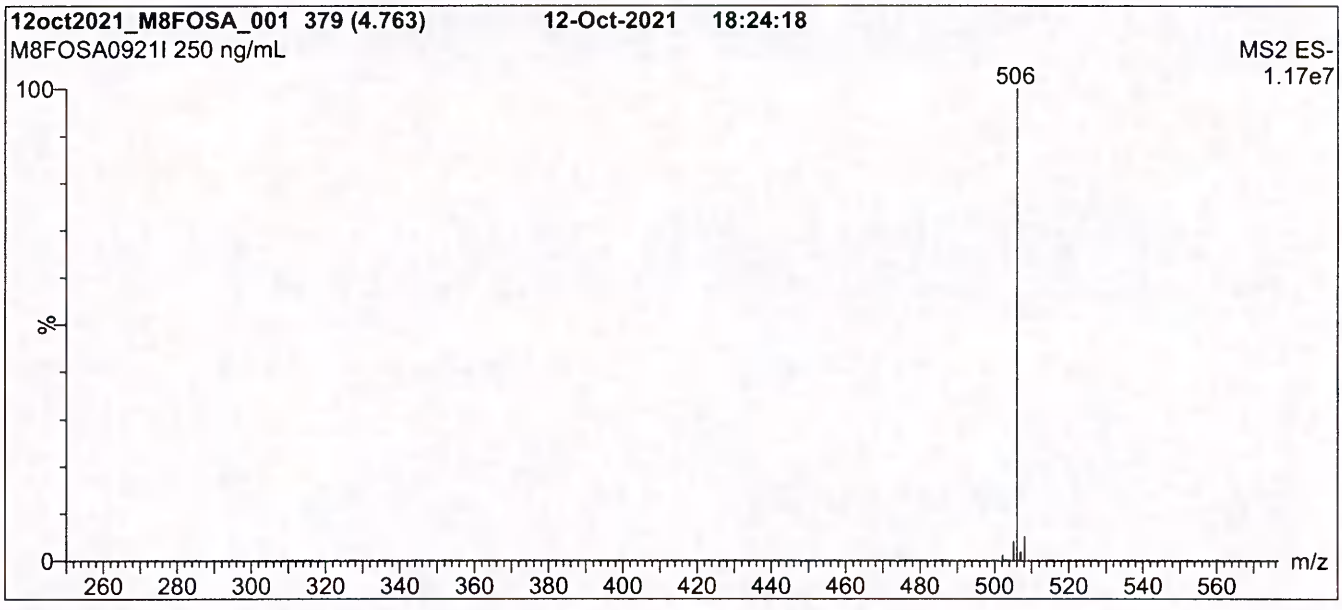
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **M8FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

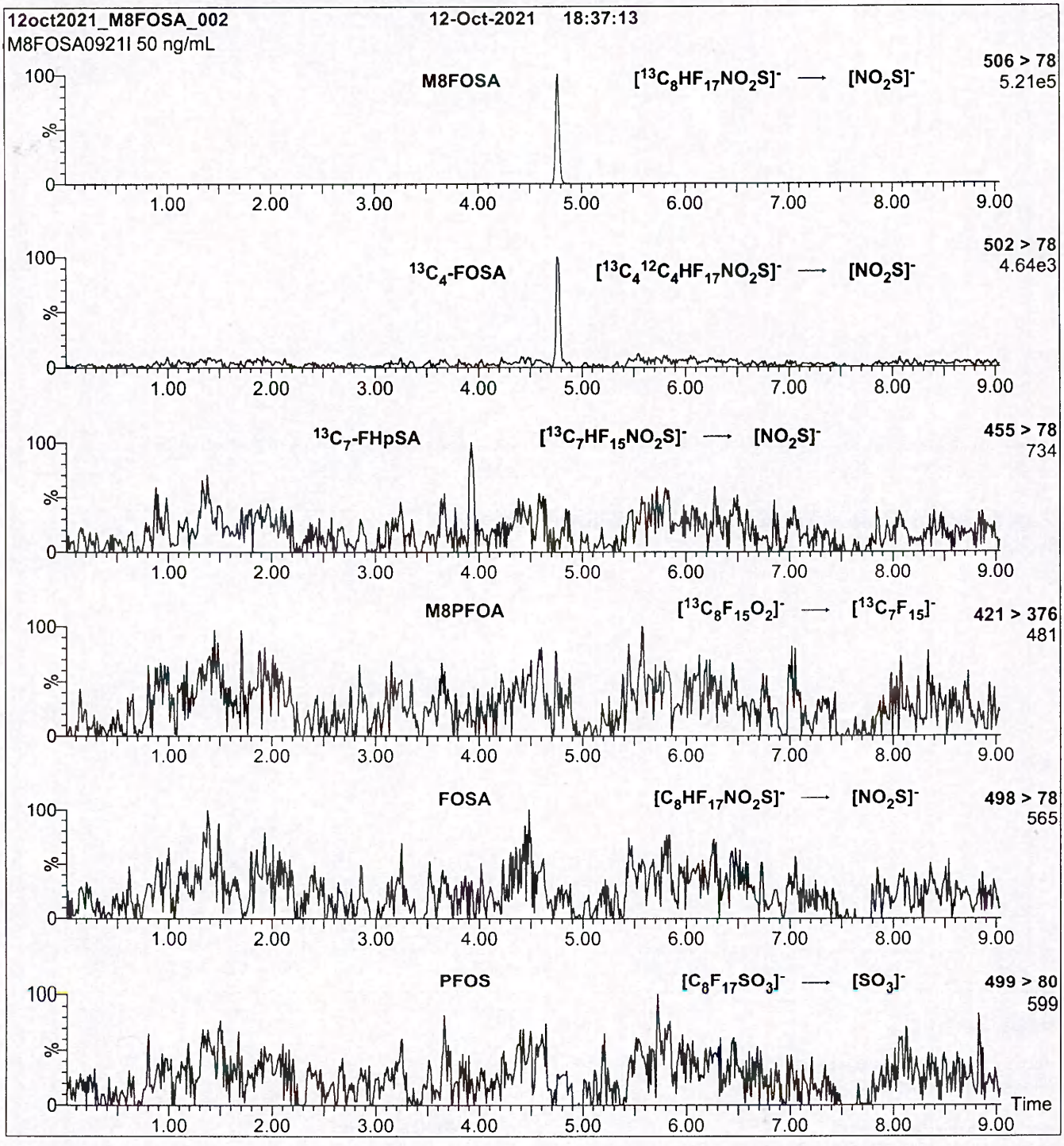
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 30

Reagent

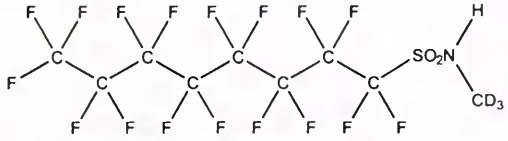
PFC_ST_01344

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d-N-MeFOSA-M
LOT NUMBER: dNMeFOSA1021M
COMPOUND: N-methyl-d_3-perfluoro-1-octanesulfonamide

STRUCTURE:



CAS #: 936109-37-4

410-2395773

MOLECULAR FORMULA:	$C_9D_3HF_{17}NO_2S$	**MOLECULAR WEIGHT:**	516.19
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_3$
LAST TESTED: (mm/dd/yyyy)	10/07/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/07/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/08/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

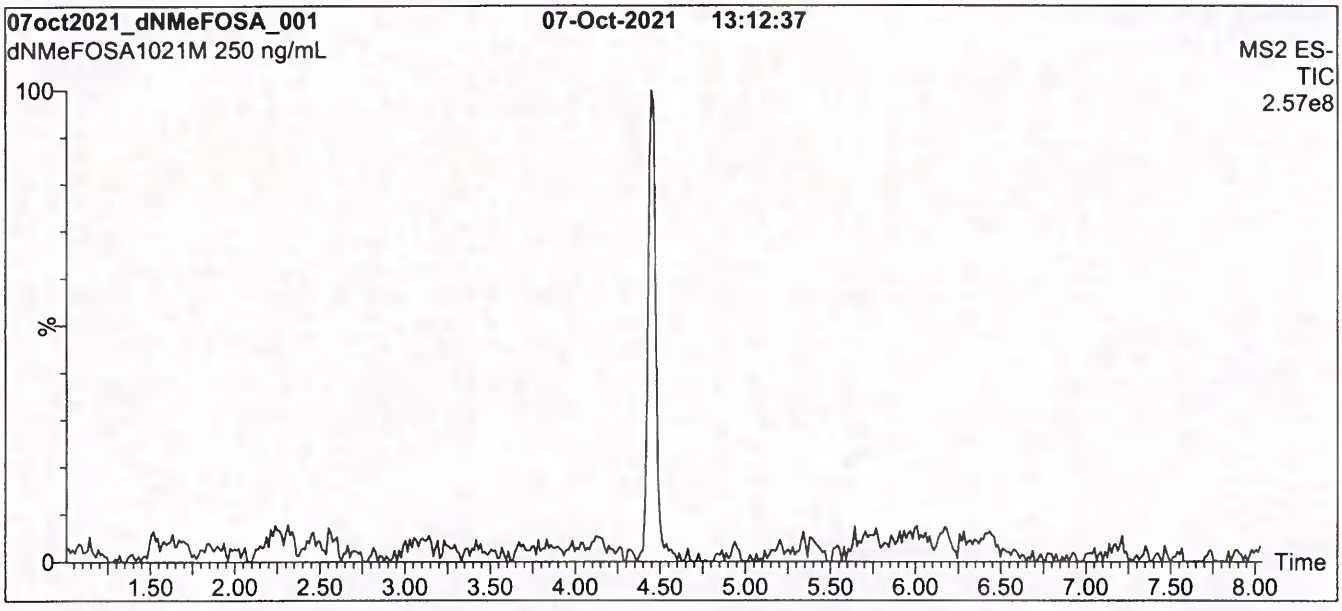
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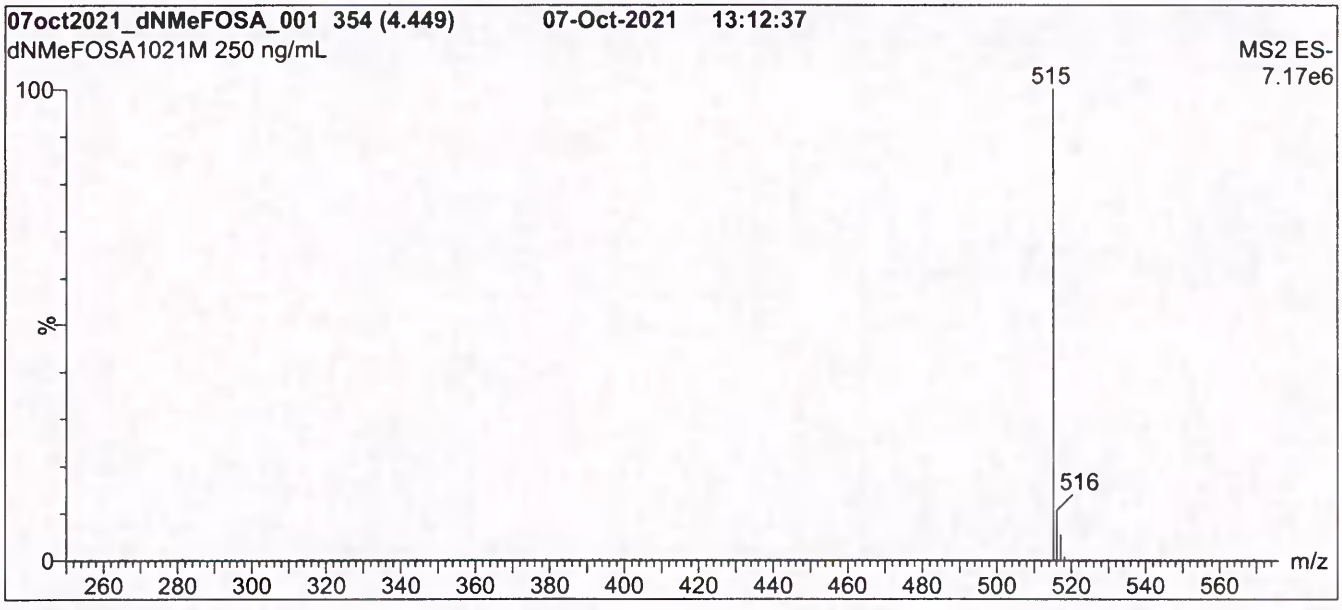
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **d-N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

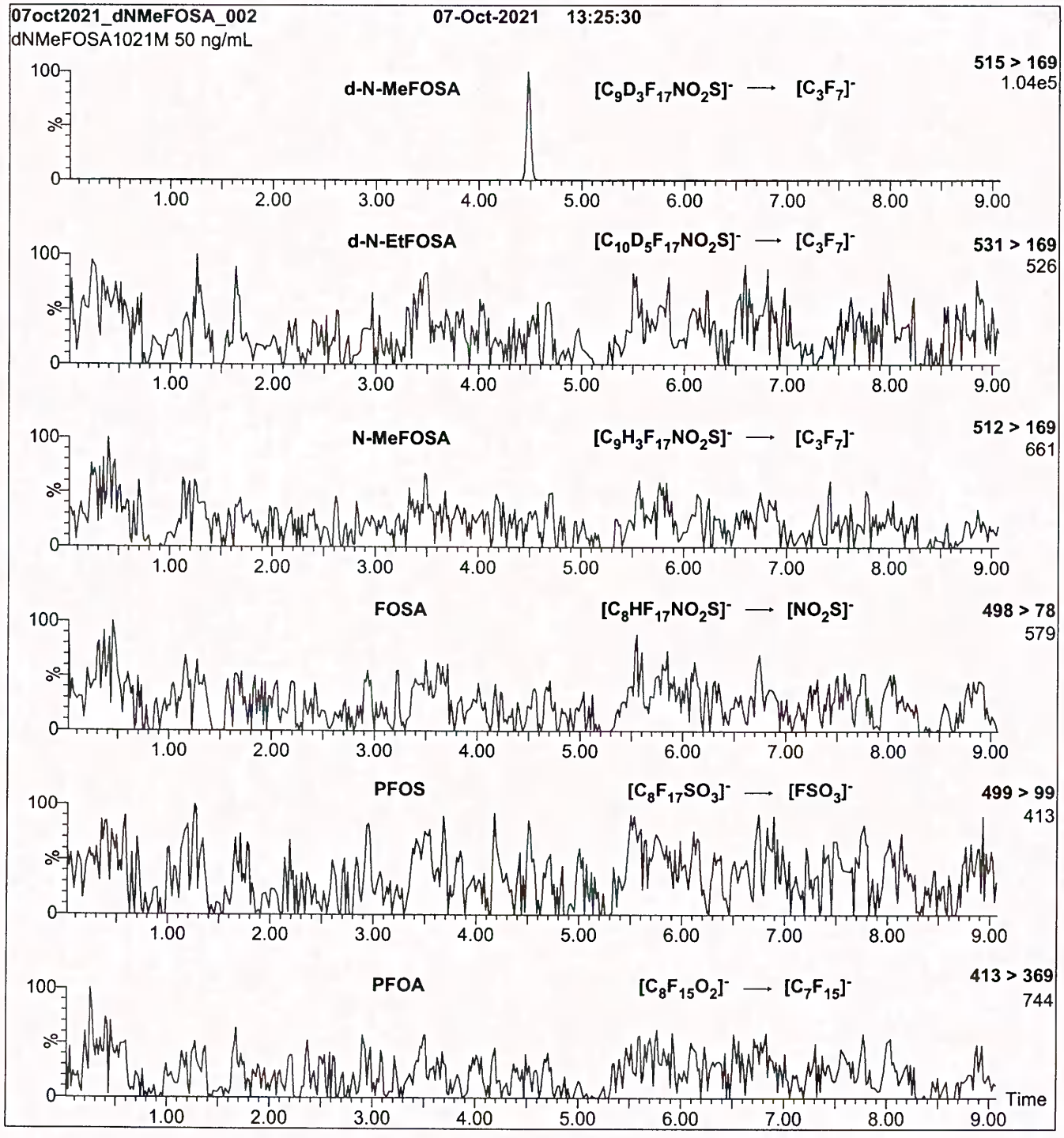
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d-N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 24

Reagent

PFC_ST_01345

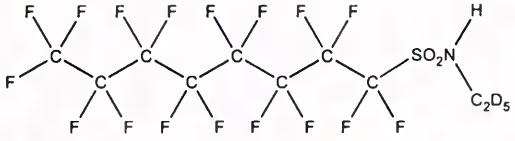
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d-N-EtFOSA-M
COMPOUND: N-ethyl-d_5-perfluoro-1-octanesulfonamide

LOT NUMBER: dNEtFOSA0821M

STRUCTURE:



CAS #: 936109-40-9

410-2395775

MOLECULAR FORMULA:	$C_{10}D_5HF_{17}NO_2S$	**MOLECULAR WEIGHT:**	532.23
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_5$
LAST TESTED: (mm/dd/yyyy)	08/10/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/10/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

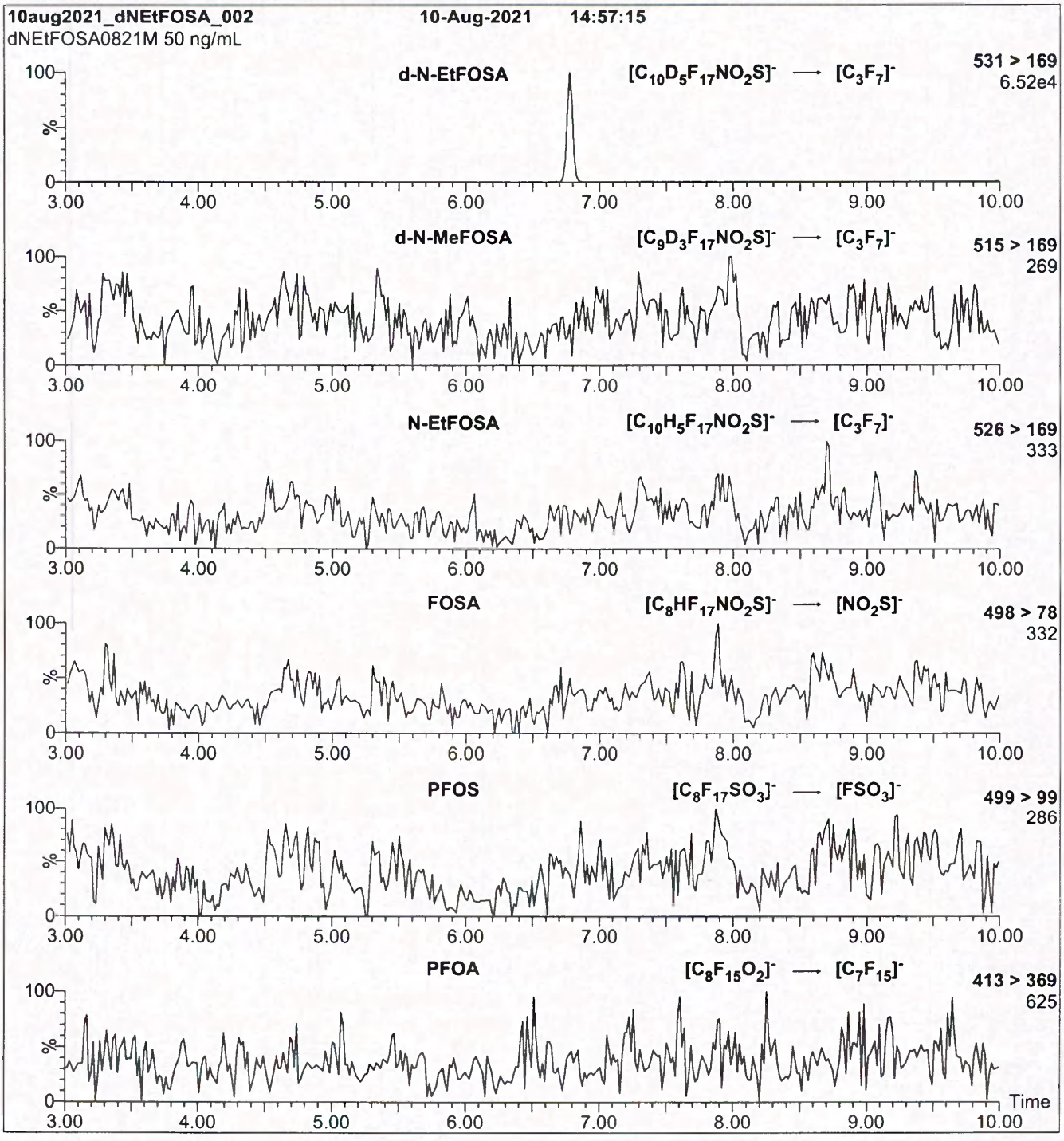
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/19/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 2: **d-N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d-N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 24

Reagent

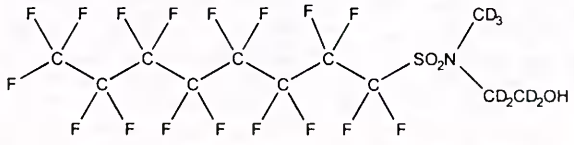
PFC_ST_01346

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d7-N-MeFOSE-M **LOT NUMBER:** d7NMeFOSE1221M
COMPOUND: 2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol

STRUCTURE: **CAS #:** 1265205-95-5



410-2395778

MOLECULAR FORMULA:	$C_{11}D_7HF_{17}NO_3S$	**MOLECULAR WEIGHT:**	564.27
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥98% $^2H_7$
LAST TESTED: (mm/dd/yyyy)	12/16/2021 (HRGC/LRMS) 01/27/2022 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	01/27/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 02/03/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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HOMOGENEITY:

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UNCERTAINTY:

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

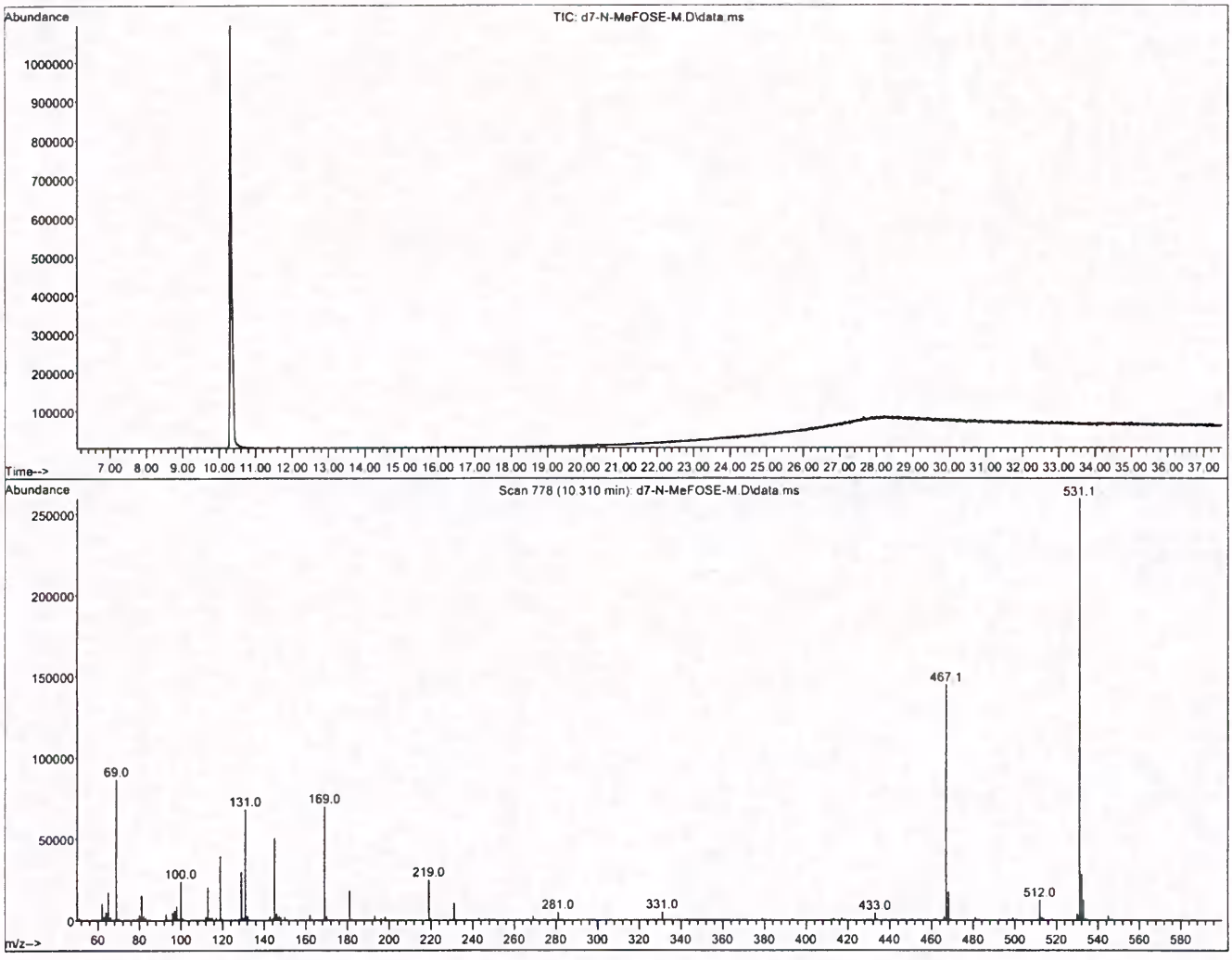
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **d7-N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



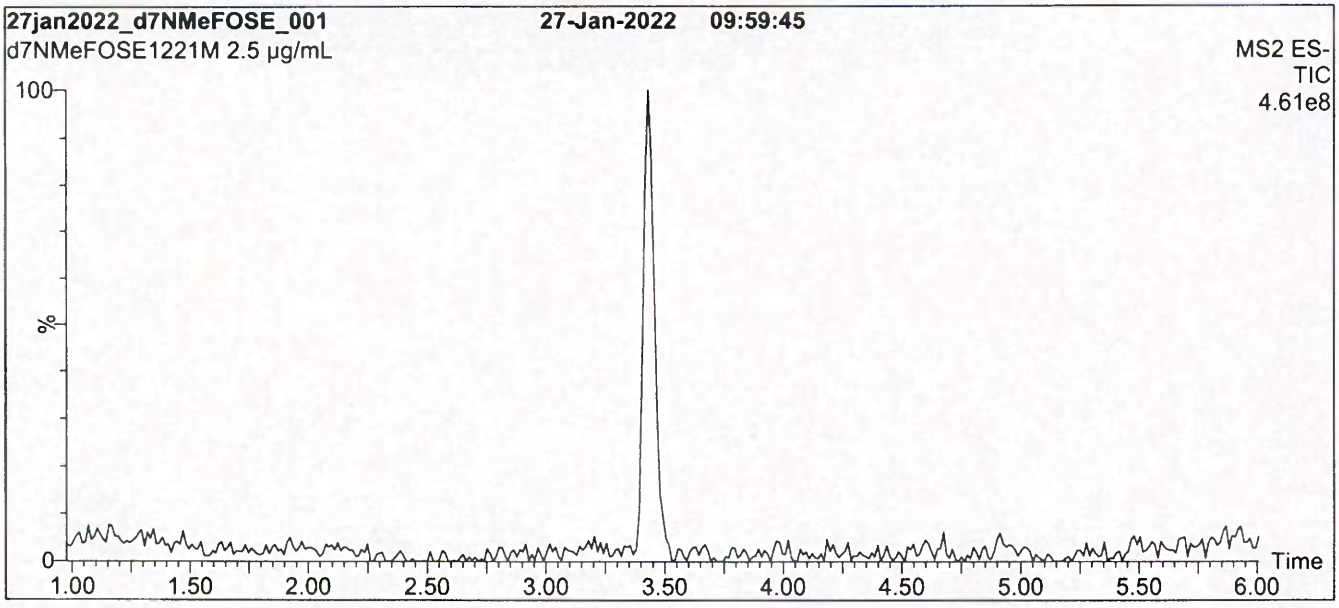
Conditions for Figure 1:

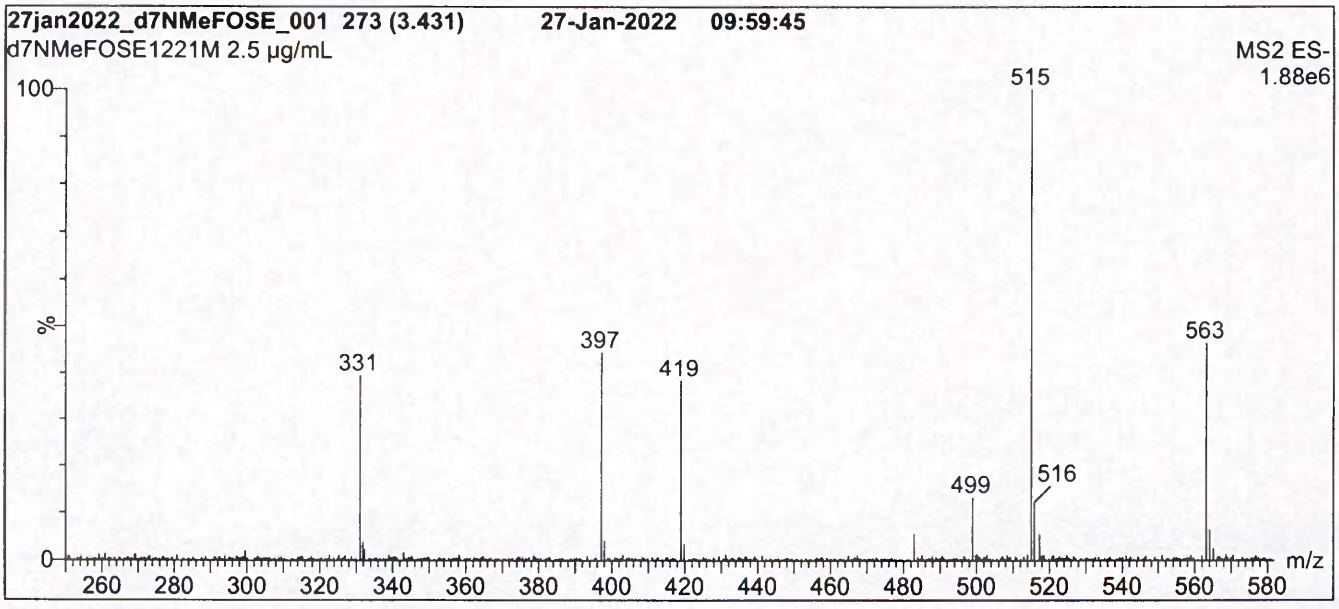
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1.0 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 310°C 310°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

Figure 2: **d7-N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

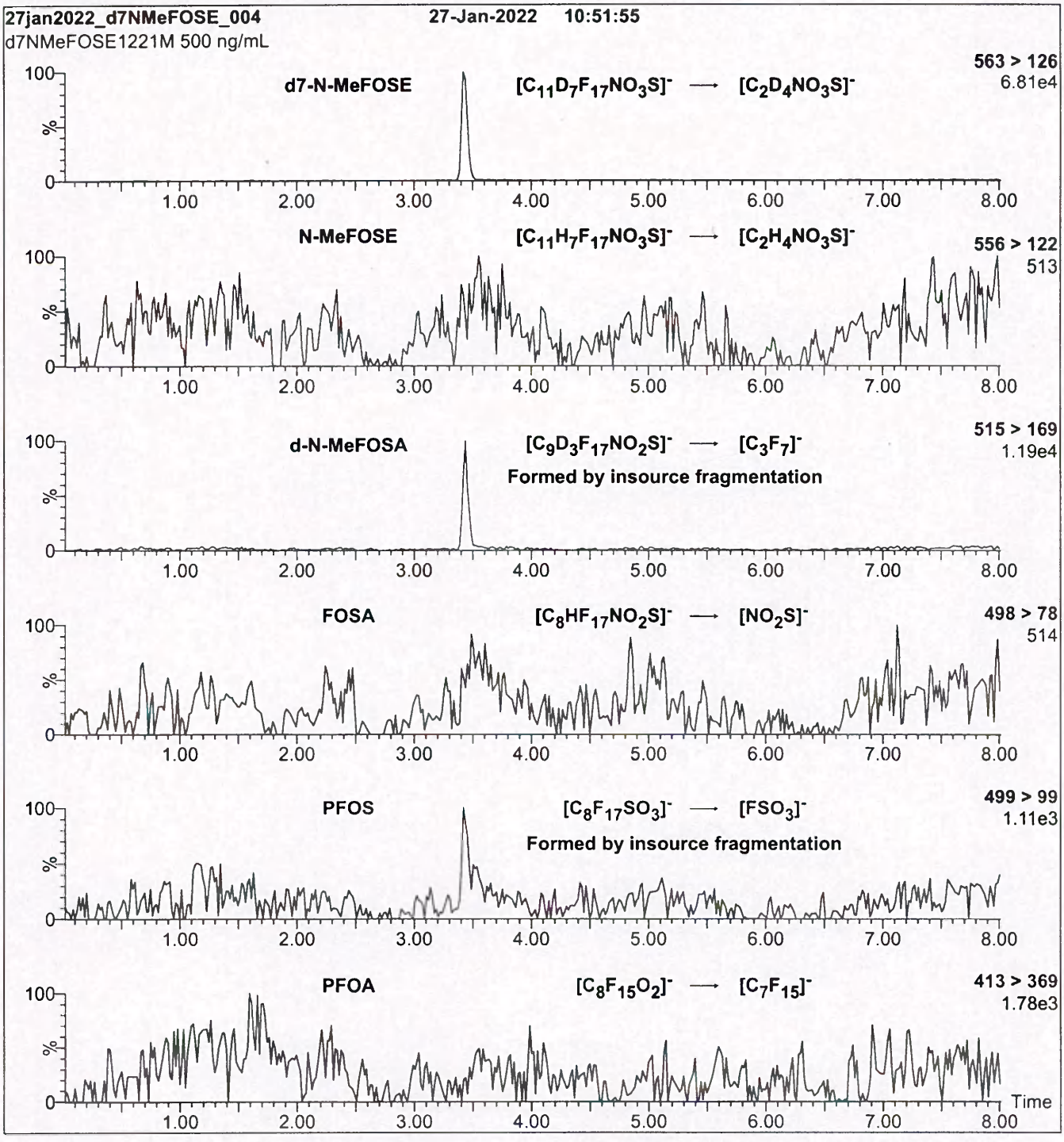
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **d7-N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (d7-N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 36

Reagent

PFC_ST_01353

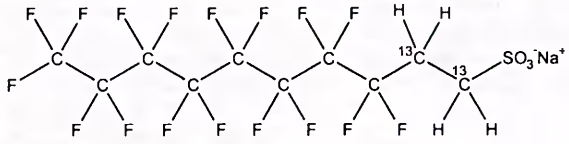
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS1121

COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)decanesulfonate

STRUCTURE: **CAS #:** 2708218-90-8



410-2395846

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	552.15
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.0 ± 2.4 µg/mL (M2-8:2FTS acid) 47.9 ± 2.4 µg/mL (M2-8:2FTS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/23/2021		
EXPIRY DATE: (mm/dd/yyyy)	11/23/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of ^{34}S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/03/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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SYNTHESIS / CHARACTERIZATION:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

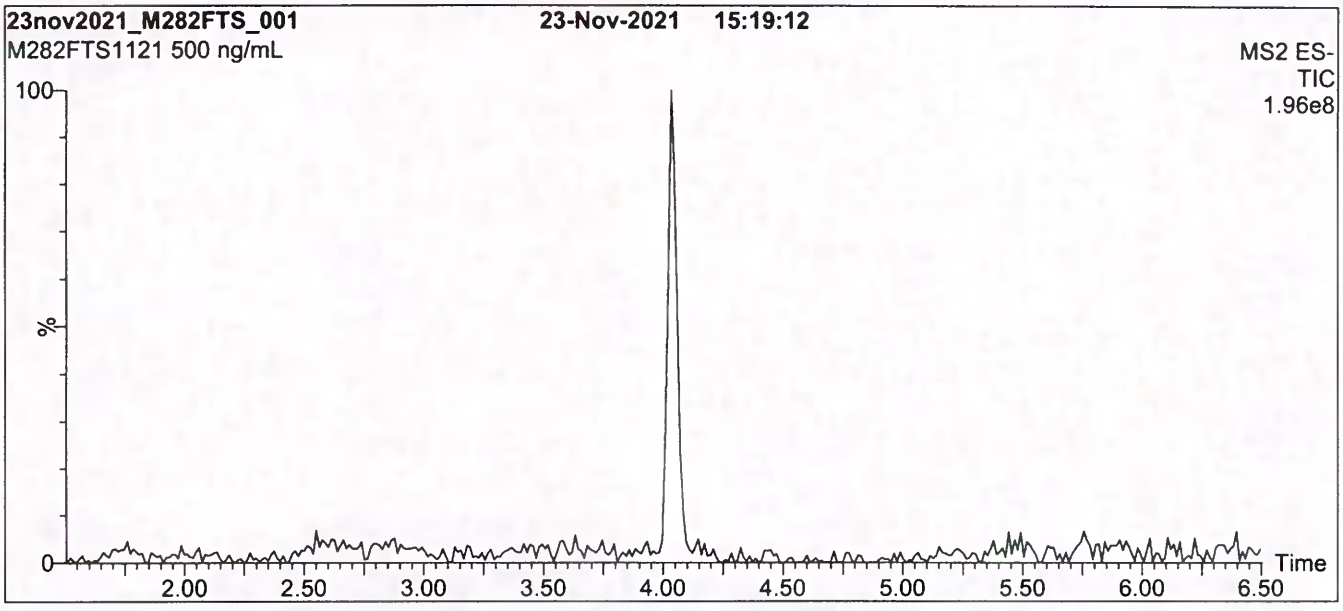
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

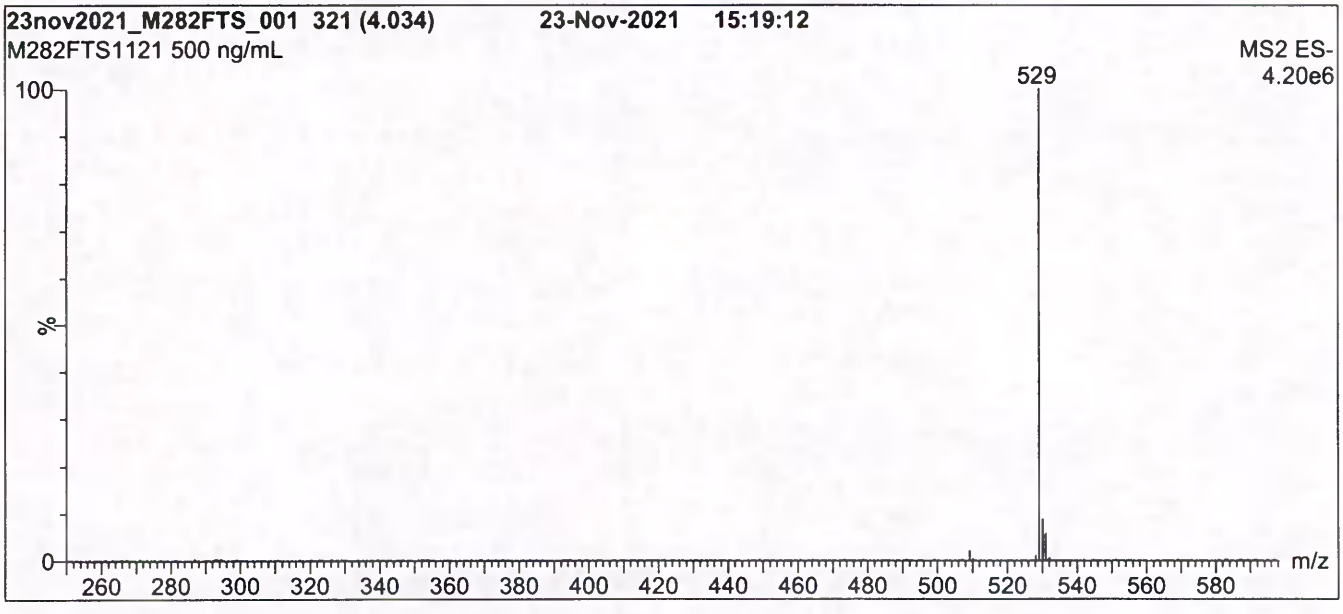
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **M2-8:2FTS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

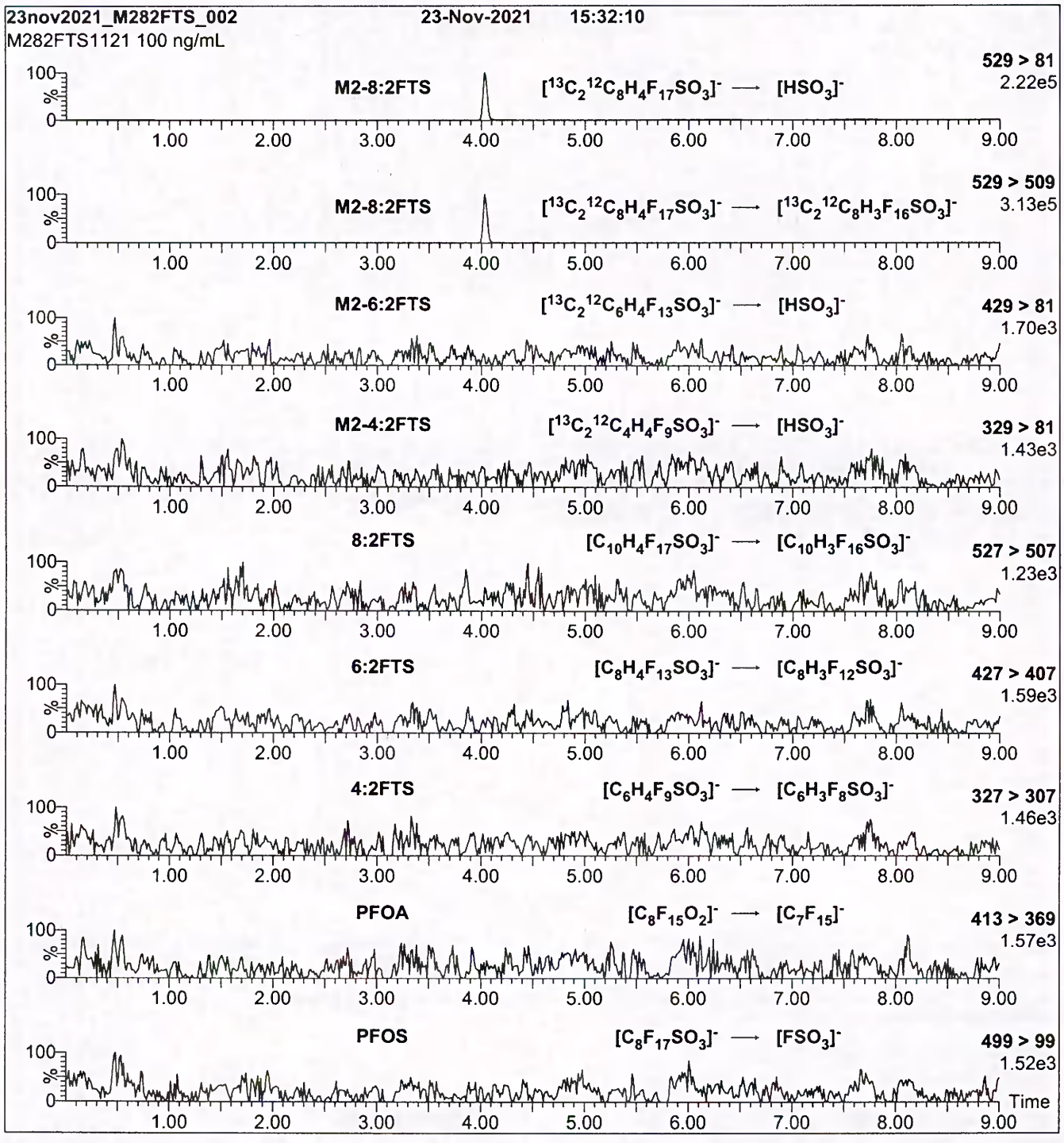
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2-8:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 35

Reagent

PFC_ST_01406

WELLINGTON LABORATORIES

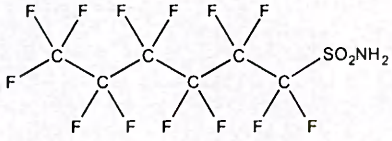
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFC-ST-01406

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA1221I

STRUCTURE:



CAS #: 41997-13-1

410-2416291

MOLECULAR FORMULA:	$C_6H_2F_{13}NO_2S$	**MOLECULAR WEIGHT:**	399.13
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	12/29/2021		
EXPIRY DATE: (mm/dd/yyyy)	12/29/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 01/10/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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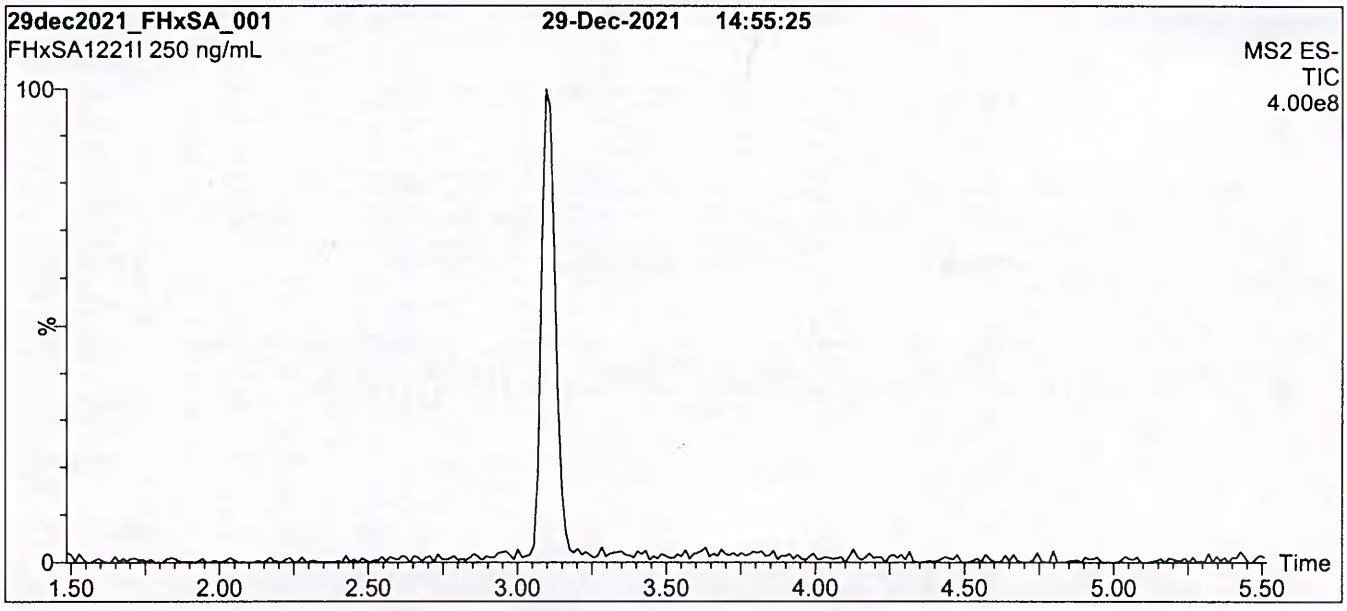
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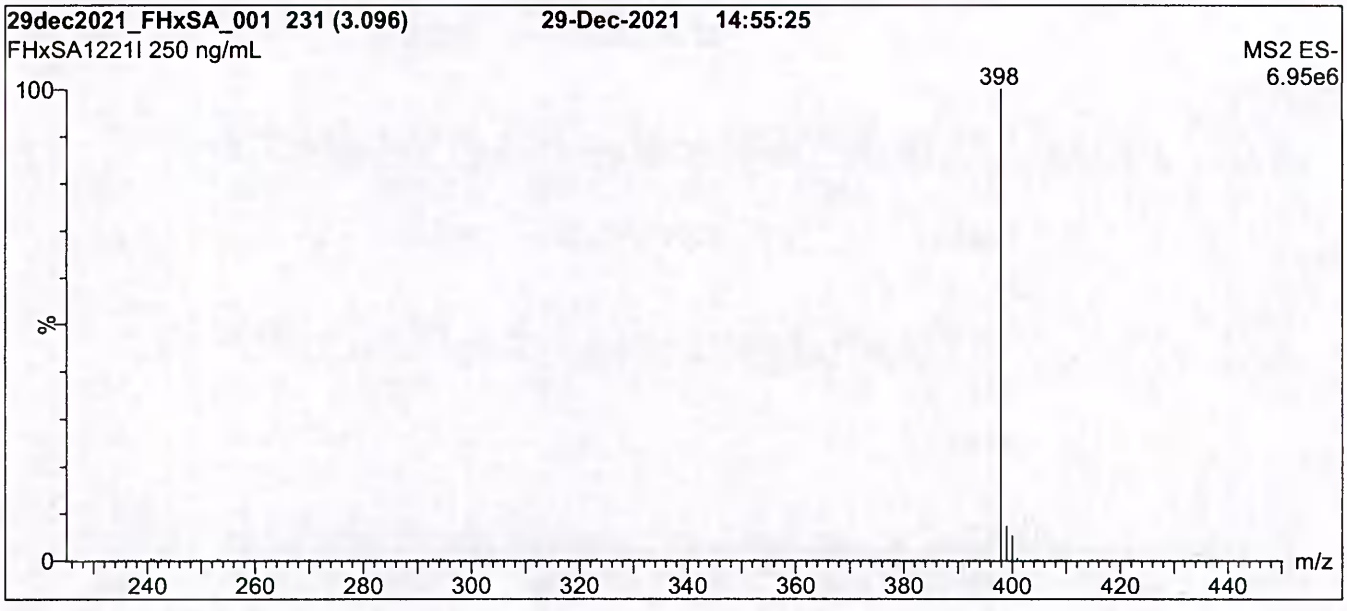
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **FHxSA-I; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

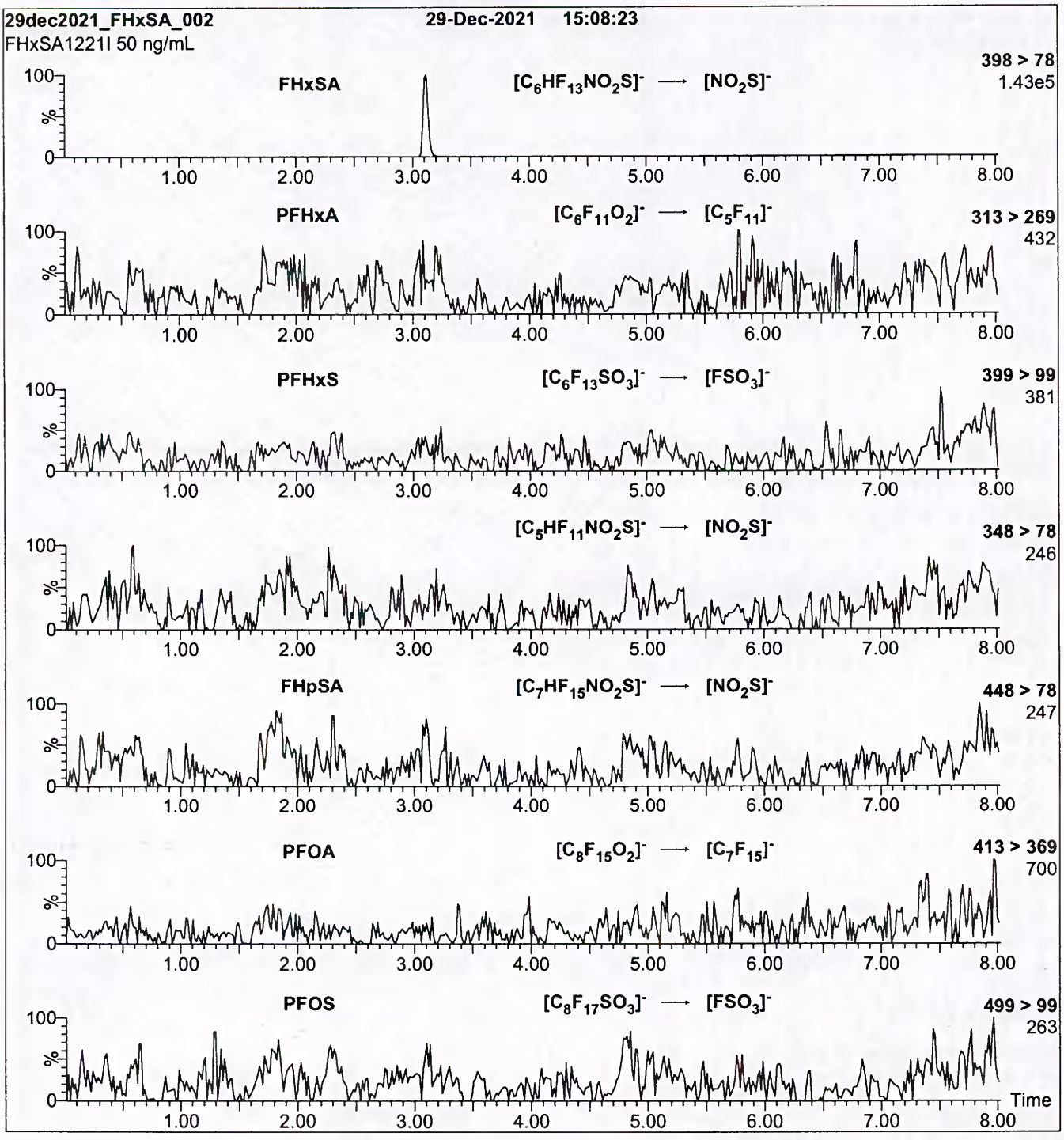
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 750

Figure 2: **FHxSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FHxSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 28

Reagent

PFC_ST_01407

WELLINGTON LABORATORIES

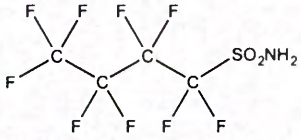
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFC-ST-01407

PRODUCT CODE: FBSA-I
COMPOUND: Perfluoro-1-butanesulfonamide

LOT NUMBER: FBSA1121I

STRUCTURE:



CAS #: 30334-69-1

410-2416292

MOLECULAR FORMULA:	$C_4H_2F_9NO_2S$	**MOLECULAR WEIGHT:**	299.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/10/2021		
EXPIRY DATE: (mm/dd/yyyy)	11/10/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

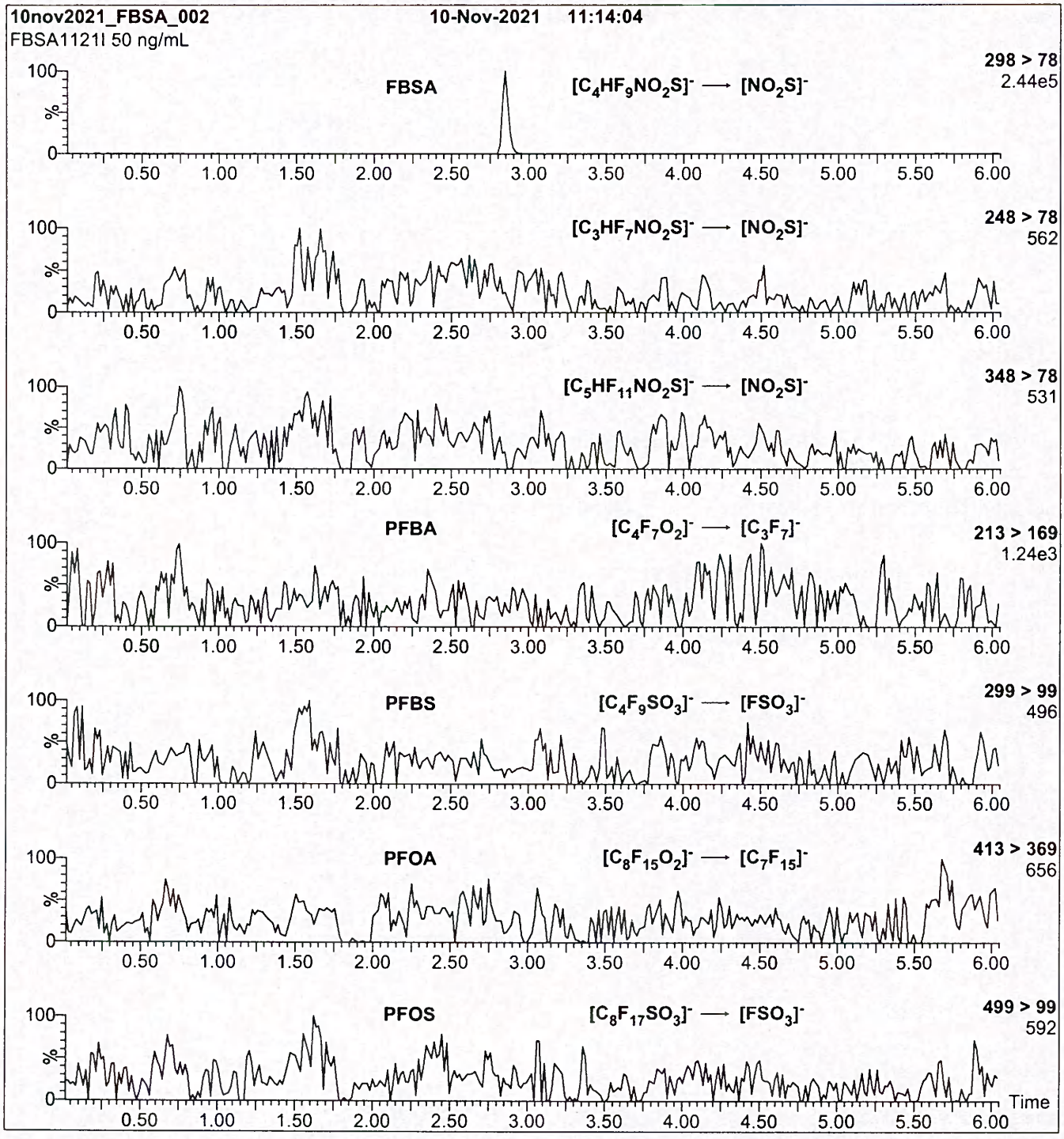
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/10/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 2: **FBSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FBSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.42e-3
Collision Energy (eV) = 30

Reagent

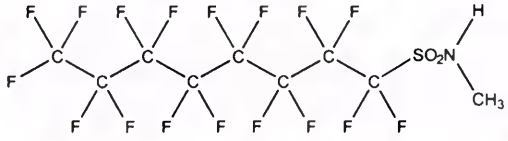
PFC_ST_01417

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
LOT NUMBER: NMeFOSA0721M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

STRUCTURE:



CAS #: 31506-32-8

410-2448638

MOLECULAR FORMULA:	$C_9H_4F_{17}NO_2S$	**MOLECULAR WEIGHT:**	513.17
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/03/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/03/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

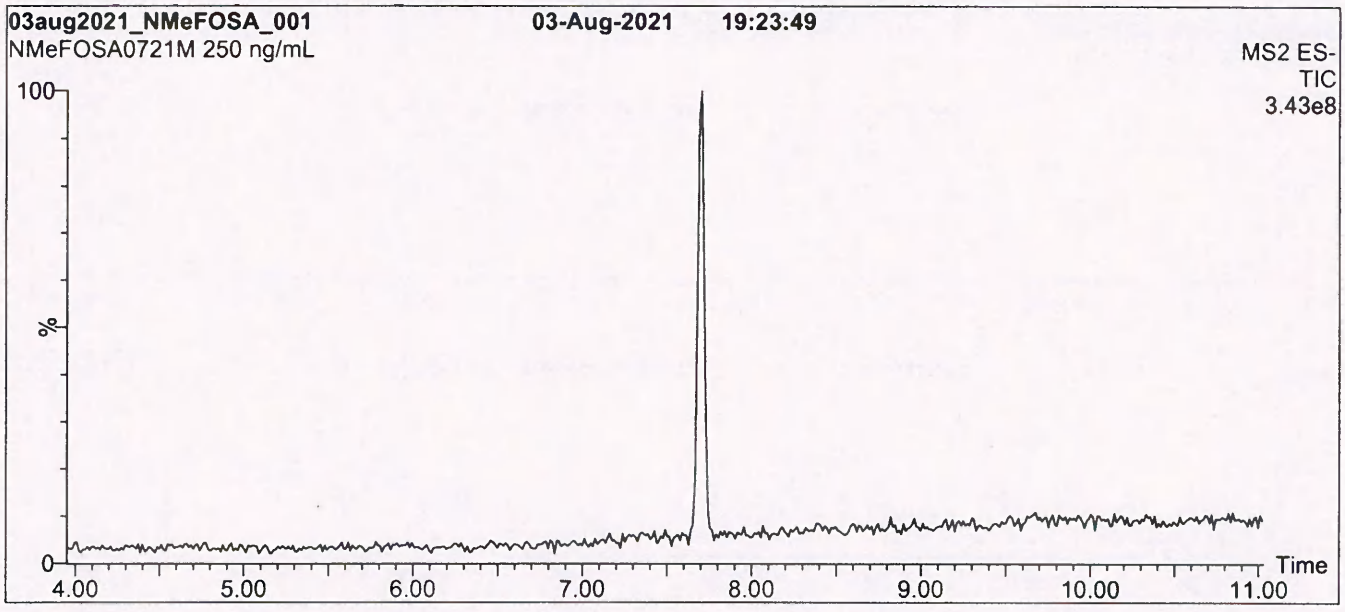
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

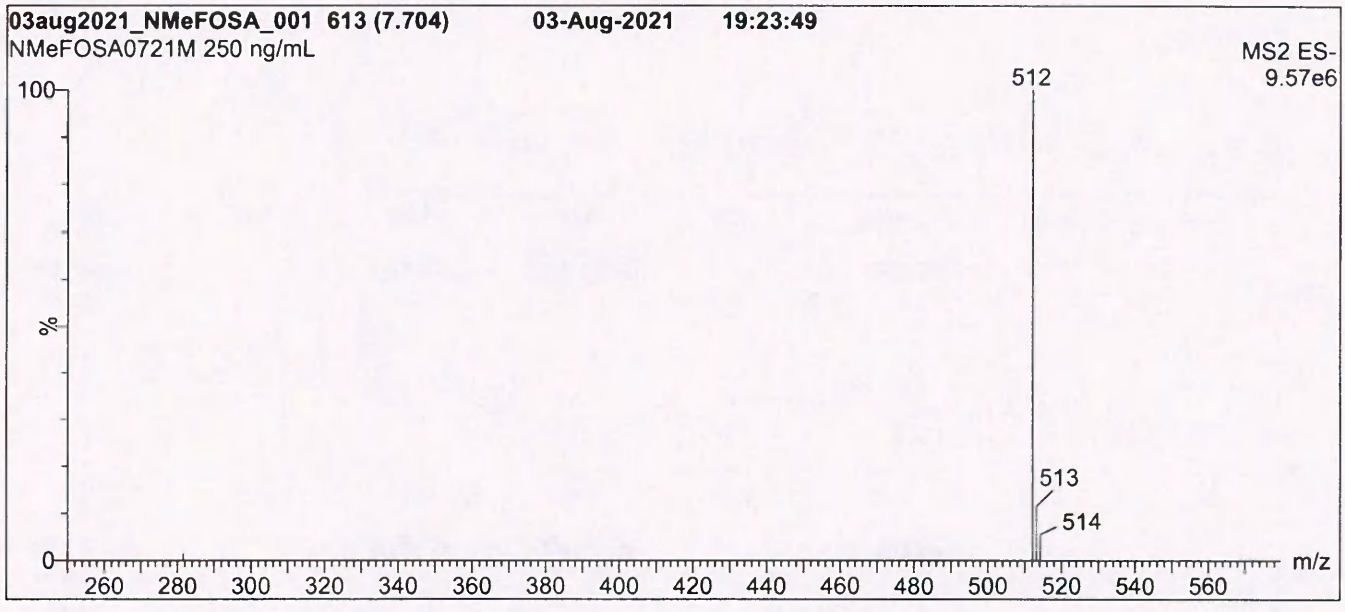
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

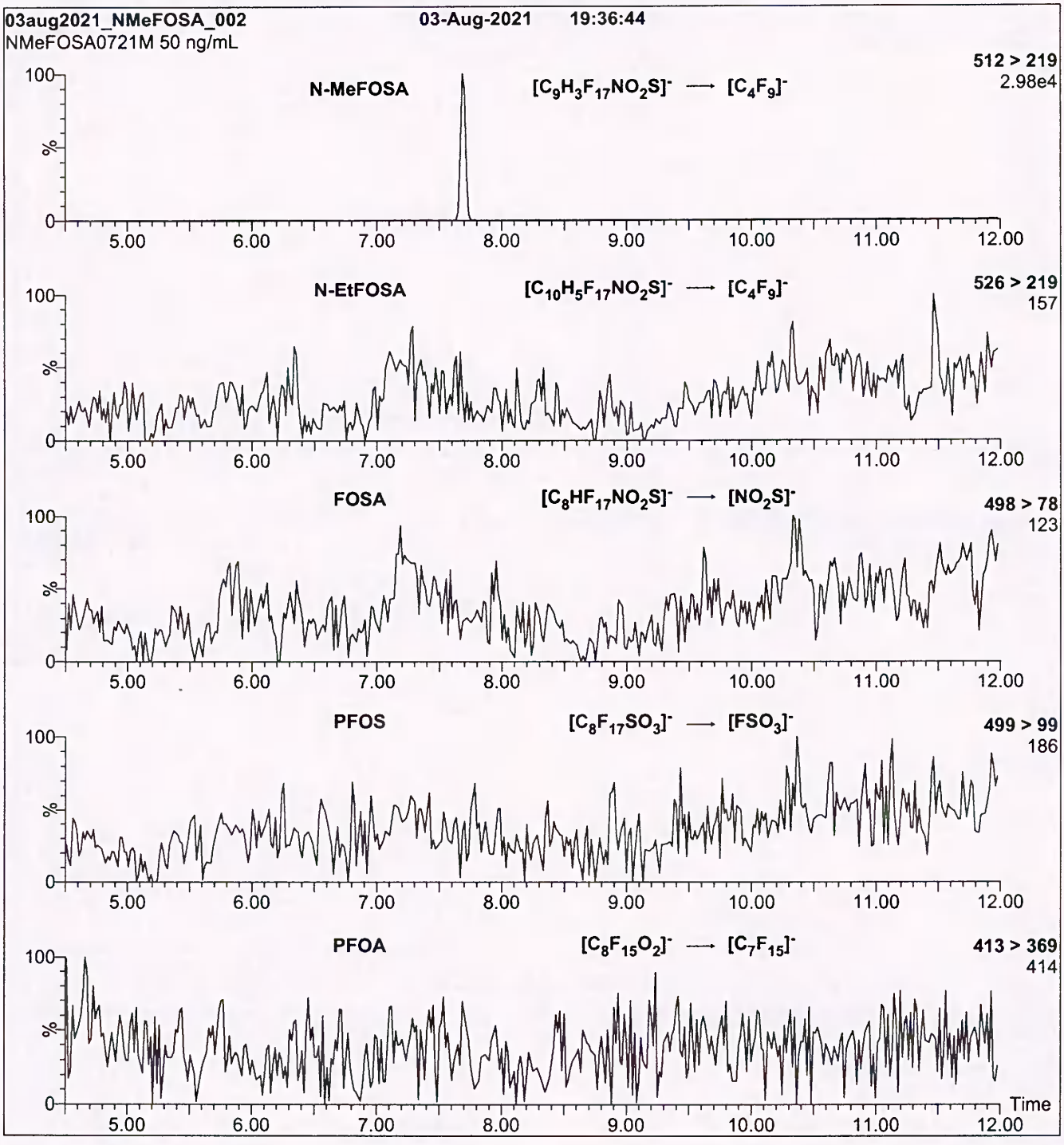
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 24

Reagent

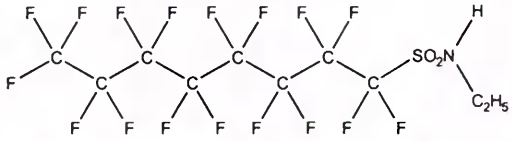
PFC_ST_01418

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M
LOT NUMBER: NEtFOSA0821M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:



CAS #: 4151-50-2

410-2448639

MOLECULAR FORMULA:	$C_{10}H_6F_{17}NO_2S$	**MOLECULAR WEIGHT:**	527.20
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/12/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/12/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/16/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

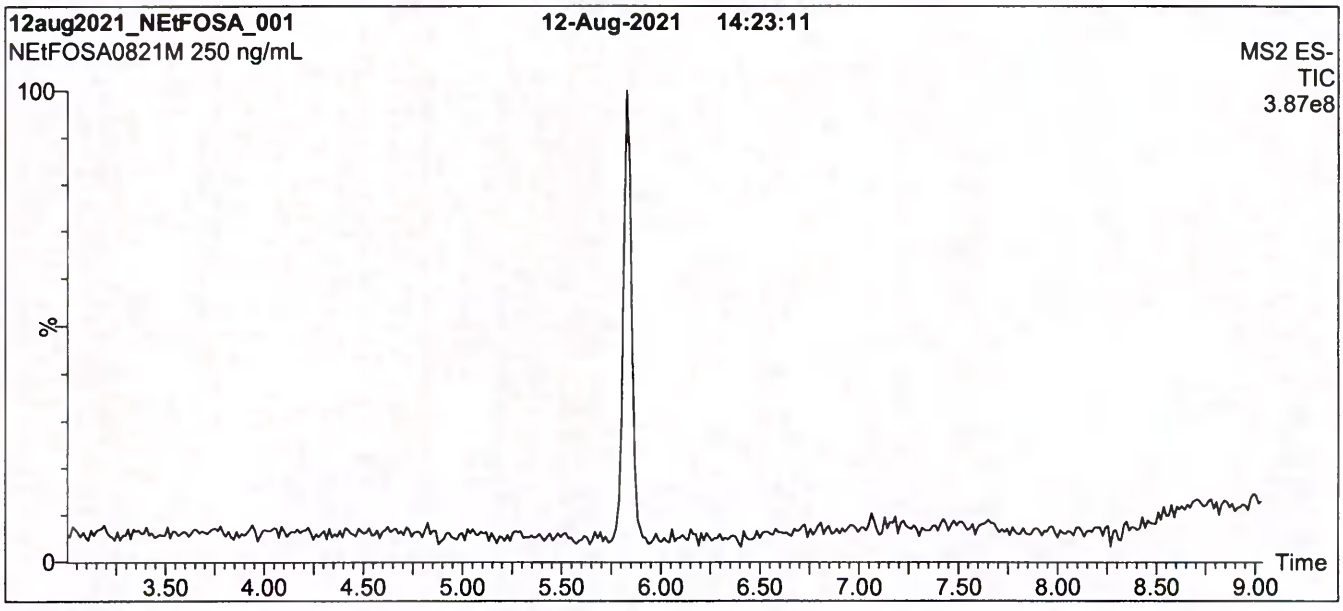
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

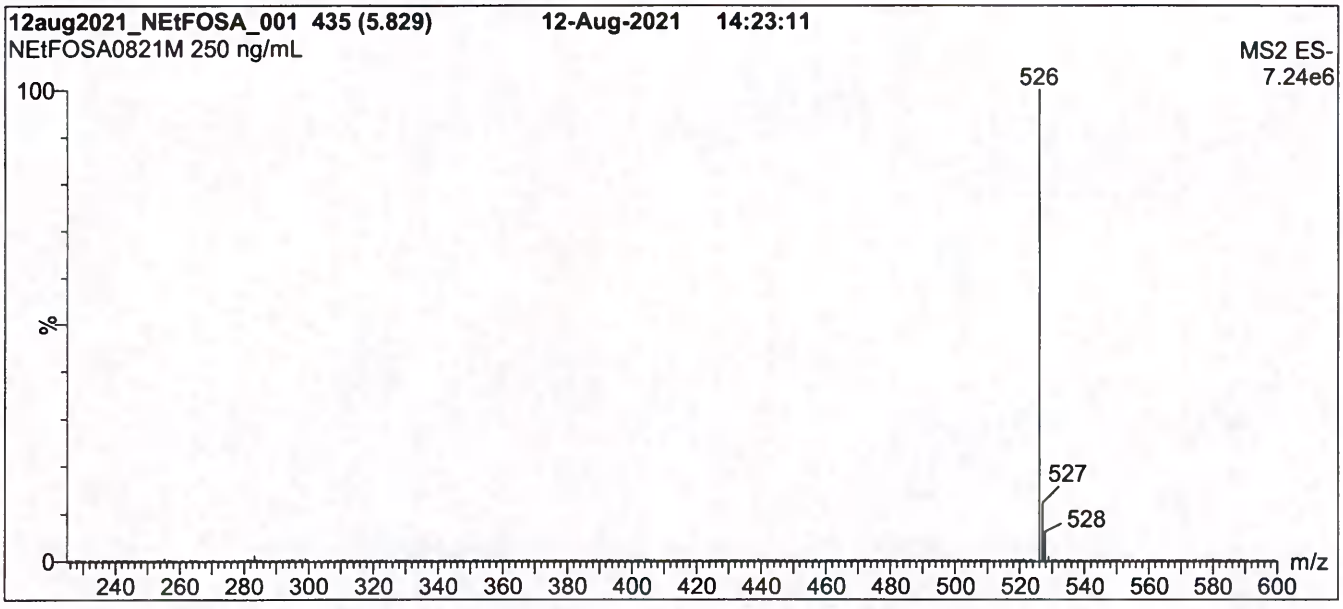
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **N-EtFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

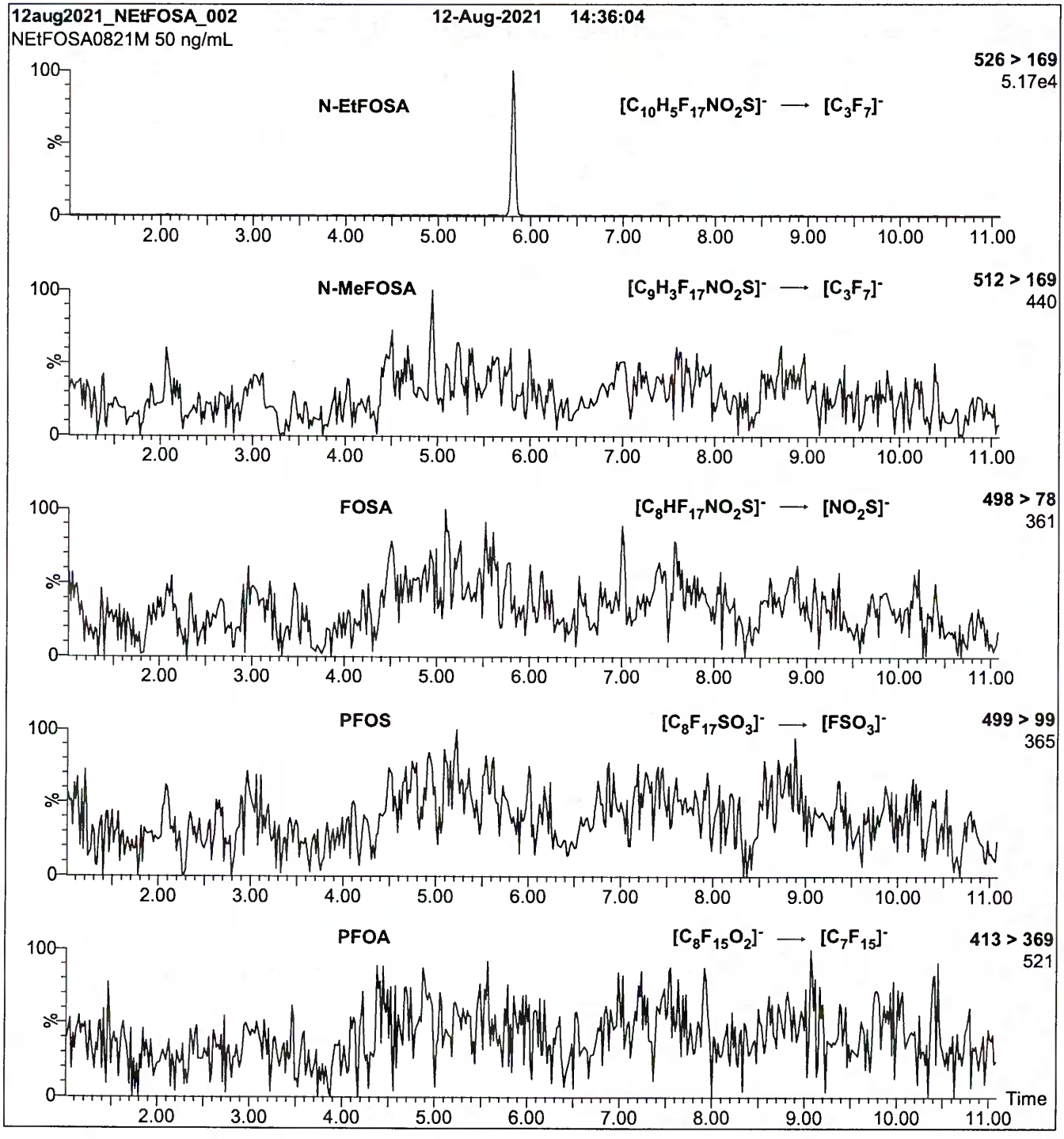
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 24

Reagent

PFC_ST_01419

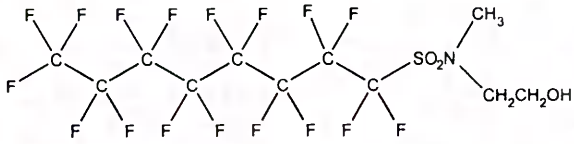
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M

COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 24448-09-7



410-2448641

MOLECULAR FORMULA:	$C_{11}H_8F_{17}NO_3S$	**MOLECULAR WEIGHT:**	557.22
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/22/2021 (HRGC/LRMS) 09/23/2021 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	09/23/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/28/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

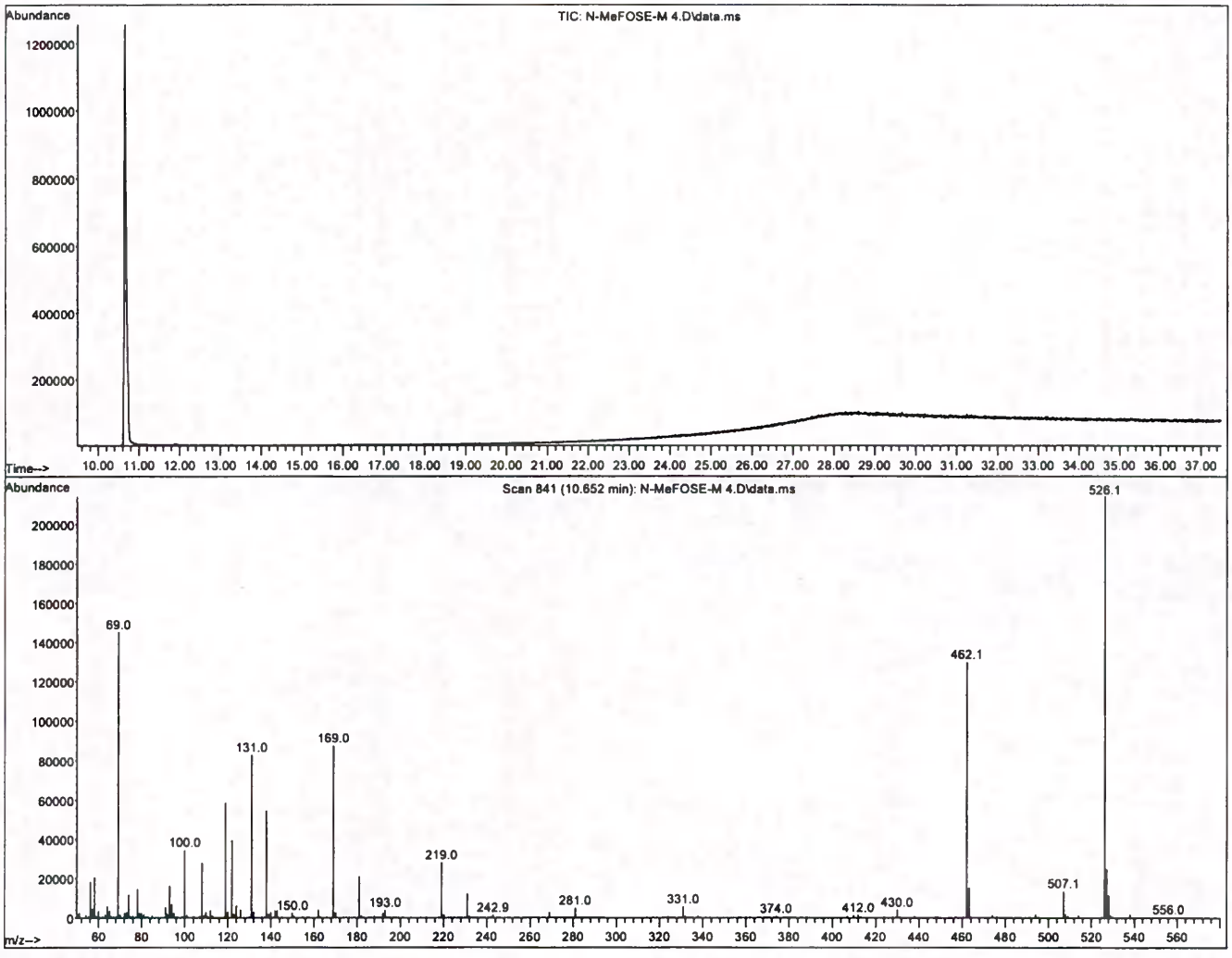
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED 17034:2016 REFERENCE MATERIAL PRODUCER

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Figure 1: **N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



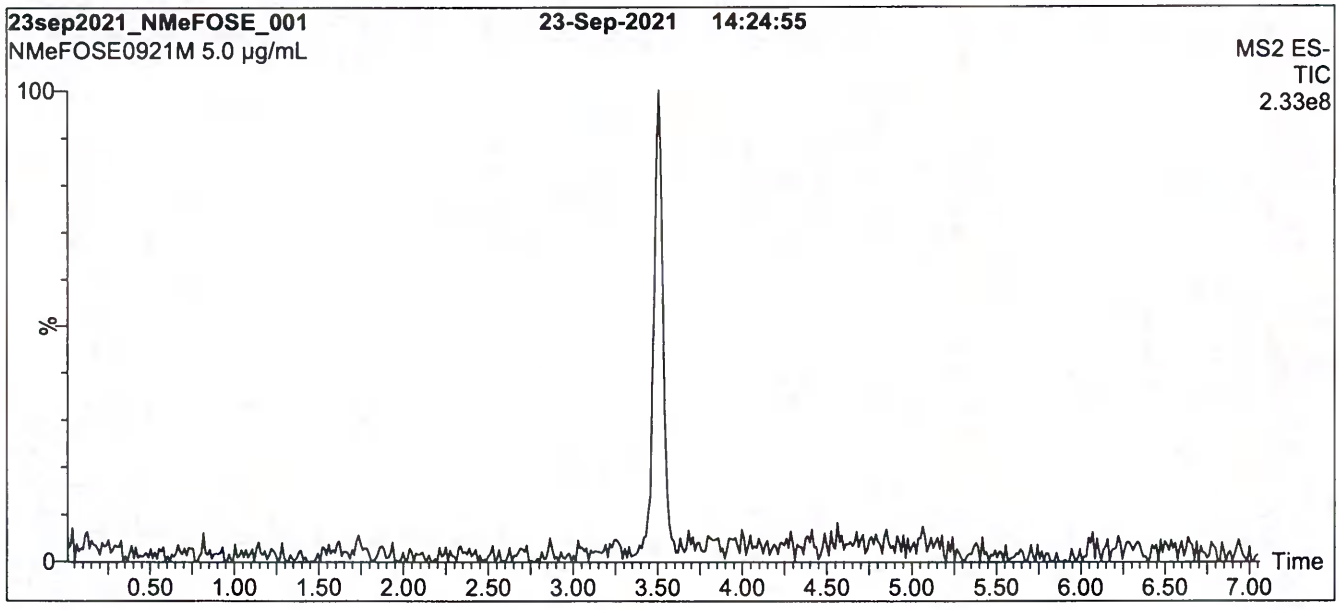
Conditions for Figure 1:

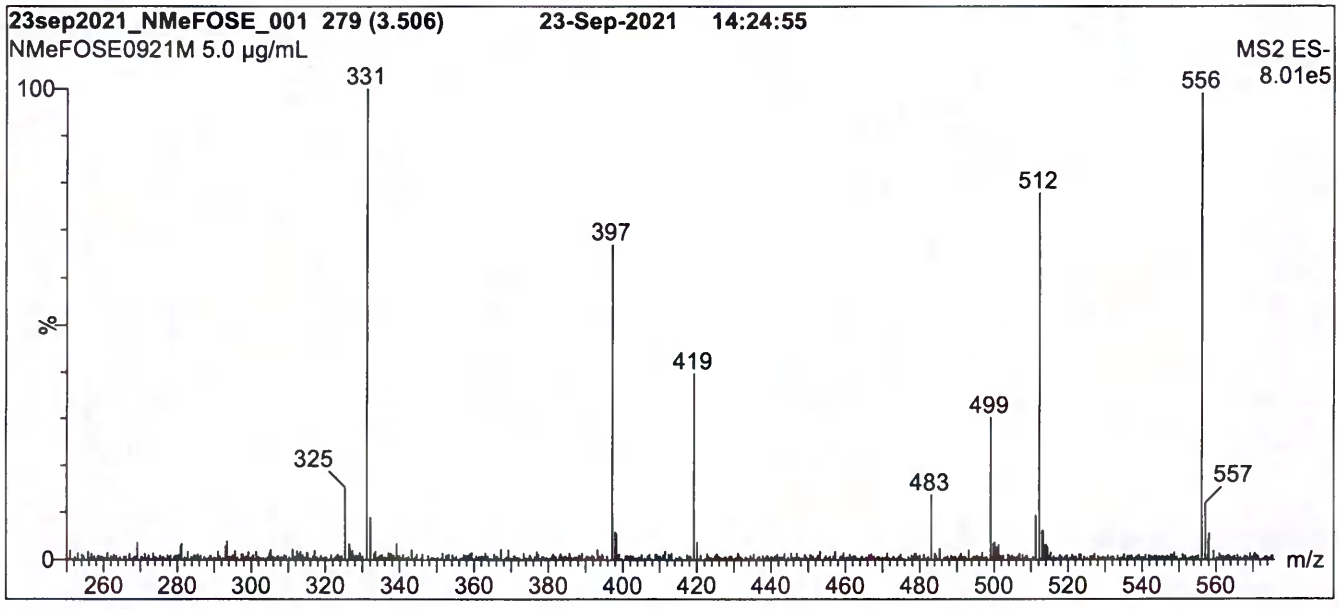
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 310°C 310°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

Figure 2: **N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

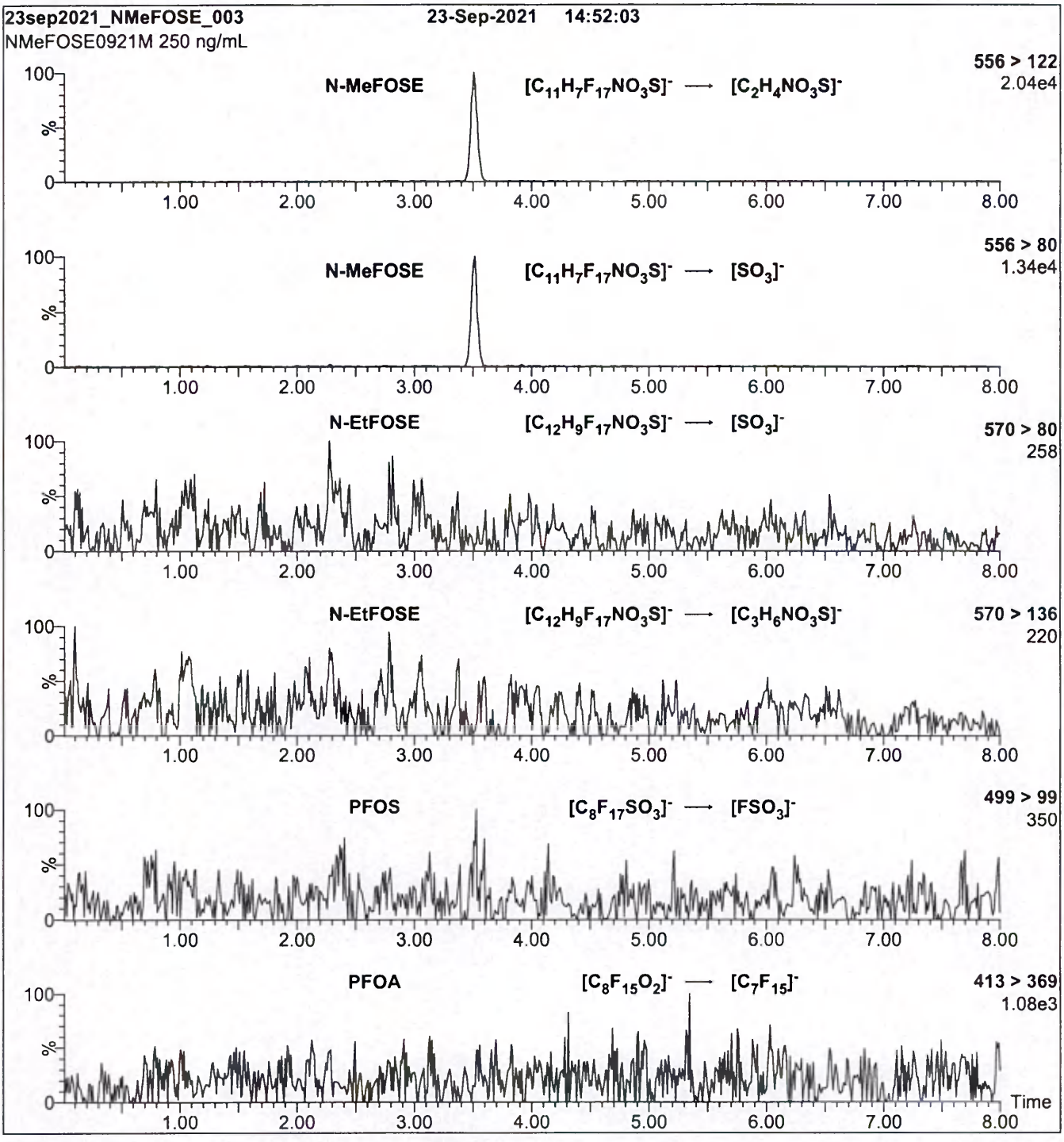
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 36

Reagent

PFC_ST_01420

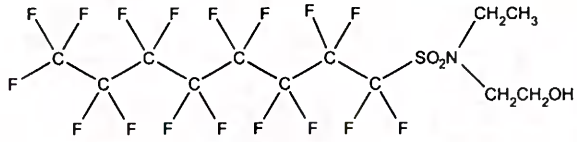
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M

COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 1691-99-2



410-2448697

MOLECULAR FORMULA:	$C_{12}H_{10}F_{17}NO_3S$	**MOLECULAR WEIGHT:**	571.25
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/22/2021 (HRGC/LRMS) 09/23/2021 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	09/23/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

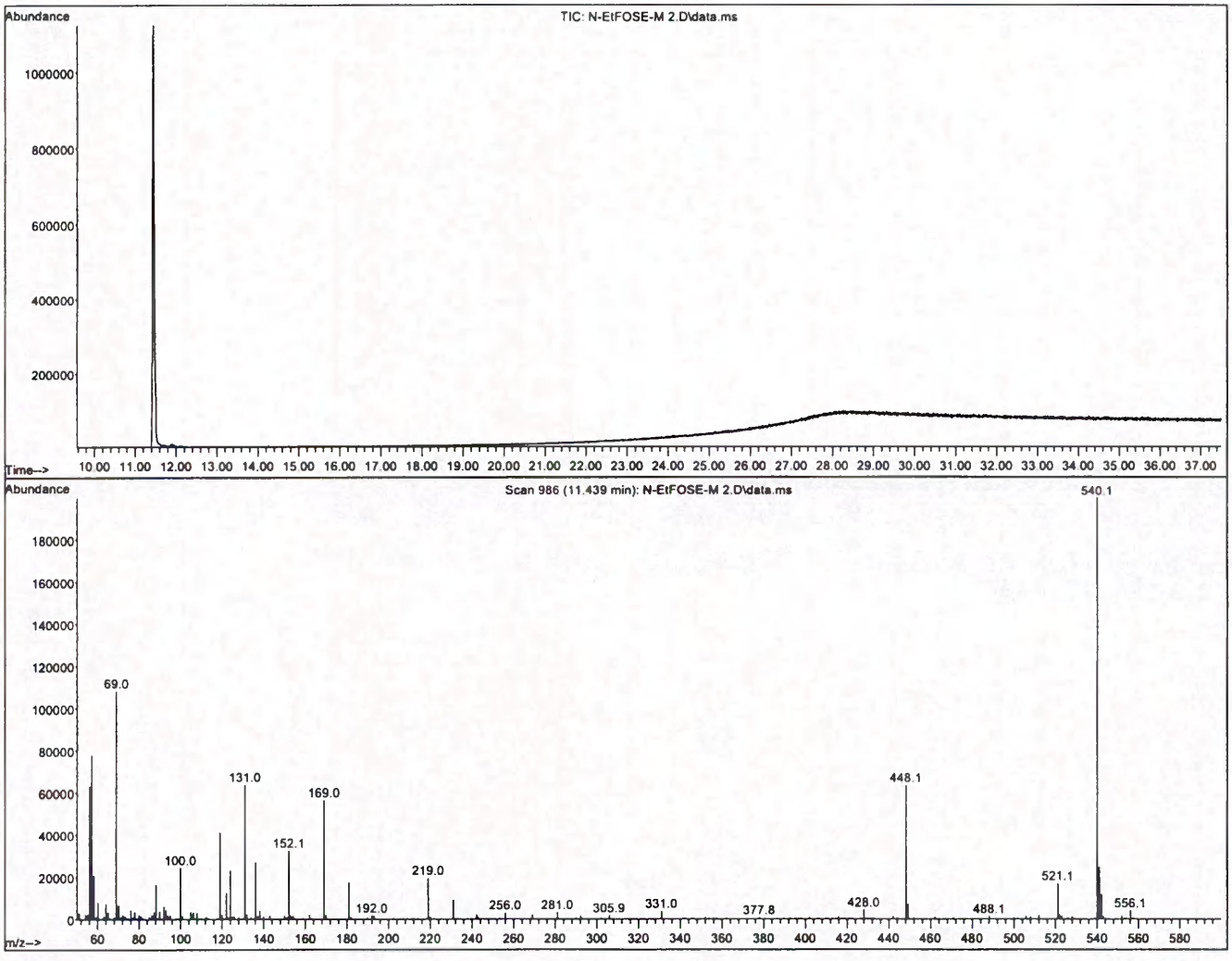
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



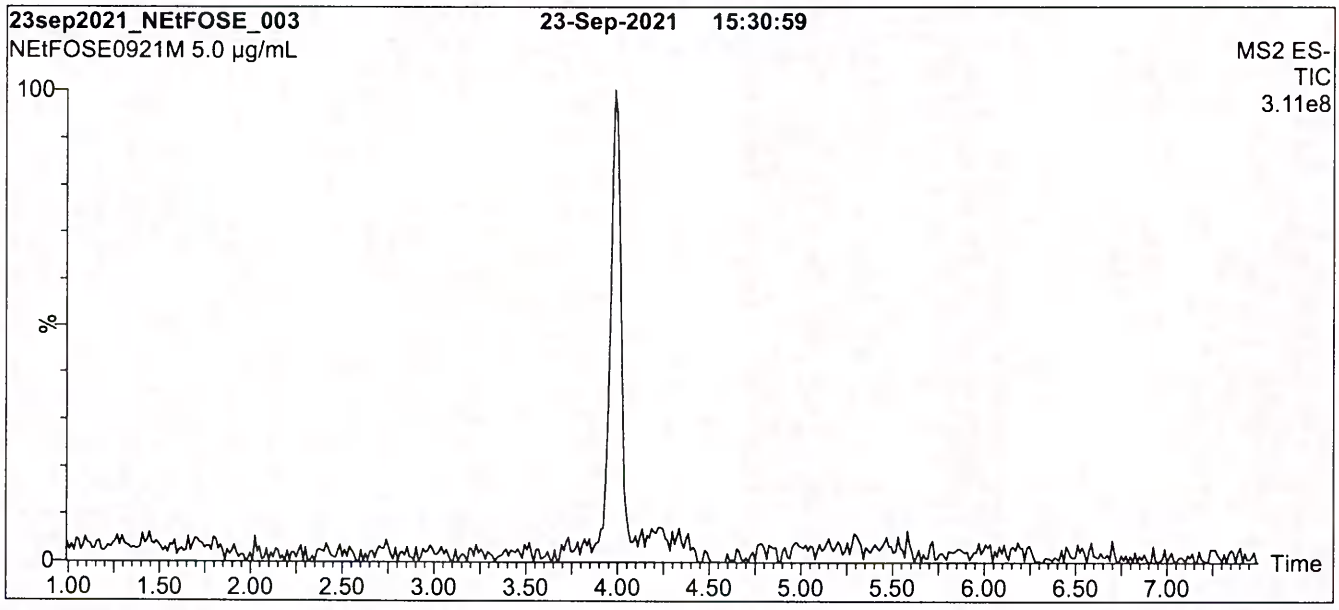
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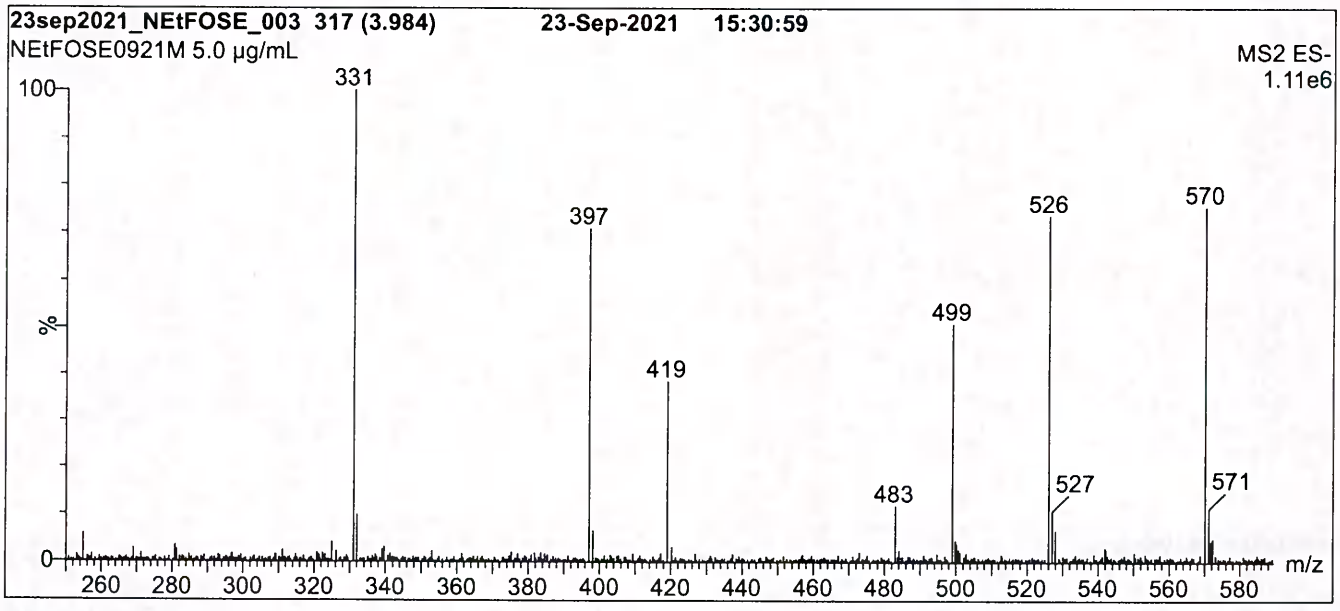
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min) 10°C/min to 325°C 325°C (10 min)
Ionization:	EI+
Detector:	230°C Full Scan (50-1000 amu)

Figure 2: **N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 2:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

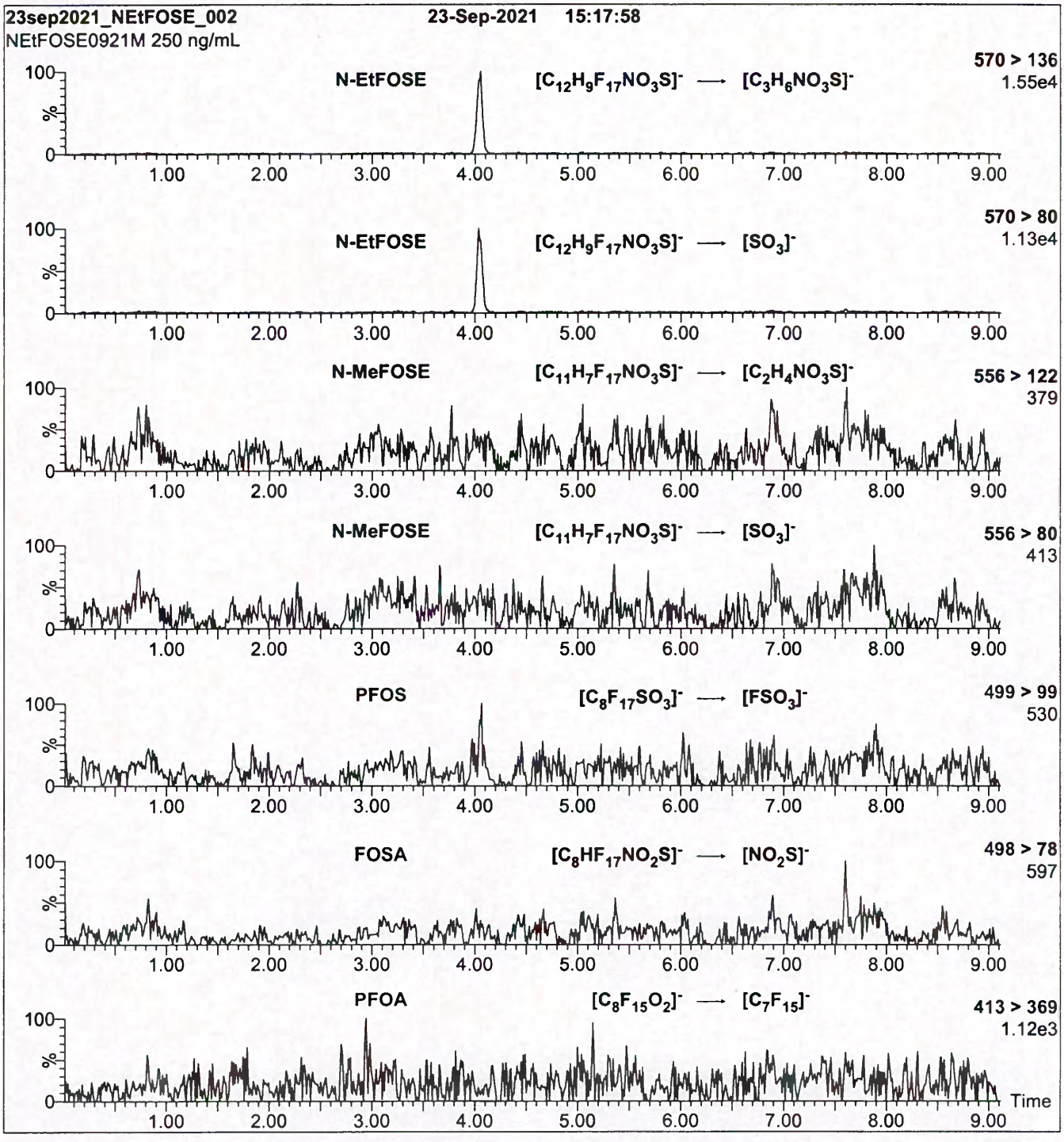
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (L/hr) = 1000

Figure 3: **N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 32

Reagent

PFC_ST_01422

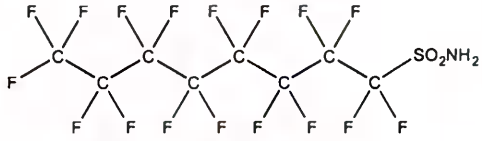
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide

LOT NUMBER: FOSA0721I

STRUCTURE:



CAS #: 754-91-6

410-2448708

MOLECULAR FORMULA:	$C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	499.14
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/10/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/10/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

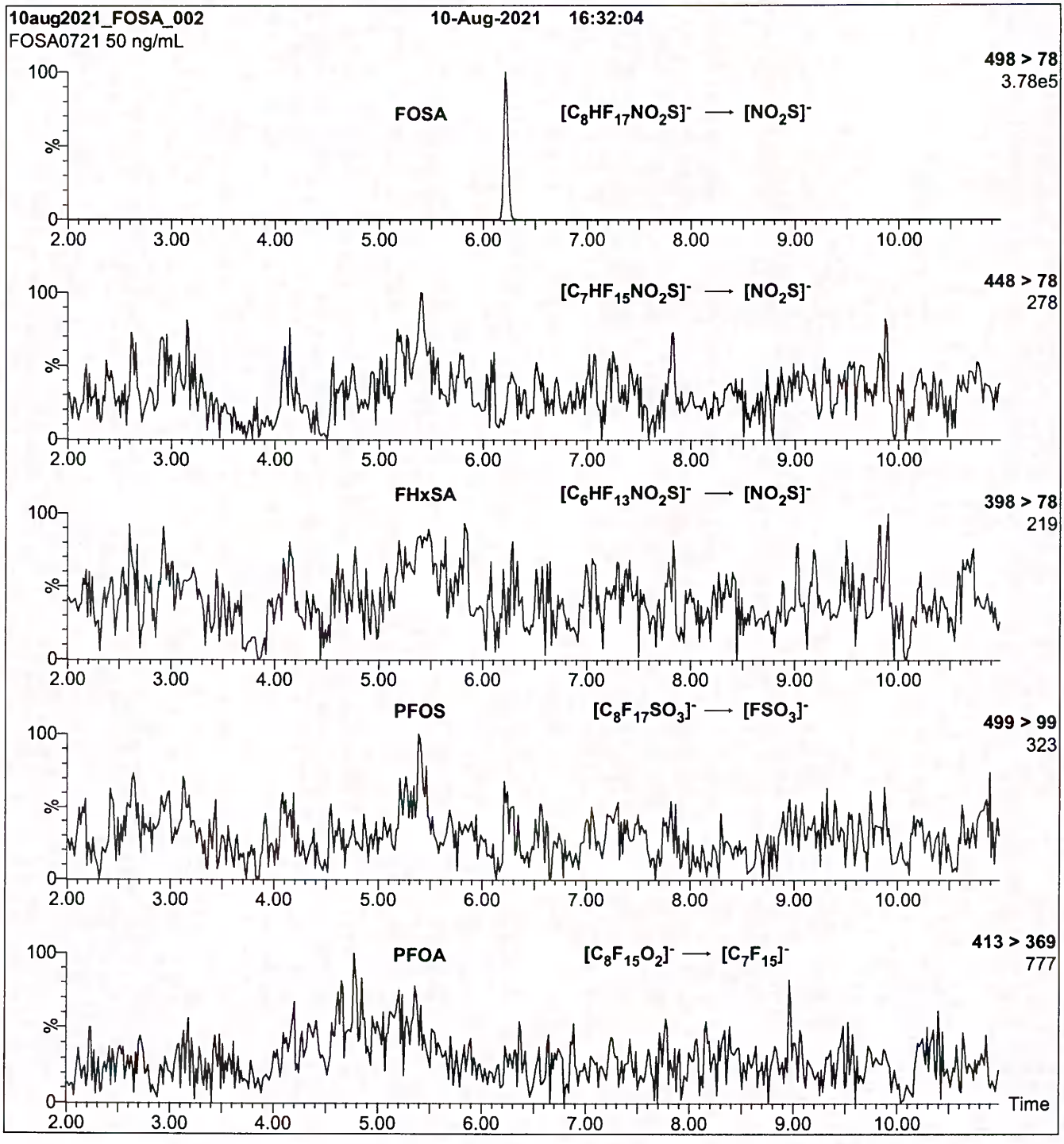
- See page 2 for further details.

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Certified By: _____ **Date:** 08/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 2: **FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 30

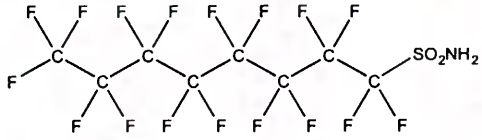
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide

LOT NUMBER: FOSA0721I

STRUCTURE:



CAS #: 754-91-6

410-2448708

MOLECULAR FORMULA:	$C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	499.14
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/10/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/10/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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B.G. Chittim, General Manager

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519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

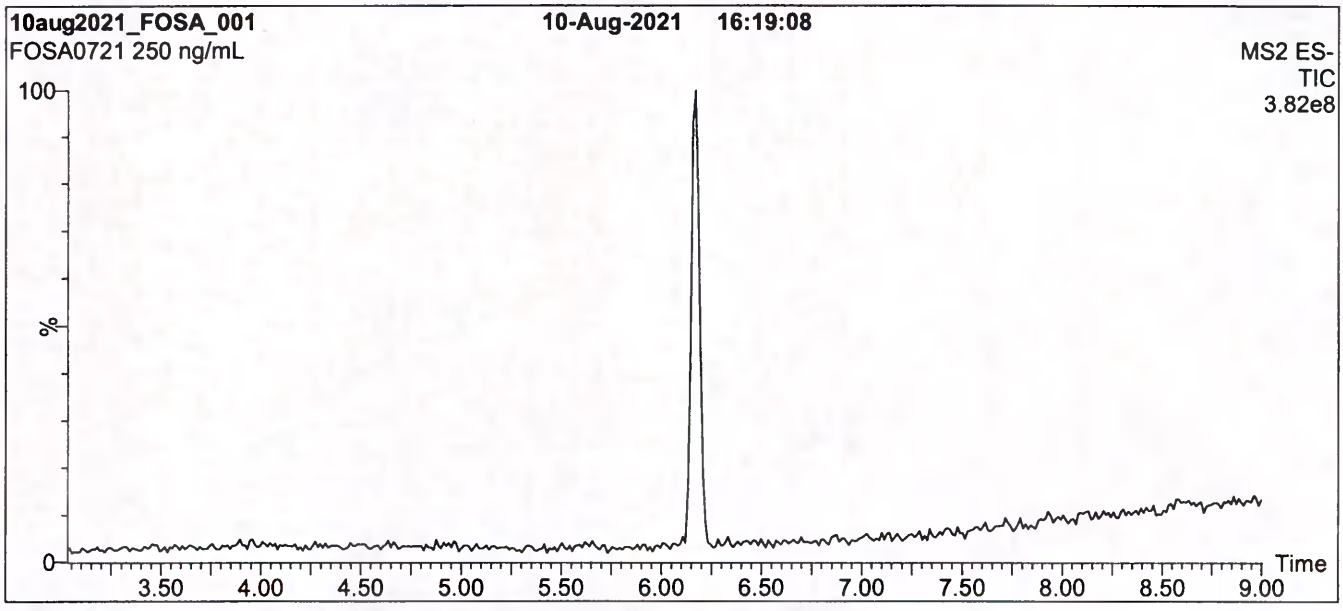
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

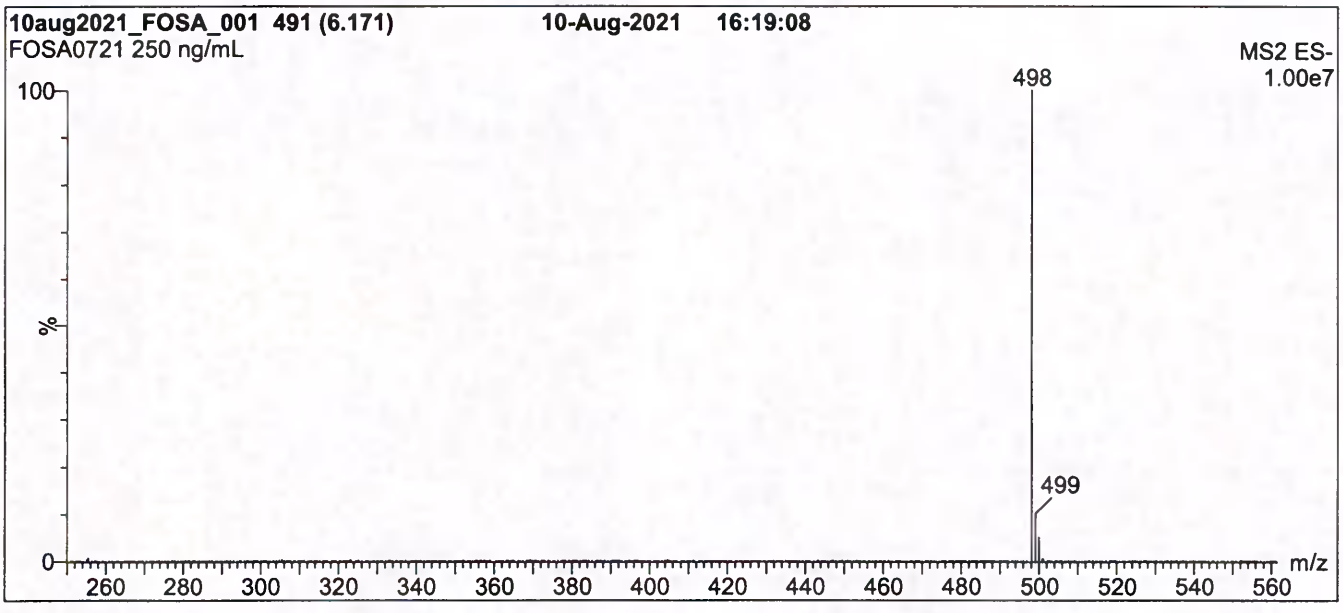
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

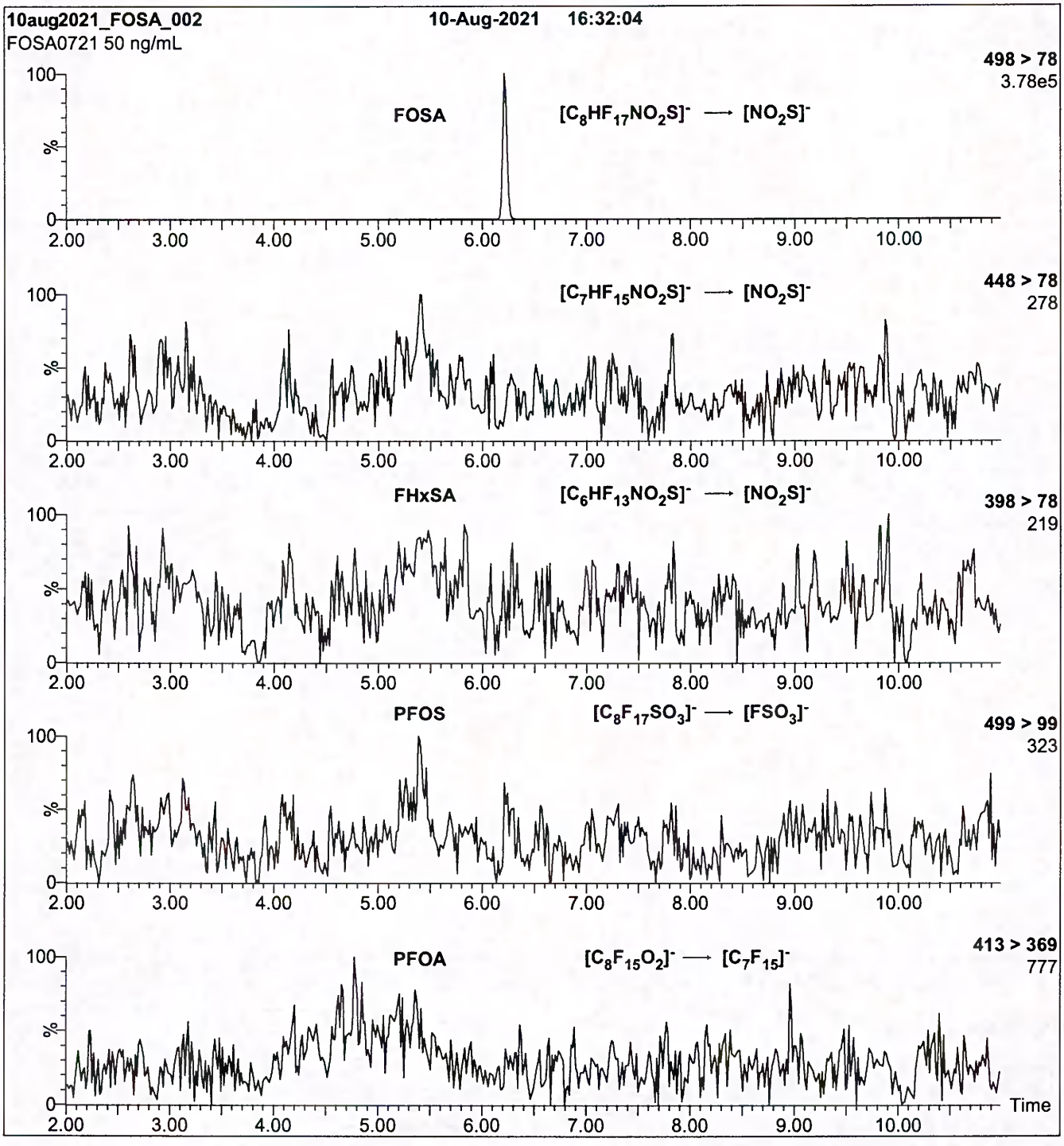
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 30

Reagent

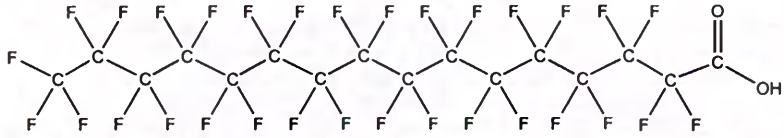
PFC_ST_01423

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxDA
LOT NUMBER: PFHxDA0421
COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE:



CAS #: 67905-19-5

410-2448711

MOLECULAR FORMULA: $C_{16}HF_{31}O_2$
MOLECULAR WEIGHT: 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/25/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

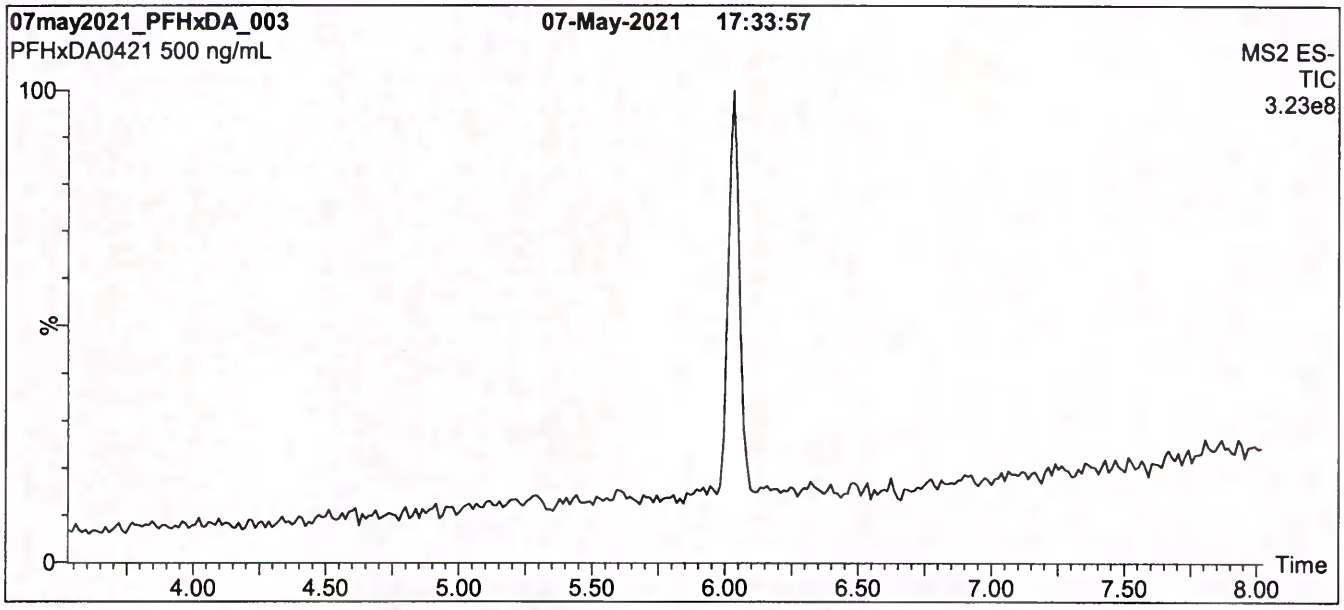
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

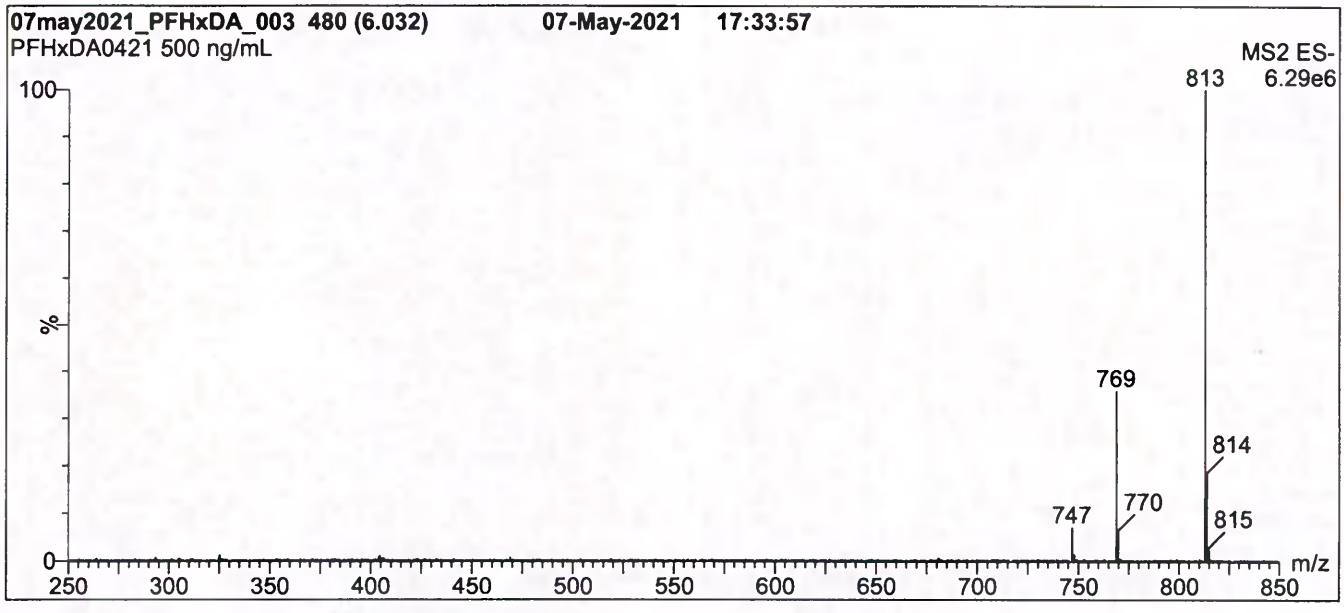
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **PFHxDA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min before returning to initial conditions in 0.75 min.
Time: 12 min

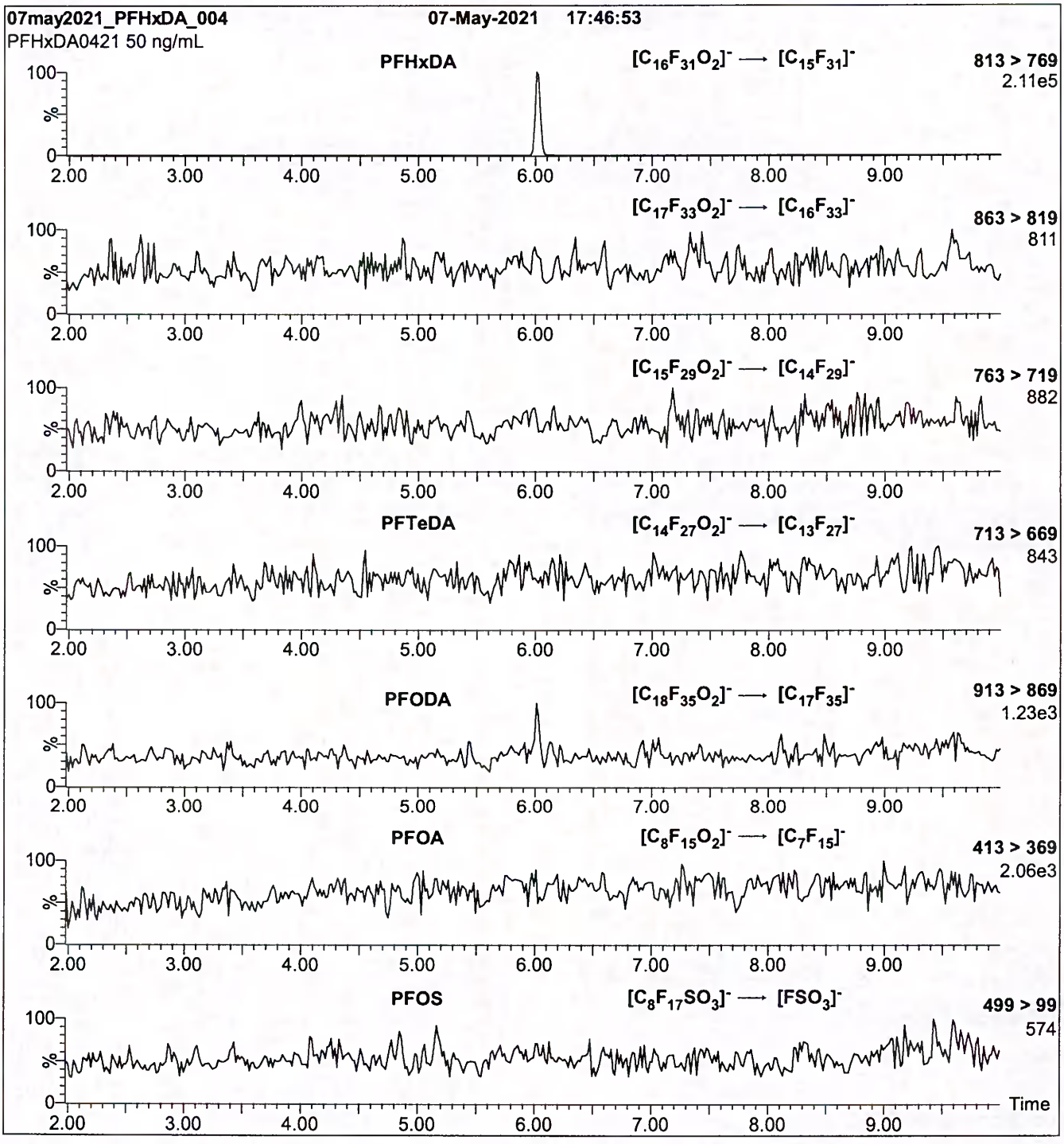
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHxDA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 15

Reagent

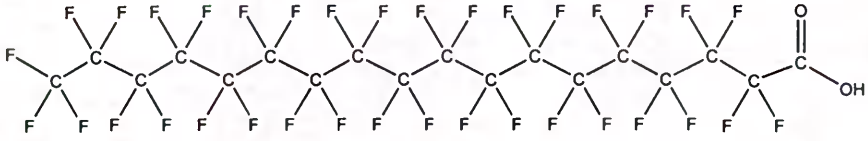
PFC_ST_01424

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFODA
LOT NUMBER: PFODA0821
COMPOUND: Perfluoro-n-octadecanoic acid

STRUCTURE:
CAS #: 16517-11-6



410-2448775

MOLECULAR FORMULA: $C_{18}HF_{35}O_2$
MOLECULAR WEIGHT: 914.14
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/03/2021
EXPIRY DATE: (mm/dd/yyyy) 09/03/2026
RECOMMENDED STORAGE: Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/28/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

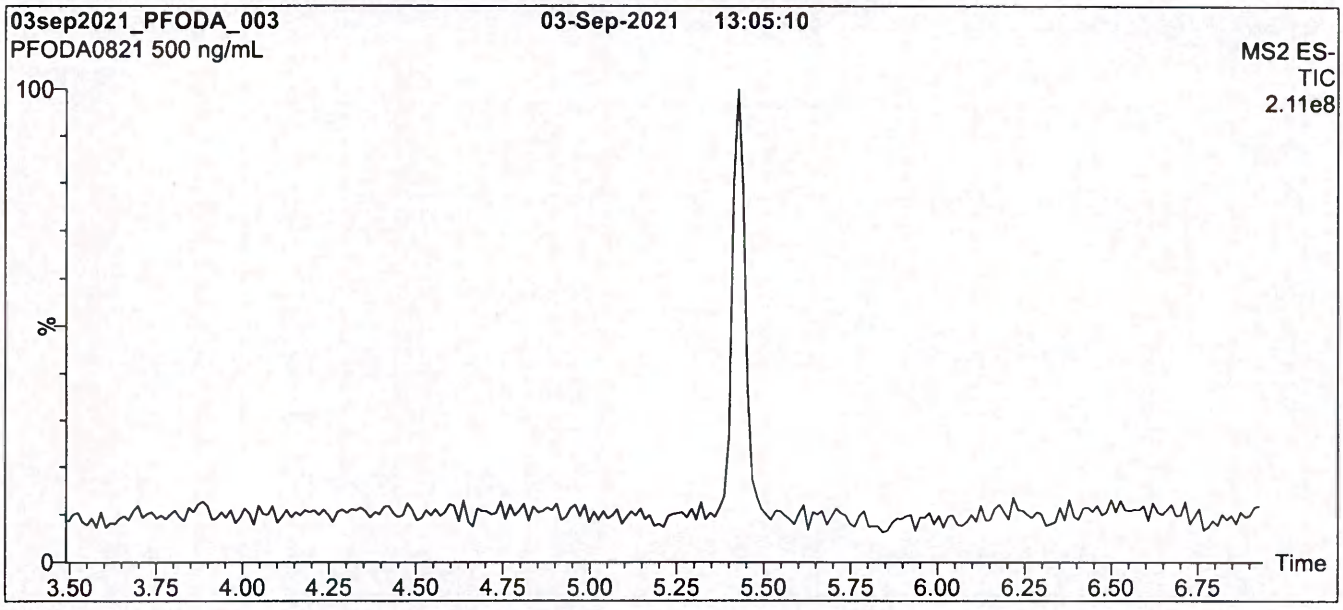
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

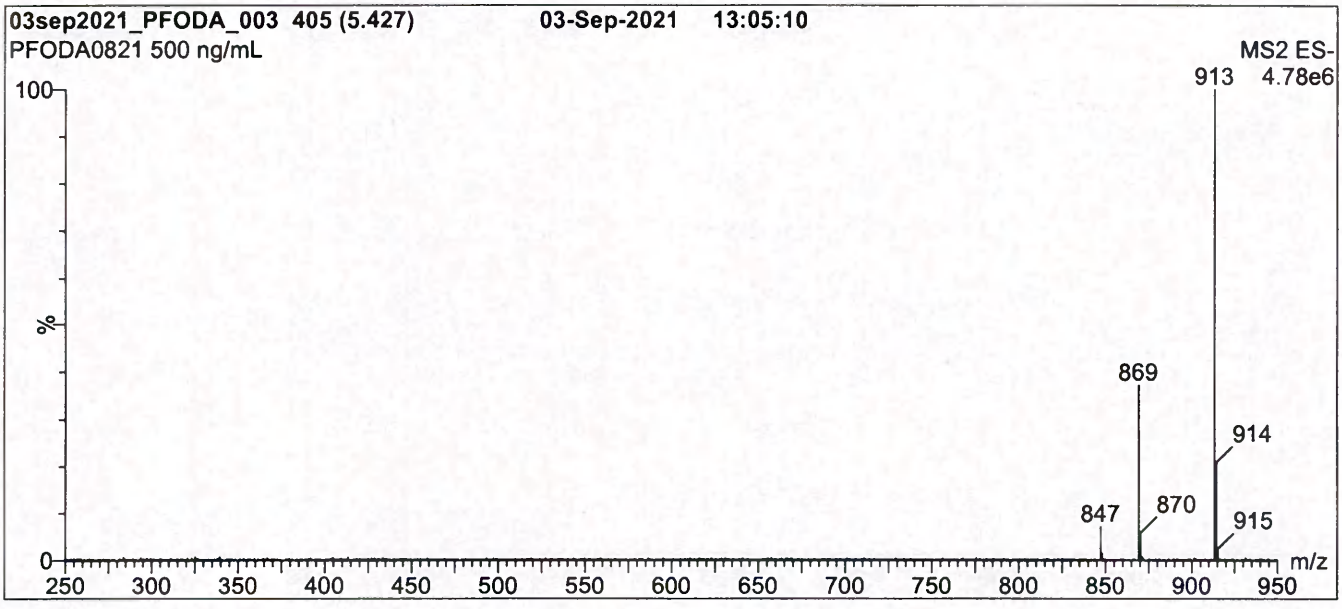
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **PFODA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S Micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 25% H_2O / 75% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 95% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

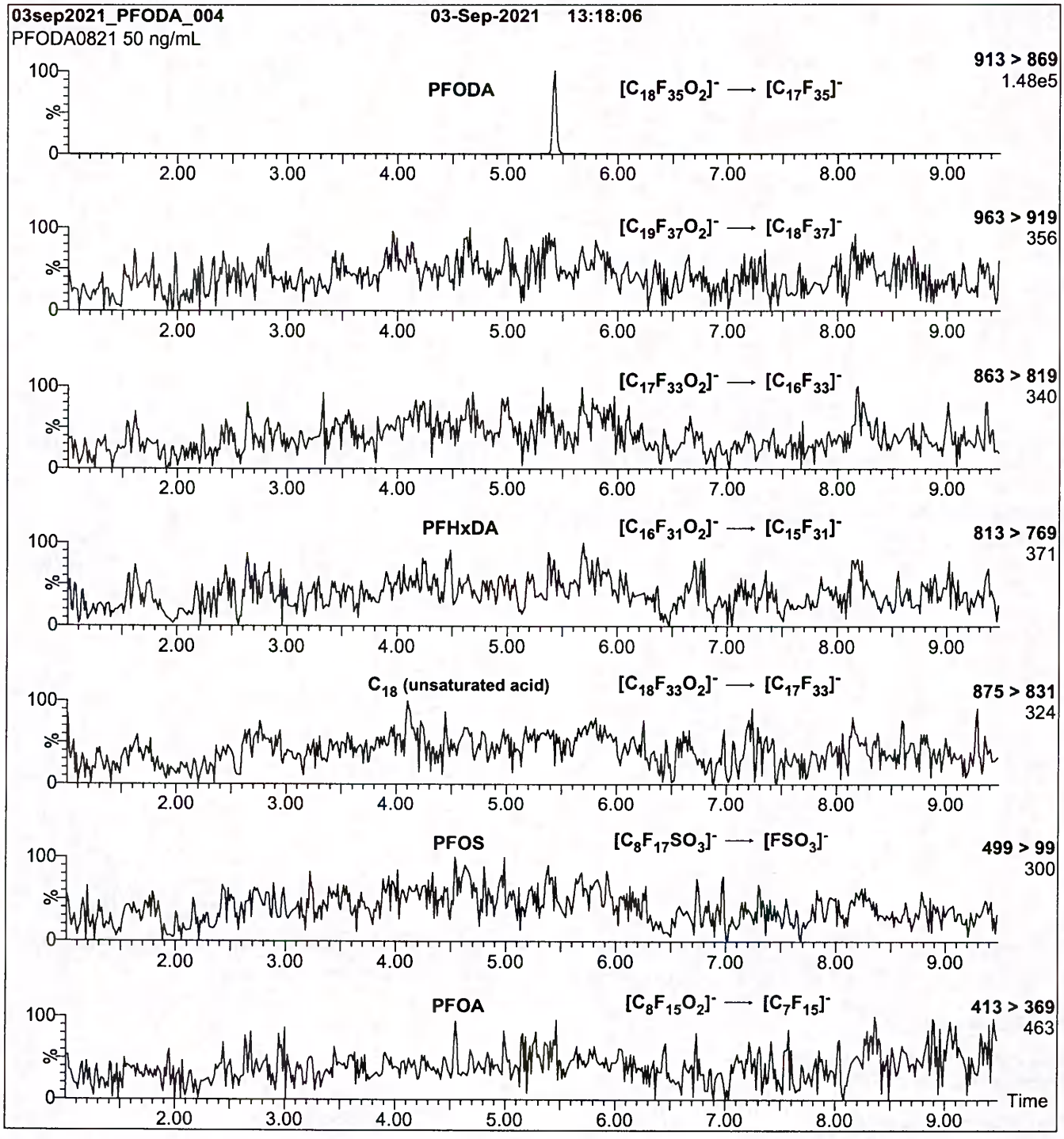
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 950 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **PFODA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFODA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 15

Reagent

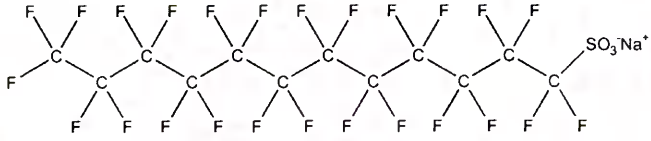
PFC_ST_01425

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFDoS
LOT NUMBER: LPFDoS1021
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

STRUCTURE:



CAS #: 1260224-54-1

410-2448803

MOLECULAR FORMULA:	$C_{12}F_{25}SO_3Na$	**MOLECULAR WEIGHT:**	722.14
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.5 ± 2.4 µg/mL (PFDoS acid) 48.4 ± 2.4 µg/mL (PFDoS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/19/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/19/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/22/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

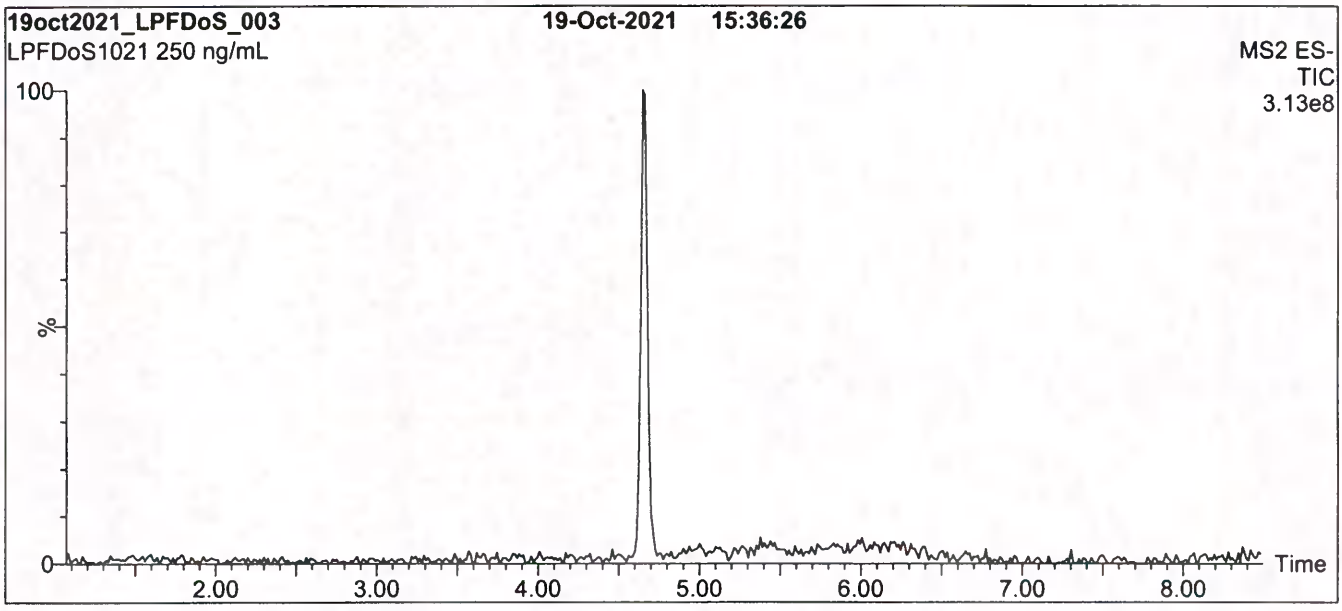
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

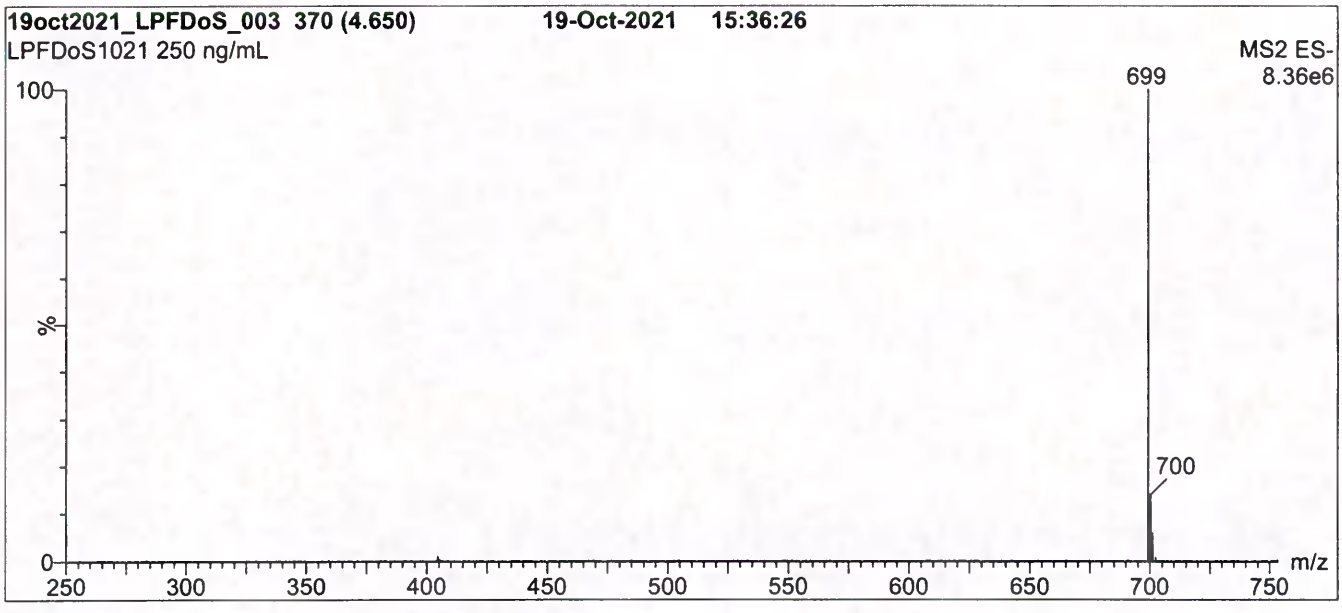
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **L-PFDoS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

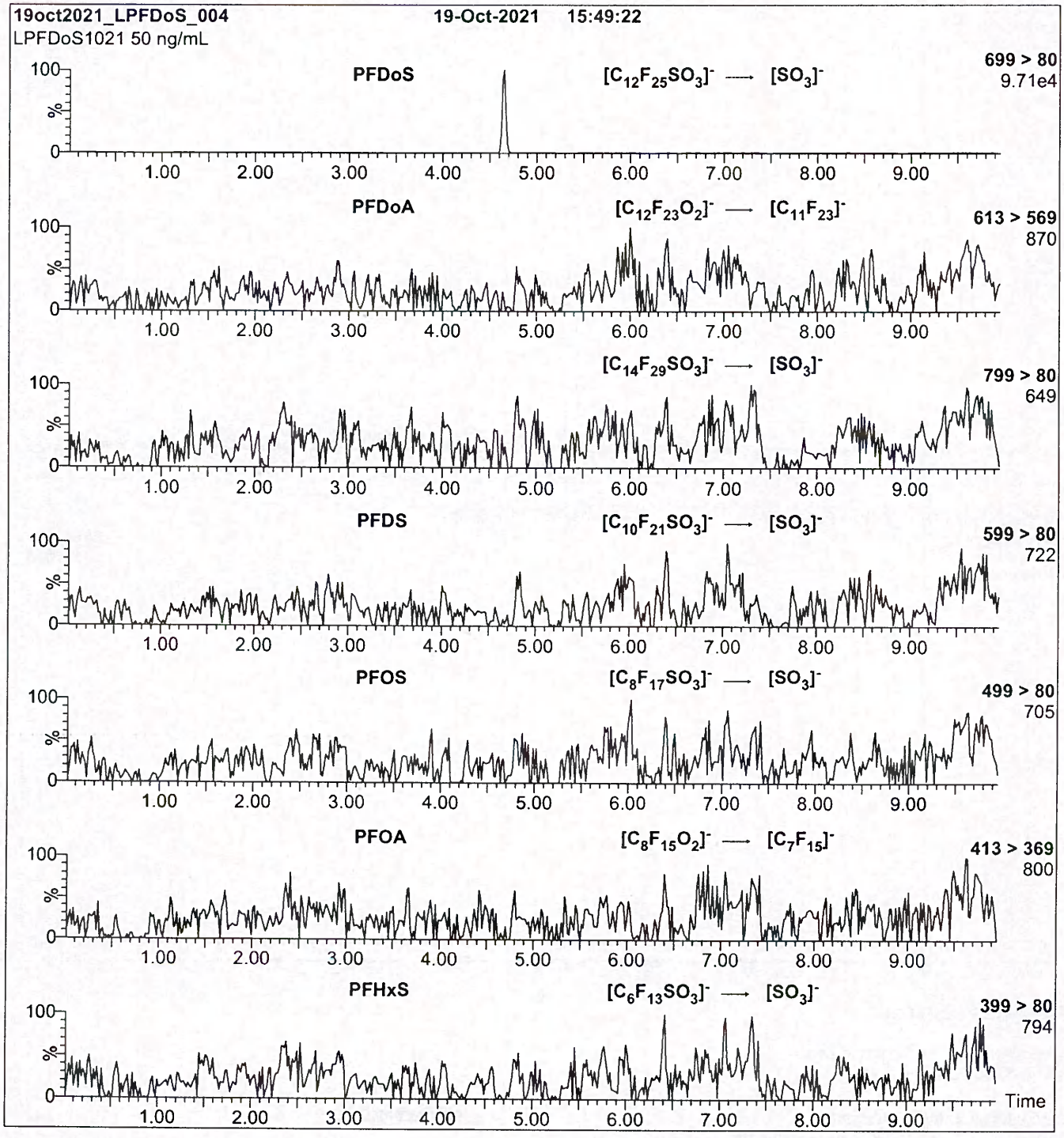
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **L-PFDoS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFDoS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 60

Reagent

PFC_ST_01426

WELLINGTON LABORATORIES

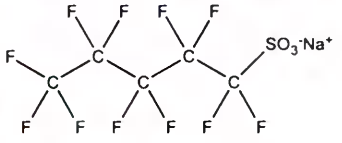
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFPeS
COMPOUND: Sodium perfluoro-1-pentanesulfonate

LOT NUMBER: LPFPeS0721

STRUCTURE:

CAS #: 630402-22-1



410-2448817

MOLECULAR FORMULA:	$C_5F_{11}SO_3Na$	**MOLECULAR WEIGHT:**	372.09
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 47.0 ± 2.3 µg/mL (PFPeS acid) 46.9 ± 2.3 µg/mL (PFPeS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	07/12/2021		
EXPIRY DATE: (mm/dd/yyyy)	07/12/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

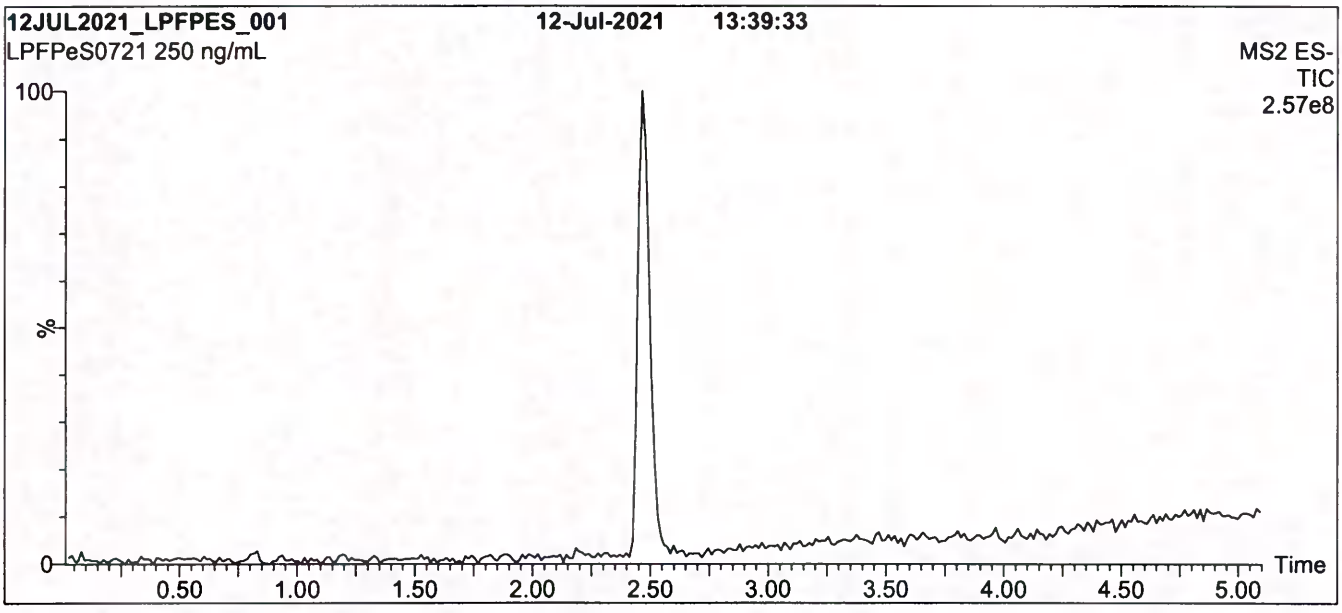
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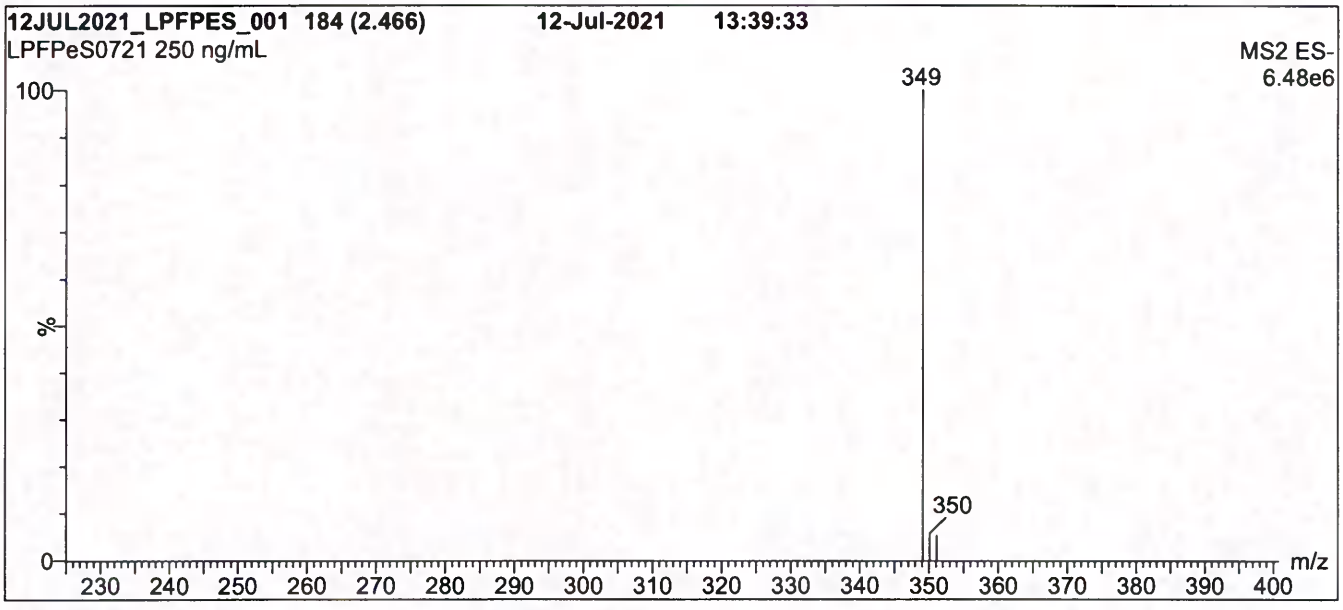
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **L-PFPeS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 7 min and hold for 2 min
before returning to initial conditions over 0.75 min.
Time: 12 min

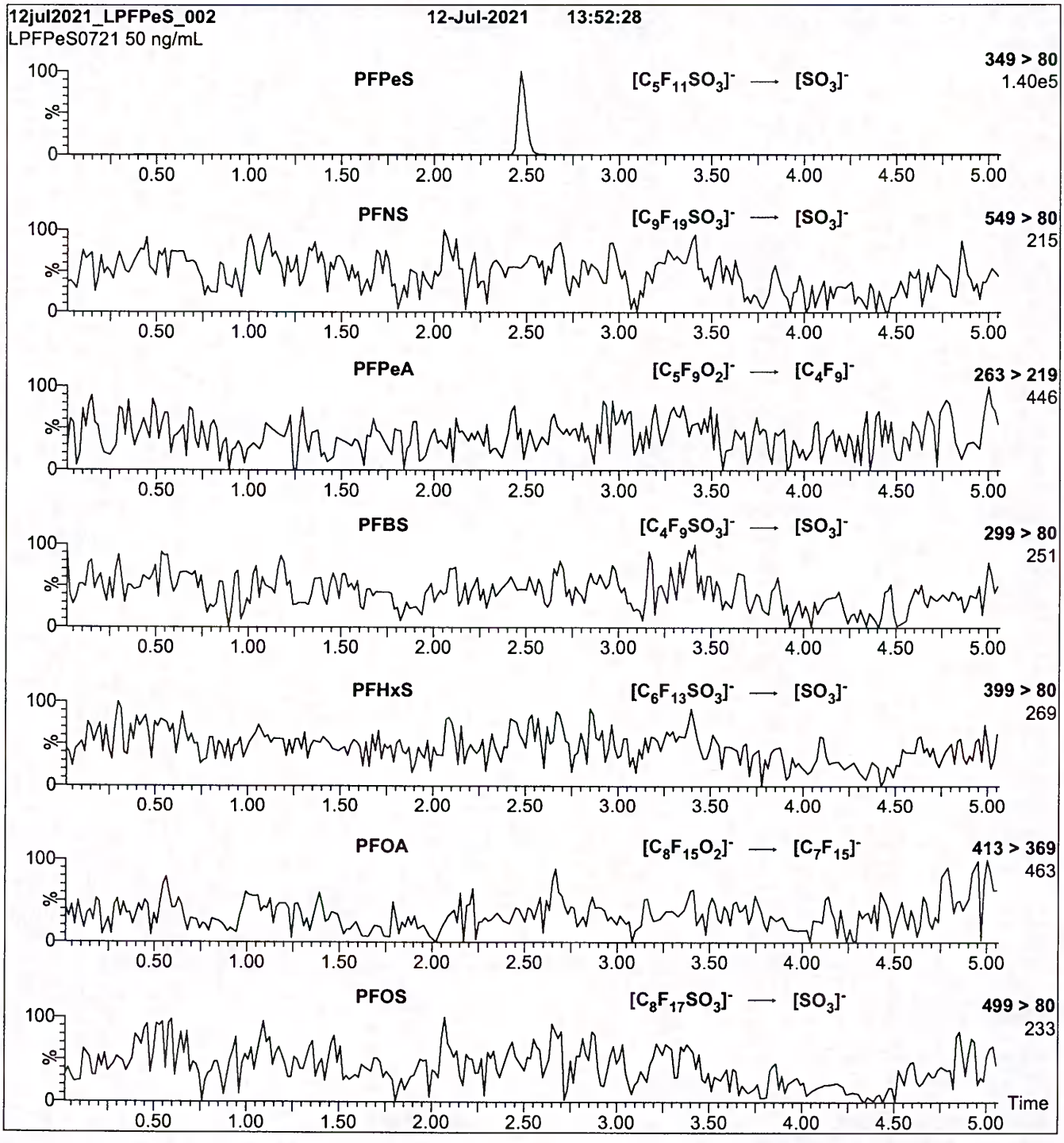
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **L-PFPeS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFPeS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 32

Reagent

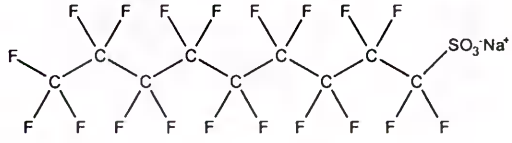
PFC_ST_01428

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFNS
LOT NUMBER: LPFNS1021
COMPOUND: Sodium perfluoro-1-nonanesulfonate

STRUCTURE:



CAS #: 98789-57-2

410-2448819

MOLECULAR FORMULA:	$C_9F_{19}SO_3Na$	**MOLECULAR WEIGHT:**	572.12
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.1 ± 2.4 µg/mL (PFNS acid) 48.0 ± 2.4 µg/mL (PFNS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/19/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/19/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

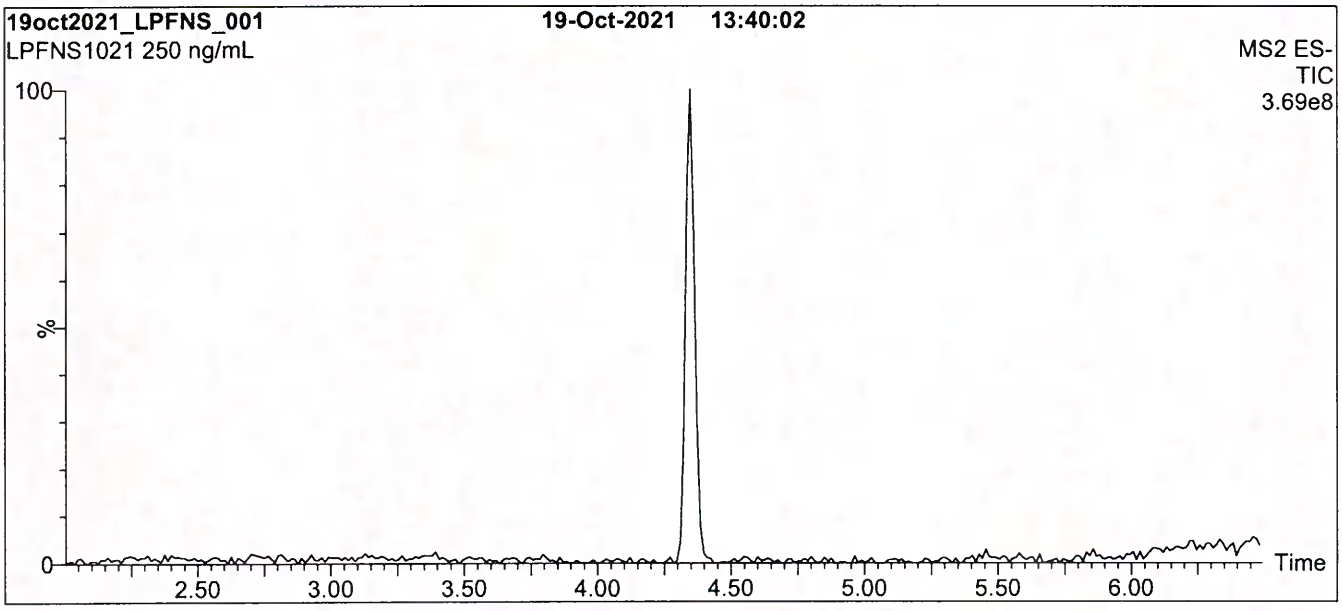
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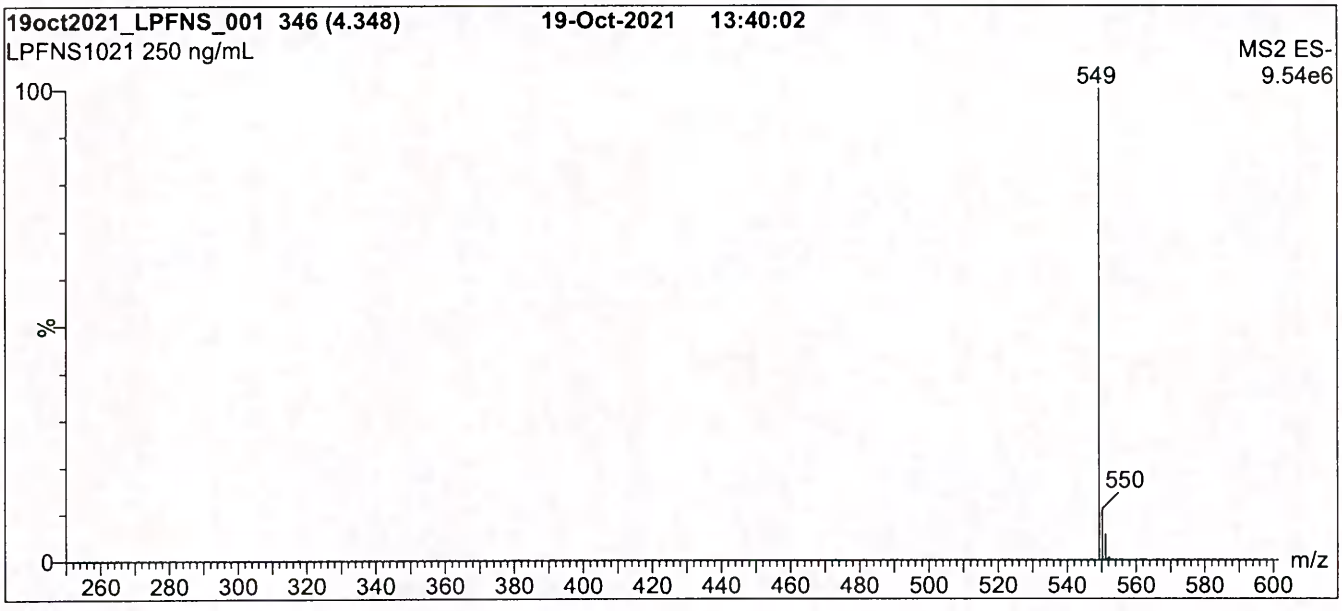
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **L-PFNS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

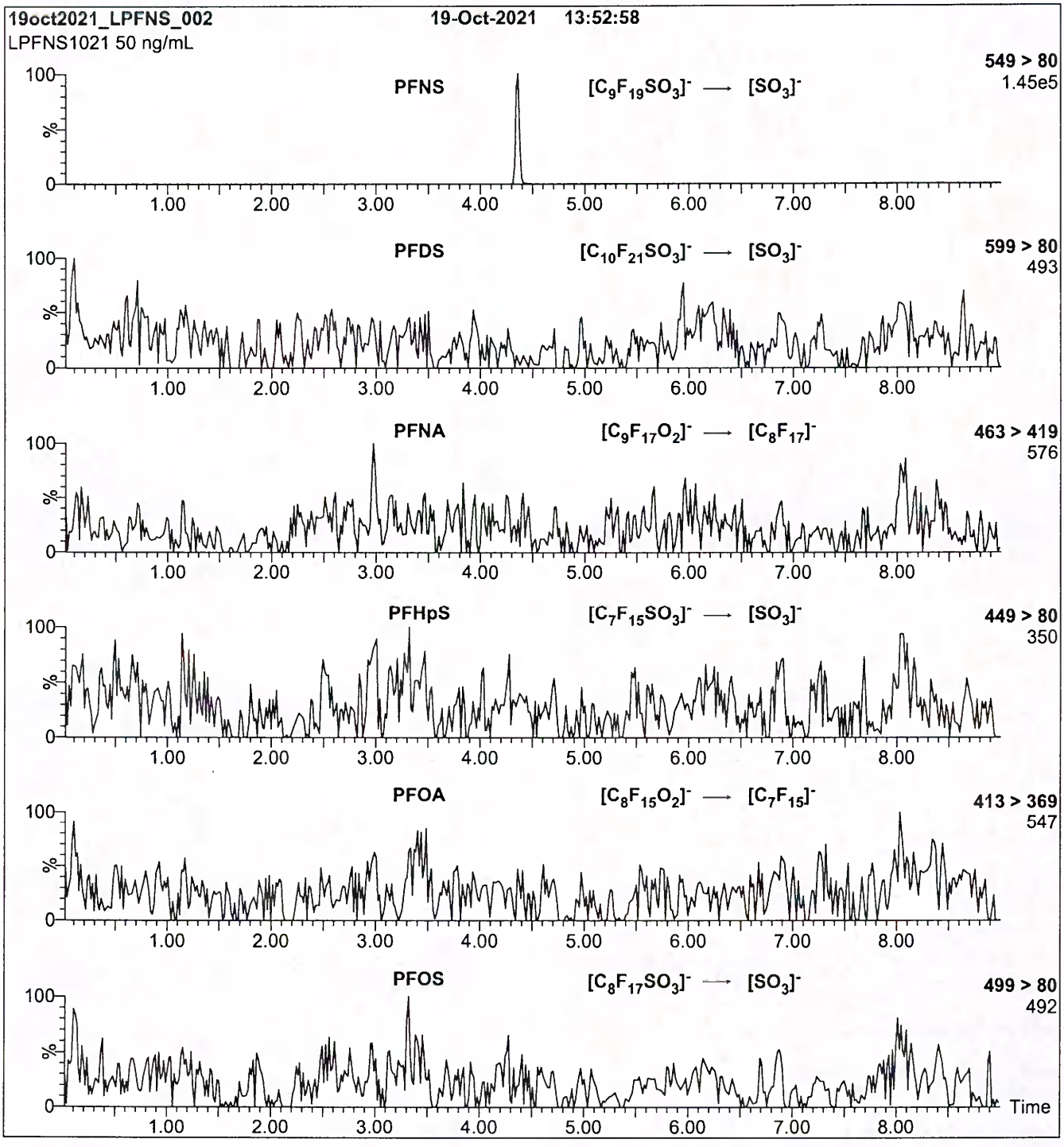
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) =1000

Figure 2: **L-PFNS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFNS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 64

Reagent

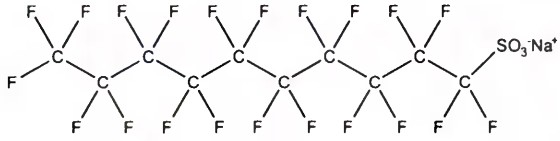
PFC_ST_01429

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFDS
LOT NUMBER: LPFDS0821
COMPOUND: Sodium perfluoro-1-decanesulfonate

STRUCTURE:



CAS #: 2806-15-7

410-2448820

MOLECULAR FORMULA:	$C_{10}F_{21}SO_3Na$	**MOLECULAR WEIGHT:**	622.13
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.2 ± 2.4 µg/mL (PFDS acid) 48.2 ± 2.4 µg/mL (PFDS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/19/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/19/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

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Certified By: _____ **Date:** 08/31/2021 (mm/dd/yyyy)
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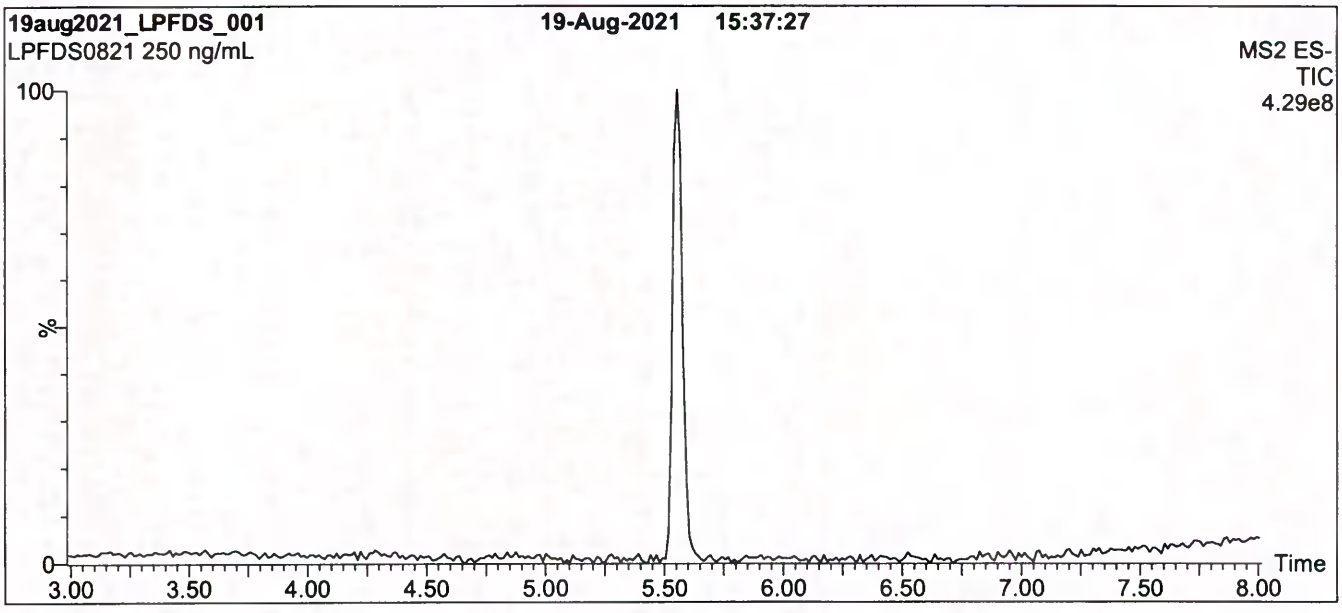
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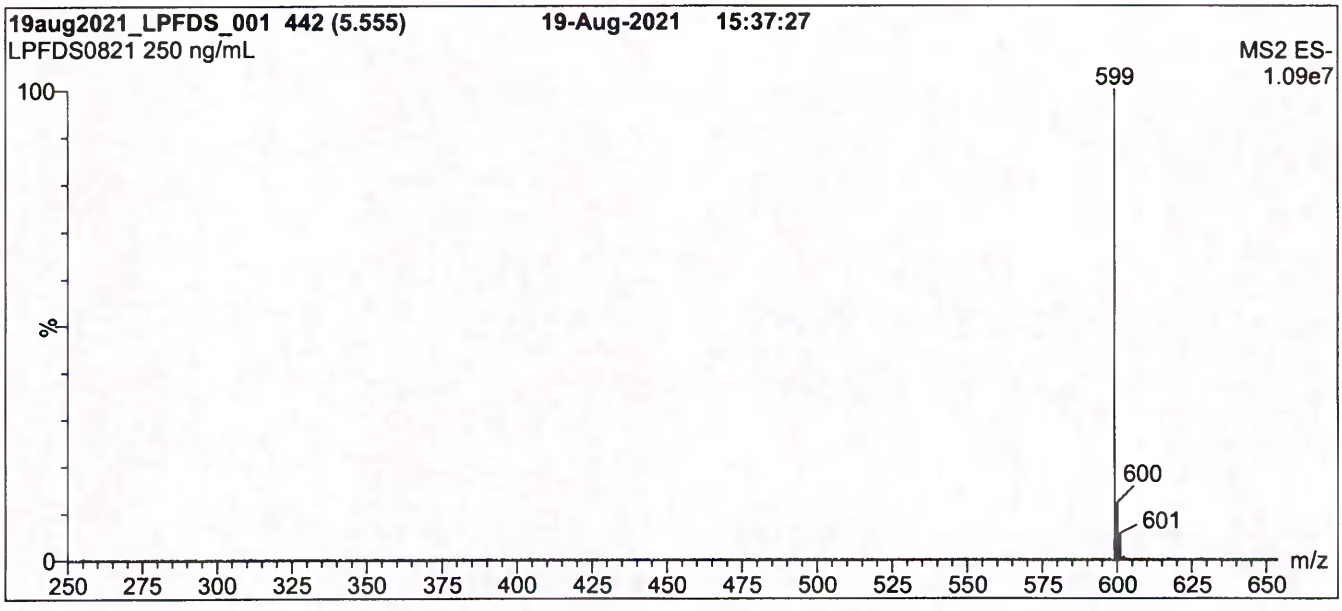
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Figure 1: **L-PFDS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

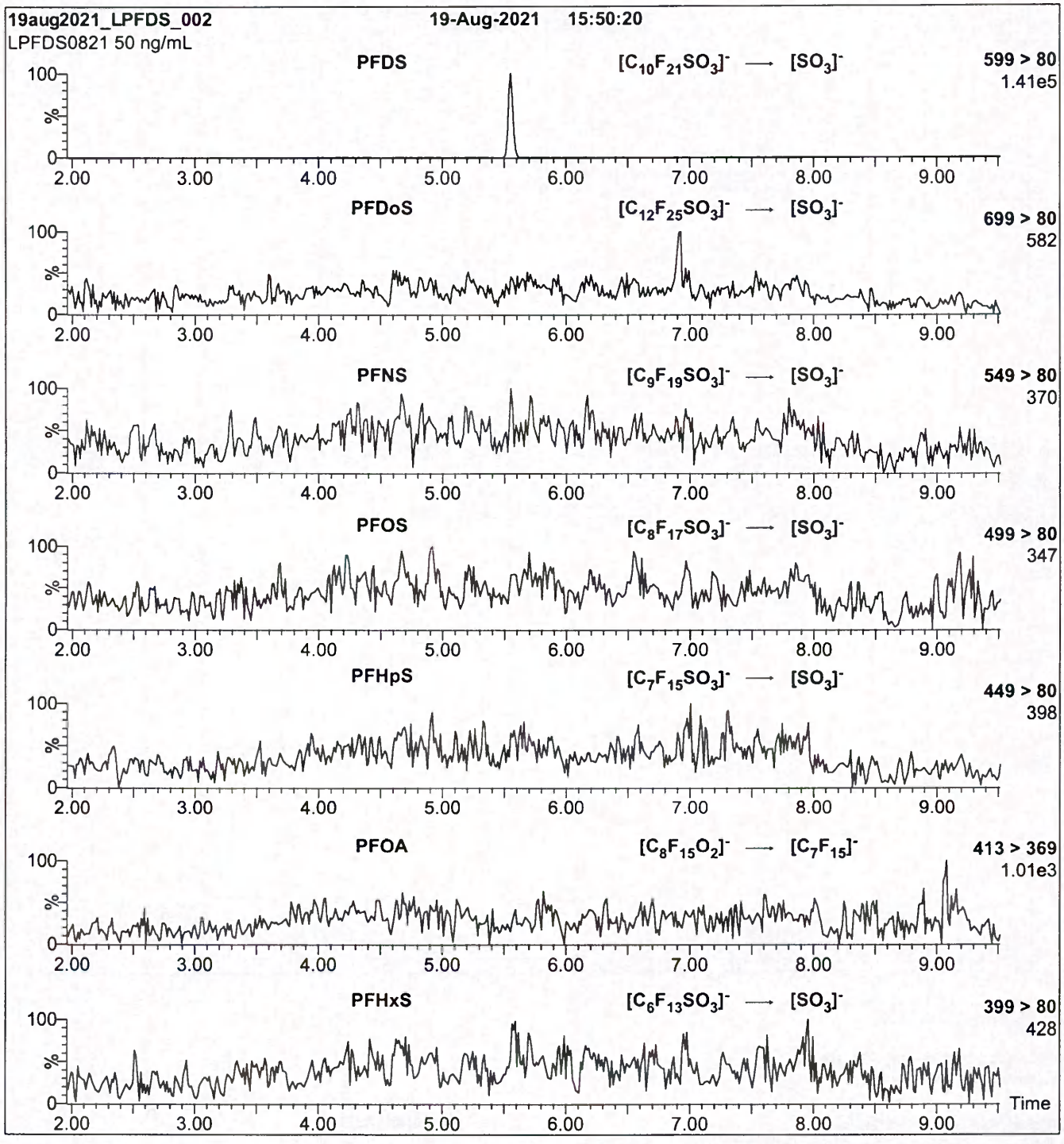
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **L-PFDS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFDS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 56

Reagent

PFC_ST_01430

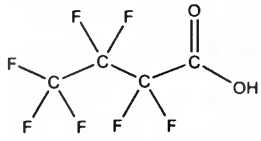
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFBA
COMPOUND: Perfluoro-n-butanoic acid

LOT NUMBER: PFBA1021

STRUCTURE:



CAS #: 375-22-4

410-2448821

MOLECULAR FORMULA: $C_4HF_7O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 214.04
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/04/2021
EXPIRY DATE: (mm/dd/yyyy) 10/04/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ **Date:** 11/04/2021 (mm/dd/yyyy)
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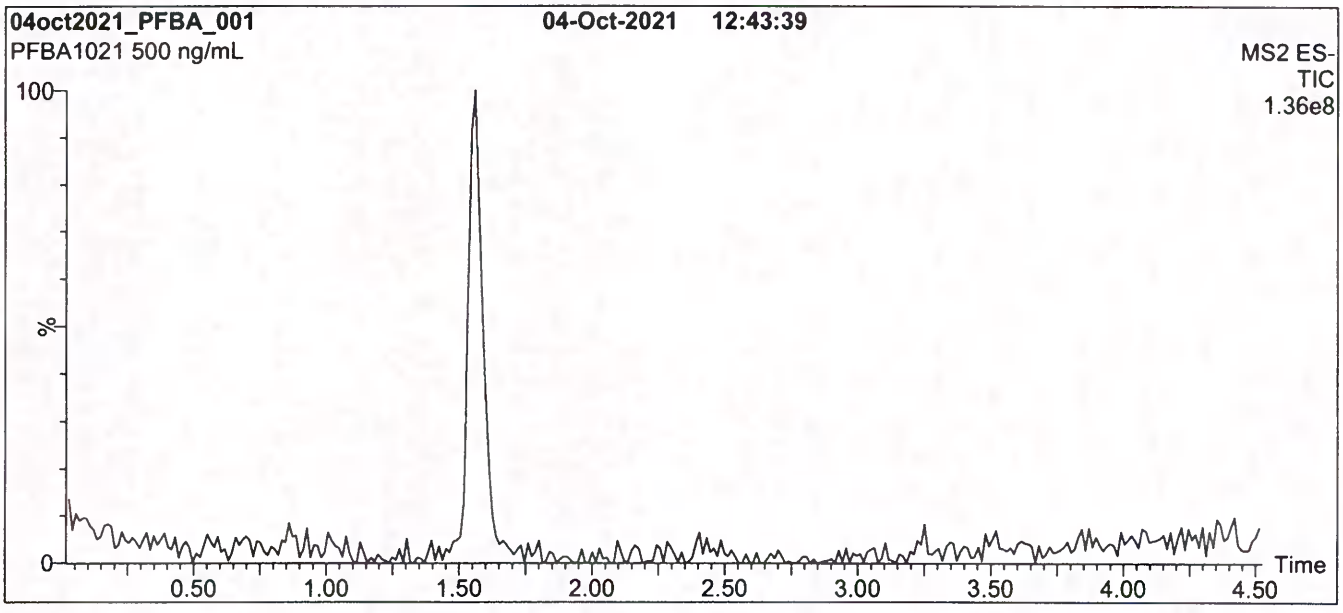
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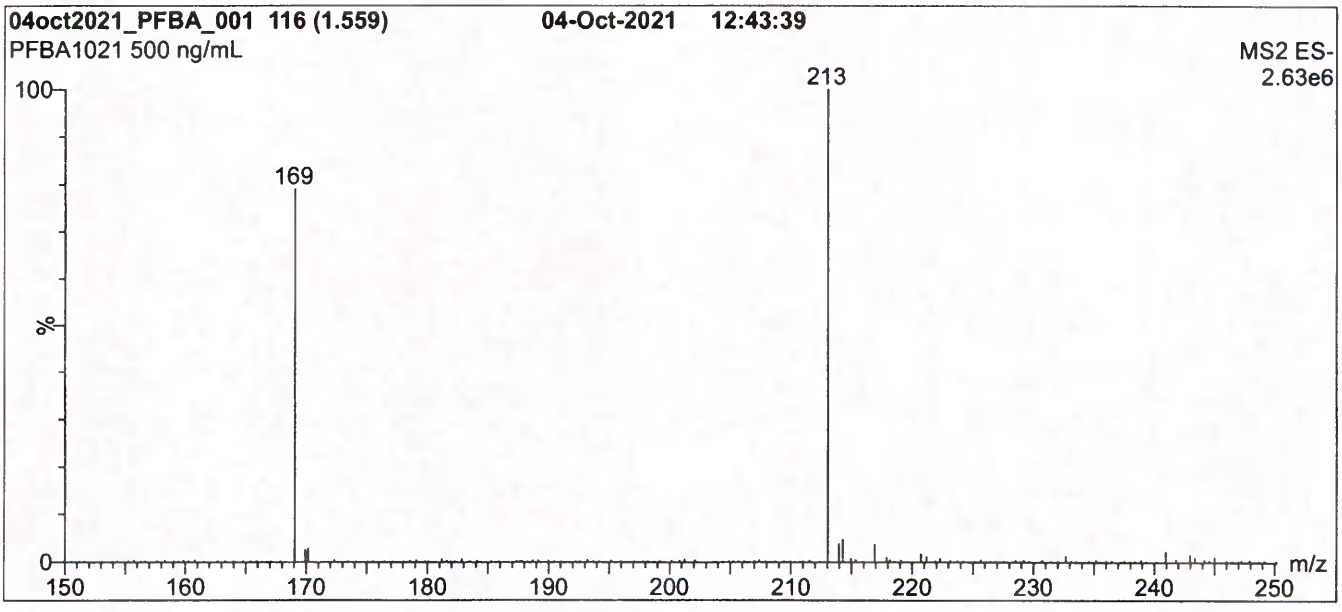
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Figure 1: **PFBA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 1 min
before returning to initial conditions in 1 min.
Time: 12 min

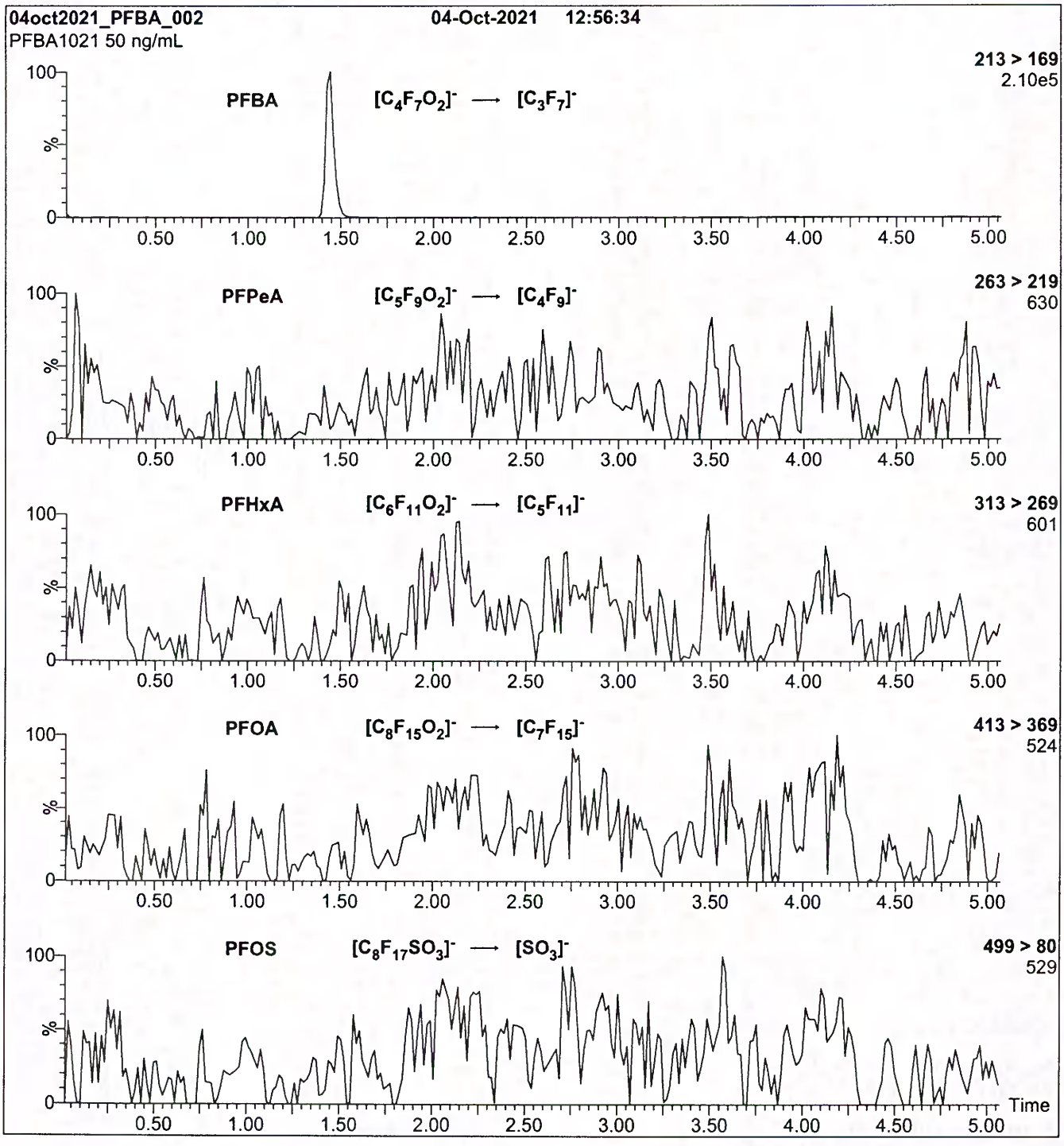
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **PFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFBA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 8

Reagent

PFC_ST_01431

WELLINGTON LABORATORIES

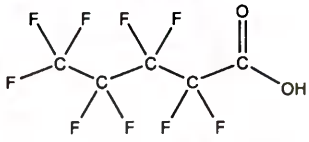
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFPeA
COMPOUND: Perfluoro-n-pentanoic acid

LOT NUMBER: PFPeA0721

STRUCTURE:

CAS #: 2706-90-3



410-2448822

MOLECULAR FORMULA: $C_5HF_9O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 264.05
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/10/2021
EXPIRY DATE: (mm/dd/yyyy) 08/10/2026
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QUALITY MANAGEMENT:

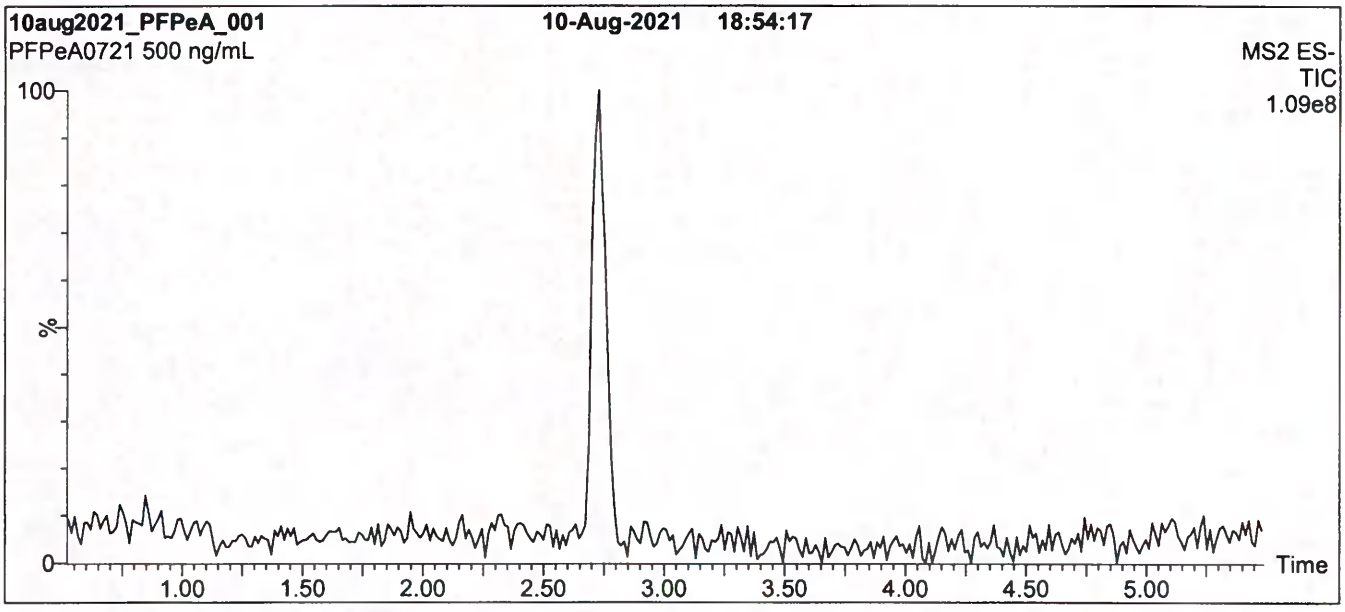
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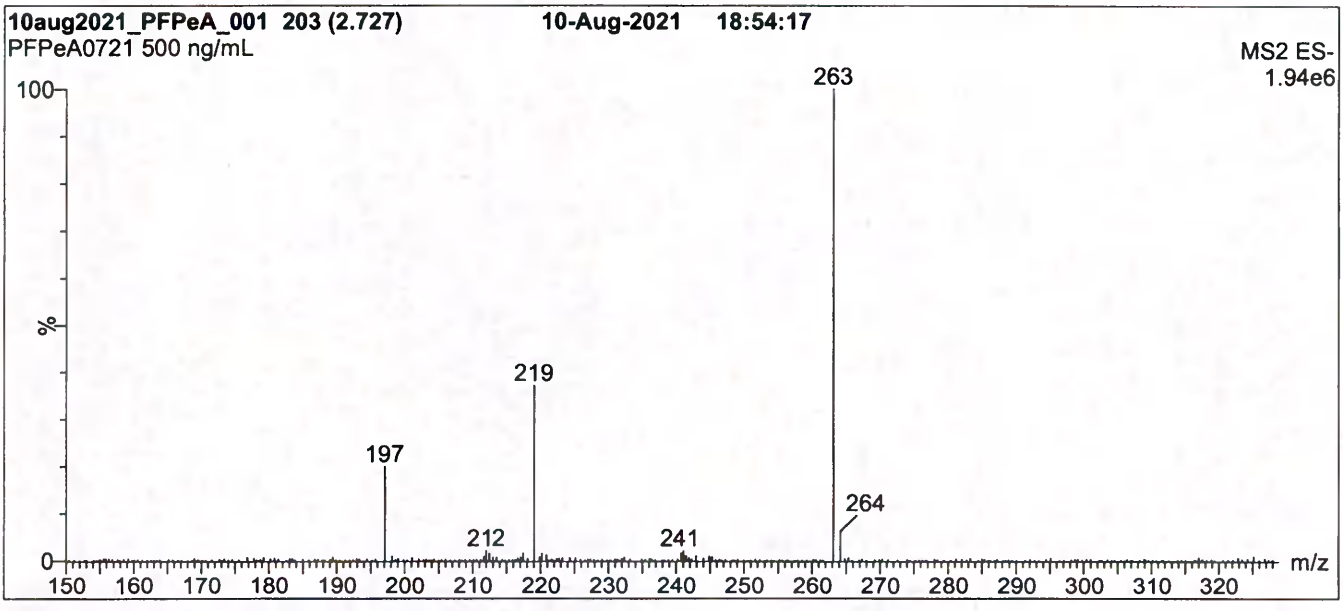
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **PFPeA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

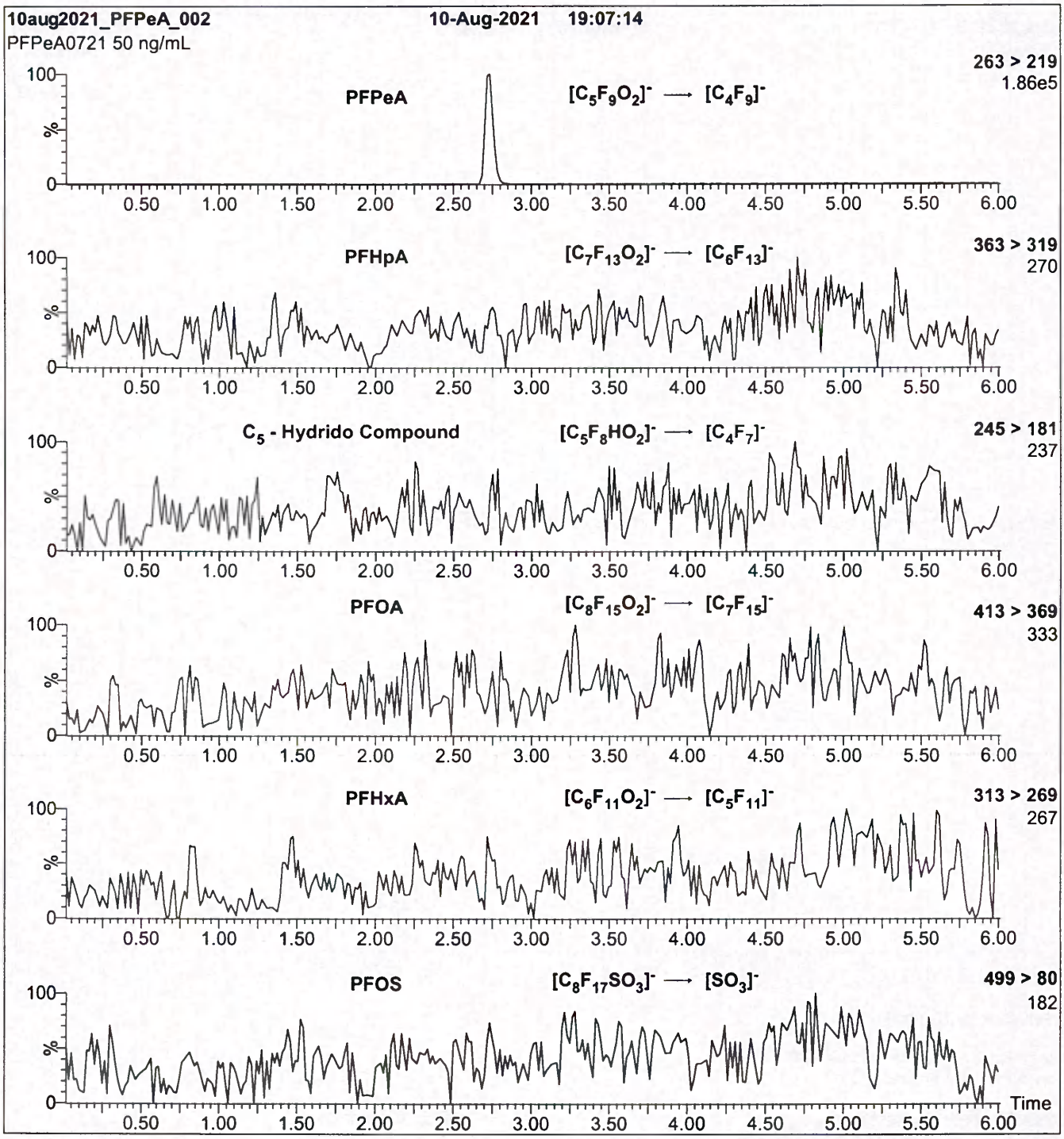
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 8

Reagent

PFC_ST_01432

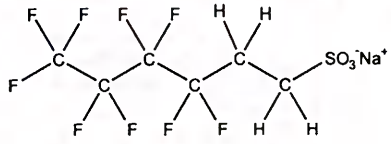
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 4:2FTS **LOT NUMBER:** 42FTS0921

COMPOUND: Sodium 1H,1H,2H,2H-perfluorohexanesulfonate

STRUCTURE: **CAS #:** 27619-93-8



410-2448823

MOLECULAR FORMULA:	$C_6H_4F_9SO_3Na$	**MOLECULAR WEIGHT:**	350.13
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 46.9 ± 2.3 µg/mL (4:2FTS acid) 46.7 ± 2.3 µg/mL (4:2FTS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/04/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/04/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/20/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

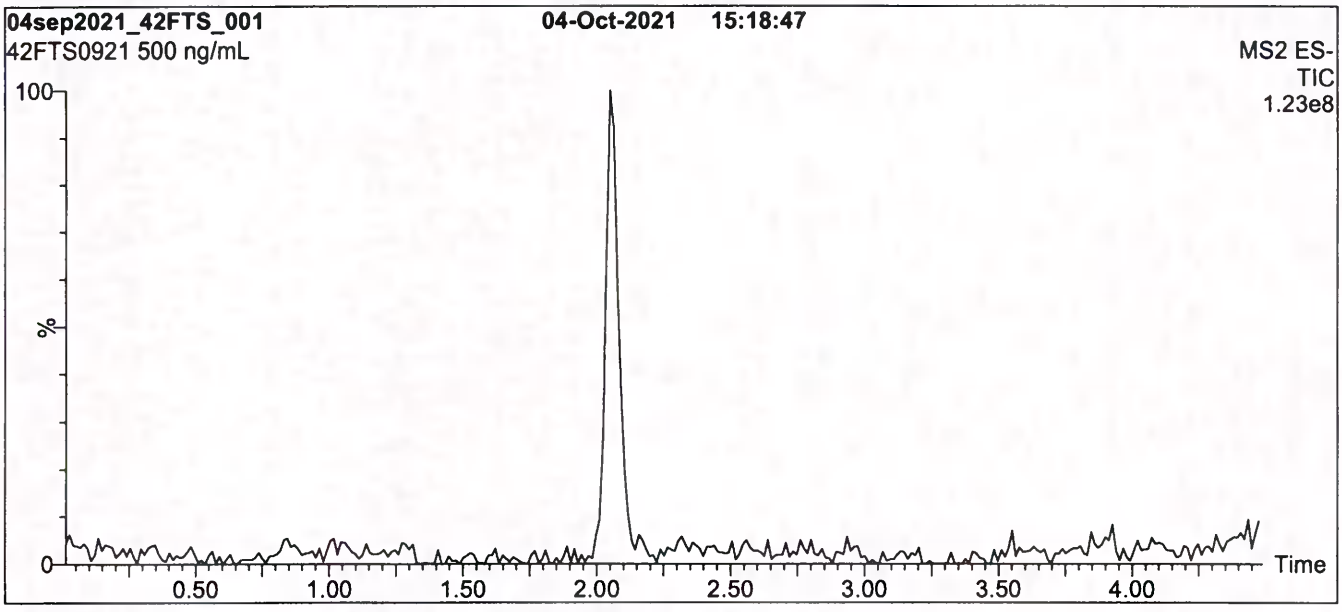
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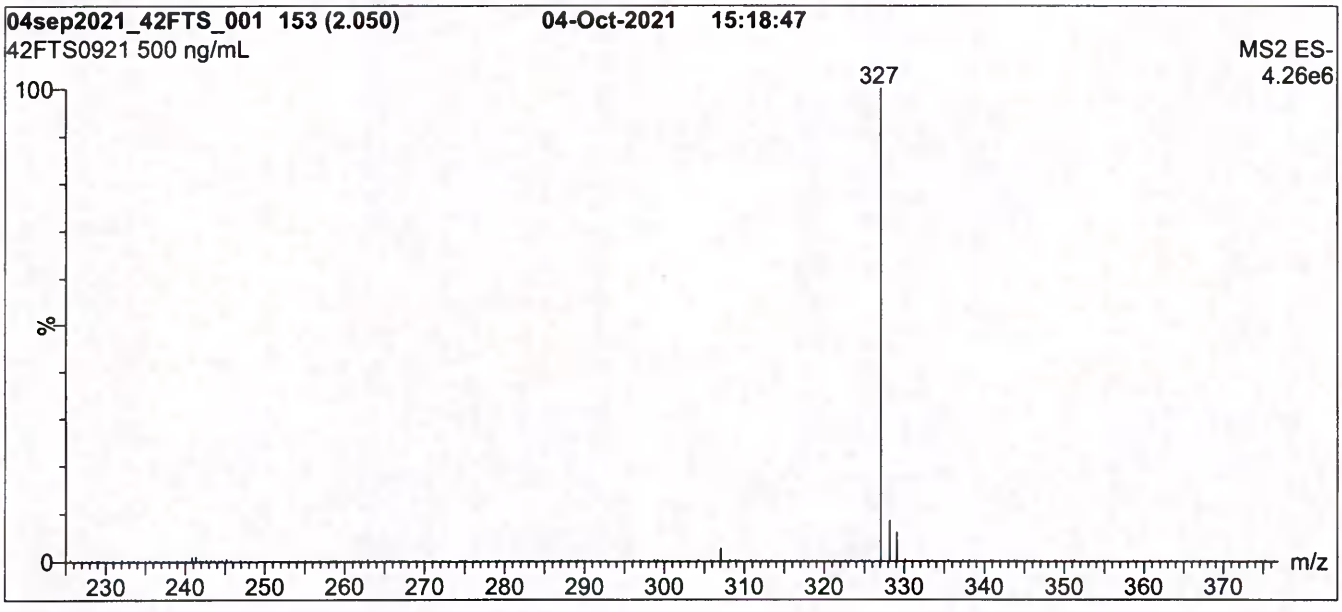
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **4:2FTS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min before returning to initial conditions in 1 min.
Time: 12 min

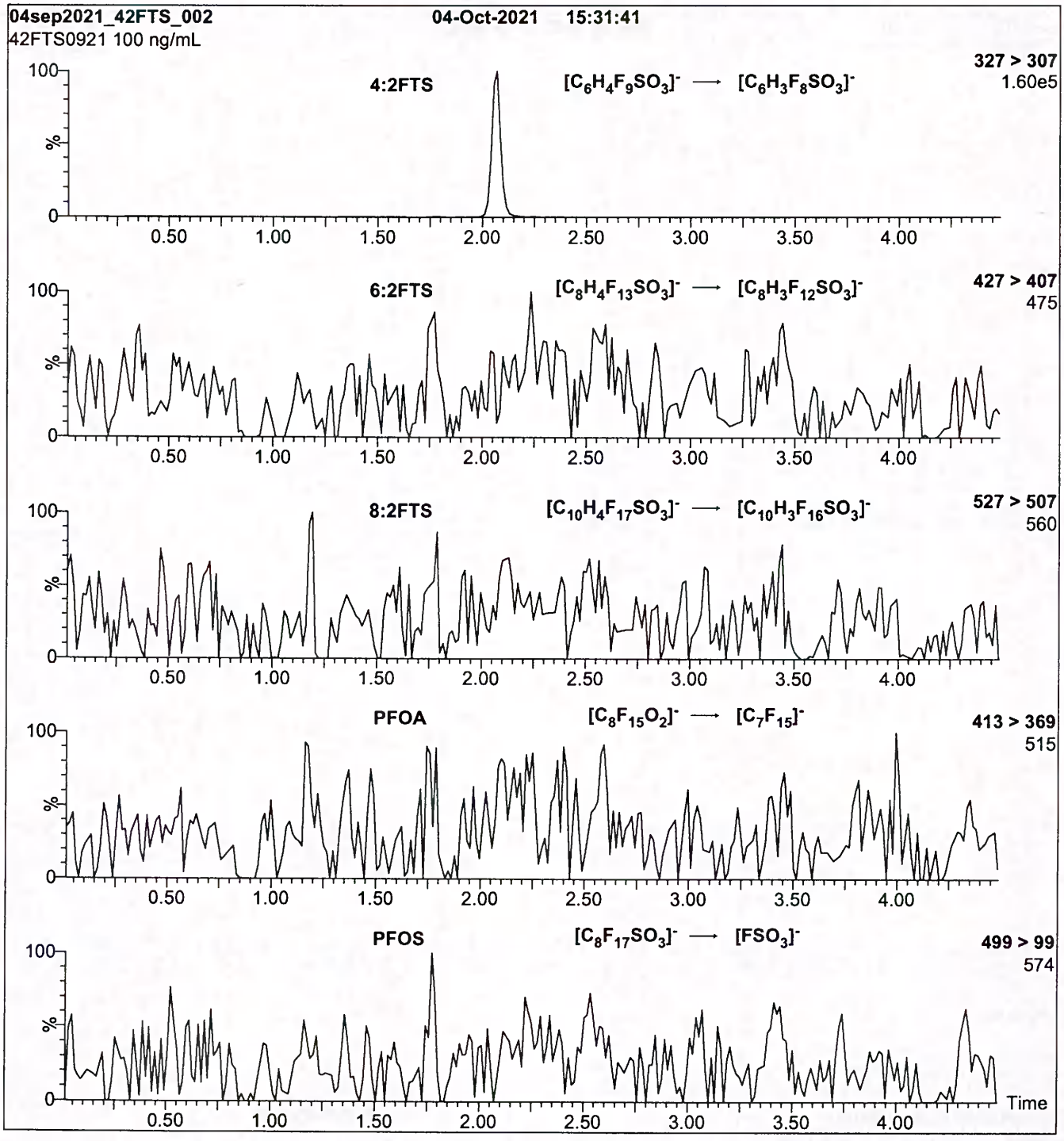
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 18

Reagent

PFC_ST_01433

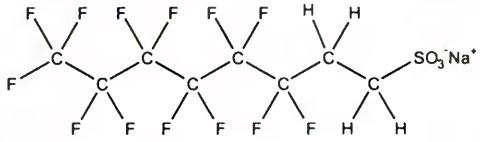
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 6:2FTS **LOT NUMBER:** 62FTS0521

COMPOUND: Sodium 1H,1H,2H,2H-perfluorooctanesulfonate

STRUCTURE: **CAS #:** 27619-94-9



410-2448825

MOLECULAR FORMULA:	$C_8H_4F_{13}SO_3Na$	**MOLECULAR WEIGHT:**	450.15
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt)	**SOLVENT(S):**	Methanol
	47.6 ± 2.4 µg/mL (6:2FTS acid)		
	47.4 ± 2.4 µg/mL (6:2FTS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	06/09/2021		
EXPIRY DATE: (mm/dd/yyyy)	06/09/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/24/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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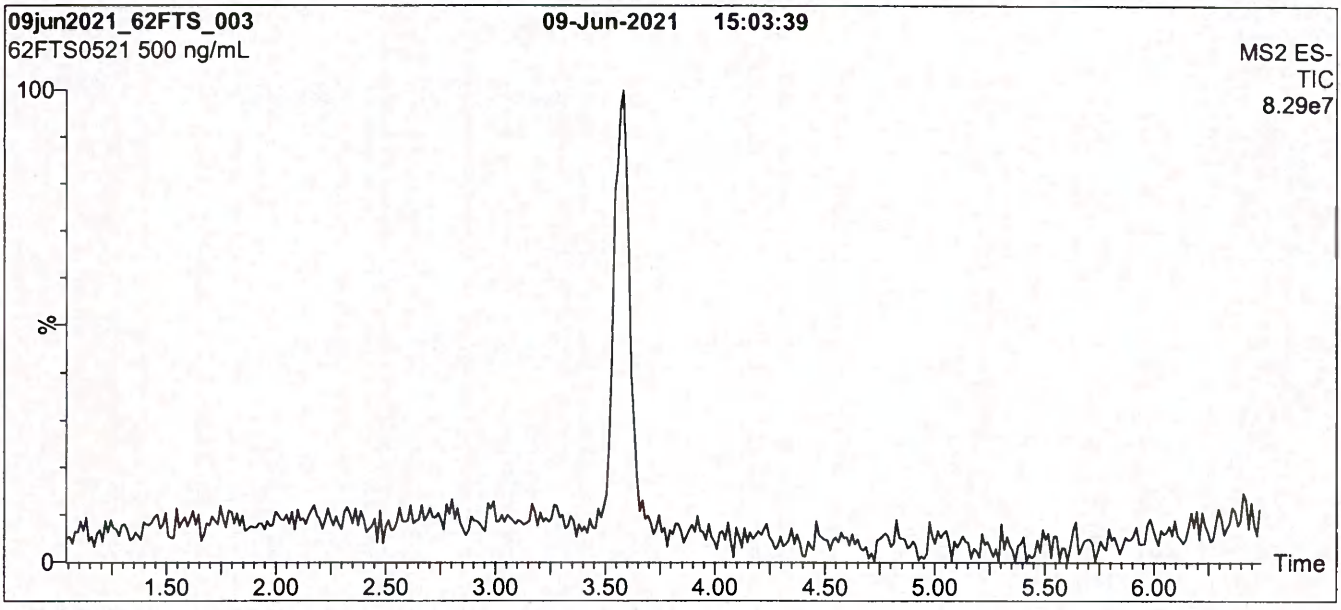
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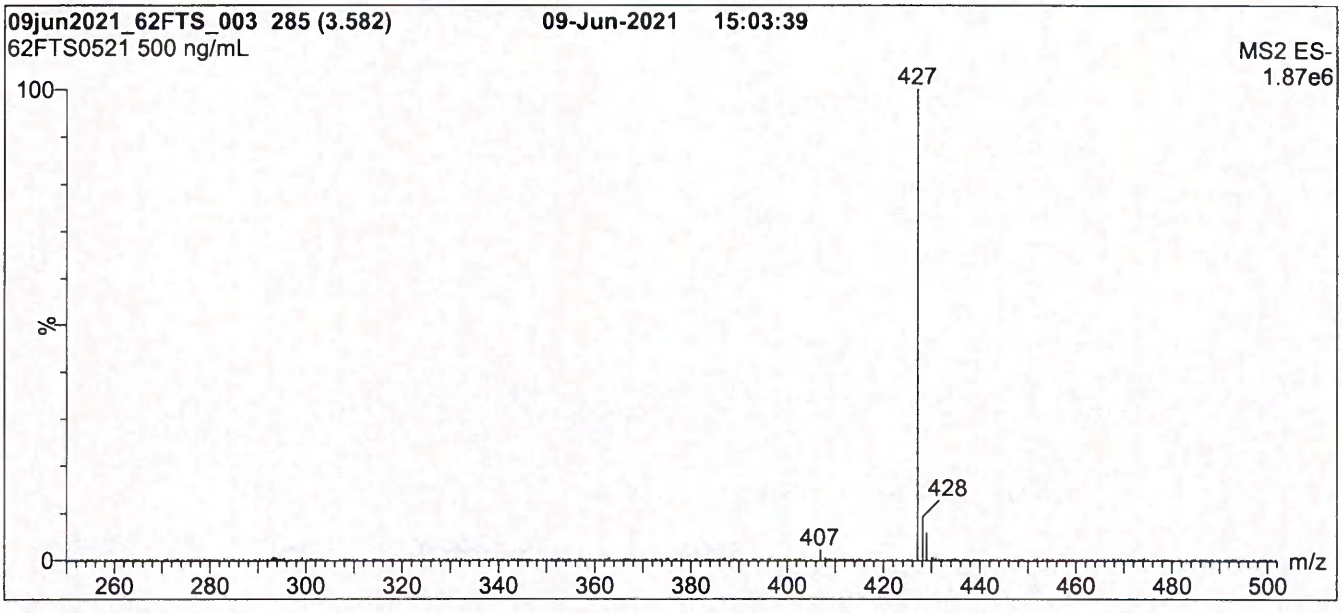
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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Figure 1: **6:2FTS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

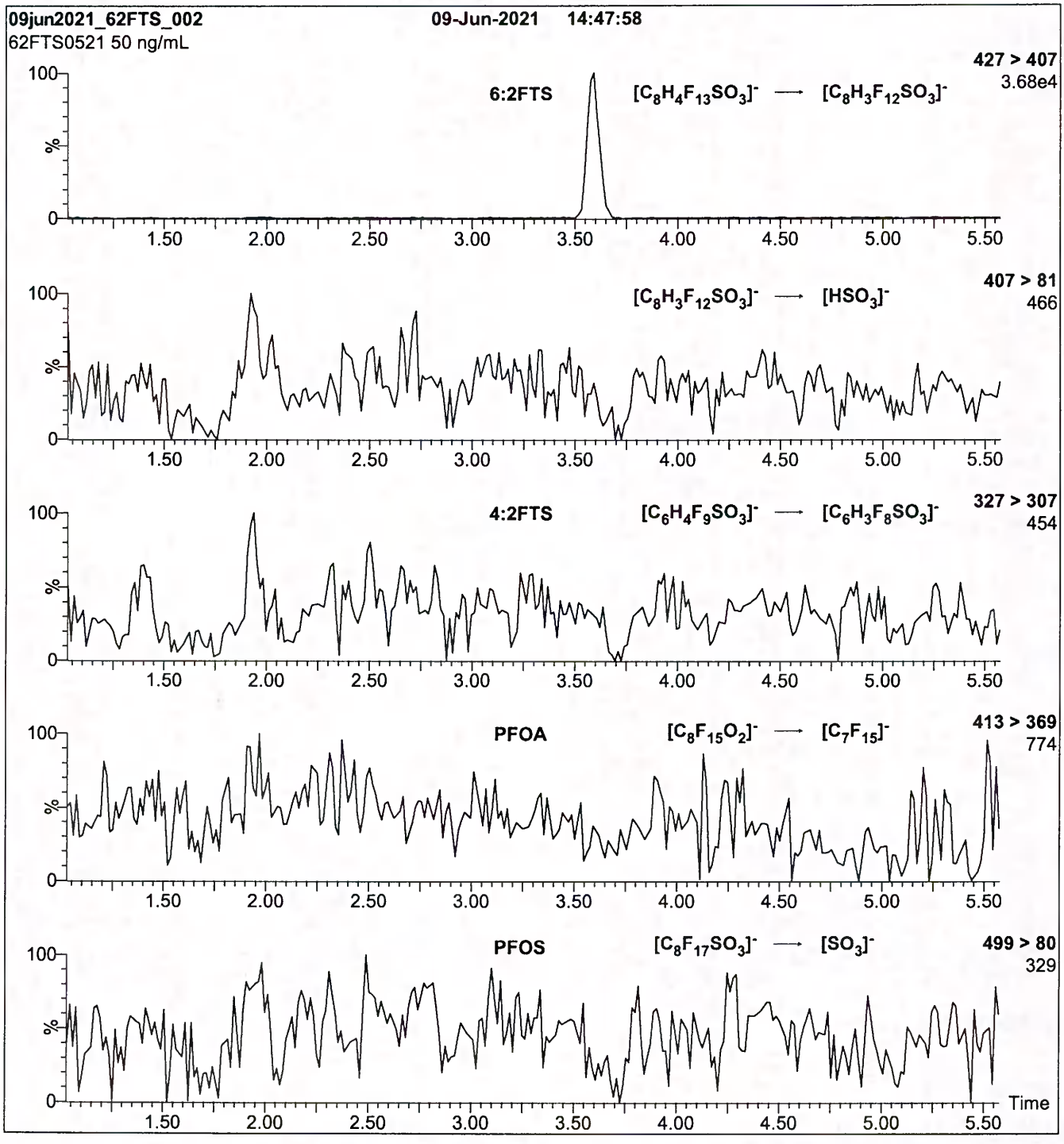
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (6:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 20

Reagent

PFC_ST_01434

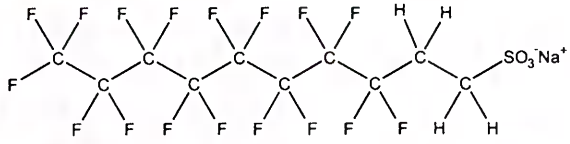
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 8:2FTS **LOT NUMBER:** 82FTS0821

COMPOUND: Sodium 1H,1H,2H,2H-perfluorodecanesulfonate

STRUCTURE: **CAS #:** 27619-96-1



410-2448827

MOLECULAR FORMULA:	$C_{10}H_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	550.16
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.0 ± 2.4 µg/mL (8:2FTS acid) 47.9 ± 2.4 µg/mL (8:2FTS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/11/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/11/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/19/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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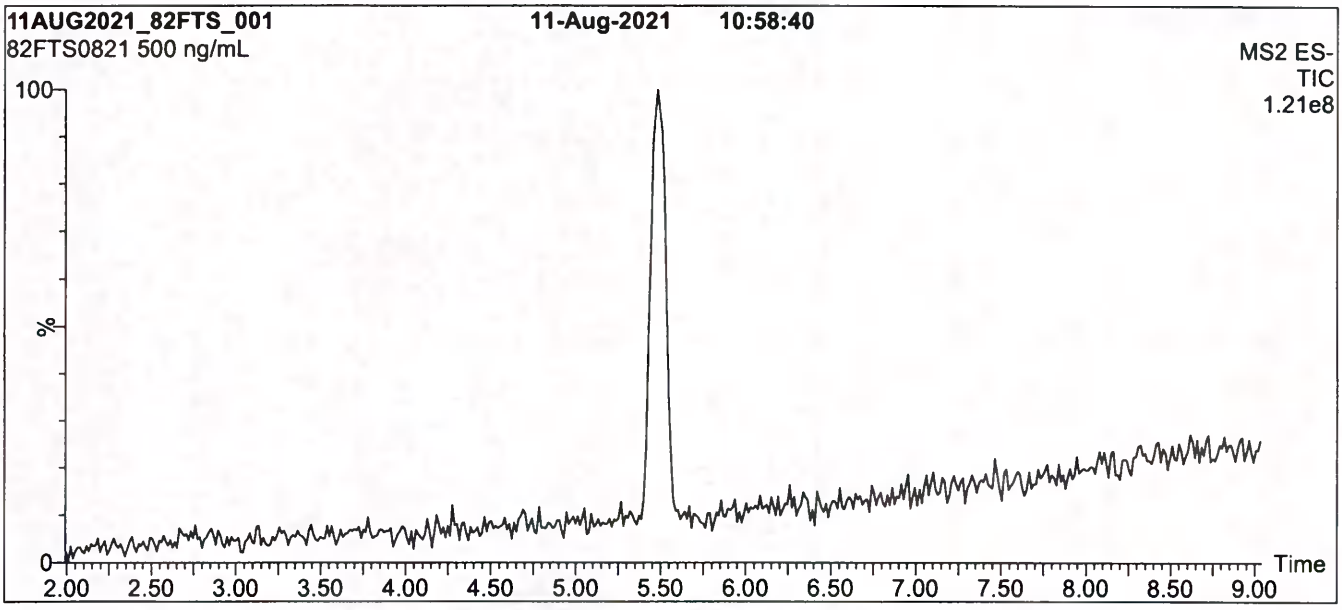
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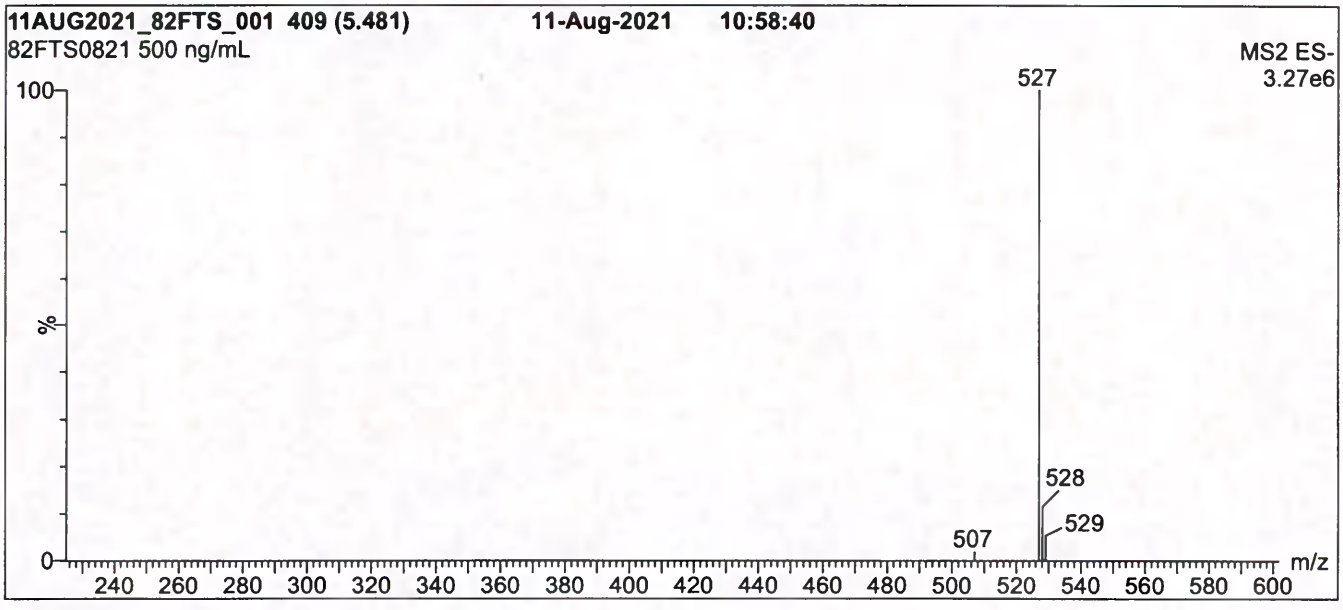
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **8:2FTS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 80% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

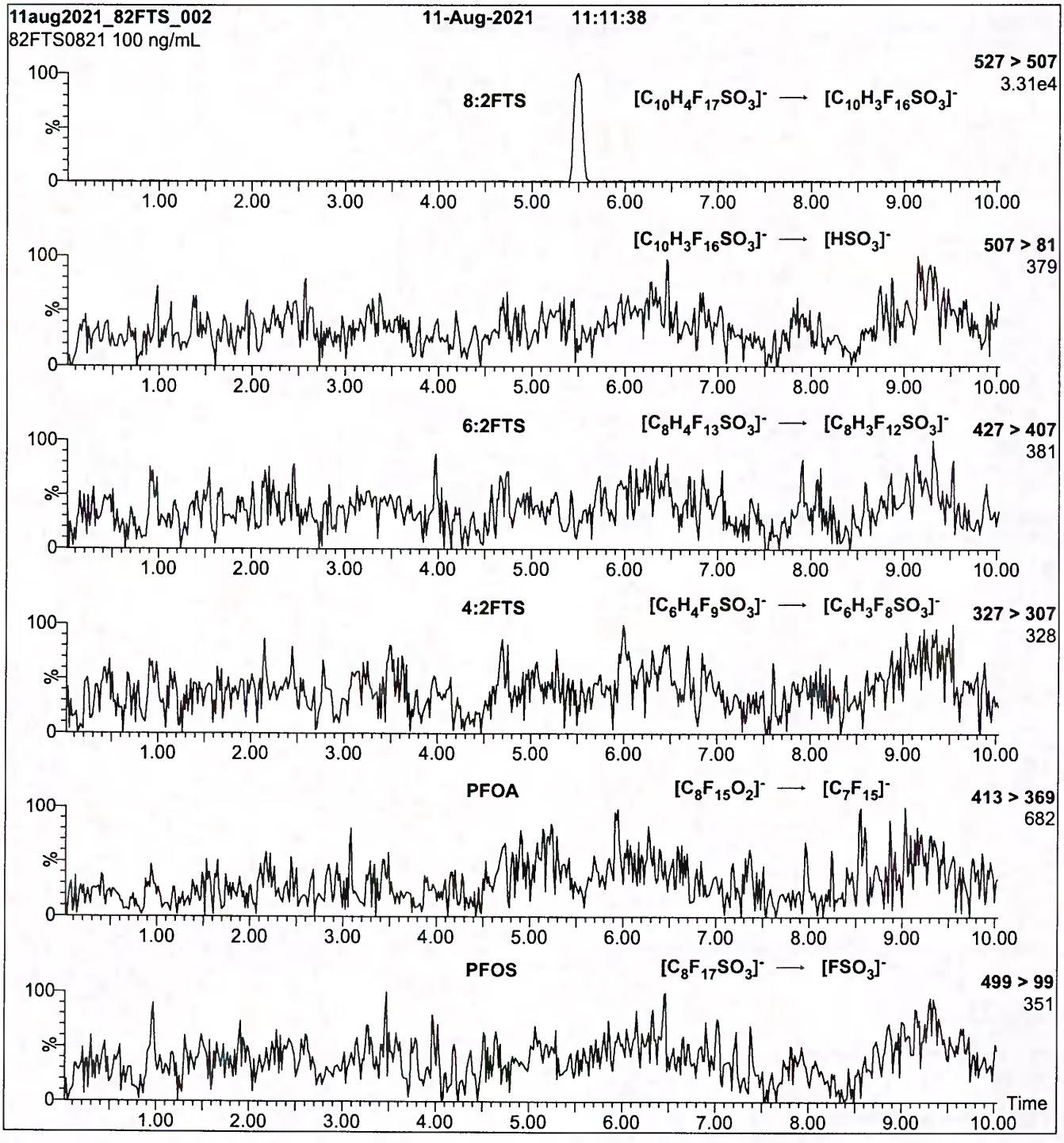
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C)= 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (8:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 26

Reagent

PFC_ST_01435

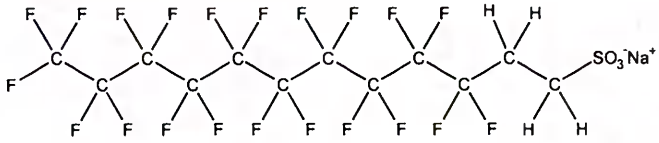
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221

COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



410-2448829

MOLECULAR FORMULA:	$C_{12}H_4F_{21}SO_3Na$	**MOLECULAR WEIGHT:**	650.18
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt)	**SOLVENT(S):**	Methanol
	48.3 ± 2.4 µg/mL (10:2FTS acid)		
	48.2 ± 2.4 µg/mL (10:2FTS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/03/2021		
EXPIRY DATE: (mm/dd/yyyy)	03/03/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/05/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

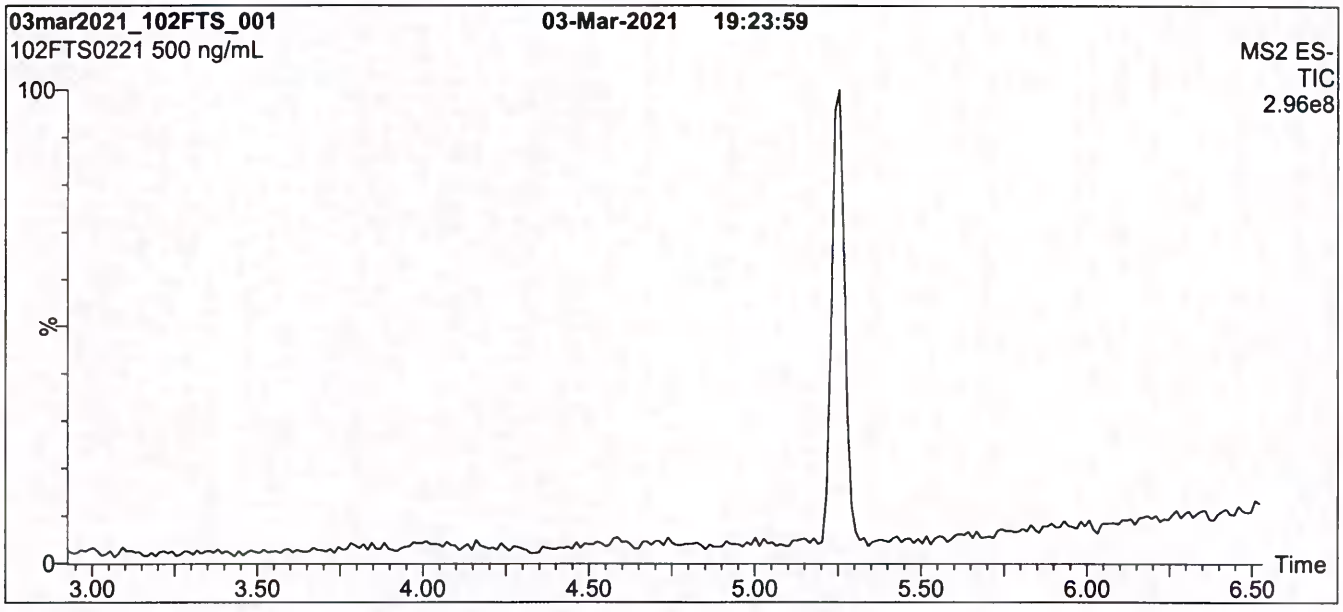
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

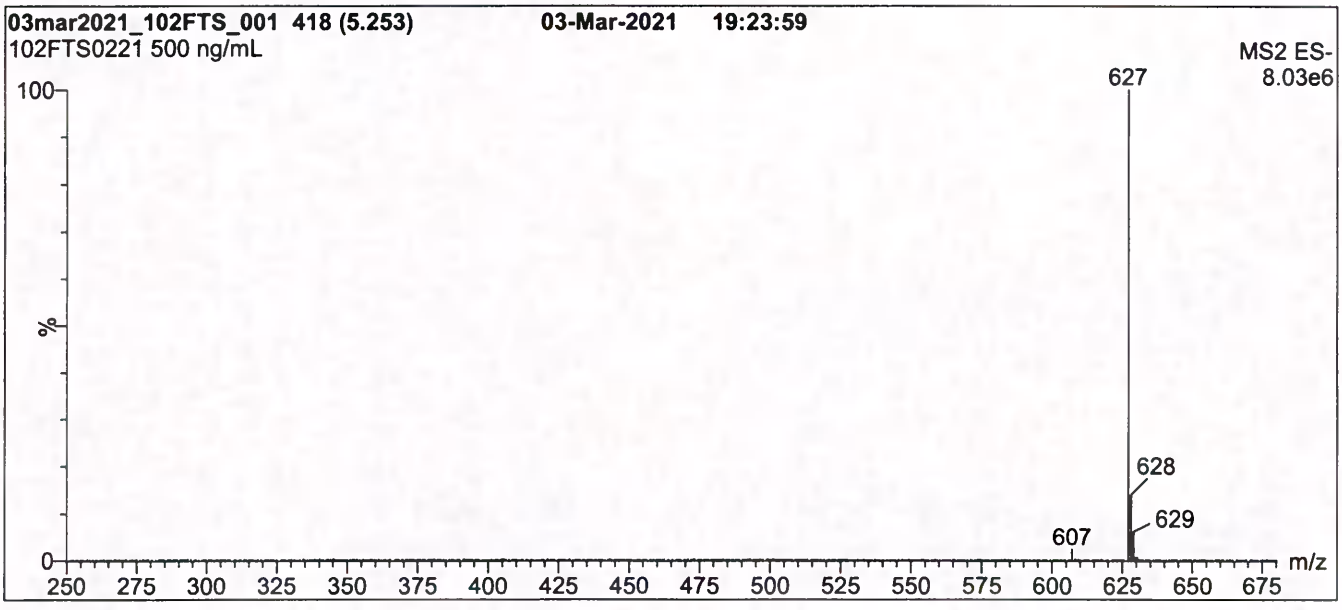
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

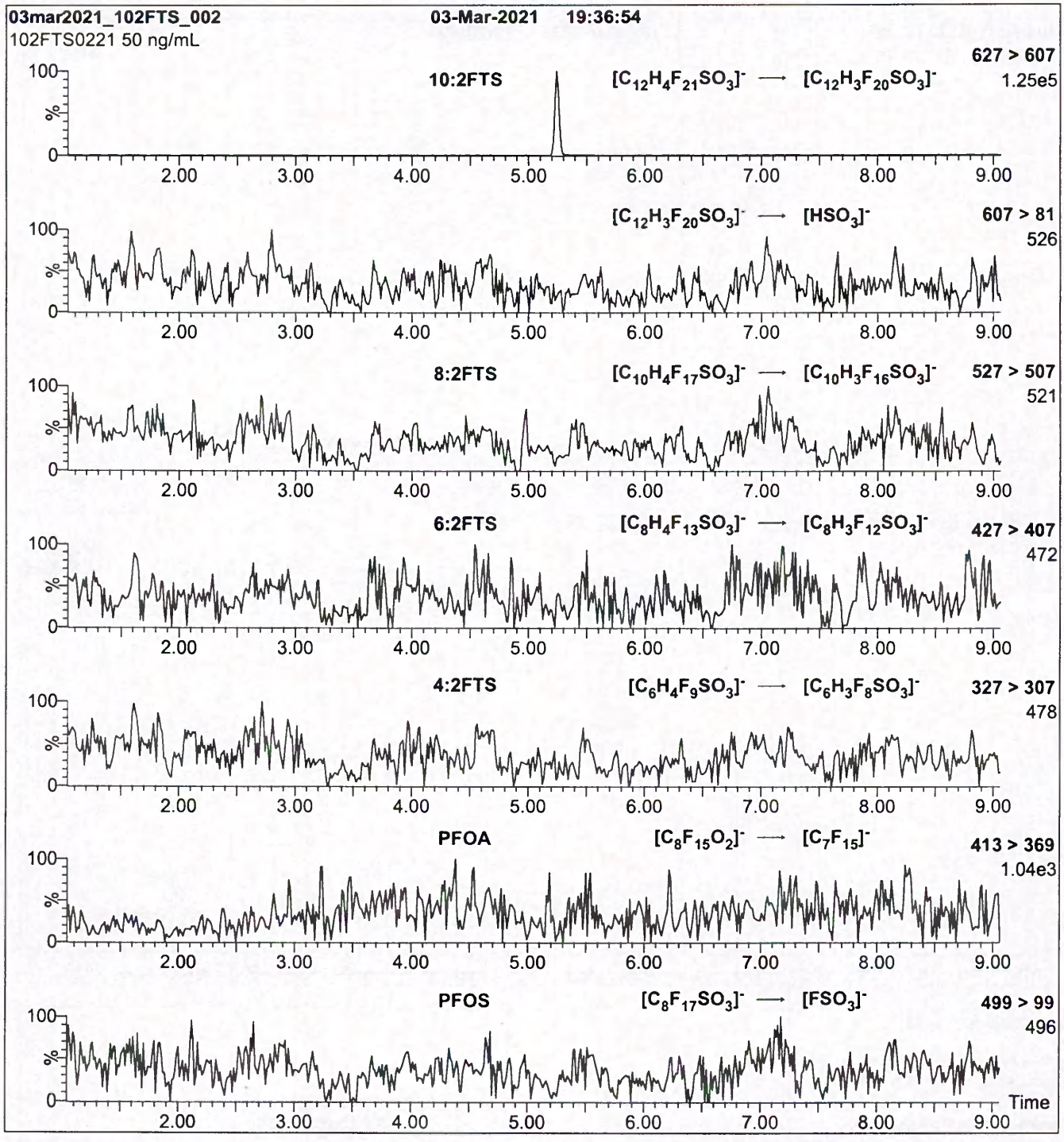
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **10:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (10:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 25

Reagent

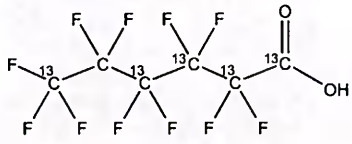
PFC_ST_01445

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFHxA
LOT NUMBER: M5PFHxA1021
COMPOUND: Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid

STRUCTURE:



CAS #: 2328024-54-8

410-2460058

MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_1HF_{11}O_2$	**MOLECULAR WEIGHT:**	319.02
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4,6\text{-}^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	10/29/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/29/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/11/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

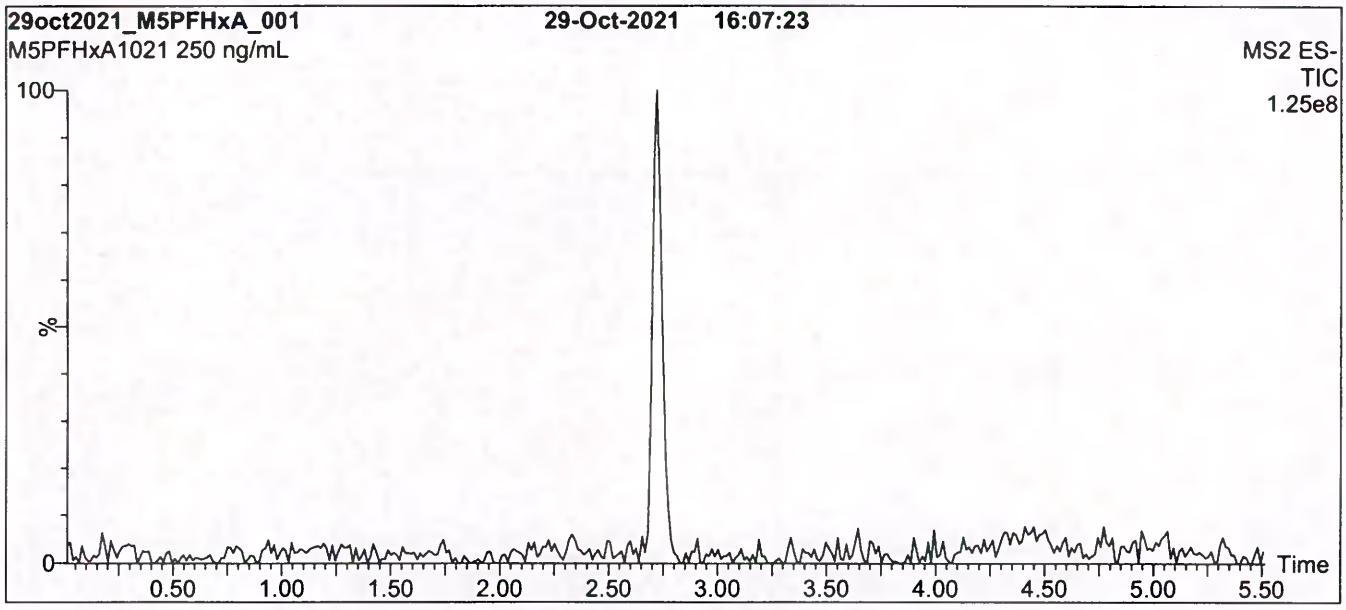
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

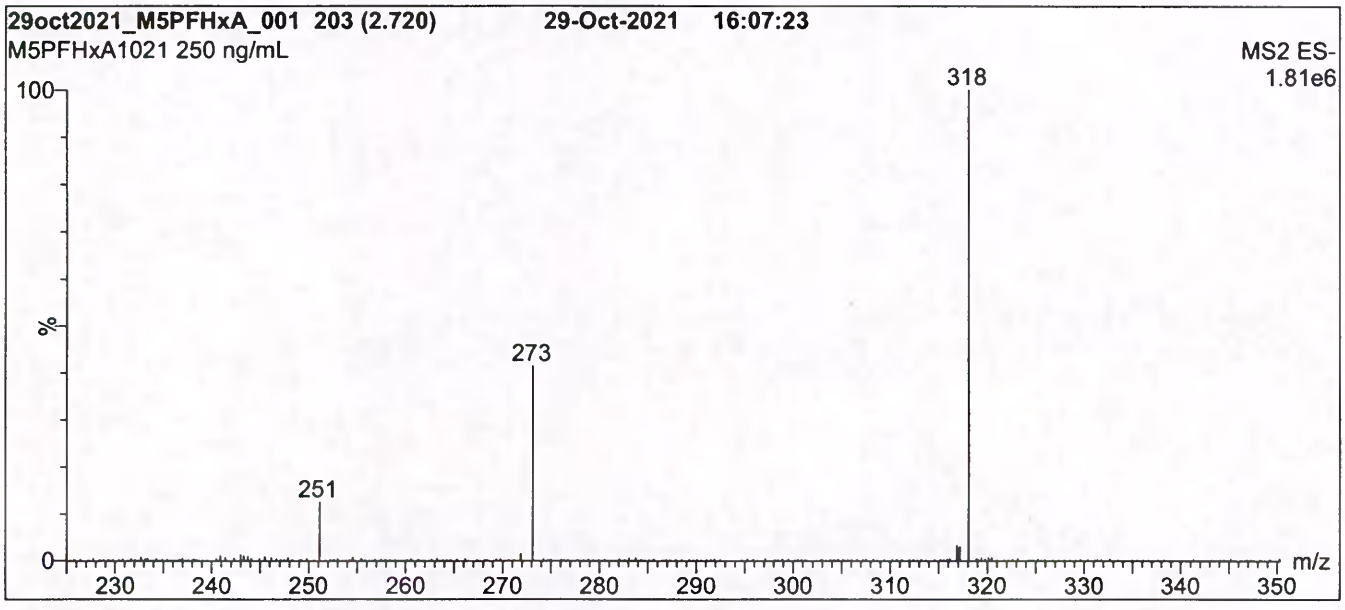
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **M5PFHxA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

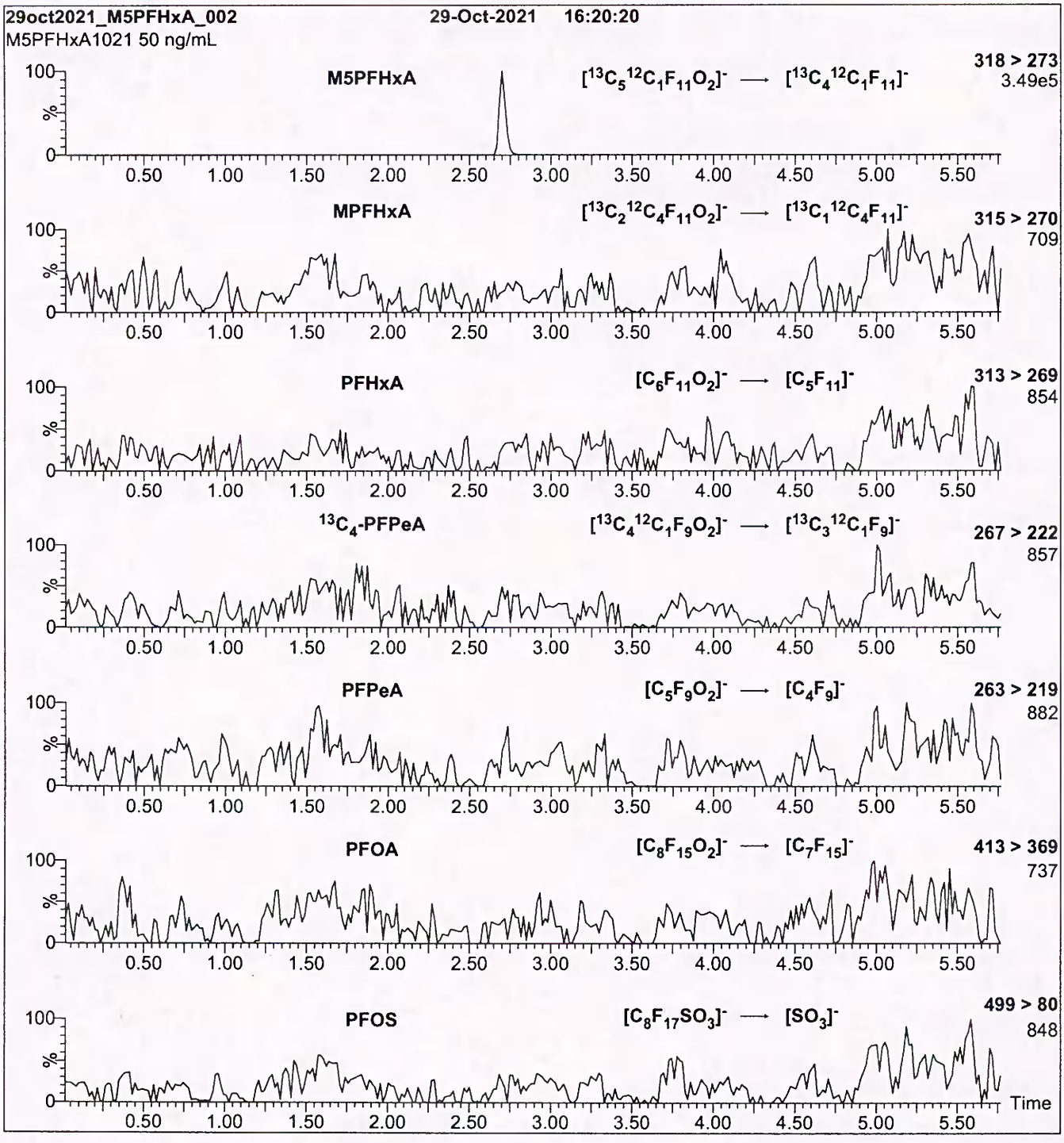
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M5PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M5PFHxA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.18e-3
Collision Energy (eV) = 8

Reagent

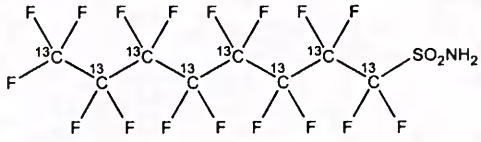
PFC_ST_01453

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I
LOT NUMBER: M8FOSA0921I
COMPOUND: Perfluoro-1-($^{13}C_8$)octanesulfonamide

STRUCTURE:



CAS #: 1365803-60-6

410-2460095

MOLECULAR FORMULA:	$^{13}C_8H_2F_{17}NO_2S$	**MOLECULAR WEIGHT:**	507.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ($^{13}C_8$)
LAST TESTED: (mm/dd/yyyy)	10/12/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/12/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~1.0% of perfluoro-1-($^{13}C_4$)octanesulfonamide and ~0.2% of perfluoro-1-($^{13}C_7$)heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/14/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

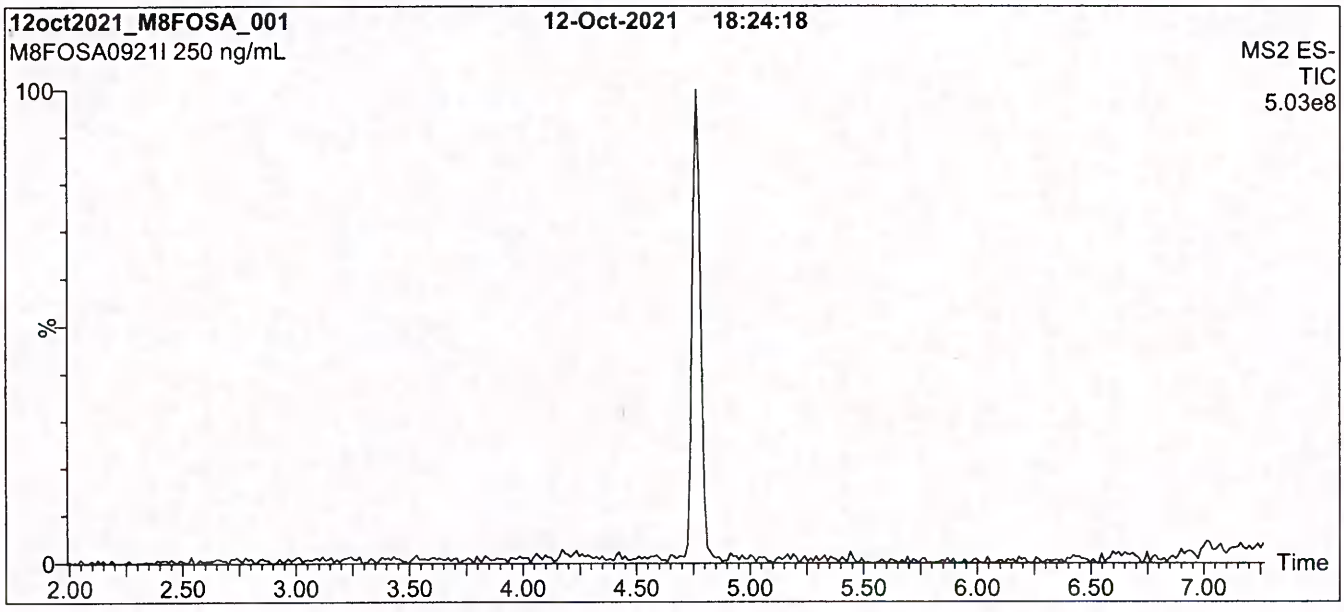
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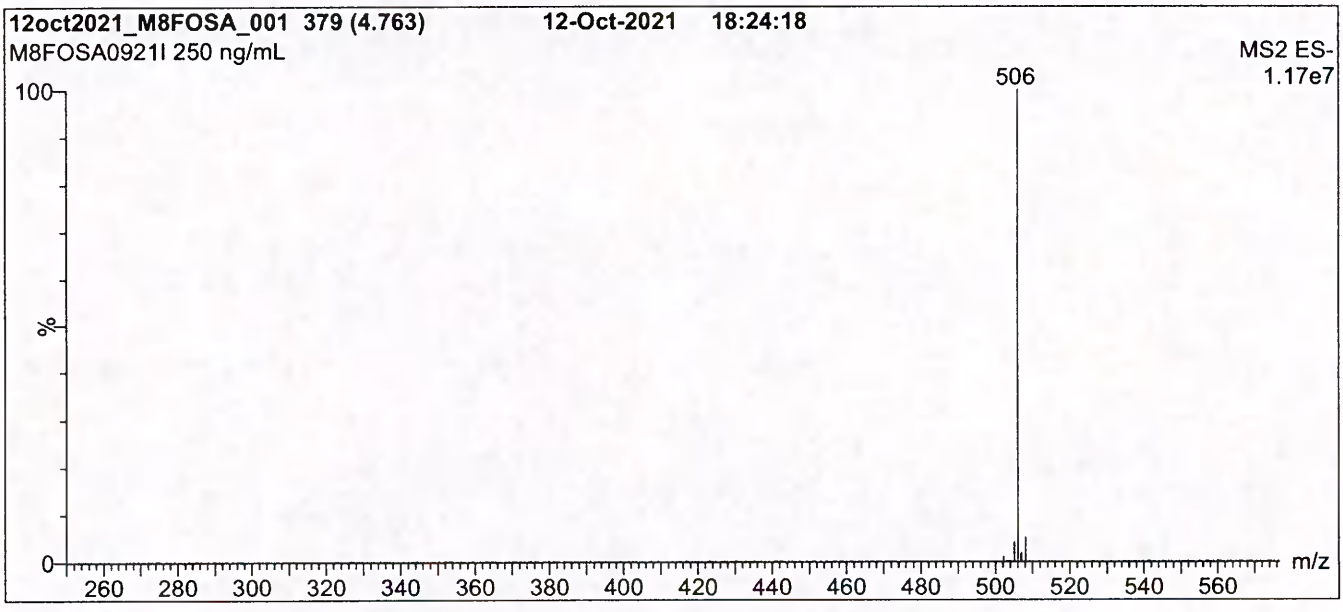
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **M8FOSA-I; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

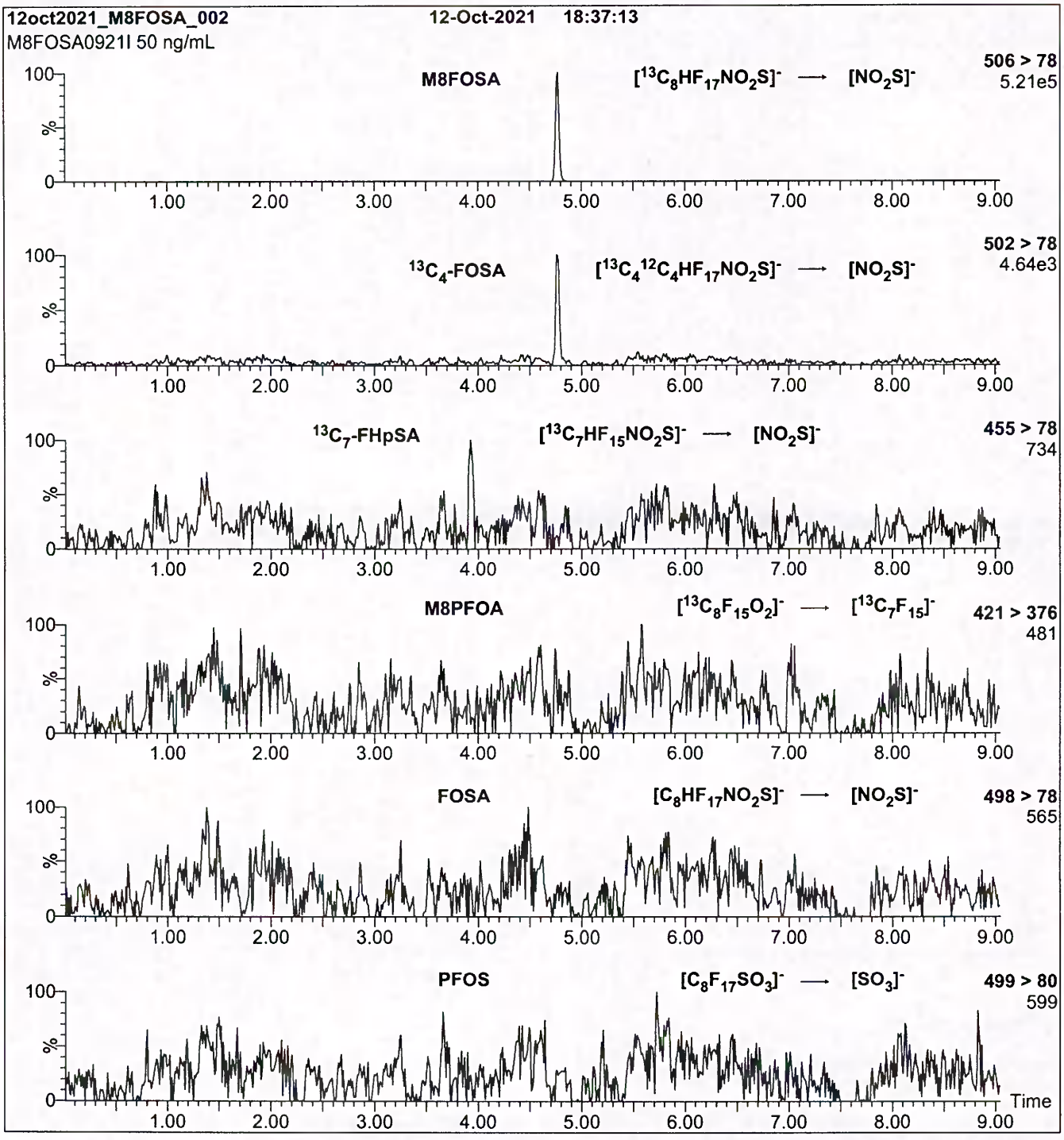
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 30

Reagent

PFC_ST_01464

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFHEA
LOT NUMBER: MFHEA0921
COMPOUND: 2-Perfluorohexyl (1,2-$^{13}C_2$)ethanoic acid

STRUCTURE:



CAS #: 872398-75-9

410-2460306

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_6H_3F_{13}O_2$	**MOLECULAR WEIGHT:**	380.07
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	09/29/2021		
EXPIRY DATE: (mm/dd/yyyy)	09/29/2024		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.1% 2H-Perfluoro-(1,2-$^{13}C_2$)-2-octenoic acid (MFHUEA).
- The saturated telomer acid very slowly degrades to MFHUEA in isopropanol. This solution contains 3 molar equivalents of HCl to minimize this degradation. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/14/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

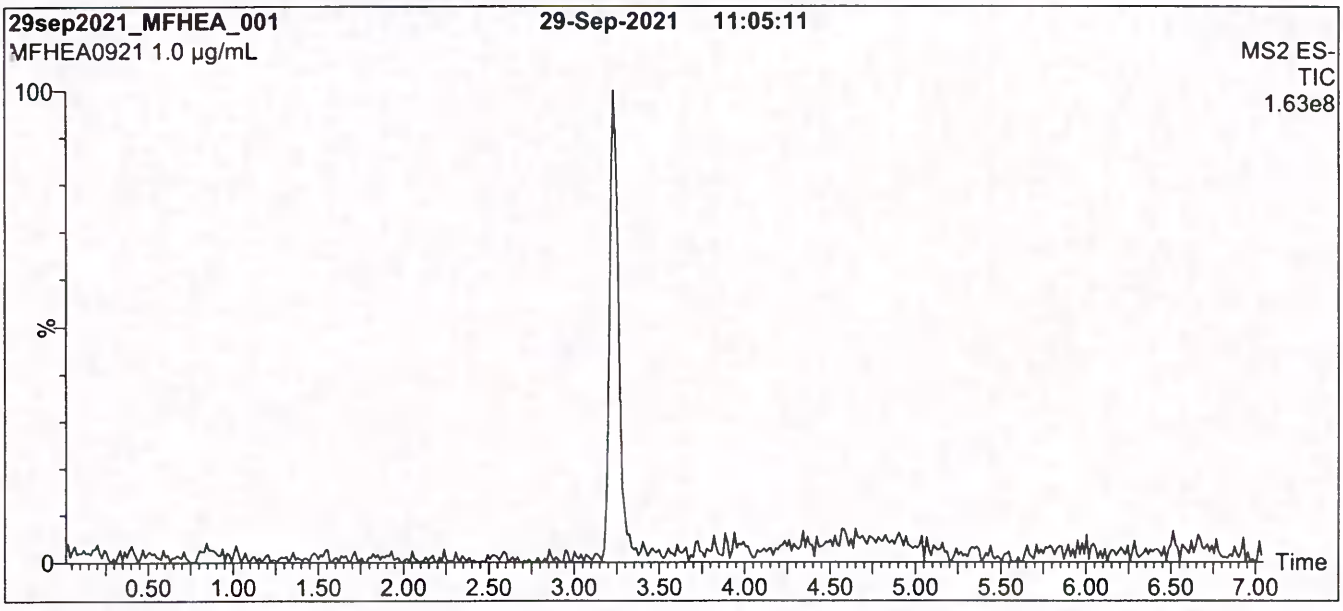
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

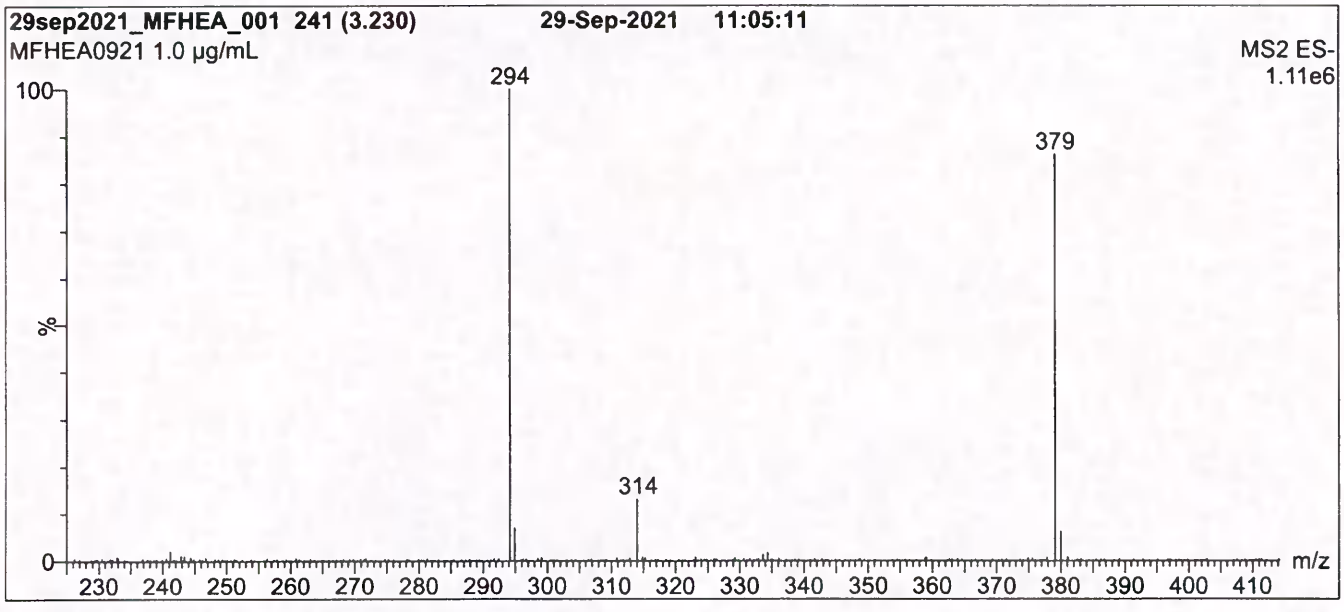
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **MFHEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 12 min

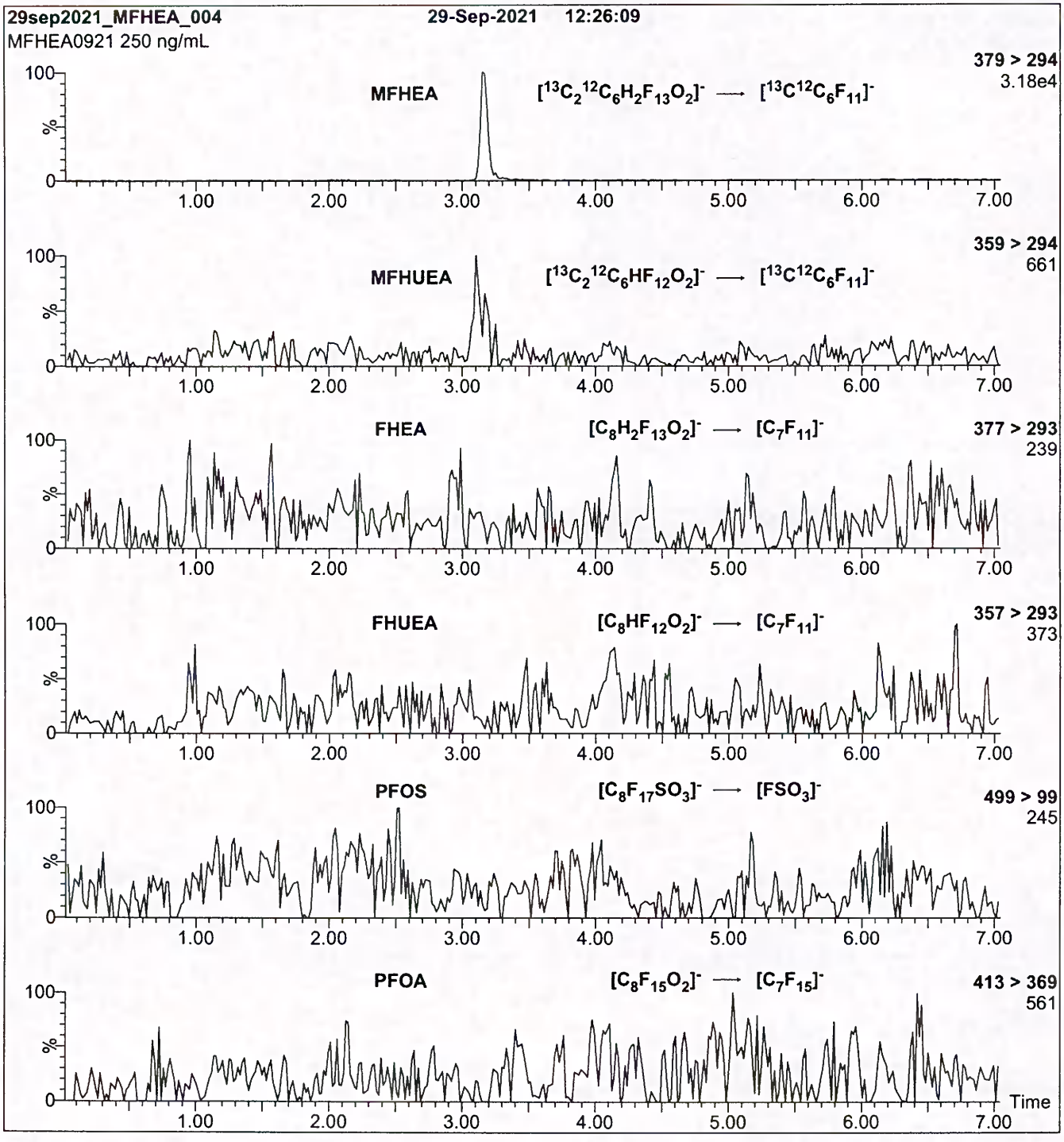
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MFHEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFHEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 10

Reagent

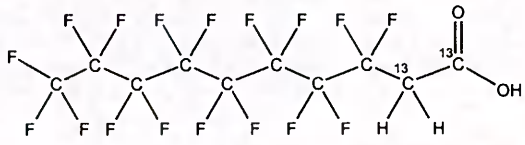
PFC_ST_01465

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFOEA
LOT NUMBER: MFOEA1121
COMPOUND: 2-Perfluorooctyl (1,2-$^{13}C_2$)ethanoic acid

STRUCTURE:



CAS #: 872398-76-0

410-2460308

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_3F_{17}O_2$	**MOLECULAR WEIGHT:**	480.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/22/2021		
EXPIRY DATE: (mm/dd/yyyy)	11/22/2024		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The saturated telomer acid very slowly degrades to MFOUEA in isopropanol. This solution contains 3 molar equivalents of HCl to minimize this degradation. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.
- Contains ~1.4% 2H-Perfluoro-2-(1,2-$^{13}C_2$)decenoic acid (MFOUEA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/26/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

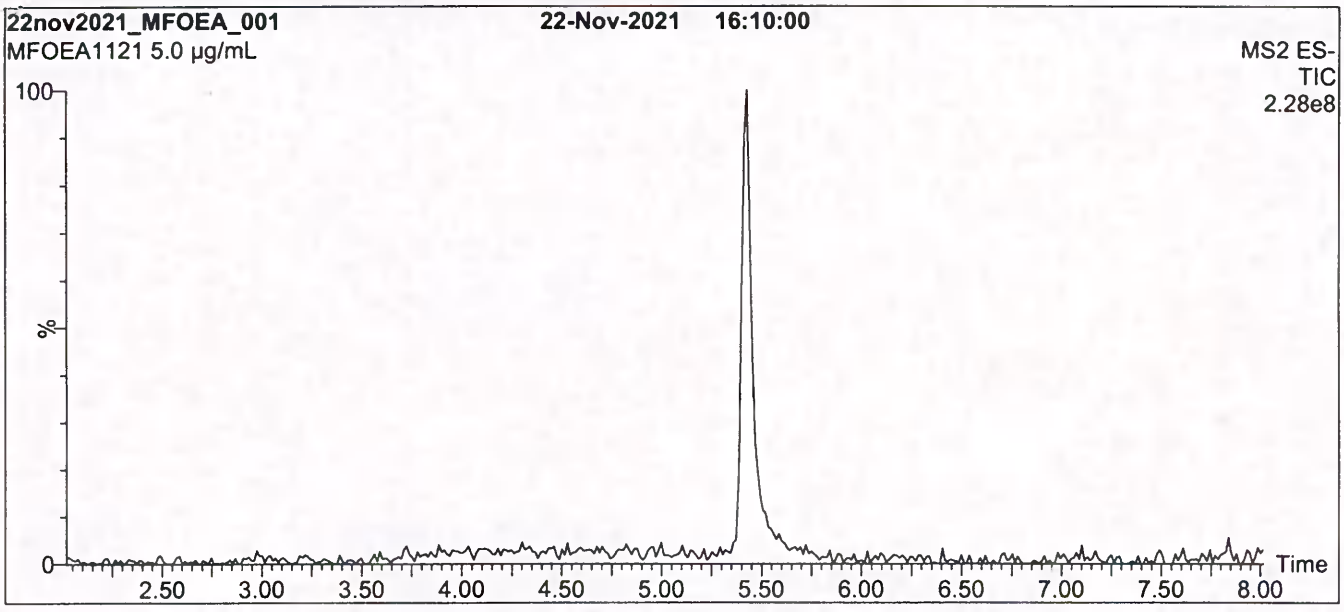
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

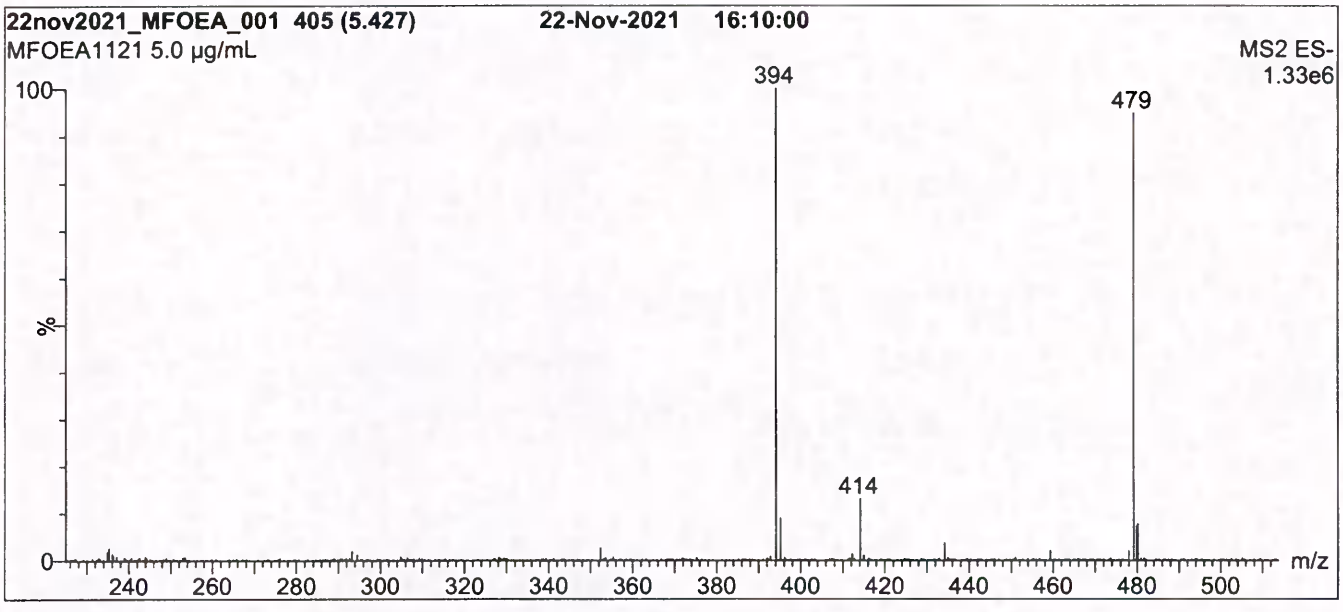
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **MFOEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for 1 min
before returning to initial conditions in 0.75 min.
Time: 12 min

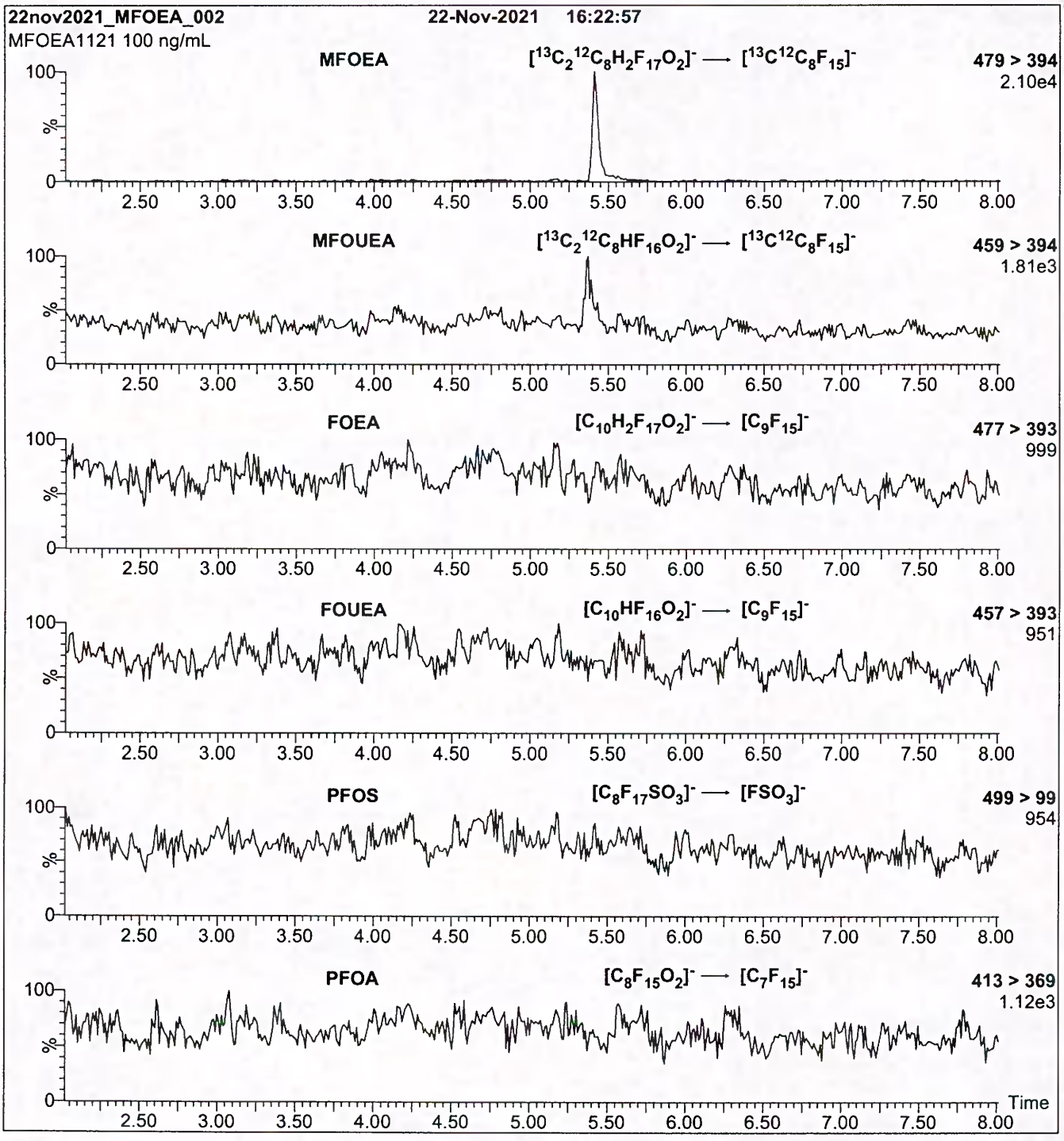
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MFOEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFOEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 12

Reagent

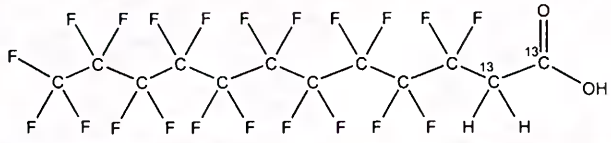
PFC_ST_01466

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFDEA
LOT NUMBER: MFDEA0921
COMPOUND: 2-Perfluorodecyl (1,2-$^{13}C_2$)ethanoic acid

STRUCTURE:



CAS #: 872398-77-1

410-2460310

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{10}H_3F_{21}O_2$	**MOLECULAR WEIGHT:**	580.10
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	09/27/2021		
EXPIRY DATE: (mm/dd/yyyy)	09/27/2024		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1.0% 2H-Perfluoro-($1,2\text{-}^{13}C_2$)-2-dodecenoic acid (MFDUEA).
- The saturated telomer acid very slowly degrades to MFDUEA in isopropanol. This solution contains 3 molar equivalents of HCl to minimize this degradation. This degradation occurs at a much faster rate in MeOH, therefore any MeOH dilutions should be used on the same day that they are prepared and monitored for degradation. The rate of degradation can also increase significantly when handling the solution at ambient temperature or in the presence of base. Always store this solution at 4°C to minimize degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/28/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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HOMOGENEITY:

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QUALITY MANAGEMENT:

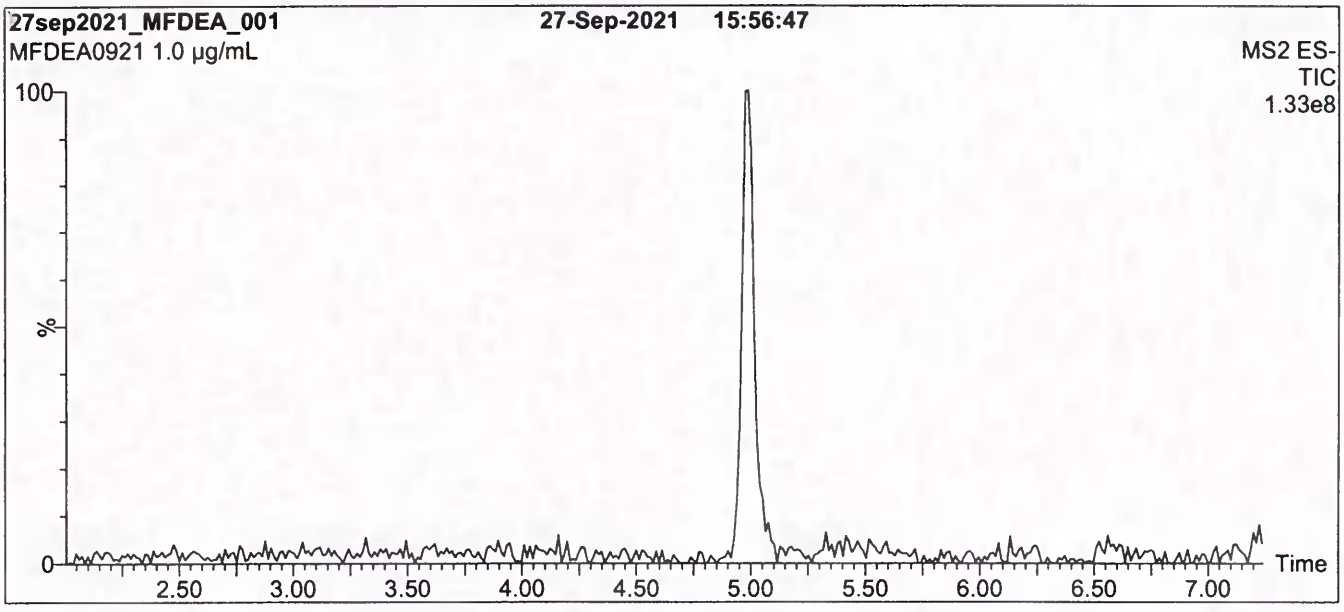
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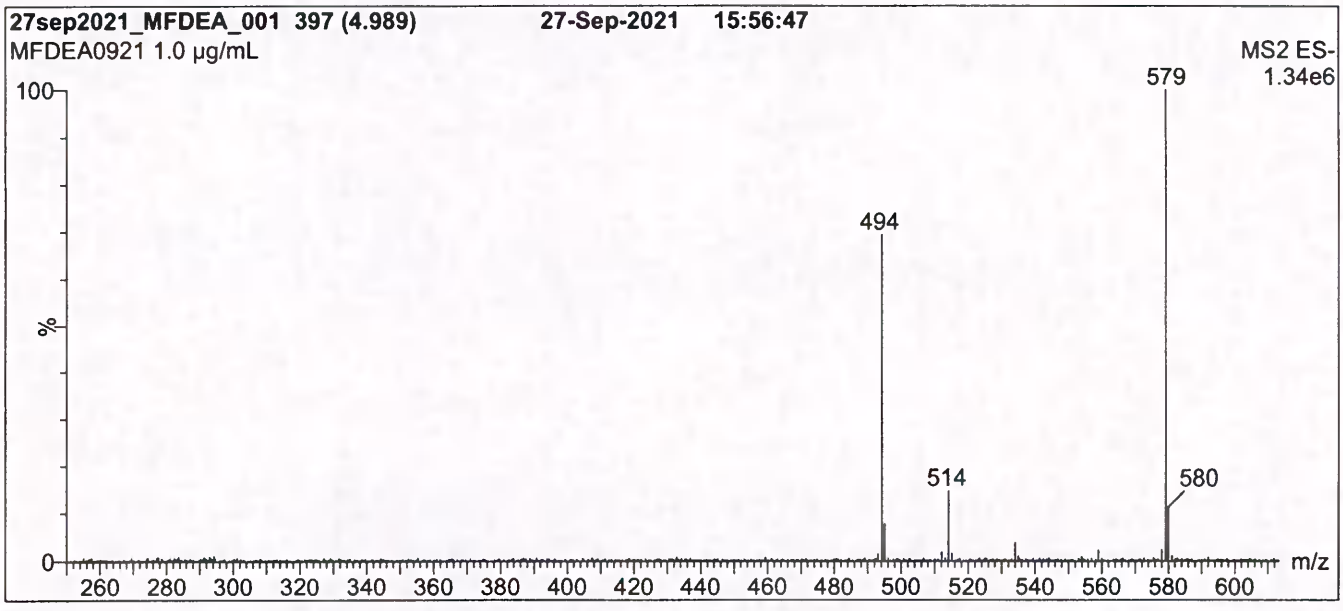
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **MFDEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

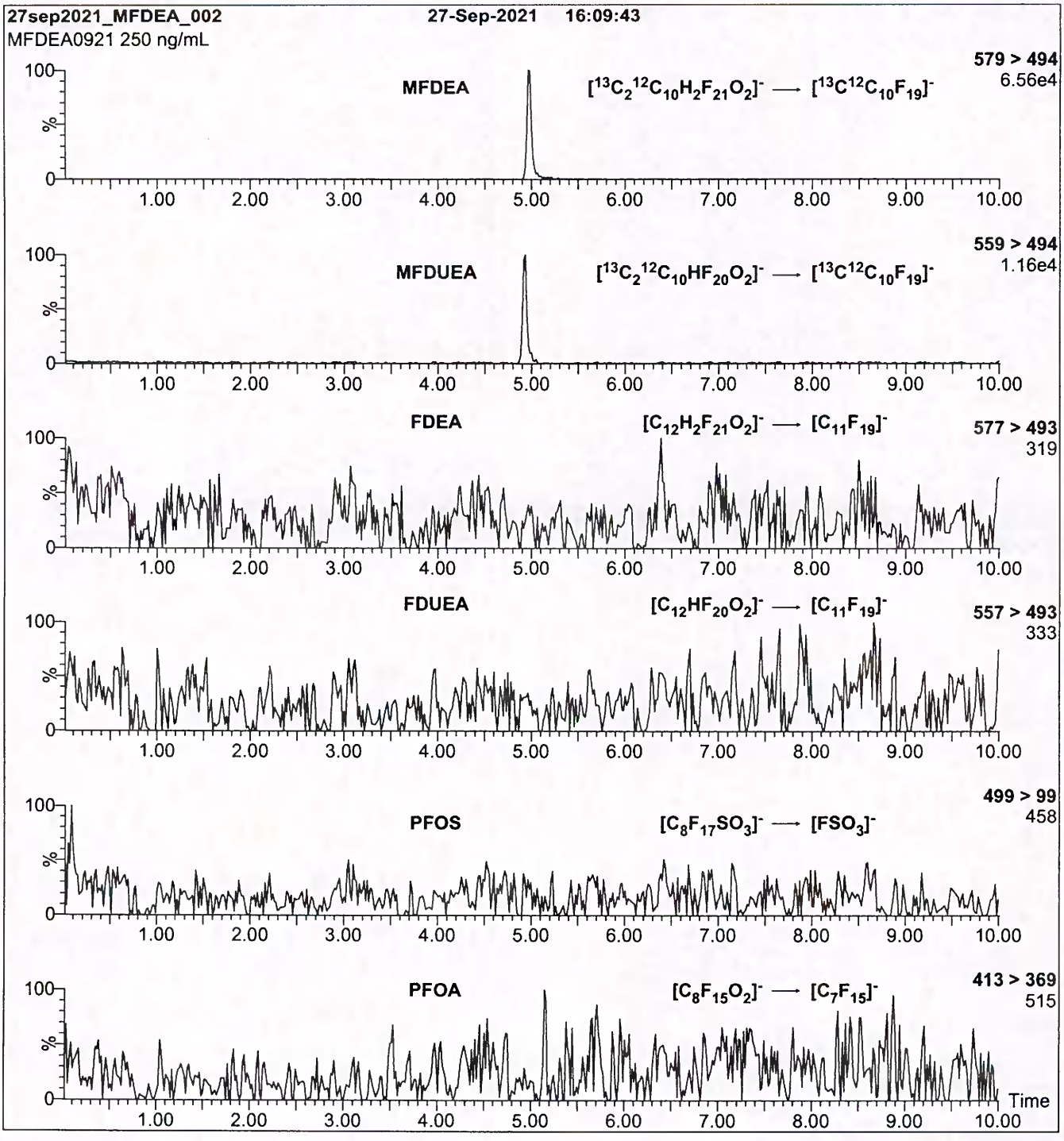
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 15.00
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MFDEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFDEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.06e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_01467

WELLINGTON LABORATORIES

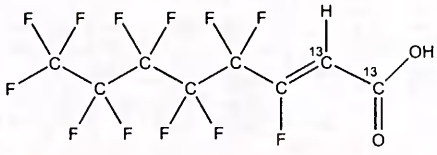
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFHUEA
COMPOUND: 2H-Perfluoro-2-(1,2-$^{13}C_2$)octenoic acid

LOT NUMBER: MFHUEA0322

STRUCTURE:

CAS #: 872398-78-2



410-2460344

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_6H_2F_{12}O_2$	**MOLECULAR WEIGHT:**	360.07
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Anhydrous Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	02/18/2022		
EXPIRY DATE: (mm/dd/yyyy)	02/18/2024		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.5% of 2H-perfluoro-2-(1,2-$^{13}C_2$)decenoic acid (MFOUEA).
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-(1,2-$^{13}C_2$)octenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 02/18/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

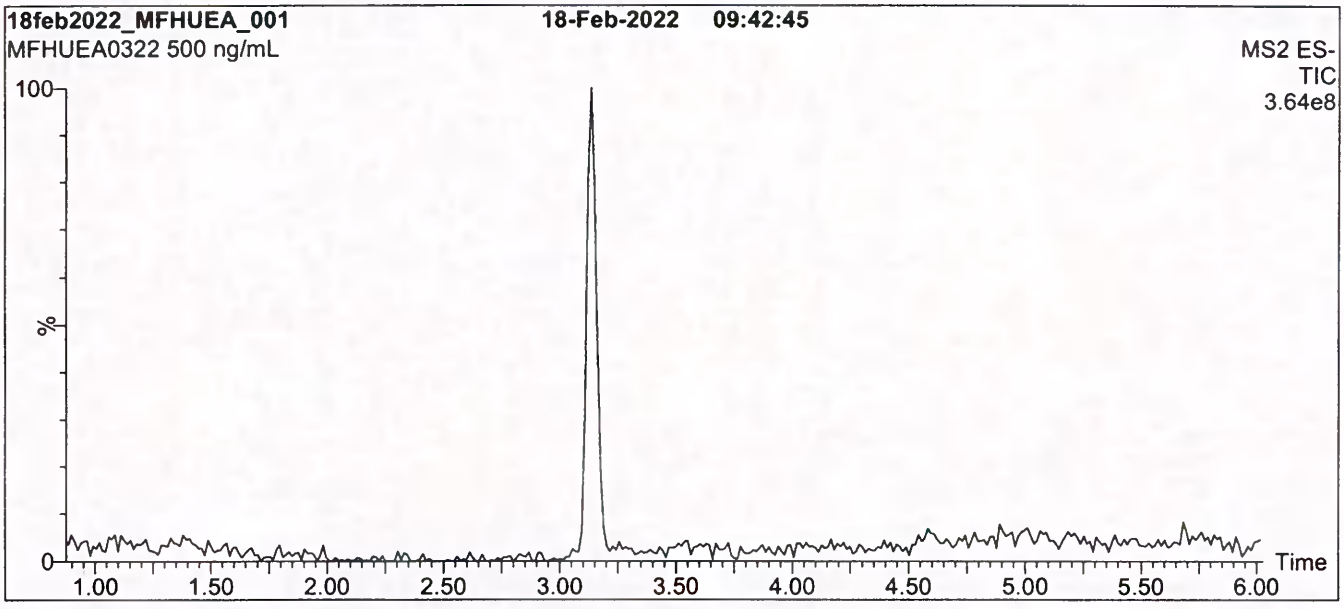
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

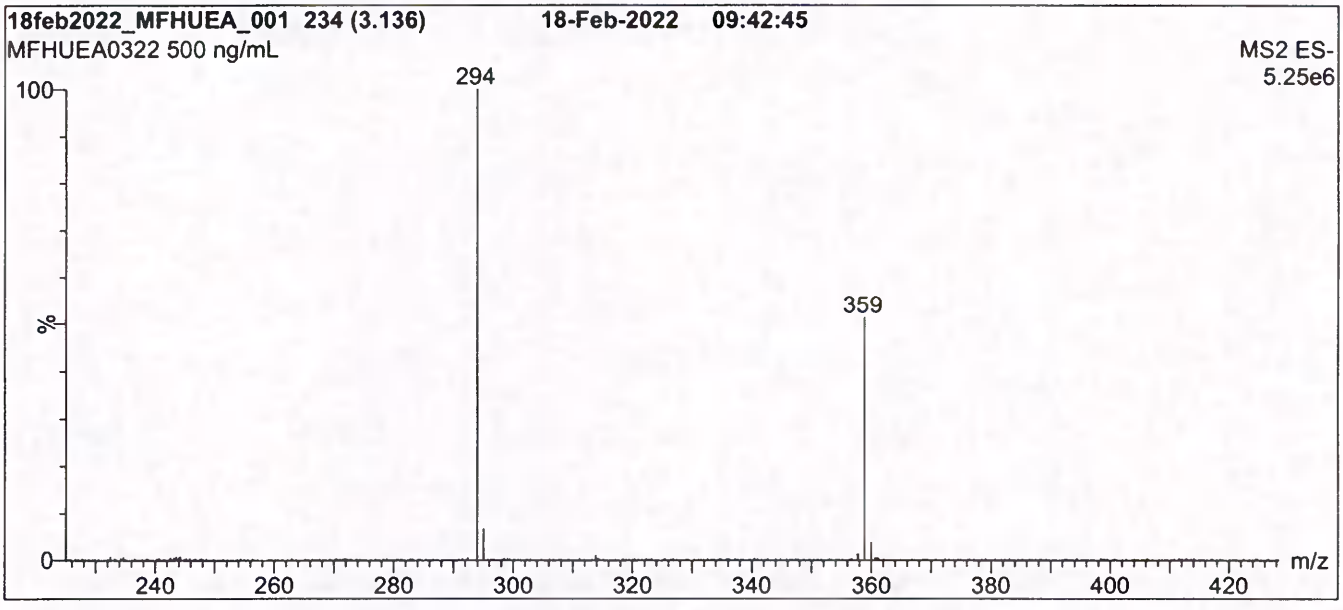
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **MFHUEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

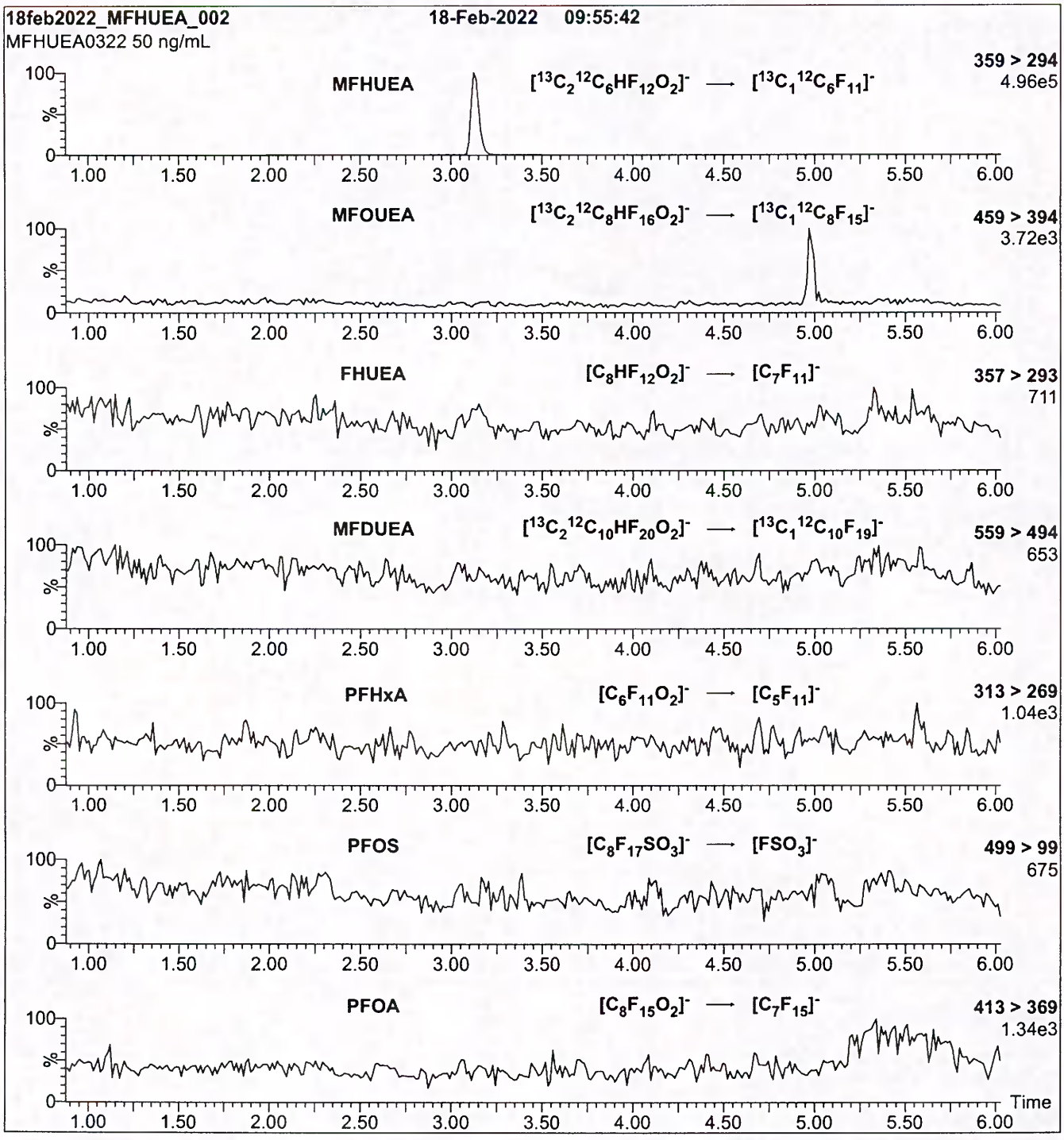
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MFHUEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFHUEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.22e-3
Collision Energy (eV) = 14

Reagent

PFC_ST_01468

WELLINGTON LABORATORIES

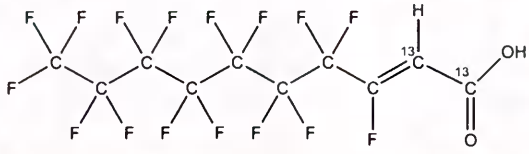
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFOUEA
COMPOUND: 2H-Perfluoro-2-(1,2-$^{13}C_2$)decenoic acid

LOT NUMBER: MFOUEA1121

STRUCTURE:

CAS #: 872398-79-3





410-2460347

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_2F_{16}O_2$	**MOLECULAR WEIGHT:**	460.08
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Anhydrous Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	12/07/2021		
EXPIRY DATE: (mm/dd/yyyy)	12/07/2023		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-($1,2\text{-}^{13}C_2$)decenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/07/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

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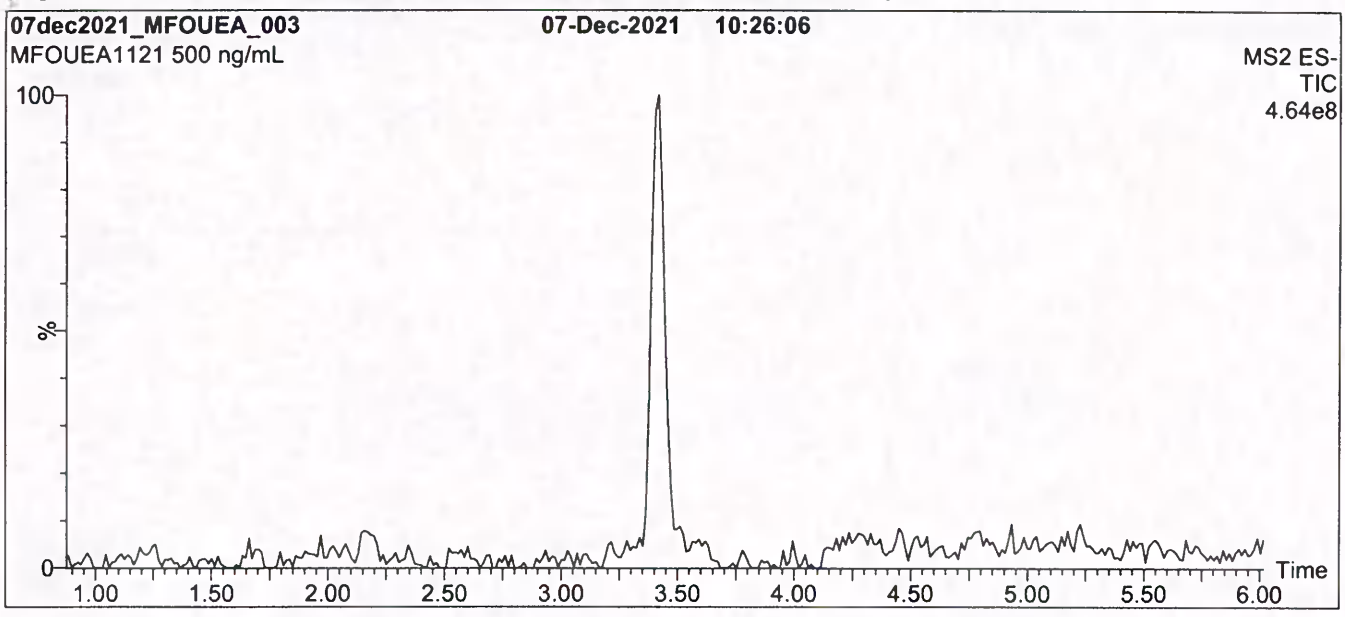
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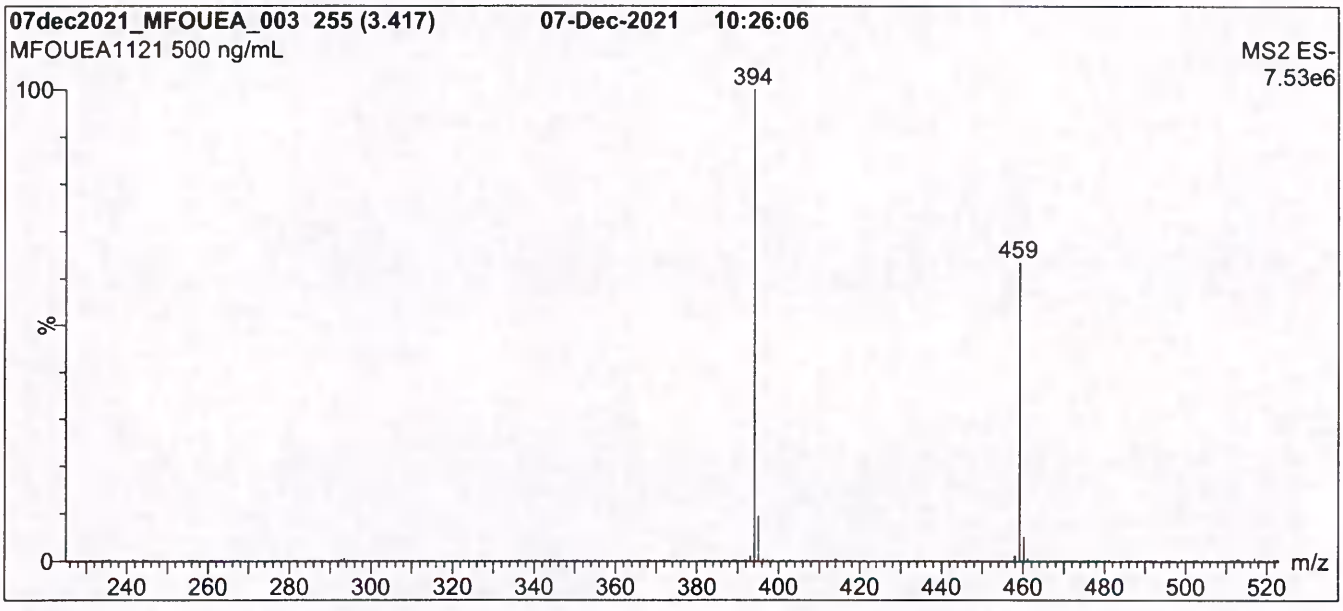
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **MFOUEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

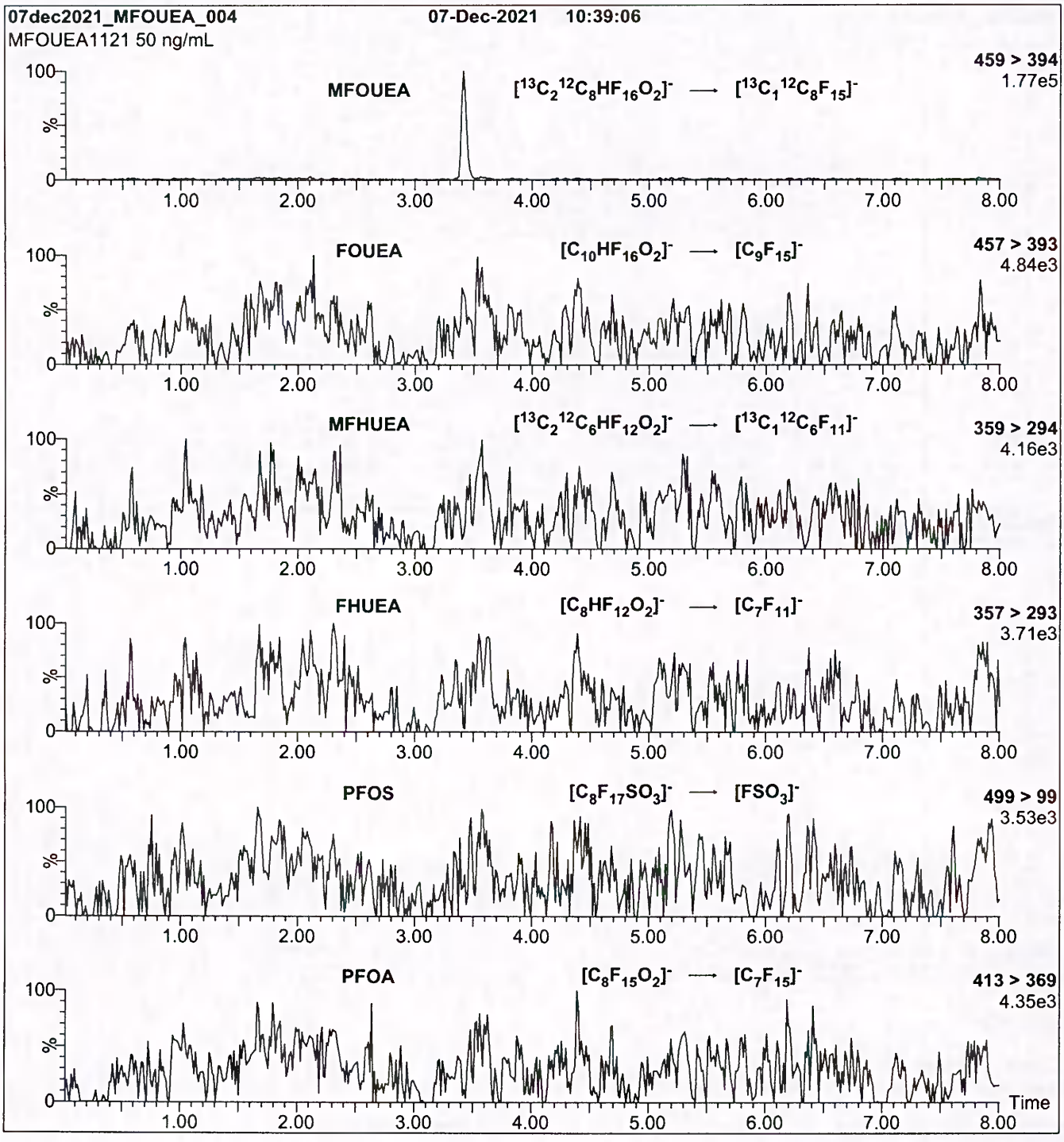
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MFOUEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFOUEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 10

Reagent

PFC_ST_01469

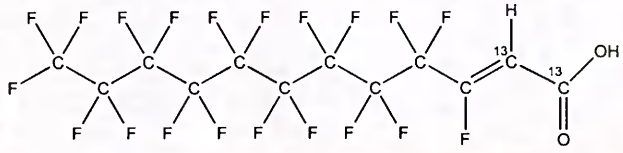
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MFDUEA
LOT NUMBER: MFDUEA1221
COMPOUND: 2H-Perfluoro-2-(1,2-$^{13}C_2$)dodecenoic acid

STRUCTURE:

CAS #: 872398-80-6



410-2460348

MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_{10}H_2F_{20}O_2$	**MOLECULAR WEIGHT:**	560.10
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Anhydrous Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/22/2021		
EXPIRY DATE: (mm/dd/yyyy)	11/22/2023		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-2-($1,2\text{-}^{13}C_2$)dodecenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.
- Contains ~0.1% of 2H-Perfluoro-2-dodecenoic acid (FDUEA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/22/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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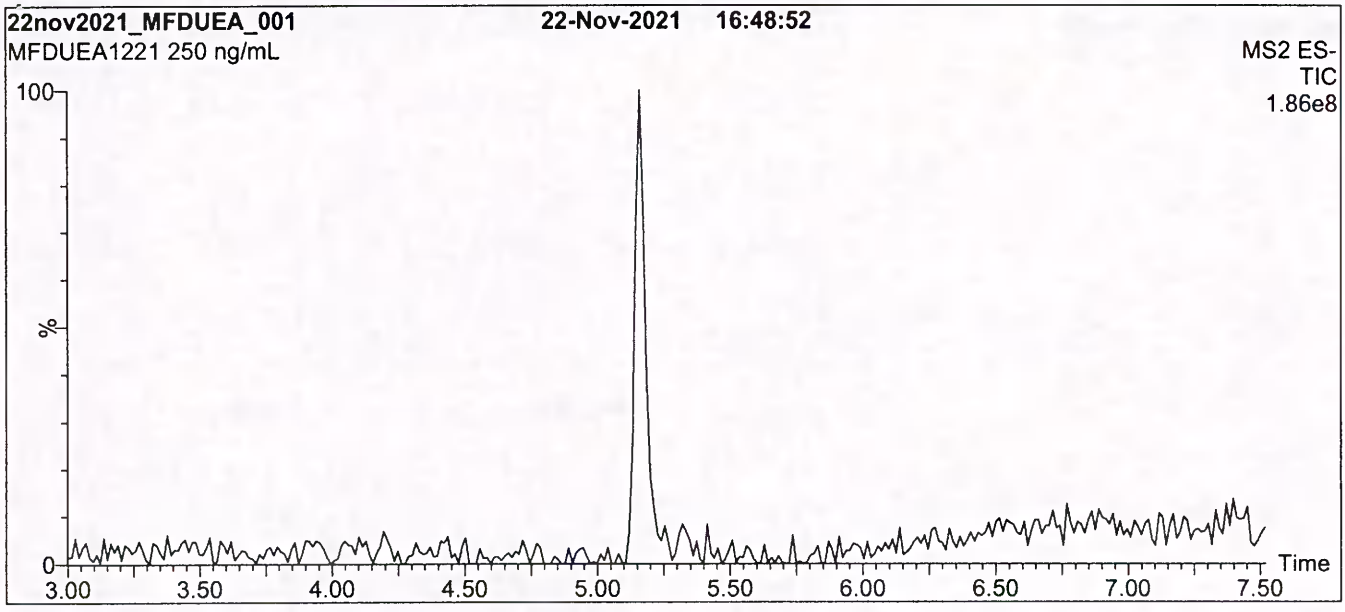
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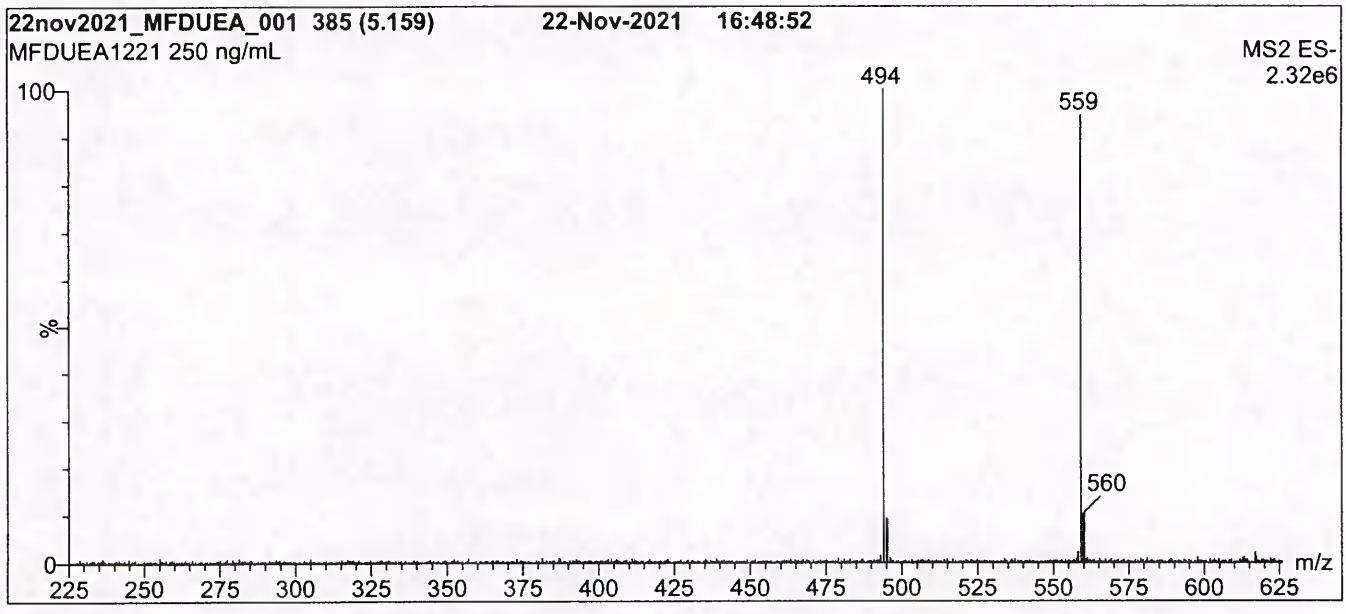
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED REFERENCE MATERIAL PRODUCER

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Figure 1: **MFDUEA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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Waters Xevo TQ-S micro MS

Chromatographic Conditions:

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1.7 µm, 2.1 x 100 mm

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Start: 40% H_2O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

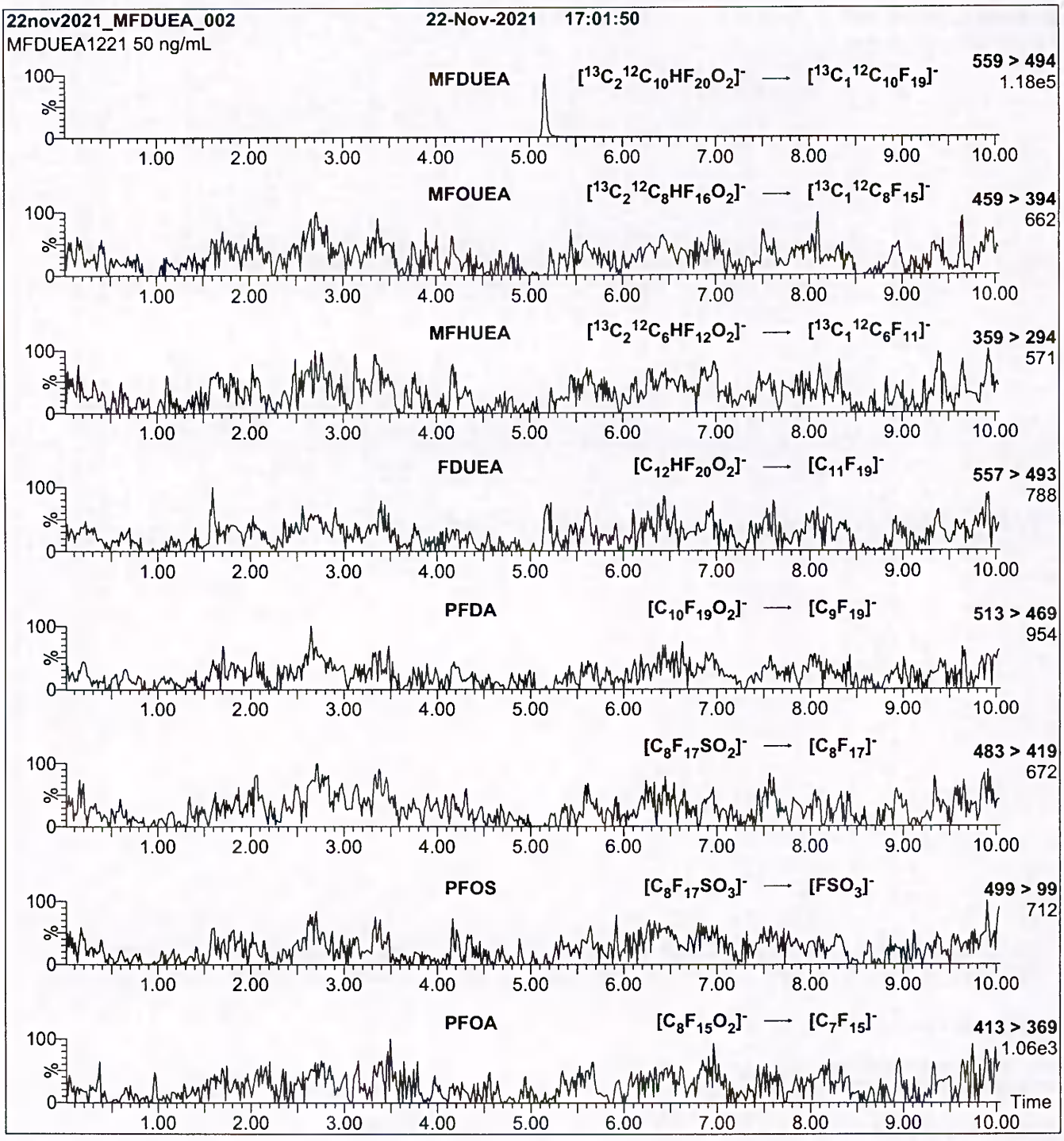
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **MFDUEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFDUEA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 14

Sample Container Check Report

Client: EA Engineering, Science, and Technology
Job ID: 410-78012-1
Project/Site: USACE ANG SI Rochester AASF #2

Sample Container Checks and Verifications

Lab Sample ID: 410-78012-1 **Client Sample ID: AOI01-04-GW**

Bottle Code	Check Performed	By Employee	Date	Check Result	Expected Result	Adjusted Date	Reagent Lot #	Reagent Expires	Re-check Result	Re-check Date
A	pH Check	T7ZN	03/30/2022	7	5-9	N/A	N/A	N/A	N/A	N/A
A	Chlorine Check	T7ZN	03/30/2022	N	N/A	N/A	N/A	N/A	N/A	N/A
B	pH Check	T7ZN	03/30/2022	7	5-9	N/A	N/A	N/A	N/A	N/A
B	Chlorine Check	T7ZN	03/30/2022	N	N/A	N/A	N/A	N/A	N/A	N/A

PFC_IDA_D5.3

PFAS for QSM 5.3, Table B-15

FORM II
PFAS SURROGATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	C3PFBS #	M242FTS #	13C5PHA #	C3PFHS #	C4PFHA #	M262FTS #
AOI01-04-GW	410-78012-1	49 *5-	106	107	153 *5+	115	109	114	122
AOI01-04-GW RE	410-78012-1 RE	68	122	131	228 *5+	131	137	135	180 *5+
	MB 410-239491/1-A	133	146	142	187 *5+	147	146	150	179 *5+
	MB 410-241437/1-A	111	111	105	130	115	115	119	121
	LCS 410-239491/2-A	133	140	137	168 *5+	143	141	137	163 *5+
	LCS 410-241437/3-A	110	106	105	123	110	106	106	115
	LCSD 410-241437/4-A	107	106	103	126	115	107	110	120

	QC LIMITS
PFBA = 13C4 PFBA	50-150
PFPeA = 13C5 PFPeA	50-150
C3PFBS = 13C3 PFBS	50-150
M242FTS = M2-4:2 FTS	50-150
13C5PHA = 13C5 PFHxA	50-150
C3PFHS = 13C3 PFHxS	50-150
C4PFHA = 13C4 PFHpA	50-150
M262FTS = M2-6:2 FTS	50-150

Column to be used to flag recovery values

FORM II EPA 537(Mod)

FORM II
PFAS SURROGATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	C8PFOA #	C8PFOS #	C9PFNA #	C6PFDA #	M282FTS #	PFOSA #	d3NMFOS #	13C7PUA #
AOI01-04-GW	410-78012-1	102	91	93	85	86	66	71	62
AOI01-04-GW RE	410-78012-1 RE	131	112	116	111	140	93	104	90
	MB 410-239491/1-A	145	142	145	154 *5+	179 *5+	117	148	146
	MB 410-241437/1-A	113	111	109	117	116	94	111	107
	LCS 410-239491/2-A	139	137	140	143	172 *5+	114	145	140
	LCS 410-241437/3-A	103	107	102	108	111	95	109	106
	LCSD 410-241437/4-A	107	107	105	110	113	97	109	106

	QC LIMITS
C8PFOA = 13C8 PFOA	50-150
C8PFOS = 13C8 PFOS	50-150
C9PFNA = 13C9 PFNA	50-150
C6PFDA = 13C6 PFDA	50-150
M282FTS = M2-8:2 FTS	50-150
PFOSA = 13C8 FOSA	50-150
d3NMFOS = d3-NMeFOSAA	50-150
13C7PUA = 13C7 PFUnA	50-150

Column to be used to flag recovery values

FORM II EPA 537(Mod)

FORM II
PFAS SURROGATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	d5NEFOS #	PFDoDA #	PFTDA #
AOI01-04-GW	410-78012-1	64	38 *5-	5 *5-
AOI01-04-GW RE	410-78012-1 RE	100	66	23 *5-
	MB 410-239491/1-A	154 *5+	132	117
	MB 410-241437/1-A	114	104	90
	LCS 410-239491/2-A	145	127	116
	LCS 410-241437/3-A	111	101	93
	LCSD 410-241437/4-A	111	100	95

	QC LIMITS
d5NEFOS = d5-NEtFOSAA	50-150
PFDoDA = 13C2-PFDoDA	50-150
PFTDA = 13C2 PFTeDA	50-150

Column to be used to flag recovery values

FORM II EPA 537(Mod)

FORM III
PFAS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 22APR04-04.d

Lab ID: LCS 410-239491/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorohexanoic acid	25.6	21.3	83	72-129	
Perfluoroheptanoic acid	25.6	21.7	85	72-130	
Perfluorooctanoic acid	25.6	21.9	86	71-133	
Perfluorononanoic acid	25.6	21.8	85	69-130	
Perfluorodecanoic acid	25.6	21.2	83	71-129	
Perfluorotridecanoic acid	25.6	22.7	89	65-144	
Perfluorotetradecanoic acid	25.6	21.5	84	71-132	
Perfluorobutanesulfonic acid	22.7	19.9	88	72-130	
Perfluorohexanesulfonic acid	23.3	19.3	83	68-131	
Perfluorooctanesulfonic acid	23.7	20.5	86	65-140	
NEtFOSAA	25.6	18.2	71	61-135	
NMeFOSAA	25.6	18.2	71	65-136	
M2-4:2 FTS	37.4	62.7	168	50-150	*5+
M2-8:2 FTS	38.3	65.8	172	50-150	*5+
M2-6:2 FTS	38.0	61.8	163	50-150	*5+
Perfluoropentanesulfonic acid	24.0	20.2	84	71-127	
Perfluoroheptanesulfonic acid	24.4	19.4	80	69-134	
Perfluorononanesulfonic acid	24.6	19.4	79	69-127	
Perfluorodecanesulfonic acid	24.7	19.1	77	53-142	
Perfluorooctanesulfonamide	25.6	21.3	83	67-137	
Perfluorobutanoic acid	25.6	21.0	82	73-129	
Perfluoropentanoic acid	25.6	18.1	71	72-129	*-
13C5 PFHxA	40.0	57.1	143	50-150	
13C4 PFHpA	40.0	54.8	137	50-150	
13C8 PFOA	40.0	55.7	139	50-150	
13C9 PFNA	40.0	56.1	140	50-150	
13C6 PFDA	40.0	57.3	143	50-150	
13C7 PFUnA	40.0	56.0	140	50-150	
13C2-PFDoDA	40.0	50.7	127	50-150	
13C2 PFTeDA	40.0	46.5	116	50-150	
13C3 PFBS	37.2	51.0	137	50-150	
13C3 PFHxS	37.8	53.3	141	50-150	
13C8 PFOS	38.2	52.6	137	50-150	
d3-NMeFOSAA	40.0	58.2	145	50-150	
d5-NEtFOSAA	40.0	57.9	145	50-150	
13C8 FOSA	40.0	45.5	114	50-150	
13C4 PFBA	40.0	53.1	133	50-150	
13C5 PFPeA	40.0	55.8	140	50-150	
Perfluoroundecanoic acid	25.6	21.0	82	69-133	
Perfluorododecanoic acid	25.6	22.8	89	72-134	

Column to be used to flag recovery and RPD values

FORM III EPA 537(Mod)

FORM III
PFAS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 22APR04-04.d

Lab ID: LCS 410-239491/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
6:2 Fluorotelomer sulfonic acid	24.3	18.0	74	64-140	
8:2 Fluorotelomer sulfonic acid	24.5	16.9	69	67-138	
4:2 Fluorotelomer sulfonic acid	23.9	16.5	69	63-143	

Column to be used to flag recovery and RPD values

FORM III EPA 537(Mod)

FORM III
PFAS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 22APR07-66.d

Lab ID: LCS 410-241437/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorohexanoic acid	25.6	28.2	110	72-129	
Perfluoroheptanoic acid	25.6	27.1	106	72-130	
Perfluorooctanoic acid	25.6	28.1	110	71-133	
Perfluorononanoic acid	25.6	27.5	107	69-130	
Perfluorodecanoic acid	25.6	28.1	110	71-129	
Perfluorotridecanoic acid	25.6	26.7	104	65-144	
Perfluorotetradecanoic acid	25.6	26.4	103	71-132	
Perfluorobutanesulfonic acid	22.7	24.9	110	72-130	
Perfluorohexanesulfonic acid	23.3	25.0	107	68-131	
Perfluorooctanesulfonic acid	23.7	25.2	106	65-140	
NEtFOSAA	25.6	24.4	95	61-135	
NMeFOSAA	25.6	24.5	96	65-136	
M2-4:2 FTS	37.4	45.8	123	50-150	
M2-8:2 FTS	38.3	42.5	111	50-150	
M2-6:2 FTS	38.0	43.6	115	50-150	
Perfluoropentanesulfonic acid	24.0	25.5	106	71-127	
Perfluoroheptanesulfonic acid	24.4	24.3	100	69-134	
Perfluorononanesulfonic acid	24.6	25.0	102	69-127	
Perfluorodecanesulfonic acid	24.7	24.3	98	53-142	
Perfluorooctanesulfonamide	25.6	27.2	106	67-137	
Perfluorobutanoic acid	25.6	27.0	105	73-129	
Perfluoropentanoic acid	25.6	23.2	91	72-129	
13C5 PFHxA	40.0	44.1	110	50-150	
13C4 PFHpA	40.0	42.4	106	50-150	
13C8 PFOA	40.0	41.2	103	50-150	
13C9 PFNA	40.0	41.0	102	50-150	
13C6 PFDA	40.0	43.1	108	50-150	
13C7 PFUnA	40.0	42.5	106	50-150	
13C2-PFDoDA	40.0	40.5	101	50-150	
13C2 PFTeDA	40.0	37.0	93	50-150	
13C3 PFBS	37.2	39.2	105	50-150	
13C3 PFHxS	37.8	40.2	106	50-150	
13C8 PFOS	38.2	40.9	107	50-150	
d3-NMeFOSAA	40.0	43.5	109	50-150	
d5-NEtFOSAA	40.0	44.5	111	50-150	
13C8 FOSA	40.0	37.9	95	50-150	
13C4 PFBA	40.0	44.1	110	50-150	
13C5 PFPeA	40.0	42.4	106	50-150	
Perfluoroundecanoic acid	25.6	28.5	111	69-133	
Perfluorododecanoic acid	25.6	27.6	108	72-134	

Column to be used to flag recovery and RPD values

FORM III EPA 537(Mod)

FORM III
PFAS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 22APR07-66.d

Lab ID: LCS 410-241437/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
6:2 Fluorotelomer sulfonic acid	24.3	23.1	95	64-140	
8:2 Fluorotelomer sulfonic acid	24.5	23.8	97	67-138	
4:2 Fluorotelomer sulfonic acid	23.9	23.0	96	63-143	

Column to be used to flag recovery and RPD values

FORM III EPA 537(Mod)

FORM III
PFAS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 22APR07-67.d

Lab ID: LCSD 410-241437/4-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorohexanoic acid	25.6	27.5	108	2	30	72-129	
Perfluoroheptanoic acid	25.6	27.5	107	1	30	72-130	
Perfluorooctanoic acid	25.6	27.5	107	2	30	71-133	
Perfluorononanoic acid	25.6	28.5	111	4	30	69-130	
Perfluorodecanoic acid	25.6	26.3	103	7	30	71-129	
Perfluorotridecanoic acid	25.6	27.5	107	3	30	65-144	
Perfluorotetradecanoic acid	25.6	26.3	103	0	30	71-132	
Perfluorobutanesulfonic acid	22.7	25.1	111	1	30	72-130	
Perfluorohexanesulfonic acid	23.3	25.8	110	3	30	68-131	
Perfluorooctanesulfonic acid	23.7	26.4	111	5	30	65-140	
NEtFOSAA	25.6	24.6	96	1	30	61-135	
NMeFOSAA	25.6	24.5	96	0	30	65-136	
M2-4:2 FTS	37.4	47.3	126			50-150	
M2-8:2 FTS	38.3	43.2	113			50-150	
M2-6:2 FTS	38.0	45.7	120			50-150	
Perfluoropentanesulfonic acid	24.0	26.2	109	3	30	71-127	
Perfluoroheptanesulfonic acid	24.4	25.2	103	3	30	69-134	
Perfluorononanesulfonic acid	24.6	25.3	103	1	30	69-127	
Perfluorodecanesulfonic acid	24.7	24.2	98	0	30	53-142	
Perfluorooctanesulfonamide	25.6	26.3	103	4	30	67-137	
Perfluorobutanoic acid	25.6	27.9	109	3	30	73-129	
Perfluoropentanoic acid	25.6	23.7	93	2	30	72-129	
13C5 PFHxA	40.0	45.9	115			50-150	
13C4 PFHpA	40.0	43.9	110			50-150	
13C8 PFOA	40.0	42.9	107			50-150	
13C9 PFNA	40.0	41.9	105			50-150	
13C6 PFDA	40.0	44.2	110			50-150	
13C7 PFUnA	40.0	42.6	106			50-150	
13C2-PFDoDA	40.0	39.9	100			50-150	
13C2 PFTeDA	40.0	38.2	95			50-150	
13C3 PFBS	37.2	38.5	103			50-150	
13C3 PFHxS	37.8	40.4	107			50-150	
13C8 PFOS	38.2	40.9	107			50-150	
d3-NMeFOSAA	40.0	43.4	109			50-150	
d5-NEtFOSAA	40.0	44.3	111			50-150	
13C8 FOSA	40.0	38.8	97			50-150	
13C4 PFBA	40.0	42.8	107			50-150	
13C5 PFPeA	40.0	42.6	106			50-150	
Perfluoroundecanoic acid	25.6	26.9	105	6	30	69-133	
Perfluorododecanoic acid	25.6	28.1	110	2	30	72-134	

Column to be used to flag recovery and RPD values

FORM III EPA 537(Mod)

FORM III
PFAS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 22APR07-67.d

Lab ID: LCSD 410-241437/4-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
6:2 Fluorotelomer sulfonic acid	24.3	22.5	93	2	30	64-140	
8:2 Fluorotelomer sulfonic acid	24.5	23.9	97	1	30	67-138	
4:2 Fluorotelomer sulfonic acid	23.9	21.7	91	6	30	63-143	

Column to be used to flag recovery and RPD values

FORM III EPA 537(Mod)

FORM IV
PFAS METHOD BLANK SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Lab File ID: 22APR04-03.d Lab Sample ID: MB 410-239491/1-A

Matrix: Water Date Extracted: 03/31/2022 06:58

Instrument ID: 29347 Date Analyzed: 04/04/2022 07:54

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 410-239491/2-A	22APR04-04.d	04/04/2022 08:05
AOI01-04-GW RE	410-78012-1 RE	22APR04-24.d	04/04/2022 11:37

FORM IV
PFAS METHOD BLANK SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-78012-1

SDG No.:

Lab File ID: 22APR07-64.d Lab Sample ID: MB 410-241437/1-A

Matrix: Water Date Extracted: 04/06/2022 07:05

Instrument ID: 29347 Date Analyzed: 04/07/2022 17:49

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 410-241437/3-A	22APR07-66.d	04/07/2022 18:10
	LCSD 410-241437/4-A	22APR07-67.d	04/07/2022 18:21
AOI01-04-GW	410-78012-1	22APR07-69.d	04/07/2022 18:42

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		PFBA		PFPeA		C3PFBS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		9028031	3.66	7656785	4.18	9099755	4.23
UPPER LIMIT		13542047	4.06	11485178	4.58	13649633	4.63
LOWER LIMIT		4514016	3.26	3828393	3.78	4549878	3.83
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		9028031	3.66	7656785	4.18	9099755	4.23
ICB 410-240108/8		12608134	3.66	10182118	4.18	12215410	4.24
ICV 410-240108/9		9314054	3.66	7675633	4.18	9193575	4.24
CCVIS 410-240466/1		8549798	3.67	7456670	4.19	8972483	4.24

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		M242FTS		13C5PHA		HFPODA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		403246	4.54	9415459	4.58	1129152	4.71
UPPER LIMIT		604869	4.94	14123189	4.98	1693728	5.11
LOWER LIMIT		201623	4.14	4707730	4.18	564576	4.31
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		403246	4.54	9415459	4.58	1129152	4.71
ICB 410-240108/8		593354	4.54	12828009	4.59	1687070	4.71
ICV 410-240108/9		426009	4.54	9459769	4.58	1157097	4.71
CCVIS 410-240466/1		413540	4.56	9275071	4.60	1152539	4.73

M242FTS = M2-4:2 FTS
13C5PHA = 13C5 PFHxA
HFPODA = 13C3 HFPO-DA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		C3PFHS		C4PFHA		M262FTS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		8747274	4.98	9854716	4.98	258903	5.32
UPPER LIMIT		13120911	5.38	14782074	5.38	388355	5.72
LOWER LIMIT		4373637	4.58	4927358	4.58	129452	4.92
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		8747274	4.98	9854716	4.98	258903	5.32
ICB 410-240108/8		11521388	4.98	13596933	4.98	401260	5.33
ICV 410-240108/9		8787771	4.98	9776688	4.98	269422	5.33
CCVIS 410-240466/1		8310634	4.99	9923659	4.99	279495	5.34

C3PFHS = 13C3 PFHxS
C4PFHA = 13C4 PFHpA
M262FTS = M2-6:2 FTS

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		C8PFOA		C8PFOS		C9PFNA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		10569984	5.35	8135428	5.68	10500969	5.69
UPPER LIMIT		15854976	5.75	12203142	6.08	15751454	6.09
LOWER LIMIT		5284992	4.95	4067714	5.28	5250485	5.29
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		10569984	5.35	8135428	5.68	10500969	5.69
ICB 410-240108/8		14291556	5.35	11041025	5.68	14428887	5.69
ICV 410-240108/9		10584130	5.35	8253491	5.68	10810124	5.69
CCVIS 410-240466/1		10200043	5.36	7860342	5.69	10530267	5.70

C8PFOA = 13C8 PFOA
C8PFOS = 13C8 PFOS
C9PFNA = 13C9 PFNA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		M282FTS		C6PFDA		PFOSA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		232822	6.01	11328908	6.01	13374586	6.11
UPPER LIMIT		349233	6.41	16993362	6.41	20061879	6.51
LOWER LIMIT		116411	5.61	5664454	5.61	6687293	5.71
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		232822	6.01	11328908	6.01	13374586	6.11
ICB 410-240108/8		341640	6.01	16010864	6.01	19292639	6.11
ICV 410-240108/9		257258	6.01	11945227	6.01	14468977	6.11
CCVIS 410-240466/1		253208	6.01	11380730	6.01	13282158	6.12

C6PFDA = 13C6 PFDA
M282FTS = M2-8:2 FTS
PFOSA = 13C8 FOSA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		d3NMFOS		13C7PUA		d5NEFOS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		2919068	6.15	11998507	6.28	2318148	6.30
UPPER LIMIT		4378602	6.55	17997761	6.68	3477222	6.70
LOWER LIMIT		1459534	5.75	5999254	5.88	1159074	5.90
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		2919068	6.15	11998507	6.28	2318148	6.30
ICB 410-240108/8		4675112	6.16	16569512	6.28	3631233	6.30
ICV 410-240108/9		3111444	6.16	12247554	6.28	2415264	6.30
CCVIS 410-240466/1		2937246	6.16	11577229	6.29	2358002	6.31

d3NMFOS = d3-NMeFOSAA
13C7PUA = 13C7 PFUnA
d5NEFOS = d5-NEtFOSAA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		PFDoDA		NMFM		d3NMFSA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		12892696	6.52	1407476	6.56	1712931	6.57
UPPER LIMIT		19339044	6.92	2111214	6.96	2569397	6.97
LOWER LIMIT		6446348	6.12	703738	6.16	856466	6.17
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		12892696	6.52	1407476	6.56	1712931	6.57
ICB 410-240108/8		16430535	6.53	2146260	6.56	2474679	6.58
ICV 410-240108/9		12731286	6.52	1509132	6.56	1877645	6.57
CCVIS 410-240466/1		12166873	6.53	1409125	6.56	1719564	6.58

PFDoDA = 13C2-PFDoDA
NMFM = d7-N-MeFOSE-M
d3NMFSA = d3-NMePFOSA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-240108/3 Date Analyzed: 04/03/2022 17:33

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR03DCAL-43.d Heated Purge: (Y/N) N

Calibration ID: 36762

		NEFM		d5NPFSA		PFTDA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		1711980	6.72	1597800	6.74	12655384	6.92
UPPER LIMIT		2567970	7.12	2396700	7.14	18983076	7.32
LOWER LIMIT		855990	6.32	798900	6.34	6327692	6.52
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-240108/3		1711980	6.72	1597800	6.74	12655384	6.92
ICB 410-240108/8		2454460	6.72	2313363	6.75	16546958	6.93
ICV 410-240108/9		1810258	6.72	1703621	6.75	12757371	6.92
CCVIS 410-240466/1		1679162	6.72	1578124	6.74	11432072	6.93

NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
PFTDA = 13C2 PFTeDA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		PFBA		PFPeA		C3PFBS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		8549798	3.67	7456670	4.19	8972483	4.24
UPPER LIMIT		12824697	4.07	11185005	4.59	13458725	4.64
LOWER LIMIT		4274899	3.27	3728335	3.79	4486242	3.84
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		8549798	3.67	7456670	4.19	8972483	4.24
CCB 410-240466/2		12417000	3.67	10206343	4.18	11915779	4.24
MB 410-239491/1-A		11569419	3.67	10588052	4.19	12421899	4.24
LCS 410-239491/2-A		11552077	3.66	10142371	4.19	11975856	4.24
CCV 410-240466/15		9009236	3.66	7498798	4.18	8937715	4.23
410-78012-1 RE	AOI01-04-GW RE	5920000	3.66	8879099	4.18	11416574	4.23
CCV 410-240466/26		8887158	3.66	7417654	4.18	9014176	4.23

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		M242FTS		13C5PHA		HFPODA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		413540	4.56	9275071	4.60	1152539	4.73
UPPER LIMIT		620310	4.96	13912607	5.00	1728809	5.13
LOWER LIMIT		206770	4.16	4637536	4.20	576270	4.33
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		413540	4.56	9275071	4.60	1152539	4.73
CCB 410-240466/2		612303	4.56	12694238	4.59	1685478	4.72
MB 410-239491/1-A		708992	4.56	13020331	4.60	1566185	4.72
LCS 410-239491/2-A		635838	4.55	12646944	4.59	1685739	4.73
CCV 410-240466/15		422751	4.55	9426510	4.59	1044052	4.72
410-78012-1 RE	AOI01-04-GW RE	862557	4.55	11653208	4.59		
CCV 410-240466/26		396557	4.55	9142494	4.59	1080870	4.72

M242FTS = M2-4:2 FTS
13C5PHA = 13C5 PFHxA
HFPODA = 13C3 HFPO-DA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		C4PFHA		C3PFHS		M262FTS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		9923659	4.99	8310634	4.99	279495	5.34
UPPER LIMIT		14885489	5.39	12465951	5.39	419243	5.74
LOWER LIMIT		4961830	4.59	4155317	4.59	139748	4.94
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		9923659	4.99	8310634	4.99	279495	5.34
CCB 410-240466/2		13711628	4.98	11394223	4.99	412452	5.34
MB 410-239491/1-A		13315287	4.99	11597691	4.99	435467	5.34
LCS 410-239491/2-A		12166105	4.99	11170916	4.99	394609	5.34
CCV 410-240466/15		9944080	4.98	8953812	4.98	277019	5.33
410-78012-1 RE	AOI01-04-GW RE	12017476	4.98	10850452	4.98	436884	5.33
CCV 410-240466/26		9426068	4.98	8230599	4.99	259092	5.33

C3PFHS = 13C3 PFHxS
C4PFHA = 13C4 PFHpA
M262FTS = M2-6:2 FTS

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		C8PFOA		C8PFOS		C9PFNA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		10200043	5.36	7860342	5.69	10530267	5.70
UPPER LIMIT		15300065	5.76	11790513	6.09	15795401	6.10
LOWER LIMIT		5100022	4.96	3930171	5.29	5265134	5.30
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		10200043	5.36	7860342	5.69	10530267	5.70
CCB 410-240466/2		14570007	5.36	11430428	5.69	14863249	5.70
MB 410-239491/1-A		14109964	5.36	10966048	5.68	14704850	5.70
LCS 410-239491/2-A		13600807	5.36	10644095	5.69	14269278	5.70
CCV 410-240466/15		10443894	5.34	8069625	5.68	10644658	5.69
410-78012-1 RE	AOI01-04-GW RE	12805766	5.35	8655244	5.67	11830761	5.69
CCV 410-240466/26		9769011	5.36	7735698	5.68	10161753	5.70

C8PFOA = 13C8 PFOA
C8PFOS = 13C8 PFOS
C9PFNA = 13C9 PFNA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		M282FTS		C6PFDA		PFOSA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		253208	6.01	11380730	6.01	13282158	6.12
UPPER LIMIT		379812	6.41	17071095	6.41	19923237	6.52
LOWER LIMIT		126604	5.61	5690365	5.61	6641079	5.72
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		253208	6.01	11380730	6.01	13282158	6.12
CCB 410-240466/2		362456	6.02	16864178	6.02	18963775	6.12
MB 410-239491/1-A		384624	6.01	16608697	6.01	15120608	6.11
LCS 410-239491/2-A		367965	6.01	15485191	6.01	14733778	6.11
CCV 410-240466/15		265918	6.01	11605071	6.01	13771977	6.11
410-78012-1 RE	AOI01-04-GW RE	299173	6.01	11957023	6.00	12021599	6.11
CCV 410-240466/26		234636	6.01	11051617	6.01	12883638	6.11

C6PFDA = 13C6 PFDA
M282FTS = M2-8:2 FTS
PFOSA = 13C8 FOSA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		d3NMFOS		13C7PUA		d5NEFOS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		2937246	6.16	11577229	6.29	2358002	6.31
UPPER LIMIT		4405869	6.56	17365844	6.69	3537003	6.71
LOWER LIMIT		1468623	5.76	5788615	5.89	1179001	5.91
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		2937246	6.16	11577229	6.29	2358002	6.31
CCB 410-240466/2		4717331	6.16	17066486	6.29	3722641	6.31
MB 410-239491/1-A		4179498	6.16	16447522	6.29	3377620	6.30
LCS 410-239491/2-A		4094458	6.16	15785871	6.29	3165763	6.31
CCV 410-240466/15		3095014	6.15	12196807	6.28	2322008	6.30
410-78012-1 RE	AOI01-04-GW RE	2919338	6.15	10146111	6.29	2181473	6.30
CCV 410-240466/26		3037263	6.16	11362905	6.29	2339455	6.30

d3NMFOS = d3-NMeFOSAA
13C7PUA = 13C7 PFUnA
d5NEFOS = d5-NEtFOSAA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		PFDoDA		NMFM		d3NMFSA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		12166873	6.53	1409125	6.56	1719564	6.58
UPPER LIMIT		18250310	6.93	2113688	6.96	2579346	6.98
LOWER LIMIT		6083437	6.13	704563	6.16	859782	6.18
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		12166873	6.53	1409125	6.56	1719564	6.58
CCB 410-240466/2		16912164	6.53	2179713	6.56	2478117	6.57
MB 410-239491/1-A		15794311	6.53	1677280	6.56	1774305	6.57
LCS 410-239491/2-A		15143656	6.53	1583720	6.56	1731834	6.58
CCV 410-240466/15		12670798	6.52	1393590	6.55	1766961	6.57
410-78012-1 RE	AOI01-04-GW RE	7840557	6.53				
CCV 410-240466/26		11946597	6.53	1323738	6.56	1700651	6.57

PFDoDA = 13C2-PFDoDA
NMFM = d7-N-MeFOSE-M
d3NMFSA = d3-NMePFOSA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: CCVIS 410-240466/1 Date Analyzed: 04/04/2022 07:32

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR04-01.d Heated Purge: (Y/N) N

Calibration ID: 36762

		NEFM		d5NPFSA		PFTDA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1679162	6.72	1578124	6.74	11432072	6.93
UPPER LIMIT		2518743	7.12	2367186	7.14	17148108	7.33
LOWER LIMIT		839581	6.32	789062	6.34	5716036	6.53
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 410-240466/1		1679162	6.72	1578124	6.74	11432072	6.93
CCB 410-240466/2		2412958	6.72	2312247	6.74	15769437	6.93
MB 410-239491/1-A		1883496	6.71	1599441	6.74	14099232	6.93
LCS 410-239491/2-A		1856260	6.72	1665635	6.75	14020888	6.93
CCV 410-240466/15		1634752	6.71	1555190	6.74	12364849	6.92
410-78012-1 RE	AOI01-04-GW RE					2807011	6.93
CCV 410-240466/26		1621109	6.72	1541609	6.74	12163127	6.93

NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
PFTDA = 13C2 PFTeDA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		PFBA		PFPeA		C3PFBS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		8960747	3.66	7474328	4.18	9104139	4.23
UPPER LIMIT		13441121	4.06	11211492	4.58	13656209	4.63
LOWER LIMIT		4480374	3.26	3737164	3.78	4552070	3.83
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		8960747	3.66	7474328	4.18	9104139	4.23
ICB 410-242022/8		7836356	3.66	6683024	4.18	8127982	4.24
ICV 410-242022/9		8525073	3.66	7038438	4.18	8723643	4.24
CCVIS 410-242084/1		8496635	3.66	7169506	4.18	8775243	4.23
CCB 410-242084/2		7627454	3.66	6653895	4.18	7907361	4.24
CCV 410-242084/30		8060717	3.66	6759533	4.18	8352345	4.23
MB 410-241437/1-A		8976470	3.66	7684753	4.18	9045623	4.24
LCS 410-241437/3-A		8918124	3.66	7359833	4.18	9042081	4.23
LCSD 410-241437/4-A		8662221	3.66	7386421	4.18	8872286	4.24
410-78012-1	AOI01-04-GW	3973895	3.66	7367945	4.18	9206135	4.24
CCV 410-242084/46		8364901	3.66	7057970	4.18	8575965	4.23

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
C3PFBS = 13C3 PFBS

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		M242FTS		13C5PHA		HFPODA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		437049	4.55	9010958	4.59	872757	4.71
UPPER LIMIT		655574	4.95	13516437	4.99	1309136	5.11
LOWER LIMIT		218525	4.15	4505479	4.19	436379	4.31
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		437049	4.55	9010958	4.59	872757	4.71
ICB 410-242022/8		424300	4.55	7949861	4.59	896829	4.72
ICV 410-242022/9		419491	4.54	8660255	4.58	849961	4.71
CCVIS 410-242084/1		438614	4.55	8660092	4.59	887729	4.72
CCB 410-242084/2		428355	4.55	7884346	4.59	875395	4.72
CCV 410-242084/30		394216	4.55	8039976	4.59	846259	4.72
MB 410-241437/1-A		528091	4.54	9151484	4.58	1057181	4.71
LCS 410-241437/3-A		499794	4.55	8817644	4.59	1001149	4.72
LCSD 410-241437/4-A		515426	4.55	9159515	4.59	987187	4.72
410-78012-1	AOI01-04-GW	623645	4.55	9163026	4.59		
CCV 410-242084/46		426483	4.55	8460925	4.59	955203	4.72

M242FTS = M2-4:2 FTS
13C5PHA = 13C5 PFHxA
HFPODA = 13C3 HFPO-DA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		C4PFHA		C3PFHS		M262FTS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		9244334	4.98	8516938	4.98	284350	5.33
UPPER LIMIT		13866501	5.38	12775407	5.38	426525	5.73
LOWER LIMIT		4622167	4.58	4258469	4.58	142175	4.93
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		9244334	4.98	8516938	4.98	284350	5.33
ICB 410-242022/8		8174885	4.98	7678377	4.98	284617	5.33
ICV 410-242022/9		9191261	4.98	8406764	4.98	289896	5.33
CCVIS 410-242084/1		9388332	4.99	8424044	4.99	281958	5.34
CCB 410-242084/2		8342005	4.98	7641732	4.99	297934	5.34
CCV 410-242084/30		8524706	4.98	7461588	4.99	257105	5.33
MB 410-241437/1-A		10004537	4.98	9025599	4.98	335277	5.33
LCS 410-241437/3-A		8905523	4.98	8308385	4.99	316979	5.33
LCSD 410-241437/4-A		9219968	4.98	8359055	4.98	331740	5.33
410-78012-1	AOI01-04-GW	9576907	4.98	8520672	4.98	337053	5.33
CCV 410-242084/46		8869424	4.98	8101278	4.99	272786	5.33

C4PFHA = 13C4 PFHpA
C3PFHS = 13C3 PFHxS
M262FTS = M2-6:2 FTS

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		C8PFOA		C8PFOS		C9PFNA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		9763718	5.35	7947303	5.68	10193604	5.69
UPPER LIMIT		14645577	5.75	11920955	6.08	15290406	6.09
LOWER LIMIT		4881859	4.95	3973652	5.28	5096802	5.29
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		9763718	5.35	7947303	5.68	10193604	5.69
ICB 410-242022/8		8791837	5.35	6776659	5.68	8730211	5.69
ICV 410-242022/9		9609363	5.35	7578038	5.68	9707568	5.69
CCVIS 410-242084/1		9425920	5.35	7476692	5.68	9860414	5.70
CCB 410-242084/2		9085038	5.36	6800913	5.68	8729565	5.69
CCV 410-242084/30		9138140	5.35	7116329	5.67	9025691	5.69
MB 410-241437/1-A		10320590	5.34	7945800	5.68	10199076	5.69
LCS 410-241437/3-A		9404163	5.35	7627331	5.68	9583277	5.70
LCSD 410-241437/4-A		9805290	5.35	7632267	5.68	9801455	5.69
410-78012-1	AOI01-04-GW	9313712	5.34	6522145	5.68	8675564	5.69
CCV 410-242084/46		9541182	5.34	7372976	5.68	9665769	5.69

C8PFOA = 13C8 PFOA
C8PFOS = 13C8 PFOS
C9PFNA = 13C9 PFNA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		M282FTS		C6PFDA		PFOSA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		251855	6.01	10920508	6.01	12775409	6.11
UPPER LIMIT		377783	6.41	16380762	6.41	19163114	6.51
LOWER LIMIT		125928	5.61	5460254	5.61	6387705	5.71
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		251855	6.01	10920508	6.01	12775409	6.11
ICB 410-242022/8		242166	6.01	10036570	6.01	12609303	6.11
ICV 410-242022/9		252586	6.01	10790156	6.01	13195284	6.11
CCVIS 410-242084/1		235227	6.01	10655916	6.01	12775203	6.11
CCB 410-242084/2		243859	6.01	10305747	6.01	12750573	6.11
CCV 410-242084/30		219170	6.00	10248588	6.00	11904423	6.11
MB 410-241437/1-A		270364	6.01	11811648	6.01	11687260	6.11
LCS 410-241437/3-A		257709	6.01	10904698	6.00	11775208	6.11
LCSD 410-241437/4-A		262022	6.01	11170349	6.01	12037605	6.11
410-78012-1	AOI01-04-GW	200294	6.01	8622554	6.01	8229649	6.11
CCV 410-242084/46		234693	6.01	10221525	6.01	12779425	6.11

C6PFDA = 13C6 PFDA
M282FTS = M2-8:2 FTS
PFOSA = 13C8 FOSA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		d3NMFOS		13C7PUA		d5NEFOS	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		3074251	6.16	11343158	6.28	2364784	6.30
UPPER LIMIT		4611377	6.56	17014737	6.68	3547176	6.70
LOWER LIMIT		1537126	5.76	5671579	5.88	1182392	5.90
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		3074251	6.16	11343158	6.28	2364784	6.30
ICB 410-242022/8		2977608	6.16	10195341	6.28	2442289	6.30
ICV 410-242022/9		2929243	6.16	10630114	6.28	2329996	6.30
CCVIS 410-242084/1		2915492	6.16	10771821	6.29	2219744	6.30
CCB 410-242084/2		3059700	6.16	10067796	6.29	2388730	6.30
CCV 410-242084/30		2714749	6.15	10143922	6.28	2146081	6.30
MB 410-241437/1-A		3219811	6.15	11046788	6.28	2536526	6.30
LCS 410-241437/3-A		3148028	6.15	10930401	6.29	2465530	6.30
LCSD 410-241437/4-A		3144260	6.15	10939899	6.29	2458606	6.30
410-78012-1	AOI01-04-GW	2054338	6.15	6414044	6.28	1425642	6.30
CCV 410-242084/46		2953903	6.15	10661855	6.29	2308411	6.30

d3NMFOS = d3-NMeFOSAA
13C7PUA = 13C7 PFUnA
d5NEFOS = d5-NEtFOSAA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		PFDoDA		NMFM		d3NMFSA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		11787445	6.52	1221723	6.55	1610387	6.57
UPPER LIMIT		17681168	6.92	1832585	6.95	2415581	6.97
LOWER LIMIT		5893723	6.12	610862	6.15	805194	6.17
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		11787445	6.52	1221723	6.55	1610387	6.57
ICB 410-242022/8		10037574	6.52	1200290	6.55	1589199	6.57
ICV 410-242022/9		11494943	6.52	1268319	6.55	1593954	6.57
CCVIS 410-242084/1		11067143	6.53	1219967	6.56	1593280	6.57
CCB 410-242084/2		10328936	6.53	1152973	6.56	1531609	6.58
CCV 410-242084/30		10273730	6.52	1121610	6.55	1493015	6.56
MB 410-241437/1-A		11103622	6.52	1112571	6.55	1042244	6.57
LCS 410-241437/3-A		10790549	6.53	1056590	6.55	1030545	6.57
LCSD 410-241437/4-A		10631917	6.53	1073177	6.56	1365668	6.57
410-78012-1	AOI01-04-GW	4026208	6.52				
CCV 410-242084/46		10785701	6.53	1205327	6.56	1527733	6.57

PFDoDA = 13C2-PFDoDA
NMFM = d7-N-MeFOSE-M
d3NMFSA = d3-NMePFOSA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM VIII
PFAS ISOTOPE DILUTION STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Sample No.: ICIS 410-242022/3 Date Analyzed: 04/07/2022 10:13

Instrument ID: 29347 GC Column: Gemini C18 50mm ID: 3(mm)

Lab File ID (Standard): 22APR07-21.d Heated Purge: (Y/N) N

Calibration ID: 36957

		NEFM		d5NPFSA		PFTDA	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		1486996	6.71	1415957	6.73	11488242	6.92
UPPER LIMIT		2230494	7.11	2123936	7.13	17232363	7.32
LOWER LIMIT		743498	6.31	707979	6.33	5744121	6.52
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICIS 410-242022/3		1486996	6.71	1415957	6.73	11488242	6.92
ICB 410-242022/8		1394281	6.72	1384955	6.74	10181463	6.92
ICV 410-242022/9		1452617	6.71	1459914	6.73	10914662	6.92
CCVIS 410-242084/1		1511371	6.71	1434712	6.74	11094899	6.93
CCB 410-242084/2		1392273	6.72	1397589	6.74	9824568	6.93
CCV 410-242084/30		1342368	6.71	1364347	6.74	10843710	6.92
MB 410-241437/1-A		1227030	6.71	904099	6.74	9557159	6.92
LCS 410-241437/3-A		1133173	6.71	871336	6.74	9824177	6.93
LCSD 410-241437/4-A		1231716	6.72	1239389	6.74	10124803	6.92
410-78012-1	AOI01-04-GW					512598	6.92
CCV 410-242084/46		1432943	6.71	1418967	6.74	11295335	6.92

NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
PFTDA = 13C2 PFTeDA

Column used to flag values outside QC limits

FORM VIII EPA 537(MOD)

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: AOI01-04-GW RE Lab Sample ID: 410-78012-1 RE

Matrix: Water Lab File ID: 22APR04-24.d

Analysis Method: EPA 537(Mod) Date Collected: 03/25/2022 07:05

Extraction Method: PFAS by QSM B15 Date Extracted: 03/31/2022 06:58

Sample wt/vol: 294.9(mL) Date Analyzed: 04/04/2022 11:37

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	2.3	M	1.7	0.85	0.42
375-85-9	Perfluoroheptanoic acid	0.71	J M	1.7	0.85	0.42
335-67-1	Perfluorooctanoic acid	1.0	J	1.7	0.85	0.42
375-95-1	Perfluorononanoic acid	0.85	U	1.7	0.85	0.42
335-76-2	Perfluorodecanoic acid	0.85	U	1.7	0.85	0.42
72629-94-8	Perfluorotridecanoic acid	0.85	U	1.7	0.85	0.42
376-06-7	Perfluorotetradecanoic acid	0.85	U	1.7	0.85	0.42
375-73-5	Perfluorobutanesulfonic acid	0.85	U	1.7	0.85	0.42
355-46-4	Perfluorohexanesulfonic acid	0.85	U M	1.7	0.85	0.42
1763-23-1	Perfluorooctanesulfonic acid	0.62	J	1.7	0.85	0.42
2991-50-6	NEtFOSAA	0.85	U	2.5	0.85	0.42
2355-31-9	NMeFOSAA	1.0	U	1.7	1.0	0.51
2706-91-4	Perfluoropentanesulfonic acid	0.85	U	1.7	0.85	0.42
375-92-8	Perfluoroheptanesulfonic acid	0.85	U	1.7	0.85	0.42
68259-12-1	Perfluorononanesulfonic acid	0.85	U	1.7	0.85	0.42
335-77-3	Perfluorodecanesulfonic acid	0.85	U	1.7	0.85	0.42
754-91-6	Perfluorooctanesulfonamide	0.49	J	1.7	0.85	0.42
375-22-4	Perfluorobutanoic acid	29		4.2	3.4	1.7
2706-90-3	Perfluoropentanoic acid	22	*-	1.7	0.85	0.42
2058-94-8	Perfluoroundecanoic acid	0.85	U	1.7	0.85	0.42
307-55-1	Perfluorododecanoic acid	0.85	U	1.7	0.85	0.42
27619-97-2	6:2 Fluorotelomer sulfonic acid	12		4.2	3.4	1.7
39108-34-4	8:2 Fluorotelomer sulfonic acid	1.7	U	2.5	1.7	0.85
757124-72-4	4:2 Fluorotelomer sulfonic acid	0.85	U	1.7	0.85	0.42

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: AOI01-04-GW RE Lab Sample ID: 410-78012-1 RE

Matrix: Water Lab File ID: 22APR04-24.d

Analysis Method: EPA 537(Mod) Date Collected: 03/25/2022 07:05

Extraction Method: PFAS by QSM B15 Date Extracted: 03/31/2022 06:58

Sample wt/vol: 294.9(mL) Date Analyzed: 04/04/2022 11:37

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	228	*5+	50-150
STL02280	M2-8:2 FTS	140		50-150
STL02279	M2-6:2 FTS	180	*5+	50-150
STL02577	13C5 PFHxA	131		50-150
STL01892	13C4 PFHpA	135		50-150
STL01052	13C8 PFOA	131		50-150
STL02578	13C9 PFNA	116		50-150
STL02579	13C6 PFDA	111		50-150
STL02580	13C7 PFUnA	90		50-150
STL02703	13C2-PFDoDA	66		50-150
STL02116	13C2 PFTeDA	23	*5-	50-150
STL02337	13C3 PFBS	131		50-150
STL02581	13C3 PFHxS	137		50-150
STL01054	13C8 PFOS	112		50-150
STL02118	d3-NMeFOSAA	104		50-150
STL02117	d5-NEtFOSAA	100		50-150
STL01056	13C8 FOSA	93		50-150
STL00992	13C4 PFBA	68		50-150
STL01893	13C5 PFPeA	122		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-24.d
Lims ID: 410-78012-A-1-A
Client ID: AOI01-04-GW
Sample Type: Client
Inject. Date: 04-Apr-2022 11:37:48 ALS Bottle#: 21 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 410-78012-A-1-A
Misc. Info.: Plate: 2 Rack: 1 410-0053975-024
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 04-Apr-2022 15:45:55 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1662

First Level Reviewer: matthewsl Date: 04-Apr-2022 15:42:59
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-15.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.663	3.671	-0.008	1.000	4236730	8.58			967	
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.671	-0.008		5920000	6.81		68.1	77108	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.179	4.187	-0.008	1.000	5878485	6.43			2819	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.187	-0.008		8879099	12.2		122	58458	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.239	-0.008		11416574	12.1		131	72960	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.239	-0.008	1.000	102963	0.0873	Target=2.86		24.7	
299.00 > 99.00	4.224	4.239	-0.015	0.998	38735		2.66(1.43-4.29)		62.0	
7 4:2 FTS										R
327.00 > 307.00	4.539	4.551	-0.012	0.998	3379	0.009681	Target=1.75		146	R
327.00 > 81.00	4.579	4.551	0.028	1.006	22604		0.15(0.88-2.63)		84.7	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.560	-0.011		862557	21.3		228	8942	
10 Perfluorohexanoic acid										M
313.00 > 269.00	4.588	4.590	-0.002	1.000	680754	0.6678	Target=14.52		705	M
313.00 > 119.00	4.579	4.590	-0.011	0.998	47432		14.35(7.26-21.78)		809	
D 9 13C5 PFHxA										
318.00 > 273.00	4.588	4.600	-0.012		11653208	13.1		131	255375	
11 Perfluoropentanesulfonic acid										R
349.00 > 80.00	4.608	4.618	-0.010	1.089	10442	0.009622	Target=3.05		25.5	R
349.00 > 99.00	4.608	4.618	-0.010	1.089	2219		4.71(1.53-4.58)		15.6	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluoroheptanoic acid										M
363.00 > 319.00	4.977	4.989	-0.013	1.000	241599	0.2105	Target=3.27		515	M
363.00 > 169.00	4.977	4.989	-0.013	1.000	77116		3.13(1.63-4.90)		1298	
D 17 13C4 PFHpA										
367.00 > 322.00	4.977	4.989	-0.013		12017476	13.5		135	143530	
14 Perfluorohexanesulfonic acid										M
399.00 > 80.00	4.977	4.989	-0.013	1.000	113162	0.1014	Target=3.04		4858	M
399.00 > 99.00	4.977	4.989	-0.013	1.000	39579		2.86(1.52-4.57)		6936	M
D 16 13C3 PFHxS										
402.00 > 80.00	4.977	4.989	-0.013		10850452	12.9		137	748945	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.329	5.338	-0.009		436884	17.1		180	10699	
19 6:2 FTS										
427.00 > 407.00	5.329	5.338	-0.009	1.000	818650	3.41	Target=1.67		56269	
427.00 > 81.00	5.322	5.338	-0.016	0.999	518921		1.58(0.83-2.50)		830	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.344				ND				
449.00 > 99.00		5.344								
23 Perfluorooctanoic acid										
413.00 > 369.00	5.342	5.357	-0.015	0.999	336385	0.2935	Target=2.34		13089	
413.00 > 169.00	5.348	5.357	-0.009	1.000	146987		2.29(1.17-3.51)		56612	
D 22 13C8 PFOA										
421.00 > 376.00	5.348	5.357	-0.009		12805766	13.1		131	1038476	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.681	5.685	-0.004	1.001	177871	0.1829	Target=3.61		53798	
499.00 > 99.00	5.666	5.685	-0.019	0.999	43236		4.11(1.80-5.41)		15766	
D 25 13C8 PFOS										
507.00 > 80.00	5.673	5.685	-0.012		8655244	10.7		112	473081	
26 Perfluorononanoic acid										
463.00 > 419.00	5.689	5.701	-0.012	1.000	50189	0.0498	Target=4.45		351	
463.00 > 169.00	5.689	5.701	-0.012	1.000	11419		4.40(2.22-6.67)		409	
D 27 13C9 PFNA										
472.00 > 427.00	5.689	5.701	-0.012		11830761	11.6		116	255678	
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.990				ND				
549.00 > 99.00		5.990								
33 8:2 FTS										R
527.00 > 507.00	5.995	6.014	-0.019	0.997	2530	0.0108	Target=1.99		218	R
527.00 > 81.00	6.020	6.014	0.006	1.001	3751		0.67(1.00-2.99)		32.2	
30 Perfluorodecanoic acid										R
513.00 > 469.00	6.004	6.014	-0.010	1.000	43996	0.0423	Target=9.24		416	R
513.00 > 169.00	6.004	6.014	-0.010	1.000	2687		16.37(4.62-13.86)		51.8	
D 32 13C6 PFDA										
519.00 > 474.00	6.004	6.014	-0.010		11957023	11.1		111	473880	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.012	6.014	-0.002		299173	13.4		140	8837	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.111	6.115	-0.004	1.000	175125	0.1449			2604	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 13C8 FOSA										
506.00 > 78.00	6.111	6.115	-0.004		12021599	9.29		92.9	355224	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.152	6.163	-0.011		2919338	10.4		104	597585	
36 NMeFOSAA										
570.00 > 419.00	6.167	6.171	-0.004	1.002	3257	0.0126	Target=1.81		278	
570.00 > 483.00	6.160	6.171	-0.011	1.001	1829		1.78(0.91-2.72)		4.5	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.262				ND				
599.00 > 99.00		6.262								
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.290				ND				
563.00 > 169.00		6.290								
D 40 13C7 PFUnA										
570.00 > 525.00	6.286	6.290	-0.004		10146111	9.00		90.0	453641	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.304	6.309	-0.005		2181473	9.97		99.7	298498	
42 NEtFOSAA										
584.00 > 419.00		6.309				ND				
584.00 > 526.00		6.309								
46 Perfluorododecanoic acid										R
613.00 > 569.00	5.987	6.531	-0.544	0.917	1408	0.002041	Target=6.00		10.6	R
613.00 > 169.00	5.995	6.531	-0.536	0.919	955		1.47(3.00-9.00)		25.3	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.527	6.531	-0.004		7840557	6.57		65.7	374253	
56 Perfluorotridecanoic acid										
663.00 > 619.00		6.740				ND				
663.00 > 169.00		6.740								
57 Perfluorotetradecanoic acid										
713.00 > 669.00		6.928				ND				
713.00 > 169.00		6.928								
D 58 13C2 PFTeDA										
715.00 > 670.00	6.926	6.928	-0.002		2807011	2.33		23.3	132007	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 04-Apr-2022 15:46:53 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-24.d

Injection Date: 04-Apr-2022 11:37:48 Instrument ID: 29347

Lims ID: 410-78012-A-1-A Lab Sample ID: 410-78012-1

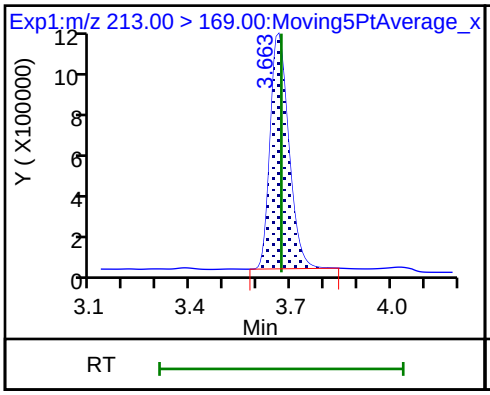
Client ID: AOI01-04-GW

Operator ID: US19_USR_INS75556 ALS Bottle#: 21 Worklist Smp#: 24

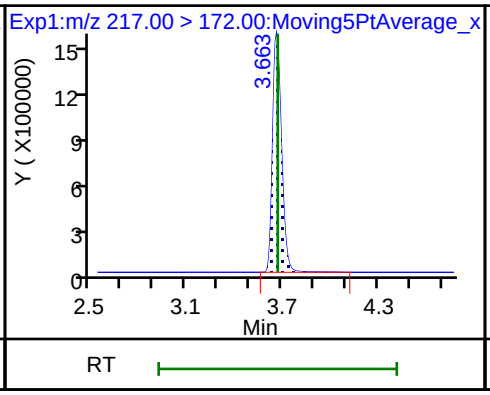
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

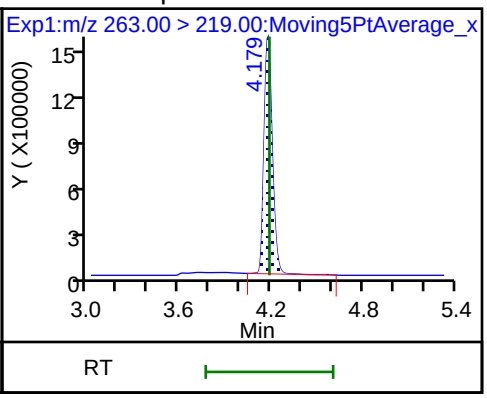
1 Perfluorobutanoic acid



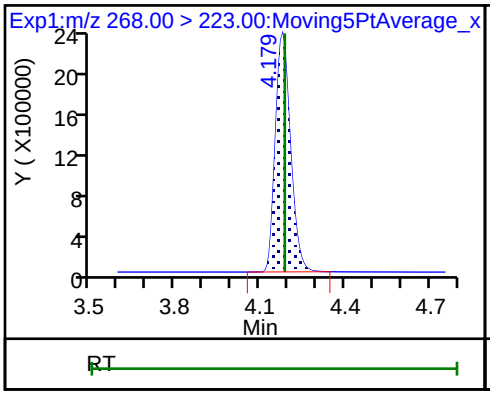
D 2 13C4 PFBA



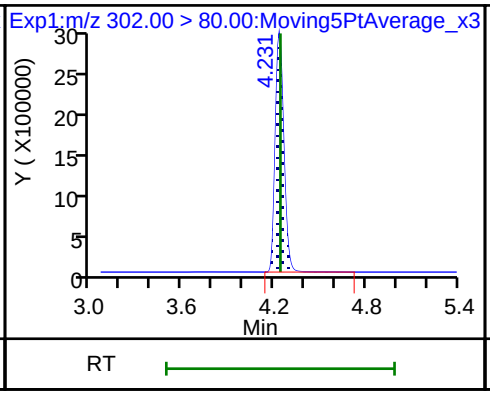
3 Perfluoropentanoic acid



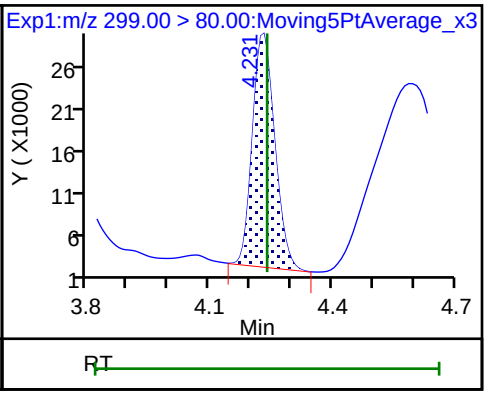
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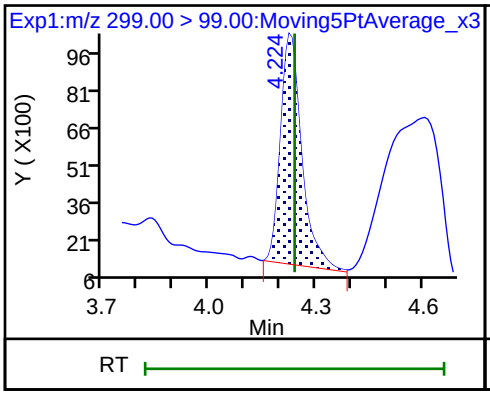
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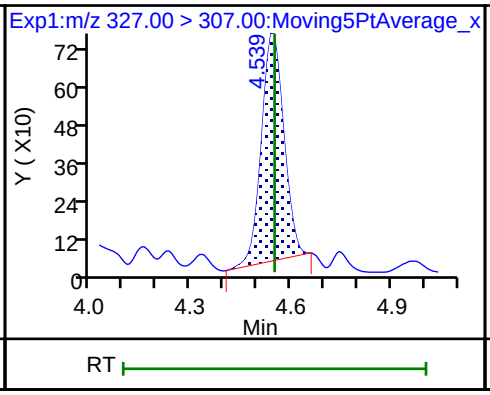
5 Perfluorobutanesulfonic acid



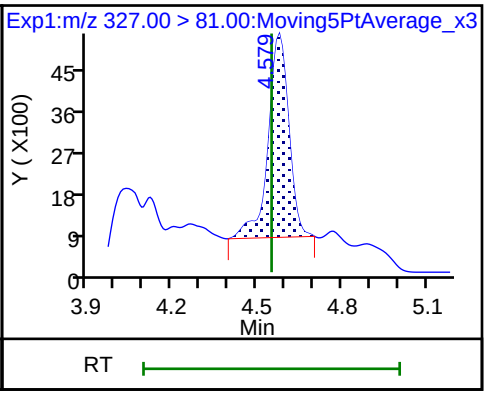
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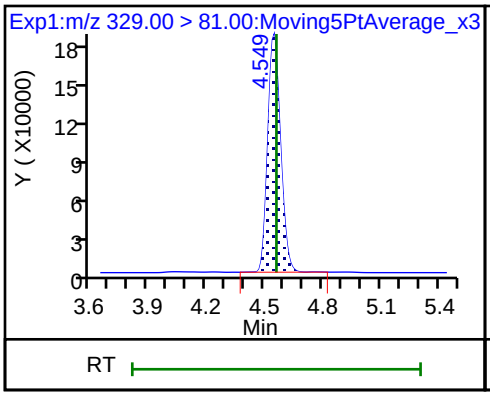
7 4:2 FTS



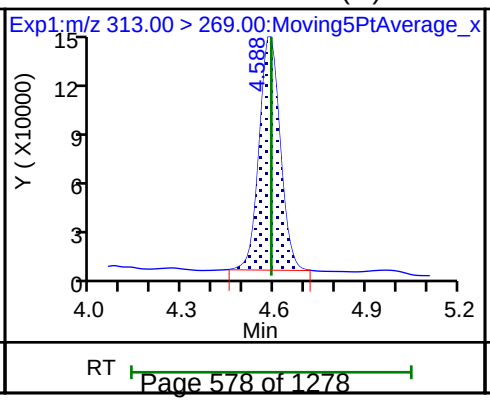
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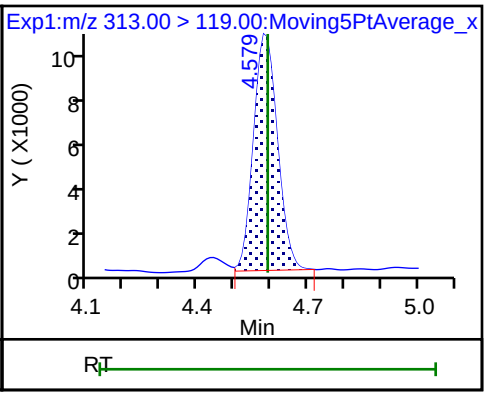
D 8 M2-4:2 FTS



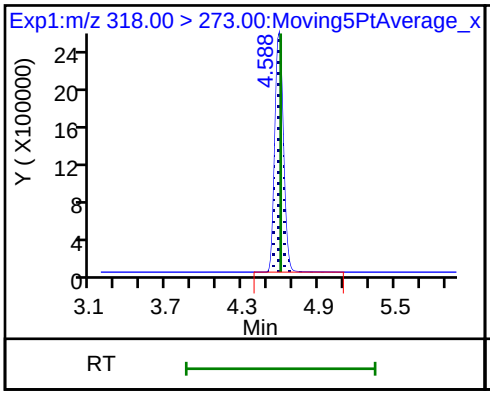
10 Perfluorohexanoic acid (M)



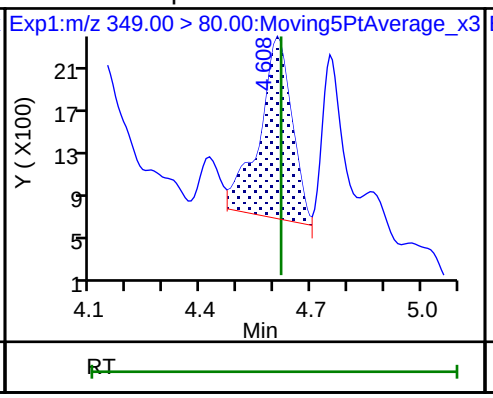
10 Perfluorohexanoic acid



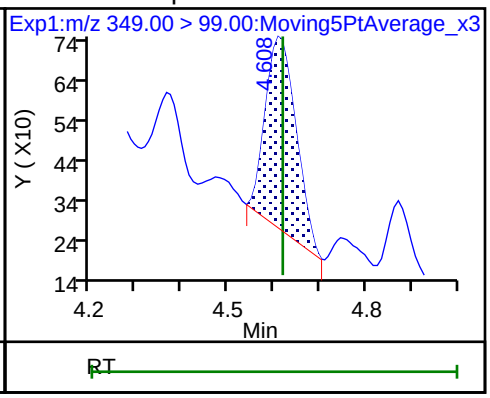
D 9 13C5 PFHxA



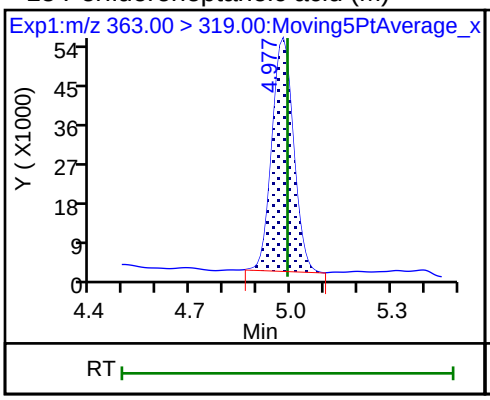
11 Perfluoropentanesulfonic acid



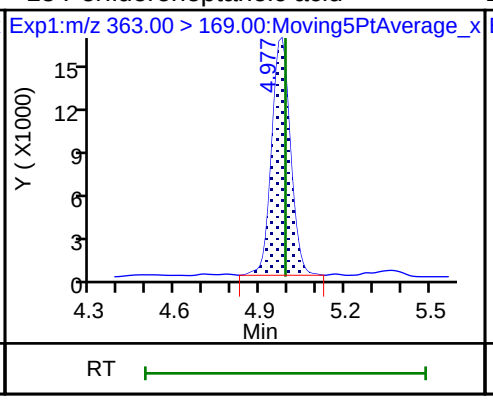
11 Perfluoropentanesulfonic acid



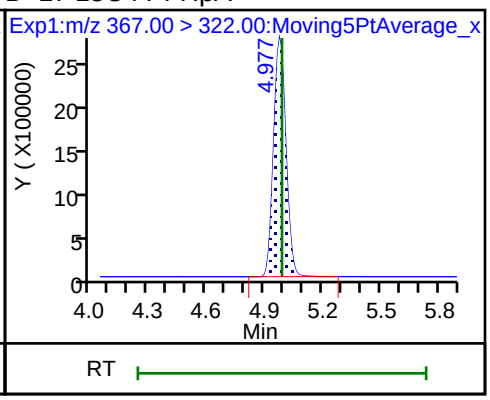
15 Perfluoroheptanoic acid (M)



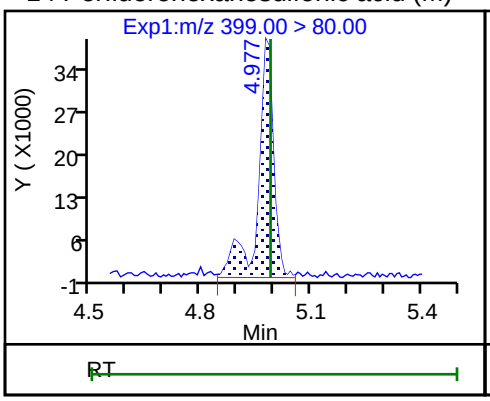
15 Perfluoroheptanoic acid



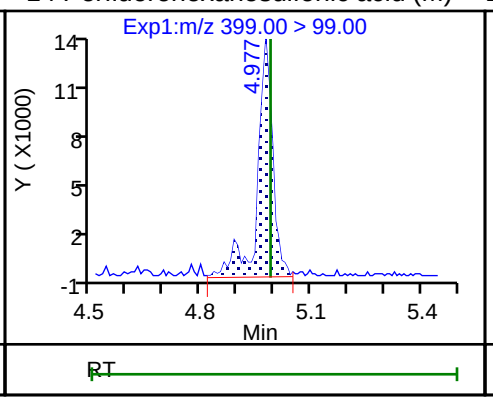
D 17 13C4 PFHpA



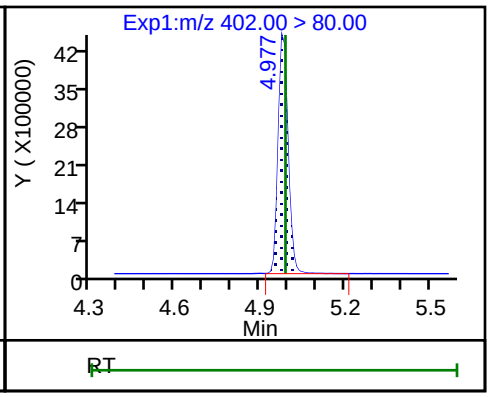
14 Perfluorohexanesulfonic acid (M)



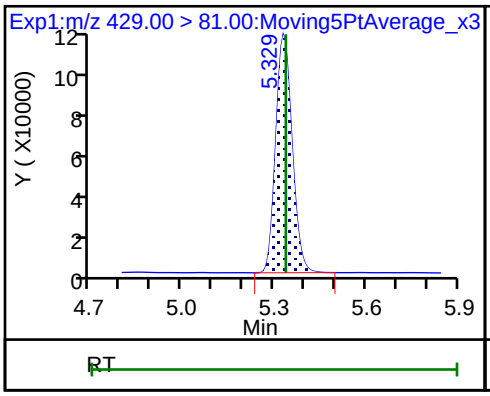
14 Perfluorohexanesulfonic acid (M)



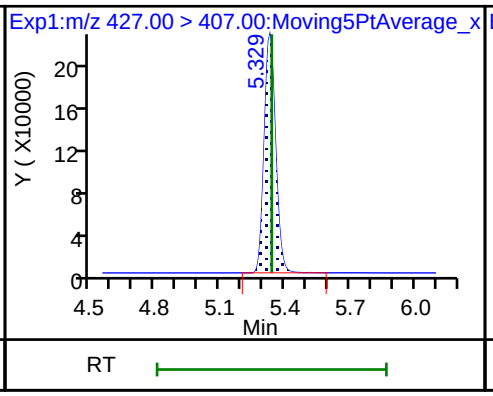
D 16 13C3 PFHxS



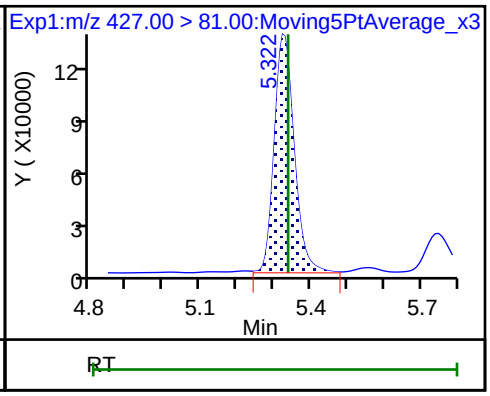
D 20 M2-6:2 FTS



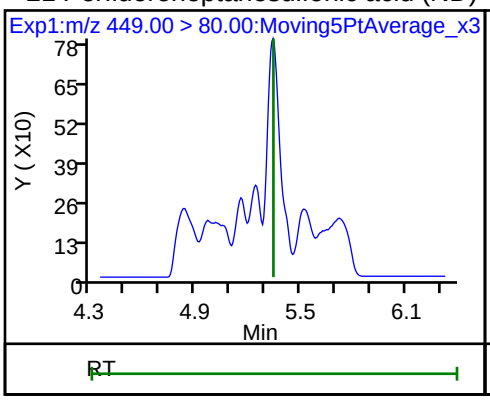
19 6:2 FTS



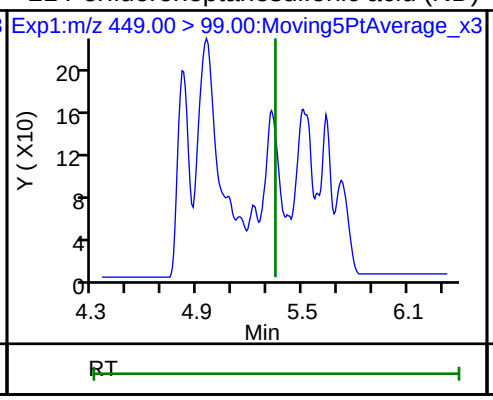
19 6:2 FTS



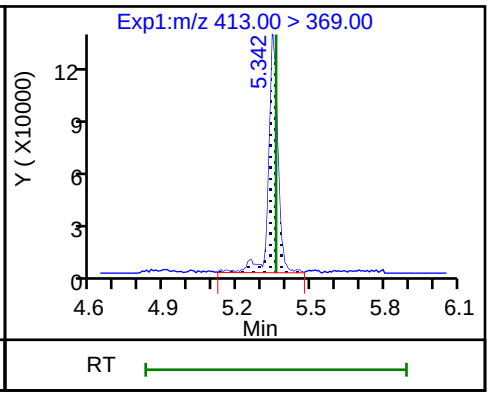
21 Perfluoroheptanesulfonic acid (ND)



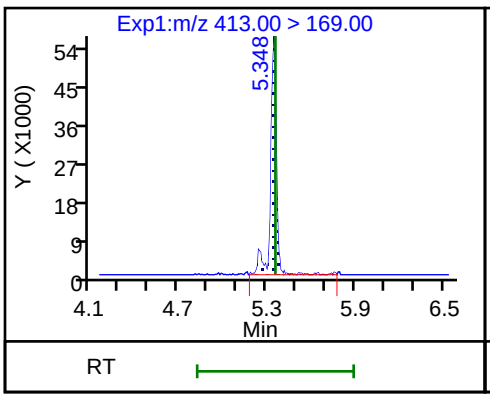
21 Perfluoroheptanesulfonic acid (ND)



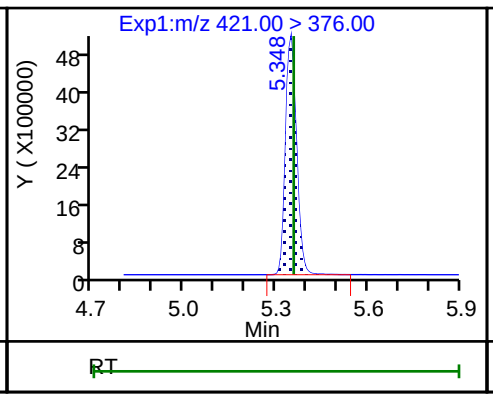
23 Perfluorooctanoic acid



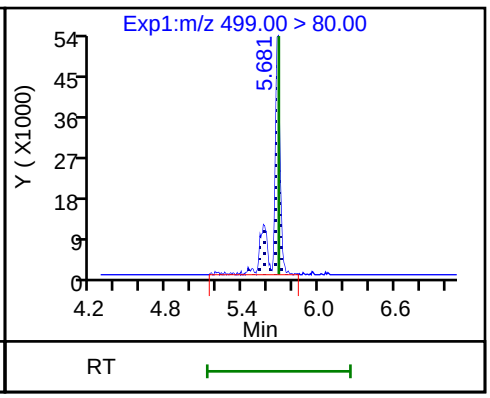
23 Perfluorooctanoic acid



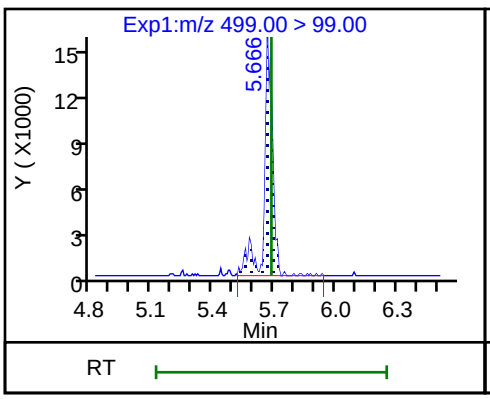
D 22 13C8 PFOA



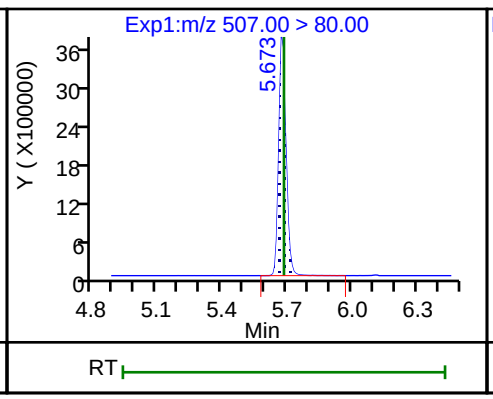
24 Perfluorooctanesulfonic acid



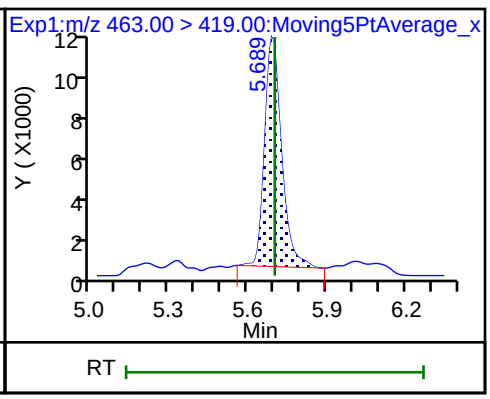
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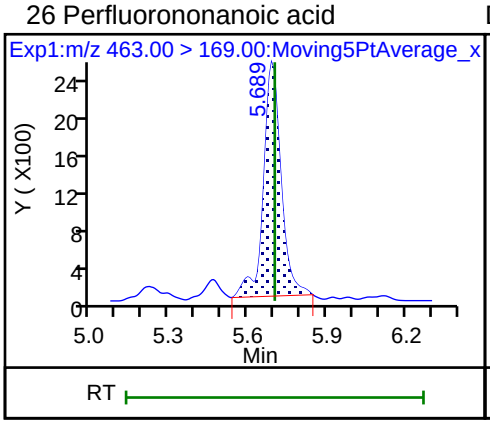
D 25 13C8 PFOS



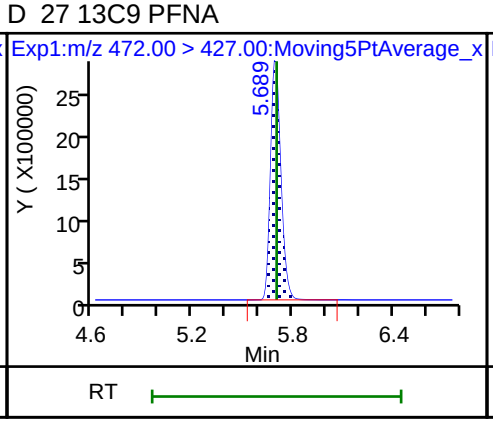
26 Perfluorononanoic acid



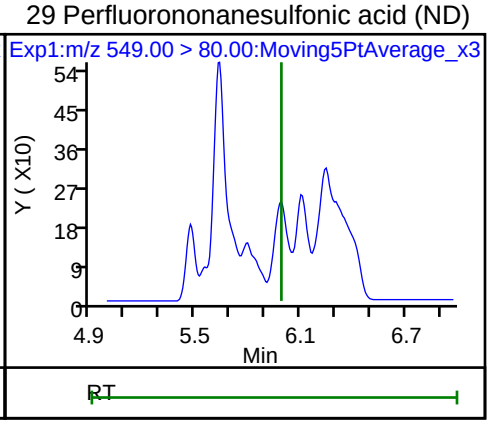
26 Perfluorononanoic acid



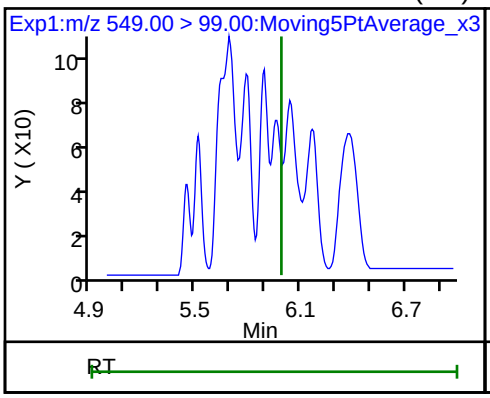
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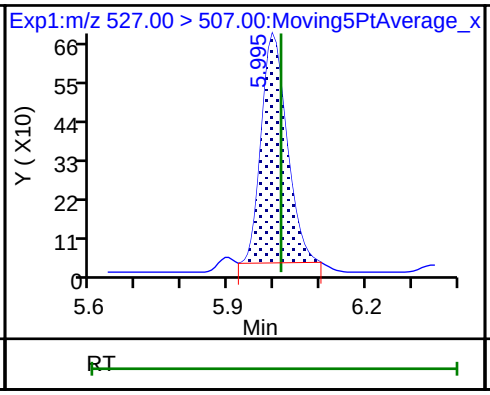
29 Perfluorononanesulfonic acid (ND)



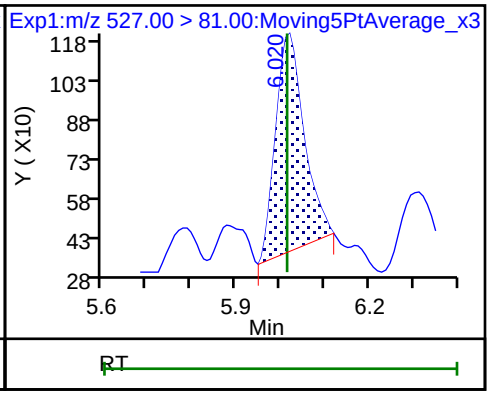
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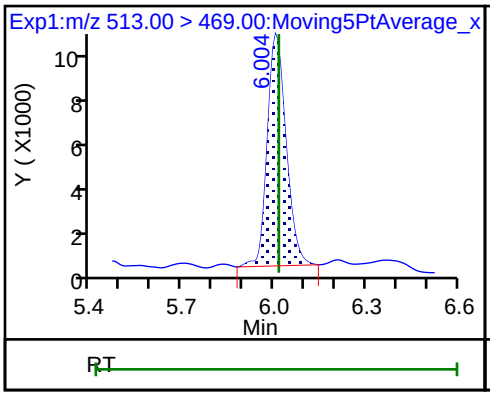
33 8:2 FTS



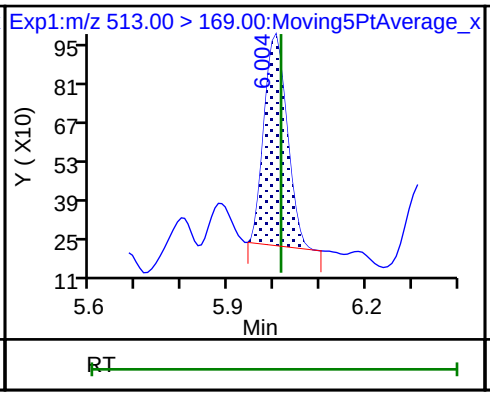
33 8:2 FTS



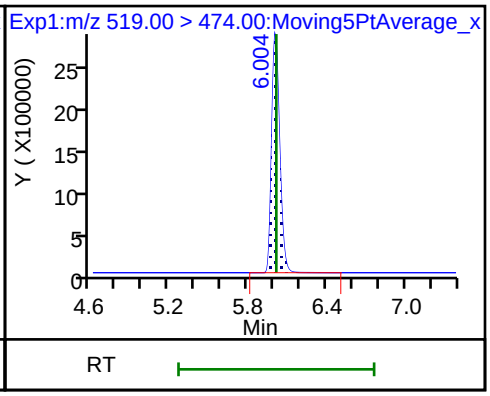
30 Perfluorodecanoic acid



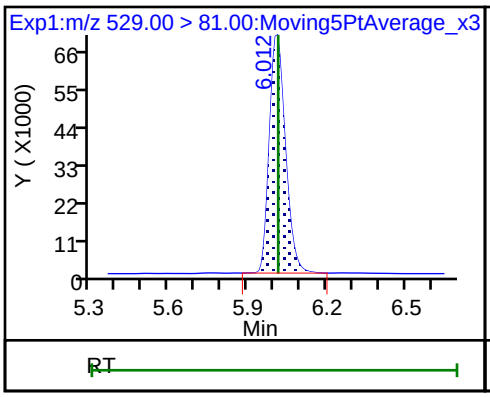
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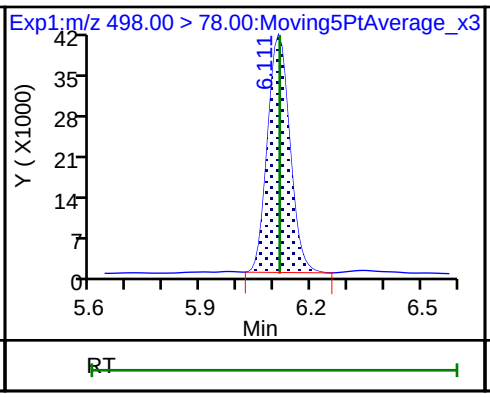
D 32 13C6 PFDA



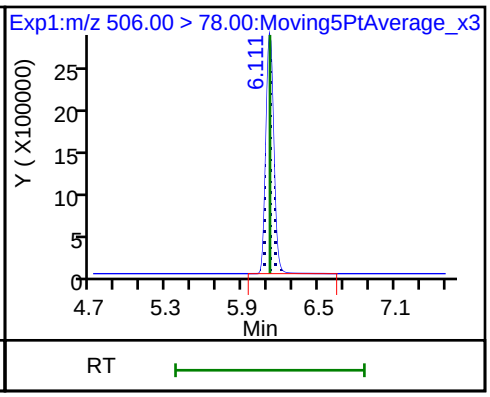
D 31 M2-8:2 FTS



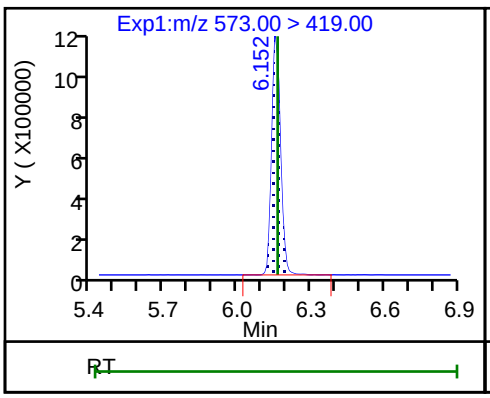
34 Perfluorooctanesulfonamide



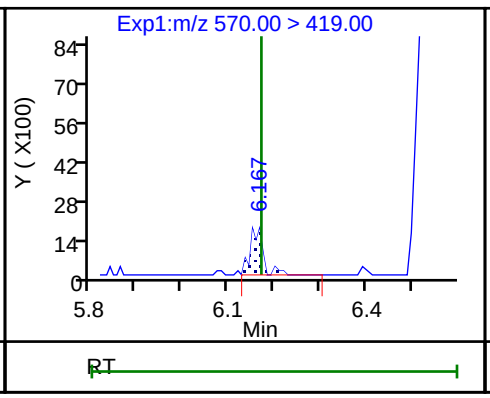
D 35 13C8 FOSA



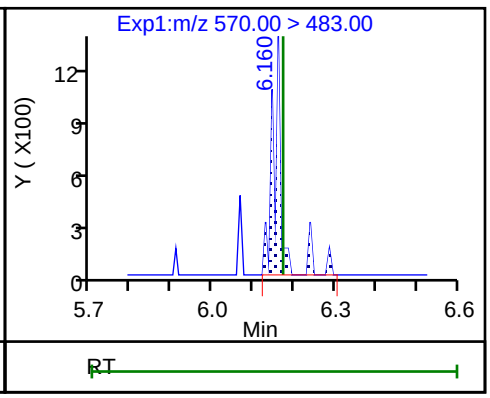
D 37 d3-NMeFOSAA



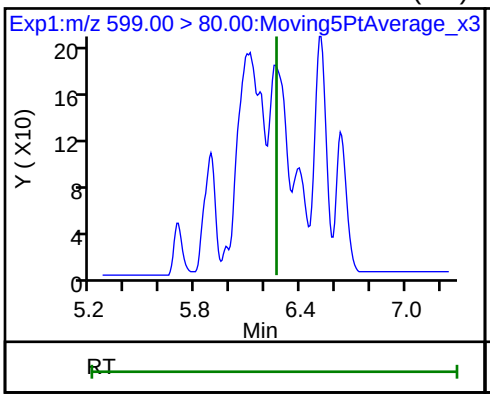
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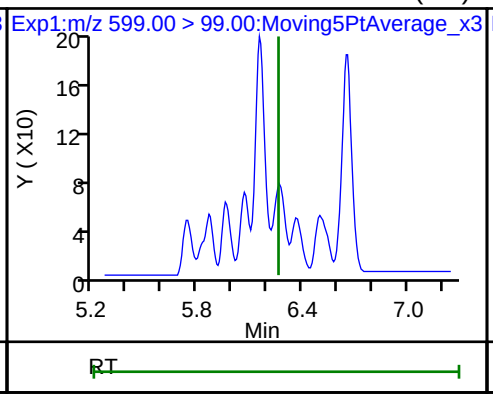
36 NMeFOSAA



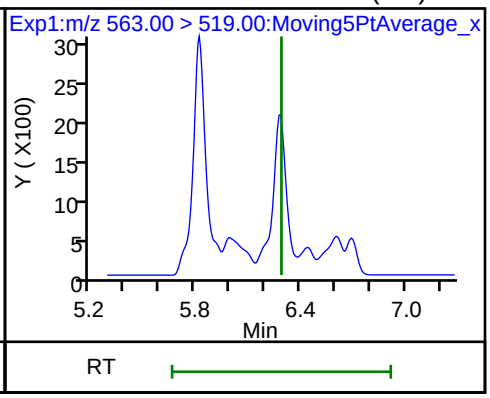
38 Perfluorodecanesulfonic acid (ND)



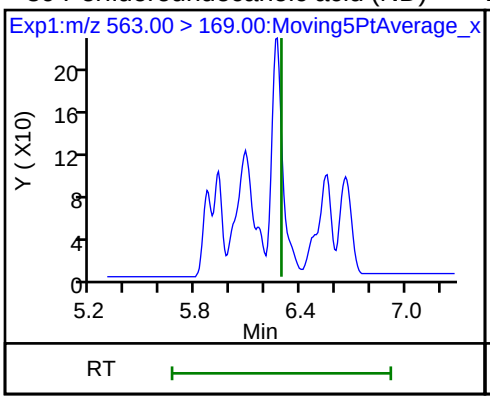
38 Perfluorodecanesulfonic acid (ND)



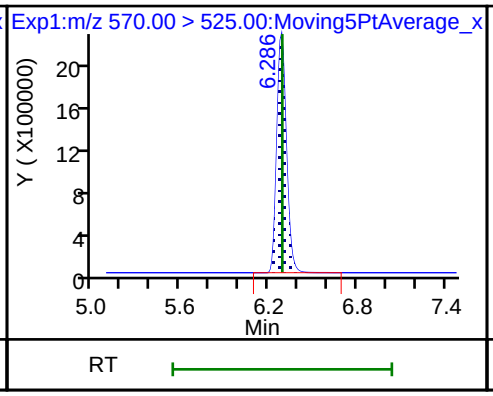
39 Perfluoroundecanoic acid (ND)



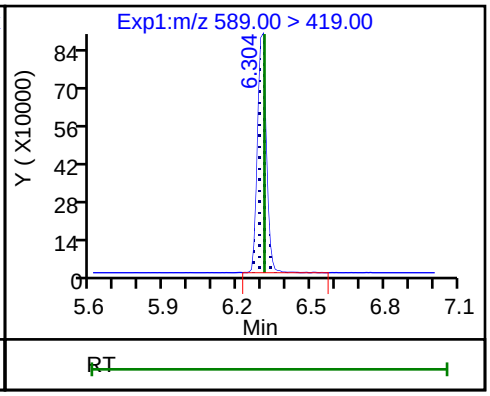
39 Perfluoroundecanoic acid (ND)



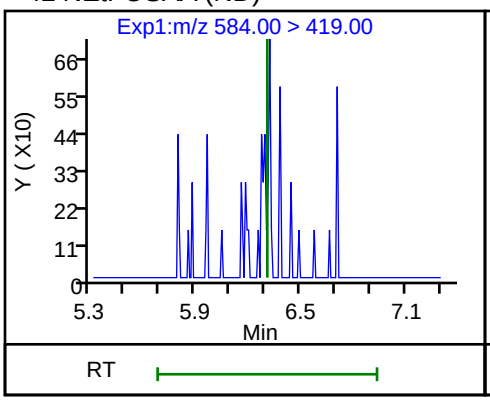
D 40 13C7 PFUnA



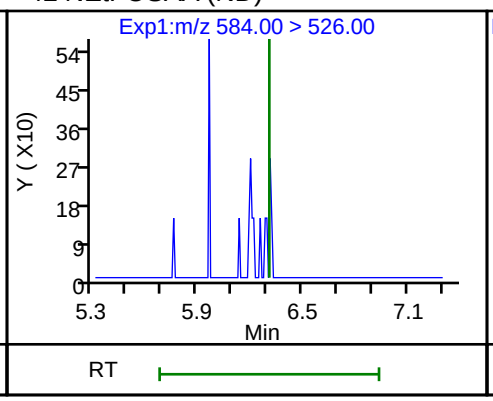
D 41 d5-NEtFOSAA



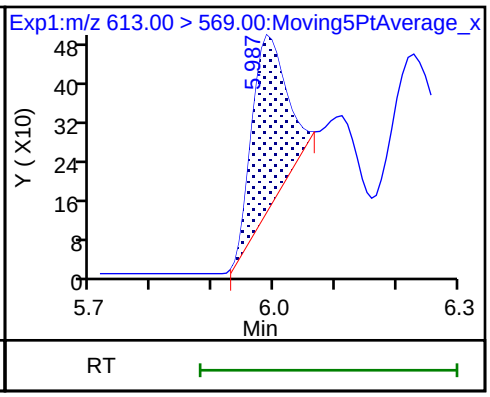
42 NEtFOSAA (ND)



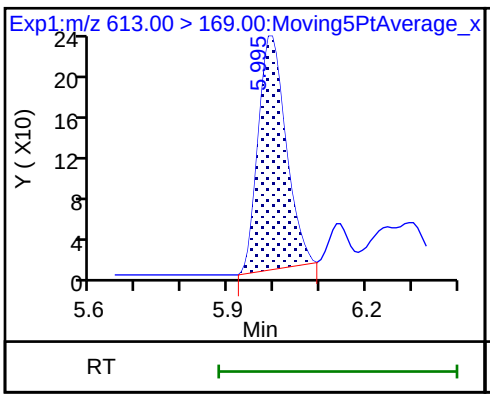
42 NEtFOSAA (ND)



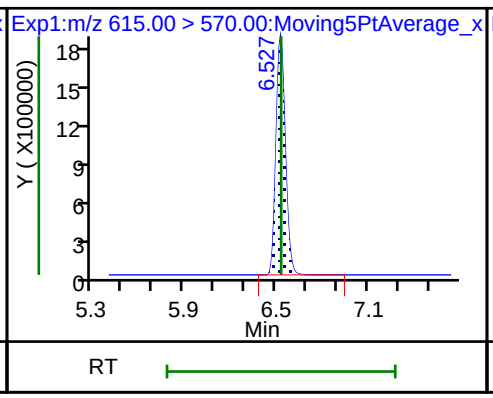
46 Perfluorododecanoic acid



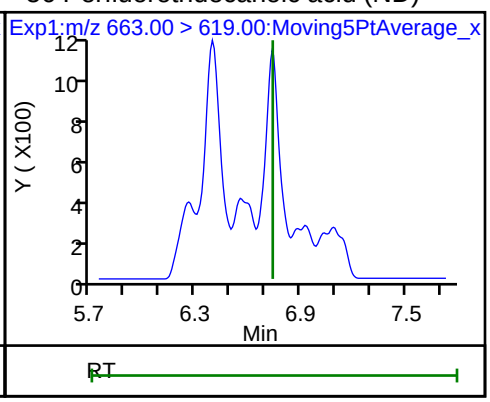
46 Perfluorododecanoic acid



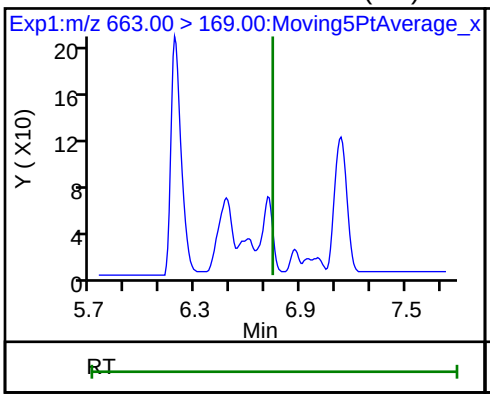
D 45 13C2-PFDoDA



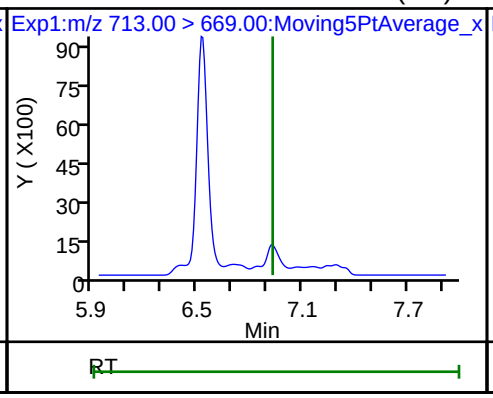
56 Perfluorotridecanoic acid (ND)



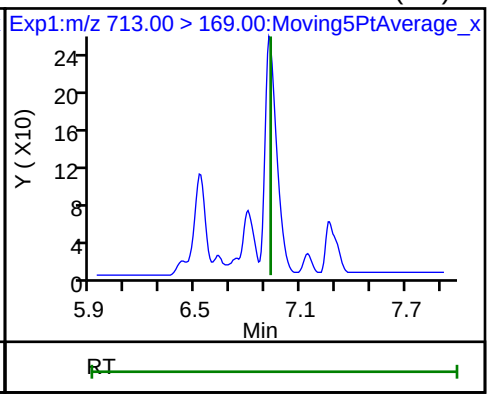
56 Perfluorotridecanoic acid (ND)



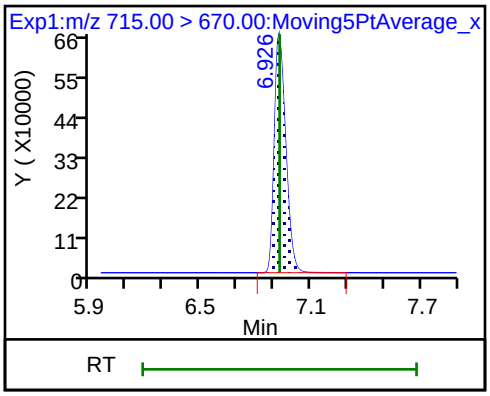
57 Perfluorotetradecanoic acid (ND)



57 Perfluorotetradecanoic acid (ND)



D 58 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

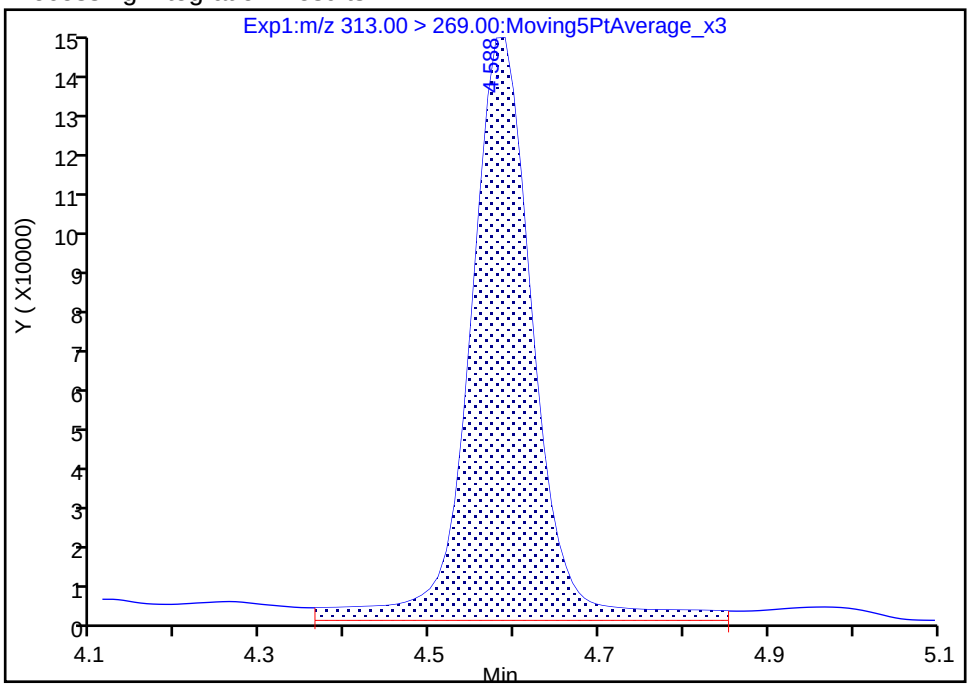
Data File:	\\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-24.d				
Injection Date:	04-Apr-2022 11:37:48	Instrument ID:	29347		
Lims ID:	410-78012-A-1-A	Lab Sample ID:	410-78012-1		
Client ID:	AOI01-04-GW				
Operator ID:	US19_USR_INS75556	ALS Bottle#:	21	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

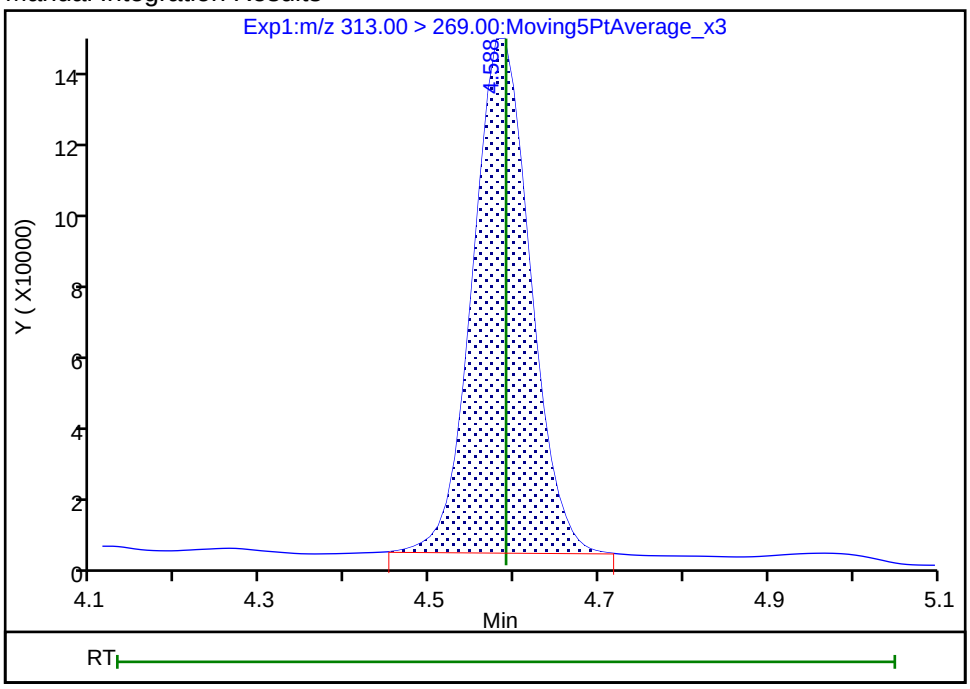
Processing Integration Results

RT: 4.59
Area: 774581
Amount: 0.759818
Amount Units: ng/ml



Manual Integration Results

RT: 4.59
Area: 680754
Amount: 0.667779
Amount Units: ng/ml



Reviewer: matthewsl, 04-Apr-2022 15:39:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

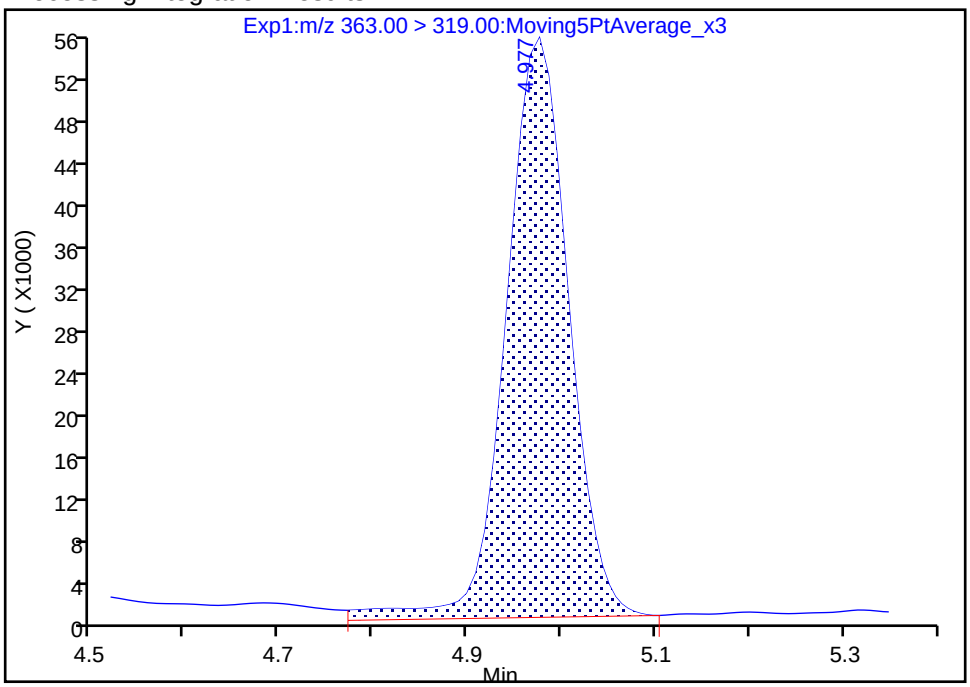
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Injection Date:	04-Apr-2022 11:37:48	Instrument ID:	29347		
Lims ID:	410-78012-A-1-A	Lab Sample ID:	410-78012-1		
Client ID:	AOI01-04-GW				
Operator ID:	US19_USR_INS75556	ALS Bottle#:	21	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

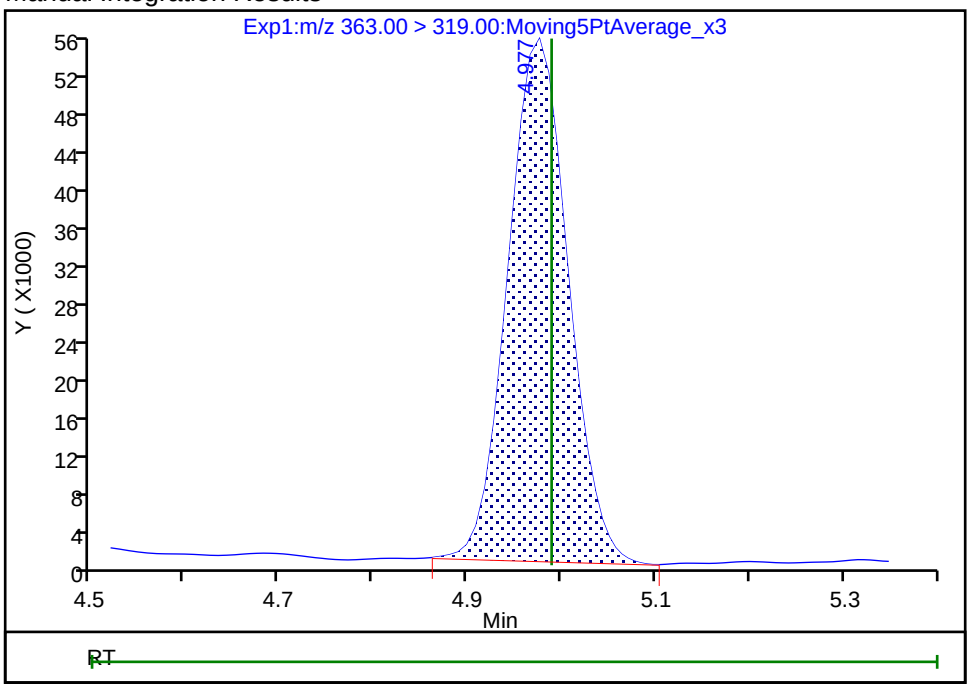
Processing Integration Results

RT: 4.98
Area: 253615
Amount: 0.220990
Amount Units: ng/ml



Manual Integration Results

RT: 4.98
Area: 241599
Amount: 0.210520
Amount Units: ng/ml



Reviewer: matthewsl, 04-Apr-2022 15:40:08

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

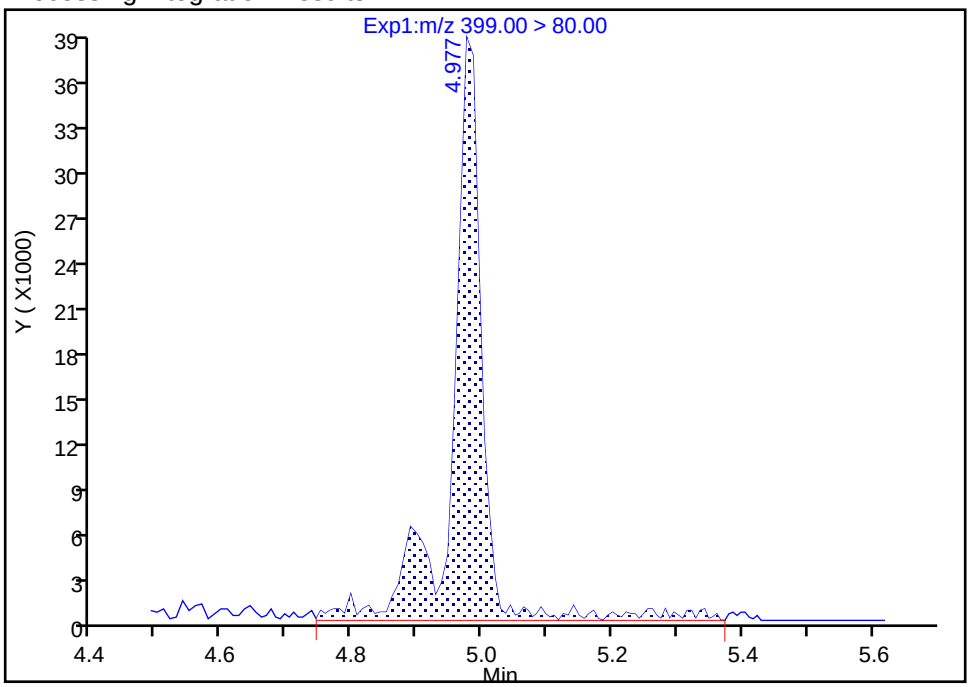
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Injection Date:	04-Apr-2022 11:37:48	Instrument ID:	29347		
Lims ID:	410-78012-A-1-A	Lab Sample ID:	410-78012-1		
Client ID:	AOI01-04-GW				
Operator ID:	US19_USR_INS75556	ALS Bottle#:	21	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

14 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

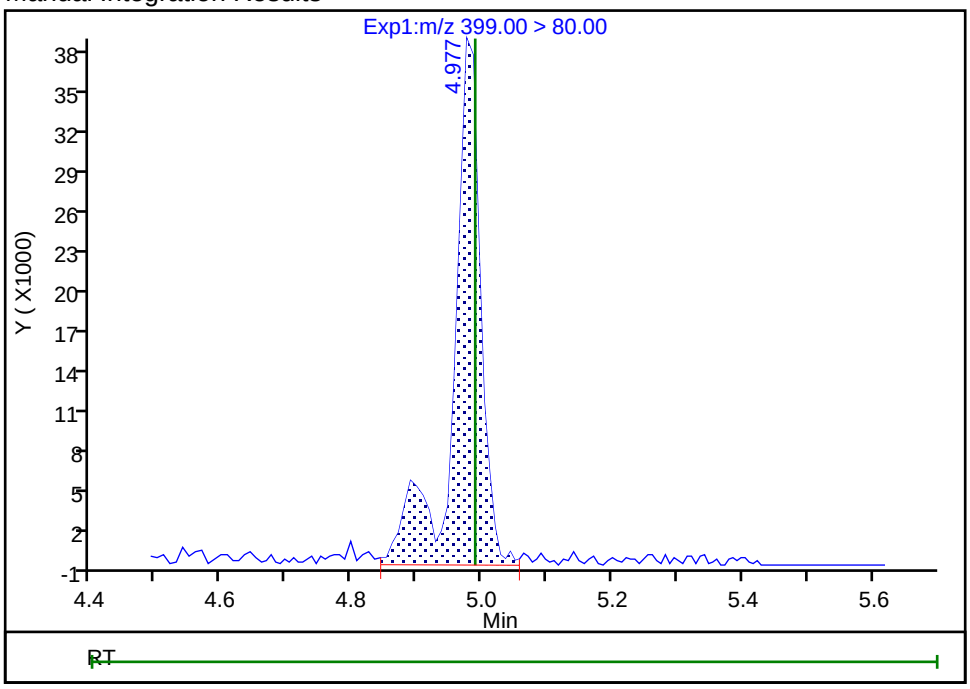
Processing Integration Results

RT: 4.98
Area: 125081
Amount: 0.112093
Amount Units: ng/ml



Manual Integration Results

RT: 4.98
Area: 113162
Amount: 0.101412
Amount Units: ng/ml



Reviewer: matthewsl, 04-Apr-2022 15:42:20

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

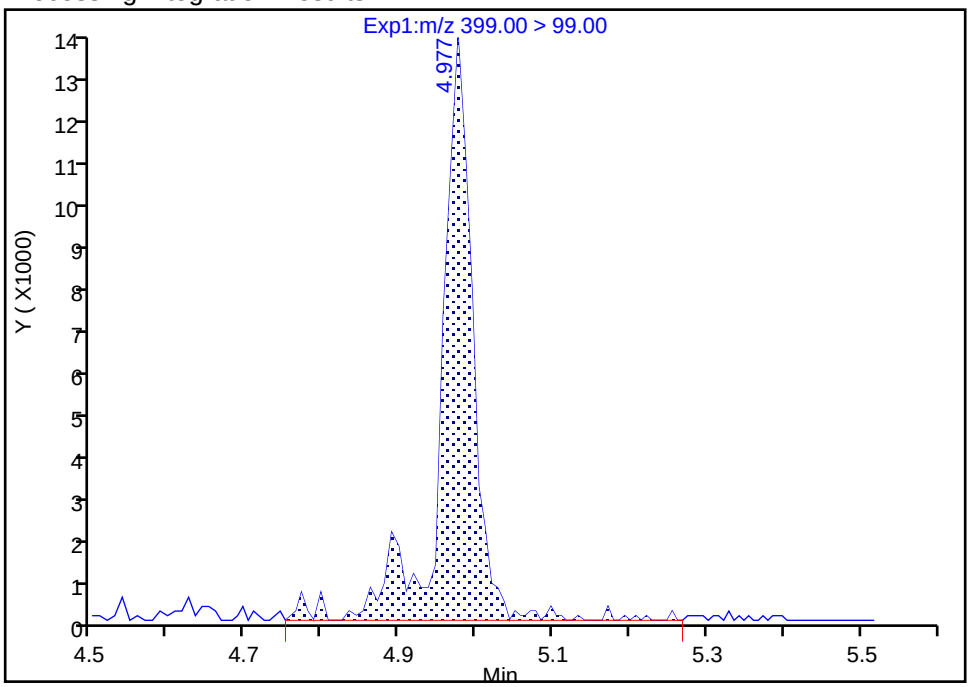
Data File:	\\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-24.d				
Injection Date:	04-Apr-2022 11:37:48	Instrument ID:	29347		
Lims ID:	410-78012-A-1-A	Lab Sample ID:	410-78012-1		
Client ID:	AOI01-04-GW				
Operator ID:	US19_USR_INS75556	ALS Bottle#:	21	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

14 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

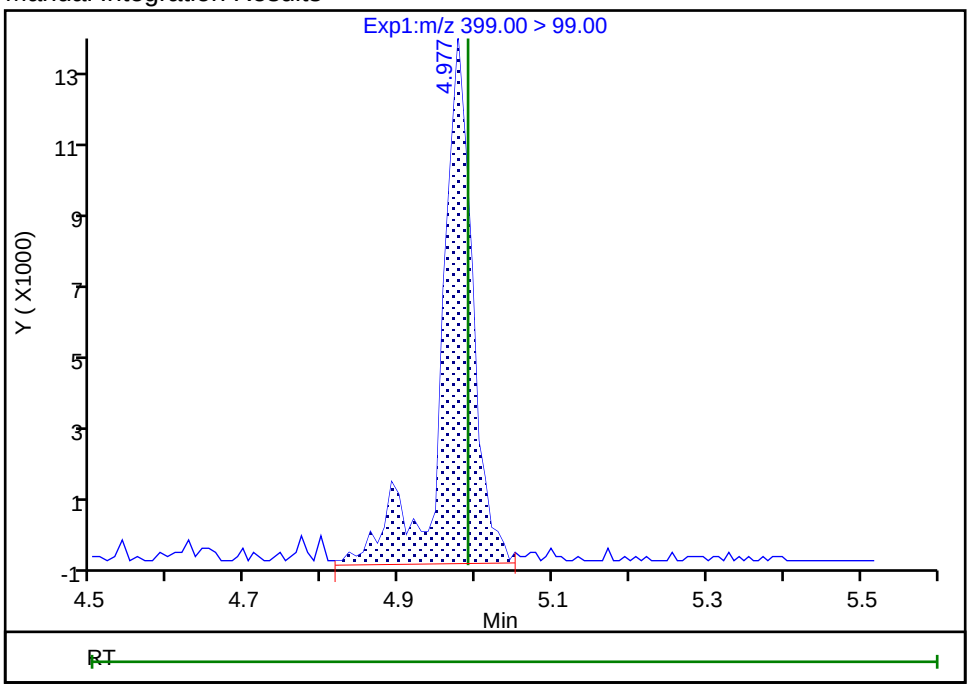
Processing Integration Results

RT: 4.98
Area: 40217
Amount: 0.112093
Amount Units: ng/ml



Manual Integration Results

RT: 4.98
Area: 39579
Amount: 0.101412
Amount Units: ng/ml



Reviewer: matthewsl, 04-Apr-2022 15:42:29

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: AOI01-04-GW Lab Sample ID: 410-78012-1

Matrix: Water Lab File ID: 22APR07-69.d

Analysis Method: EPA 537(Mod) Date Collected: 03/25/2022 07:05

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 179.2(mL) Date Analyzed: 04/07/2022 18:42

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	2.4	J M	2.8	1.4	0.70
375-85-9	Perfluoroheptanoic acid	1.4	U	2.8	1.4	0.70
335-67-1	Perfluorooctanoic acid	0.86	J M	2.8	1.4	0.70
375-95-1	Perfluorononanoic acid	1.4	U	2.8	1.4	0.70
335-76-2	Perfluorodecanoic acid	1.4	U	2.8	1.4	0.70
72629-94-8	Perfluorotridecanoic acid	1.4	U	2.8	1.4	0.70
376-06-7	Perfluorotetradecanoic acid	1.4	U	2.8	1.4	0.70
375-73-5	Perfluorobutanesulfonic acid	1.4	U	2.8	1.4	0.70
355-46-4	Perfluorohexanesulfonic acid	1.4	U	2.8	1.4	0.70
1763-23-1	Perfluorooctanesulfonic acid	1.4	U	2.8	1.4	0.70
2991-50-6	NEtFOSAA	1.4	U	4.2	1.4	0.70
2355-31-9	NMeFOSAA	1.7	U	2.8	1.7	0.84
2706-91-4	Perfluoropentanesulfonic acid	1.4	U	2.8	1.4	0.70
375-92-8	Perfluoroheptanesulfonic acid	1.4	U	2.8	1.4	0.70
68259-12-1	Perfluorononanesulfonic acid	1.4	U	2.8	1.4	0.70
335-77-3	Perfluorodecanesulfonic acid	1.4	U	2.8	1.4	0.70
754-91-6	Perfluorooctanesulfonamide	0.84	J	2.8	1.4	0.70
375-22-4	Perfluorobutanoic acid	41		7.0	5.6	2.8
2706-90-3	Perfluoropentanoic acid	32		2.8	1.4	0.70
2058-94-8	Perfluoroundecanoic acid	1.4	U	2.8	1.4	0.70
307-55-1	Perfluorododecanoic acid	1.4	U	2.8	1.4	0.70
27619-97-2	6:2 Fluorotelomer sulfonic acid	7.1		7.0	5.6	2.8
39108-34-4	8:2 Fluorotelomer sulfonic acid	2.8	U	4.2	2.8	1.4
757124-72-4	4:2 Fluorotelomer sulfonic acid	1.4	U	2.8	1.4	0.70

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: AOI01-04-GW Lab Sample ID: 410-78012-1

Matrix: Water Lab File ID: 22APR07-69.d

Analysis Method: EPA 537(Mod) Date Collected: 03/25/2022 07:05

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 179.2(mL) Date Analyzed: 04/07/2022 18:42

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	153	*5+	50-150
STL02280	M2-8:2 FTS	86		50-150
STL02279	M2-6:2 FTS	122		50-150
STL02577	13C5 PFHxA	115		50-150
STL01892	13C4 PFHpA	114		50-150
STL01052	13C8 PFOA	102		50-150
STL02578	13C9 PFNA	93		50-150
STL02579	13C6 PFDA	85		50-150
STL02580	13C7 PFUnA	62		50-150
STL02703	13C2-PFDoDA	38	*5-	50-150
STL02116	13C2 PFTeDA	5	*5-	50-150
STL02337	13C3 PFBS	107		50-150
STL02581	13C3 PFHxS	109		50-150
STL01054	13C8 PFOS	91		50-150
STL02118	d3-NMeFOSAA	71		50-150
STL02117	d5-NEtFOSAA	64		50-150
STL01056	13C8 FOSA	66		50-150
STL00992	13C4 PFBA	49	*5-	50-150
STL01893	13C5 PFPeA	106		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-69.d
Lims ID: 410-78012-B-1-A
Client ID: AOI01-04-GW
Sample Type: Client
Inject. Date: 07-Apr-2022 18:42:45 ALS Bottle#: 33 Worklist Smp#: 38
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 410-78012-B-1-A
Misc. Info.: Plate: 1 Rack: 1 410-0054325-038
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 20:33:31 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: matthewsl Date: 07-Apr-2022 20:01:27
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-61.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.662	3.649	0.013	1.000	2409370	7.37			956	
D 2 13C4 PFBA										
217.00 > 172.00	3.662	3.649	0.013		3973895	4.91		49.1	56259	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.183	4.168	0.015	1.000	4411357	5.72			3231	
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.168	0.015		7367945	10.6		106	60410	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.235	4.220	0.015	1.000	63592	0.0671	Target=2.91		20.6	
299.00 > 99.00	4.228	4.220	0.008	0.998	23161		2.75(1.46-4.37)		46.4	
D 6 13C3 PFBS										
302.00 > 80.00	4.235	4.227	0.008		9206135	9.98		107	86871	
7 4:2 FTS										R
327.00 > 307.00	4.544	4.534	0.010	0.998	1233	0.004813	Target=1.81		101	R
327.00 > 81.00	4.583	4.534	0.049	1.006	15383		0.08(0.91-2.72)		100	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.554	4.544	0.010		623645	14.3		153	8469	
10 Perfluorohexanoic acid										M
313.00 > 269.00	4.583	4.573	0.010	0.998	336798	0.4306	Target=14.20		755	M
313.00 > 119.00	4.583	4.573	0.010	0.998	20538		16.40(7.10-21.30)		653	
D 9 13C5 PFHxA										
318.00 > 273.00	4.593	4.583	0.010		9163026	11.5		115	203170	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.603	4.603	0.0	1.087	4126	0.004651	Target=3.15		17.8	
349.00 > 99.00	4.603	4.603	0.0	1.087	1329		3.10(1.58-4.73)		19.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.981	4.971	0.010	1.000	83967	0.0916	Target=3.24		308	
363.00 > 169.00	4.972	4.971	0.001	0.998	29042		2.89(1.62-4.87)		525	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.981	4.971	0.010	1.000	33528	0.0382	Target=3.16		2573	
399.00 > 99.00	4.972	4.971	0.001	0.998	12465		2.69(1.58-4.73)		2573	
D 17 13C4 PFHpA										
367.00 > 322.00	4.981	4.971	0.010		9576907	11.4		114	122630	
D 16 13C3 PFHxS										
402.00 > 80.00	4.981	4.971	0.010		8520672	10.3		109	718003	
19 6:2 FTS										
427.00 > 407.00	5.331	5.317	0.014	1.000	238525	1.28	Target=1.74		16499	
427.00 > 81.00	5.331	5.317	0.014	1.000	139722		1.71(0.87-2.61)		2409	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.324	0.007		337053	11.6		122	13202	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.330				ND				
449.00 > 99.00		5.330								
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.344	5.337	0.007	1.000	129325	0.1539	Target=2.25		3685	M
413.00 > 169.00	5.344	5.337	0.007	1.000	56627		2.28(1.13-3.38)		9474	
D 22 13C8 PFOA										
421.00 > 376.00	5.344	5.337	0.007		9313712	10.2		102	965474	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.676	5.669	0.007	1.000	71156	0.0938	Target=3.77		22506	
499.00 > 99.00	5.669	5.669	0.0	0.999	22308		3.19(1.89-5.66)		43.6	
D 25 13C8 PFOS										
507.00 > 80.00	5.676	5.669	0.007		6522145	8.74		91.4	574122	
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.684	0.008	1.000	17195	0.0220	Target=4.65		142	
463.00 > 169.00	5.684	5.684	0.0	0.999	5472		3.14(2.33-6.98)		253	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.684	0.008		8675564	9.28		92.8	209370	
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.972				ND				
549.00 > 99.00		5.972								
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	5.997	0.008	1.000	27886	0.0374	Target=8.88		365	
513.00 > 169.00	5.997	5.997	0.0	0.999	2275		12.26(4.44-13.32)		40.9	
33 8:2 FTS										
527.00 > 507.00		5.997				ND				
527.00 > 81.00		5.997								
D 32 13C6 PFDA										
519.00 > 474.00	6.005	5.997	0.008		8622554	8.53		85.3	344605	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	5.997	0.008		200294	8.25		86.1	9596	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.113	6.095	0.017	1.000	128328	0.1505			3297	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.104	0.008		8229649	6.63		66.3	276263	
36 NMeFOSAA										
570.00 > 419.00		6.146				ND				
570.00 > 483.00		6.146								
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.154	6.146	0.008		2054338	7.09		70.9	415881	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.242				ND				
599.00 > 99.00		6.242								
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.270				ND				
563.00 > 169.00		6.270								
D 40 13C7 PFUnA										
570.00 > 525.00	6.278	6.270	0.008		6414044	6.24		62.4	119147	
42 NEtFOSAA										
584.00 > 419.00		6.289				ND				
584.00 > 526.00		6.289								
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.297	6.289	0.008		1425642	6.43		64.3	310625	
46 Perfluorododecanoic acid										R
613.00 > 569.00	6.013	6.512	-0.499	0.922	1235	0.003483	Target=5.85		10.0	R
613.00 > 169.00	6.005	6.512	-0.507	0.921	1079		1.14(2.92-8.77)		45.7	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.521	6.512	0.009		4026208	3.78		37.8	119893	
56 Perfluorotridecanoic acid										
663.00 > 619.00		6.724				ND				
663.00 > 169.00		6.724								
57 Perfluorotetradecanoic acid										
713.00 > 669.00		6.909				ND				
713.00 > 169.00		6.909								
D 58 13C2 PFTeDA										
715.00 > 670.00	6.920	6.916	0.004		512598	0.4830		4.8	24561	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 07-Apr-2022 20:34:26 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-69.d

Injection Date: 07-Apr-2022 18:42:45 Instrument ID: 29347

Lims ID: 410-78012-B-1-A Lab Sample ID: 410-78012-1

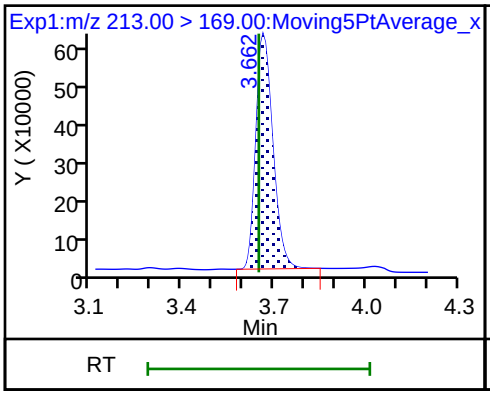
Client ID: AOI01-04-GW

Operator ID: US19_USR_INS75556 ALS Bottle#: 33 Worklist Smp#: 38

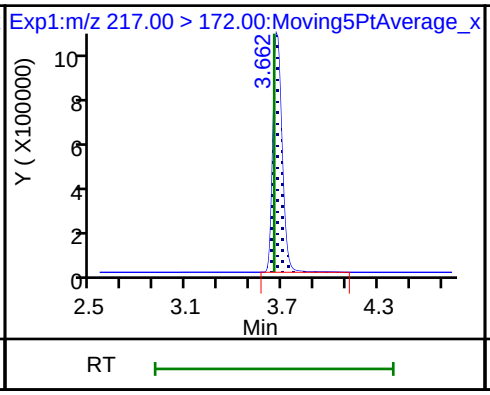
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

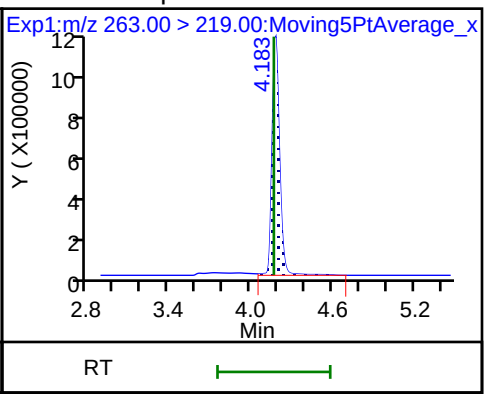
1 Perfluorobutanoic acid



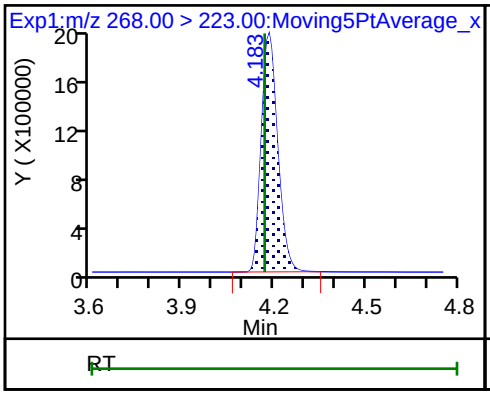
D 2 13C4 PFBA



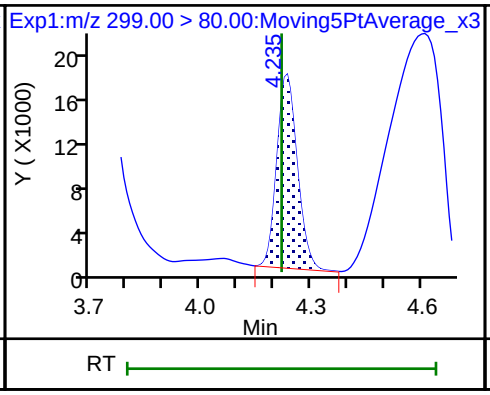
3 Perfluoropentanoic acid



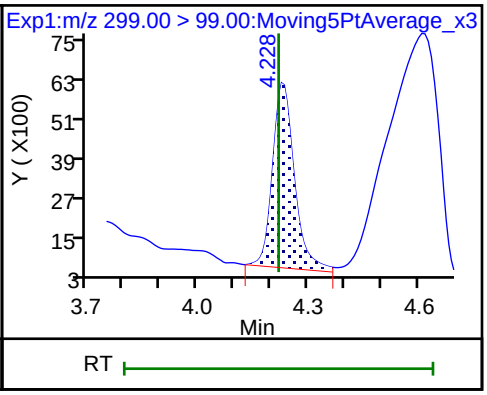
D 4 13C5 PFPeA



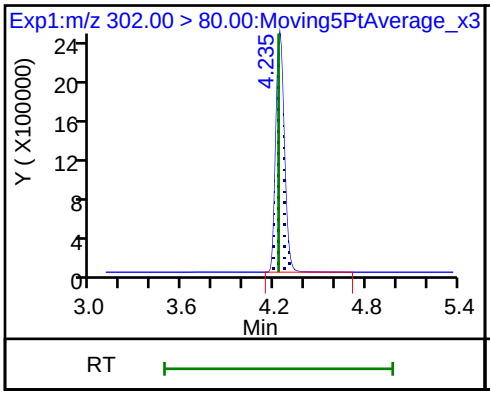
5 Perfluorobutanesulfonic acid



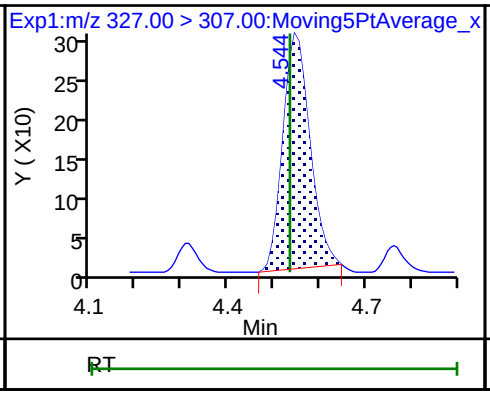
5 Perfluorobutanesulfonic acid



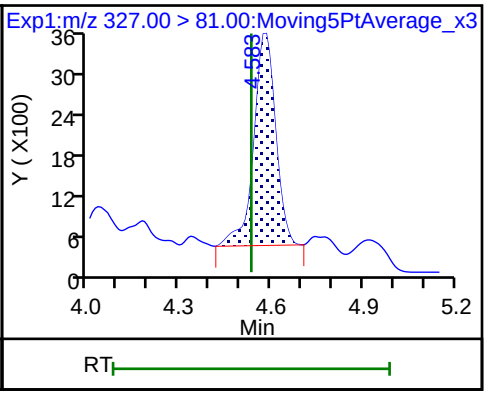
D 6 13C3 PFBS



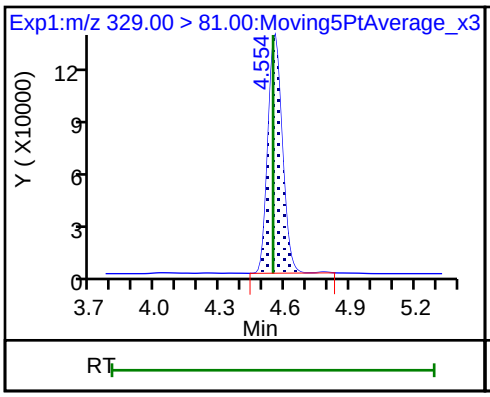
7 4:2 FTS



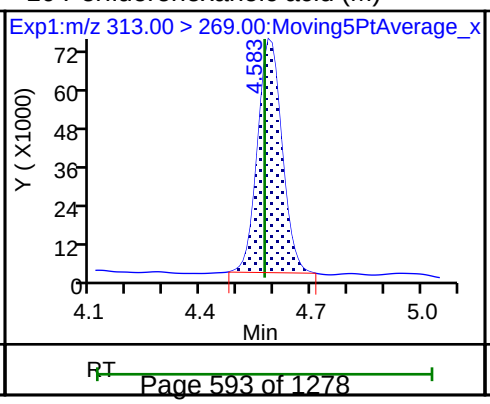
7 4:2 FTS



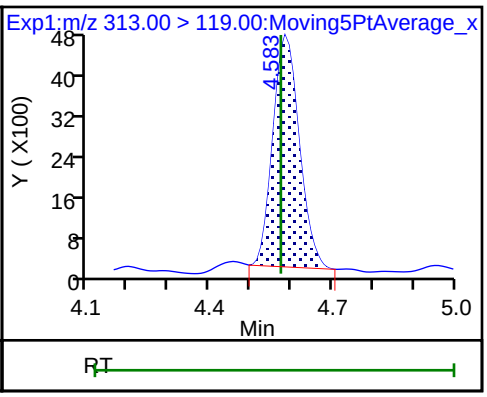
D 8 M2-4:2 FTS



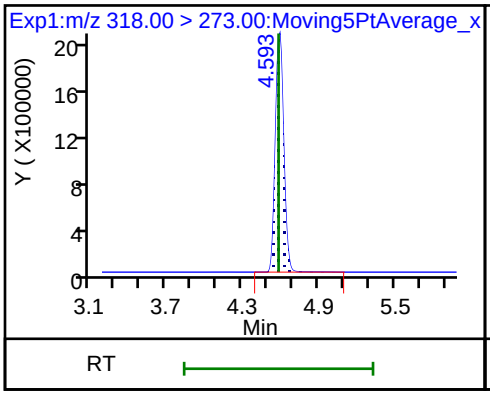
10 Perfluorohexanoic acid (M)



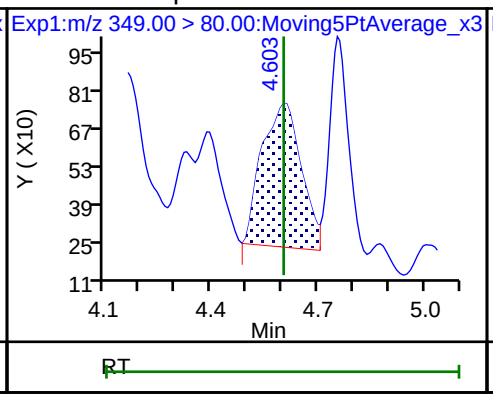
10 Perfluorohexanoic acid



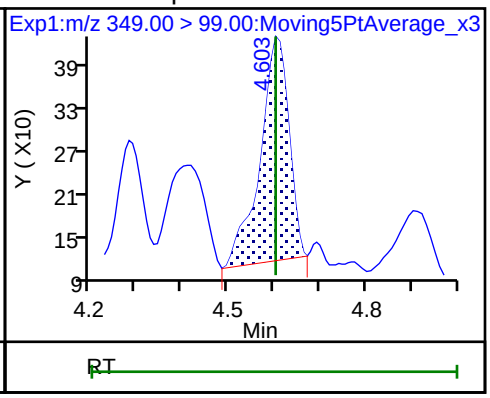
D 9 13C5 PFHxA



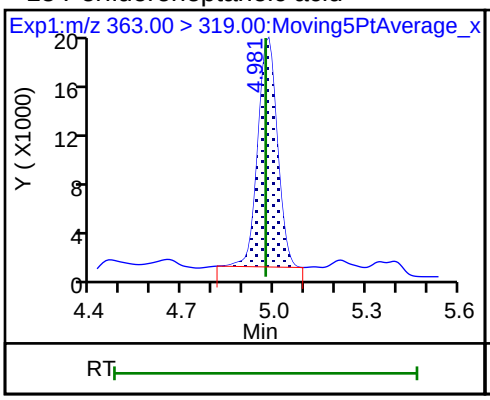
11 Perfluoropentanesulfonic acid



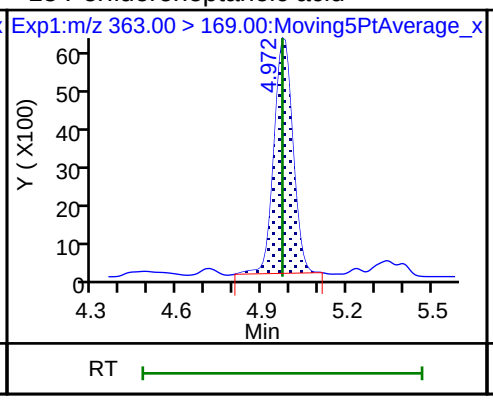
11 Perfluoropentanesulfonic acid



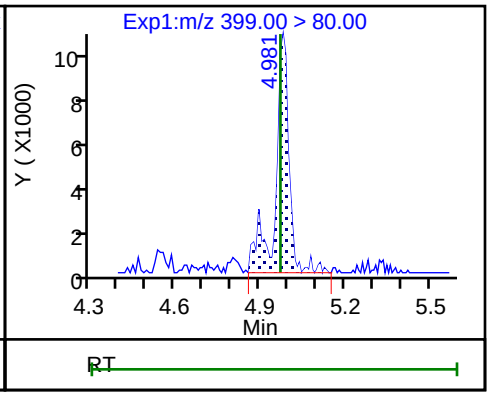
15 Perfluoroheptanoic acid



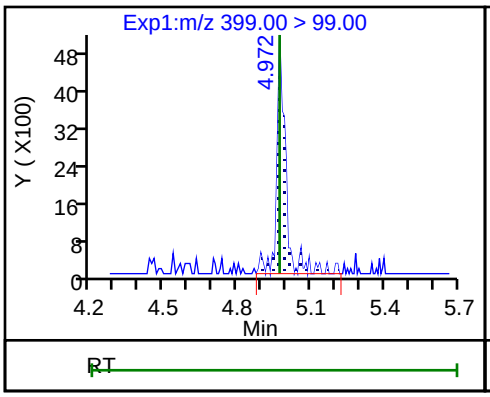
15 Perfluoroheptanoic acid



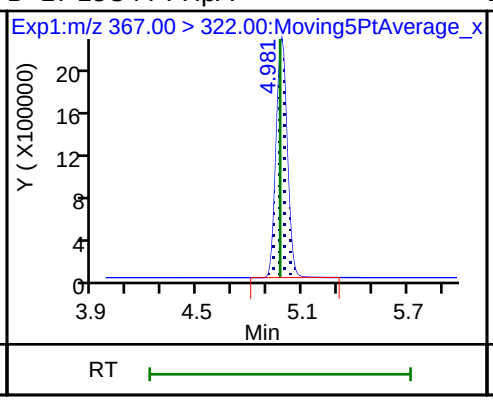
14 Perfluorohexanesulfonic acid



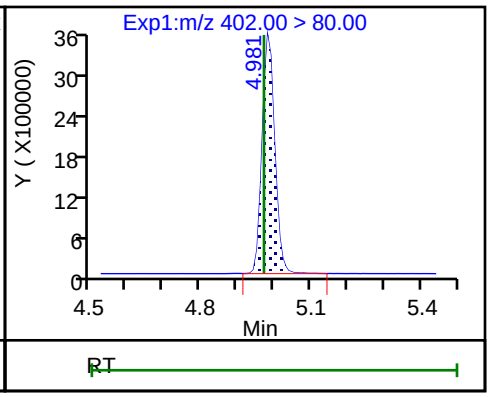
14 Perfluorohexanesulfonic acid



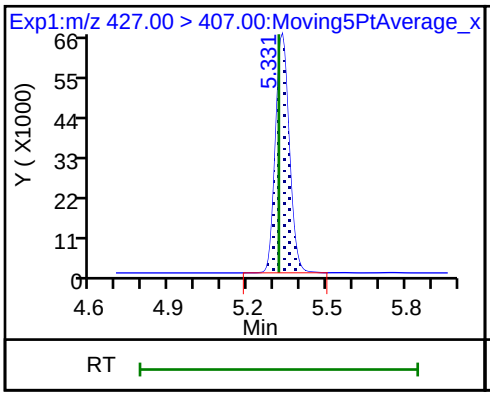
D 17 13C4 PFHpA



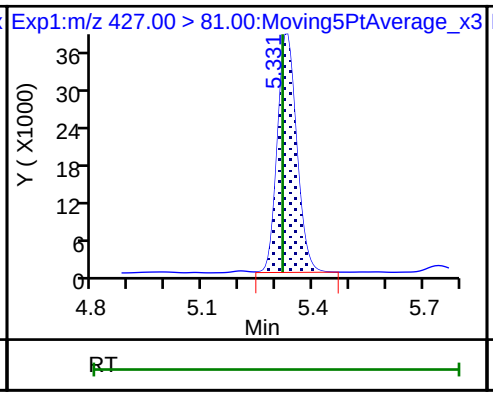
D 16 13C3 PFHxS



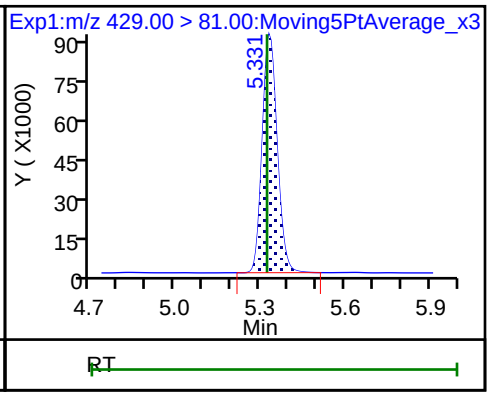
19 6:2 FTS



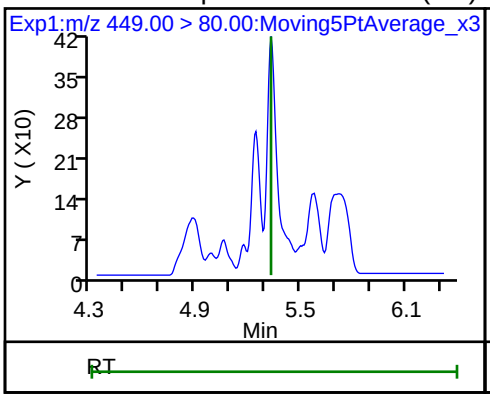
19 6:2 FTS



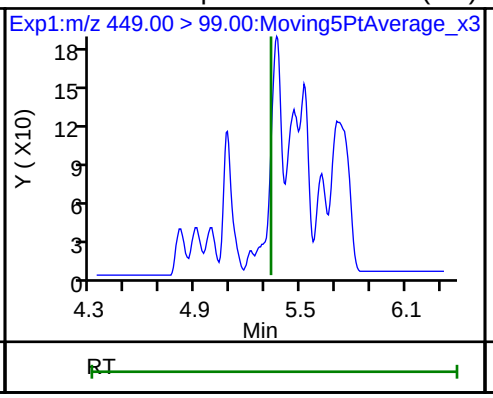
D 20 M2-6:2 FTS



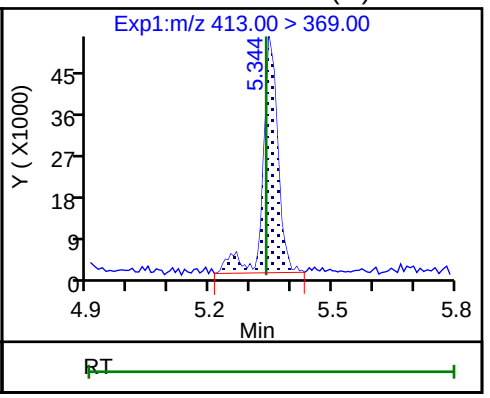
21 Perfluoroheptanesulfonic acid (ND)



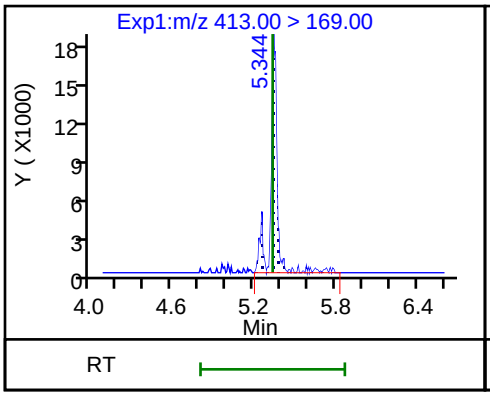
21 Perfluoroheptanesulfonic acid (ND)



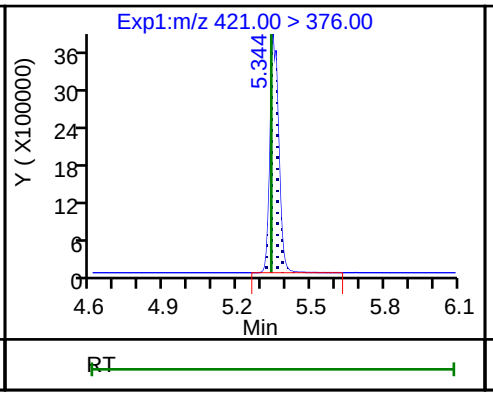
23 Perfluorooctanoic acid (M)



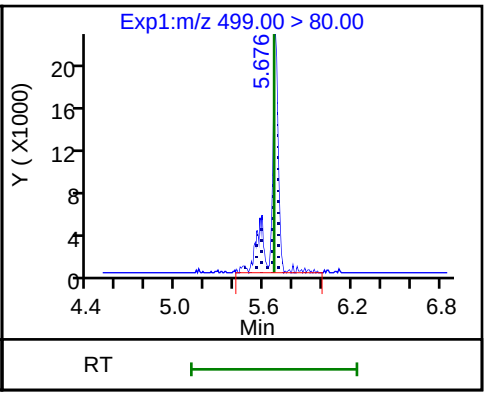
23 Perfluorooctanoic acid



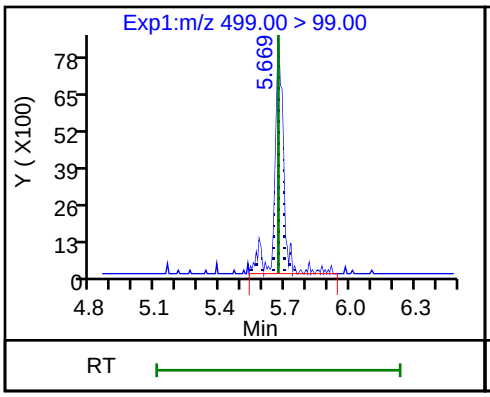
D 22 13C8 PFOA



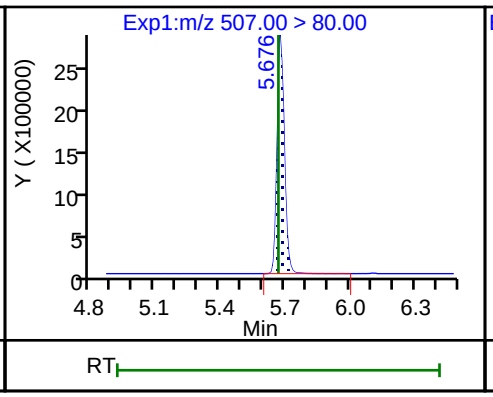
24 Perfluorooctanesulfonic acid



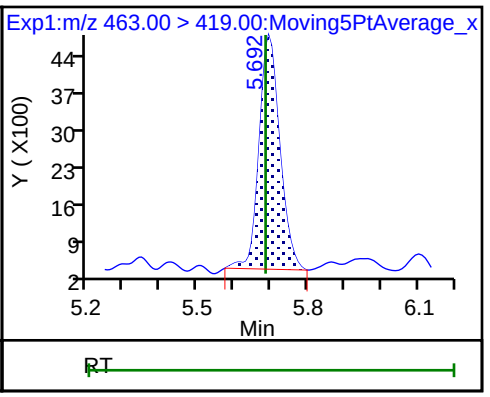
24 Perfluorooctanesulfonic acid



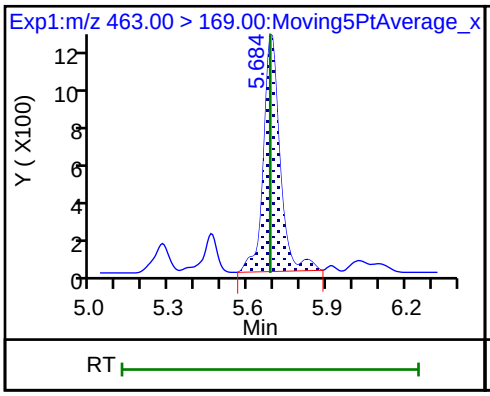
D 25 13C8 PFOS



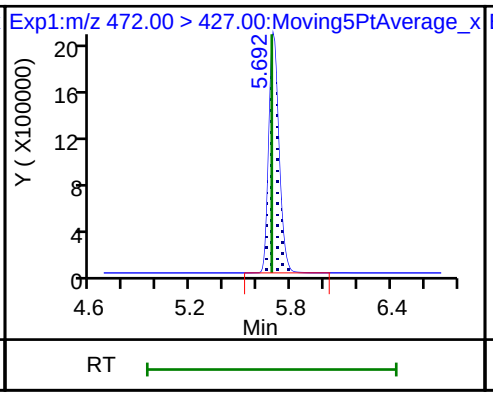
26 Perfluorononanoic acid



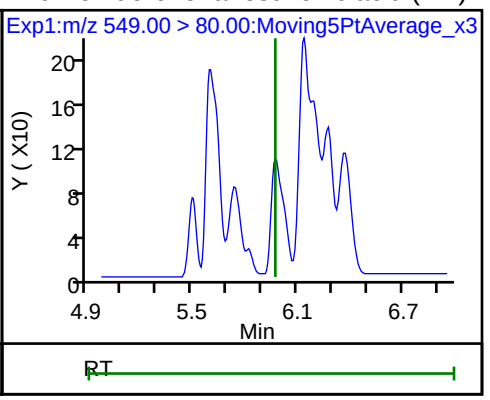
26 Perfluorononanoic acid



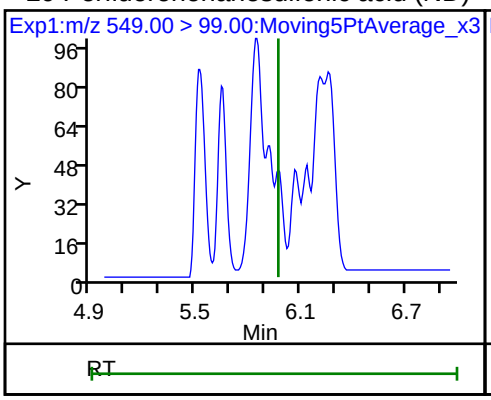
D 27 13C9 PFNA



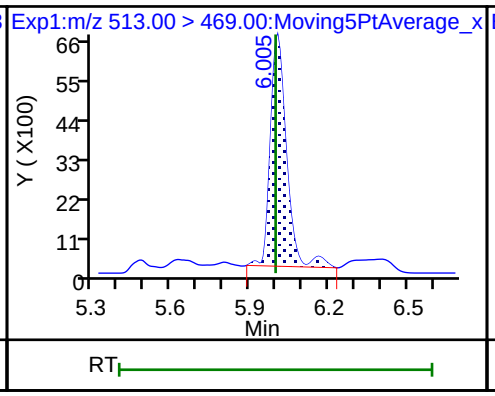
29 Perfluorononanesulfonic acid (ND)



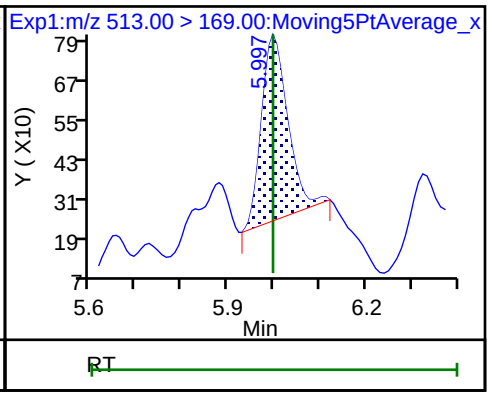
29 Perfluorononanesulfonic acid (ND)



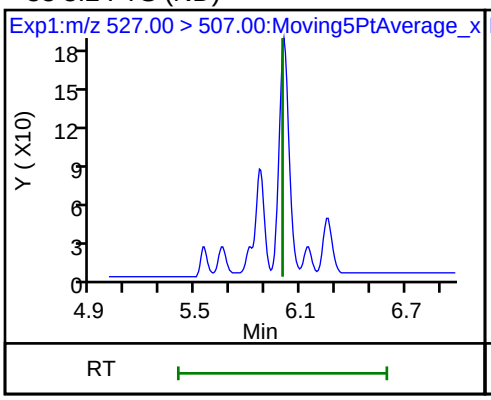
30 Perfluorodecanoic acid



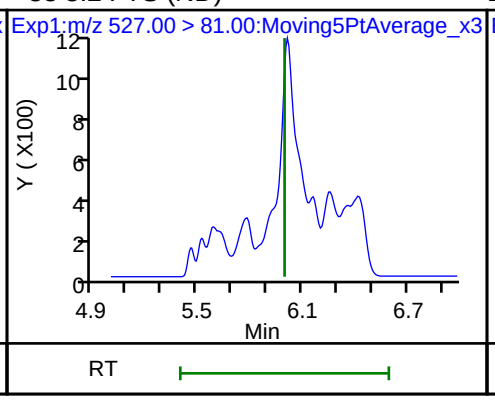
30 Perfluorodecanoic acid



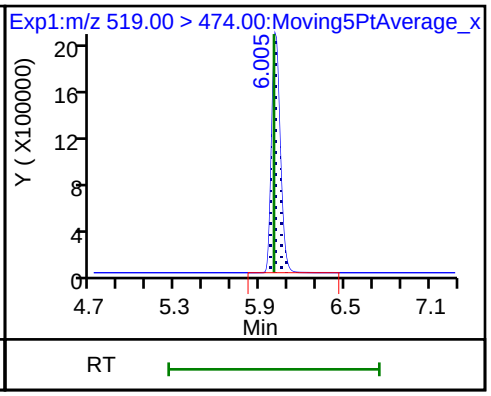
33 8:2 FTS (ND)



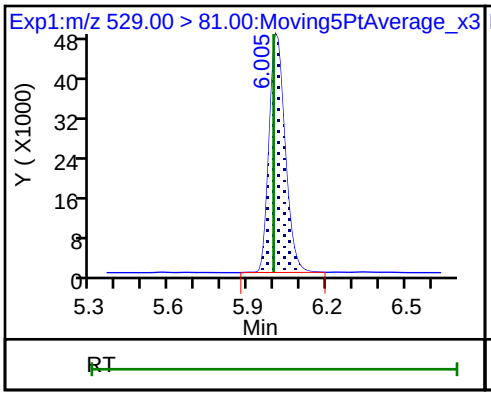
33 8:2 FTS (ND)



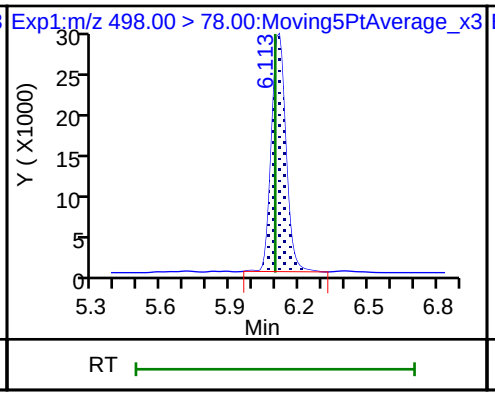
D 32 13C6 PFDA



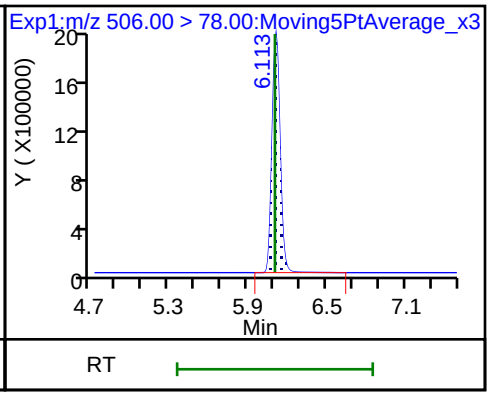
D 31 M2-8:2 FTS



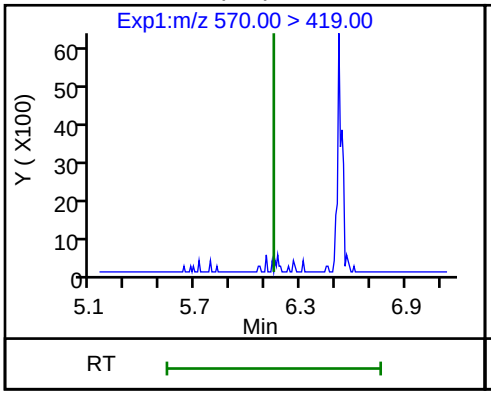
34 Perfluorooctanesulfonamide



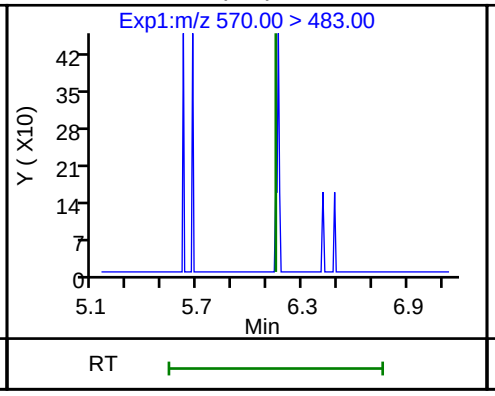
D 35 13C8 FOSA



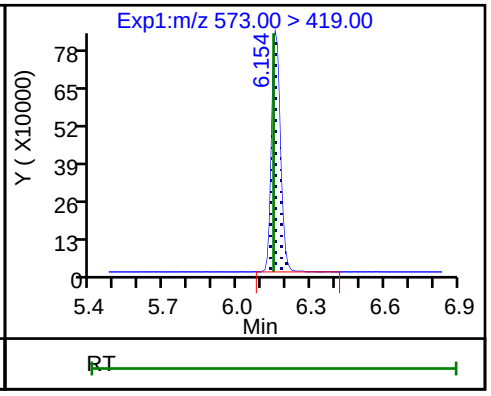
36 NMeFOSAA (ND)



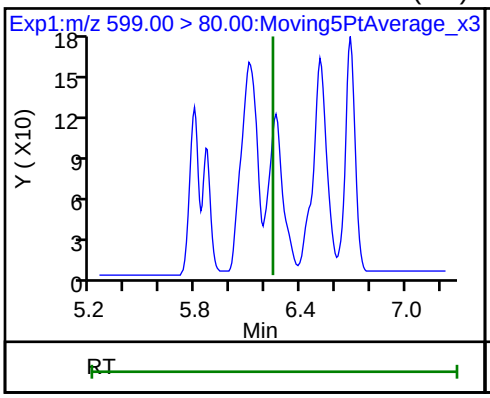
36 NMeFOSAA (ND)



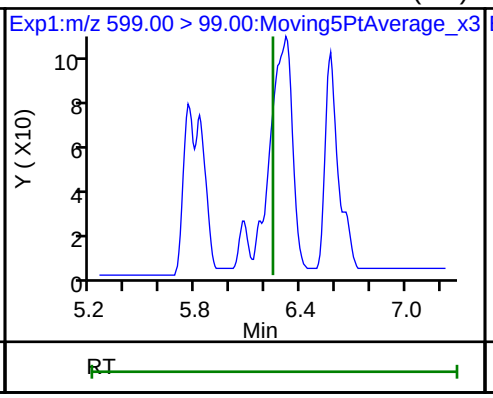
D 37 d3-NMeFOSAA



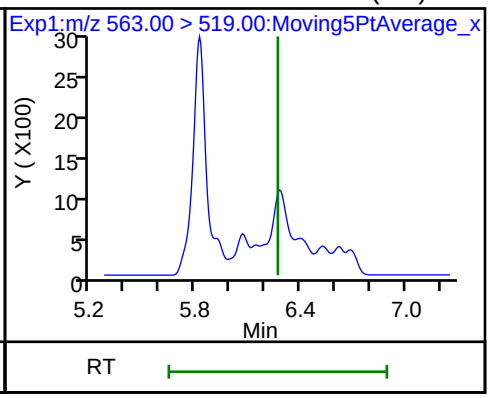
38 Perfluorodecanesulfonic acid (ND)



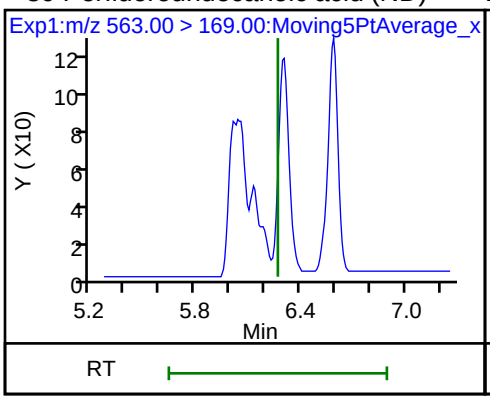
38 Perfluorodecanesulfonic acid (ND)



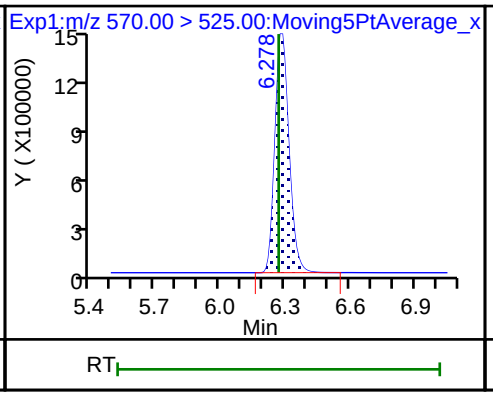
39 Perfluoroundecanoic acid (ND)



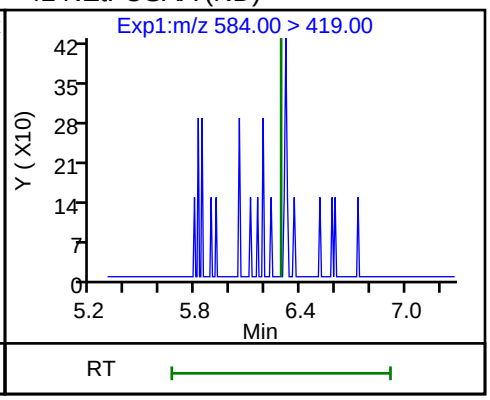
39 Perfluoroundecanoic acid (ND)



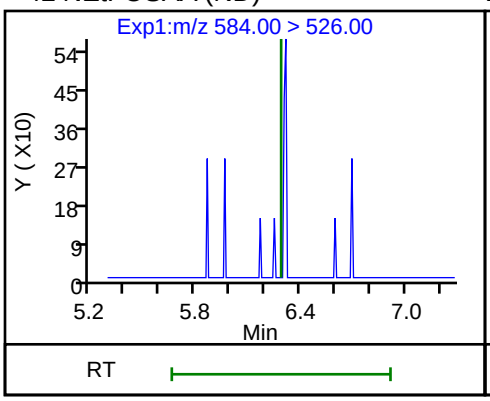
D 40 13C7 PFUnA



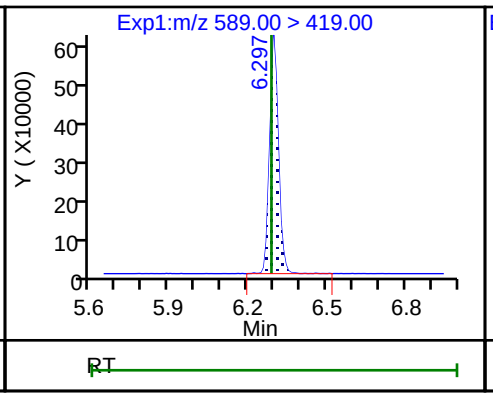
42 NEtFOSAA (ND)



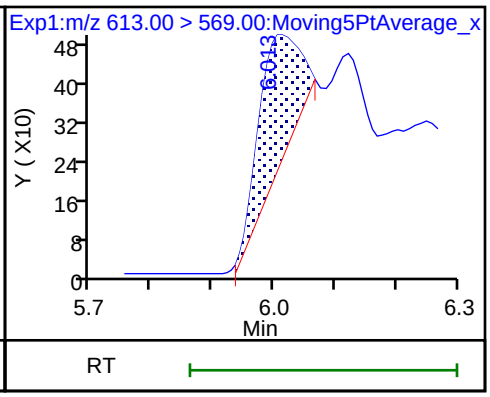
42 NEtFOSAA (ND)



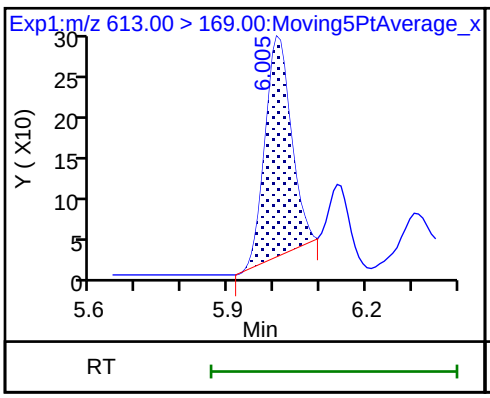
D 41 d5-NEtFOSAA



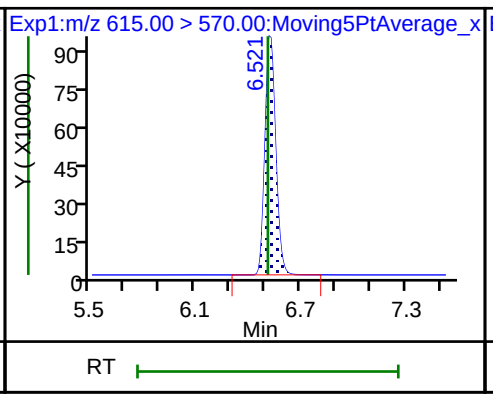
46 Perfluorododecanoic acid



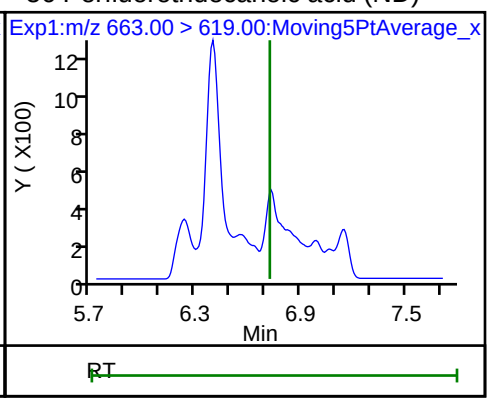
46 Perfluorododecanoic acid



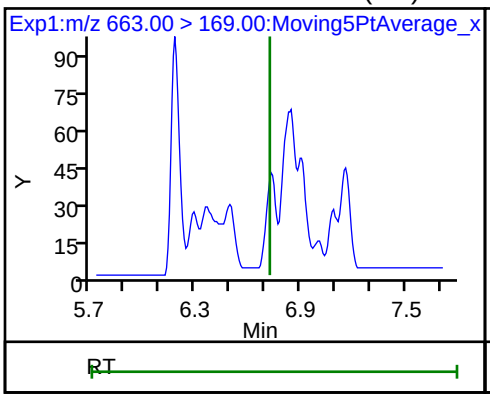
D 45 13C2-PFDoDA



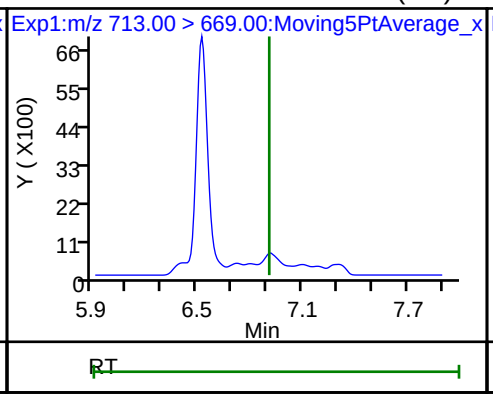
56 Perfluorotridecanoic acid (ND)



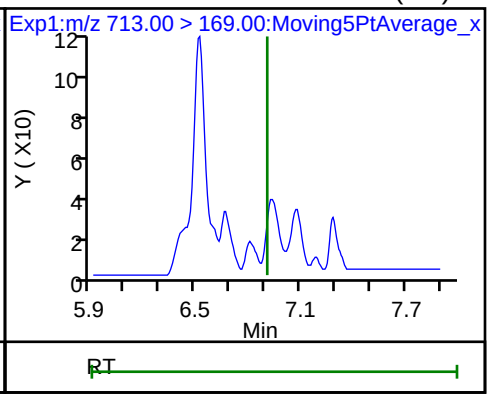
56 Perfluorotridecanoic acid (ND)



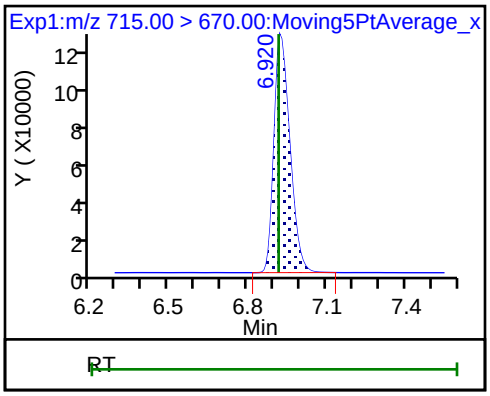
57 Perfluorotetradecanoic acid (ND)



57 Perfluorotetradecanoic acid (ND)



D 58 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

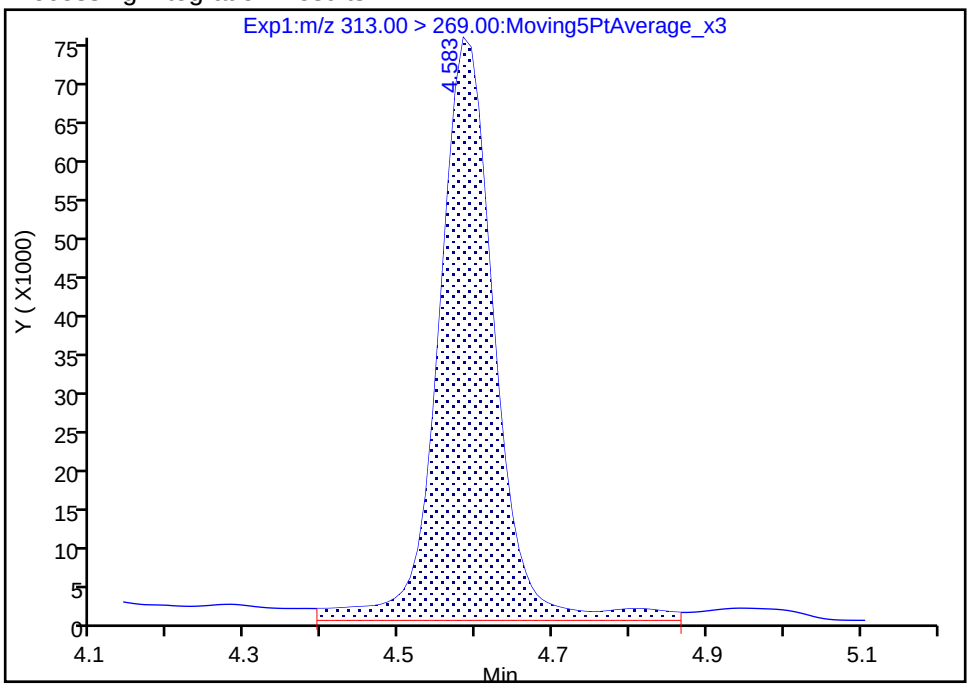
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-69.d				
Injection Date:	07-Apr-2022 18:42:45	Instrument ID:	29347		
Lims ID:	410-78012-B-1-A	Lab Sample ID:	410-78012-1		
Client ID:	AOI01-04-GW				
Operator ID:	US19_USR_INS75556	ALS Bottle#:	33	Worklist Smp#:	38
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

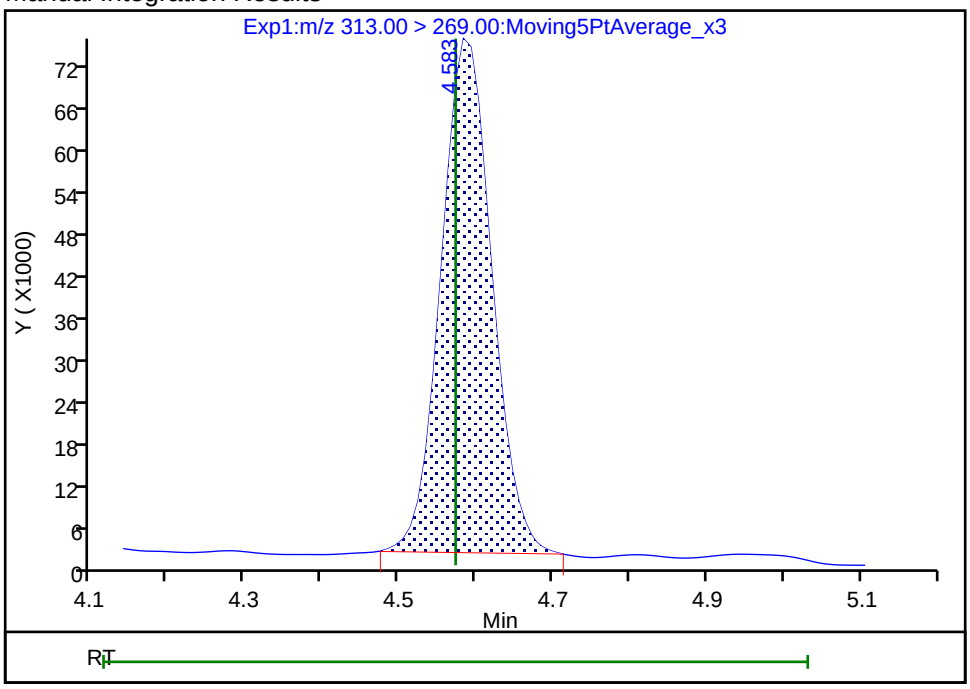
Processing Integration Results

RT: 4.58
Area: 382391
Amount: 0.488880
Amount Units: ng/ml



Manual Integration Results

RT: 4.58
Area: 336798
Amount: 0.430590
Amount Units: ng/ml



Reviewer: matthewsl, 07-Apr-2022 20:00:45

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

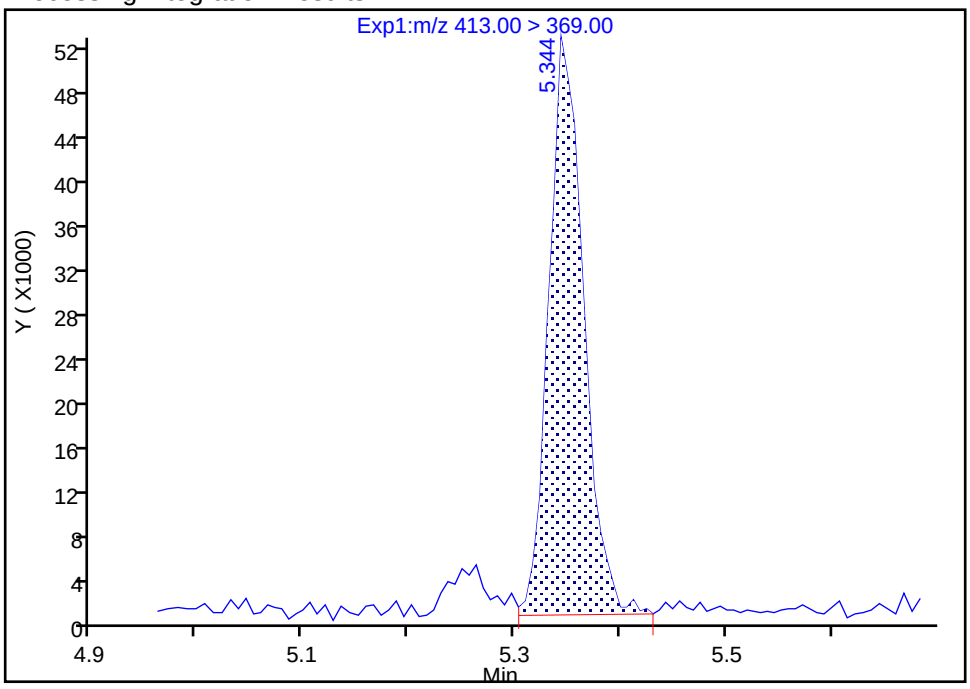
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-69.d				
Injection Date:	07-Apr-2022 18:42:45	Instrument ID:	29347		
Lims ID:	410-78012-B-1-A	Lab Sample ID:	410-78012-1		
Client ID:	AOI01-04-GW				
Operator ID:	US19_USR_INS75556	ALS Bottle#:	33	Worklist Smp#:	38
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

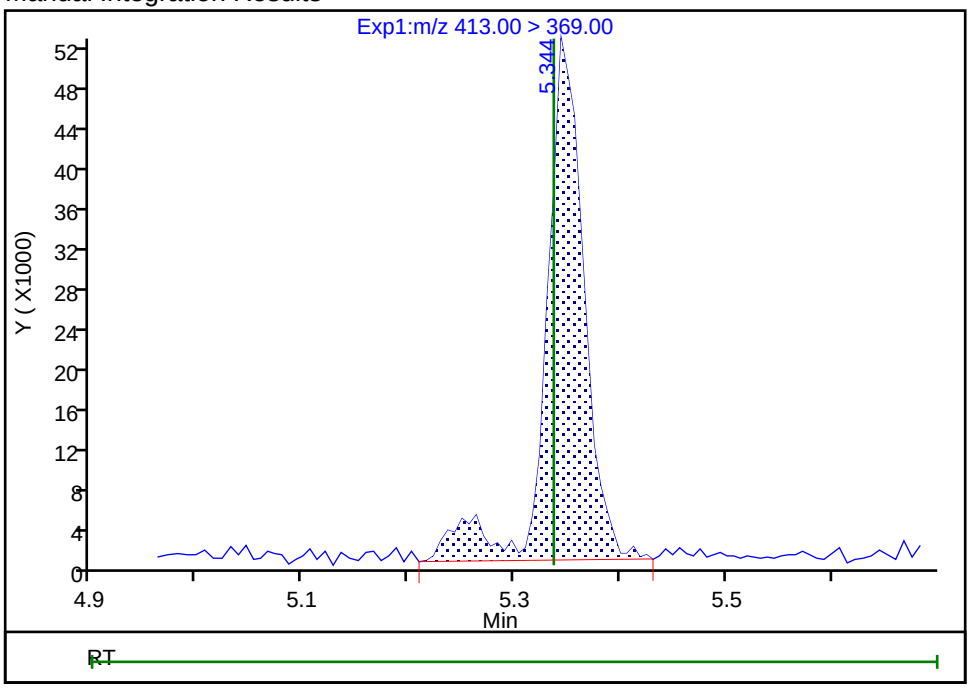
Processing Integration Results

RT: 5.34
Area: 117643
Amount: 0.140027
Amount Units: ng/ml



Manual Integration Results

RT: 5.34
Area: 129325
Amount: 0.153932
Amount Units: ng/ml



Reviewer: matthewsl, 07-Apr-2022 20:01:11

Audit Action: Manually Integrated Audit Reason: Baseline

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-240108/1	22APR03DCAL-41.d
Level 2	IC 410-240108/2	22APR03DCAL-42.d
Level 3	ICIS 410-240108/3	22APR03DCAL-43.d
Level 4	IC 410-240108/4	22APR03DCAL-44.d
Level 5	IC 410-240108/5	22APR03DCAL-45.d
Level 6	IC 410-240108/6	22APR03DCAL-46.d
Level 7	IC 410-240108/7	22APR03DCAL-47.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid	3.656	3.655	3.656	3.663	3.655	3.655	+++++				3.292 - 4.023	3.657
PFMPA	3.890	3.882	3.891	3.890	3.890	3.890	+++++				3.790 - 3.990	3.889
3:3 FTCA	4.165	4.162	4.166	4.172	4.162	4.169	+++++				4.066 - 4.266	4.166
Perfluoropentanoic acid	4.179	4.176	4.180	4.179	4.169	4.176	+++++				3.760 - 4.595	4.177
Perfluorobutanesulfonic acid	4.231	4.228	4.232	4.231	4.228	4.228	+++++				3.807 - 4.654	4.230
PFMBA	4.301	4.297	4.301	4.300	4.297	4.297	+++++				4.200 - 4.400	4.299
PFEESA	4.391	4.385	4.389	4.388	4.385	+++++	+++++				4.290 - 4.490	4.388
NFDHA	4.513	4.505	4.511	4.509	4.505	4.505	+++++				4.409 - 4.609	4.508
4:2 Fluorotelomer sulfonic acid	4.542	4.545	4.541	4.549	4.535	4.544	+++++				4.089 - 4.999	4.543
Perfluorohexanoic acid	4.581	4.574	4.580	4.588	4.574	4.584	+++++				4.123 - 5.040	4.580
Perfluoropentanesulfonic acid	4.601	4.603	4.600	4.608	4.603	4.603	+++++				2.912 - 6.296	4.603
Perfluoro(2-propoxypropanoic) acid	4.712	4.707	4.711	4.717	4.707	4.714	+++++				3.770 - 5.655	4.711
Perfluoroheptanoic acid	4.970	4.972	4.970	4.976	4.972	4.972	+++++				4.476 - 5.471	4.972
Perfluorohexanesulfonic acid	4.980	4.972	4.979	4.976	4.972	4.972	+++++				2.985 - 6.967	4.975
DONA	5.023	5.015	5.023	5.019	5.015	5.024	+++++				4.026 - 6.017	5.020
5:3 FTCA	5.046	5.046	5.045	5.050	5.039	5.046	+++++				4.947 - 5.147	5.045
6:2 Fluorotelomer sulfonic acid	5.331	5.324	5.323	5.328	5.324	5.324	+++++				4.794 - 5.859	5.326
Perfluoroheptanesulfonic acid	5.337	5.331	5.337	5.335	5.331	5.331	+++++				3.343 - 7.325	5.334
Perfluorooctanoic acid	5.344	5.338	5.350	5.342	5.338	5.345	+++++				4.809 - 5.878	5.343
Perfluorooctanesulfonic acid	5.669	5.669	5.676	5.673	5.669	5.669	+++++				5.104 - 6.239	5.671
Perfluorononanoic acid	5.692	5.685	5.692	5.688	5.685	5.693	+++++				5.121 - 6.259	5.689
7:3 FTCA	5.791	5.783	5.790	5.787	5.783	5.791	+++++				5.688 - 5.888	5.788
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	5.857	5.850	5.856	5.854	5.850	+++++	+++++				4.721 - 6.990	5.853
Perfluorononanesulfonic acid	5.981	5.973	5.981	5.978	5.973	5.982	+++++				3.709 - 8.248	5.978
8:2 Fluorotelomer sulfonic acid	6.005	5.998	6.005	6.003	5.998	6.006	+++++				5.402 - 6.603	6.003
Perfluorodecanoic acid	6.005	5.998	6.005	6.003	5.998	6.006	+++++				5.402 - 6.603	6.003
Perfluorooctanesulfonamide	6.113	6.105	6.113	6.110	6.105	+++++	+++++				5.500 - 6.723	6.109
NMeFOSAA	6.147	6.155	6.154	6.152	6.147	6.155	6.162				5.536 - 6.767	6.153

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorodecanesulfonic acid	6.251	6.252	6.251	6.248	6.242	6.252	+++++				3.980 - 8.519	6.249
Perfluoroundecanoic acid	6.280	6.271	6.279	6.276	6.271	6.280	+++++				5.650 - 6.906	6.276
NEtFOSAA	6.289	6.299	6.298	6.304	6.299	6.299	+++++				5.670 - 6.929	6.298
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	6.398	6.388	6.398	6.393	6.388	6.399	+++++				5.260 - 7.529	6.394
Perfluorododecanoic acid	6.521	6.513	6.521	6.518	6.513	6.522	+++++				5.866 - 7.171	6.518
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	6.539	6.530	6.530	6.535	6.531	6.540	+++++				4.132 - 8.938	6.534
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	6.566	6.566	6.566	6.562	6.557	6.566	+++++				5.908 - 7.220	6.564
NMeFOSA	6.574	6.574	6.574	6.579	6.574	6.575	+++++				5.919 - 7.234	6.575
Perfluorododecanesulfonic acid (PFDoS)	6.705	6.697	6.705	6.702	6.696	6.705	+++++				4.433 - 8.972	6.702
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	6.732	6.724	6.731	6.728	6.723	6.732	+++++				6.057 - 7.401	6.728
Perfluorotridecanoic acid	6.732	6.732	6.731	6.736	6.731	6.732	+++++				4.124 - 9.343	6.732
N-ethylperfluoro-1-octanesulfonamide	6.748	6.748	6.748	6.752	6.748	6.748	+++++				6.075 - 7.424	6.749
Perfluorotetradecanoic acid	6.921	6.913	6.921	6.918	6.914	6.921	+++++				4.150 - 9.688	6.918
Perfluorohexadecanoic acid	7.241	7.234	7.241	7.246	7.235	7.241	+++++				4.472 - 10.009	7.240
Perfluorooctadecanoic acid	7.494	7.494	7.494	7.499	7.489	7.494	+++++				4.726 - 10.264	7.494
13C4 PFBA	3.656	3.655	3.656	3.663	3.655	3.655	+++++				2.908 - 4.408	3.657
13C5 PFPeA	4.179	4.176	4.180	4.179	4.176	4.176	+++++				3.428 - 4.928	4.178
13C3 PFBS	4.231	4.228	4.232	4.231	4.228	4.228	+++++				3.480 - 4.980	4.230
M2-4:2 FTS	4.542	4.545	4.541	4.549	4.544	4.544	+++++				3.795 - 5.295	4.544
13C5 PFHxA	4.581	4.584	4.580	4.588	4.584	4.584	+++++				3.835 - 5.335	4.584
13C3 HFPO-DA	4.712	4.707	4.711	4.717	4.707	4.714	+++++				3.962 - 5.462	4.711
13C4 PFHpA	4.980	4.972	4.979	4.976	4.972	4.972	+++++				4.226 - 5.726	4.975
13C3 PFHxS	4.980	4.972	4.979	4.976	4.972	4.982	+++++				4.227 - 5.727	4.977
M2-6:2 FTS	5.331	5.324	5.323	5.328	5.324	5.324	+++++				4.577 - 6.077	5.326
13C8 PFOA	5.344	5.344	5.350	5.348	5.338	5.345	+++++				4.595 - 6.095	5.345
13C8 PFOS	5.677	5.669	5.676	5.673	5.669	5.677	+++++				4.924 - 6.424	5.674
13C9 PFNA	5.692	5.685	5.692	5.688	5.685	5.693	+++++				4.941 - 6.441	5.689
13C6 PFDA	6.005	5.998	6.005	6.003	5.998	6.006	+++++				5.254 - 6.754	6.003
M2-8:2 FTS	6.005	6.006	6.005	6.003	6.006	6.006	+++++				5.256 - 6.756	6.005
13C8 FOSA	6.113	6.114	6.113	6.119	6.105	6.114	+++++				5.364 - 6.864	6.113
d3-NMeFOSAA	6.154	6.147	6.146	6.152	6.147	6.155	+++++				5.402 - 6.902	6.150
13C7 PFUnA	6.280	6.280	6.279	6.286	6.280	6.280	+++++				5.532 - 7.032	6.281
d5-NEtFOSAA	6.299	6.289	6.298	6.295	6.290	6.299	+++++				5.546 - 7.046	6.295

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C2-PFDoDA	6.521	6.521	6.521	6.526	6.522	6.522	+++++				5.773 - 7.273	6.522
d7-N-MeFOSE-M	6.557	6.557	6.557	6.562	6.557	6.557	+++++				5.809 - 7.309	6.558
d3-NMePFOSA	6.574	6.574	6.574	6.579	6.574	6.575	+++++				5.826 - 7.326	6.575
d9-N-EtFOSE-M	6.723	6.715	6.723	6.720	6.714	6.723	+++++				5.970 - 7.470	6.720
d5-NEtPFOSA	6.748	6.740	6.740	6.745	6.740	6.748	+++++				5.994 - 7.494	6.744
13C2 PFTeDA	6.921	6.921	6.921	6.925	6.921	6.921	+++++				6.172 - 7.672	6.922

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-240108/1	22APR03DCAL-41.d
Level 2	IC 410-240108/2	22APR03DCAL-42.d
Level 3	ICIS 410-240108/3	22APR03DCAL-43.d
Level 4	IC 410-240108/4	22APR03DCAL-44.d
Level 5	IC 410-240108/5	22APR03DCAL-45.d
Level 6	IC 410-240108/6	22APR03DCAL-46.d
Level 7	IC 410-240108/7	22APR03DCAL-47.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C4 PFBA	906401 856147	881191 813636	902803 +++++	857449	Ave		869604.533				4.0					
13C5 PFPeA	762847 702881	727551 658919	765679 +++++	741532	Ave		726568.133				5.6					
13C3 PFBS	984991 911504	941846 869809	978468 +++++	952930	Ave		939924.695				4.6					
M2-4:2 FTS	42925 40225	40860 36566	43174 +++++	39784	Ave		40589.0257				6.0					
13C5 PFHxA	943385 849452	889599 797477	941546 +++++	898083	Ave		886590.133				6.3					
13C3 HFPO-DA	114385 111859	109796 103519	112915 +++++	110176	Ave		110441.633				3.4					
13C4 PFHpA	984612 842128	930969 698551	985472 +++++	887589	Ave		888220.117				12.2					
13C3 PFHxS	908218 793477	883783 667063	924659 +++++	850798	Ave		837999.753				11.4					
M2-6:2 FTS	26456 25471	28033 20559	27253 +++++	25518	Ave		25548.3333				10.3					
13C8 PFOA	1039175 919061	1017328 828626	1056998 +++++	994318	Ave		975917.517				8.9					
13C8 PFOS	859652 761700	838230 730624	850986 +++++	820017	Ave		810201.499				6.5					
13C9 PFNA	1082884 962150	1057437 895419	1050097 +++++	1056433	Ave		1017403.37				7.1					
13C6 PFDA	1175389 998523	1112872 912964	1132891 +++++	1150129	Ave		1080461.38				9.5					

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
M2-8:2 FTS	23870 21055	24278 18143	24303 +++++	22632	Ave		22379.9930				10.8					
13C8 FOSA	1353352 1294536	1312107 1223007	1337459 +++++	1243539	Ave		1293999.88				4.0					
d3-NMeFOSAA	289182 278148	288016 267696	291907 +++++	274009	Ave		281492.817				3.4					
13C7 PFUnA	1240440 1055268	1192458 937108	1199851 +++++	1138760	Ave		1127314.28				10.0					
d5-NEtFOSAA	238028 204544	226871 191578	231815 +++++	220169	Ave		218834.067				8.0					
13C2-PFDoDA	1310205 1161229	1197722 1028471	1289270 +++++	1175137	Ave		1193672.10				8.5					
d7-N-MeFOSE-M	140721 135405	135786 129207	140748 +++++	134359	Ave		136037.683				3.2					
d3-NMePFOSA	172360 174547	175203 171269	171293 +++++	168669	Ave		172223.483				1.4					
d9-N-EtFOSE-M	171401 161621	169919 144119	171198 +++++	166259	Ave		164086.250				6.4					
d5-NEtPFOSA	158044 159806	158737 152886	159780 +++++	155993	Ave		157541.083				1.7					
13C2 PFTeDA	1260571 1170982	1236294 1099509	1265538 +++++	1203800	Ave		1206115.63				5.2					

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

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	0.8385 0.7866	0.7902 +++++	0.8334	0.9074	0.8497	AveID		0.8343				5.3		20.0			
PFMPA	0.7878 0.7902	0.7705 +++++	0.8049	0.8662	0.8637	AveID		0.8139				5.0		20.0			
3:3 FTCA	0.0584 0.0646	0.0517 +++++	0.0568	0.0630	0.0623	AveID		0.0595				8.1		20.0			
Perfluoropentanoic acid	1.0346 0.9651	0.9864 +++++	1.0089	1.1171	1.0657	AveID		1.0296				5.4		20.0			
Perfluorobutanesulfonic acid	0.9708 0.8539	0.9179 +++++	0.9676	1.0342	1.0213	AveID		0.9609				7.0		20.0			
PFMBA	0.8458 0.7977	0.7876 +++++	0.8007	0.8564	0.8813	AveID		0.8283				4.6		20.0			
PFEESA	3.3915 +++++	3.4283 +++++	3.5268	3.7334	2.9752	AveID		3.4110				8.1		20.0			
NFDHA	0.2826 0.2732	0.2634 +++++	0.2738	0.3035	0.3005	AveID		0.2829				5.7		20.0			
4:2 Fluorotelomer sulfonic acid	3.4813 3.7854	3.6455 +++++	3.7404	4.0299	3.9944	AveID		3.7795				5.5		20.0			
Perfluorohexanoic acid	0.8753 0.8054	0.8878 +++++	0.8610	0.8921	0.9271	AveID		0.8748				4.6		20.0			
Perfluoropentanesulfonic acid	0.8626 0.7831	0.8716 +++++	0.9061	0.9498	0.9307	AveID		0.8840				6.7		20.0			
Perfluoro(2-propoxypropanoic) acid	2.0354 2.1217	2.0419 +++++	2.2243	2.1973	2.0964	AveID		2.1195				3.7		20.0			
Perfluoroheptanoic acid	0.9894 0.8688	0.9481 +++++	0.9322	1.0195	0.9718	AveID		0.9550				5.5		20.0			
Perfluorohexanesulfonic acid	0.9424 0.9901	0.9002 +++++	0.9403	1.0188	1.0454	AveID		0.9729				5.6		20.0			
DONA	1.6567 1.4399	1.5768 +++++	1.6641	1.8226	1.6934	AveID		1.6423				7.8		20.0			
5:3 FTCA	0.2033 0.1845	0.1868 +++++	0.1866	0.1939	0.1988	AveID		0.1923				4.0		20.0			
6:2 Fluorotelomer sulfonic acid	5.4322 5.4912	4.2654 +++++	5.3354	5.6245	5.1314	AveID		5.2134				9.5		20.0			
Perfluoroheptanesulfonic acid	0.9237 0.9944	0.9064 +++++	0.9300	1.0534	1.0289	AveID		0.9728				6.3		20.0			

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

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								
Perfluorooctanoic acid	0.9134 0.8151	0.8947 +++++	0.8970	0.9194	0.9310	AveID		0.8951				4.6		20.0			
Perfluorooctanesulfonic acid	1.0559 1.0556	0.9737 +++++	1.0776	1.1095	1.1721	AveID		1.0741				6.1		20.0			
Perfluorononanoic acid	0.8123 0.8049	0.8259 +++++	0.8852	0.8848	0.8962	AveID		0.8515				4.9		20.0			
7:3 FTCA	0.0886 0.0986	0.0998 +++++	0.1056	0.1055	0.1028	AveID		0.1001				6.3		20.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	2.3512 +++++	2.2585 +++++	2.4277	2.5281	2.3742	AveID		2.3879				4.2		20.0			
Perfluorononanesulfonic acid	0.8979 0.8925	0.8843 +++++	0.8933	1.0465	1.0122	AveID		0.9378				7.7		20.0			
8:2 Fluorotelomer sulfonic acid	7.5370 7.5548	6.7666 +++++	7.1236	8.1418	7.8253	AveID		7.4915				6.5		20.0			
Perfluorodecanoic acid	0.8572 0.8023	0.8635 +++++	0.8671	0.8931	0.9311	AveID		0.8690				4.9		20.0			
Perfluorooctanesulfonamide	1.0073 +++++	0.9171 +++++	1.0119	1.1385	0.9514	AveID		1.0053				8.4		20.0			
NMeFOSAA	0.8517 0.8726	0.8281	0.8900	0.9109	0.9297	AveID		0.8823				3.9		20.0			
Perfluorodecanesulfonic acid	1.0107 1.0016	0.9797 +++++	1.0579	1.1391	1.1517	AveID		1.0568				6.9		20.0			
Perfluoroundecanoic acid	0.8148 0.7457	0.7928 +++++	0.8523	0.8687	0.8600	AveID		0.8224				5.8		20.0			
NEtFOSAA	0.8773 0.9374	0.8927 +++++	0.9502	0.9958	1.0384	AveID		0.9486				6.4		20.0			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	2.0619 1.5391	1.9826 +++++	2.2295	2.1575	2.1289	AveID		2.0166				12.3		20.0			
Perfluorododecanoic acid	0.8767 0.7784	0.8655 +++++	0.8926	0.9651	0.9012	AveID		0.8799				6.9		20.0			
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	8.6665 9.8873	8.2138 +++++	9.1665	10.449	9.7262	AveID		9.3516				8.9		20.0			
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	0.8628 1.0434	0.9410 +++++	1.0079	1.0757	1.0272	AveID		0.9930				7.9		20.0			

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

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								
NMeFOSA	0.8933 1.0274	0.9413 +++++	1.0867	1.1017	1.0244	AveID		1.0125				8.0		20.0			
Perfluorododecanesulfonic acid (PFDoS)	1.0647 0.9412	0.9724 +++++	1.0146	1.1141	1.0806	AveID		1.0313				6.5		20.0			
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	0.8554 0.9752	0.8528 +++++	0.8895	0.9928	0.9502	AveID		0.9193				6.7		20.0			
Perfluorotridecanoic acid	0.9009 0.7437	0.8941 +++++	0.8849	0.9790	0.8689	AveID		0.8786				8.7		20.0			
N-ethylperfluoro-1-octanesulfonamide	1.0719 1.0974	1.0015 +++++	1.0941	1.1914	1.1043	AveID		1.0934				5.6		20.0			
Perfluorotetradecanoic acid	0.8937 0.7520	0.8529 +++++	0.8922	0.9313	0.8806	AveID		0.8671				7.1		20.0			
Perfluorohexadecanoic acid	0.7161 0.5763	0.6382 +++++	0.6170	0.6861	0.6486	AveID		0.6471				7.7		20.0			
Perfluorooctadecanoic acid	0.4198 0.4311	0.4047 +++++	0.4331	0.4859	0.4638	AveID		0.4397				6.8		20.0			

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-240108/1	22APR03DCAL-41.d
Level 2	IC 410-240108/2	22APR03DCAL-42.d
Level 3	ICIS 410-240108/3	22APR03DCAL-43.d
Level 4	IC 410-240108/4	22APR03DCAL-44.d
Level 5	IC 410-240108/5	22APR03DCAL-45.d
Level 6	IC 410-240108/6	22APR03DCAL-46.d
Level 7	IC 410-240108/7	22APR03DCAL-47.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	Ave	9064011 8136364	8811906 +++++	9028031	8574493	8561467	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C5 PFPeA	Ave	7628473 6589192	7275513 +++++	7656785	7415319	7028806	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C3 PFBS	Ave	9160417 8089225	8759164 +++++	9099755	8862249	8476988	9.30 9.30	9.30 +++++	9.30	9.30	9.30
M2-4:2 FTS	Ave	400924 341526	381631 +++++	403246	371584	375698	9.34 9.34	9.34 +++++	9.34	9.34	9.34
13C5 PFHxA	Ave	9433849 7974766	8895986 +++++	9415459	8980825	8494523	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C3 HFPO-DA	Ave	1143846 1035193	1097957 +++++	1129152	1101764	1118586	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C4 PFHpA	Ave	9846121 6985514	9309689 +++++	9854716	8875890	8421277	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C3 PFHxS	Ave	8591739 6310415	8360589 +++++	8747274	8048553	7506296	9.46 9.46	9.46 +++++	9.46	9.46	9.46
M2-6:2 FTS	Ave	251330 195315	266310 +++++	258903	242423	241974	9.50 9.50	9.50 +++++	9.50	9.50	9.50
13C8 PFOA	Ave	10391749 8286261	10173275 +++++	10569984	9943175	9190607	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C8 PFOS	Ave	8218274 6984762	8013477 +++++	8135428	7839367	7281850	9.56 9.56	9.56 +++++	9.56	9.56	9.56
13C9 PFNA	Ave	10828839 8954194	10574366 +++++	10500969	10564331	9621503	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C6 PFDA	Ave	11753891 9129639	11128723 +++++	11328908	11501291	9985231	10.0 10.0	10.0 +++++	10.0	10.0	10.0
M2-8:2 FTS	Ave	228672	232580	232822	216815	201703	9.58	9.58	9.58	9.58	9.58

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
		173810	+++++				9.58	+++++			
13C8 FOSA	Ave	13533515 12230073	13121068 +++++	13374586	12435387	12945364	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d3-NMeFOSAA	Ave	2891823 2676956	2880157 +++++	2919068	2740086	2781479	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C7 PFUnA	Ave	12404403 9371080	11924584 +++++	11998507	11387600	10552683	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d5-NEtFOSAA	Ave	2380279 1915779	2268708 +++++	2318148	2201688	2045442	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C2-PFDoDA	Ave	13102050 10284705	11977216 +++++	12892696	11751365	11612294	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d7-N-MeFOSE-M	Ave	1407212 1292072	1357861 +++++	1407476	1343594	1354046	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d3-NMePFOSA	Ave	1723598 1712688	1752034 +++++	1712931	1686690	1745468	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d9-N-EtFOSE-M	Ave	1714013 1441193	1699187 +++++	1711980	1662591	1616211	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d5-NEtPFOSA	Ave	1580441 1528864	1587372 +++++	1597800	1559929	1598059	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C2 PFTeDA	Ave	12605713 10995088	12362942 +++++	12655384	12037995	11709816	10.0 10.0	10.0 +++++	10.0	10.0	10.0

Curve Type Legend
Ave = Average

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-240108/1	22APR03DCAL-41.d
Level 2	IC 410-240108/2	22APR03DCAL-42.d
Level 3	ICIS 410-240108/3	22APR03DCAL-43.d
Level 4	IC 410-240108/4	22APR03DCAL-44.d
Level 5	IC 410-240108/5	22APR03DCAL-45.d
Level 6	IC 410-240108/6	22APR03DCAL-46.d
Level 7	IC 410-240108/7	22APR03DCAL-47.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	151996 31999492	348149 +++++	1504725	6224554	14548747	0.200 50.0	0.500 +++++	2.00	8.00	20.0
PFMPA		AveID	120200 26032392	280285 +++++	1232572	5138320	12141377	0.200 50.0	0.500 +++++	2.00	8.00	20.0
3:3 FTCA		AveID	8905 2128700	18800 +++++	87045	373705	875887	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluoropentanoic acid		AveID	157842 31797742	358843 +++++	1545051	6626818	14981474	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorobutanesulfonic acid		AveID	169258 32866404	382548 +++++	1675719	6977427	16477232	0.177 44.3	0.443 +++++	1.77	7.08	17.7
PFMBA		AveID	129047 26282352	286520 +++++	1226231	5080280	12388412	0.200 50.0	0.500 +++++	2.00	8.00	20.0
PFEESA		AveID	569507 +++++	1357161 +++++	5910676	23872827	44986411	0.178 +++++	0.445 +++++	1.78	7.12	17.8
NFDHA		AveID	53325 10894510	117176 +++++	515599	2180848	5105122	0.200 50.0	0.500 +++++	2.00	8.00	20.0
4:2 Fluorotelomer sulfonic acid		AveID	27915 6464128	69562 +++++	301661	1197955	3001346	0.187 46.7	0.467 +++++	1.87	7.47	18.7

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

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
Perfluorohexanoic acid		AveI D	165145 32115474	394907 +++++	1621396	6409585	15751339	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluoropentanesulfonic acid		AveI D	159398 31943932	385027 +++++	1663196	6791657	15915349	0.188 46.9	0.469 +++++	1.88	7.50	18.8
Perfluoro(2-propoxypropanoic) acid		AveI D	46564 10981796	112098 +++++	502307	1936722	4689989	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluoroheptanoic acid		AveI D	194833 30345921	441312 +++++	1837277	7239159	16368354	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorohexanesulfonic acid		AveI D	156124 30115989	362766 +++++	1585956	6324133	15130319	0.182 45.6	0.456 +++++	1.82	7.30	18.2
DONA		AveI D	308299 47525038	693626 +++++	3099415	12230242	26952534	0.189 47.3	0.473 +++++	1.89	7.56	18.9
5:3 FTCA		AveI D	38362 7357079	83102 +++++	351371	1393068	3377590	0.200 50.0	0.500 +++++	2.00	8.00	20.0
6:2 Fluorotelomer sulfonic acid		AveI D	27248 5351327	56677 +++++	275689	1088513	2478081	0.190 47.4	0.474 +++++	1.90	7.58	19.0
Perfluoroheptanesulfonic acid		AveI D	159730 31574779	381308 +++++	1637332	6825914	15544952	0.190 47.6	0.476 +++++	1.90	7.62	19.0
Perfluorooctanoic acid		AveI D	189841 33770677	455101 +++++	1896303	7313676	17113435	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorooctanesulfonic acid		AveI D	168012 35687900	377689 +++++	1697365	6736263	16525585	0.185 46.3	0.463 +++++	1.85	7.40	18.5
Perfluorononanoic acid		AveI D	175921 36035526	436670 +++++	1859110	7477465	17246095	0.200 50.0	0.500 +++++	2.00	8.00	20.0

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

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
7:3 FTCA		AveI D	16717 3932718	44387 +++++	198830	757778	1746718	0.200 50.0	0.500 +++++	2.00	8.00	20.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid		AveI D	375950 +++++	880312 +++++	3842659	15423497	33637060	0.186 +++++	0.465 +++++	1.86	7.44	18.6
Perfluorononanesulfonic acid		AveI D	148194 31301144	355787 +++++	1459631	6590429	14803691	0.192 48.0	0.480 +++++	1.92	7.68	19.2
8:2 Fluorotelomer sulfonic acid		AveI D	34470 6565483	78689 +++++	331704	1412217	3156765	0.192 47.9	0.479 +++++	1.92	7.66	19.2
Perfluorodecanoic acid		AveI D	201501 36624334	480478 +++++	1964614	8217479	18594387	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorooctanesulfonamide		AveI D	272638 +++++	601674 +++++	2706786	11326479	24633627	0.200 +++++	0.500 +++++	2.00	8.00	20.0
NMeFOSAA		AveI D	49259 11678997	119252 21381008	519617	1996737	5172060	0.200 50.0	0.500 100	2.00	8.00	20.0
Perfluorodecanesulfonic acid		AveI D	167513 35271098	395844 +++++	1735721	7203829	16913660	0.193 48.2	0.482 +++++	1.93	7.71	19.3
Perfluoroundecanoic acid		AveI D	202142 34938518	472700 +++++	2045320	7913685	18149923	0.200 50.0	0.500 +++++	2.00	8.00	20.0
NEtFOSAA		AveI D	41762 8979265	101262 +++++	440545	1754012	4247834	0.200 50.0	0.500 +++++	2.00	8.00	20.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid		AveI D	329685 52288229	772754 +++++	3528884	13162647	30161234	0.186 46.5	0.465 +++++	1.86	7.44	18.6
Perfluorododecanoic acid		AveI D	229728 40026018	518333 +++++	2301558	9072761	20930024	0.200 50.0	0.500 +++++	2.00	8.00	20.0

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

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
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)		AveID	39884 8646380	96117 +++++	429504	1823809	3948190	0.193 48.2	0.482 +++++	1.93	7.71	19.3
2-(N-methylperfluoro-1-octanesulfonamido) ethanol		AveID	24283 6740947	63888 +++++	283732	1156261	2781843	0.200 50.0	0.500 +++++	2.00	8.00	20.0
NMeFOSA		AveID	30794 8797913	82463 +++++	372293	1486573	3576234	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorododecanesulfonic acid (PFDoS)		AveID	177199 33282379	394514 +++++	1671560	7075055	15934851	0.194 48.4	0.484 +++++	1.94	7.74	19.4
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol		AveID	29322 7027544	72456 +++++	304558	1320437	3071461	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorotridecanoic acid		AveID	236065 38241889	535464 +++++	2281667	9203668	20180216	0.200 50.0	0.500 +++++	2.00	8.00	20.0
N-ethylperfluoro-1-octanesulfonamide		AveID	33880 8388749	79489 +++++	349642	1486824	3529505	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorotetradecanoic acid		AveID	225316 41339664	527234 +++++	2258117	8969012	20623152	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorohexadecanoic acid		AveID	180535 31680420	394524 +++++	1561789	6607392	15190935	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorooctadecanoic acid		AveID	105835 23697607	250153 +++++	1096312	4679163	10862183	0.200 50.0	0.500 +++++	2.00	8.00	20.0

Curve Type Legend
AveID = Average isotope dilution

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-240108/1	22APR03DCAL-41.d
Level 2	IC 410-240108/2	22APR03DCAL-42.d
Level 3	ICIS 410-240108/3	22APR03DCAL-43.d
Level 4	IC 410-240108/4	22APR03DCAL-44.d
Level 5	IC 410-240108/5	22APR03DCAL-45.d
Level 6	IC 410-240108/6	22APR03DCAL-46.d
Level 7	IC 410-240108/7	22APR03DCAL-47.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanoic acid	0.5 +++++	-5.3	-0.1	8.8	1.8	-5.7	30	30	30	30	30	30
PFMPA	-3.2 +++++	-5.3	-1.1	6.4	6.1	-2.9	30	30	30	30	30	30
3:3 FTCA	-1.9 +++++	-13.1	-4.4	5.9	4.8	8.7	30	30	30	30	30	30
Perfluoropentanoic acid	0.5 +++++	-4.2	-2.0	8.5	3.5	-6.3	30	30	30	30	30	30
Perfluorobutanesulfonic acid	1.0 +++++	-4.5	0.7	7.6	6.3	-11.1	30	30	30	30	30	30
PFMBA	2.1 +++++	-4.9	-3.3	3.4	6.4	-3.7	30	30	30	30	30	30
PFEESA	-0.6 +++++	0.5	3.4	9.5	-12.8	+++++	30	30	30	30	30	
NFDHA	-0.1 +++++	-6.9	-3.2	7.3	6.2	-3.4	30	30	30	30	30	30
4:2 Fluorotelomer sulfonic acid	-7.9 +++++	-3.5	-1.0	6.6	5.7	0.2	30	30	30	30	30	30
Perfluorohexanoic acid	0.1 +++++	1.5	-1.6	2.0	6.0	-7.9	30	30	30	30	30	30
Perfluoropentanesulfonic acid	-2.4 +++++	-1.4	2.5	7.4	5.3	-11.4	30	30	30	30	30	30
Perfluoro(2-propoxypropanoic) acid	-4.0 +++++	-3.7	4.9	3.7	-1.1	0.1	30	30	30	30	30	30
Perfluoroheptanoic acid	3.6 +++++	-0.7	-2.4	6.8	1.8	-9.0	30	30	30	30	30	30
Perfluorohexanesulfonic acid	-3.1 +++++	-7.5	-3.3	4.7	7.5	1.8	30	30	30	30	30	30

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
DONA	0.9 +++++	-4.0	1.3	11.0	3.1	-12.3	30	30	30	30	30	30
5:3 FTCA	5.7 +++++	-2.9	-3.0	0.8	3.4	-4.1	30	30	30	30	30	30
6:2 Fluorotelomer sulfonic acid	4.2 +++++	-18.2	2.3	7.9	-1.6	5.3	30	30	30	30	30	30
Perfluoroheptanesulfonic acid	-5.0 +++++	-6.8	-4.4	8.3	5.8	2.2	30	30	30	30	30	30
Perfluorooctanoic acid	2.0 +++++	0.0	0.2	2.7	4.0	-8.9	30	30	30	30	30	30
Perfluorooctanesulfonic acid	-1.7 +++++	-9.3	0.3	3.3	9.1	-1.7	30	30	30	30	30	30
Perfluorononanoic acid	-4.6 +++++	-3.0	4.0	3.9	5.2	-5.5	30	30	30	30	30	30
7:3 FTCA	-11.5 +++++	-0.4	5.4	5.3	2.7	-1.5	30	30	30	30	30	30
9-Chlorohexadecafluoro-3-oxanonane -1-sulfonic acid	-1.5 +++++	-5.4	1.7	5.9	-0.6	+++++	30	30	30	30	30	
Perfluorononanesulfonic acid	-4.3 +++++	-5.7	-4.7	11.6	7.9	-4.8	30	30	30	30	30	30
8:2 Fluorotelomer sulfonic acid	0.6 +++++	-9.7	-4.9	8.7	4.5	0.8	30	30	30	30	30	30
Perfluorodecanoic acid	-1.4 +++++	-0.6	-0.2	2.8	7.1	-7.7	30	30	30	30	30	30
Perfluorooctanesulfonamide	0.2 +++++	-8.8	0.7	13.3	-5.4	+++++	30	30	30	30	30	
NMeFOSAA	-3.5 1.2	-6.1	0.9	3.2	5.4	-1.1	30 30	30	30	30	30	30
Perfluorodecanesulfonic acid	-4.4 +++++	-7.3	0.1	7.8	9.0	-5.2	30	30	30	30	30	30
Perfluoroundecanoic acid	-0.9 +++++	-3.6	3.6	5.6	4.6	-9.3	30	30	30	30	30	30
NEtFOSAA	-7.5 +++++	-5.9	0.2	5.0	9.5	-1.2	30	30	30	30	30	30
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	2.2 +++++	-1.7	10.6	7.0	5.6	-23.7	30	30	30	30	30	30
Perfluorododecanoic acid	-0.4 +++++	-1.6	1.4	9.7	2.4	-11.5	30	30	30	30	30	30

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 240108

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2022 17:12 Calibration End Date: 04/03/2022 18:16 Calibration ID: 36762

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	-7.3 +++++	-12.2	-2.0	11.7	4.0	5.7	30	30	30	30	30	30
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	-13.1 +++++	-5.2	1.5	8.3	3.4	5.1	30	30	30	30	30	30
NMeFOSA	-11.8 +++++	-7.0	7.3	8.8	1.2	1.5	30	30	30	30	30	30
Perfluorododecanesulfonic acid (PFDoS)	3.2 +++++	-5.7	-1.6	8.0	4.8	-8.7	30	30	30	30	30	30
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	-7.0 +++++	-7.2	-3.2	8.0	3.4	6.1	30	30	30	30	30	30
Perfluorotridecanoic acid	2.5 +++++	1.8	0.7	11.4	-1.1	-15.4	30	30	30	30	30	30
N-ethylperfluoro-1-octanesulfonamide	-2.0 +++++	-8.4	0.1	9.0	1.0	0.4	30	30	30	30	30	30
Perfluorotetradecanoic acid	3.1 +++++	-1.6	2.9	7.4	1.6	-13.3	30	30	30	30	30	30
Perfluorohexadecanoic acid	10.7 +++++	-1.4	-4.6	6.0	0.2	-10.9	30	30	30	30	30	30
Perfluorooctadecanoic acid	-4.5 +++++	-8.0	-1.5	10.5	5.5	-2.0	30	30	30	30	30	30

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d
Lims ID: IC CAL 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 03-Apr-2022 17:12:49 ALS Bottle#: 20002 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 1
Misc. Info.: Plate: 1 Rack: 1 410-0053897-001
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:06 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:08:15
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 2 13C4 PFBA										
217.00 > 172.00	3.656	3.658	-0.002		9064011	10.4		104	121429	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.658	-0.002	1.000	151996	0.2010		101	325	
63 PFECA F										
229.00 > 85.00	3.890	3.890	0.0	0.931	120200	0.1936		96.8	6712	
67 3:3 FTCA										M
241.00 > 177.00	4.165	4.166	-0.001	0.997	8905	0.1963	Target=1.30	98.1	787	M
241.00 > 117.00	4.165	4.166	-0.001	0.997	6653		1.34(0.65-1.94)	98.1	247	M
3 Perfluoropentanoic acid										M
263.00 > 219.00	4.179	4.177	0.002	1.000	157842	0.2010		100	661	M
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.178	0.001		7628473	10.5		105	76192	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.230	0.001		9160417	9.75		105	599259	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.230	0.001	1.000	169258	0.1788	Target=2.82	101	203	
299.00 > 99.00	4.231	4.230	0.001	1.000	59760		2.83(1.41-4.23)	101	191	
64 PFECA A										
279.00 > 85.00	4.301	4.300	0.001	1.029	129047	0.2042		102	4575	
65 PES										
315.00 > 135.00	4.391	4.390	0.001	0.958	569507	0.1770	Target=14.82	99.4	23151	
315.00 > 83.00	4.391	4.390	0.001	0.958	34963		16.29(7.41-22.22)	99.4	43.1	
68 PFECA B										
295.00 > 201.00	4.513	4.509	0.004	0.985	53325	0.1998		99.9	2342	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.542	4.544	-0.002	1.000	27915	0.1721	Target=1.61	92.1	2017	
327.00 > 81.00	4.552	4.544	0.008	1.002	25361		1.10(0.81-2.42)	92.1	567	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.542	4.545	-0.003		400924	9.88		106	12382	
10 Perfluorohexanoic acid										M
313.00 > 269.00	4.581	4.582	-0.001	1.000	165145	0.2001	Target=13.95	100	1252	M
313.00 > 119.00	4.581	4.582	-0.001	1.000	12454		13.26(6.97-20.92)	100	471	M
D 9 13C5 PFHxA										
318.00 > 273.00	4.581	4.585	-0.004		9433849	10.6		106	74124	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.601	4.604	-0.003	1.087	159398	0.1831	Target=2.93	97.6	8895	
349.00 > 99.00	4.601	4.604	-0.003	1.087	57139		2.79(1.47-4.40)	97.6	3244	
12 HFPO-DA										
329.00 > 285.00	4.712	4.712	0.0	1.000	46564	0.1921		96.0	1144	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.712	4.712	0.0		1143846	10.4		104	60560	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.970	4.973	-0.003	0.998	194833	0.2072	Target=3.12	104	1622	
363.00 > 169.00	4.970	4.973	-0.003	0.998	59896		3.25(1.56-4.69)	104	1495	
D 17 13C4 PFHpA										
367.00 > 322.00	4.980	4.976	0.004		9846121	11.1		111	183350	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.980	4.976	0.004	1.000	156124	0.1767	Target=2.99	96.9	52217	
399.00 > 99.00	4.980	4.976	0.004	1.000	51215		3.05(1.49-4.48)	96.9	104	
D 16 13C3 PFHxS										
402.00 > 80.00	4.980	4.977	0.003		8591739	10.3		108	902896	
18 DONA										
377.00 > 251.00	5.023	5.021	0.002	1.009	308299	0.1907		101	6349	
62 5:3 FTCA										
341.00 > 237.00	5.046	5.047	-0.001	1.101	38362	0.2114	Target=3.15	106	708	
341.00 > 217.00	5.046	5.047	-0.001	1.101	10305		3.72(1.57-4.72)	106	511	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.327	0.003		251330	9.84		104	17294	
19 6:2 FTS										
427.00 > 407.00	5.331	5.327	0.003	1.000	27248	0.1976	Target=1.62	104	1840	
427.00 > 81.00	5.324	5.327	-0.003	0.999	18090		1.51(0.81-2.43)	104	1000	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.334	0.003	1.072	159730	0.1808	Target=3.16	95.0	11073	
449.00 > 99.00	5.331	5.334	-0.004	1.070	51051		3.13(1.58-4.74)	95.0	4815	
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.344	5.344	0.0	1.000	189841	0.2041	Target=2.36	102	8362	M
413.00 > 169.00	5.344	5.344	0.0	1.000	77736		2.44(1.18-3.54)	102	6816	M
D 22 13C8 PFOA										
421.00 > 376.00	5.344	5.345	-0.001		10391749	10.6		106	845509	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										M
499.00 > 80.00	5.669	5.672	-0.003	0.999	168012	0.1820	Target=3.73	98.3	218	
499.00 > 99.00	5.661	5.672	-0.011	0.997	40945		4.10(1.87-5.60)	98.3	102	M
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.674	0.003		8218274	10.1		106	690142	
26 Perfluorononanoic acid										M
463.00 > 419.00	5.692	5.690	0.002	1.000	175921	0.1908	Target=4.38	95.4	2659	
463.00 > 169.00	5.684	5.690	-0.006	0.999	44905		3.92(2.19-6.56)	95.4	1577	M
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.691	0.001		10828839	10.6		106	154027	
66 7:3 FTCA										M
441.00 > 317.00	5.791	5.788	0.003	1.264	16717	0.1769	Target=10.71	88.5	814	M
441.00 > 337.00	5.798	5.788	0.010	1.266	2042		8.19(5.36-16.07)	88.5	103	M
28 9ClFOS										M
531.00 > 351.00	5.857	5.855	0.002	1.032	375950	0.1831		98.5	14212	M
29 Perfluorononanesulfonic acid										M
549.00 > 80.00	5.981	5.978	0.003	1.054	148194	0.1838	Target=3.28	95.7	7605	
549.00 > 99.00	5.981	5.978	0.003	1.054	46791		3.17(1.64-4.92)	95.7	2976	M
33 8:2 FTS										
527.00 > 507.00	6.005	6.002	0.003	1.000	34470	0.1928	Target=2.01	101	2073	
527.00 > 81.00	6.005	6.002	0.003	1.000	15990		2.16(1.01-3.02)	101	253	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	6.002	0.003	1.000	201501	0.1973	Target=8.83	98.6	3040	
513.00 > 169.00	5.997	6.002	-0.005	0.999	23191		8.69(4.41-13.24)	98.6	421	
D 32 13C6 PFDA										
519.00 > 474.00	6.005	6.004	0.001		11753891	10.9		109	350970	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	6.006	-0.001		228672	10.2		107	18249	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.113	6.112	0.001	1.000	272638	0.2004		100	10711	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.114	-0.001		13533515	10.5		105	199741	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.154	6.152	0.002		2891823	10.3		103	609500	
36 NMeFOSAA										M
570.00 > 419.00	6.147	6.152	-0.005	0.999	49259	0.1931	Target=1.81	96.5	1806	
570.00 > 483.00	6.139	6.152	-0.014	0.997	27735		1.78(0.91-2.72)	96.5	38.1	M
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.250	0.001	1.101	167513	0.1844	Target=3.48	95.6	7614	
599.00 > 99.00	6.251	6.250	0.001	1.101	47405		3.53(1.74-5.22)	95.6	2153	
39 Perfluoroundecanoic acid										M
563.00 > 519.00	6.280	6.278	0.002	1.000	202142	0.1982	Target=8.25	99.1	1629	M
563.00 > 169.00	6.270	6.278	-0.008	0.999	24529		8.24(4.12-12.37)	99.1	1073	M
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.282	-0.002		12404403	11.0		110	231796	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.296	0.003		2380279	10.9		109	495009	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.289	6.300	-0.011	0.999	41762	0.1850	Target=1.66	92.5	78.5	
584.00 > 526.00	6.289	6.300	-0.011	0.999	24539		1.70(0.83-2.49)	92.5	44.1	
43 11ClFOS										
631.00 > 451.00	6.398	6.394	0.004	1.127	329685	0.1902		102	13935	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.521	6.518	0.003	1.000	229728	0.1993	Target=5.87	99.6	996	
613.00 > 169.00	6.512	6.518	-0.006	0.999	37720		6.09(2.94-8.81)	99.6	584	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.521	6.523	-0.002		13102050	11.0		110	621336	
48 10:2 FTS										
627.00 > 607.00	6.539	6.535	0.004	1.089	39884	0.1787	Target=1.77	92.7	2341	
627.00 > 81.00	6.530	6.535	-0.005	1.087	24025		1.66(0.88-2.65)	92.7	963	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.559	-0.002		1407212	10.3		103	6672	
47 N-MeFOSE-M										M
616.00 > 59.00	6.566	6.564	0.002	1.001	24283	0.1738		86.9	262	M
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.576	-0.002		1723598	10.0		100	6027	
50 NMeFOSA										M
512.00 > 169.00	6.574	6.576	-0.002	1.000	30794	0.1765		88.2	926	M
53 PFDoS										
699.00 > 80.00	6.705	6.702	0.003	1.181	177199	0.1999		103	4552	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.720	0.003		1714013	10.4		104	11306	
52 N-EtFOSE-M										
630.00 > 59.00	6.732	6.729	0.003	1.001	29322	0.1861		93.0	433	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.732	6.733	-0.001	1.032	236065	0.2051	Target=5.56	103	747	
663.00 > 169.00	6.732	6.733	-0.001	1.032	41687		5.66(2.78-8.34)	103	1733	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.748	6.744	0.004		1580441	10.0		100	11331	
55 N-EtFOSA-M										M
526.00 > 169.00	6.748	6.750	-0.002	1.000	33880	0.1961		98.0	862	M
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.919	0.002	1.000	225316	0.2061	Target=5.83	103	519	
713.00 > 169.00	6.914	6.919	-0.005	0.999	37926		5.94(2.92-8.75)	103	1518	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.922	-0.001		12605713	10.5		105	380410	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.241	0.0	1.046	180535	0.2213	Target=6.08	111	681	
813.00 > 169.00	7.235	7.241	-0.006	1.045	28402		6.36(3.04-9.12)	111	1179	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.495	-0.001	1.083	105835	0.1909	Target=7.30	95.5	3002	
913.00 > 169.00	7.494	7.495	-0.001	1.083	14260		7.42(3.65-10.94)	95.5	1222	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD1_00013 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:26:07 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d

Injection Date: 03-Apr-2022 17:12:49 Instrument ID: 29347

Lims ID: IC CAL 1

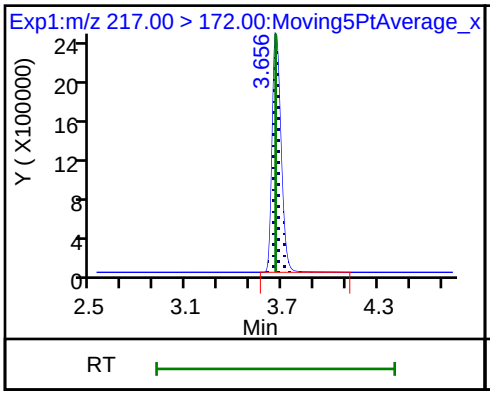
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Operator ID: US19_USR_INS75556 ALS Bottle#: 20002 Worklist Smp#: 1

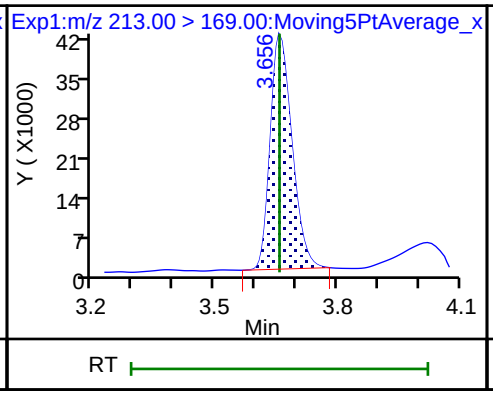
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

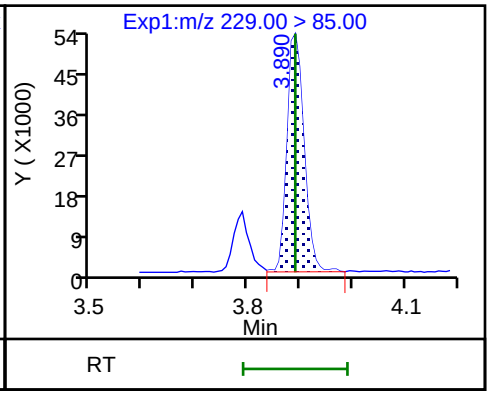
D 2 13C4 PFBA



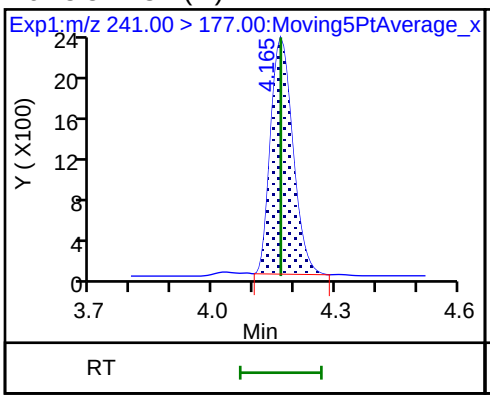
1 Perfluorobutanoic acid



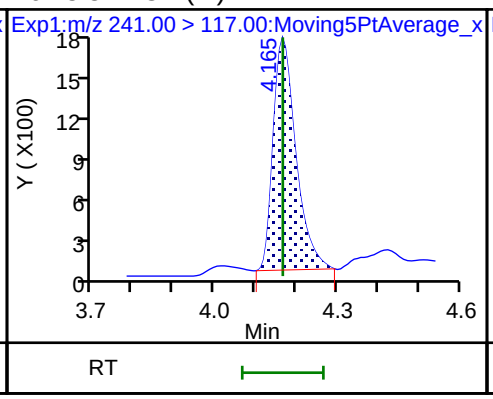
63 PFECA F



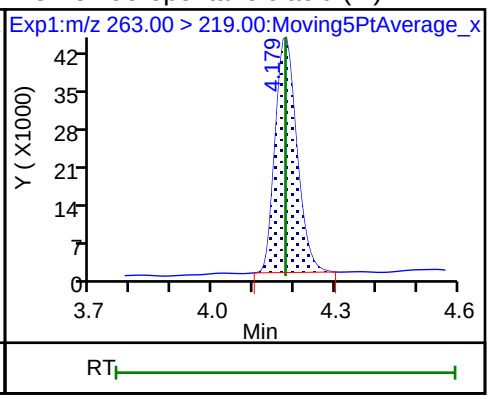
67 3:3 FTCA (M)



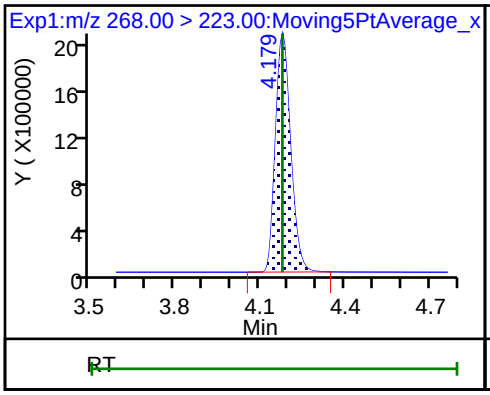
67 3:3 FTCA (M)



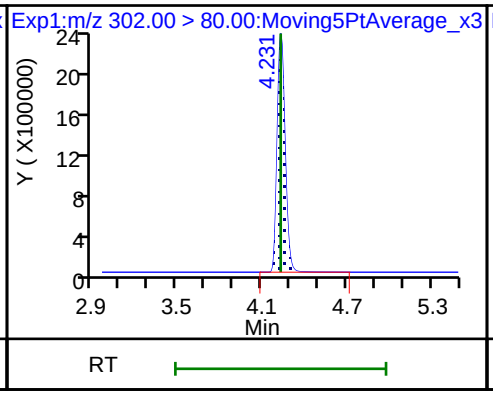
3 Perfluoropentanoic acid (M)



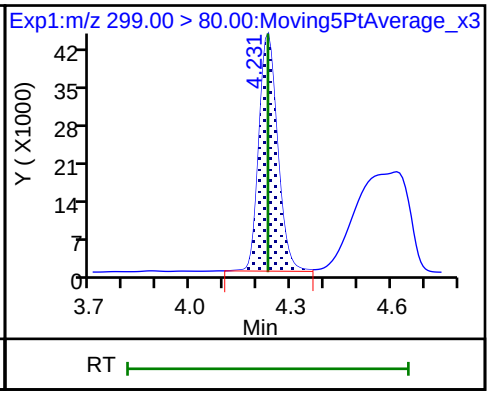
D 4 13C5 PFPeA



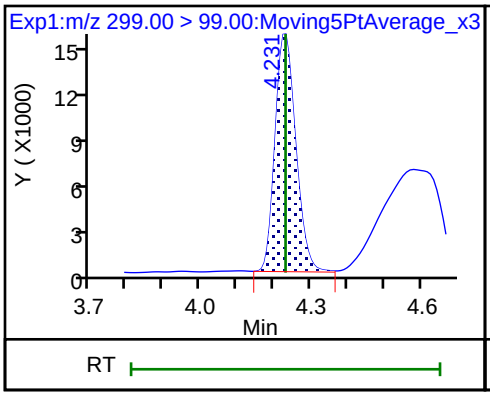
D 6 13C3 PFBS



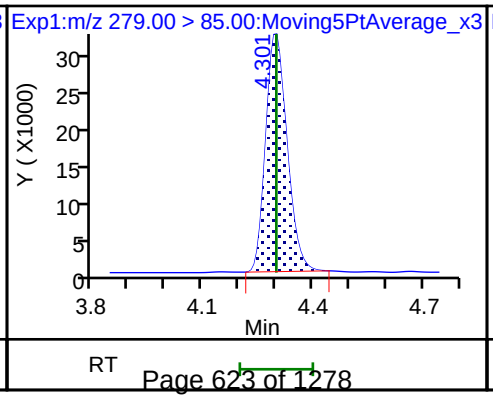
5 Perfluorobutanesulfonic acid



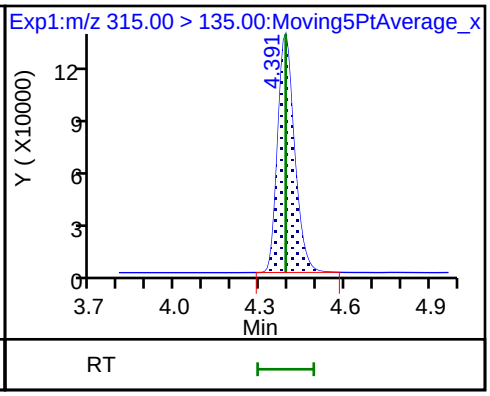
5 Perfluorobutanesulfonic acid



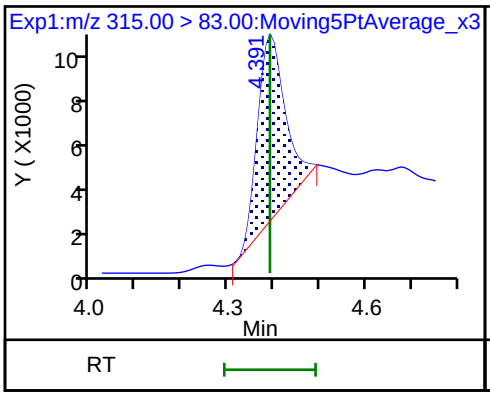
64 PFECA A



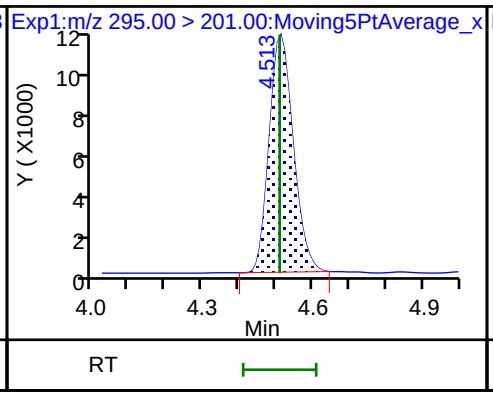
65 PES



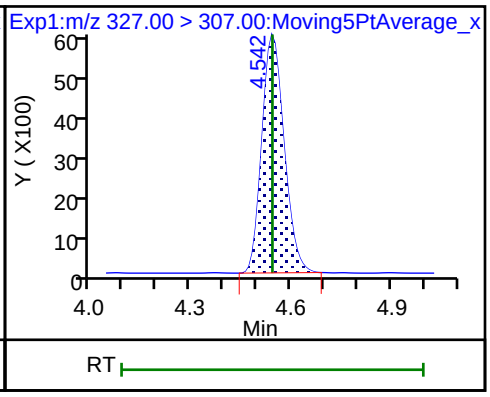
65 PES



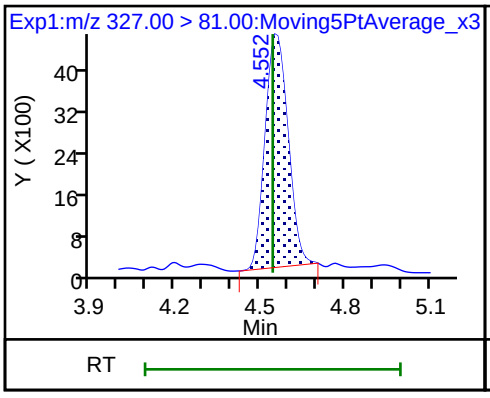
68 PFECA B



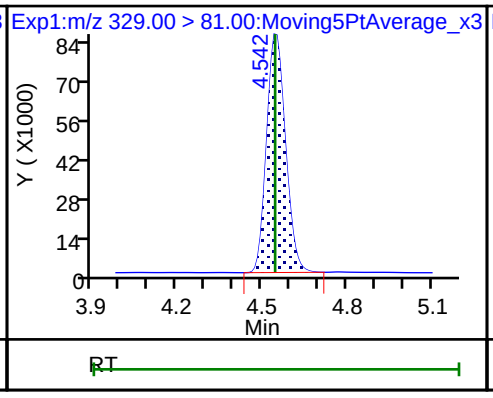
7 4:2 FTS



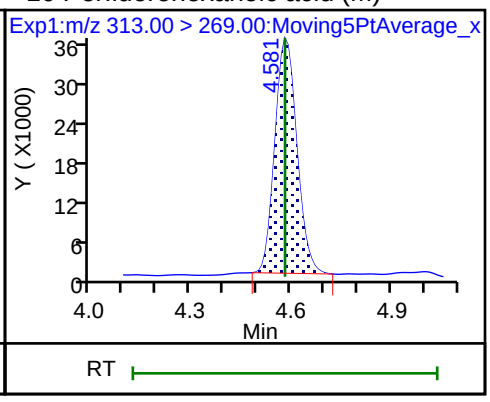
7 4:2 FTS



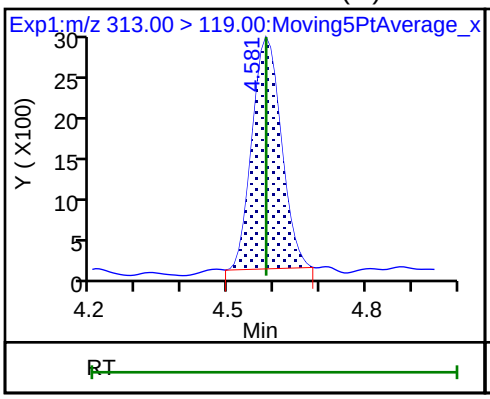
D 8 M2-4:2 FTS



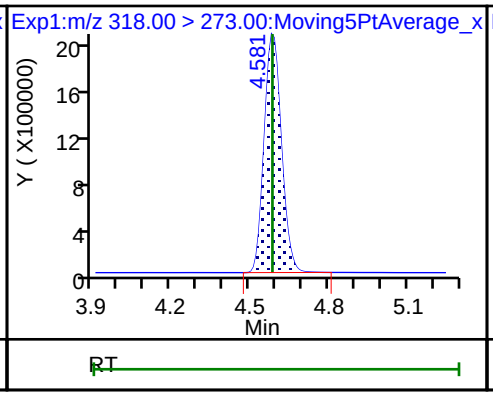
10 Perfluorohexanoic acid (M)



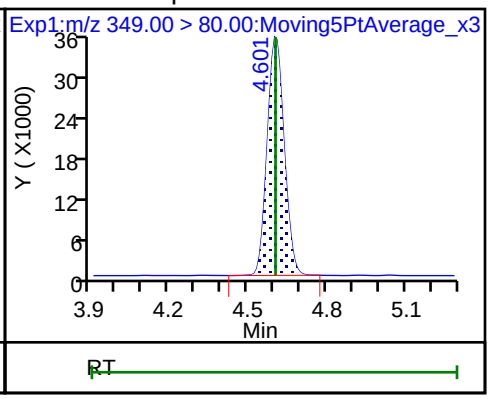
10 Perfluorohexanoic acid (M)



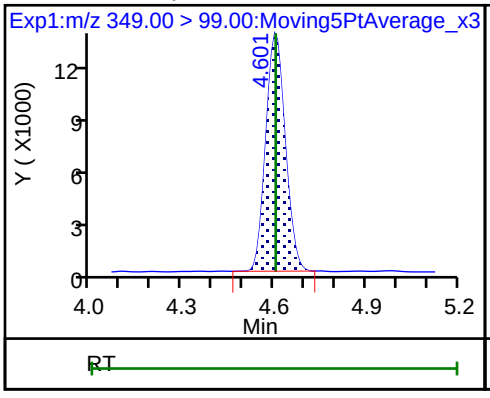
D 9 13C5 PFHxA



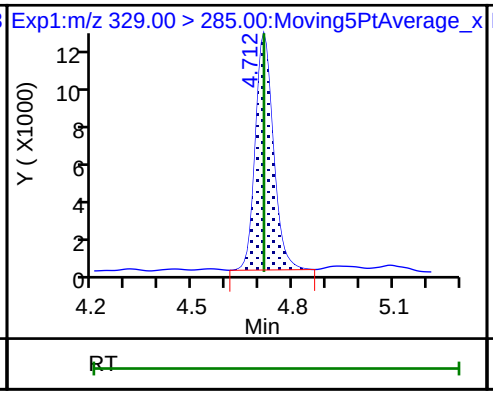
11 Perfluoropentanesulfonic acid



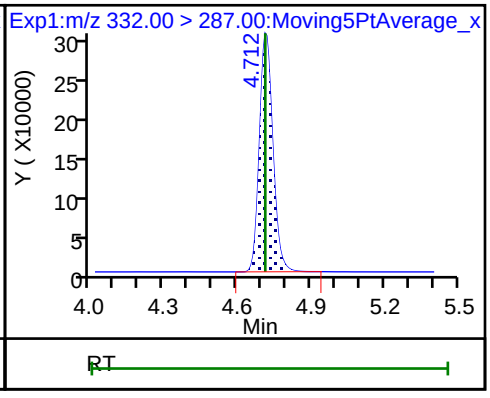
11 Perfluoropentanesulfonic acid



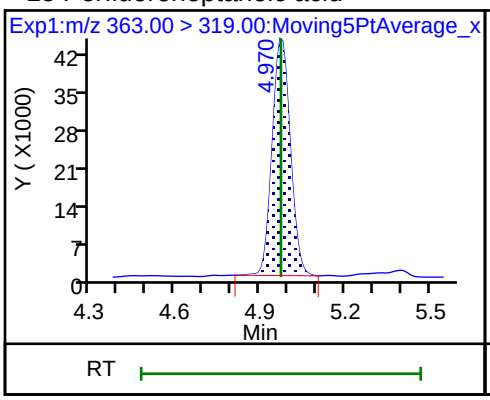
12 HFPO-DA



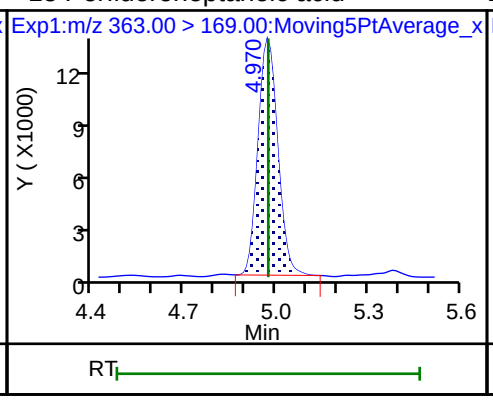
D 13 13C3 HFPO-DA



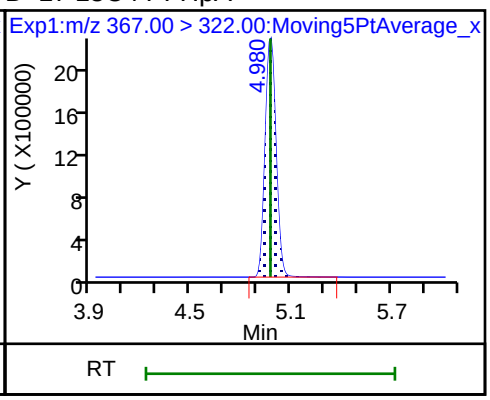
15 Perfluoroheptanoic acid



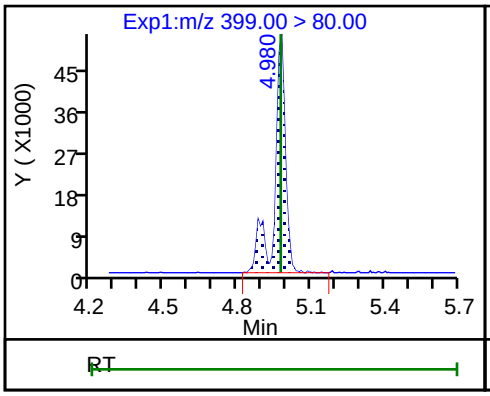
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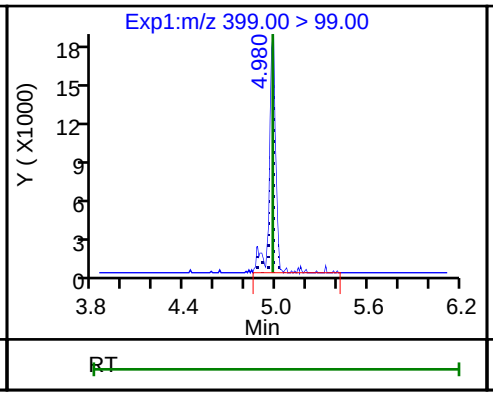
D 17 13C4 PFHpA



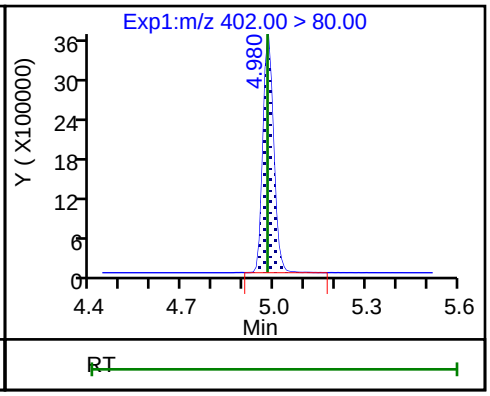
14 Perfluorohexanesulfonic acid



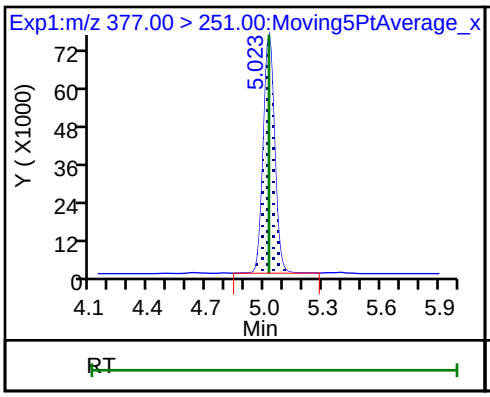
14 Perfluorohexanesulfonic acid



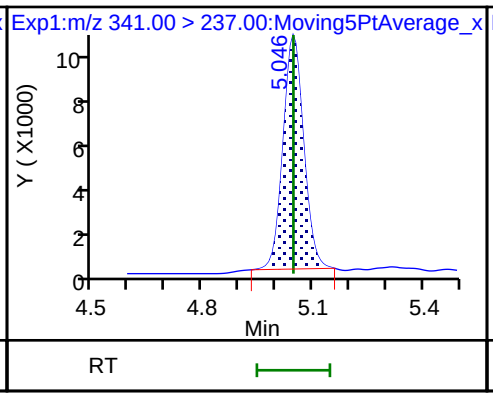
D 16 13C3 PFHxS



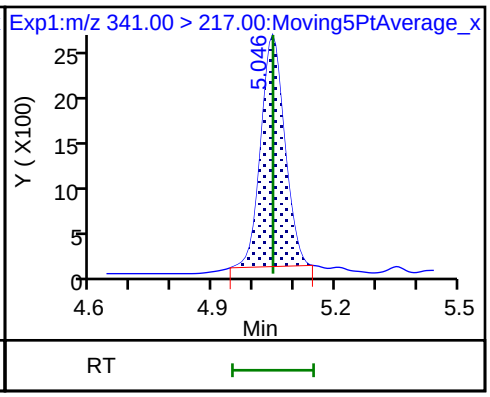
18 DONA



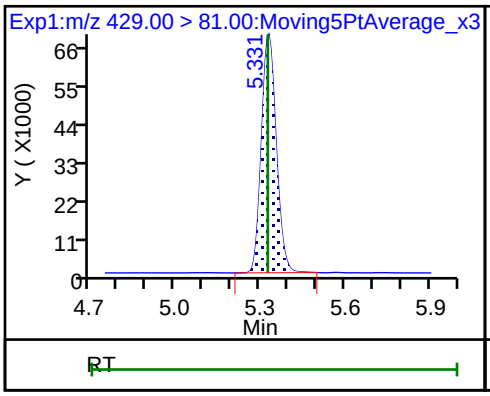
62 5:3 FTCA



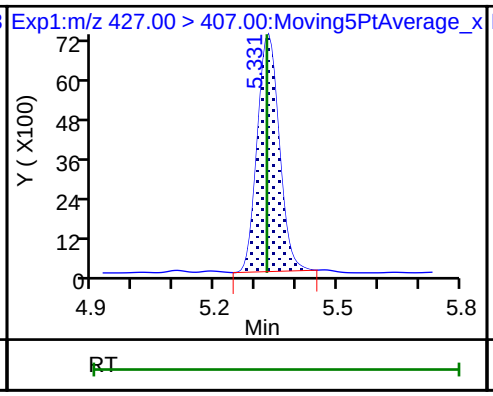
62 5:3 FTCA



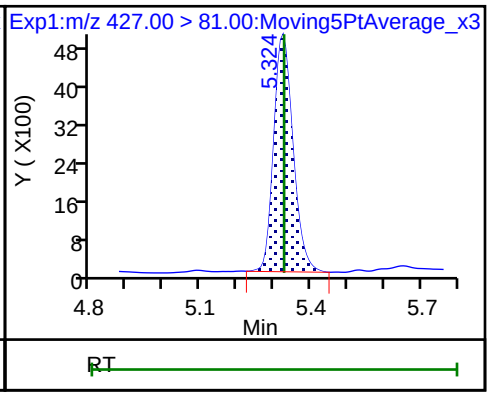
D 20 M2-6:2 FTS



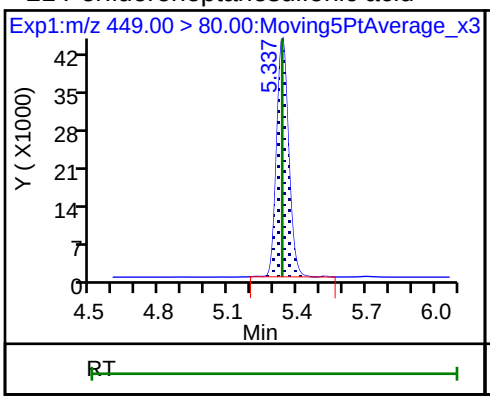
19 6:2 FTS



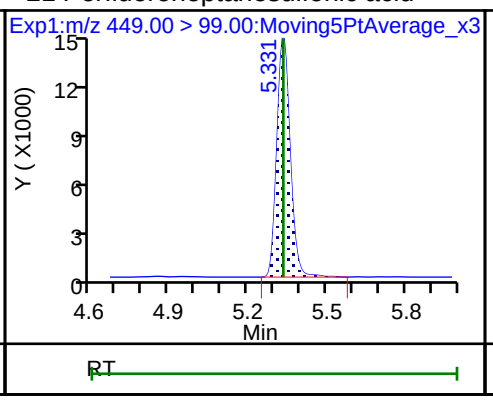
19 6:2 FTS



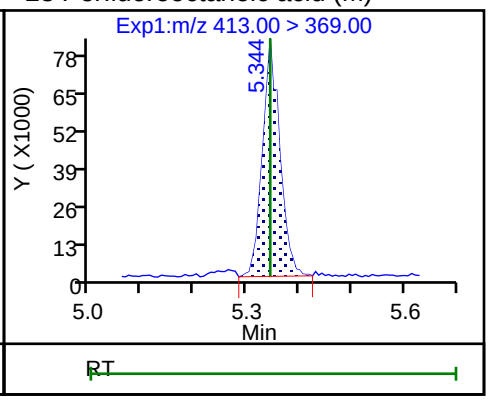
21 Perfluoroheptanesulfonic acid



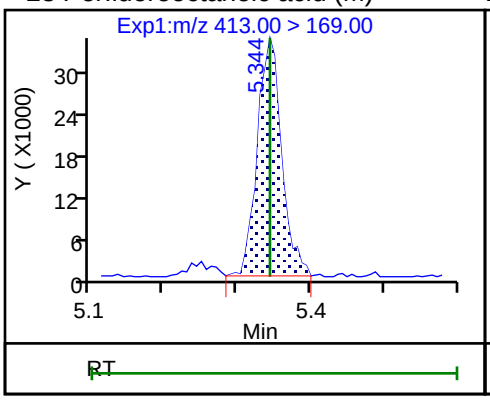
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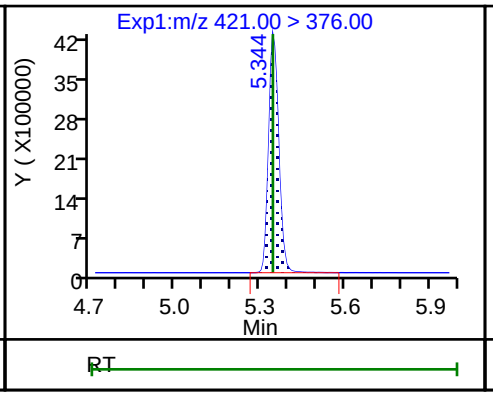
23 Perfluorooctanoic acid (M)



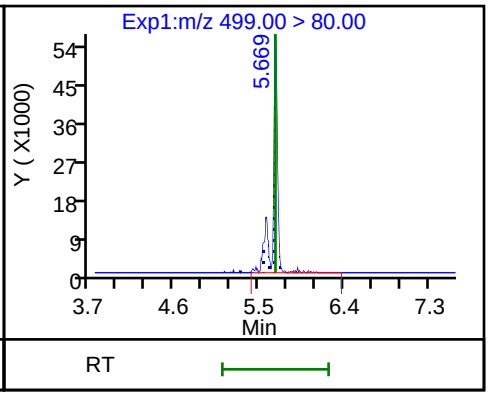
23 Perfluorooctanoic acid (M)



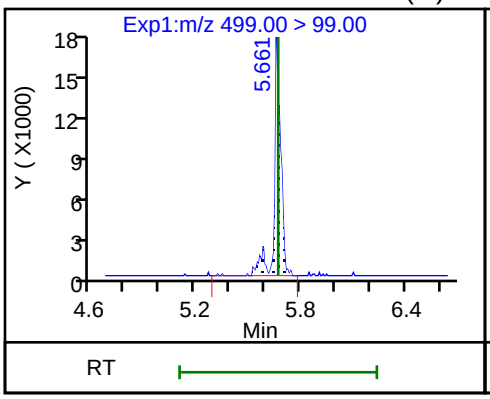
D 22 13C8 PFOA



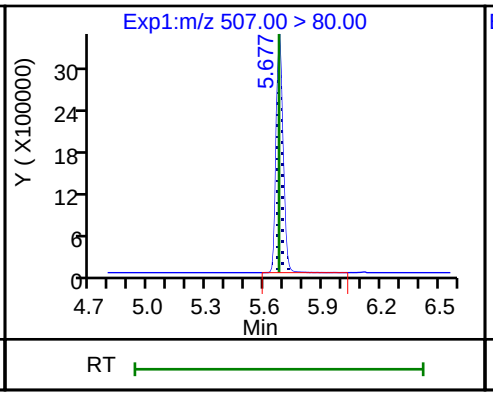
24 Perfluorooctanesulfonic acid



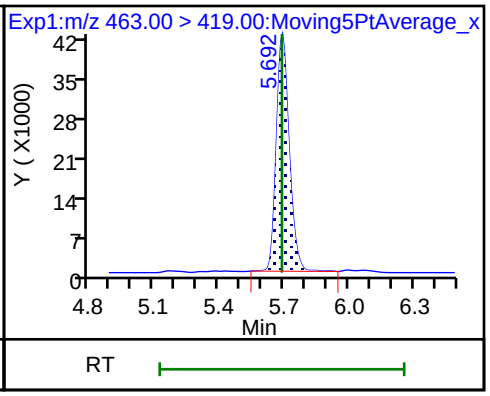
24 Perfluorooctanesulfonic acid (M)



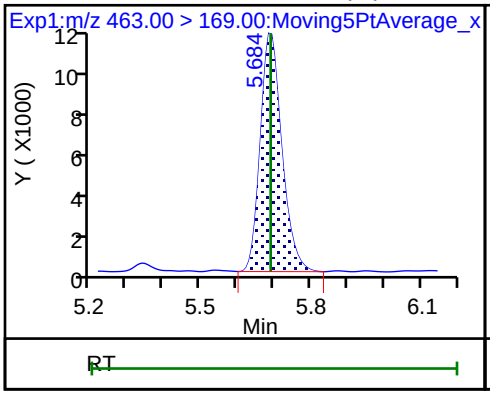
D 25 13C8 PFOS



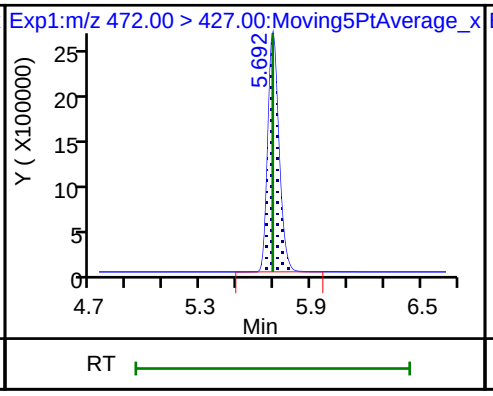
26 Perfluorononanoic acid



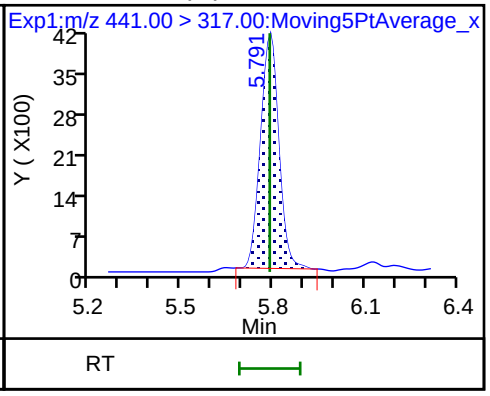
26 Perfluorononanoic acid (M)



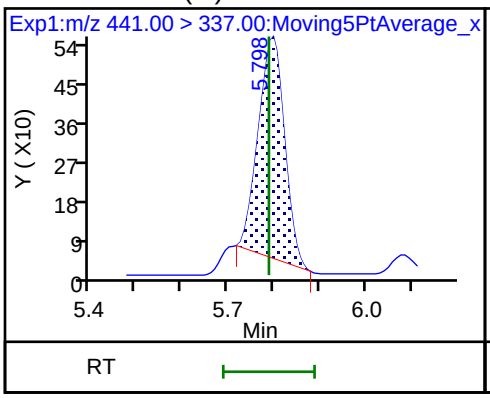
D 27 13C9 PFNA



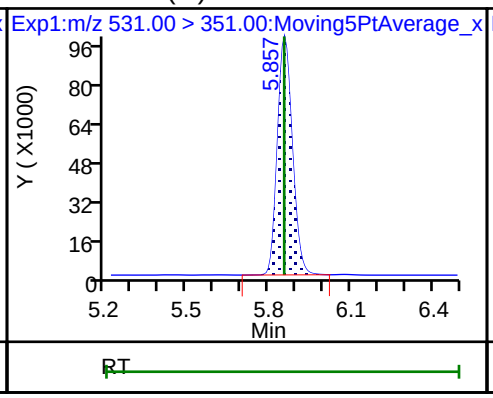
66 7:3 FTCA (M)



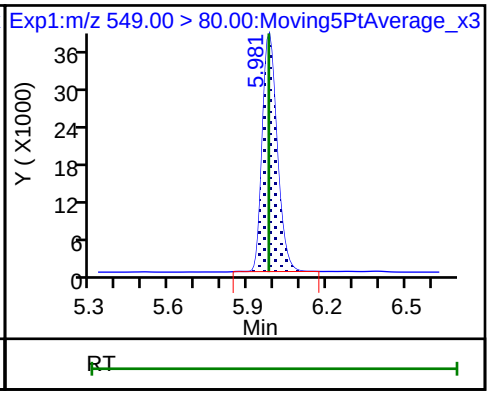
66 7:3 FTCA (M)



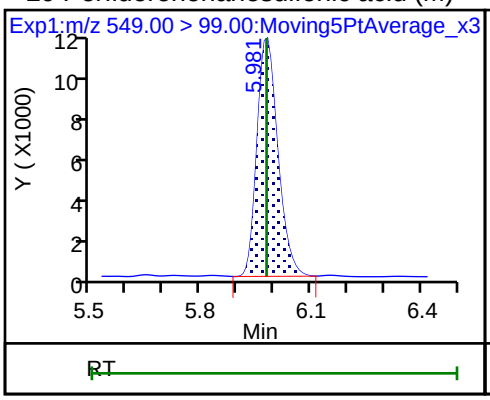
28 9ClFOS (M)



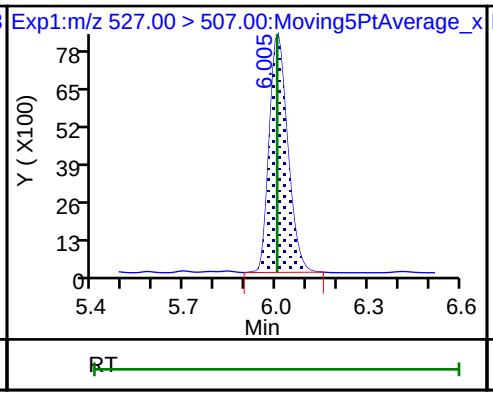
29 Perfluorononanesulfonic acid



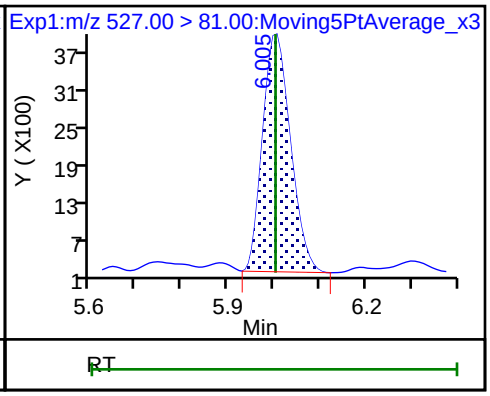
29 Perfluorononanesulfonic acid (M)



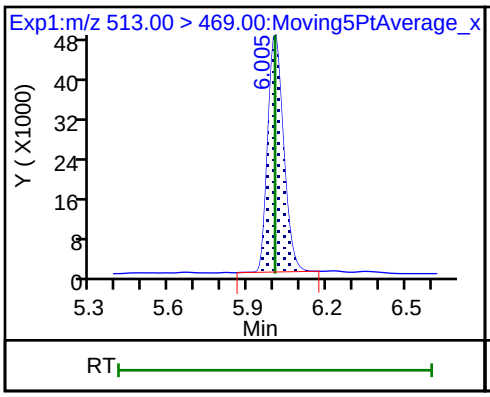
33 8:2 FTS



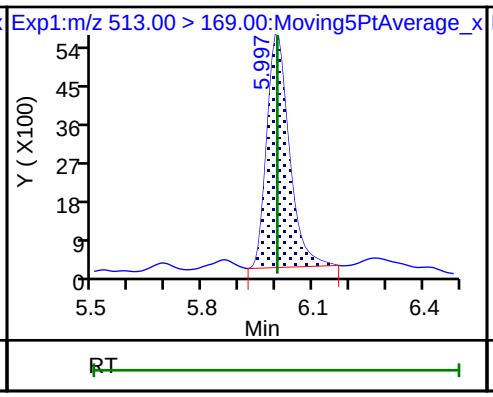
33 8:2 FTS



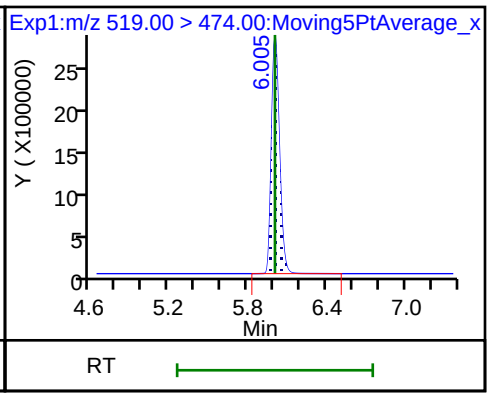
30 Perfluorodecanoic acid



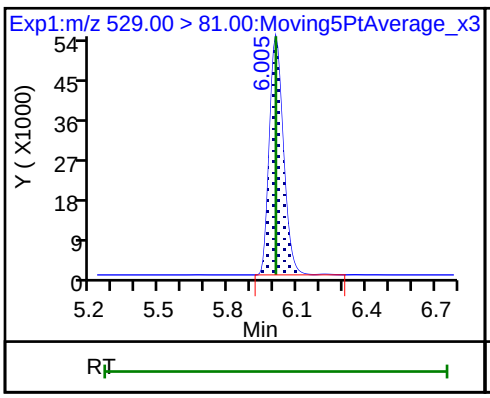
30 Perfluorodecanoic acid



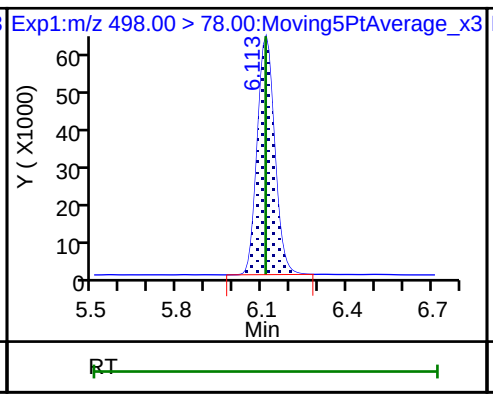
D 32 13C6 PFDA



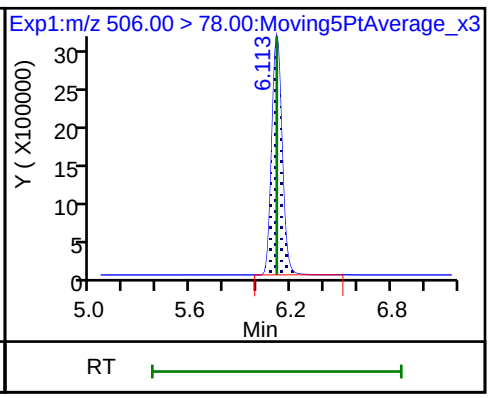
D 31 M2-8:2 FTS



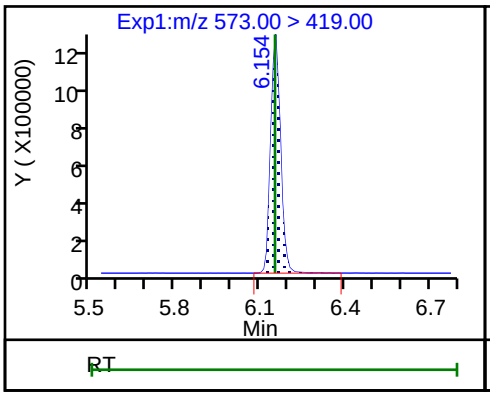
34 Perfluorooctanesulfonamide



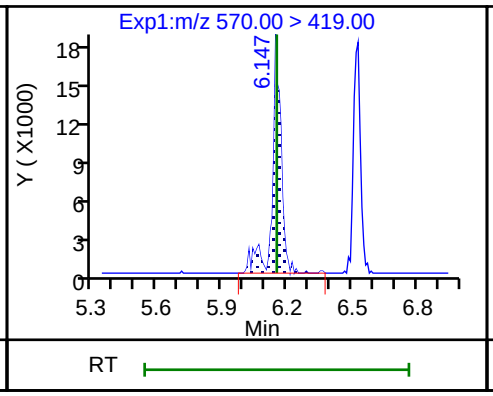
D 35 13C8 FOSA



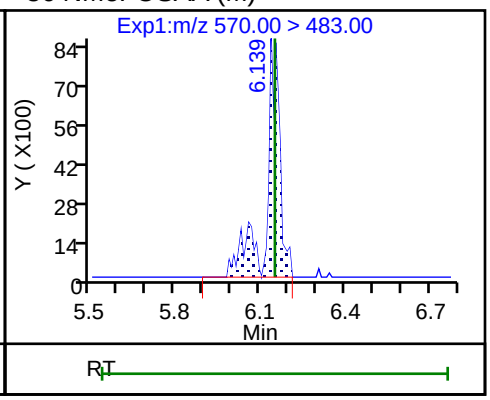
D 37 d3-NMeFOSAA



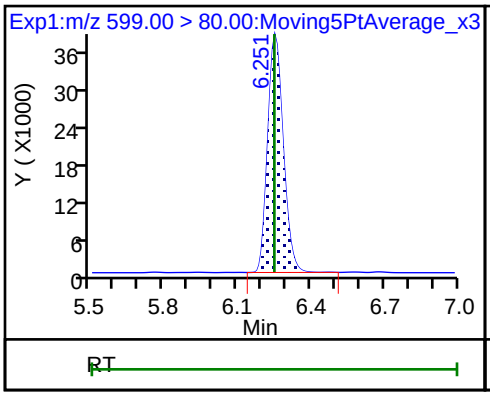
36 NMeFOSAA



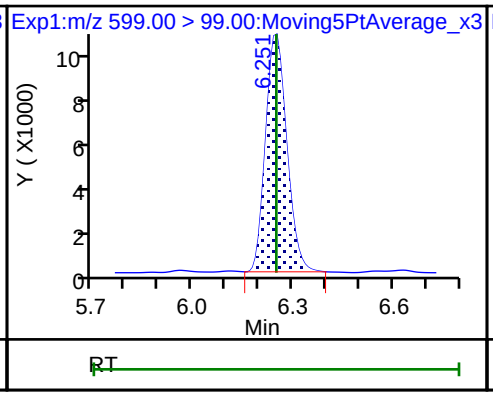
36 NMeFOSAA (M)



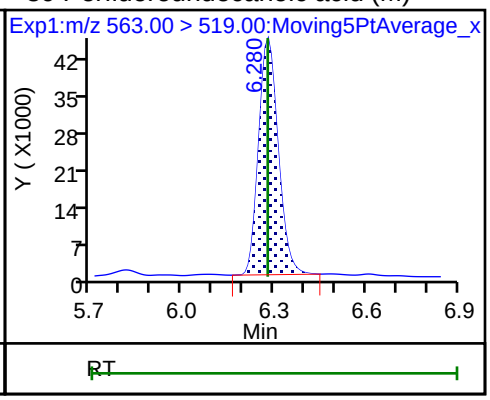
38 Perfluorodecanesulfonic acid



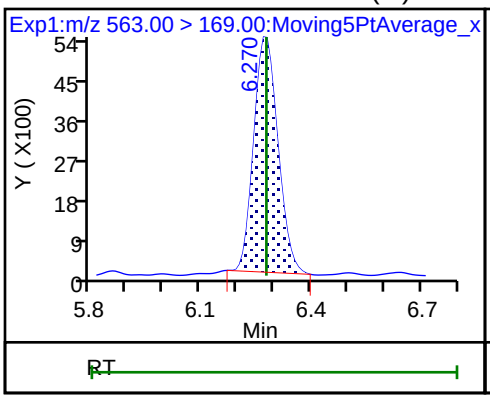
38 Perfluorodecanesulfonic acid



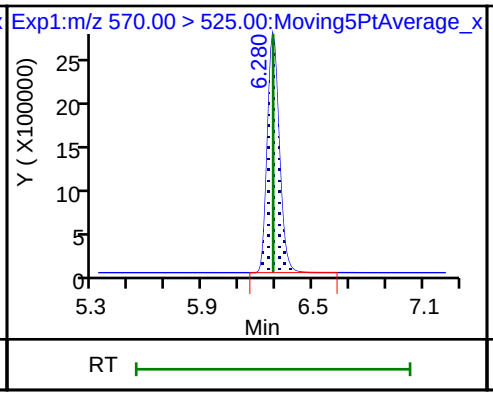
39 Perfluoroundecanoic acid (M)



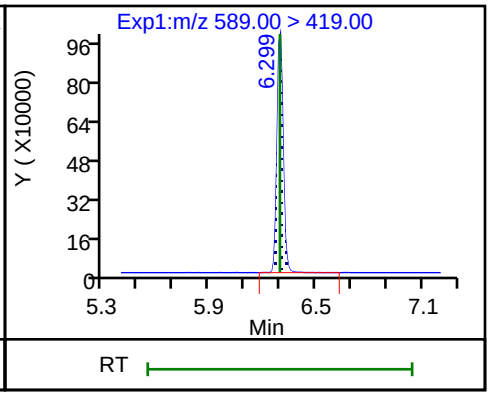
39 Perfluoroundecanoic acid (M)



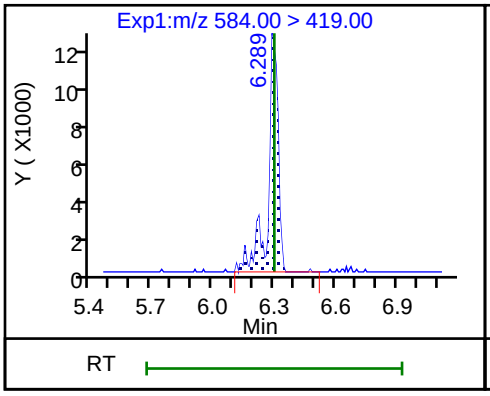
D 40 13C7 PFUnA



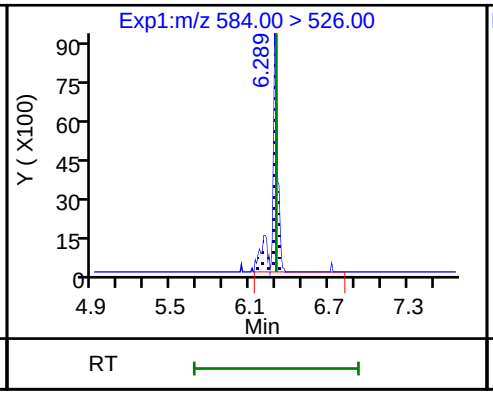
D 41 d5-NEtFOSAA



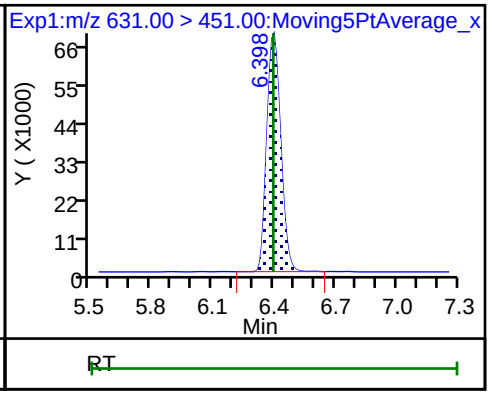
42 NEtFOSAA



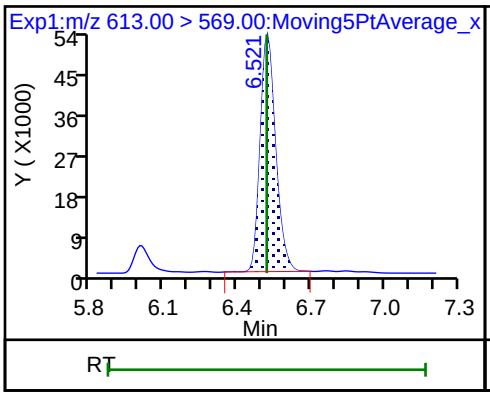
42 NEtFOSAA



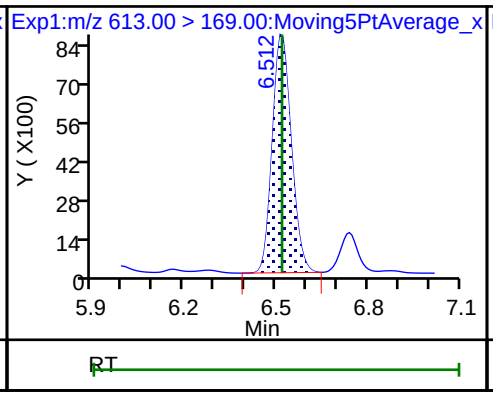
43 11ClFOS



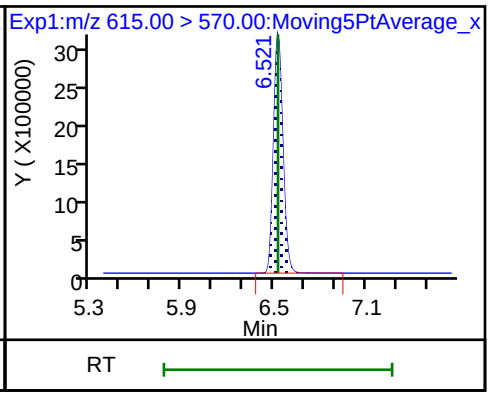
46 Perfluorododecanoic acid



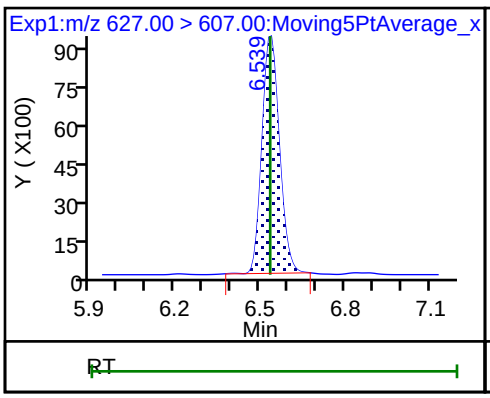
46 Perfluorododecanoic acid



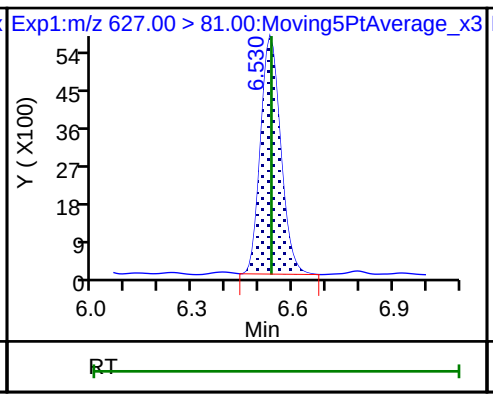
D 45 13C2-PFDoDA



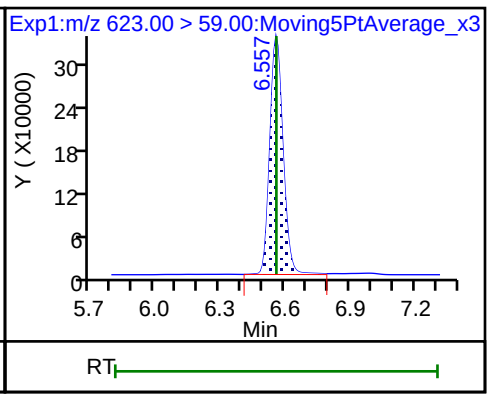
48 10:2 FTS



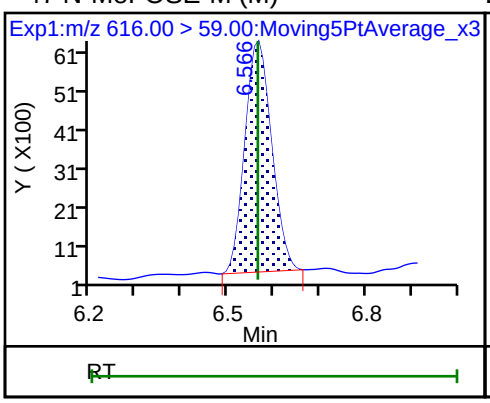
48 10:2 FTS



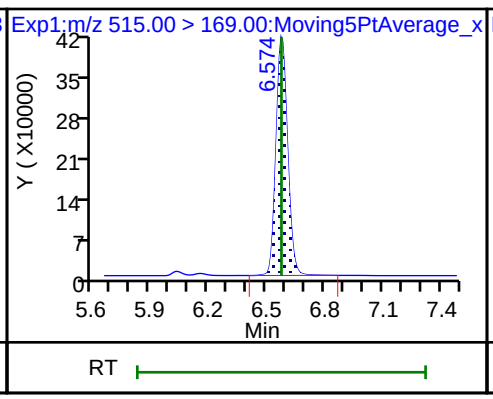
D 44 d7-N-MeFOSE-M



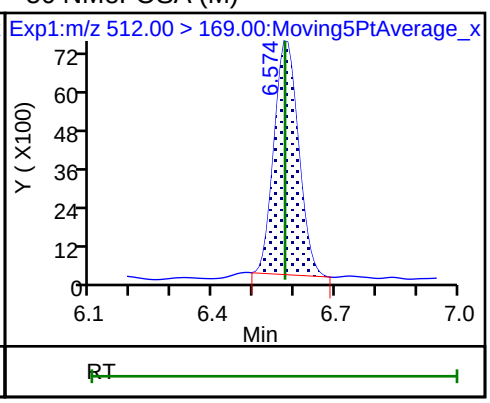
47 N-MeFOSE-M (M)



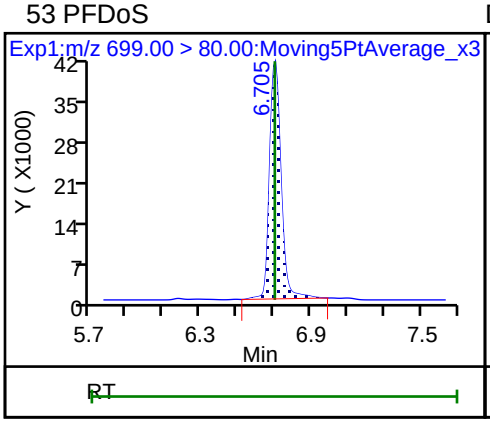
D 49 d3-NMePFOSA



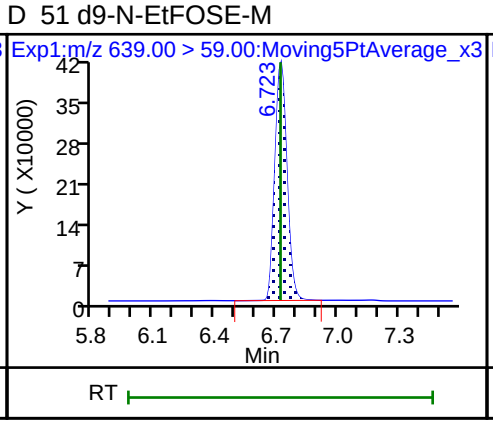
50 NMeFOSA (M)



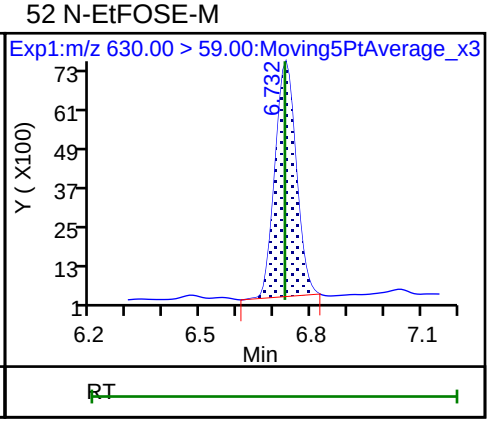
53 PFDoS



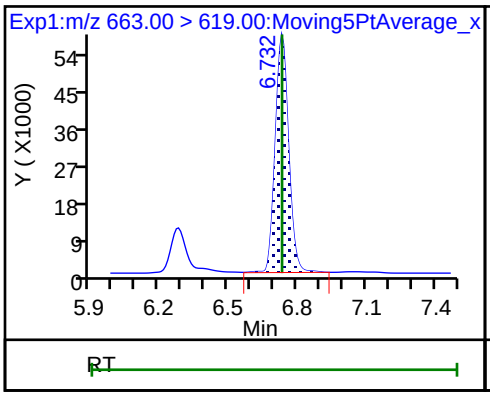
D 51 d9-N-EtFOSE-M



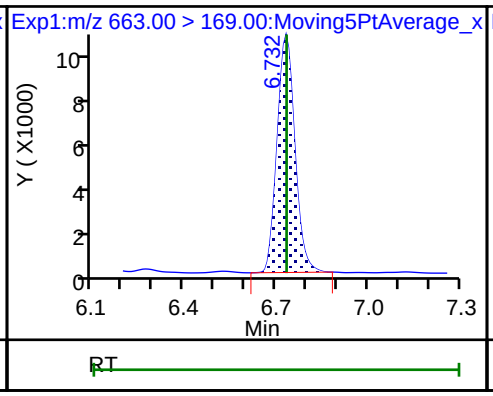
52 N-EtFOSE-M



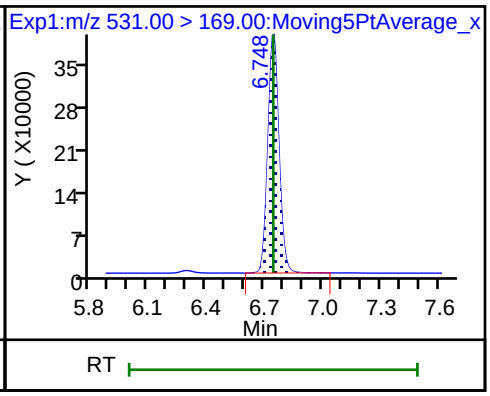
56 Perfluorotridecanoic acid



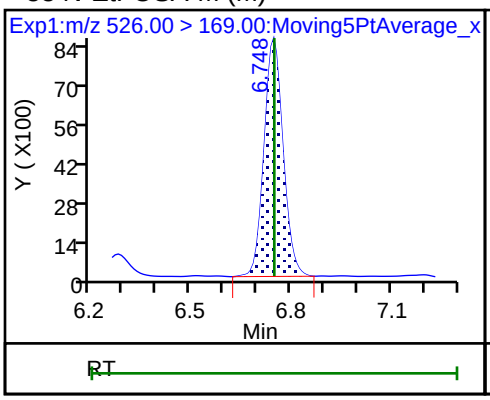
56 Perfluorotridecanoic acid



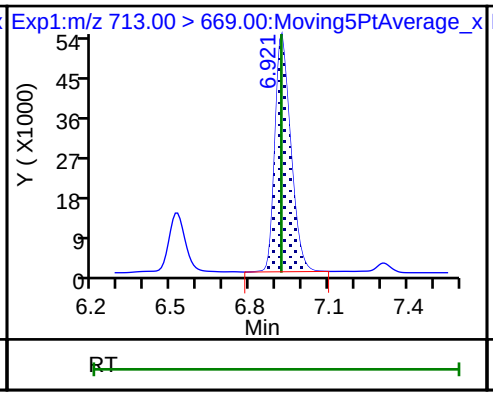
D 54 d5-NEtPFOSA



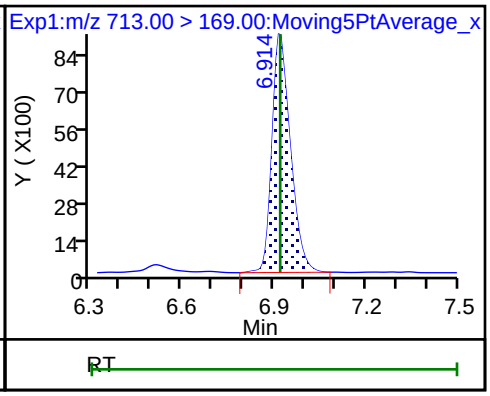
55 N-EtFOSA-M (M)



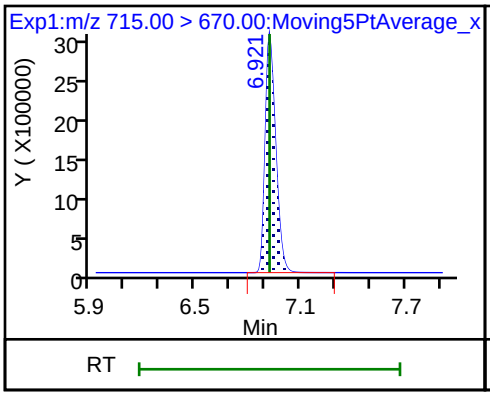
57 Perfluorotetradecanoic acid



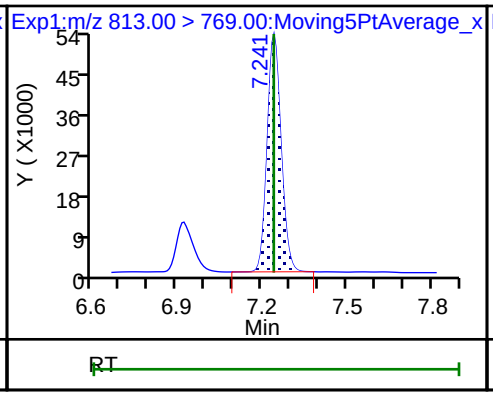
57 Perfluorotetradecanoic acid



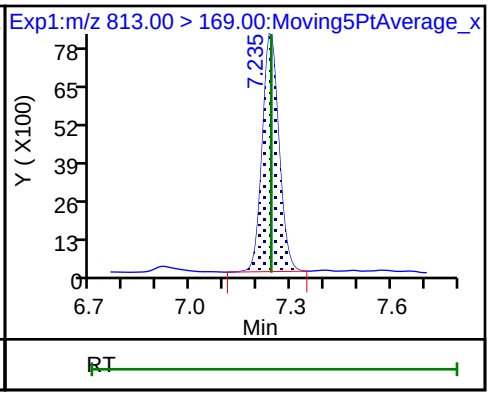
D 58 13C2 PFTeDA



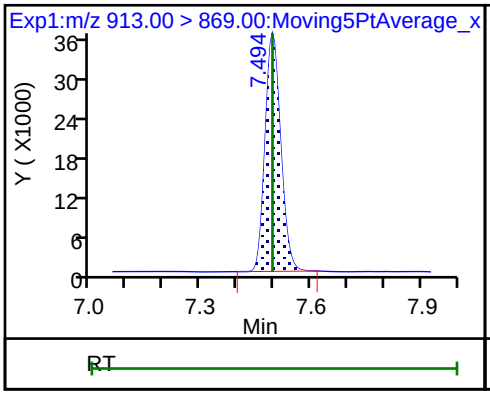
59 Perfluorohexadecanoic acid



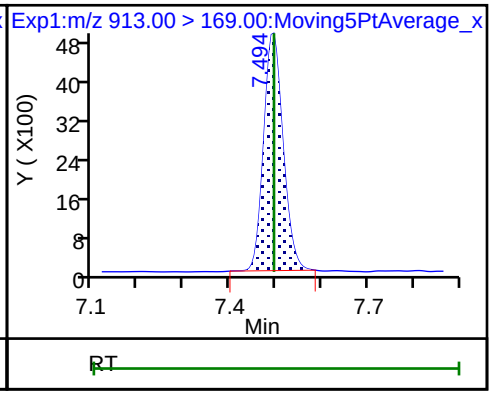
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

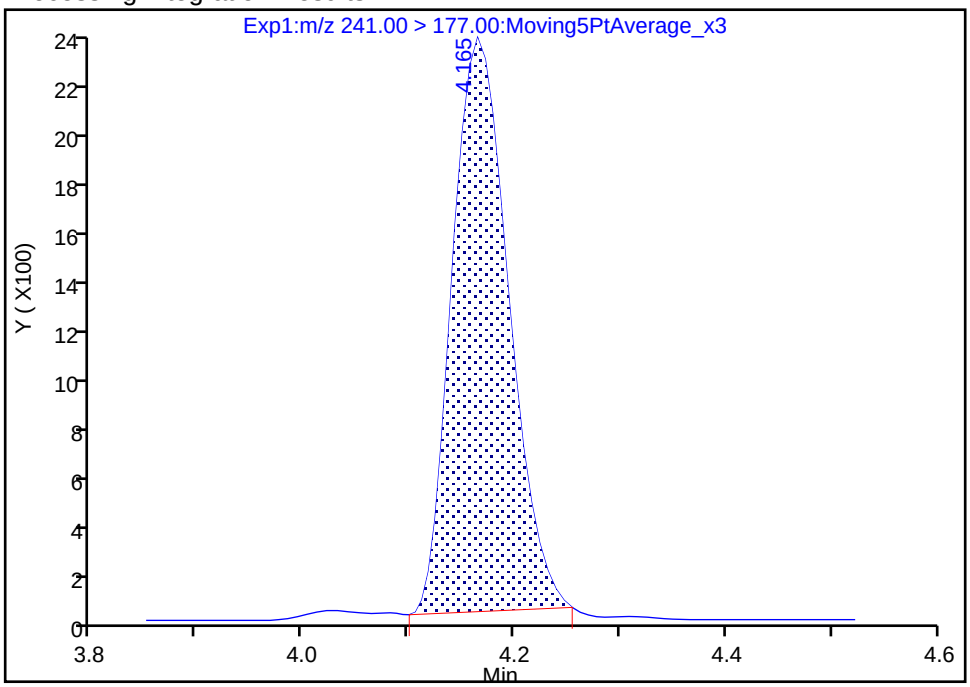
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Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

67 3:3 FTCA, CAS: 356-02-5

Signal: 1

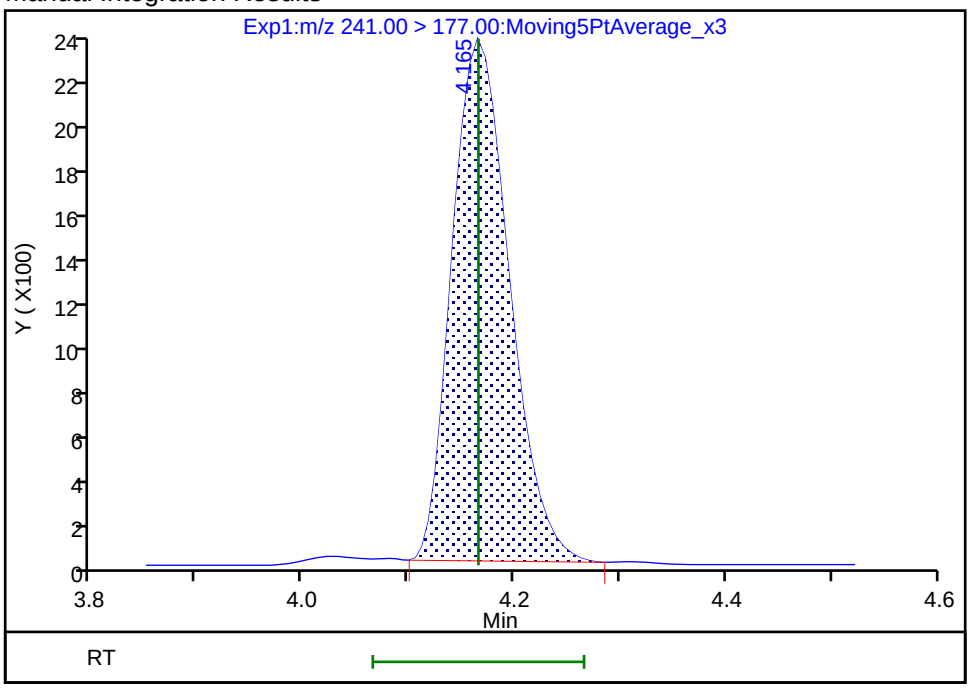
Processing Integration Results

RT: 4.16
Area: 8706
Amount: 0.189768
Amount Units: ng/ml



Manual Integration Results

RT: 4.16
Area: 8905
Amount: 0.196299
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:04:19

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

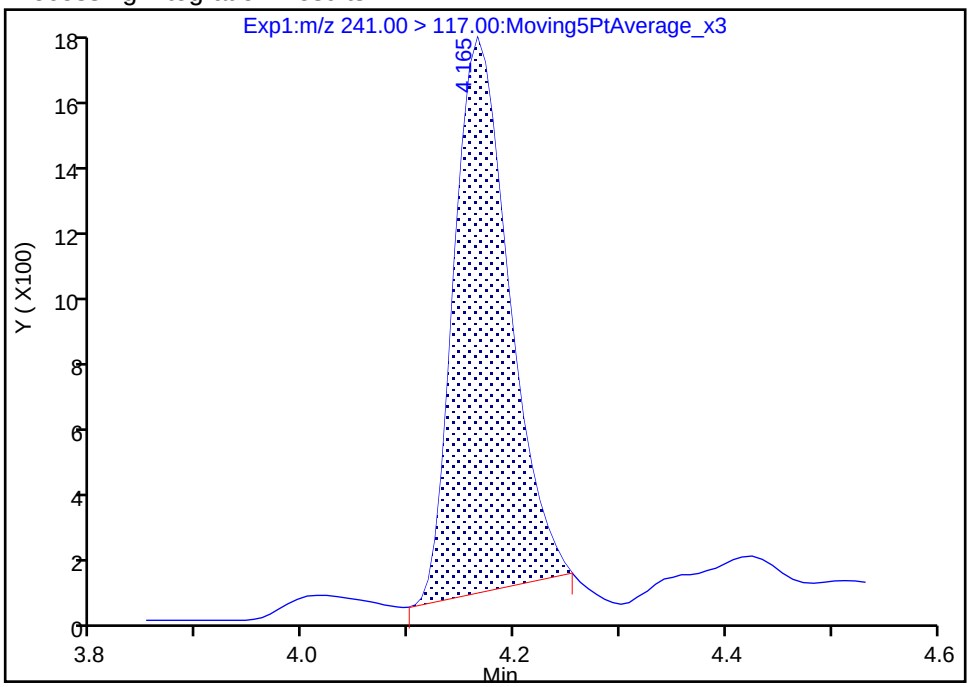
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Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

67 3:3 FTCA, CAS: 356-02-5

Signal: 2

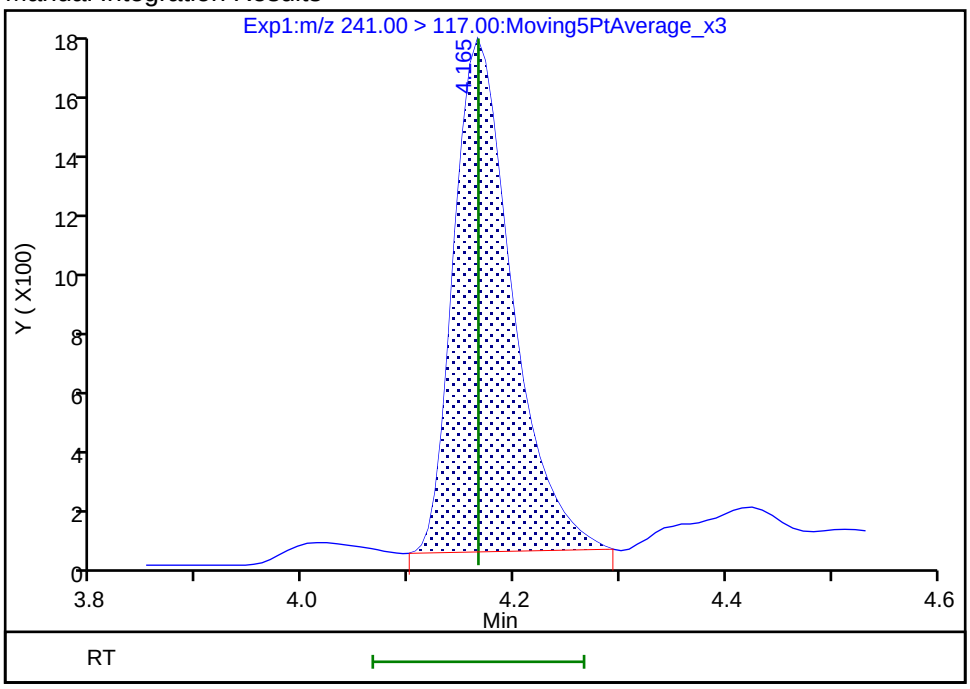
Processing Integration Results

RT: 4.16
Area: 6140
Amount: 0.189768
Amount Units: ng/ml



Manual Integration Results

RT: 4.16
Area: 6653
Amount: 0.196299
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:04:23
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

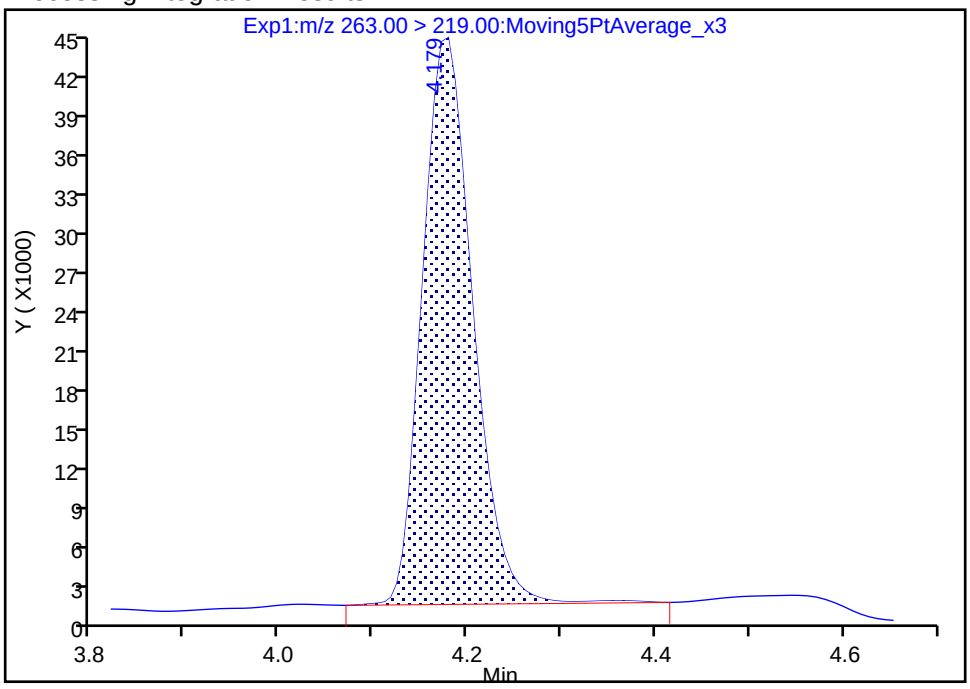
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Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

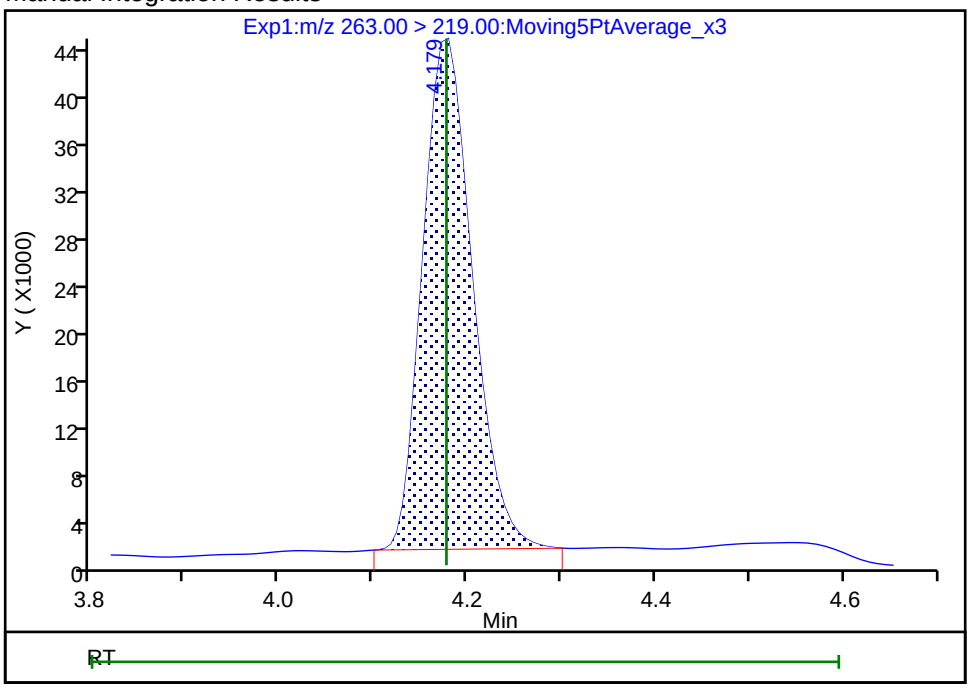
Processing Integration Results

RT: 4.18
Area: 160277
Amount: 0.208458
Amount Units: ng/ml



Manual Integration Results

RT: 4.18
Area: 157842
Amount: 0.200954
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:05:14
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

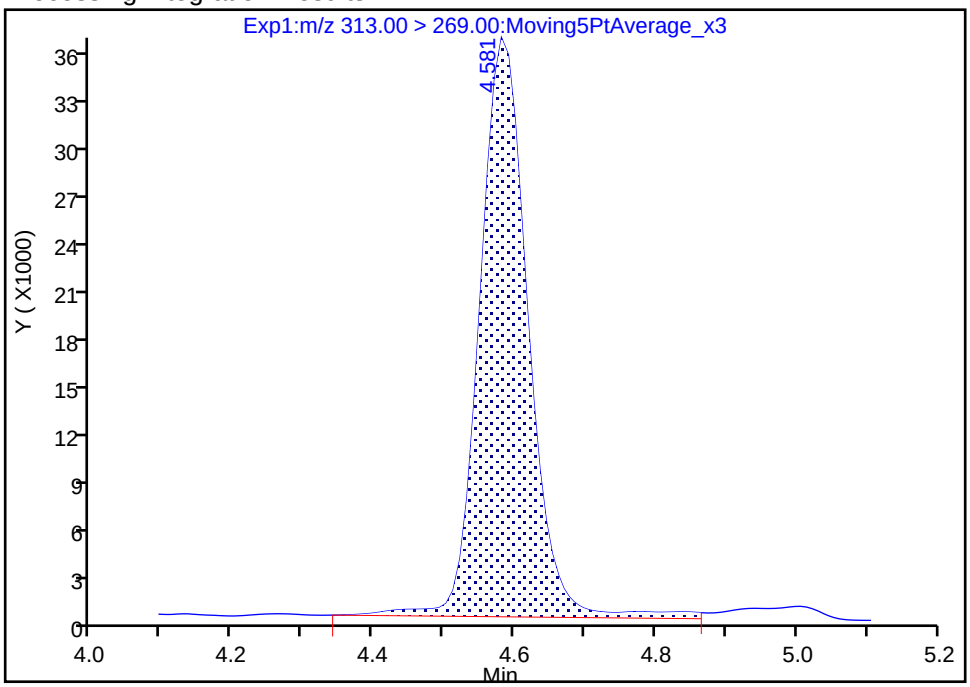
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Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

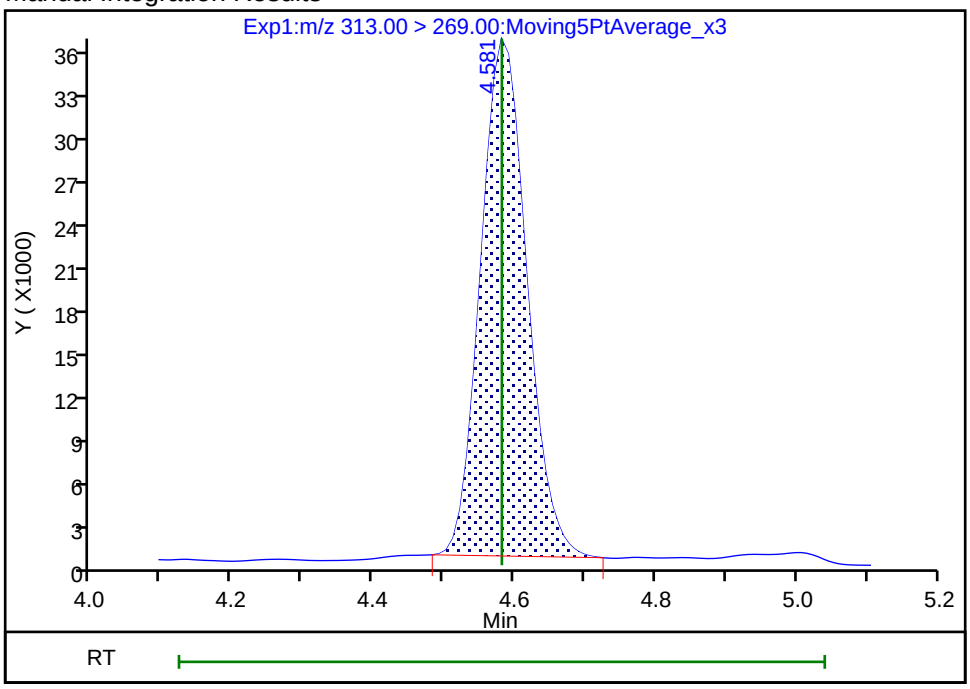
Processing Integration Results

RT: 4.58
Area: 176362
Amount: 0.216648
Amount Units: ng/ml



Manual Integration Results

RT: 4.58
Area: 165145
Amount: 0.200108
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:05:27
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

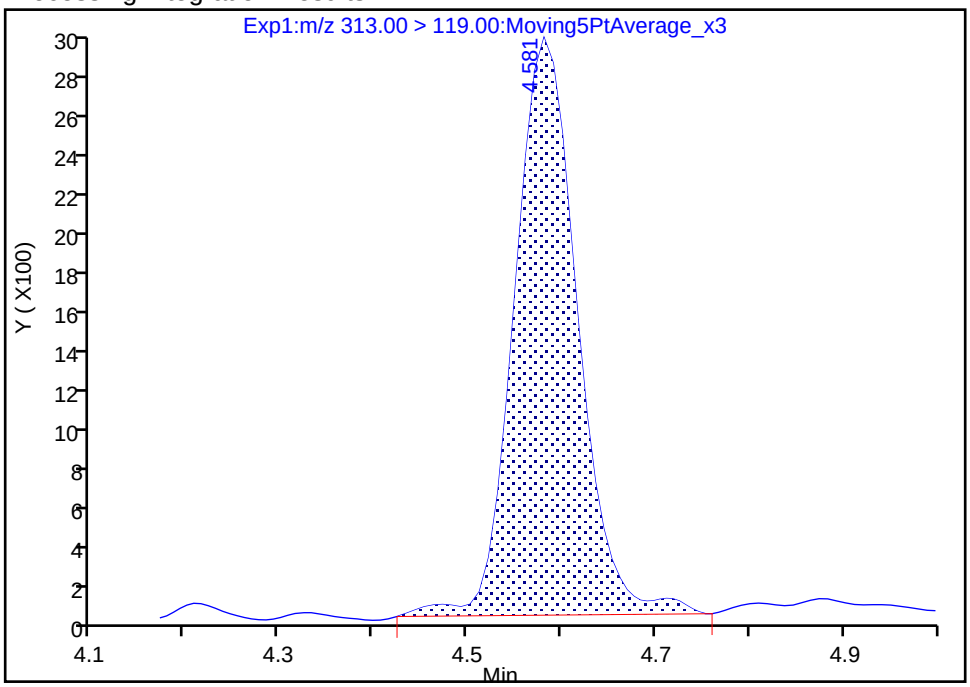
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

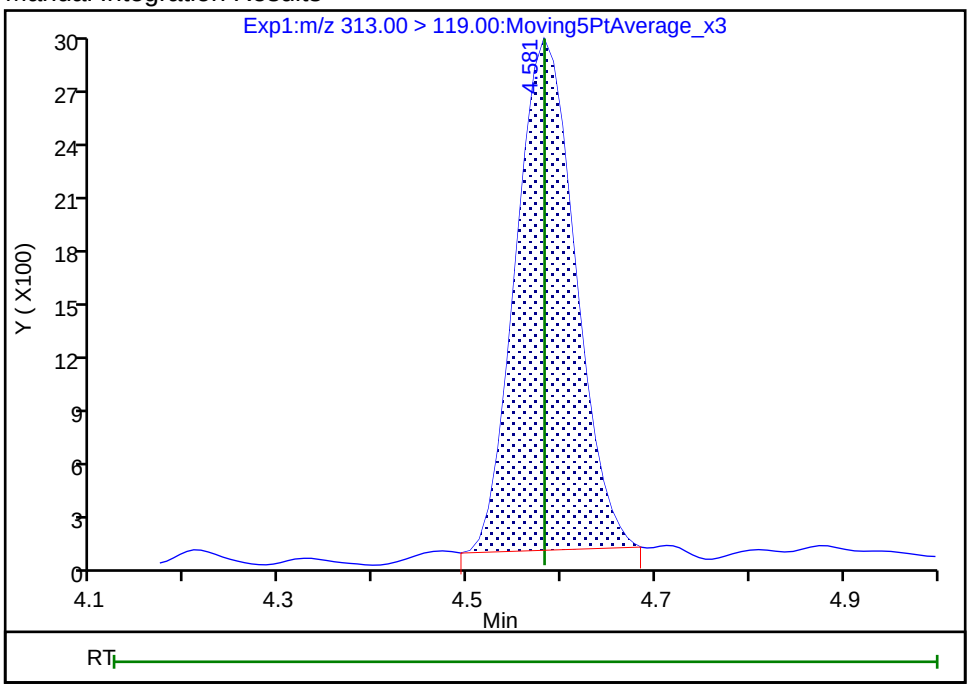
Processing Integration Results

RT: 4.58
Area: 13504
Amount: 0.216648
Amount Units: ng/ml



Manual Integration Results

RT: 4.58
Area: 12454
Amount: 0.200108
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:05:40
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

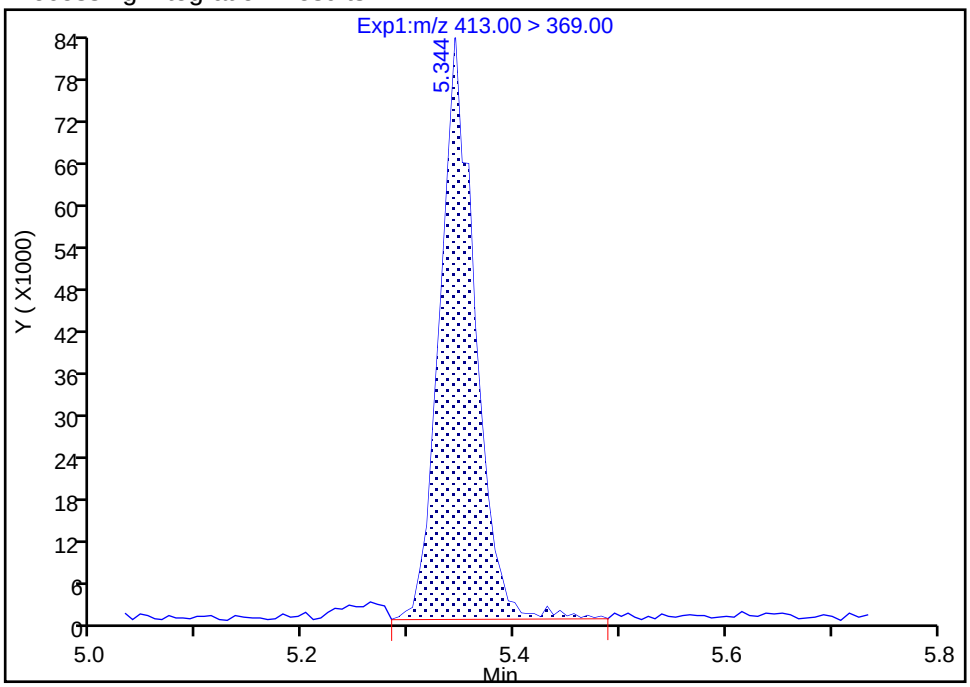
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Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

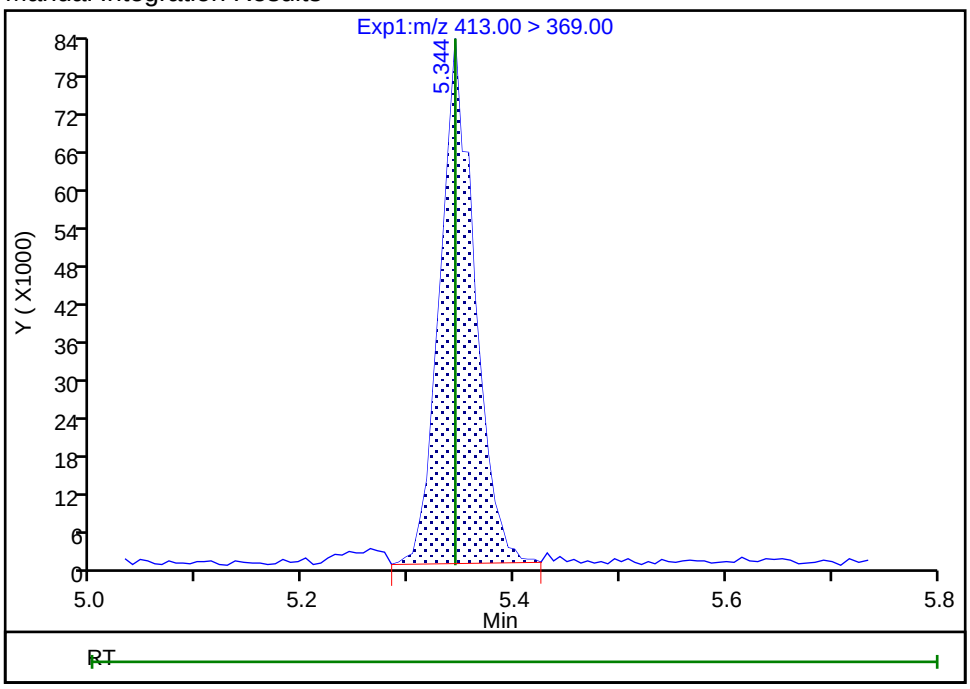
Processing Integration Results

RT: 5.34
Area: 193228
Amount: 0.211963
Amount Units: ng/ml



Manual Integration Results

RT: 5.34
Area: 189841
Amount: 0.204090
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:06:00

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

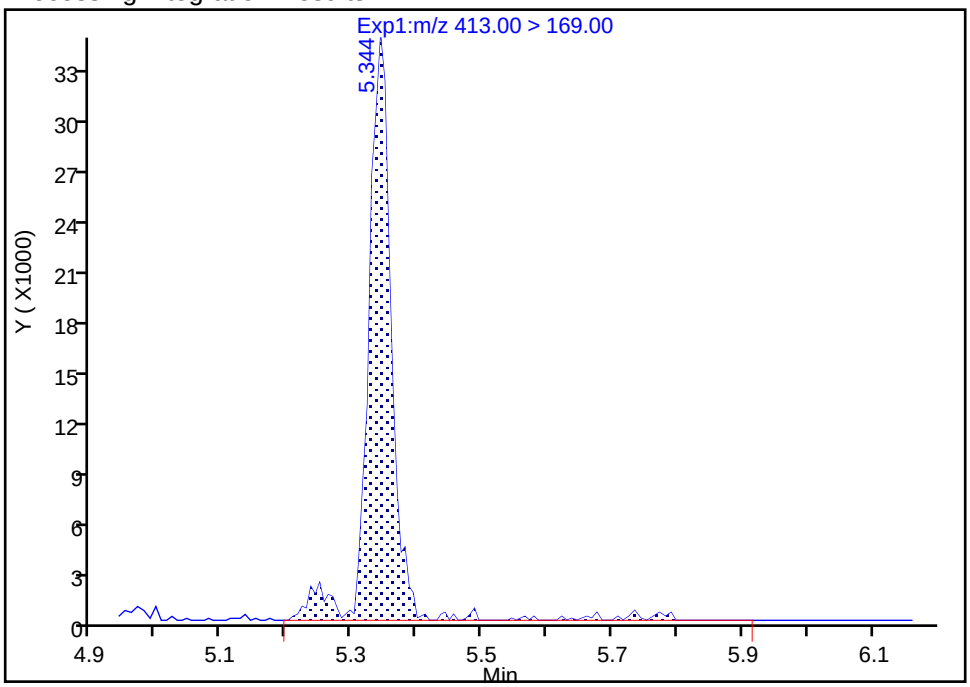
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

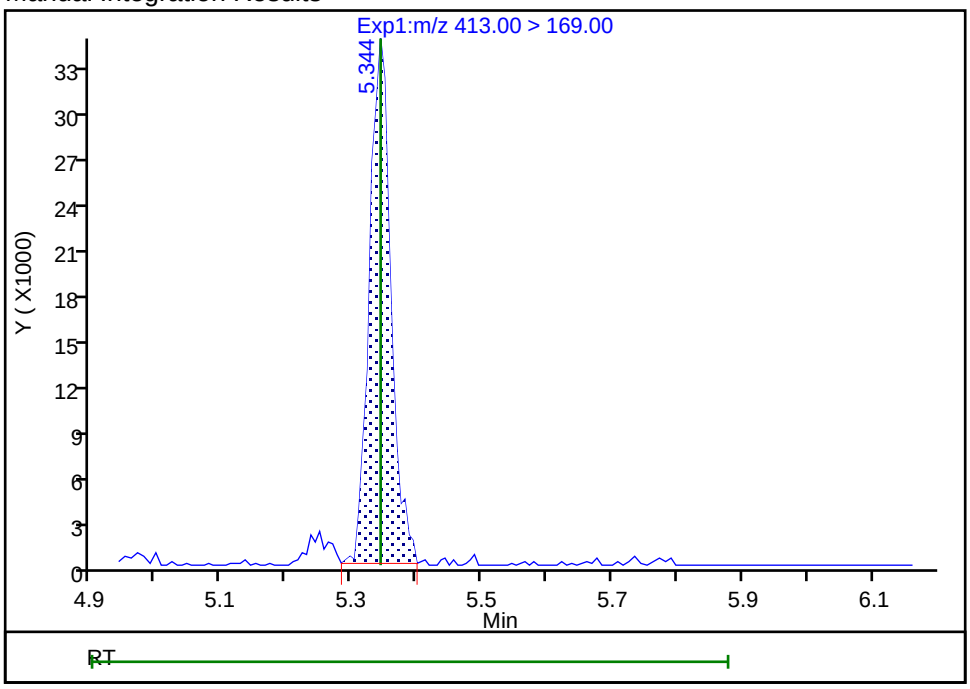
Processing Integration Results

RT: 5.34
Area: 86898
Amount: 0.211963
Amount Units: ng/ml



Manual Integration Results

RT: 5.34
Area: 77736
Amount: 0.204090
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:06:13

Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

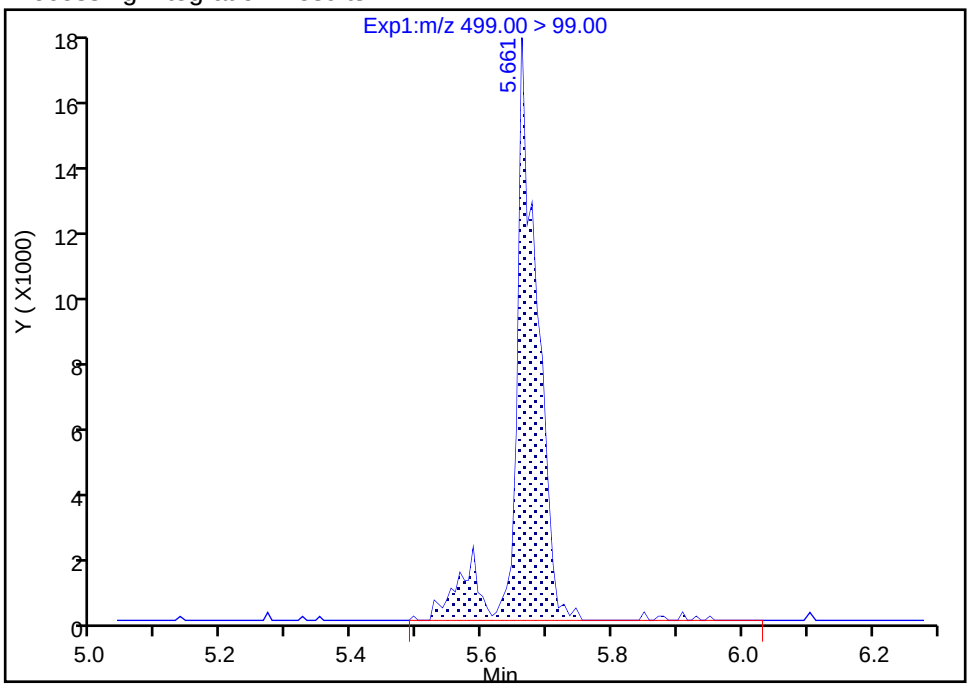
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

24 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

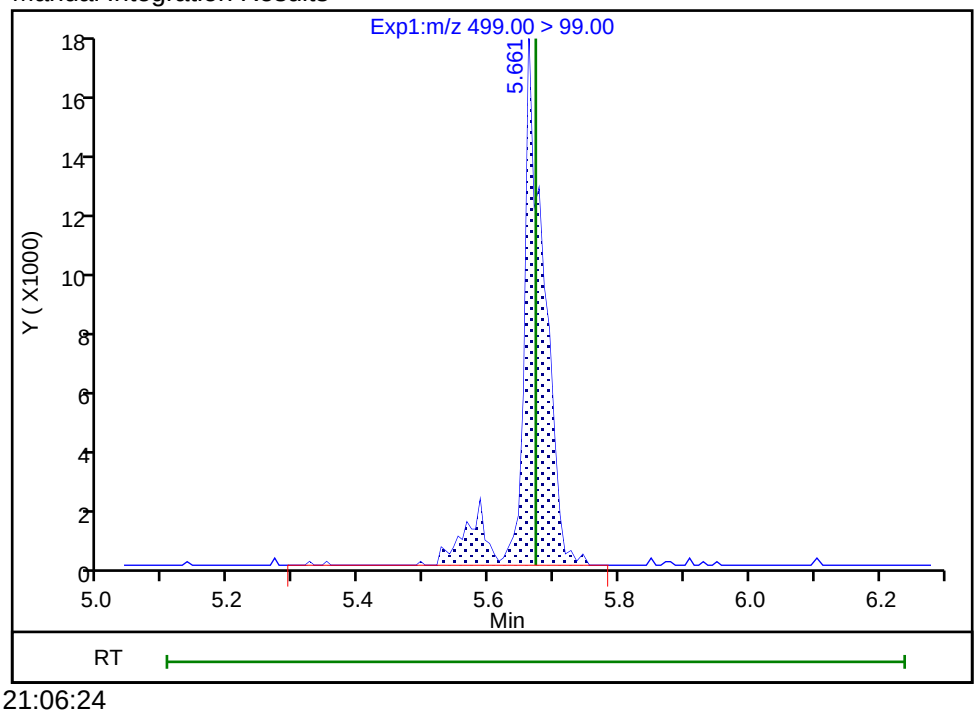
Processing Integration Results

RT: 5.66
Area: 41269
Amount: 0.183390
Amount Units: ng/ml



Manual Integration Results

RT: 5.66
Area: 40945
Amount: 0.181967
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:06:24

Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

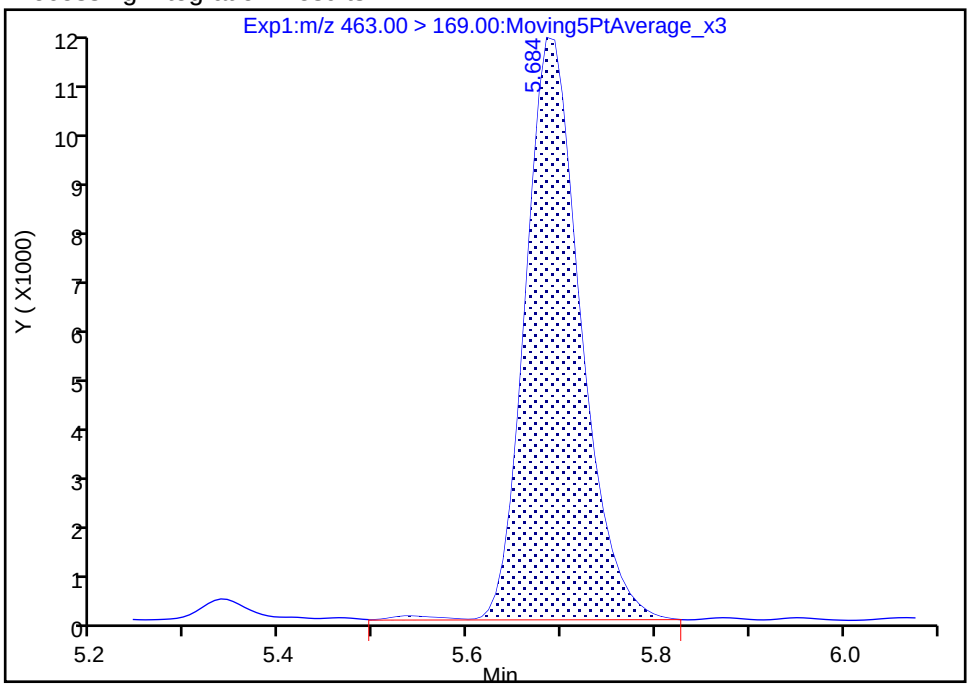
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

26 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

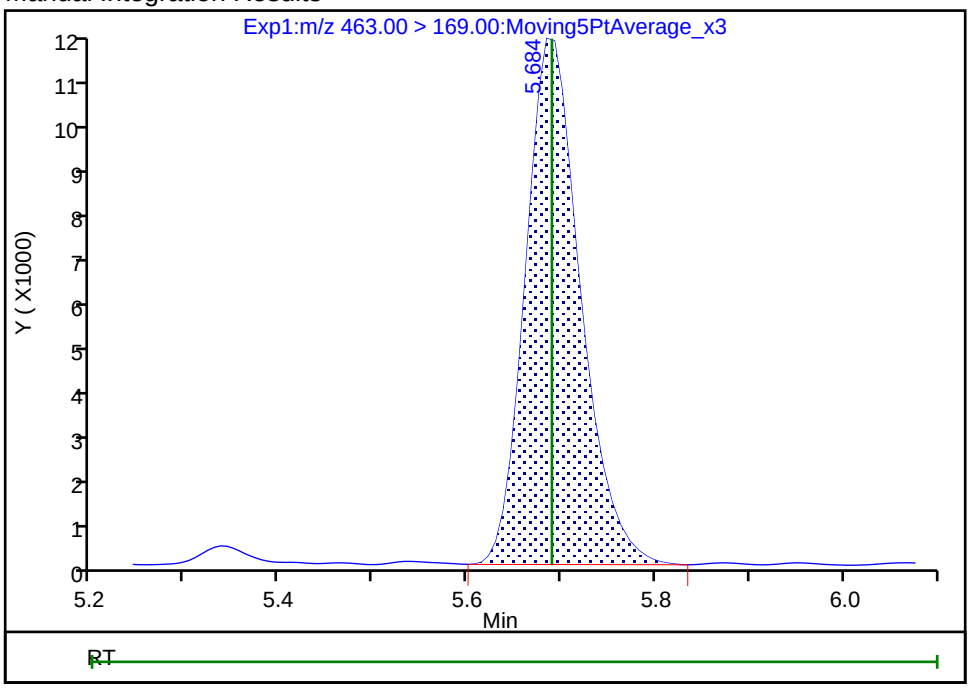
Processing Integration Results

RT: 5.68
Area: 45211
Amount: 0.195499
Amount Units: ng/ml



Manual Integration Results

RT: 5.68
Area: 44905
Amount: 0.190778
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:06:31

Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

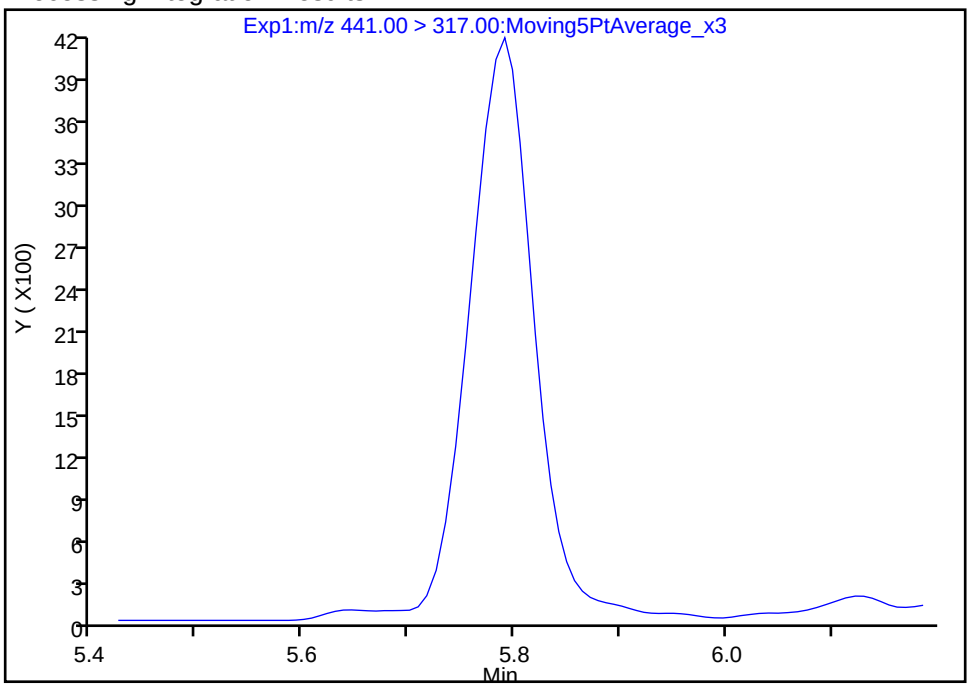
Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d
Injection Date: 03-Apr-2022 17:12:49 Instrument ID: 29347
Lims ID: IC CAL 1
Client ID:
Operator ID: US19_USR_INS75556 ALS Bottle#: 20002 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3
Column: Detector EXP1

66 7:3 FTCA, CAS: 812-70-4

Signal: 1

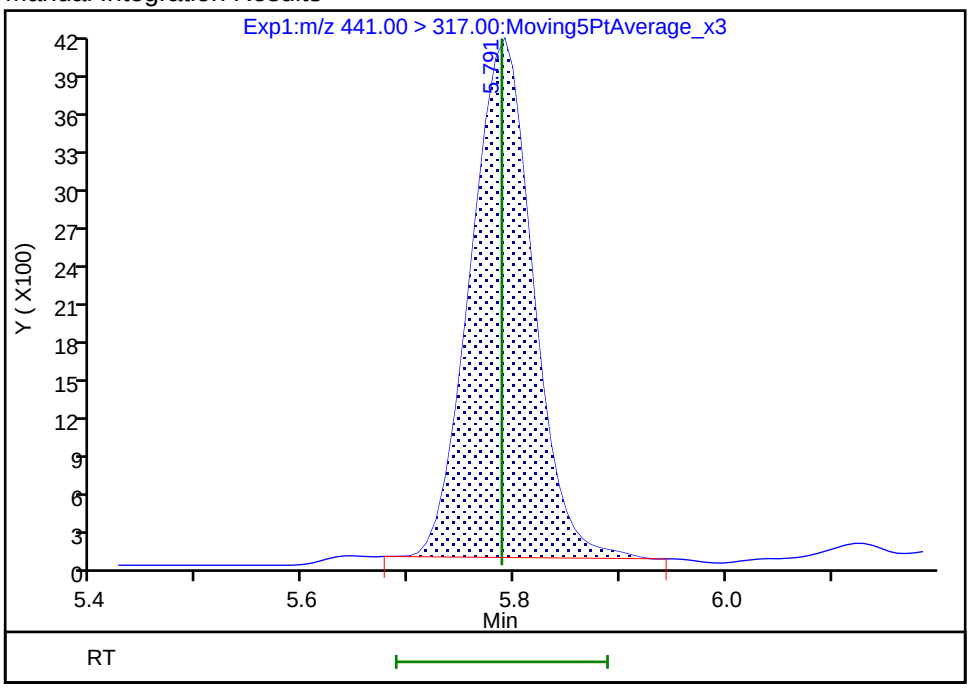
Not Detected
Expected RT: 5.79

Processing Integration Results



Manual Integration Results

RT: 5.79
Area: 16717
Amount: 0.176939
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:06:41
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

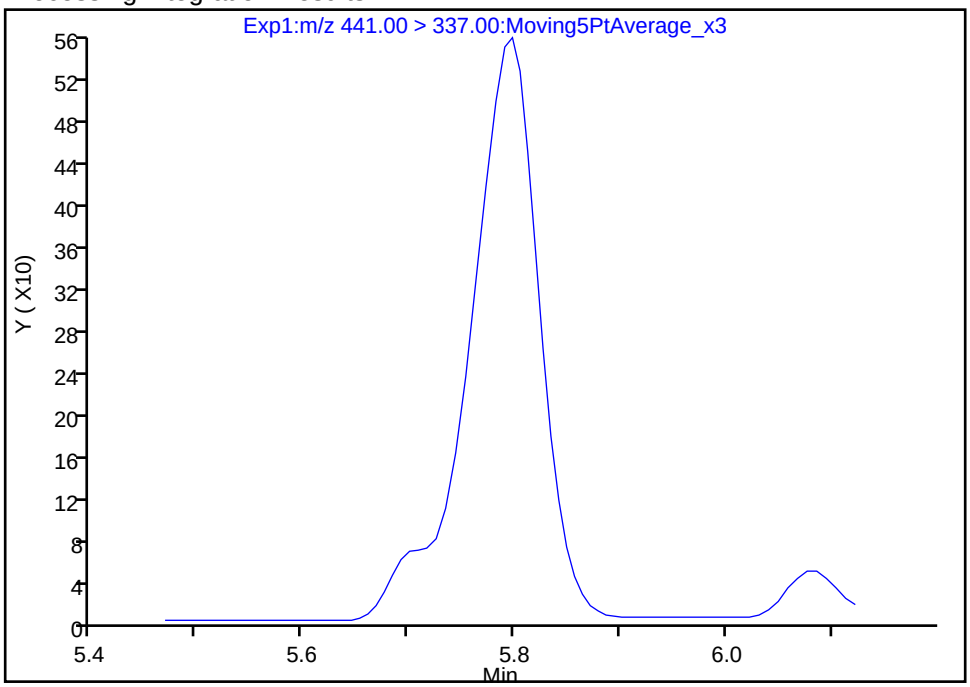
Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d
Injection Date: 03-Apr-2022 17:12:49 Instrument ID: 29347
Lims ID: IC CAL 1
Client ID:
Operator ID: US19_USR_INS75556 ALS Bottle#: 20002 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3
Column: Detector EXP1

66 7:3 FTCA, CAS: 812-70-4

Signal: 2

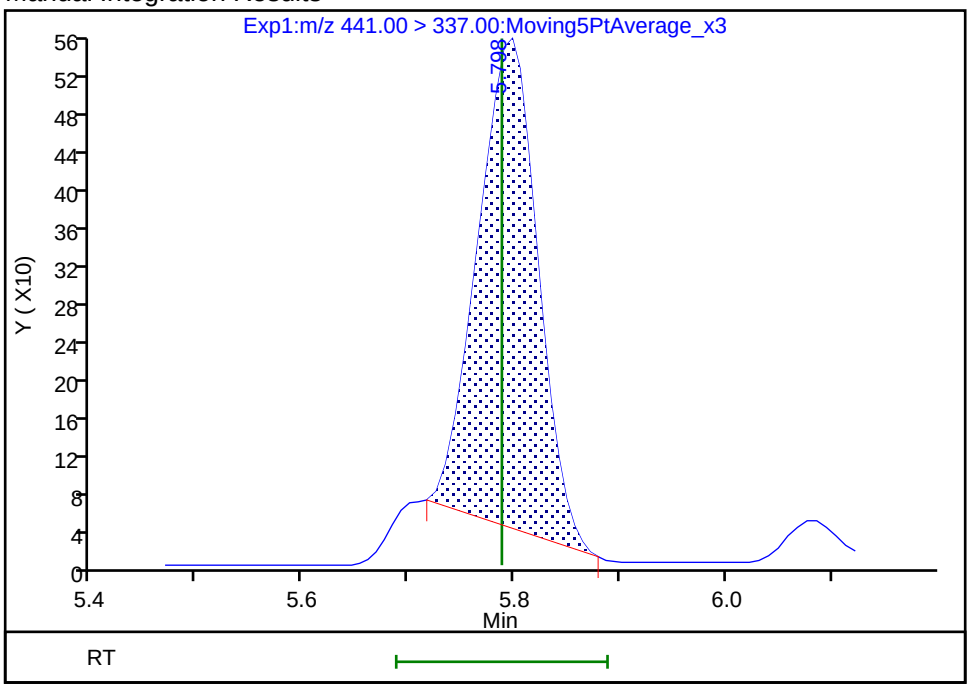
Not Detected
Expected RT: 5.79

Processing Integration Results



Manual Integration Results

RT: 5.80
Area: 2042
Amount: 0.176939
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:06:45
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

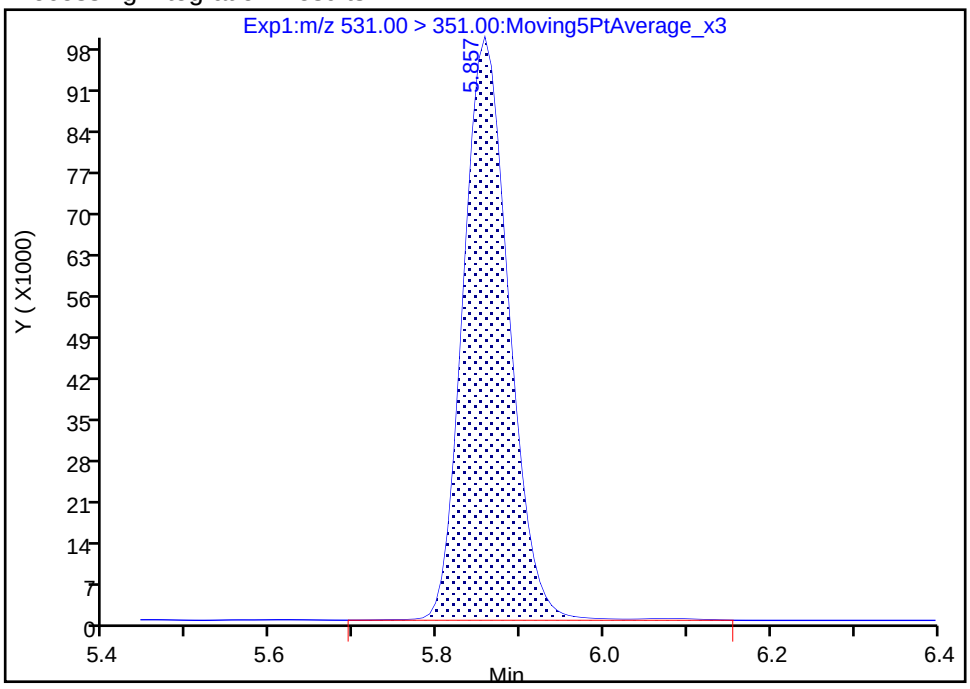
Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d
Injection Date: 03-Apr-2022 17:12:49 Instrument ID: 29347
Lims ID: IC CAL 1
Client ID:
Operator ID: US19_USR_INS75556 ALS Bottle#: 20002 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3
Column: Detector EXP1

28 9ClFOS, CAS: 756426-58-1

Signal: 1

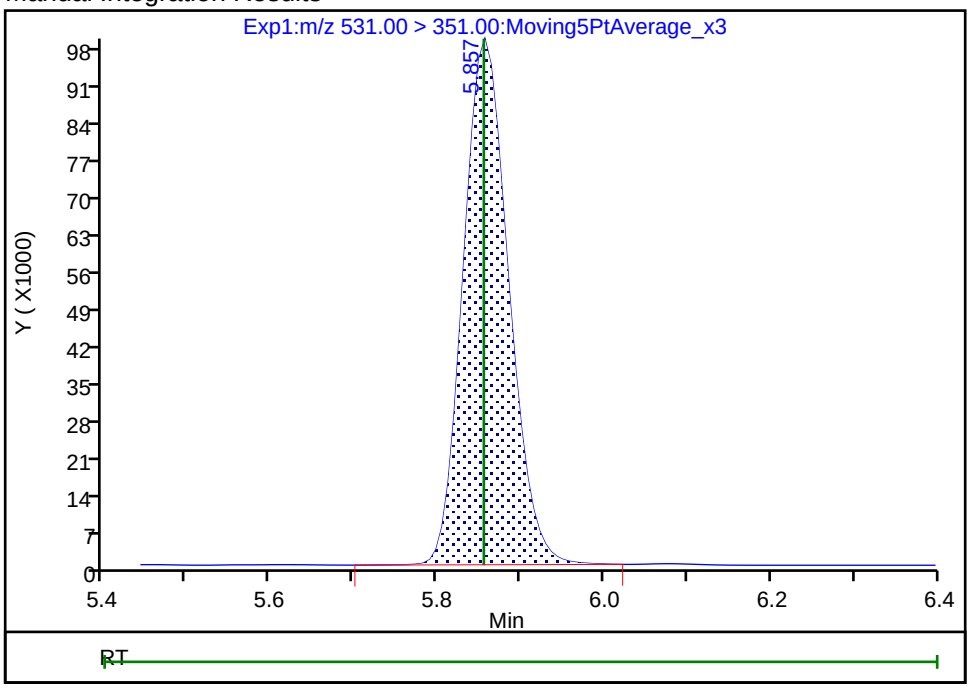
Processing Integration Results

RT: 5.86
Area: 378616
Amount: 0.210513
Amount Units: ng/ml



Manual Integration Results

RT: 5.86
Area: 375950
Amount: 0.183140
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:06:55
Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

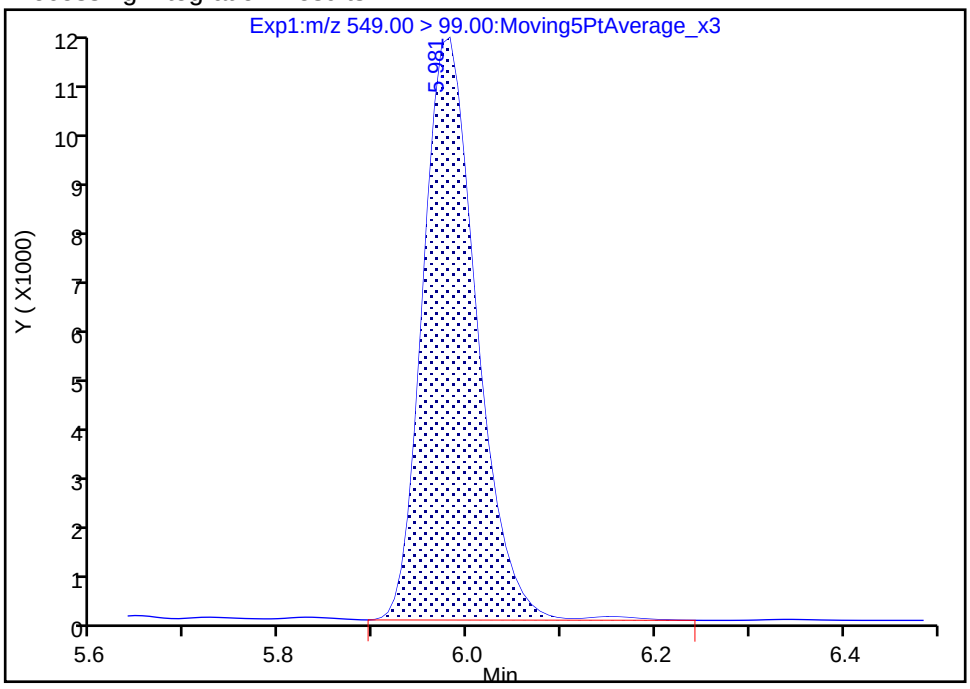
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

29 Perfluorononanesulfonic acid, CAS: 68259-12-1

Signal: 2

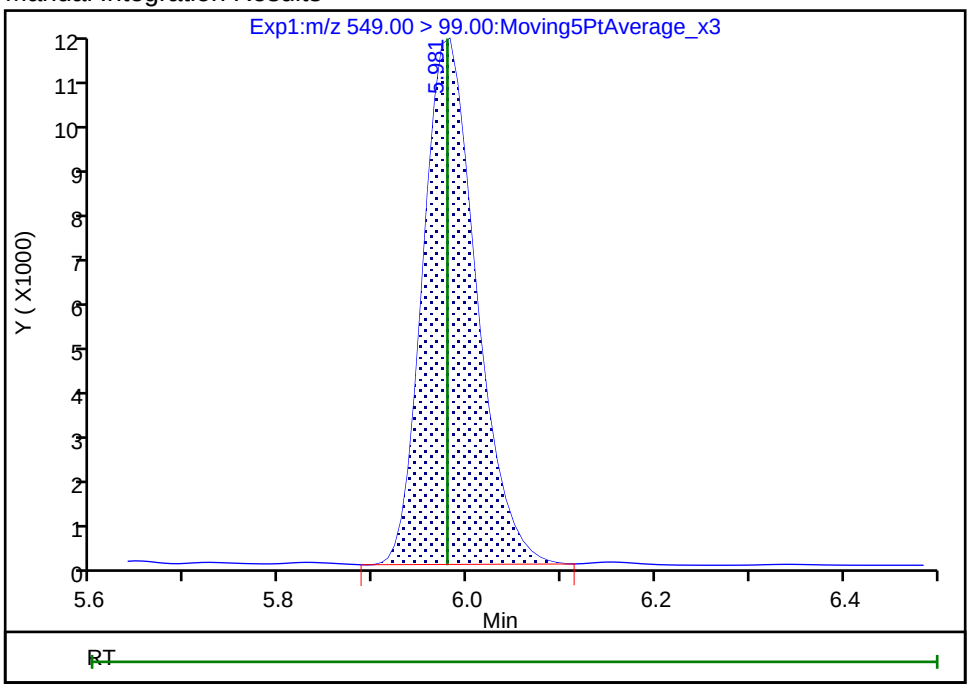
Processing Integration Results

RT: 5.98
Area: 47228
Amount: 0.189230
Amount Units: ng/ml



Manual Integration Results

RT: 5.98
Area: 46791
Amount: 0.183824
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:07:09

Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

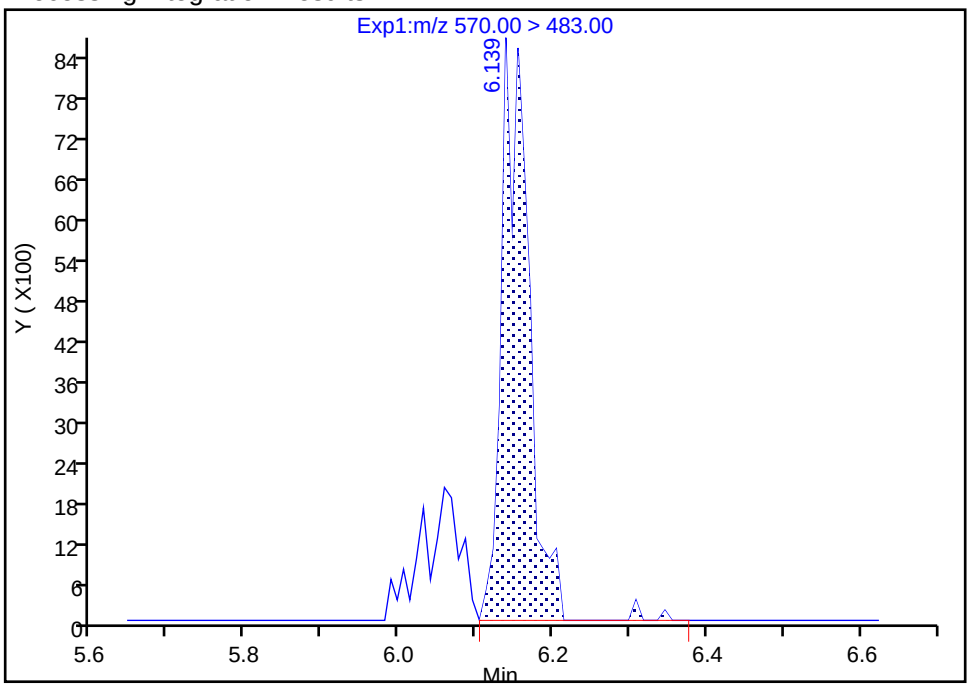
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

36 NMeFOSAA, CAS: 2355-31-9

Signal: 2

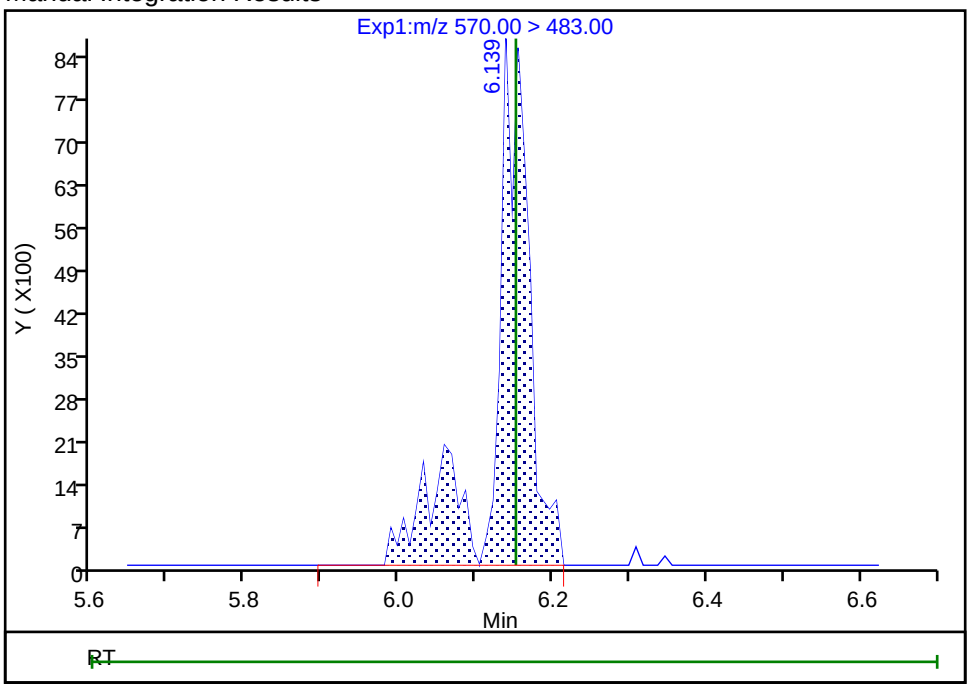
Processing Integration Results

RT: 6.14
Area: 21225
Amount: 0.193056
Amount Units: ng/ml



Manual Integration Results

RT: 6.14
Area: 27735
Amount: 0.193056
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:07:22
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

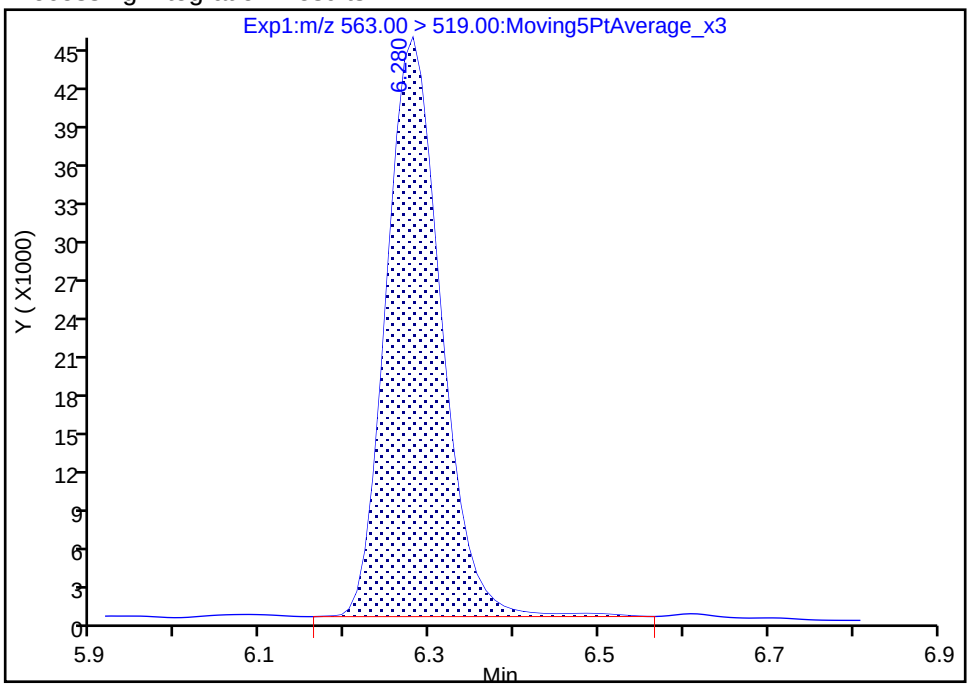
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

39 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

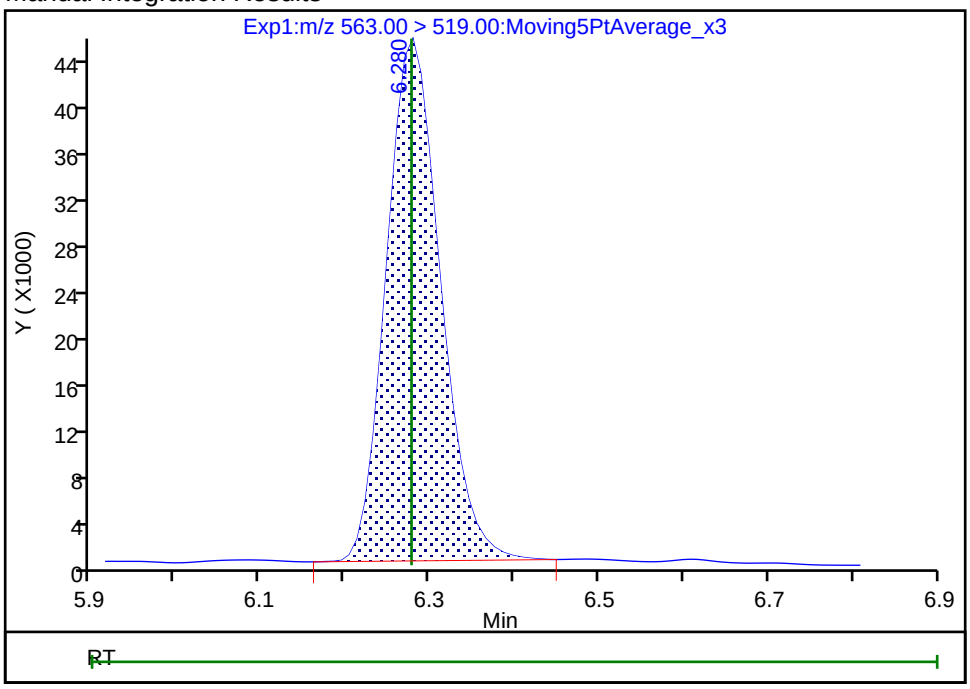
Processing Integration Results

RT: 6.28
Area: 204875
Amount: 0.206330
Amount Units: ng/ml



Manual Integration Results

RT: 6.28
Area: 202142
Amount: 0.198158
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:07:32
Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

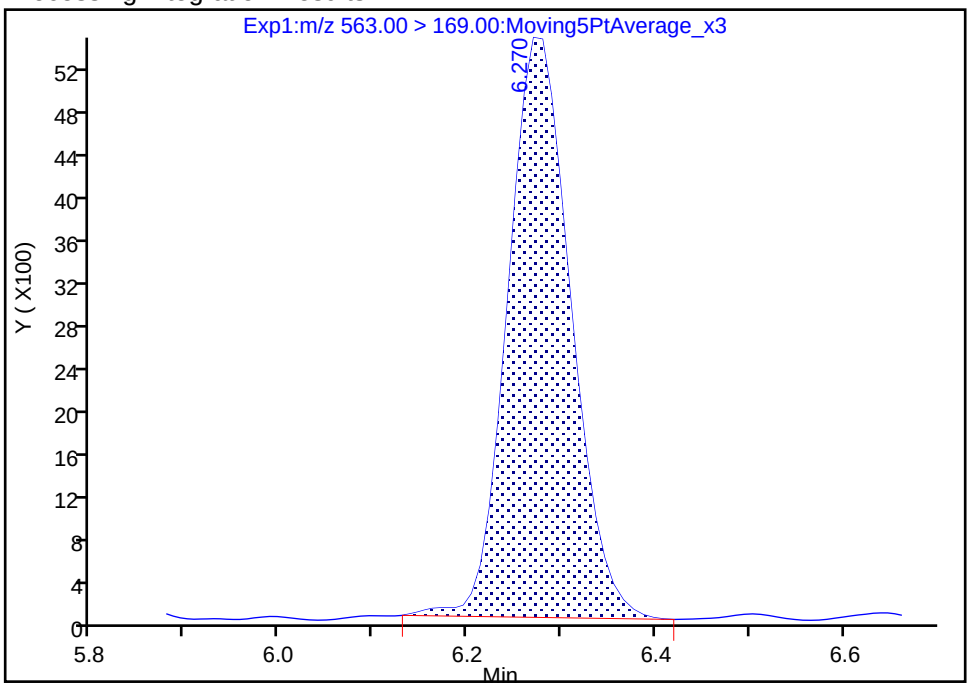
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

39 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

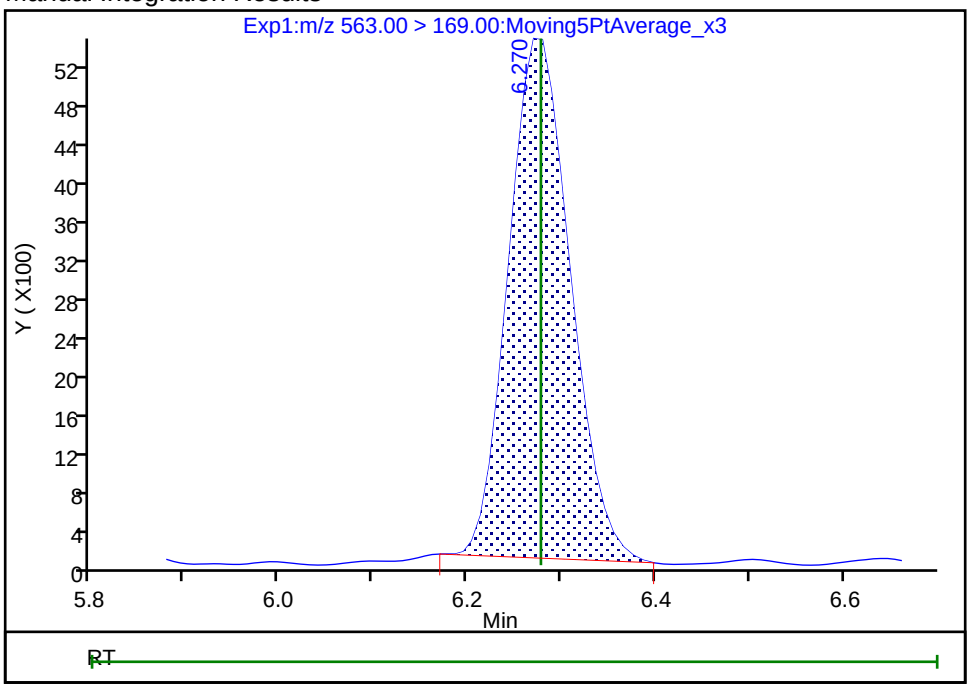
Processing Integration Results

RT: 6.27
Area: 25236
Amount: 0.206330
Amount Units: ng/ml



Manual Integration Results

RT: 6.27
Area: 24529
Amount: 0.198158
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:07:36
Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

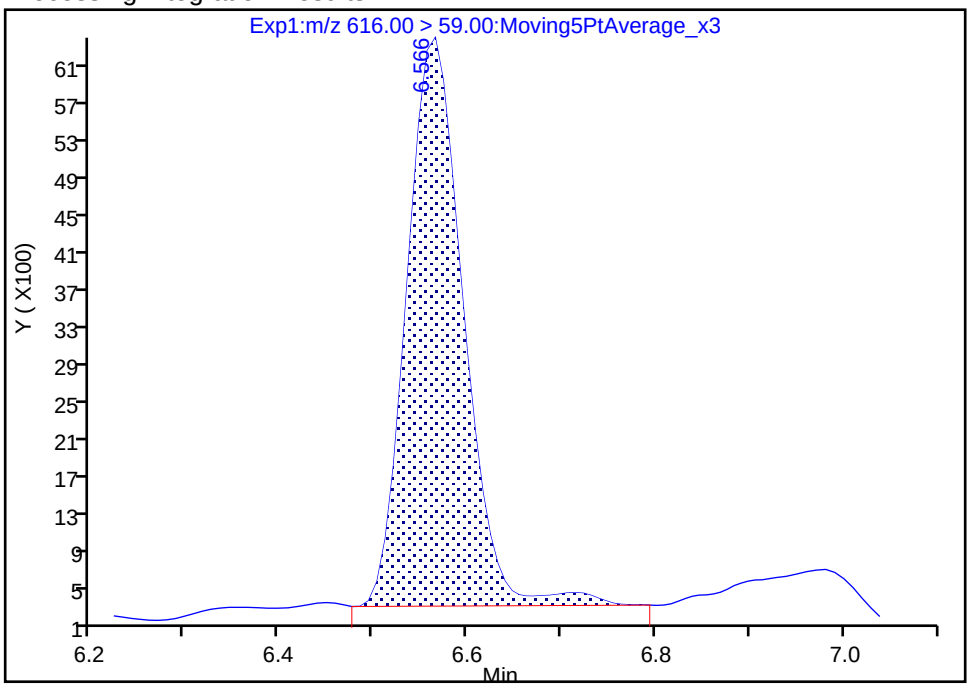
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

47 N-MeFOSE-M, CAS: 24448-09-7

Signal: 1

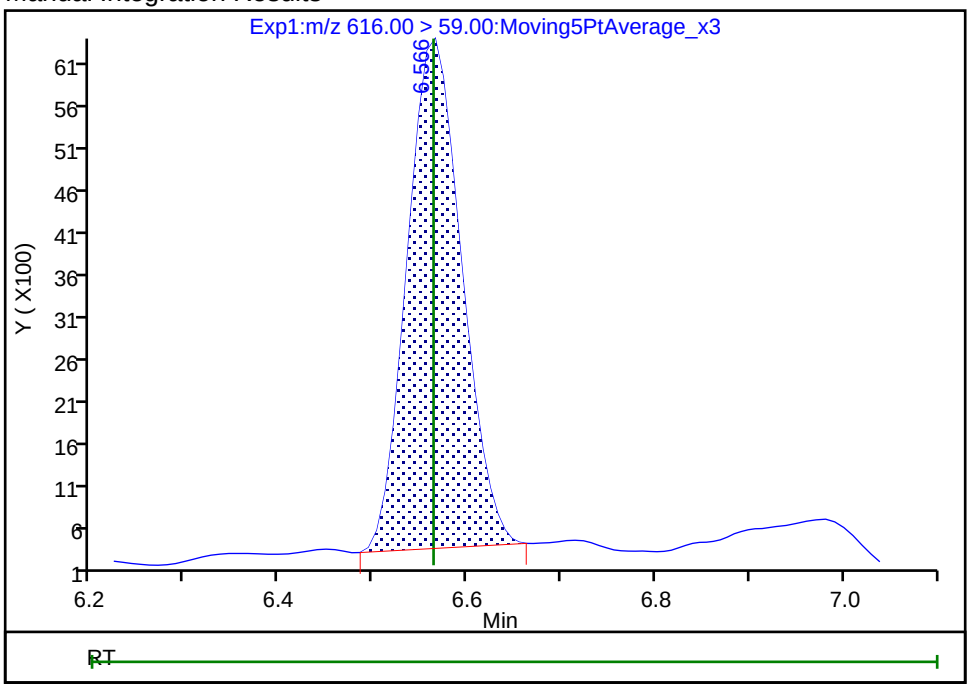
Processing Integration Results

RT: 6.57
Area: 25418
Amount: 0.178032
Amount Units: ng/ml



Manual Integration Results

RT: 6.57
Area: 24283
Amount: 0.173773
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:07:47

Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

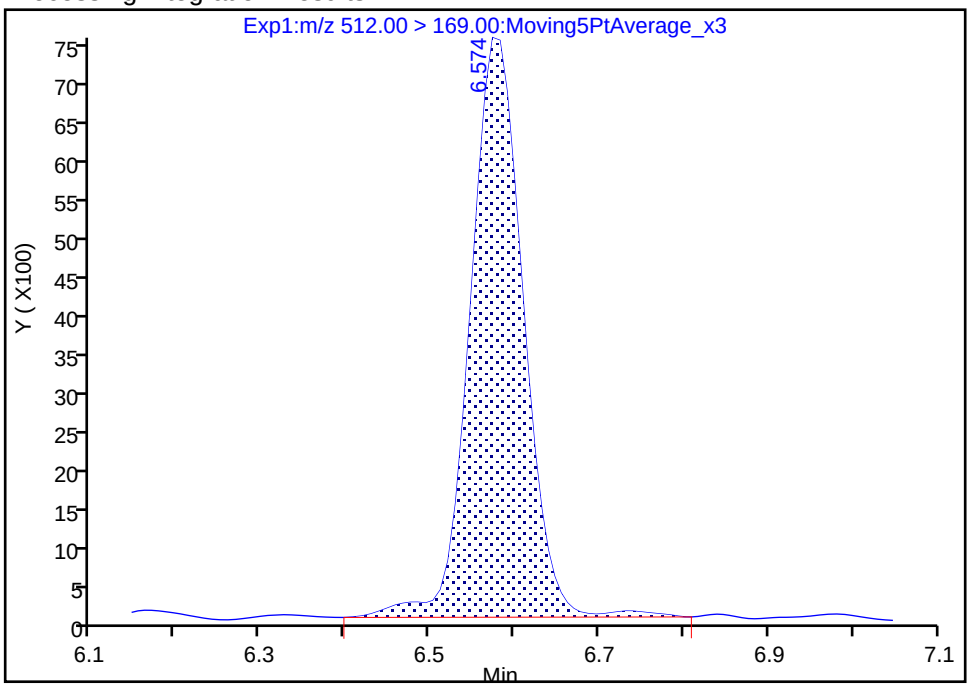
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

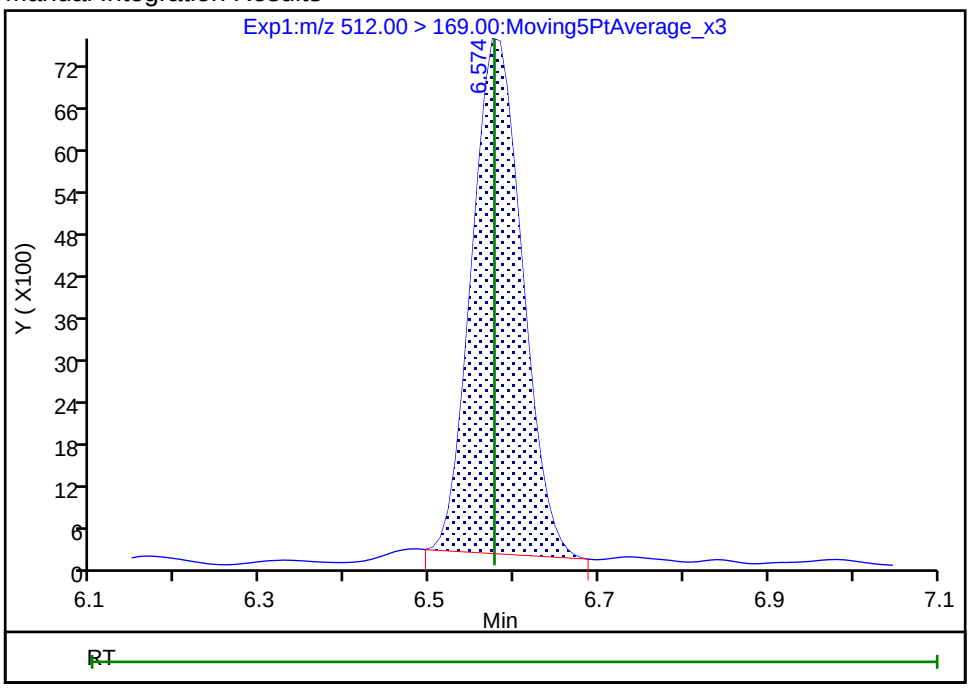
Processing Integration Results

RT: 6.57
Area: 33053
Amount: 0.188031
Amount Units: ng/ml



Manual Integration Results

RT: 6.57
Area: 30794
Amount: 0.176459
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:07:54
Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

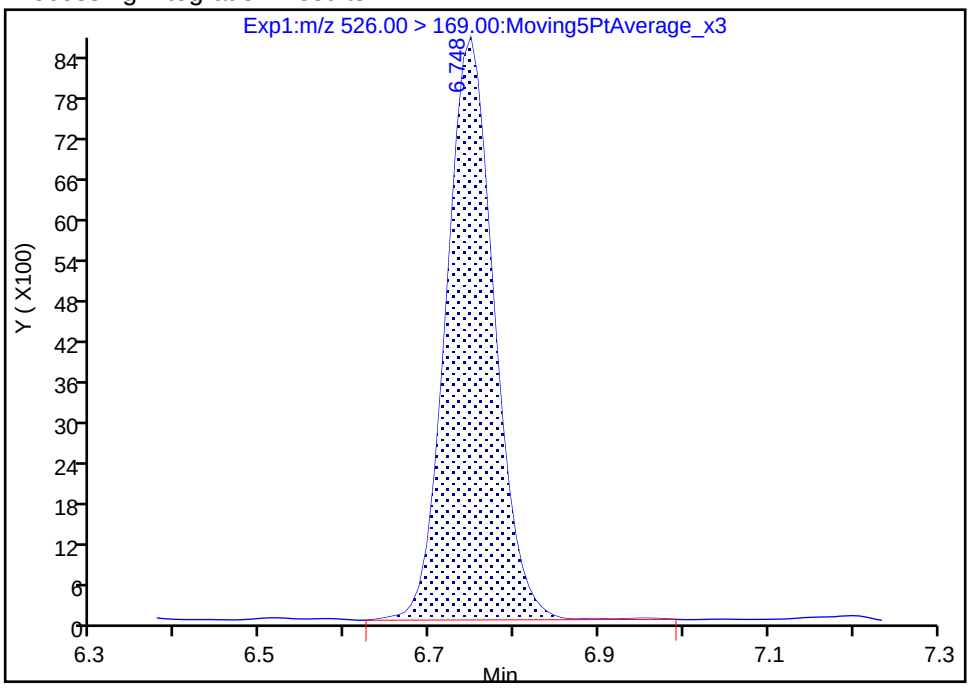
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-41.d				
Injection Date:	03-Apr-2022 17:12:49	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

55 N-EtFOSA-M, CAS: 4151-50-2

Signal: 1

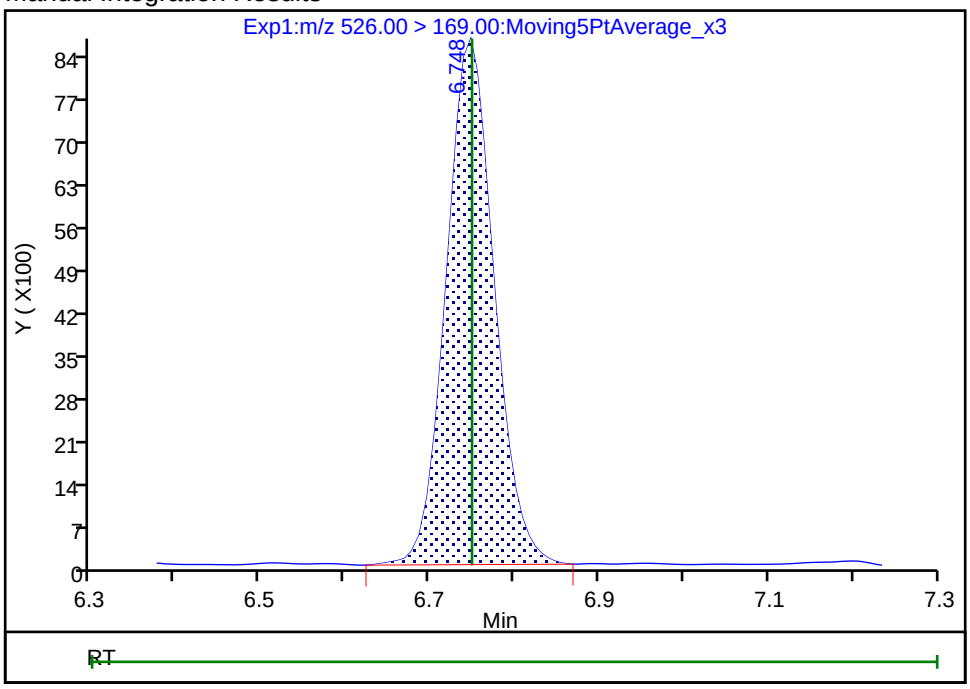
Processing Integration Results

RT: 6.75
Area: 34018
Amount: 0.196394
Amount Units: ng/ml



Manual Integration Results

RT: 6.75
Area: 33880
Amount: 0.196052
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:08:07
Audit Action: Manually Integrated Audit Reason: Shouldering

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-42.d
Lims ID: IC CAL 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 03-Apr-2022 17:23:21 ALS Bottle#: 20003 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 2
Misc. Info.: Plate: 1 Rack: 1 410-0053897-002
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:12 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:09:47
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 2 13C4 PFBA										
217.00 > 172.00	3.655	3.658	-0.003		8811906	10.1		101	95923	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.655	3.658	-0.003	1.000	348149	0.4736		94.7	735	
63 PFECA F										
229.00 > 85.00	3.882	3.890	-0.008	0.930	280285	0.4733		94.7	7096	
67 3:3 FTCA										M
241.00 > 177.00	4.162	4.167	-0.005	0.997	18800	0.4345	Target=1.30	86.9	1692	M
241.00 > 117.00	4.162	4.167	-0.005	0.997	15143		1.24(0.65-1.94)	86.9	493	
D 4 13C5 PFPeA										
268.00 > 223.00	4.176	4.178	-0.002		7275513	10.0		100	67415	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.176	4.177	-0.001	1.000	358843	0.4790		95.8	1721	
D 6 13C3 PFBS										
302.00 > 80.00	4.228	4.230	-0.002		8759164	9.32		100	573737	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.228	4.230	-0.002	1.000	382548	0.4227	Target=2.82	95.5	467	
299.00 > 99.00	4.220	4.230	-0.010	0.998	133005		2.88(1.41-4.23)	95.5	417	
64 PFECA A										
279.00 > 85.00	4.297	4.300	-0.003	1.029	286520	0.4755		95.1	12212	
65 PES										
315.00 > 135.00	4.385	4.390	-0.005	0.957	1357161	0.4473	Target=14.82	101	55184	
315.00 > 83.00	4.385	4.390	-0.005	0.957	86156		15.75(7.41-22.22)	101	107	
68 PFECA B										
295.00 > 201.00	4.505	4.509	-0.004	0.983	117176	0.4657		93.1	4205	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.545	4.544	0.001	1.000	69562	0.4504	Target=1.61	96.5	5066	
327.00 > 81.00	4.545	4.544	0.001	1.000	49107		1.42(0.81-2.42)	96.5	1080	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.545	4.545	0.0		381631	9.40		101	11868	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.574	4.582	-0.008	0.998	394907	0.5074	Target=13.95	101	3161	
313.00 > 119.00	4.574	4.582	-0.008	0.998	26057		15.16(6.97-20.92)	101	1127	
D 9 13C5 PFHxA										
318.00 > 273.00	4.584	4.585	-0.001		8895986	10.0		100	243514	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.603	4.604	-0.001	1.089	385027	0.4625	Target=2.93	98.6	17523	
349.00 > 99.00	4.594	4.604	-0.010	1.086	125972		3.06(1.47-4.40)	98.6	6961	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.707	4.712	-0.005		1097957	9.94		99.4	71756	
12 HFPO-DA										
329.00 > 285.00	4.707	4.712	-0.005	1.000	112098	0.4817		96.3	2991	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.972	4.973	-0.001	1.000	441312	0.4964	Target=3.12	99.3	3287	
363.00 > 169.00	4.972	4.973	-0.001	1.000	138843		3.18(1.56-4.69)	99.3	3420	
D 17 13C4 PFHpA										
367.00 > 322.00	4.972	4.976	-0.004		9309689	10.5		105	74972	
D 16 13C3 PFHxS										
402.00 > 80.00	4.972	4.977	-0.005		8360589	9.98		105	1728714	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.972	4.976	-0.004	1.000	362766	0.4219	Target=2.99	92.5	127313	
399.00 > 99.00	4.972	4.976	-0.004	1.000	122130		2.97(1.49-4.48)	92.5	287	
18 DONA										
377.00 > 251.00	5.015	5.021	-0.006	1.009	693626	0.4537		96.0	13068	
62 5:3 FTCA										
341.00 > 237.00	5.046	5.047	-0.001	1.101	83102	0.4857	Target=3.15	97.1	1617	
341.00 > 217.00	5.039	5.047	-0.008	1.099	28349		2.93(1.57-4.72)	97.1	1035	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.324	5.327	-0.003		266310	10.4		110	14673	
19 6:2 FTS										
427.00 > 407.00	5.324	5.327	-0.003	1.000	56677	0.3878	Target=1.62	81.8	3815	
427.00 > 81.00	5.324	5.327	-0.003	1.000	40007		1.42(0.81-2.43)	81.8	2652	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.331	5.334	-0.003	1.072	381308	0.4435	Target=3.16	93.2	21530	
449.00 > 99.00	5.331	5.334	-0.003	1.072	118108		3.23(1.58-4.74)	93.2	8194	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.338	5.341	-0.003	0.999	455101	0.4998	Target=2.36	100.0	18830	
413.00 > 169.00	5.338	5.341	-0.003	0.999	190619		2.39(1.18-3.54)	100.0	39629	
D 22 13C8 PFOA										
421.00 > 376.00	5.344	5.345	-0.001		10173275	10.4		104	991961	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.669	5.672	-0.003	1.000	377689	0.4195	Target=3.73	90.7	539	
499.00 > 99.00	5.661	5.672	-0.011	0.999	107702		3.51(1.87-5.60)	90.7	292	
D 25 13C8 PFOS										
507.00 > 80.00	5.669	5.674	-0.005		8013477	9.89		103	463513	
D 27 13C9 PFNA										
472.00 > 427.00	5.685	5.691	-0.006		10574366	10.4		104	362575	
26 Perfluorononanoic acid										
463.00 > 419.00	5.685	5.690	-0.005	1.000	436670	0.4849	Target=4.38	97.0	5320	
463.00 > 169.00	5.685	5.690	-0.005	1.000	98223		4.45(2.19-6.56)	97.0	3464	
66 7:3 FTCA										
441.00 > 317.00	5.783	5.788	-0.005	1.262	44387	0.4982	Target=10.71	99.6	2567	
441.00 > 337.00	5.783	5.788	-0.005	1.262	4632		9.58(5.36-16.07)	99.6	196	
28 9ClFOS										
531.00 > 351.00	5.850	5.855	-0.005	1.032	880312	0.4398		94.6	45711	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.973	5.978	-0.005	1.054	355787	0.4526	Target=3.28	94.3	18009	
549.00 > 99.00	5.973	5.978	-0.005	1.054	103315		3.44(1.64-4.92)	94.3	6664	
D 32 13C6 PFDA										
519.00 > 474.00	5.998	6.004	-0.006		11128723	10.3		103	220161	
33 8:2 FTS										M
527.00 > 507.00	5.998	6.003	-0.005	0.999	78689	0.4327	Target=2.01	90.3	6400	
527.00 > 81.00	5.998	6.003	-0.005	0.999	42589		1.85(1.01-3.02)	90.3	677	M
30 Perfluorodecanoic acid										M
513.00 > 469.00	5.998	6.003	-0.005	1.000	480478	0.4968	Target=8.83	99.4	6578	
513.00 > 169.00	5.998	6.003	-0.005	1.000	54697		8.78(4.41-13.24)	99.4	1128	M
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.006	0.0		232580	10.4		108	18315	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.114	0.0		13121068	10.1		101	381776	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.105	6.112	-0.007	0.999	601674	0.4562		91.2	15639	
36 NMeFOSAA										M
570.00 > 419.00	6.155	6.153	0.002	1.001	119252	0.4693	Target=1.81	93.9	4294	
570.00 > 483.00	6.155	6.153	0.002	1.001	62876		1.90(0.91-2.72)	93.9	67.7	M
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.147	6.152	-0.005		2880157	10.2		102	413589	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.252	6.250	0.002	1.103	395844	0.4469	Target=3.48	92.7	15008	
599.00 > 99.00	6.242	6.250	-0.008	1.101	113581		3.49(1.74-5.22)	92.7	6495	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.271	6.278	-0.007	0.999	472700	0.4820	Target=8.25	96.4	4077	
563.00 > 169.00	6.271	6.278	-0.007	0.999	53873		8.77(4.12-12.37)	96.4	2963	
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.282	-0.002		11924584	10.6		106	442212	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.299	6.300	-0.001	1.001	101262	0.4705	Target=1.66	94.1	198	
584.00 > 526.00	6.299	6.300	-0.001	1.001	57501		1.76(0.83-2.49)	94.1	90.8	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.289	6.296	-0.007		2268708	10.4		104	242212	
43 11ClFOS										
631.00 > 451.00	6.388	6.394	-0.006	1.127	772754	0.4572		98.3	23500	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.513	6.518	-0.005	0.999	518333	0.4918	Target=5.87	98.4	2294	
613.00 > 169.00	6.513	6.518	-0.005	0.999	88793		5.84(2.94-8.81)	98.4	1395	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.521	6.523	-0.002		11977216	10.0		100	217756	
48 10:2 FTS										
627.00 > 607.00	6.530	6.535	-0.005	1.087	96117	0.4234	Target=1.77	87.8	7571	
627.00 > 81.00	6.530	6.535	-0.005	1.087	54911		1.75(0.88-2.65)	87.8	2636	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.559	-0.002		1357861	9.98		99.8	5650	
47 N-MeFOSE-M										M
616.00 > 59.00	6.566	6.564	0.002	1.001	63888	0.4738		94.8	753	M
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.576	-0.002		1752034	10.2		102	8312	
50 NMeFOSA										
512.00 > 169.00	6.574	6.576	-0.002	1.000	82463	0.4649		93.0	2800	
53 PFDoS										
699.00 > 80.00	6.697	6.702	-0.005	1.181	394514	0.4564		94.3	11842	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.715	6.720	-0.005		1699187	10.4		104	11215	
52 N-EtFOSE-M										
630.00 > 59.00	6.724	6.729	-0.005	1.001	72456	0.4638		92.8	957	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.732	6.733	-0.001	1.032	535464	0.5089	Target=5.56	102	1999	
663.00 > 169.00	6.732	6.733	-0.001	1.032	93779		5.71(2.78-8.34)	102	5749	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.744	-0.004		1587372	10.1		101	11793	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.750	-0.002	1.001	79489	0.4580		91.6	1810	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.913	6.919	-0.006	0.999	527234	0.4918	Target=5.83	98.4	1128	
713.00 > 169.00	6.913	6.919	-0.006	0.999	86782		6.08(2.92-8.75)	98.4	4319	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.922	-0.001		12362942	10.3		103	271442	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.234	7.241	-0.007	1.045	394524	0.4932	Target=6.08	98.6	1495	
813.00 > 169.00	7.234	7.241	-0.007	1.045	62789		6.28(3.04-9.12)	98.6	2297	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.495	-0.001	1.083	250153	0.4602	Target=7.30	92.0	6485	
913.00 > 169.00	7.488	7.495	-0.007	1.082	33953		7.37(3.65-10.94)	92.0	2882	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD2_00013 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:26:14 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-42.d

Injection Date: 03-Apr-2022 17:23:21 Instrument ID: 29347

Lims ID: IC CAL 2

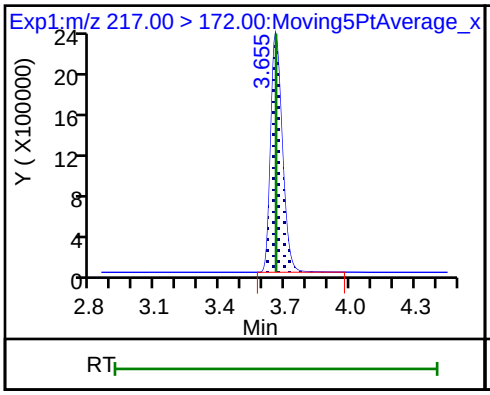
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Operator ID: US19_USR_INS75556 ALS Bottle#: 20003 Worklist Smp#: 2

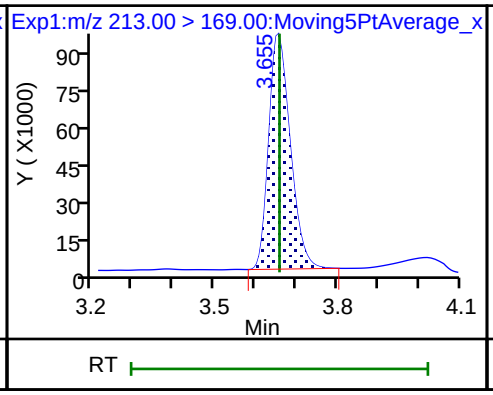
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

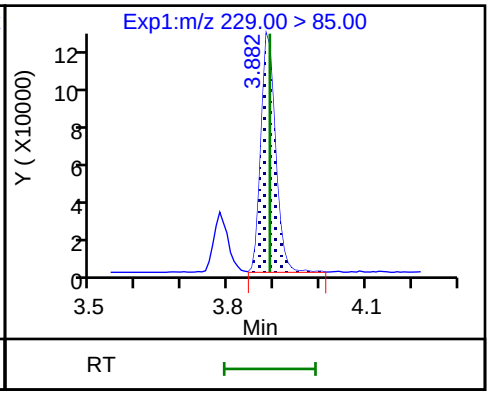
D 2 13C4 PFBA



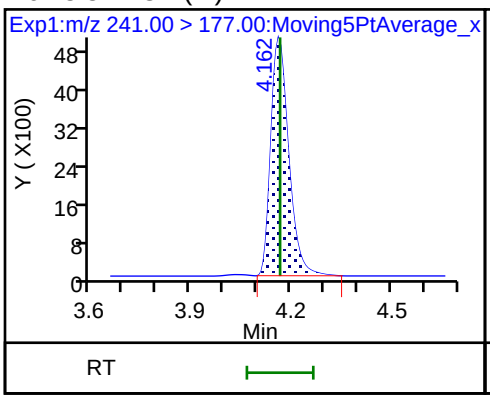
1 Perfluorobutanoic acid



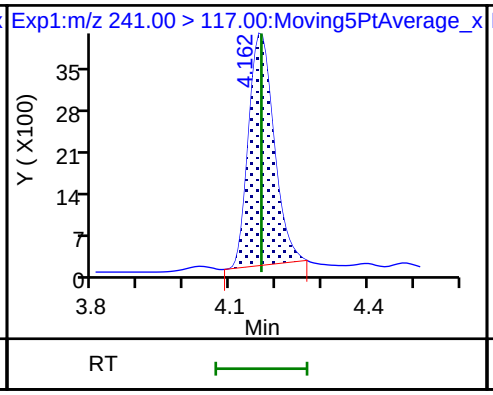
63 PFECA F



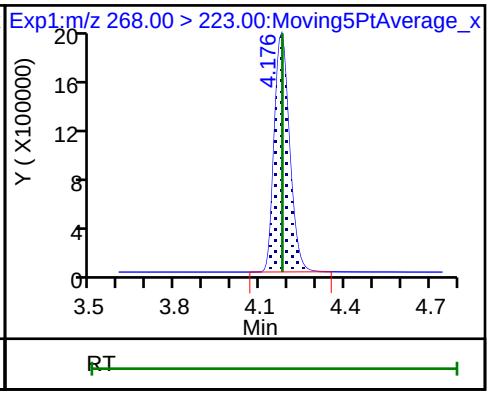
67 3:3 FTCA (M)



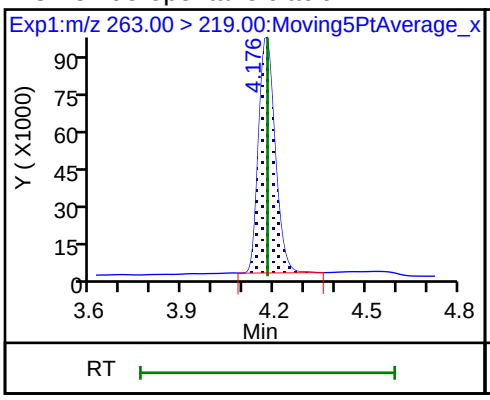
67 3:3 FTCA



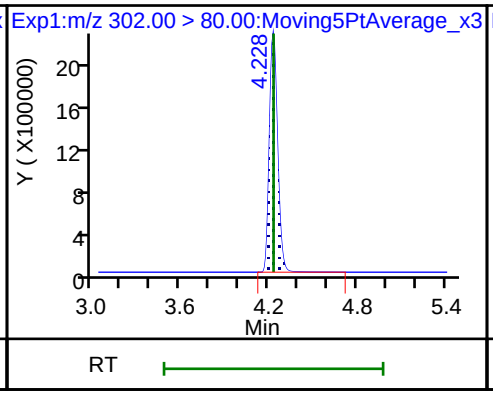
D 4 13C5 PFPeA



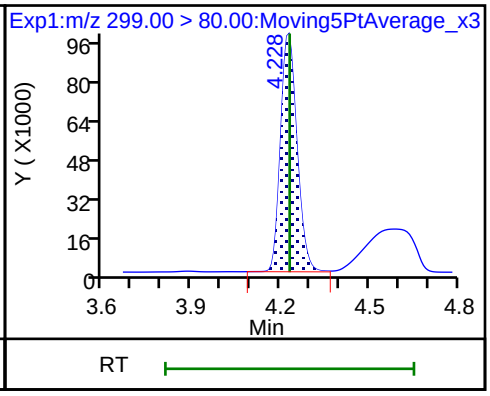
3 Perfluoropentanoic acid



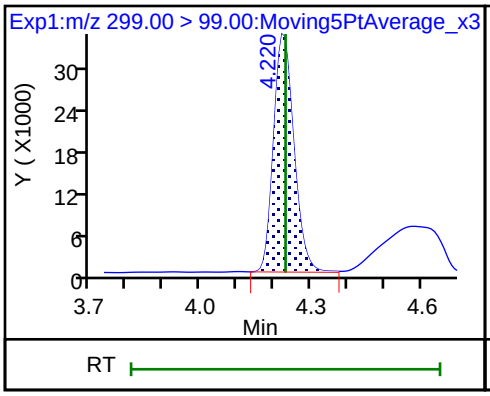
D 6 13C3 PFBS



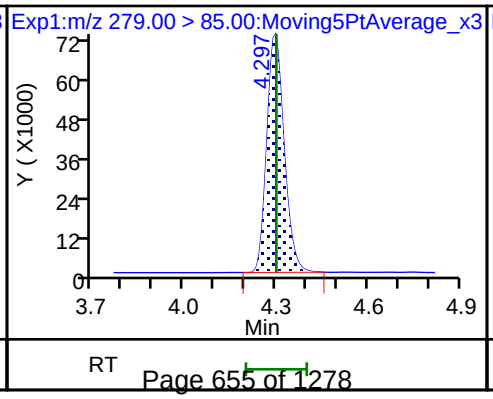
5 Perfluorobutanesulfonic acid



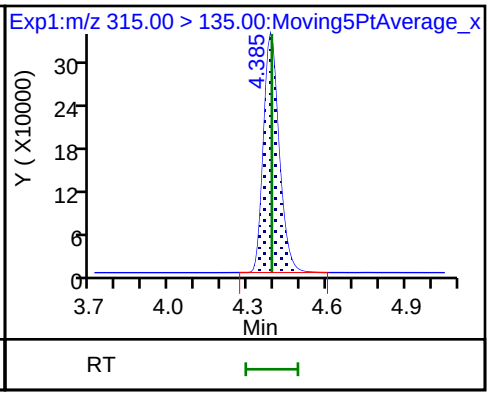
5 Perfluorobutanesulfonic acid



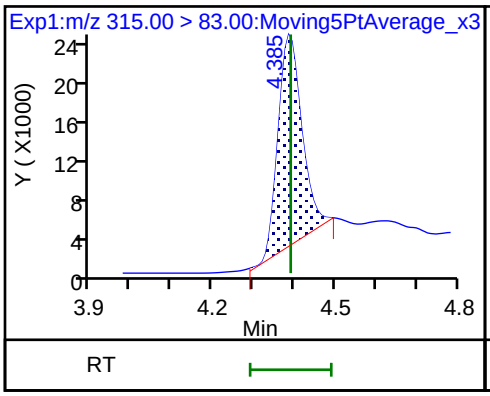
64 PFECA A



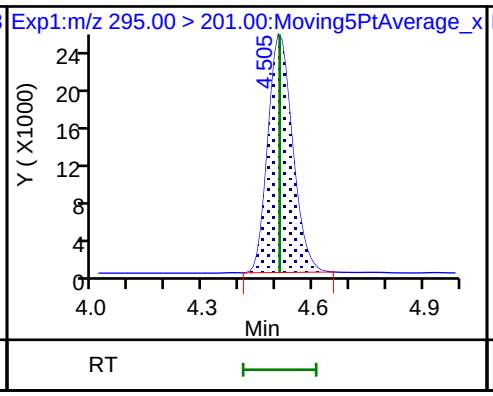
65 PES



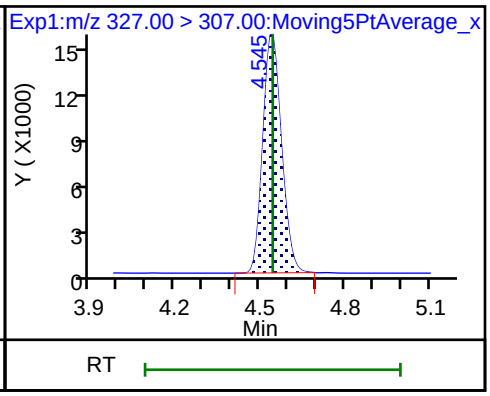
65 PES



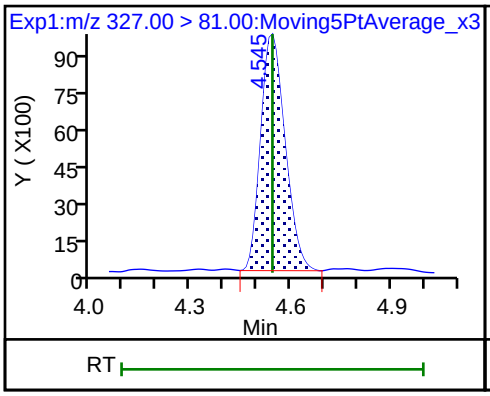
68 PFECA B



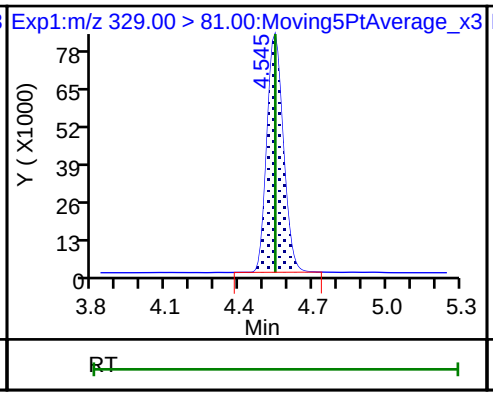
7 4:2 FTS



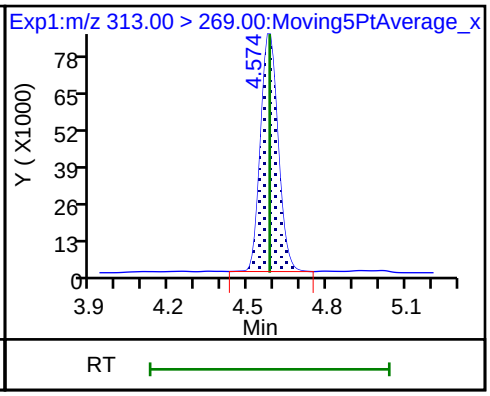
7 4:2 FTS



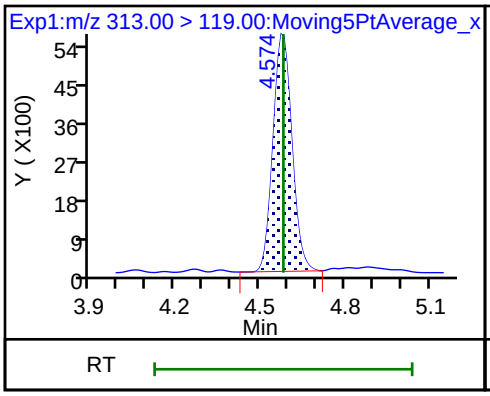
D 8 M2-4:2 FTS



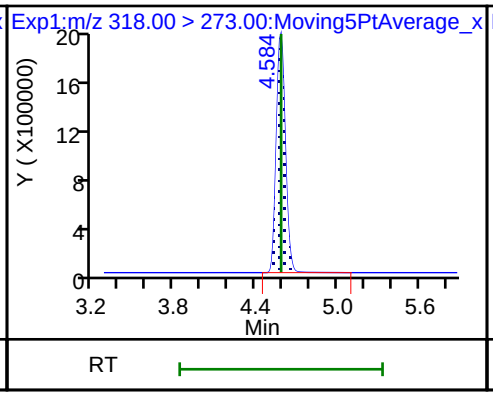
10 Perfluorohexanoic acid



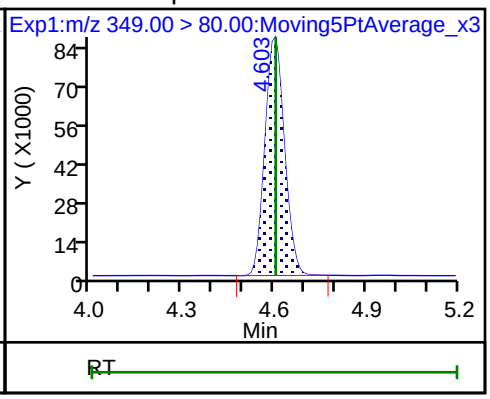
10 Perfluorohexanoic acid



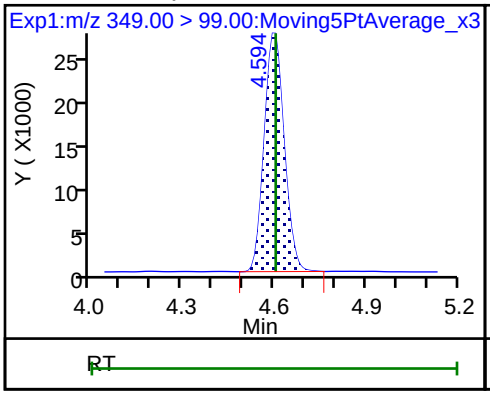
D 9 13C5 PFHxA



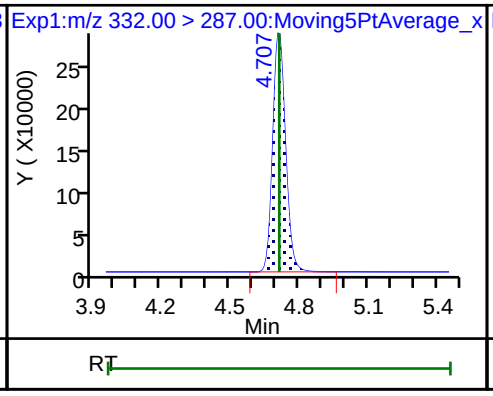
11 Perfluoropentanesulfonic acid



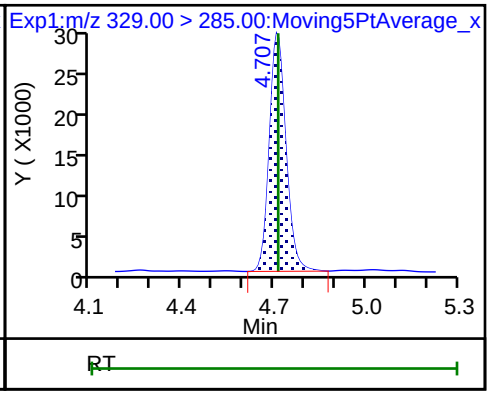
11 Perfluoropentanesulfonic acid



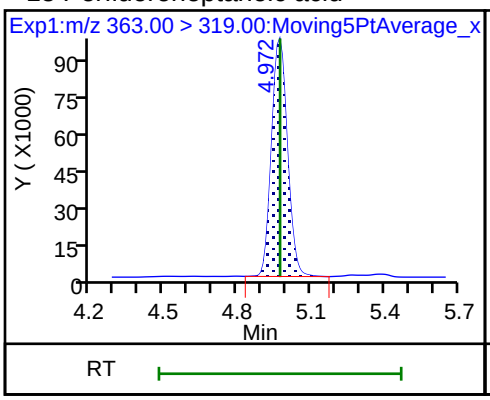
D 13 13C3 HFPO-DA



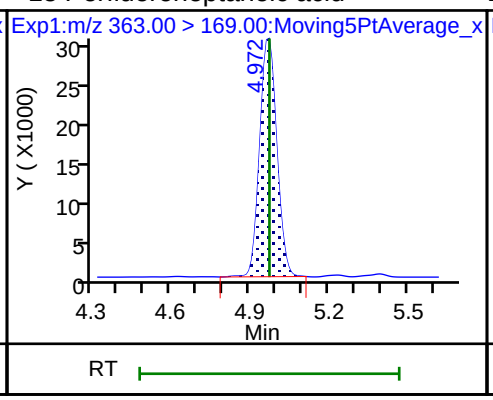
12 HFPO-DA



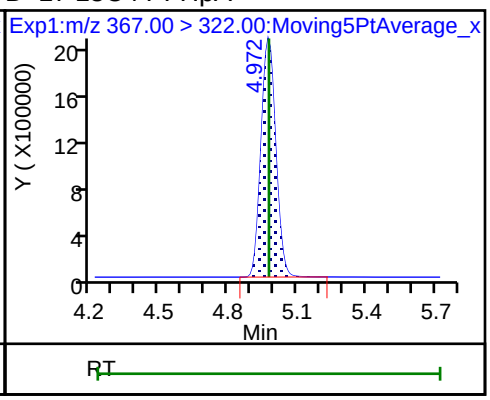
15 Perfluoroheptanoic acid



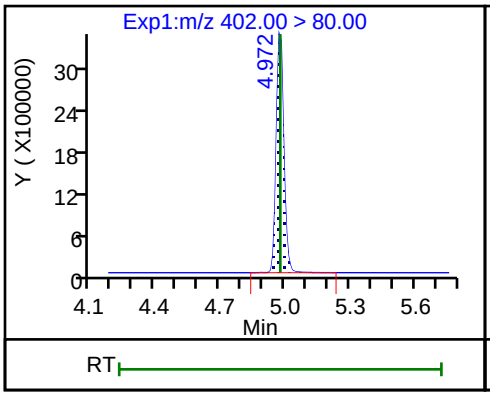
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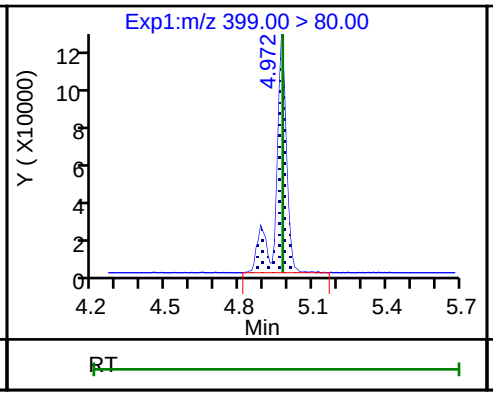
D 17 13C4 PFHpA



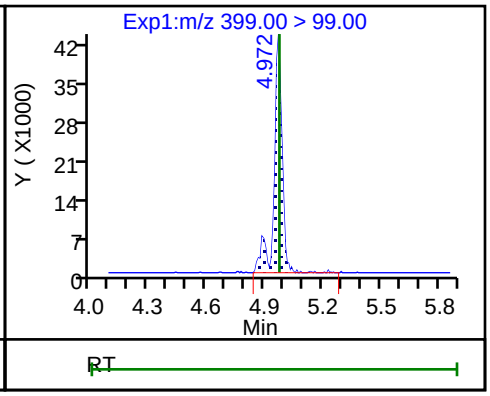
D 16 13C3 PFHxS



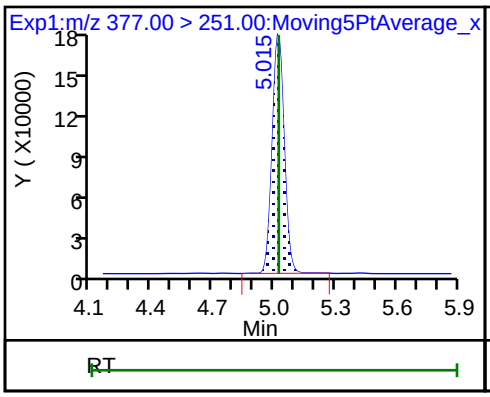
14 Perfluorohexanesulfonic acid



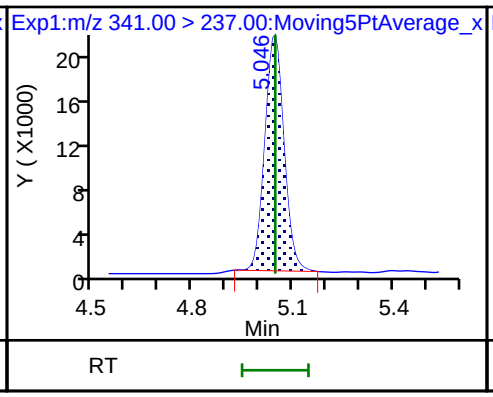
14 Perfluorohexanesulfonic acid



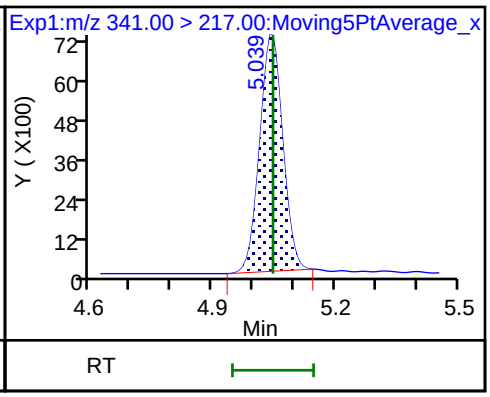
18 DONA



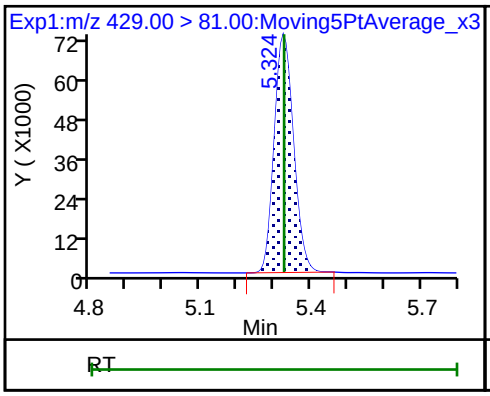
62 5:3 FTCA



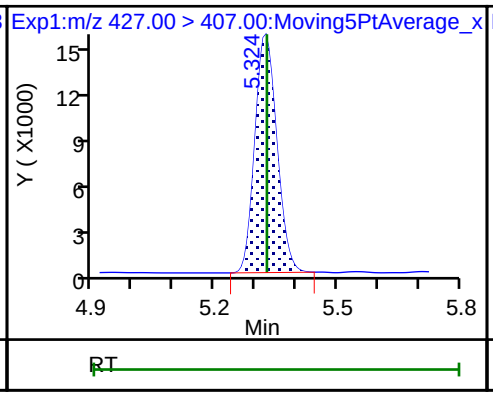
62 5:3 FTCA



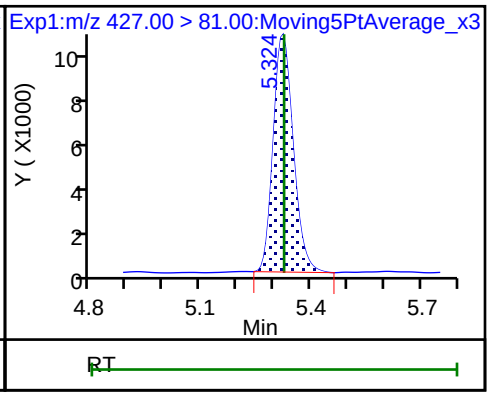
D 20 M2-6:2 FTS



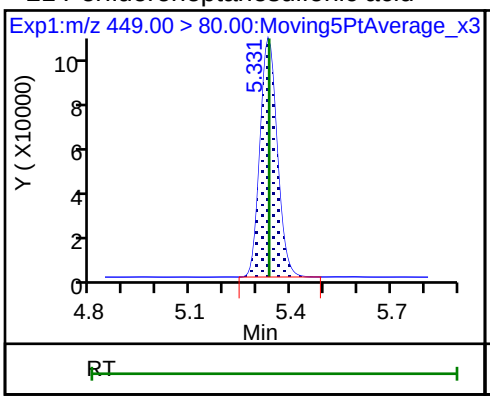
19 6:2 FTS



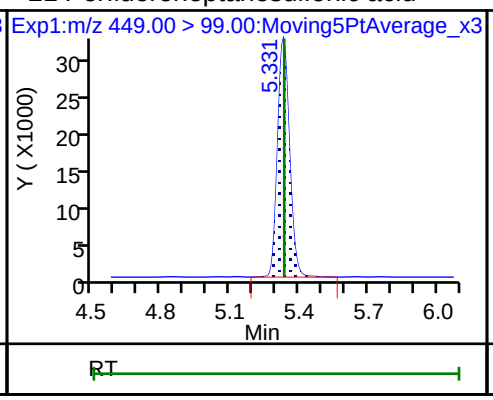
19 6:2 FTS



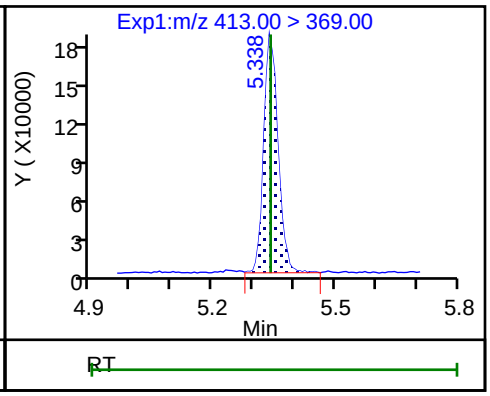
21 Perfluoroheptanesulfonic acid



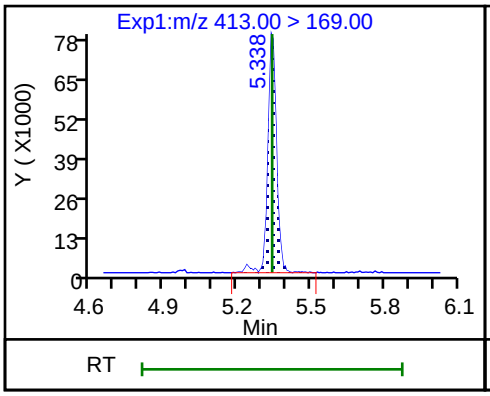
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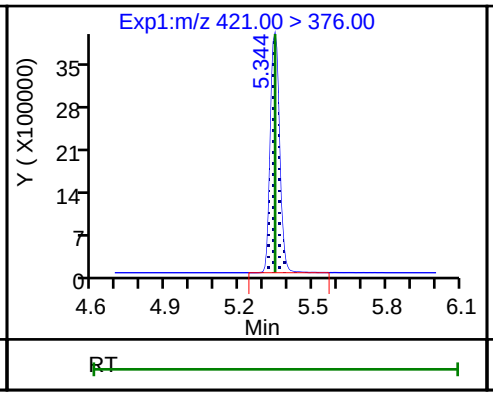
23 Perfluorooctanoic acid



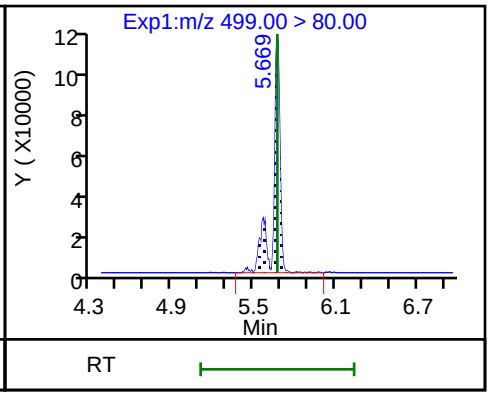
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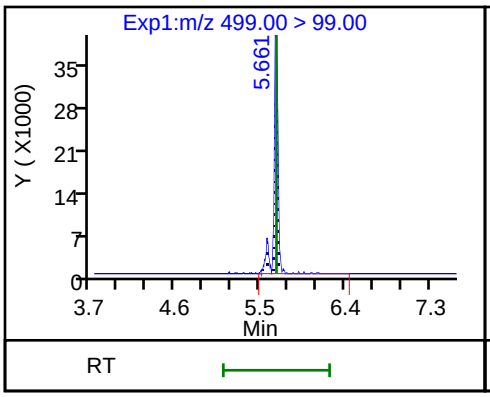
D 22 13C8 PFOA



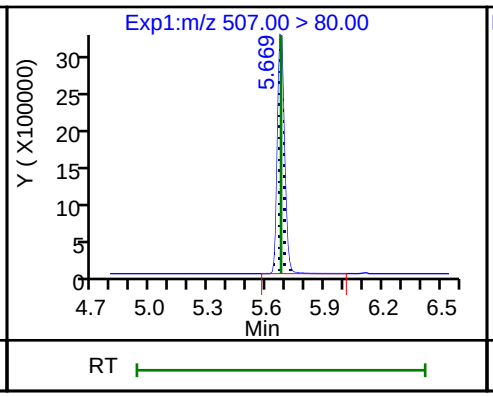
24 Perfluorooctanesulfonic acid



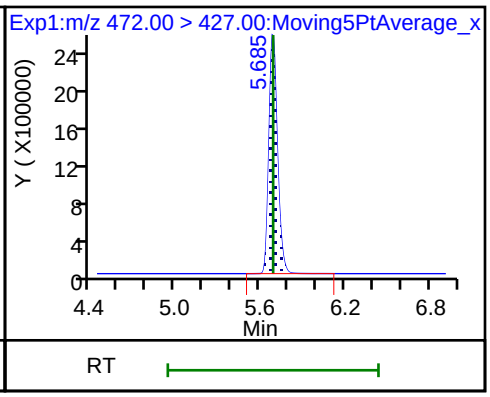
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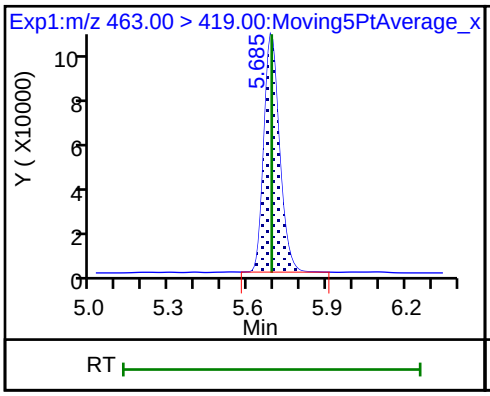
D 25 13C8 PFOS



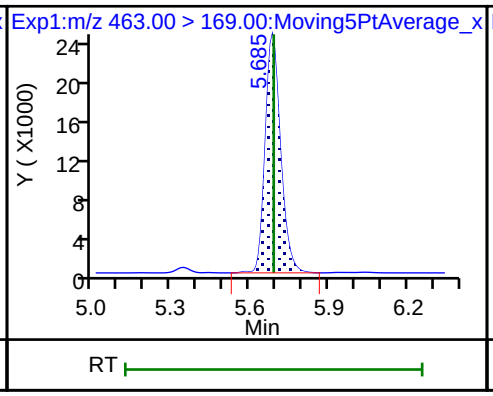
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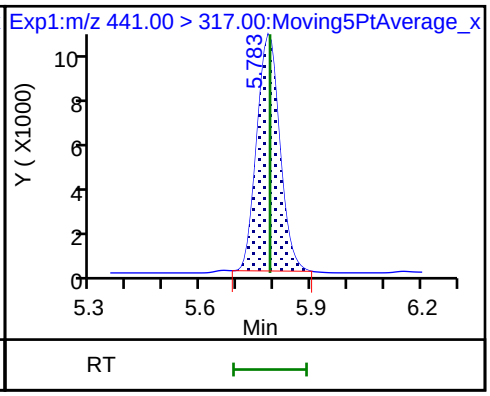
26 Perfluorononanoic acid



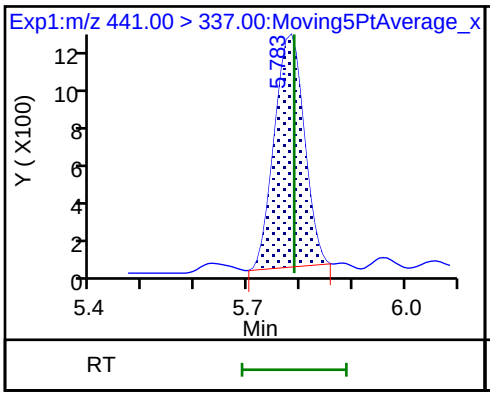
26 Perfluorononanoic acid



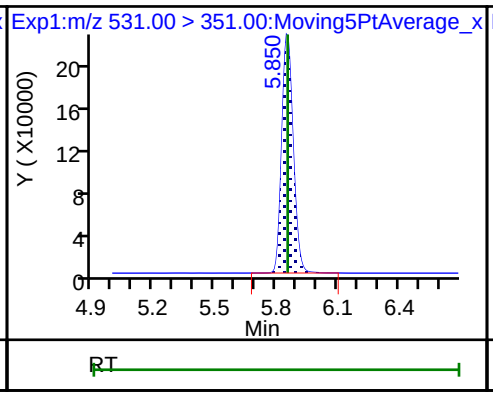
66 7:3 FTCA



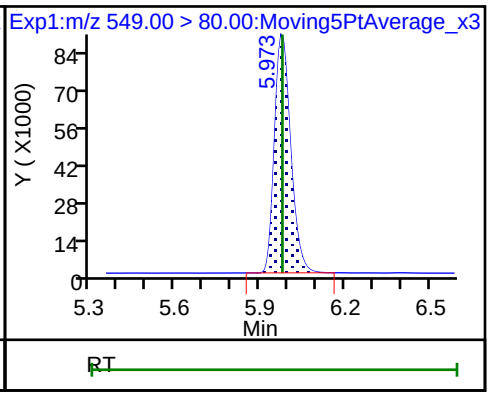
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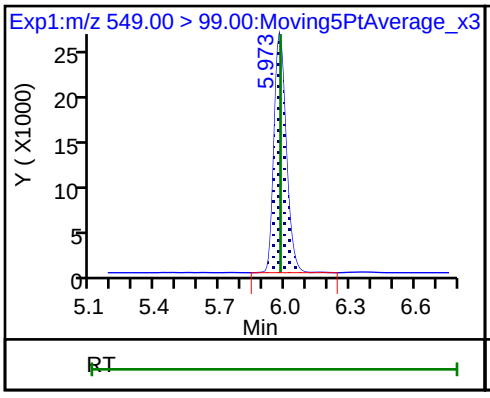
28 9ClFOS



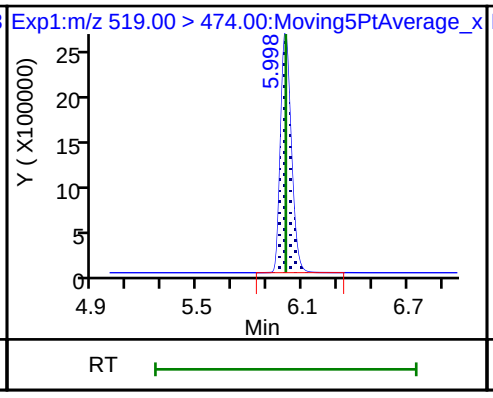
29 Perfluorononanesulfonic acid



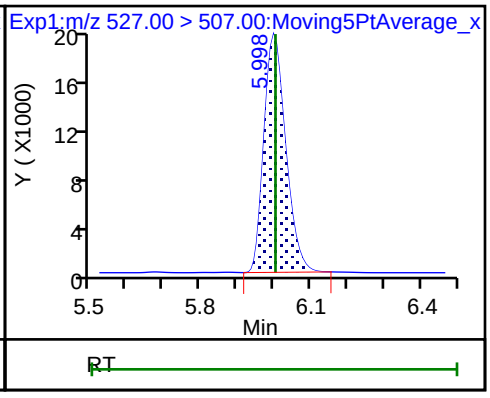
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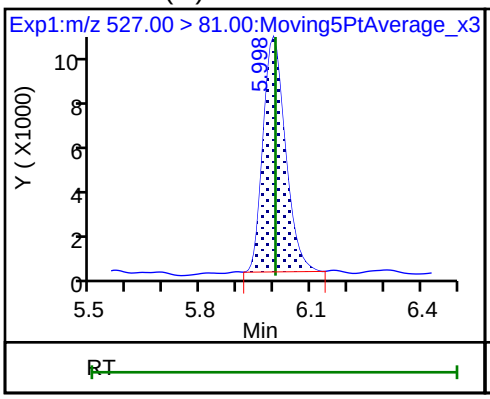
D 32 13C6 PFDA



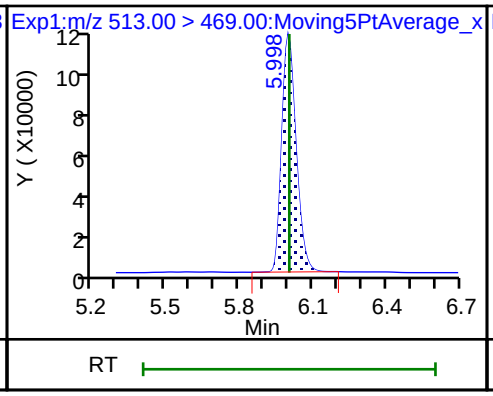
33 8:2 FTS



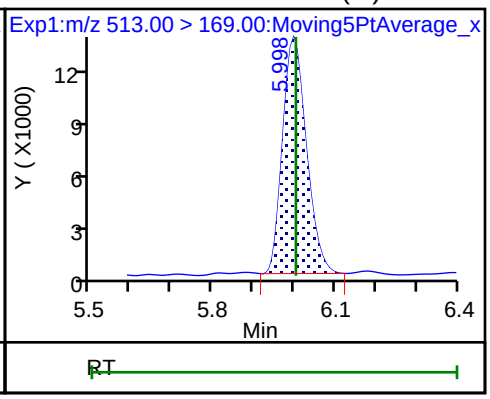
33 8:2 FTS (M)



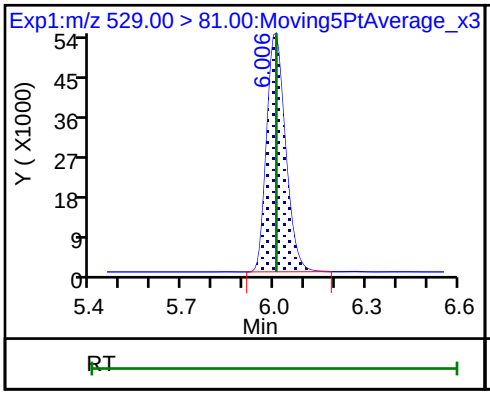
30 Perfluorodecanoic acid



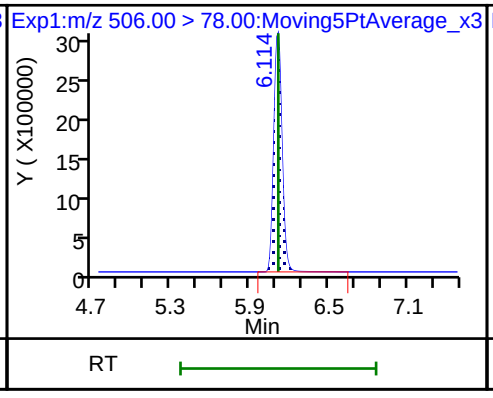
30 Perfluorodecanoic acid (M)



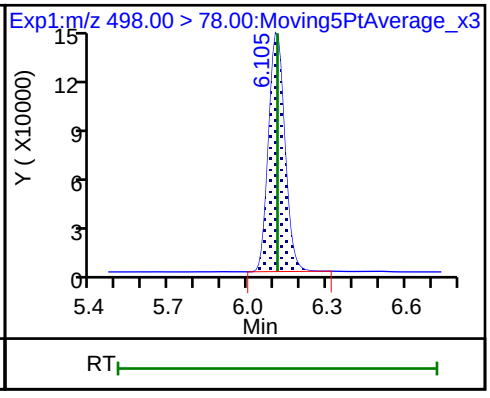
D 31 M2-8:2 FTS



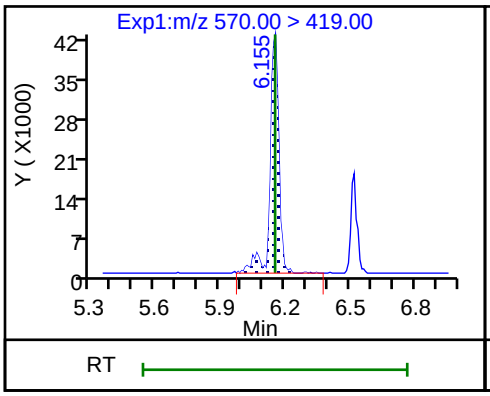
D 35 13C8 FOSA



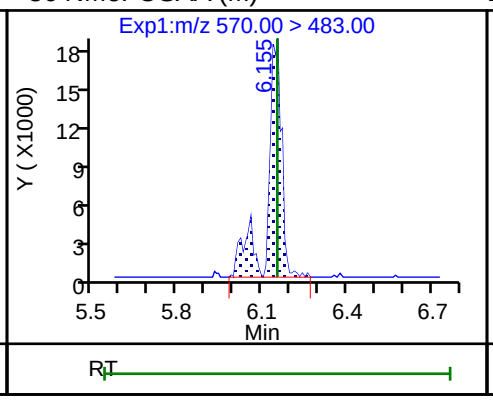
34 Perfluorooctanesulfonamide



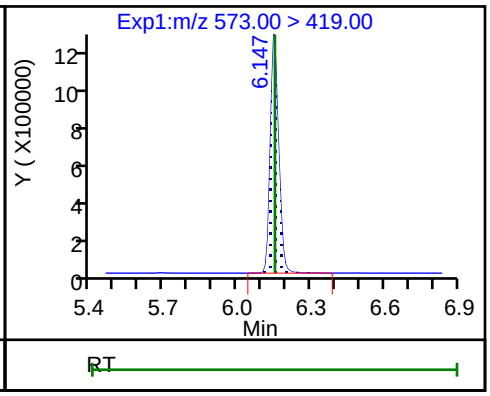
36 NMeFOSAA



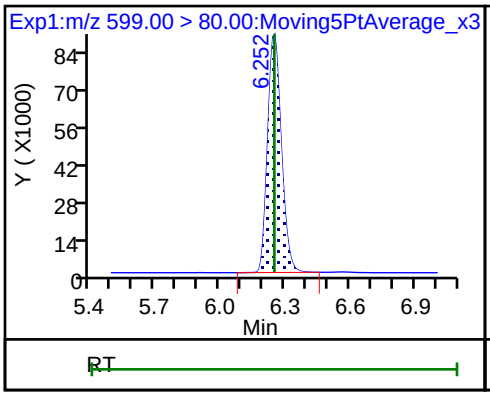
36 NMeFOSAA (M)



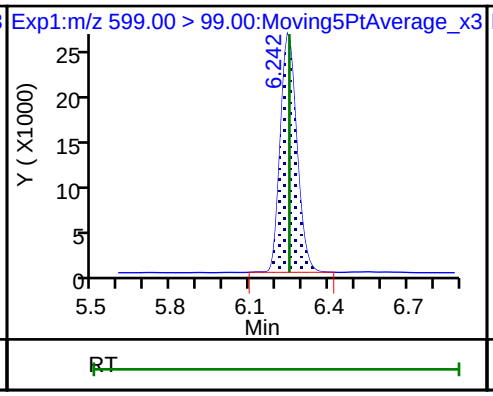
D 37 d3-NMeFOSAA



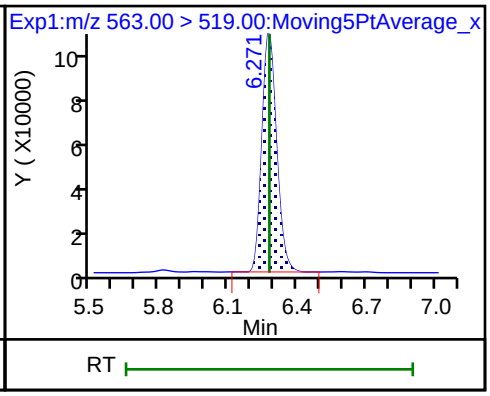
38 Perfluorodecanesulfonic acid



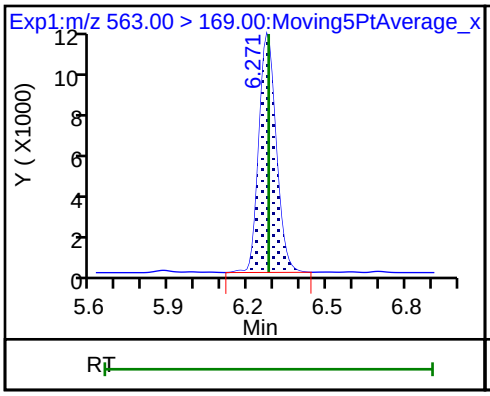
38 Perfluorodecanesulfonic acid



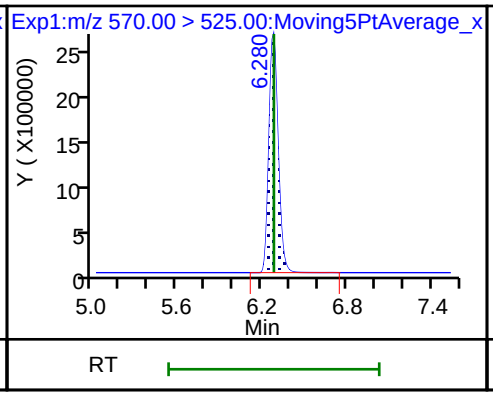
39 Perfluoroundecanoic acid



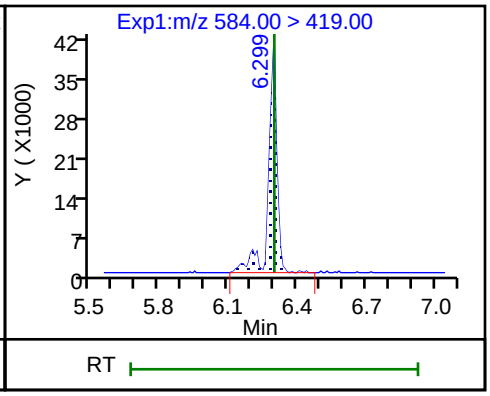
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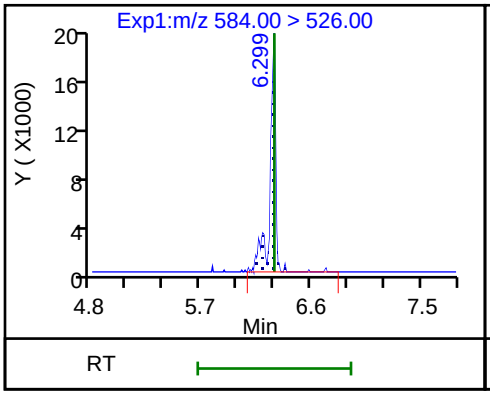
D 40 13C7 PFUnA



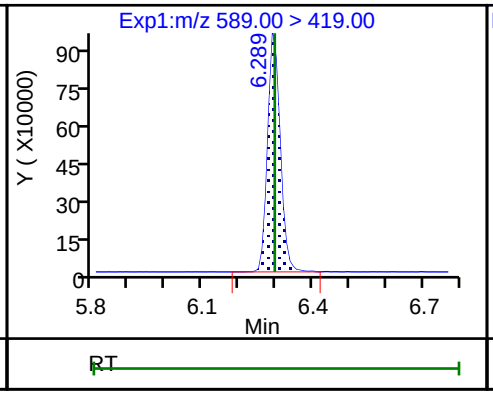
42 NEtFOSAA



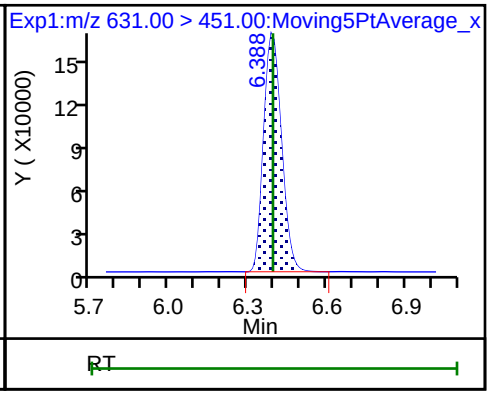
42 NEtFOSAA



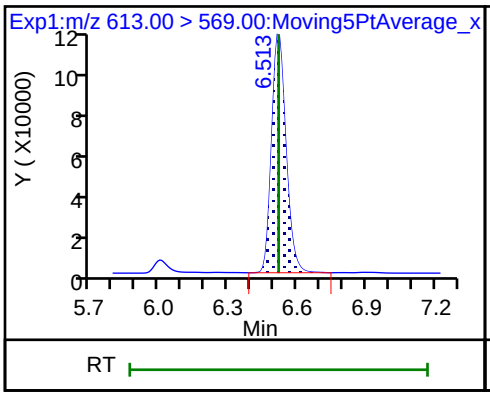
D 41 d5-NEtFOSAA



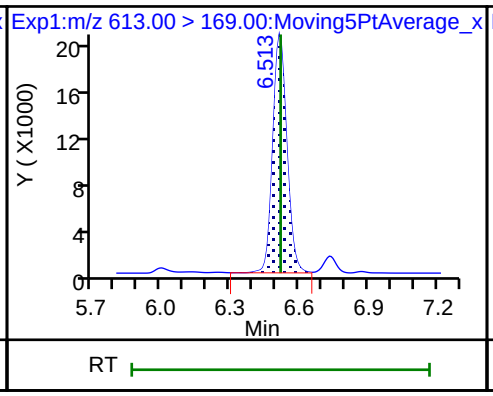
43 11ClFOS



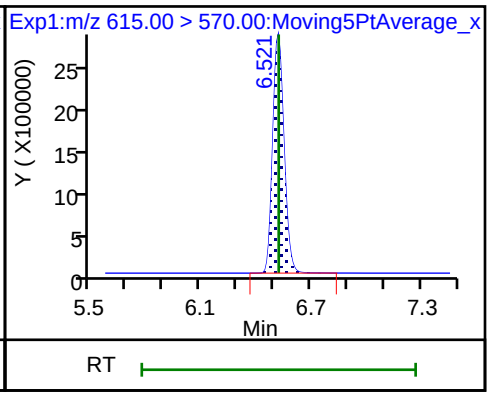
46 Perfluorododecanoic acid



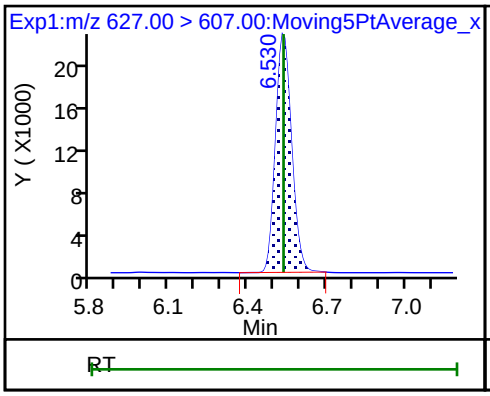
46 Perfluorododecanoic acid



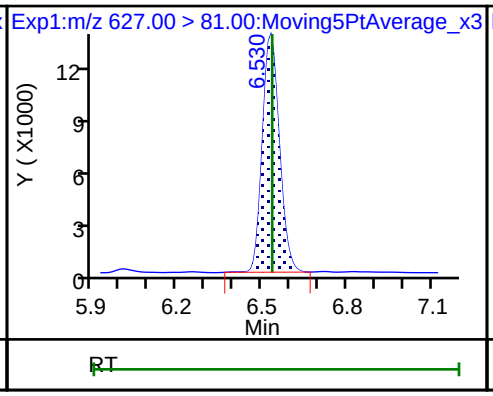
D 45 13C2-PFDoDA



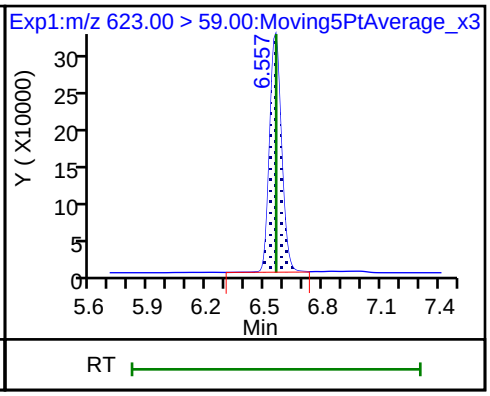
48 10:2 FTS



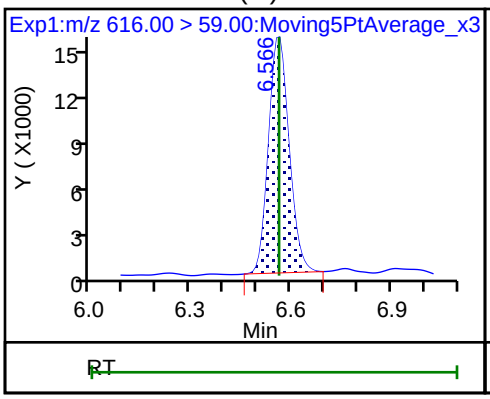
48 10:2 FTS



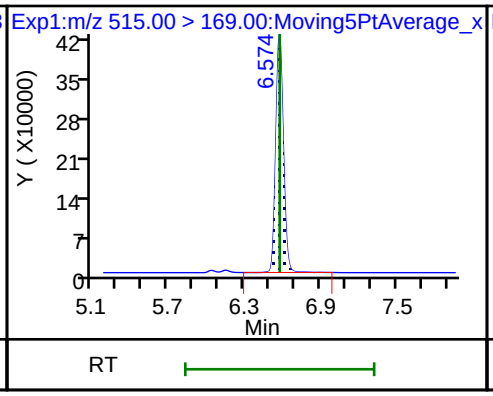
D 44 d7-N-MeFOSE-M



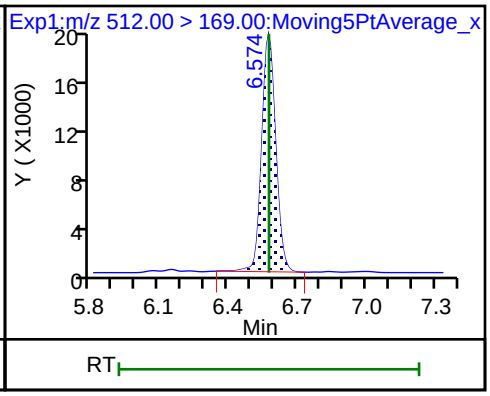
47 N-MeFOSE-M (M)



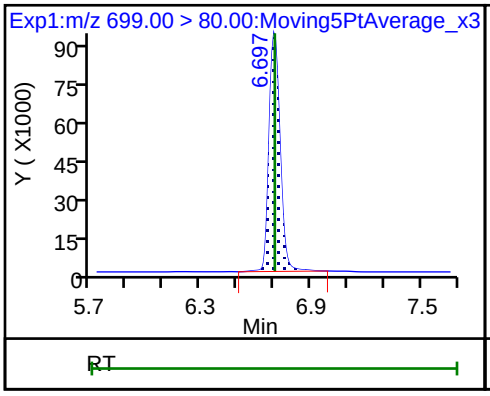
D 49 d3-NMePFOSA



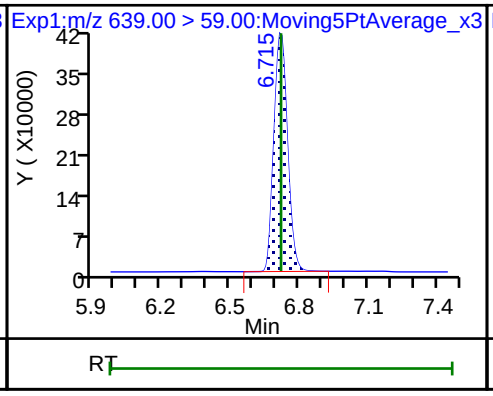
50 NMeFOSA



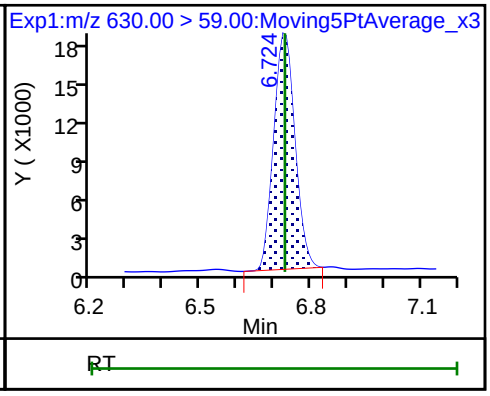
53 PFDoS



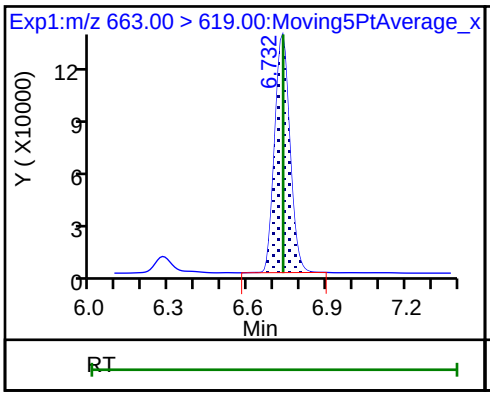
D 51 d9-N-EtFOSE-M



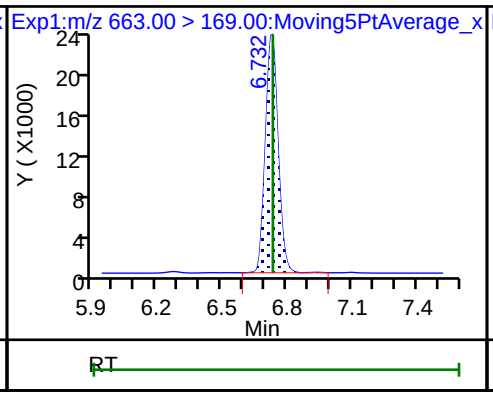
52 N-EtFOSE-M



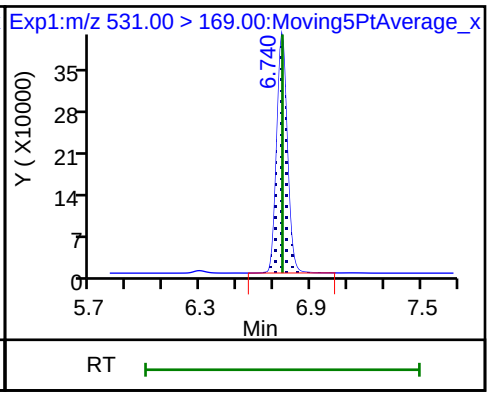
56 Perfluorotridecanoic acid



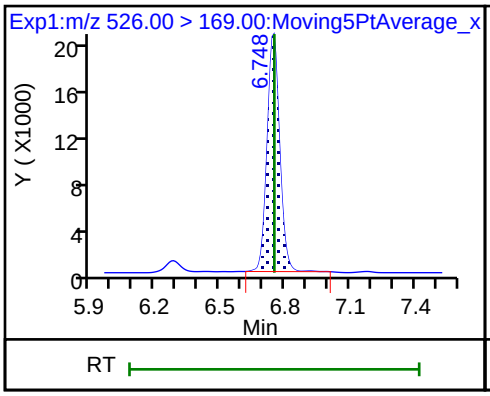
56 Perfluorotridecanoic acid



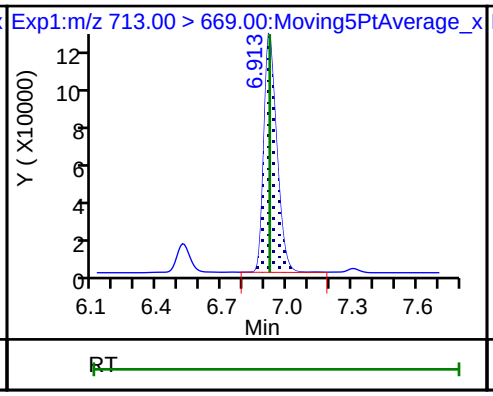
D 54 d5-NEtPFOSA



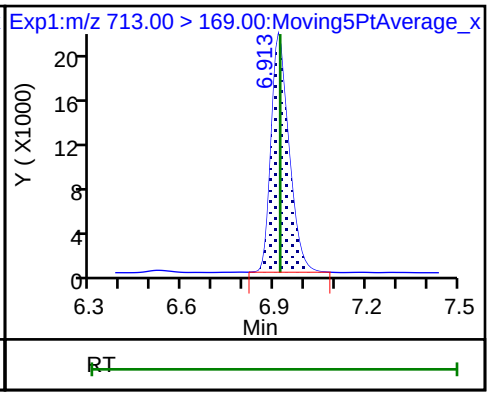
55 N-EtFOSA-M



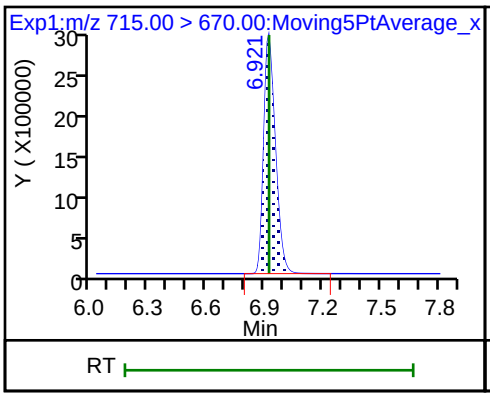
57 Perfluorotetradecanoic acid



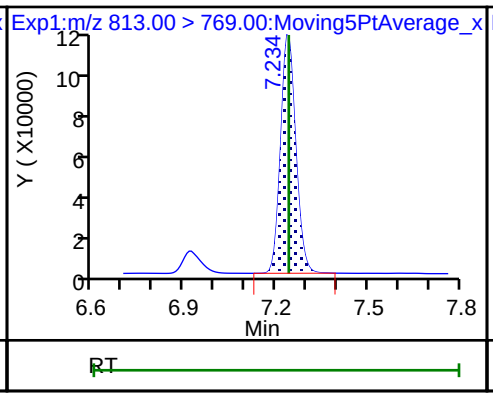
57 Perfluorotetradecanoic acid



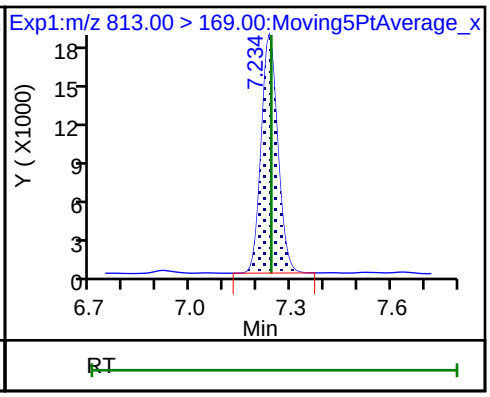
D 58 13C2 PFTeDA



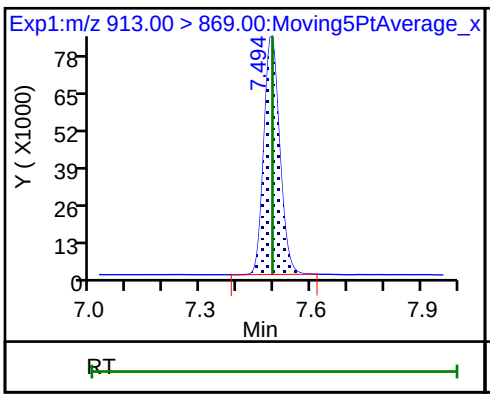
59 Perfluorohexadecanoic acid



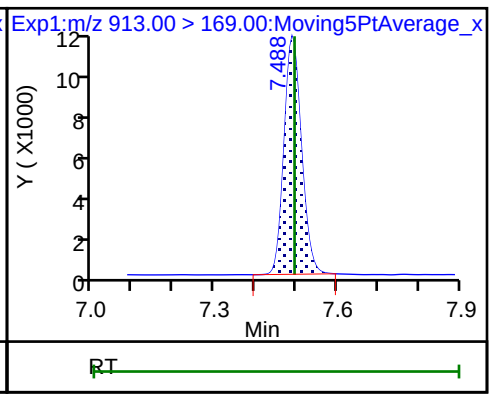
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

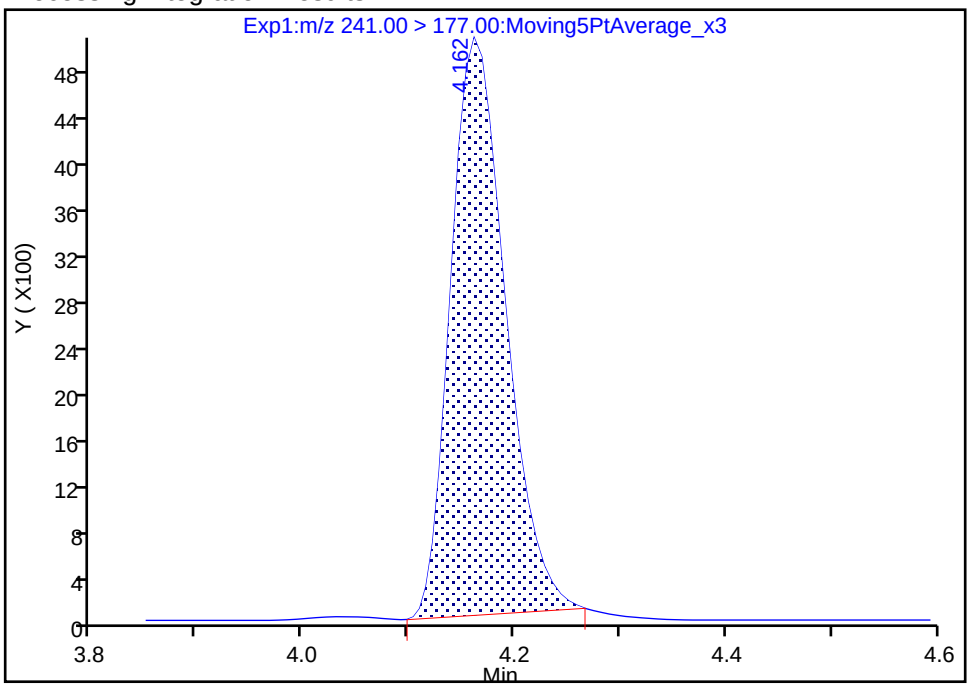
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-42.d				
Injection Date:	03-Apr-2022 17:23:21	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

67 3:3 FTCA, CAS: 356-02-5

Signal: 1

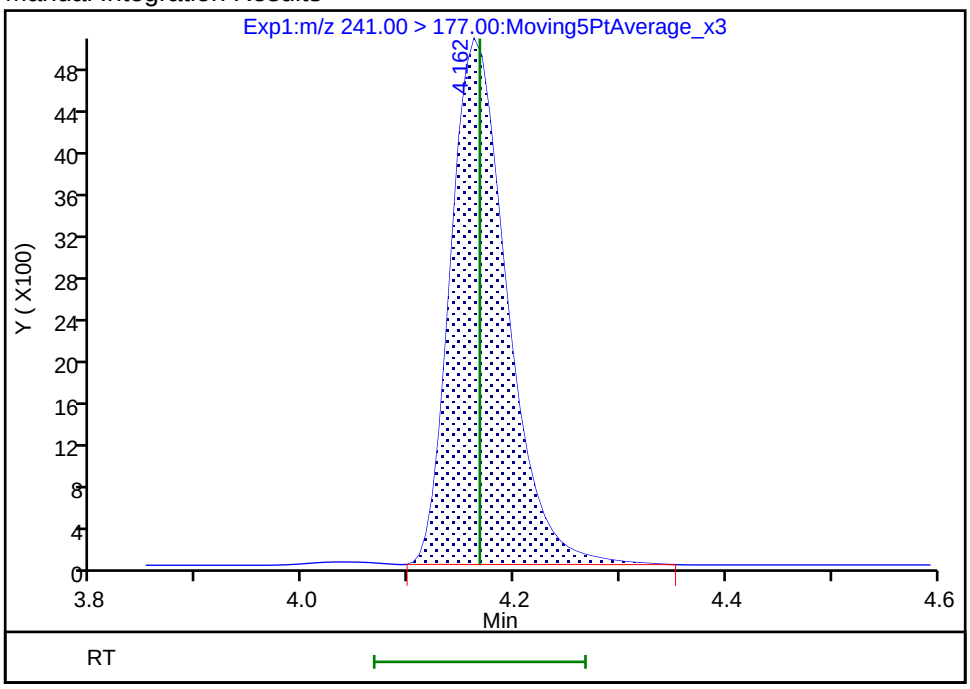
Processing Integration Results

RT: 4.16
Area: 18146
Amount: 0.413443
Amount Units: ng/ml



Manual Integration Results

RT: 4.16
Area: 18800
Amount: 0.434527
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:09:41
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

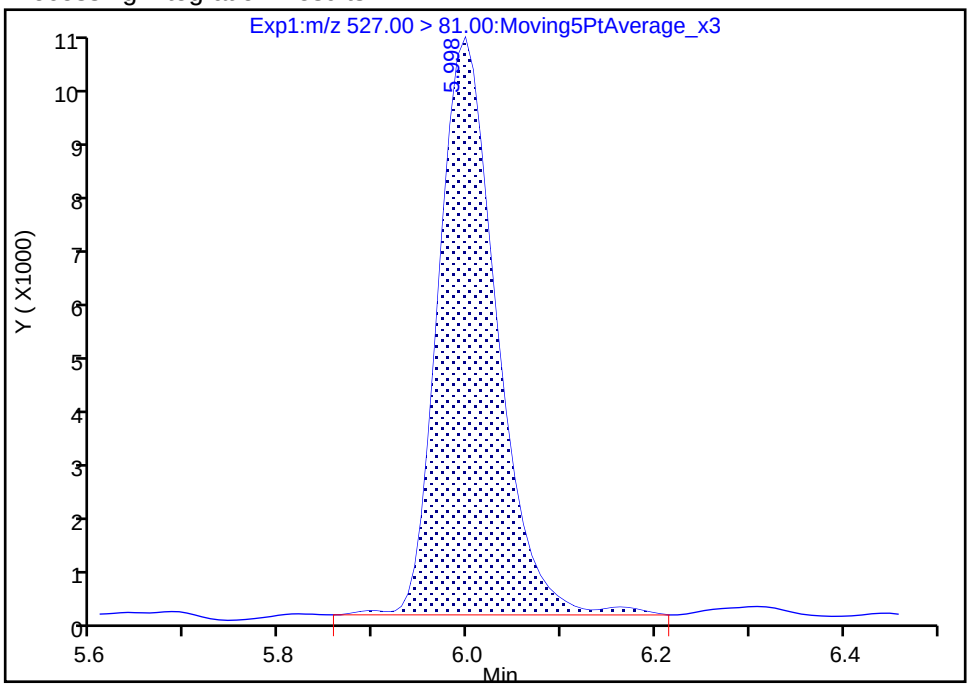
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-42.d				
Injection Date:	03-Apr-2022 17:23:21	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

33 8:2 FTS, CAS: 39108-34-4

Signal: 2

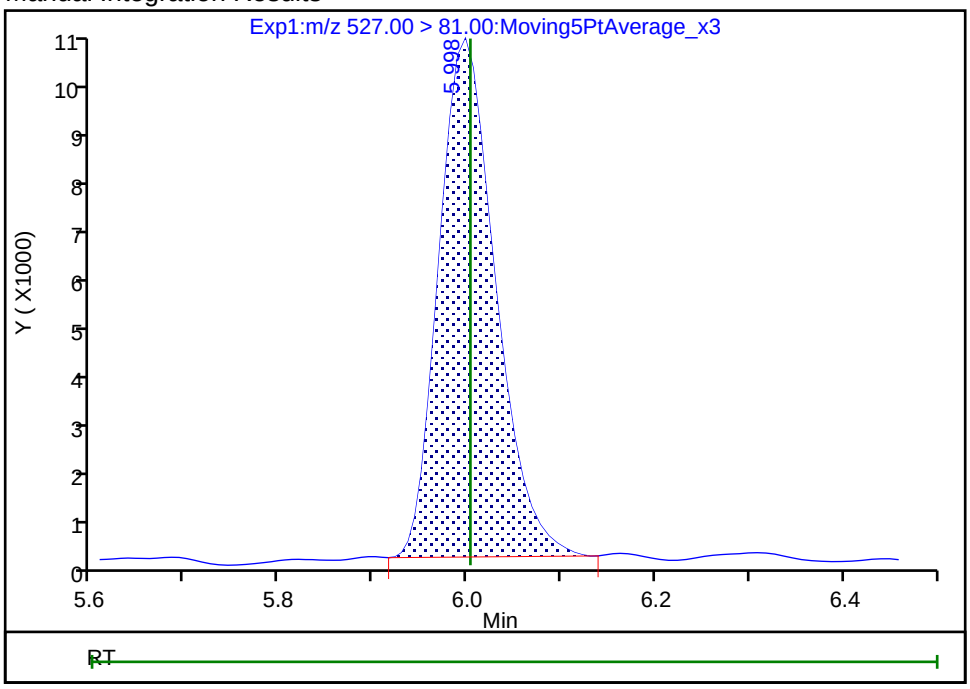
Processing Integration Results

RT: 6.00
Area: 44036
Amount: 0.435371
Amount Units: ng/ml



Manual Integration Results

RT: 6.00
Area: 42589
Amount: 0.432651
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:09:13
Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

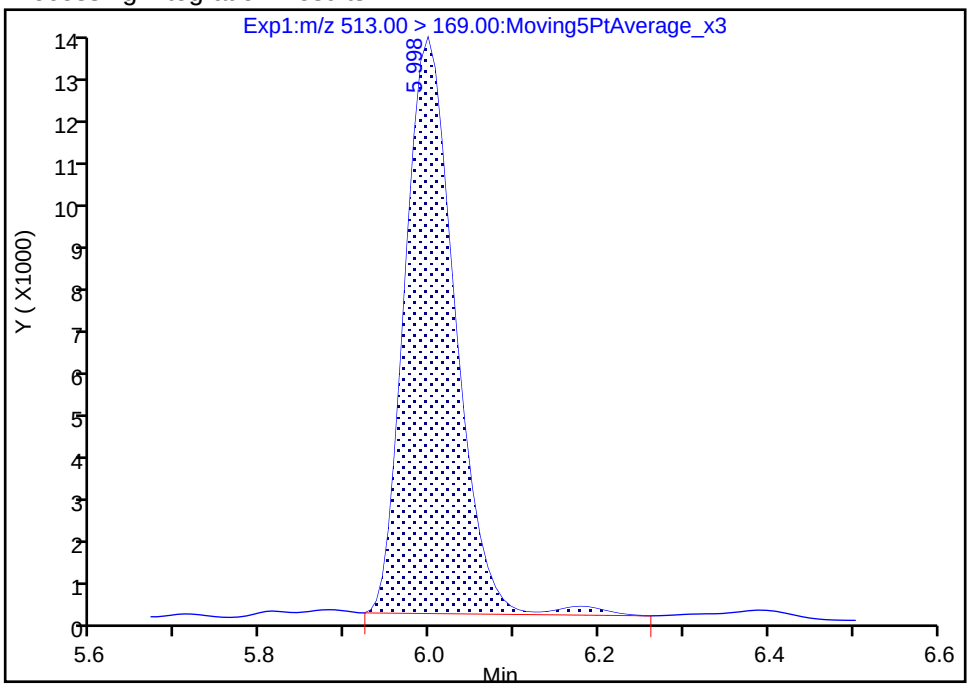
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-42.d				
Injection Date:	03-Apr-2022 17:23:21	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

30 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 2

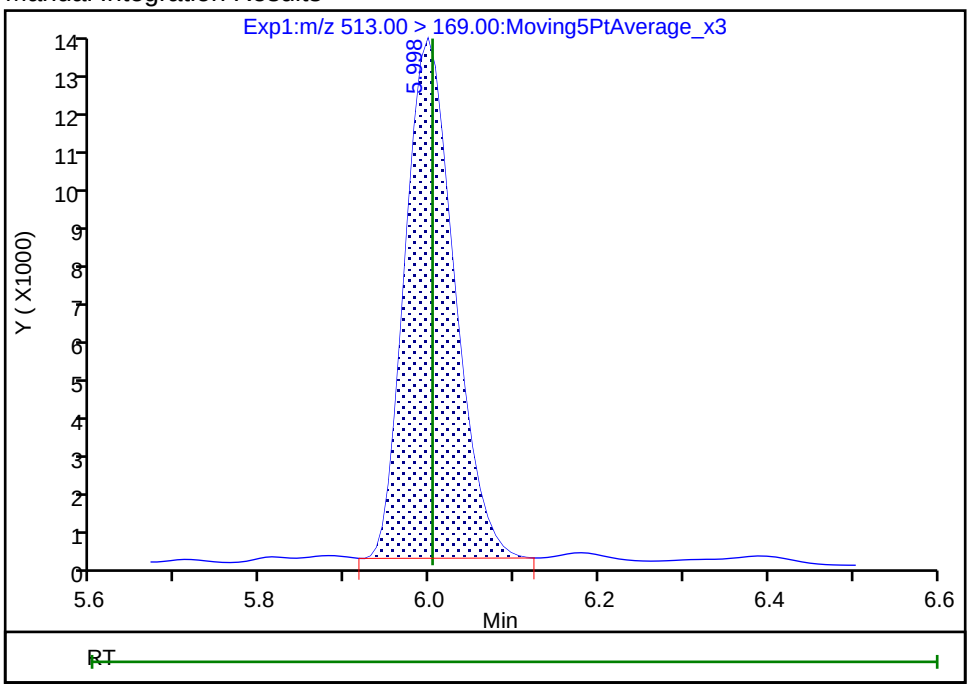
Processing Integration Results

RT: 6.00
Area: 55840
Amount: 0.510491
Amount Units: ng/ml



Manual Integration Results

RT: 6.00
Area: 54697
Amount: 0.496806
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:09:23
Audit Action: Manually Integrated Audit Reason: Shouldering

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

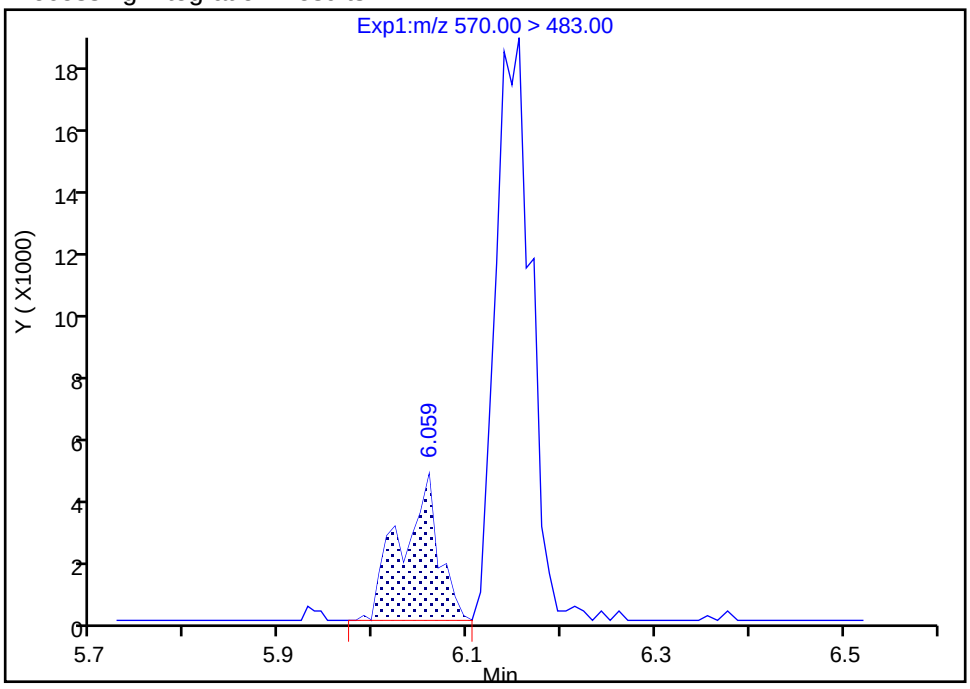
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-42.d				
Injection Date:	03-Apr-2022 17:23:21	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

36 NMeFOSAA, CAS: 2355-31-9

Signal: 2

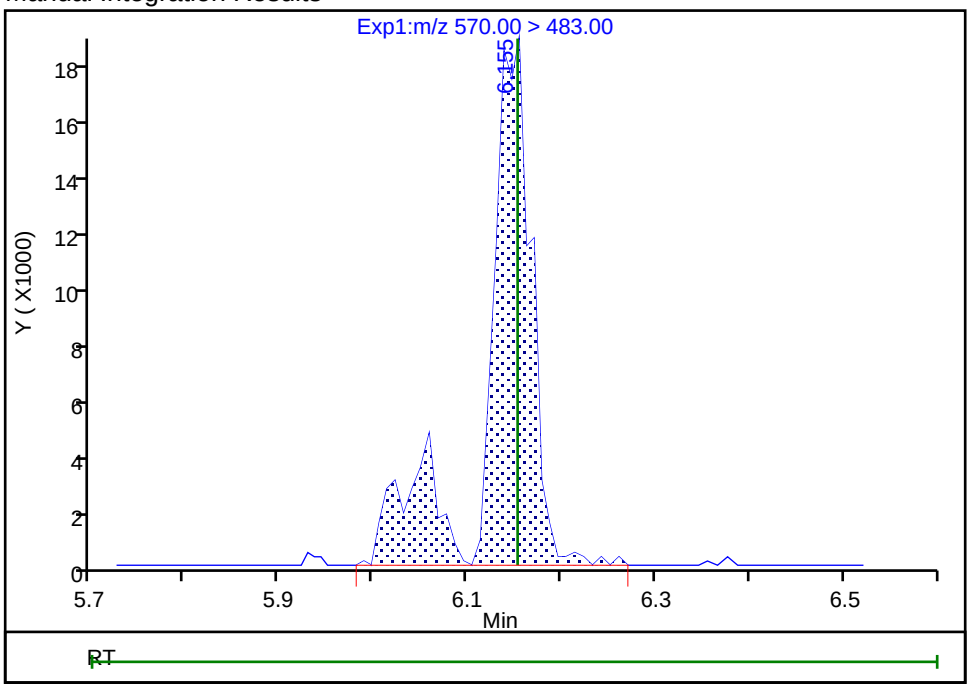
Processing Integration Results

RT: 6.06
Area: 13189
Amount: 0.469267
Amount Units: ng/ml



Manual Integration Results

RT: 6.15
Area: 62876
Amount: 0.469267
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:09:04

Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

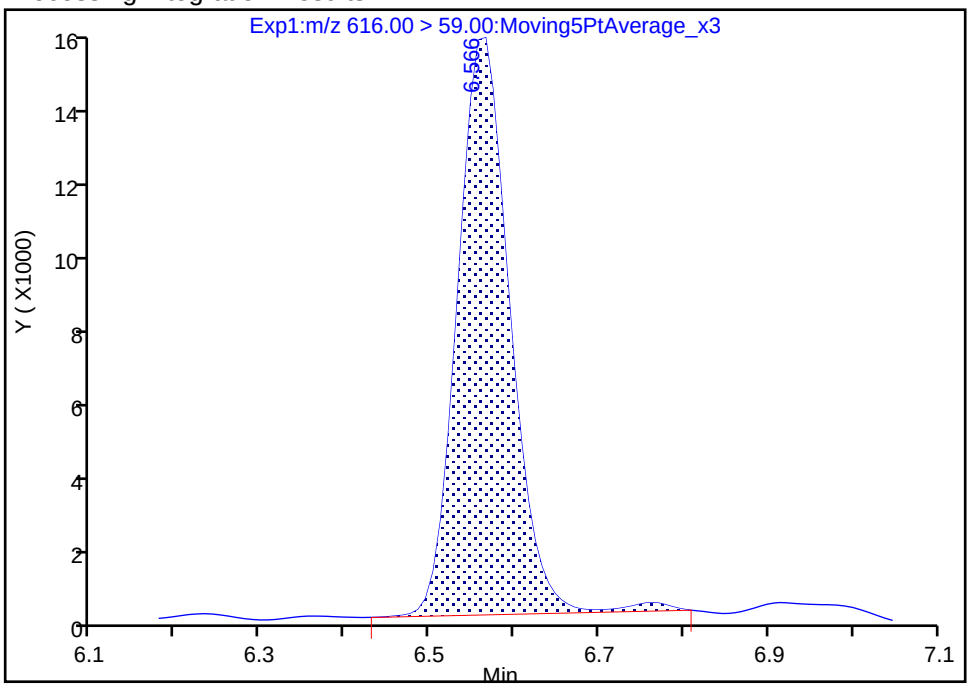
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-42.d				
Injection Date:	03-Apr-2022 17:23:21	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

47 N-MeFOSE-M, CAS: 24448-09-7

Signal: 1

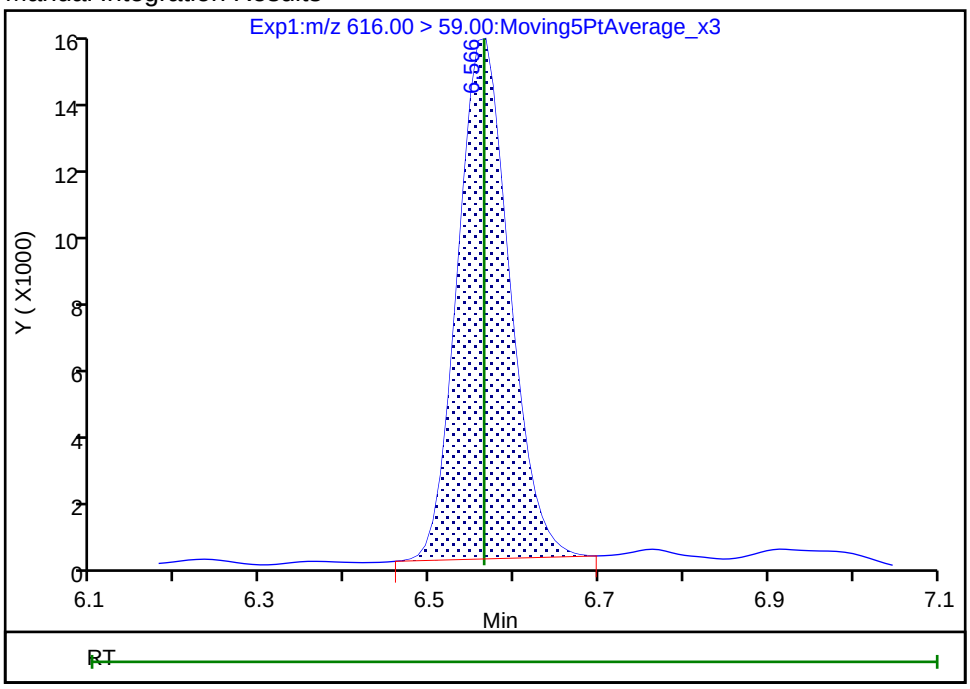
Processing Integration Results

RT: 6.57
Area: 65313
Amount: 0.476797
Amount Units: ng/ml



Manual Integration Results

RT: 6.57
Area: 63888
Amount: 0.473810
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:08:52
Audit Action: Manually Integrated Audit Reason: Shouldering

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-43.d
Lims ID: ICIS CAL 3
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 03-Apr-2022 17:33:54 ALS Bottle#: 20004 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICIS CAL 3
Misc. Info.: Plate: 1 Rack: 1 410-0053897-003
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:18 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:10:07
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 2 13C4 PFBA										
217.00 > 172.00	3.656	3.658	-0.002		9028031	10.4		104	134467	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.658	-0.002	1.000	1504725	2.00		99.9	3177	
63 PFECA F										
229.00 > 85.00	3.891	3.890	0.001	0.931	1232572	1.98		98.9	9697	
67 3:3 FTCA										
241.00 > 177.00	4.166	4.167	-0.001	0.997	87045	1.91	Target=1.30	95.6	5821	
241.00 > 117.00	4.166	4.167	-0.001	0.997	66730		1.30(0.65-1.94)	95.6	2076	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.180	4.177	0.003	1.000	1545051	1.96		98.0	7954	
D 4 13C5 PFPeA										
268.00 > 223.00	4.180	4.178	0.002		7656785	10.5		105	73693	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.232	4.230	0.002	1.000	1675719	1.78	Target=2.82	101	2123	
299.00 > 99.00	4.224	4.230	-0.006	0.998	585595		2.86(1.41-4.23)	101	1933	
D 6 13C3 PFBS										
302.00 > 80.00	4.232	4.230	0.002		9099755	9.68		104	476545	
64 PFECA A										
279.00 > 85.00	4.301	4.300	0.001	1.029	1226231	1.93		96.7	31005	
65 PES										
315.00 > 135.00	4.389	4.390	-0.001	0.958	5910676	1.84	Target=14.82	103	95736	
315.00 > 83.00	4.389	4.390	-0.001	0.958	373280		15.83(7.41-22.22)	103	459	
68 PFECA B										
295.00 > 201.00	4.511	4.509	0.002	0.985	515599	1.94		96.8	16118	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.541	4.545	-0.004		403246	9.93		106	12443	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.541	4.544	-0.003	1.000	301661	1.85	Target=1.61	99.0	16305	
327.00 > 81.00	4.541	4.544	-0.003	1.000	176018		1.71(0.81-2.42)	99.0	4124	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.580	4.582	-0.002	1.000	1621396	1.97	Target=13.95	98.4	11503	
313.00 > 119.00	4.580	4.582	-0.002	1.000	115585		14.03(6.97-20.92)	98.4	6189	
D 9 13C5 PFHxA										
318.00 > 273.00	4.580	4.585	-0.005		9415459	10.6		106	228499	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.600	4.604	-0.004	1.087	1663196	1.92	Target=2.93	102	62162	
349.00 > 99.00	4.600	4.604	-0.004	1.087	543063		3.06(1.47-4.40)	102	24551	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.711	4.712	-0.001		1129152	10.2		102	59853	
12 HFPO-DA										
329.00 > 285.00	4.711	4.712	-0.001	1.000	502307	2.10		105	14902	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.970	4.973	-0.003	0.998	1837277	1.95	Target=3.12	97.6	14165	
363.00 > 169.00	4.970	4.973	-0.003	0.998	591150		3.11(1.56-4.69)	97.6	12053	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.979	4.976	0.003	1.000	1585956	1.76	Target=2.99	96.7	288277	
399.00 > 99.00	4.970	4.976	-0.006	0.998	546148		2.90(1.49-4.48)	96.7	1503	
D 17 13C4 PFHpA										
367.00 > 322.00	4.979	4.976	0.003		9854716	11.1		111	272978	
D 16 13C3 PFHxS										
402.00 > 80.00	4.979	4.977	0.002		8747274	10.4		110	1899385	
18 DONA										
377.00 > 251.00	5.023	5.021	0.002	1.009	3099415	1.92		101	54409	
62 5:3 FTCA										
341.00 > 237.00	5.045	5.047	-0.002	1.102	351371	1.94	Target=3.15	97.0	5284	
341.00 > 217.00	5.045	5.047	-0.002	1.102	117545		2.99(1.57-4.72)	97.0	3768	
19 6:2 FTS										
427.00 > 407.00	5.323	5.327	-0.004	1.000	275689	1.94	Target=1.62	102	15242	
427.00 > 81.00	5.323	5.327	-0.004	1.000	162206		1.70(0.81-2.43)	102	6323	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.323	5.327	-0.004		258903	10.1		107	17359	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.334	0.003	1.072	1637332	1.82	Target=3.16	95.6	56727	
449.00 > 99.00	5.330	5.334	-0.004	1.070	501039		3.27(1.58-4.74)	95.6	34951	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.350	5.344	0.006	1.000	1896303	2.00	Target=2.36	100	59078	
413.00 > 169.00	5.337	5.344	-0.007	0.998	774505		2.45(1.18-3.54)	100	307092	
D 22 13C8 PFOA										
421.00 > 376.00	5.350	5.345	0.005		10569984	10.8		108	860114	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.676	5.672	0.004	1.000	1697365	1.86	Target=3.73	100	2795	
499.00 > 99.00	5.676	5.672	0.004	1.000	443233		3.83(1.87-5.60)	100	822	
D 25 13C8 PFOS										
507.00 > 80.00	5.676	5.674	0.002		8135428	10.0		105	379743	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.690	0.002	1.000	1859110	2.08	Target=4.38	104	21443	
463.00 > 169.00	5.684	5.690	-0.006	0.999	394233		4.72(2.19-6.56)	104	10716	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.691	0.001		10500969	10.3		103	420954	
66 7:3 FTCA										
441.00 > 317.00	5.790	5.788	0.002	1.264	198830	2.11	Target=10.71	105	9300	
441.00 > 337.00	5.790	5.788	0.002	1.264	17819		11.16(5.36-16.07)	105	814	
28 9ClFOS										
531.00 > 351.00	5.856	5.855	0.001	1.032	3842659	1.89		102	170536	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.978	0.003	1.054	1459631	1.83	Target=3.28	95.3	52043	
549.00 > 99.00	5.973	5.978	-0.005	1.052	462928		3.15(1.64-4.92)	95.3	23481	
33 8:2 FTS										
527.00 > 507.00	6.005	6.003	0.002	1.000	331704	1.82	Target=2.01	95.1	19512	
527.00 > 81.00	5.997	6.003	-0.006	0.999	175649		1.89(1.01-3.02)	95.1	4155	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	6.003	0.002	1.000	1964614	2.00	Target=8.83	99.8	25934	
513.00 > 169.00	5.997	6.003	-0.006	0.999	224317		8.76(4.41-13.24)	99.8	5024	
D 32 13C6 PFDA										
519.00 > 474.00	6.005	6.004	0.001		11328908	10.5		105	672963	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	6.006	-0.001		232822	10.4		109	18268	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.113	6.112	0.001	1.000	2706786	2.01		101	157666	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.114	-0.001		13374586	10.3		103	449612	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.146	6.152	-0.006		2919068	10.4		104	204200	
36 NMeFOSAA										
570.00 > 419.00	6.154	6.153	0.001	1.001	519617	2.02	Target=1.81	101	19453	
570.00 > 483.00	6.154	6.153	0.001	1.001	284137		1.83(0.91-2.72)	101	271	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.250	0.001	1.101	1735721	1.93	Target=3.48	100	79169	
599.00 > 99.00	6.242	6.250	-0.008	1.100	486044		3.57(1.74-5.22)	100	21855	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.279	6.278	0.001	1.000	2045320	2.07	Target=8.25	104	17551	
563.00 > 169.00	6.270	6.278	-0.008	0.999	229097		8.93(4.12-12.37)	104	10212	
D 40 13C7 PFUnA										
570.00 > 525.00	6.279	6.282	-0.003		11998507	10.6		106	243967	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.296	0.002		2318148	10.6		106	228713	
42 NEtFOSAA										
584.00 > 419.00	6.298	6.300	-0.002	1.000	440545	2.00	Target=1.66	100	715	
584.00 > 526.00	6.298	6.300	-0.002	1.000	269425		1.64(0.83-2.49)	100	353	
43 11ClFOS										
631.00 > 451.00	6.398	6.394	0.004	1.127	3528884	2.06		111	82321	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										
613.00 > 569.00	6.521	6.518	0.003	1.000	2301558	2.03	Target=5.87	101	10833	
613.00 > 169.00	6.513	6.518	-0.005	0.999	376813		6.11(2.94-8.81)	101	5242	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.521	6.523	-0.002		12892696	10.8		108	764485	
48 10:2 FTS										
627.00 > 607.00	6.530	6.535	-0.005	1.087	429504	1.89	Target=1.77	98.0	33560	
627.00 > 81.00	6.530	6.535	-0.005	1.087	253753		1.69(0.88-2.65)	98.0	10028	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.559	-0.002		1407476	10.3		103	6838	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.564	0.002	1.001	283732	2.03		102	3773	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.576	-0.002		1712931	9.95		99.5	5715	
50 NMeFOSA										
512.00 > 169.00	6.574	6.576	-0.002	1.000	372293	2.15		107	7465	
53 PFDoS										
699.00 > 80.00	6.705	6.702	0.003	1.181	1671560	1.90		98.4	31088	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.720	0.003		1711980	10.4		104	8935	
52 N-EtFOSE-M										
630.00 > 59.00	6.731	6.729	0.002	1.001	304558	1.94		96.8	4459	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.731	6.733	-0.002	1.032	2281667	2.01	Target=5.56	101	7139	
663.00 > 169.00	6.731	6.733	-0.002	1.032	400525		5.70(2.78-8.34)	101	16594	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.744	-0.004		1597800	10.1		101	11279	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.750	-0.002	1.001	349642	2.00		100	5145	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.919	0.002	1.000	2258117	2.06	Target=5.83	103	5026	
713.00 > 169.00	6.913	6.919	-0.006	0.999	364318		6.20(2.92-8.75)	103	14719	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.922	-0.001		12655384	10.5		105	233646	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.241	0.0	1.046	1561789	1.91	Target=6.08	95.4	6281	
813.00 > 169.00	7.234	7.241	-0.007	1.045	253307		6.17(3.04-9.12)	95.4	10516	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.495	-0.001	1.083	1096312	1.97	Target=7.30	98.5	23231	
913.00 > 169.00	7.489	7.495	-0.006	1.082	146229		7.50(3.65-10.94)	98.5	8203	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD3_00015 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:26:19 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-43.d

Injection Date: 03-Apr-2022 17:33:54 Instrument ID: 29347

Lims ID: ICIS CAL 3

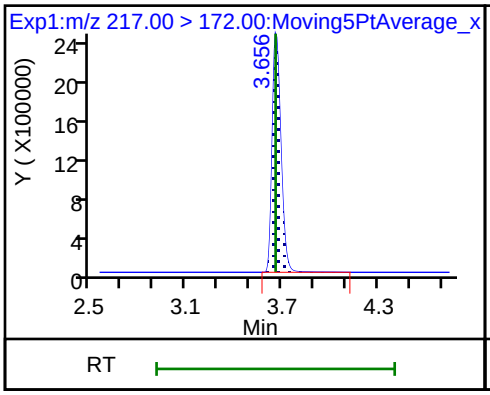
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20004 Worklist Smp#: 3

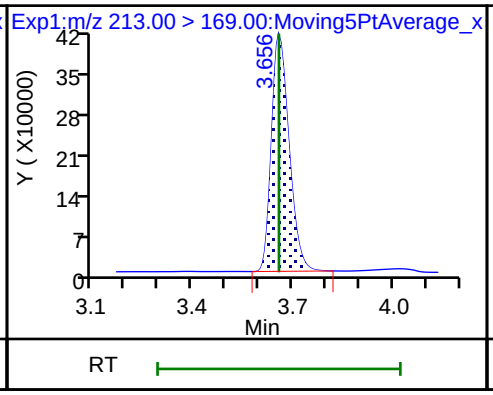
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

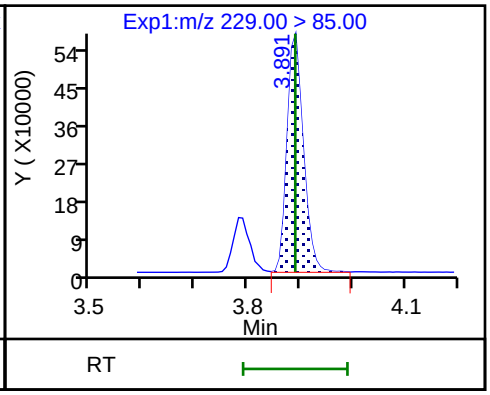
D 2 13C4 PFBA



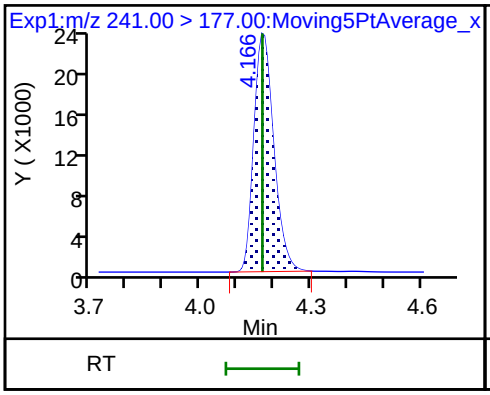
1 Perfluorobutanoic acid



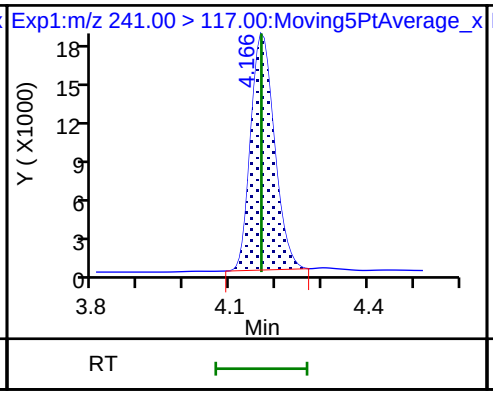
63 PFECA F



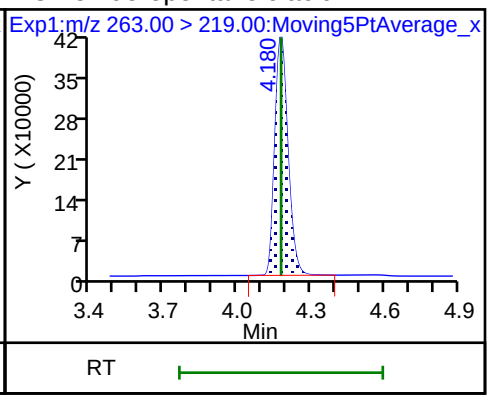
67 3:3 FTCA



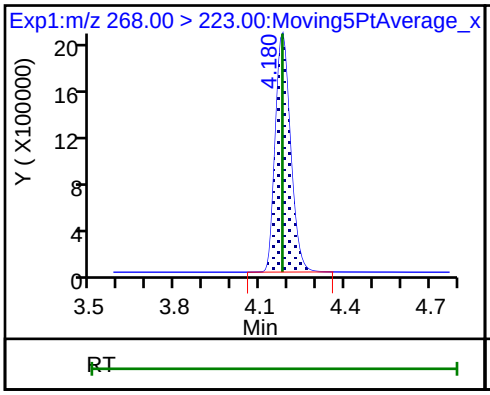
67 3:3 FTCA



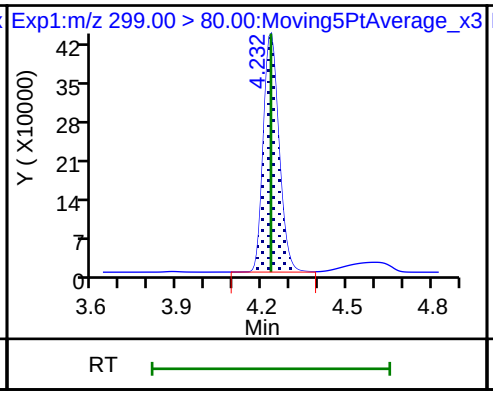
3 Perfluoropentanoic acid



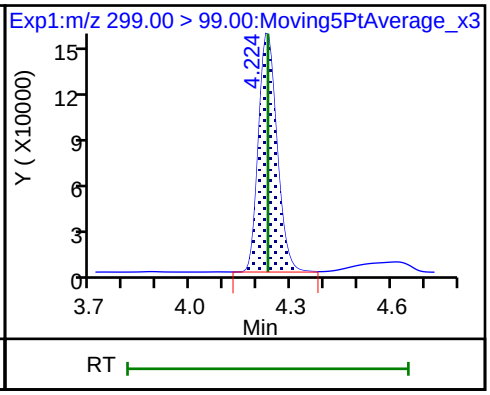
D 4 13C5 PFPeA



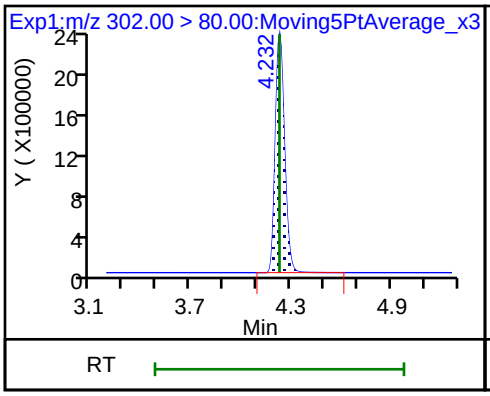
5 Perfluorobutanesulfonic acid



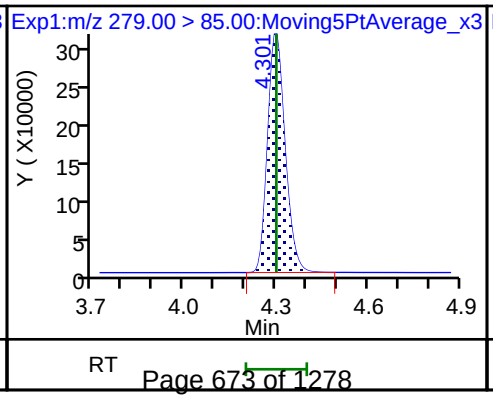
5 Perfluorobutanesulfonic acid



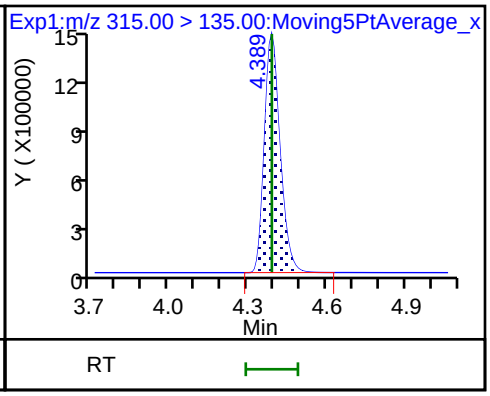
D 6 13C3 PFBS



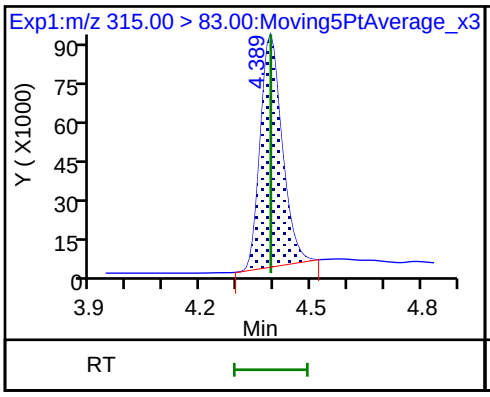
64 PFECA A



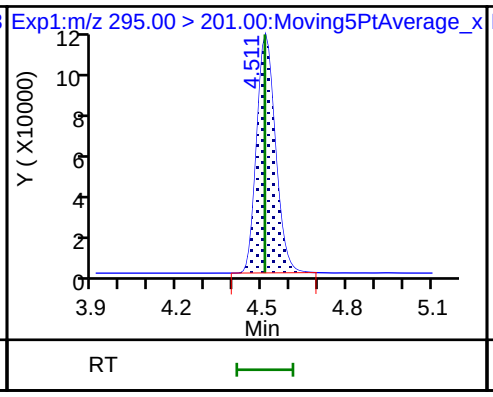
65 PES



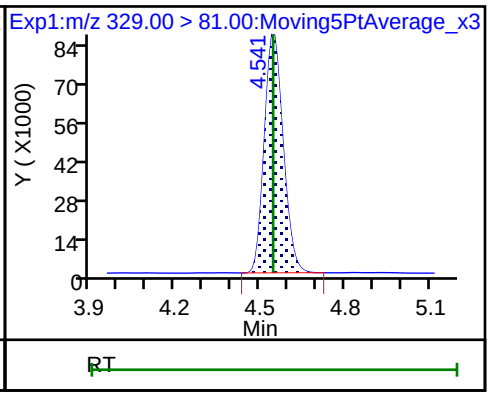
65 PES



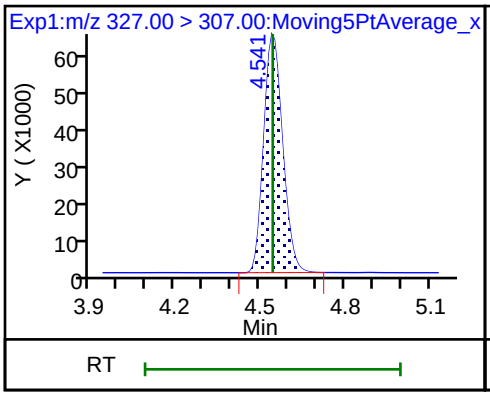
68 PFECA B



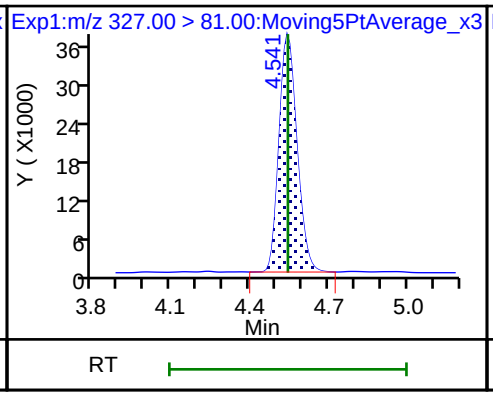
D 8 M2-4:2 FTS



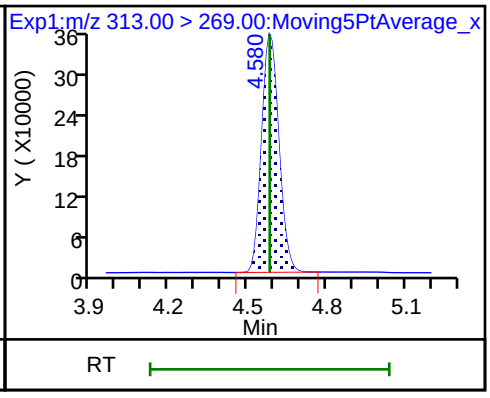
7 4:2 FTS



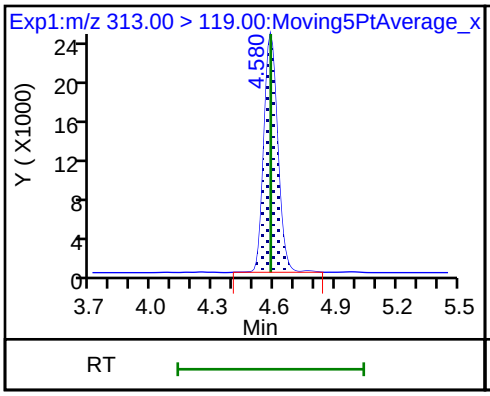
7 4:2 FTS



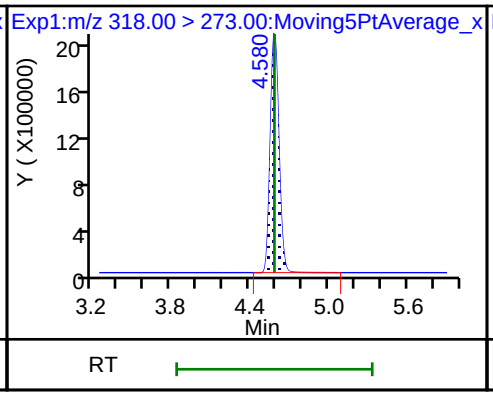
10 Perfluorohexanoic acid



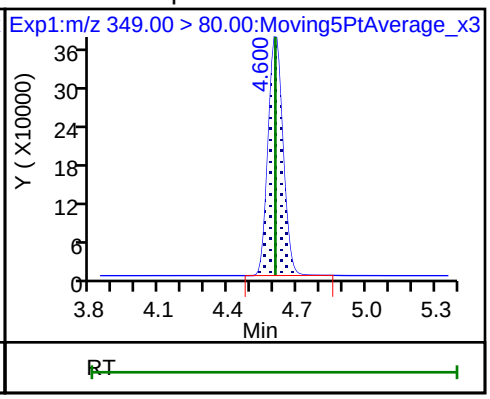
10 Perfluorohexanoic acid



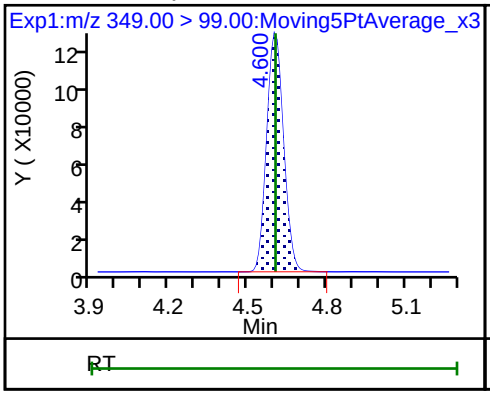
D 9 13C5 PFHxA



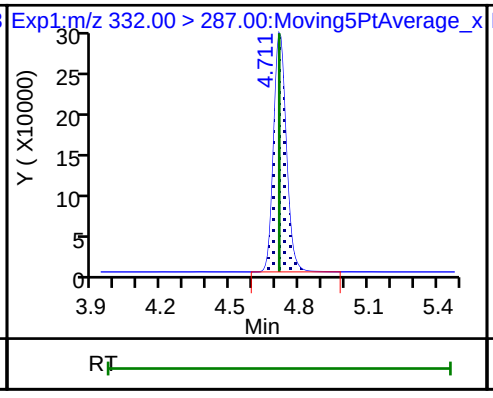
11 Perfluoropentanesulfonic acid



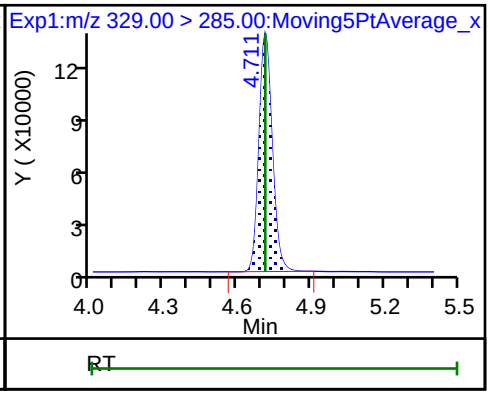
11 Perfluoropentanesulfonic acid



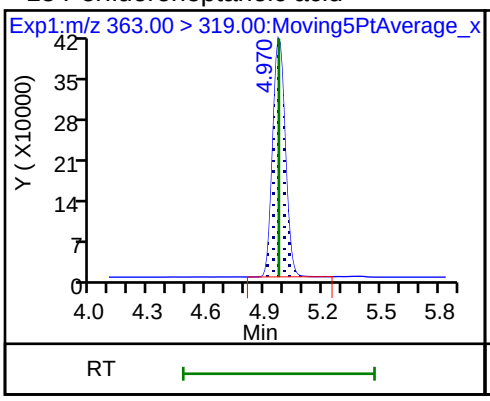
D 13 13C3 HFPO-DA



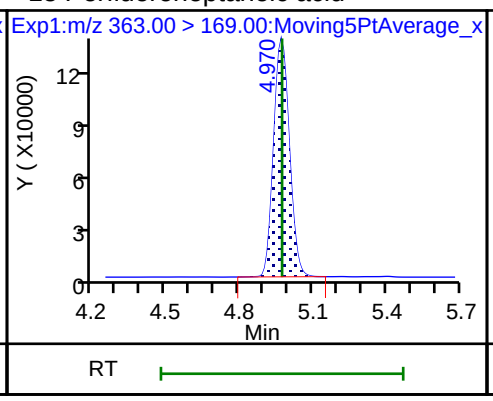
12 HFPO-DA



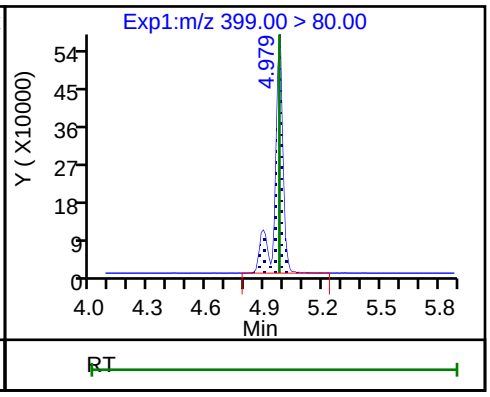
15 Perfluoroheptanoic acid



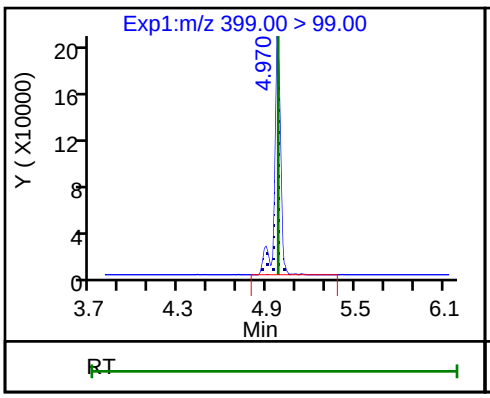
15 Perfluoroheptanoic acid



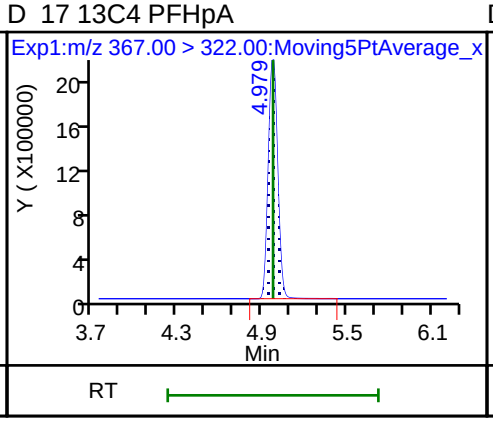
14 Perfluorohexanesulfonic acid



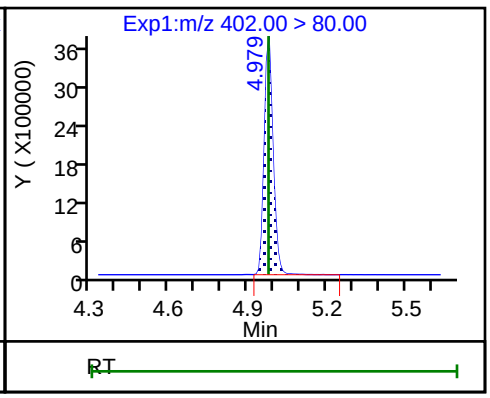
14 Perfluorohexanesulfonic acid



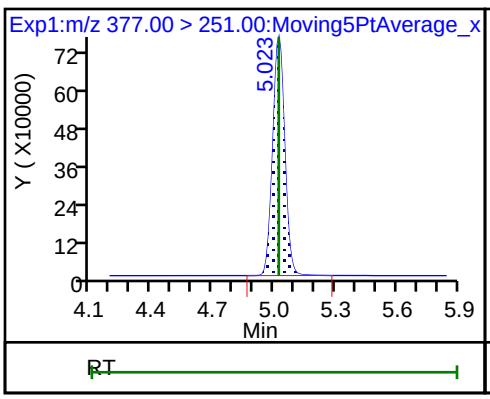
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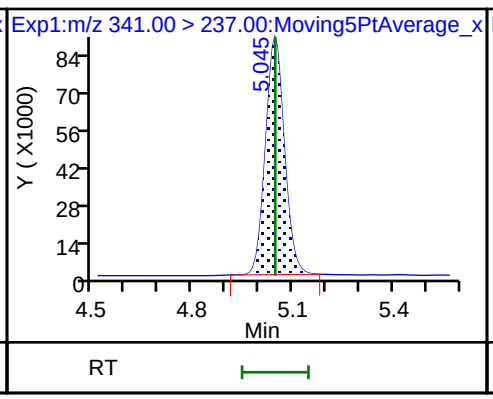
D 16 13C3 PFHxS



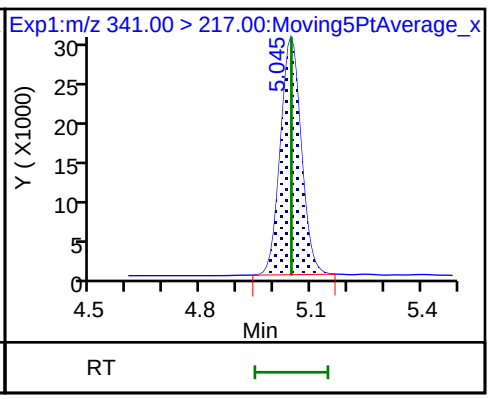
18 DONA



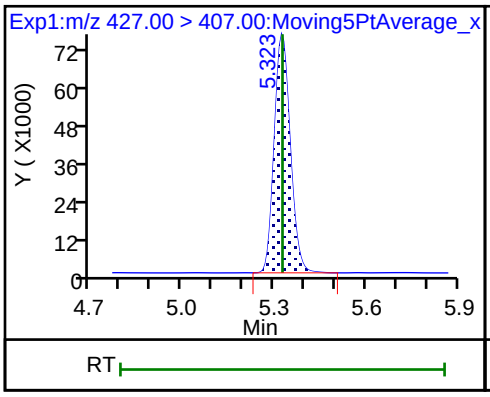
62 5:3 FTCA



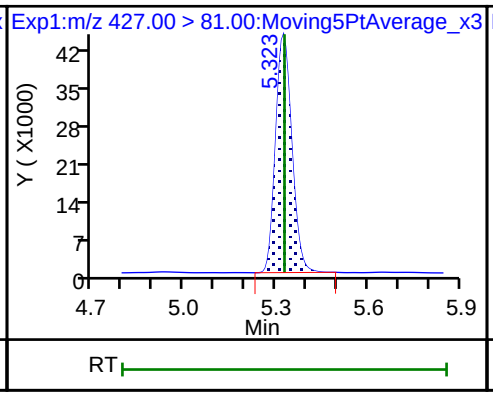
62 5:3 FTCA



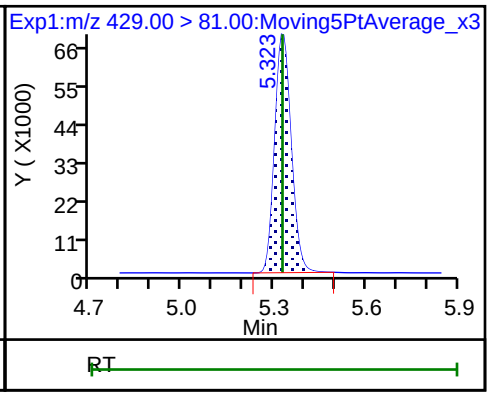
19 6:2 FTS



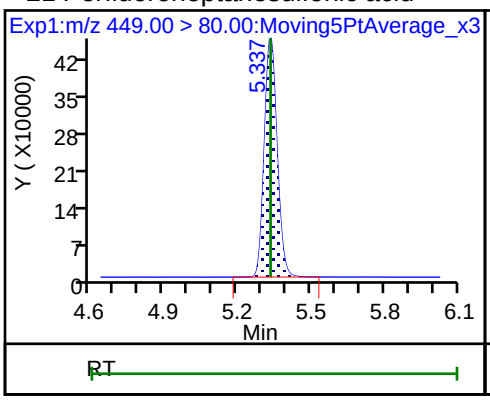
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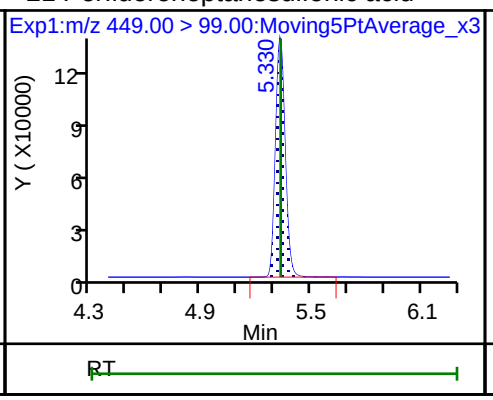
D 20 M2-6:2 FTS



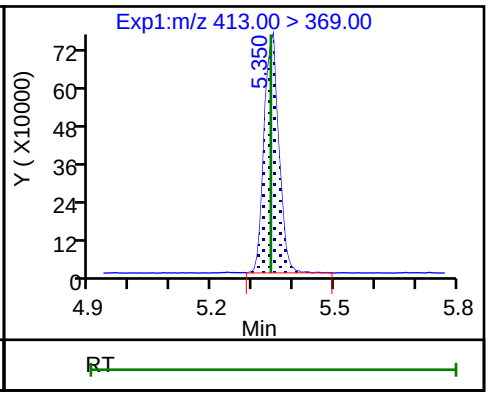
21 Perfluoroheptanesulfonic acid



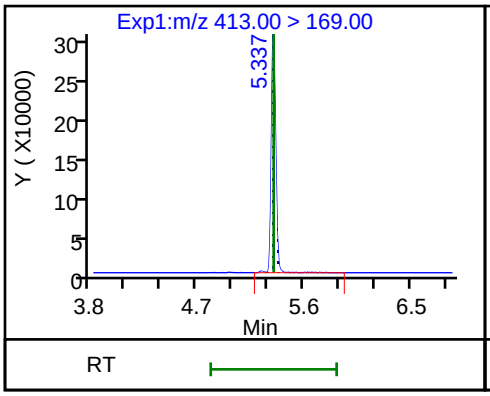
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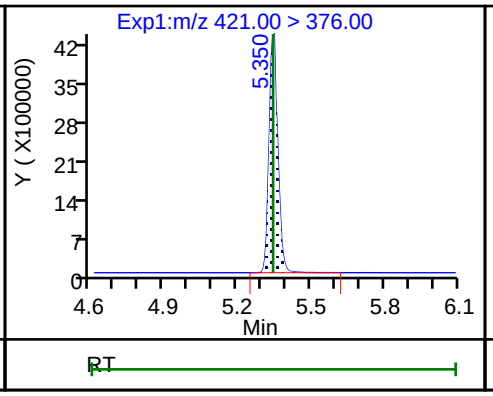
23 Perfluorooctanoic acid



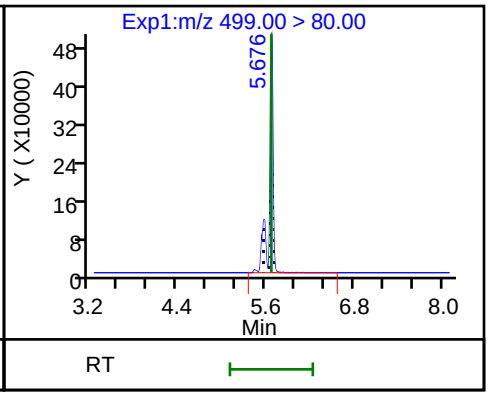
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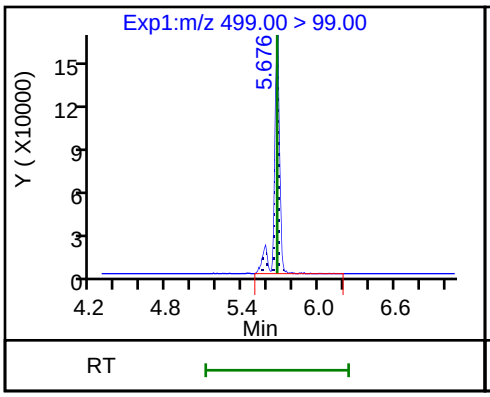
D 22 13C8 PFOA



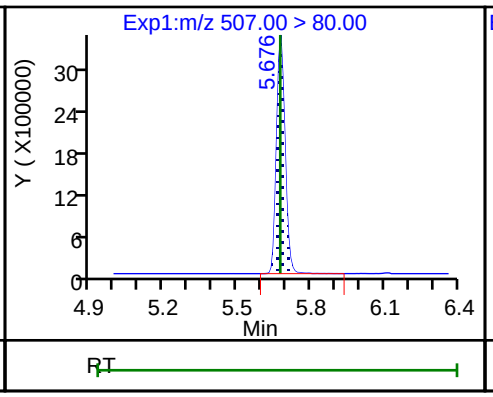
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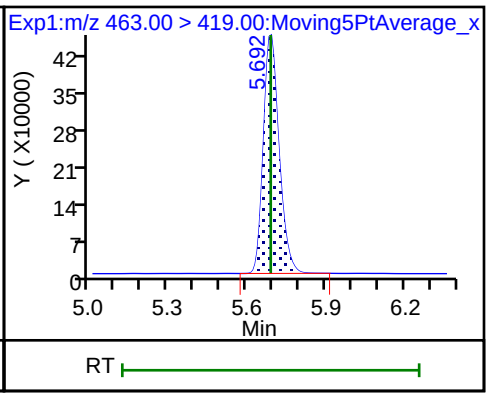
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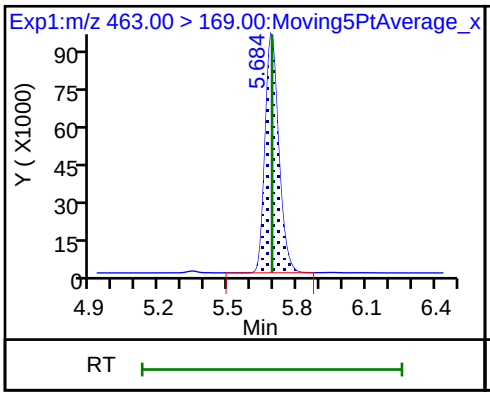
D 25 13C8 PFOS



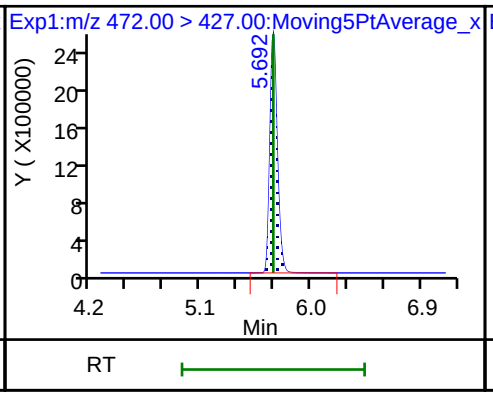
26 Perfluorononanoic acid



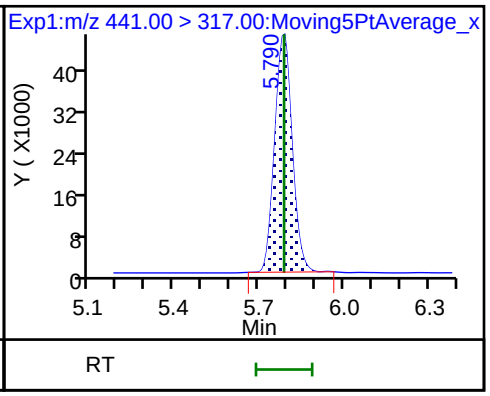
26 Perfluorononanoic acid



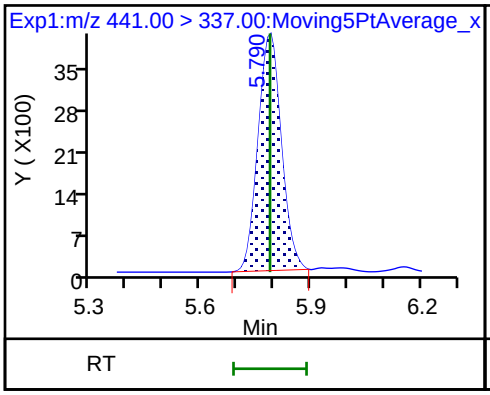
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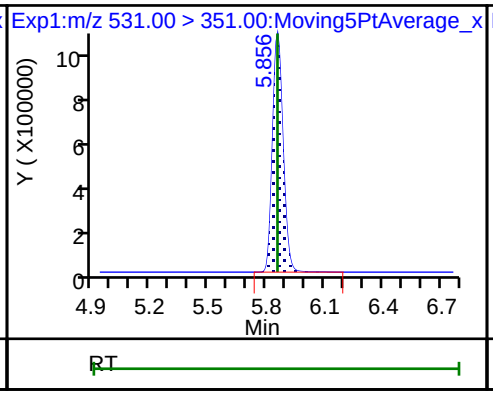
66 7:3 FTCA



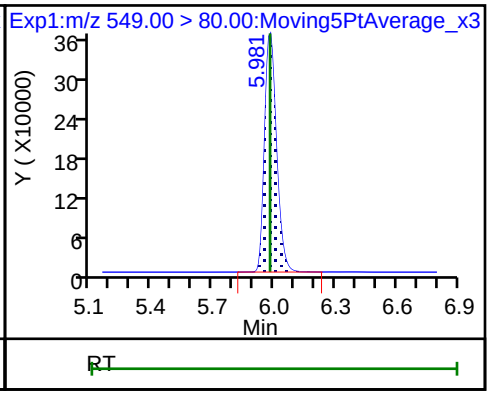
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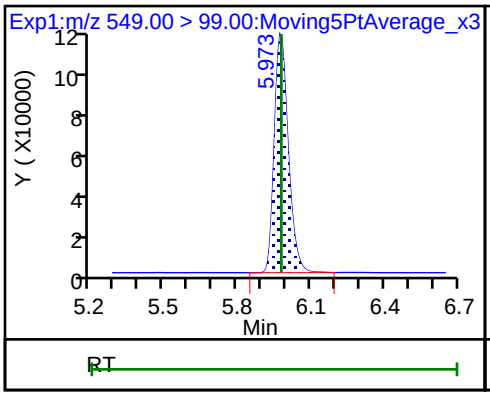
28 9ClFOS



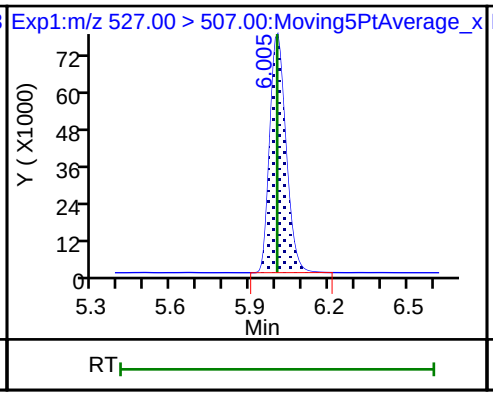
29 Perfluorononanesulfonic acid



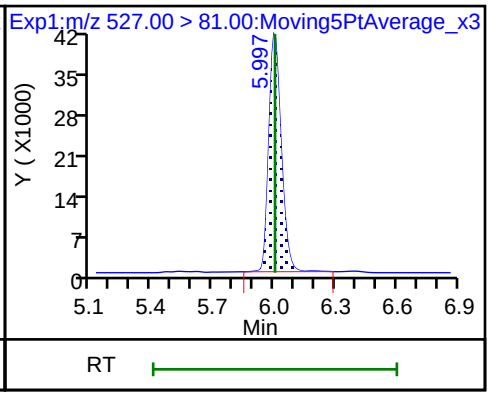
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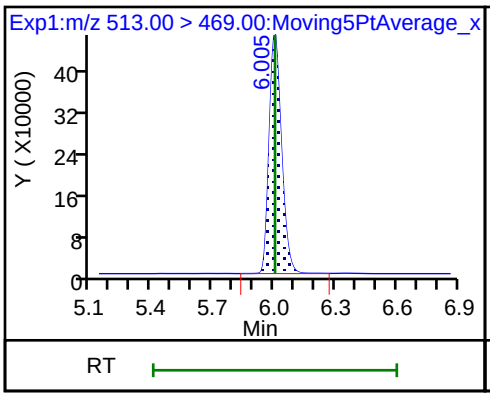
33 8:2 FTS



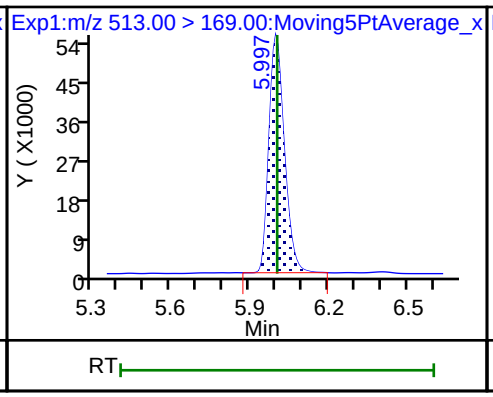
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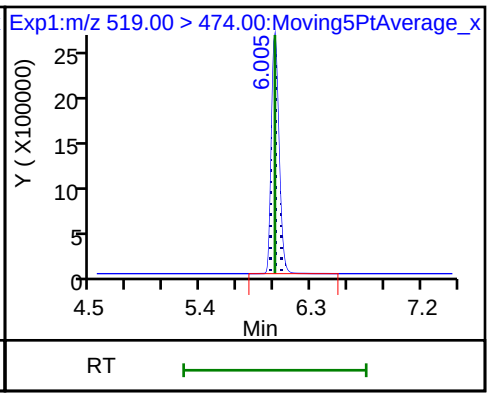
30 Perfluorodecanoic acid



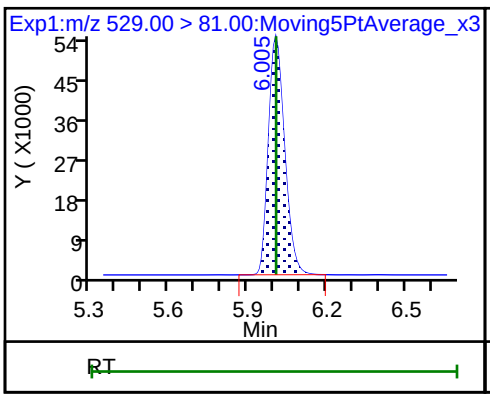
30 Perfluorodecanoic acid



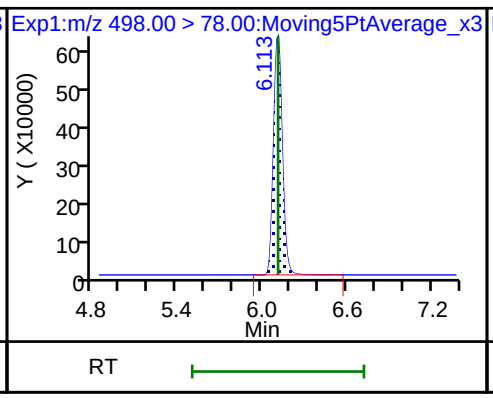
D 32 13C6 PFDA



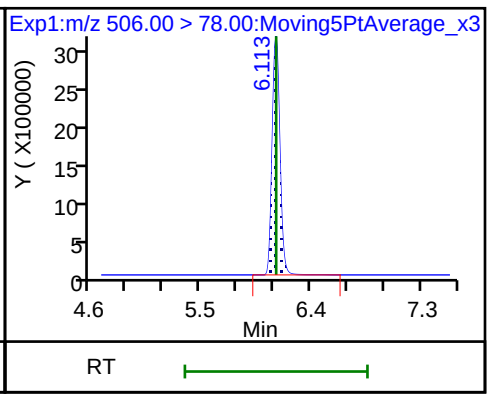
D 31 M2-8:2 FTS



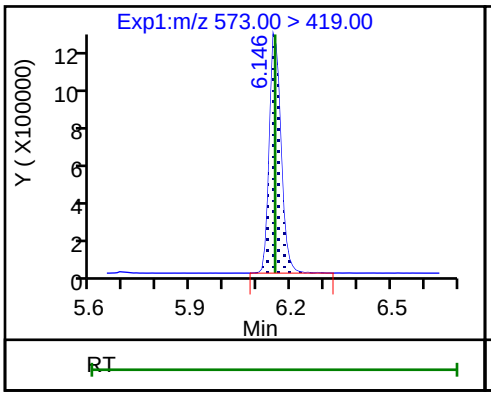
34 Perfluorooctanesulfonamide



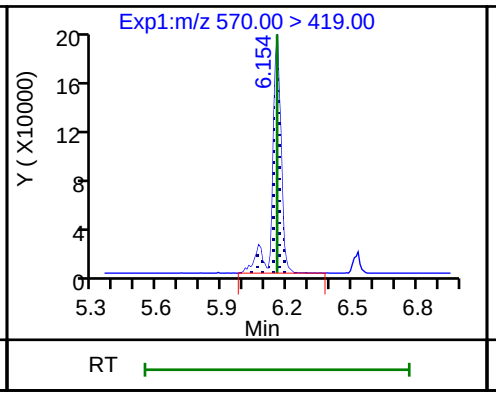
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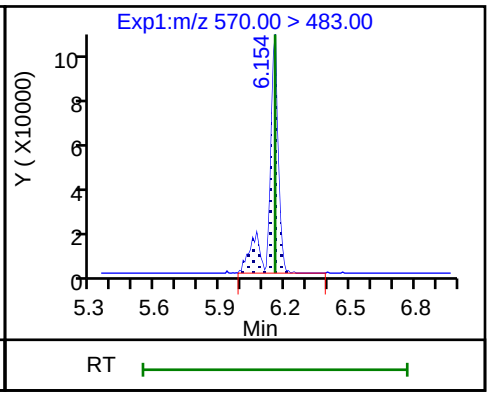
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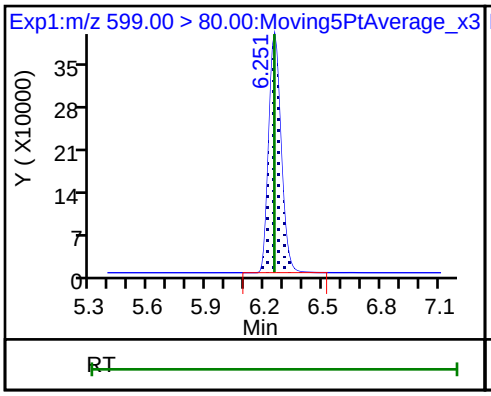
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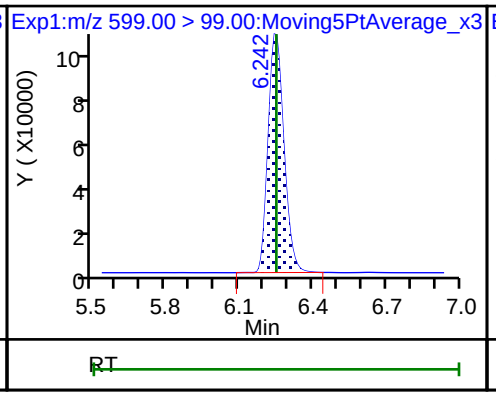
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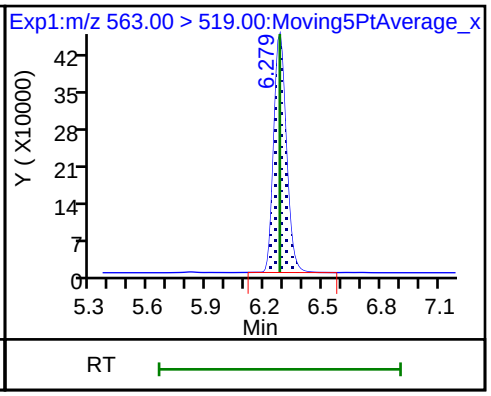
38 Perfluorodecanesulfonic acid



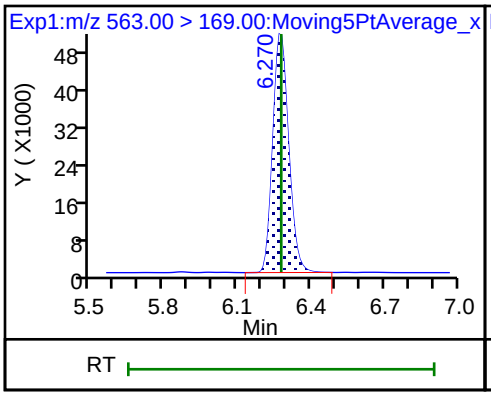
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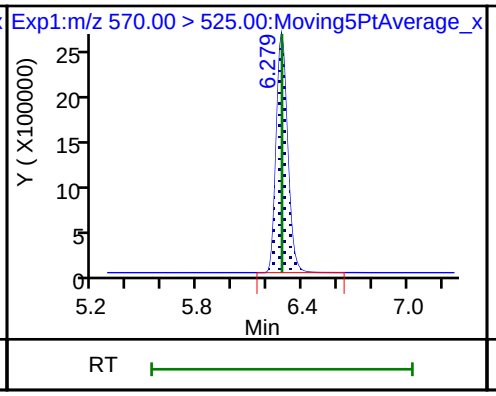
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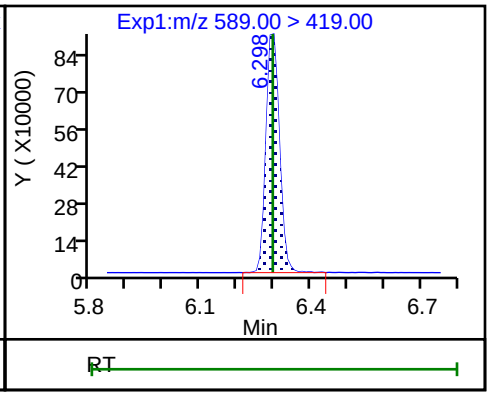
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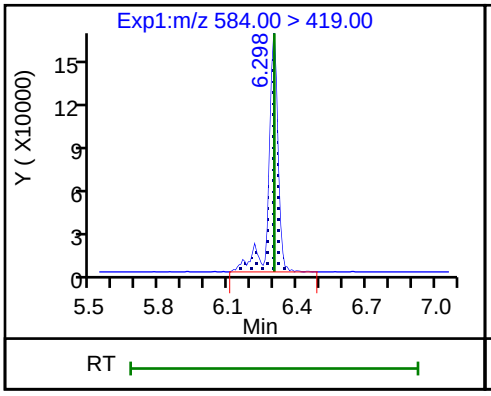
D 40 13C7 PFUnA



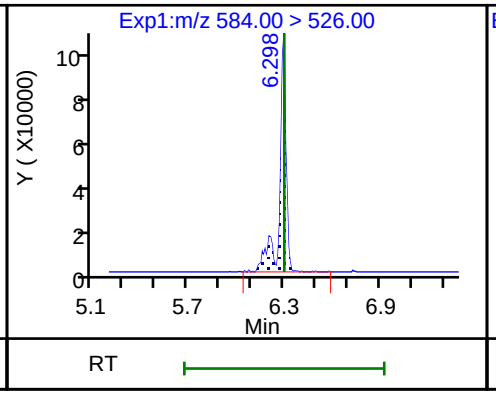
D 41 d5-NEtFOSAA



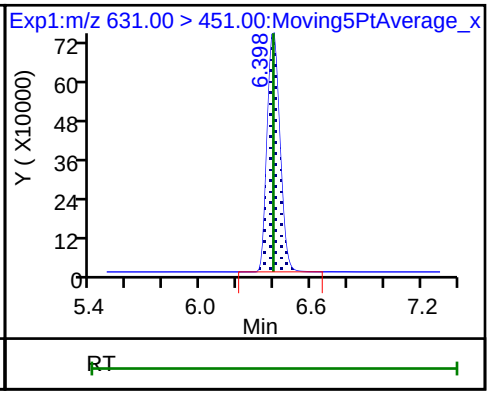
42 NEtFOSAA



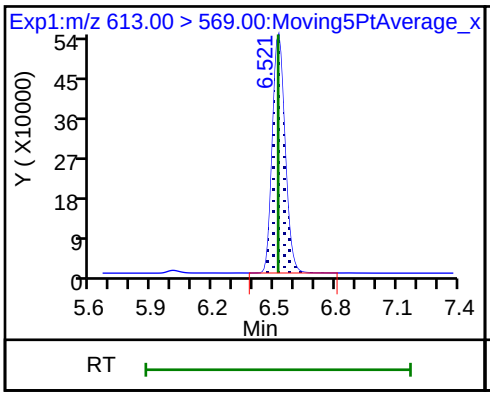
42 NEtFOSAA



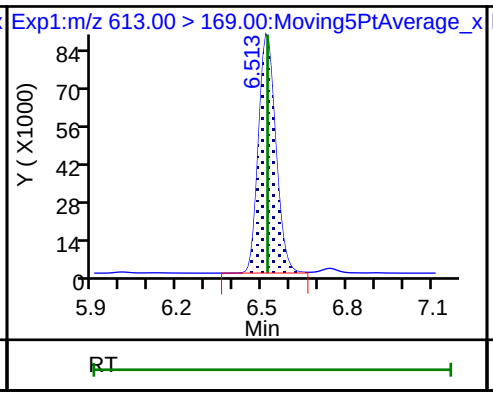
43 11ClFOS



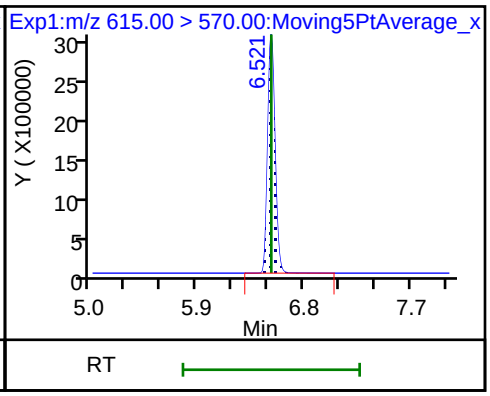
46 Perfluorododecanoic acid



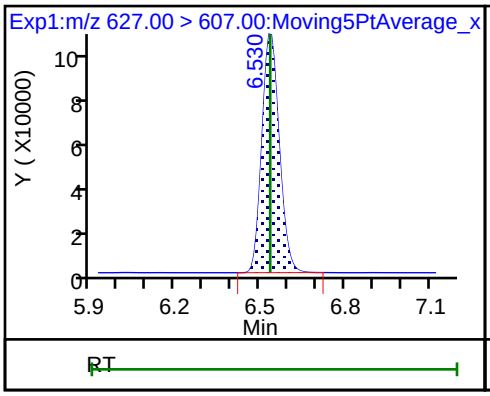
46 Perfluorododecanoic acid



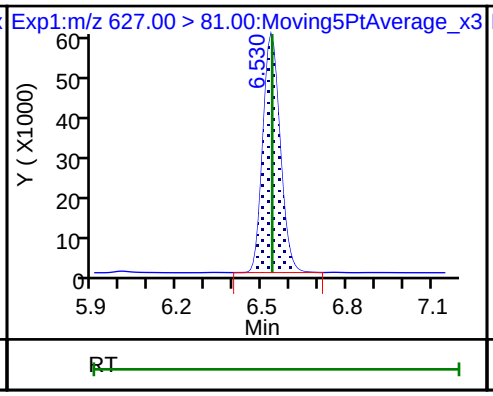
D 45 13C2-PFDoDA



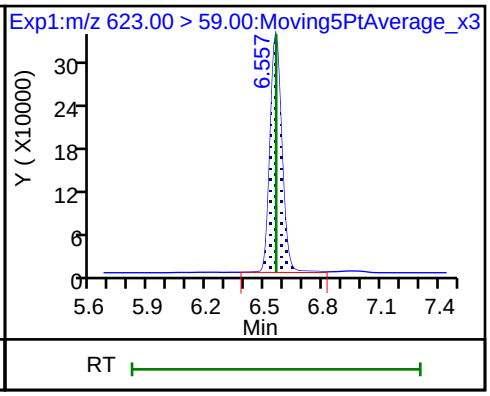
48 10:2 FTS



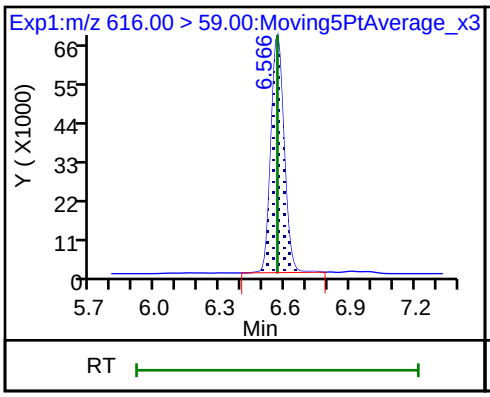
48 10:2 FTS



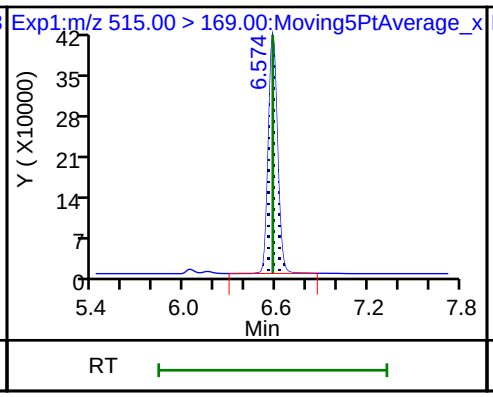
D 44 d7-N-MeFOSE-M



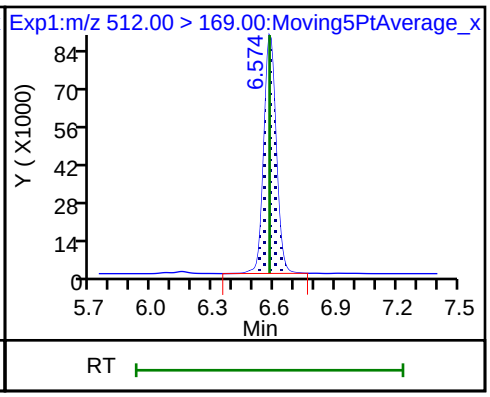
47 N-MeFOSE-M



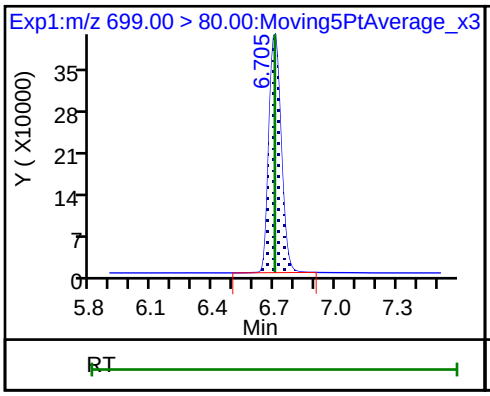
D 49 d3-NMePFOSA



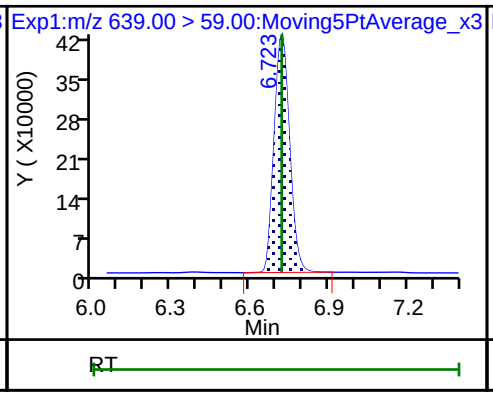
50 NMeFOSA



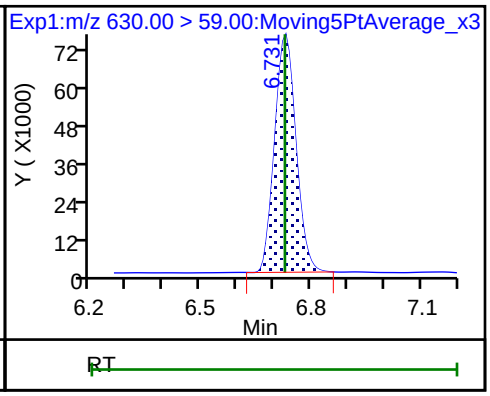
53 PFDoS



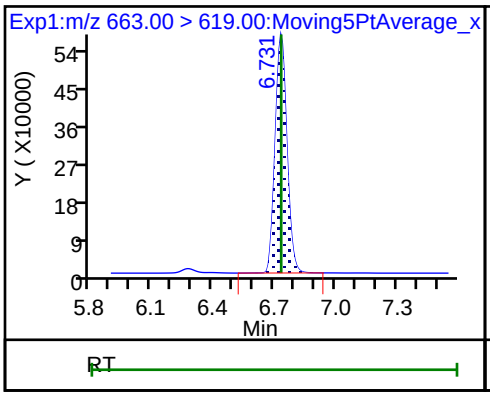
D 51 d9-N-EtFOSE-M



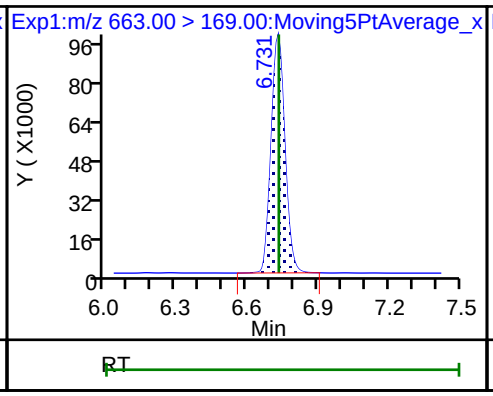
52 N-EtFOSE-M



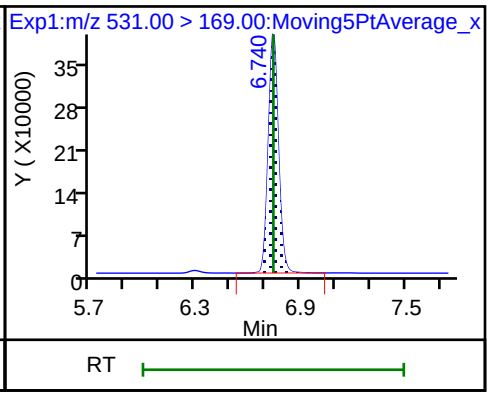
56 Perfluorotridecanoic acid



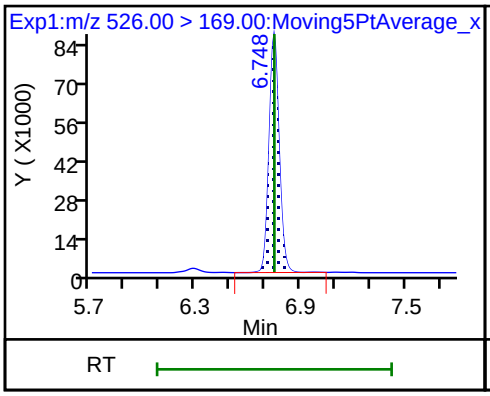
56 Perfluorotridecanoic acid



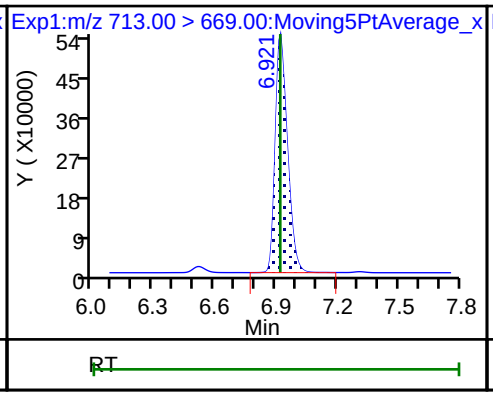
D 54 d5-NEtPFOSA



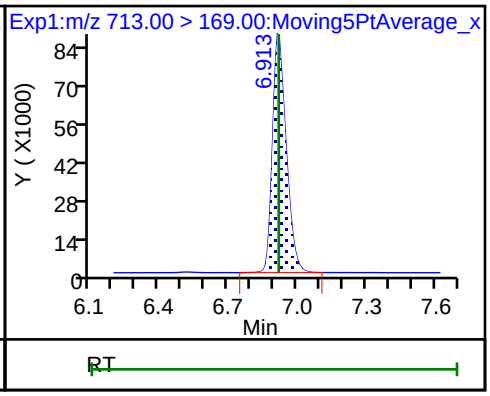
55 N-EtFOSA-M



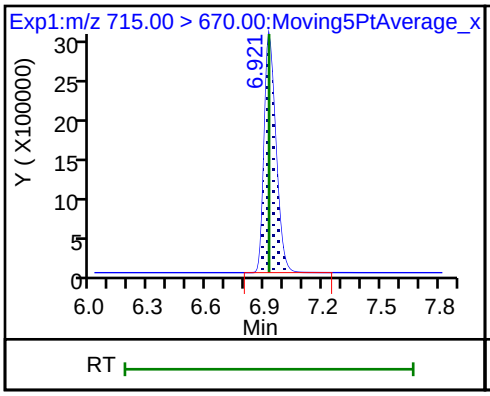
57 Perfluorotetradecanoic acid



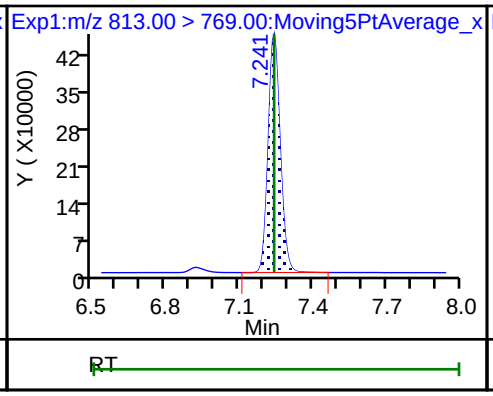
57 Perfluorotetradecanoic acid



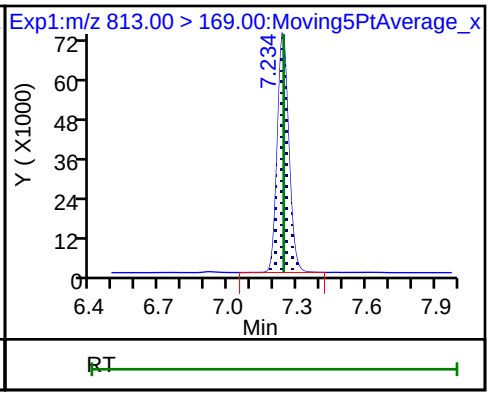
D 58 13C2 PFTeDA



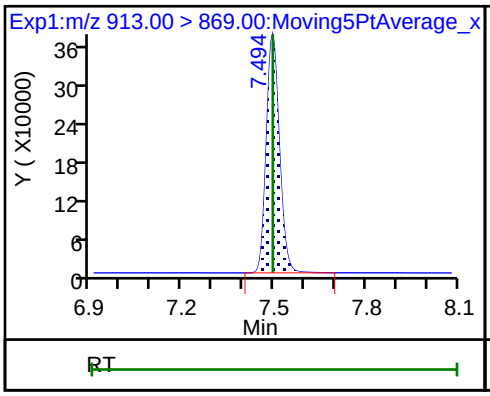
59 Perfluorohexadecanoic acid



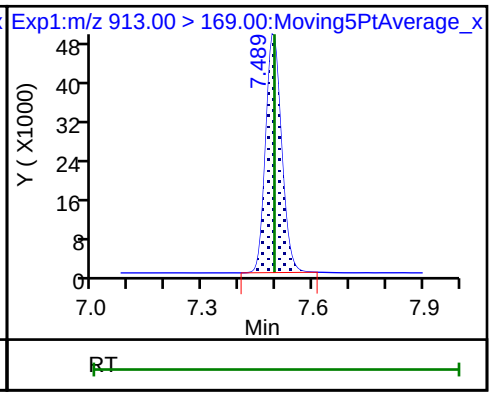
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-44.d
Lims ID: IC CAL 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 03-Apr-2022 17:44:31 ALS Bottle#: 20005 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 4
Misc. Info.: Plate: 1 Rack: 1 410-0053897-004
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:24 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:10:32
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 2 13C4 PFBA										
217.00 > 172.00	3.663	3.658	0.005		8574493	9.86		98.6	120174	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.663	3.658	0.005	1.000	6224554	8.70		109	12713	
63 PFECA F										
229.00 > 85.00	3.890	3.890	0.0	0.931	5138320	8.51		106	10951	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.167	0.005	0.998	373705	8.47	Target=1.30	106	19985	
241.00 > 117.00	4.172	4.167	0.005	0.998	285626		1.31(0.65-1.94)	106	6967	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.178	0.001		7415319	10.2		102	74148	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.179	4.177	0.002	1.000	6626818	8.68		108	63268	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.230	0.001		8862249	9.43		101	578556	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.230	0.001	1.000	6977427	7.62	Target=2.82	108	8133	
299.00 > 99.00	4.231	4.230	0.001	1.000	2362248		2.95(1.41-4.23)	108	7515	
64 PFECA A										
279.00 > 85.00	4.300	4.300	0.0	1.029	5080280	8.27		103	71841	
65 PES										
315.00 > 135.00	4.388	4.390	-0.002	0.956	23872827	7.79	Target=14.82	109	380077	
315.00 > 83.00	4.388	4.390	-0.002	0.956	1640832		14.55(7.41-22.22)	109	2220	
68 PFECA B										
295.00 > 201.00	4.509	4.509	0.0	0.983	2180848	8.59		107	42753	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.549	4.544	0.005	1.000	1197955	7.97	Target=1.61	107	64616	
327.00 > 81.00	4.539	4.544	-0.005	0.998	683254		1.75(0.81-2.42)	107	16306	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.545	0.004		371584	9.15		98.0	11587	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.588	4.582	0.006	1.000	6409585	8.16	Target=13.95	102	99706	
313.00 > 119.00	4.588	4.582	0.006	1.000	453776		14.12(6.97-20.92)	102	19521	
D 9 13C5 PFHxA										
318.00 > 273.00	4.588	4.585	0.003		8980825	10.1		101	152283	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.608	4.604	0.004	1.089	6791657	8.06	Target=2.93	107	309463	
349.00 > 99.00	4.608	4.604	0.004	1.089	2321340		2.93(1.47-4.40)	107	74978	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.717	4.712	0.005		1101764	9.98		99.8	75007	
12 HFPO-DA										
329.00 > 285.00	4.717	4.712	0.005	1.000	1936722	8.29		104	64103	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.976	4.973	0.003	1.000	7239159	8.54	Target=3.12	107	81422	
363.00 > 169.00	4.976	4.973	0.003	1.000	2315996		3.13(1.56-4.69)	107	23537	
D 17 13C4 PFHpA										
367.00 > 322.00	4.976	4.976	0.0		8875890	10.0		99.9	125259	
D 16 13C3 PFHxS										
402.00 > 80.00	4.976	4.977	-0.001		8048553	9.60		102	1152937	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.976	4.976	0.0	1.000	6324133	7.64	Target=2.99	105	2243035	
399.00 > 99.00	4.976	4.976	0.0	1.000	2094972		3.02(1.49-4.48)	105	4914	
18 DONA										
377.00 > 251.00	5.019	5.021	-0.002	1.009	12230242	8.39		111	498735	
62 5:3 FTCA										
341.00 > 237.00	5.050	5.047	0.003	1.101	1393068	8.07	Target=3.15	101	16649	
341.00 > 217.00	5.050	5.047	0.003	1.101	468680		2.97(1.57-4.72)	101	13247	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.328	5.327	0.001		242423	9.49		99.9	13412	
19 6:2 FTS										
427.00 > 407.00	5.328	5.327	0.001	1.000	1088513	8.18	Target=1.62	108	42540	
427.00 > 81.00	5.321	5.327	-0.006	0.999	640078		1.70(0.81-2.43)	108	28681	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.335	5.334	0.001	1.072	6825914	8.25	Target=3.16	108	147038	
449.00 > 99.00	5.335	5.334	0.001	1.072	2146150		3.18(1.58-4.74)	108	199857	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.342	5.343	-0.001	0.999	7313676	8.22	Target=2.36	103	231627	
413.00 > 169.00	5.342	5.343	-0.001	0.999	3154614		2.32(1.18-3.54)	103	1222014	
D 22 13C8 PFOA										
421.00 > 376.00	5.348	5.345	0.003		9943175	10.2		102	769767	
D 25 13C8 PFOS										
507.00 > 80.00	5.673	5.674	-0.001		7839367	9.68		101	300467	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.673	5.672	0.001	1.000	6736263	7.65	Target=3.73	103	14122	
499.00 > 99.00	5.673	5.672	0.001	1.000	1797052		3.75(1.87-5.60)	103	629841	
D 27 13C9 PFNA										
472.00 > 427.00	5.688	5.691	-0.003		10564331	10.4		104	421739	
26 Perfluorononanoic acid										
463.00 > 419.00	5.688	5.690	-0.002	1.000	7477465	8.31	Target=4.38	104	96016	
463.00 > 169.00	5.688	5.690	-0.002	1.000	1617577		4.62(2.19-6.56)	104	49512	
66 7:3 FTCA										
441.00 > 317.00	5.787	5.788	-0.001	1.261	757778	8.43	Target=10.71	105	16013	
441.00 > 337.00	5.787	5.788	-0.001	1.261	63249		11.98(5.36-16.07)	105	2433	
28 9ClFOS										
531.00 > 351.00	5.854	5.855	-0.001	1.032	15423497	7.88		106	804726	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.978	5.978	0.0	1.054	6590429	8.57	Target=3.28	112	168043	
549.00 > 99.00	5.978	5.978	0.0	1.054	1942249		3.39(1.64-4.92)	112	99673	
D 32 13C6 PFDA										
519.00 > 474.00	6.003	6.004	-0.001		11501291	10.6		106	461326	
33 8:2 FTS										
527.00 > 507.00	6.003	6.003	0.0	1.000	1412217	8.33	Target=2.01	109	84025	
527.00 > 81.00	6.003	6.003	0.0	1.000	705933		2.00(1.01-3.02)	109	12113	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.003	6.003	0.0	1.000	8217479	8.22	Target=8.83	103	179079	
513.00 > 169.00	6.003	6.003	0.0	1.000	877864		9.36(4.41-13.24)	103	16320	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.003	6.006	-0.003		216815	9.69		101	17129	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.110	6.112	-0.002	0.999	11326479	9.06		113	661035	
D 35 13C8 FOSA										
506.00 > 78.00	6.119	6.114	0.005		12435387	9.61		96.1	411970	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.152	6.152	0.0		2740086	9.73		97.3	87609	
36 NMeFOSAA										
570.00 > 419.00	6.152	6.153	-0.001	1.000	1996737	8.26	Target=1.81	103	81296	
570.00 > 483.00	6.152	6.153	-0.001	1.000	1108554		1.80(0.91-2.72)	103	366907	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.248	6.250	-0.002	1.101	7203829	8.31	Target=3.48	108	203211	
599.00 > 99.00	6.248	6.250	-0.002	1.101	2061780		3.49(1.74-5.22)	108	58998	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.276	6.278	-0.002	0.998	7913685	8.45	Target=8.25	106	55342	
563.00 > 169.00	6.276	6.278	-0.002	0.998	997231		7.94(4.12-12.37)	106	45017	
D 40 13C7 PFUnA										
570.00 > 525.00	6.286	6.282	0.004		11387600	10.1		101	229123	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.295	6.296	-0.001		2201688	10.1		101	463162	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.304	6.300	0.004	1.001	1754012	8.40	Target=1.66	105	2991	
584.00 > 526.00	6.295	6.300	-0.005	1.000	1047485		1.67(0.83-2.49)	105	2409	
43 11ClFOS										
631.00 > 451.00	6.393	6.394	-0.001	1.127	13162647	7.96		107	147262	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.518	6.518	0.0	0.999	9072761	8.77	Target=5.87	110	37371	
613.00 > 169.00	6.518	6.518	0.0	0.999	1457740		6.22(2.94-8.81)	110	20320	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.526	6.523	0.003		11751365	9.84		98.4	552705	
48 10:2 FTS										
627.00 > 607.00	6.535	6.535	0.0	1.089	1823809	8.62	Target=1.77	112	86890	
627.00 > 81.00	6.535	6.535	0.0	1.089	956694		1.91(0.88-2.65)	112	32281	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.562	6.559	0.003		1343594	9.88		98.8	6792	
47 N-MeFOSE-M										
616.00 > 59.00	6.562	6.564	-0.002	1.000	1156261	8.67		108	12103	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.579	6.576	0.003		1686690	9.79		97.9	6739	
50 NMeFOSA										
512.00 > 169.00	6.579	6.576	0.003	1.000	1486573	8.70		109	11112	
53 PFDoS										
699.00 > 80.00	6.702	6.702	0.0	1.181	7075055	8.37		108	193535	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.720	6.720	0.0		1662591	10.1		101	6917	
52 N-EtFOSE-M										
630.00 > 59.00	6.728	6.729	-0.001	1.001	1320437	8.64		108	17156	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.736	6.733	0.003	1.032	9203668	8.91	Target=5.56	111	29951	
663.00 > 169.00	6.728	6.733	-0.005	1.031	1559649		5.90(2.78-8.34)	111	63839	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.745	6.744	0.001		1559929	9.90		99.0	12349	
55 N-EtFOSA-M										
526.00 > 169.00	6.752	6.750	0.002	1.001	1486824	8.72		109	10688	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.918	6.919	-0.001	0.999	8969012	8.59	Target=5.83	107	19181	
713.00 > 169.00	6.918	6.919	-0.001	0.999	1516019		5.92(2.92-8.75)	107	52404	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.925	6.922	0.003		12037995	9.98		99.8	402749	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.246	7.241	0.005	1.046	6607392	8.48	Target=6.08	106	27985	
813.00 > 169.00	7.239	7.241	-0.002	1.045	1069071		6.18(3.04-9.12)	106	44941	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.495	0.004	1.083	4679163	8.84	Target=7.30	110	50890	
913.00 > 169.00	7.493	7.495	-0.002	1.082	629547		7.43(3.65-10.94)	110	26604	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD4_00014 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:26:25 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-44.d

Injection Date: 03-Apr-2022 17:44:31 Instrument ID: 29347

Lims ID: IC CAL 4

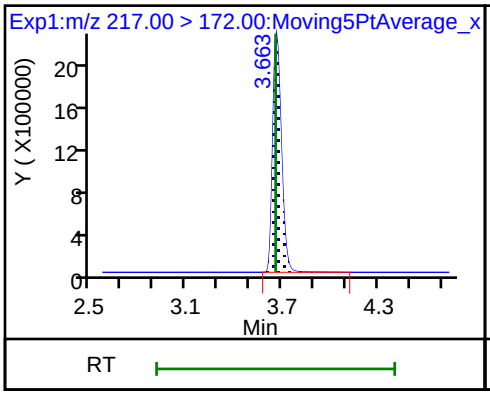
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20005 Worklist Smp#: 4

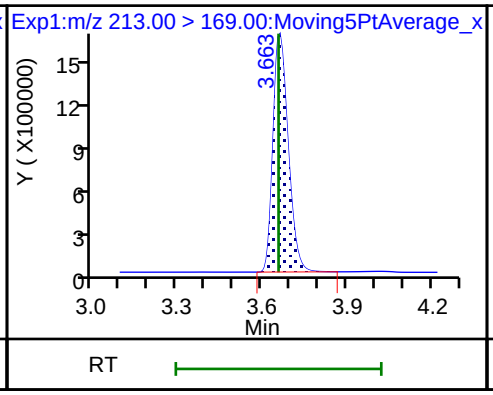
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

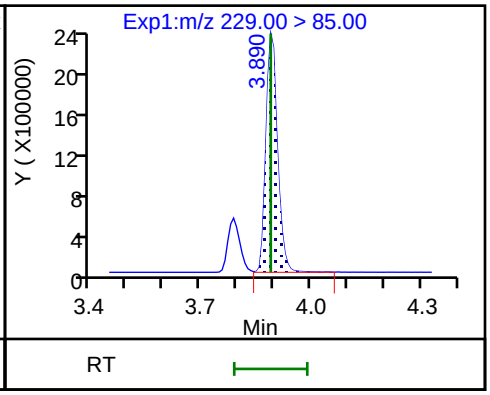
D 2 13C4 PFBA



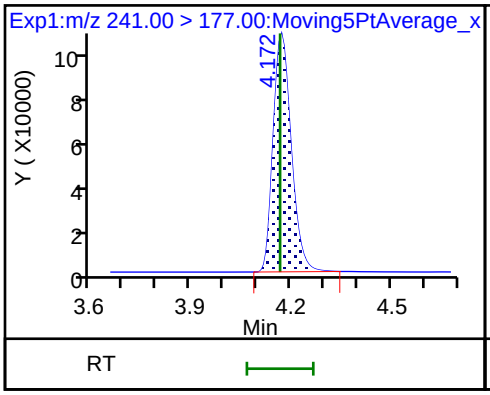
1 Perfluorobutanoic acid



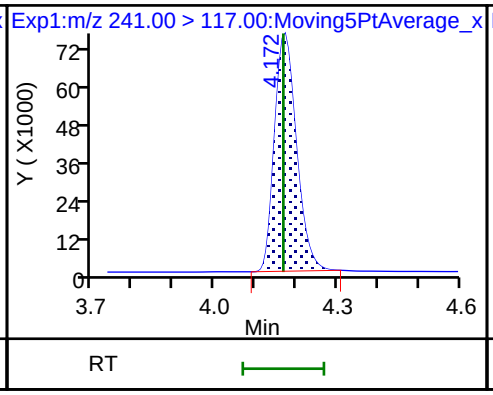
63 PFECA F



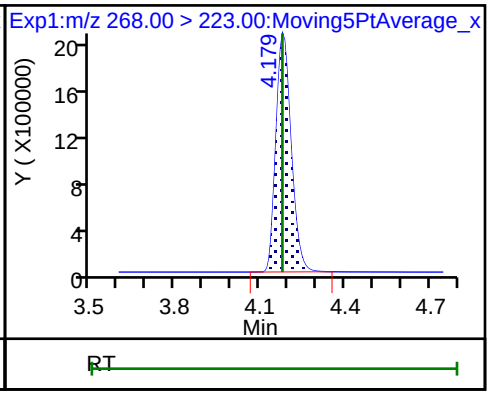
67 3:3 FTCA



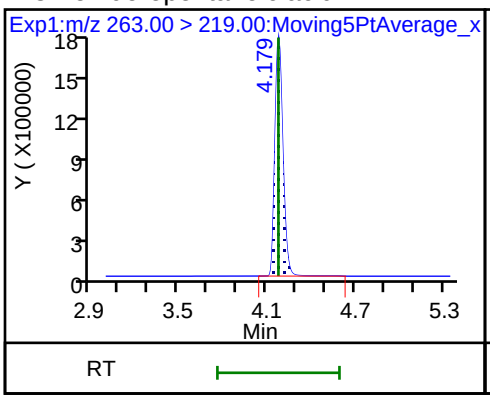
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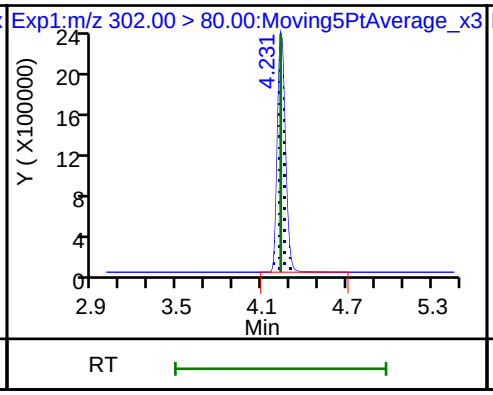
D 4 13C5 PFPeA



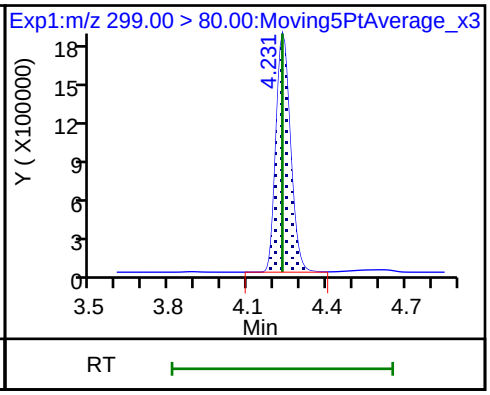
3 Perfluoropentanoic acid



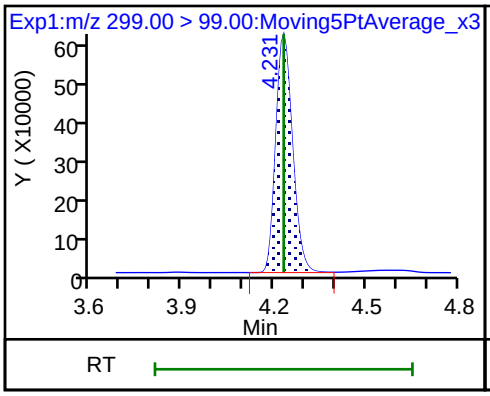
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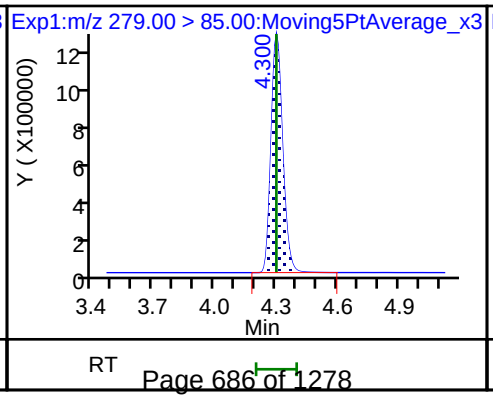
5 Perfluorobutanesulfonic acid



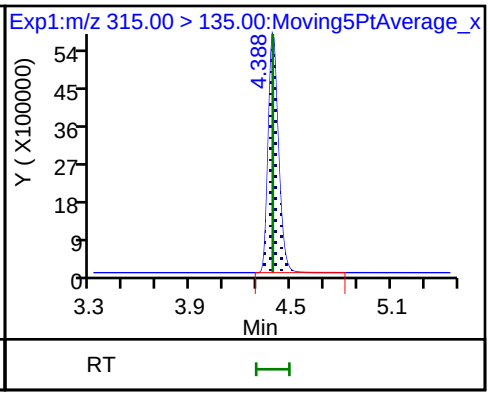
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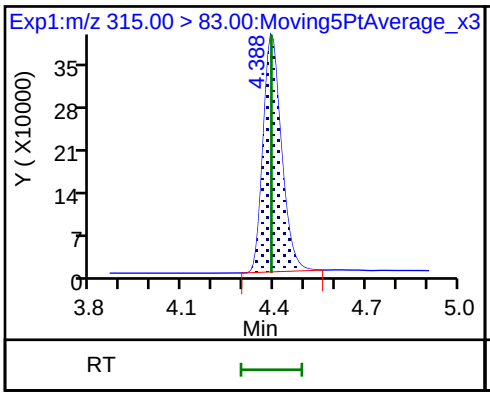
64 PFECA A



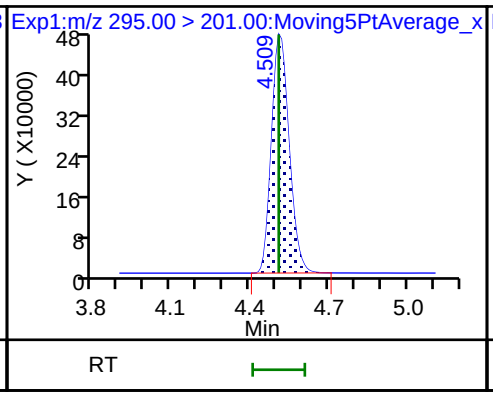
65 PES



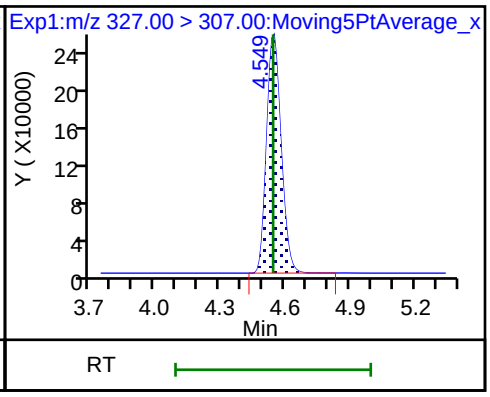
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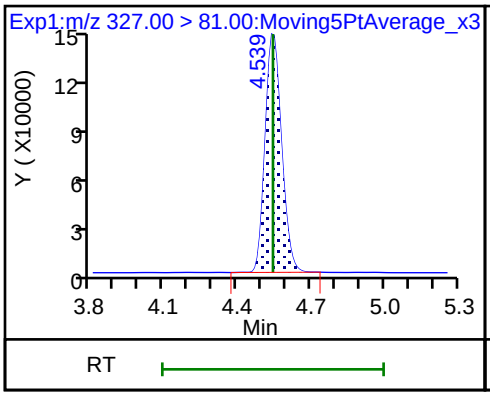
68 PFECA B



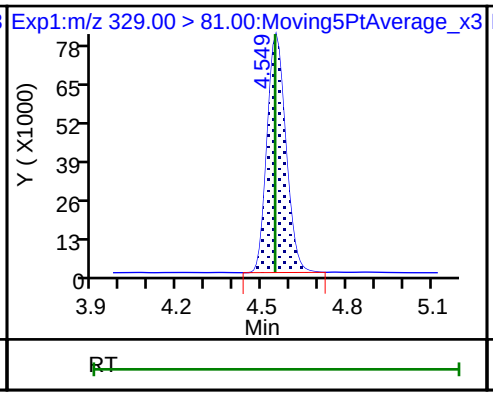
7 4:2 FTS



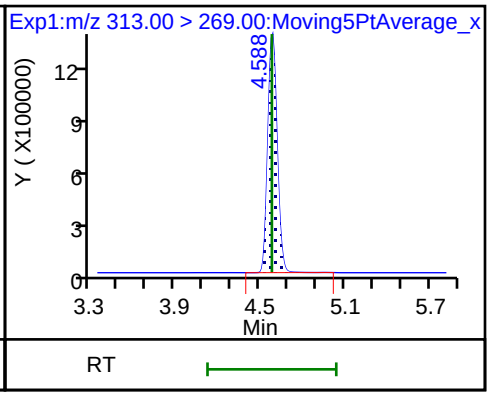
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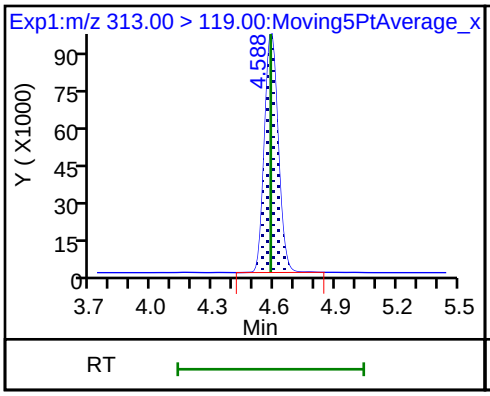
D 8 M2-4:2 FTS



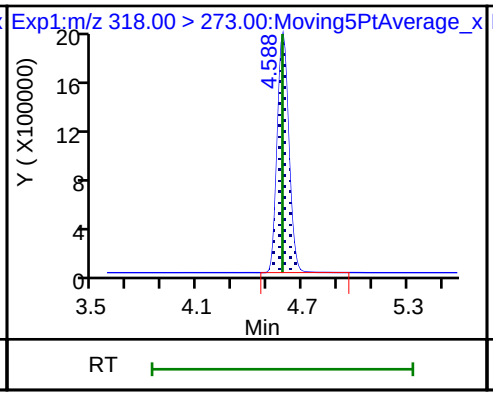
10 Perfluorohexanoic acid



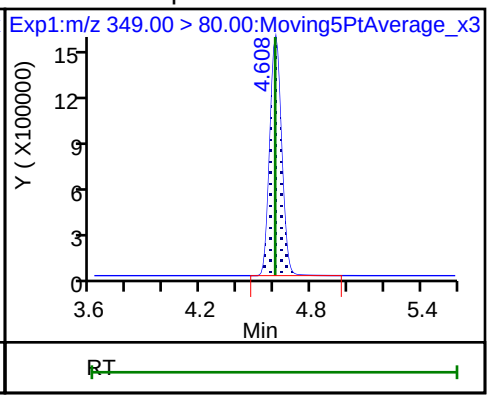
10 Perfluorohexanoic acid



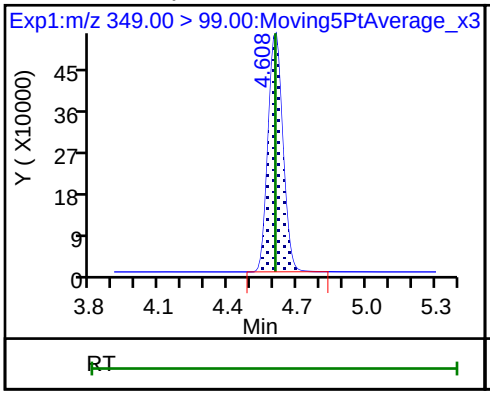
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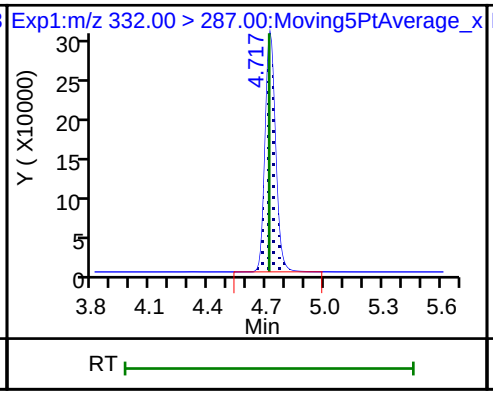
11 Perfluoropentanesulfonic acid



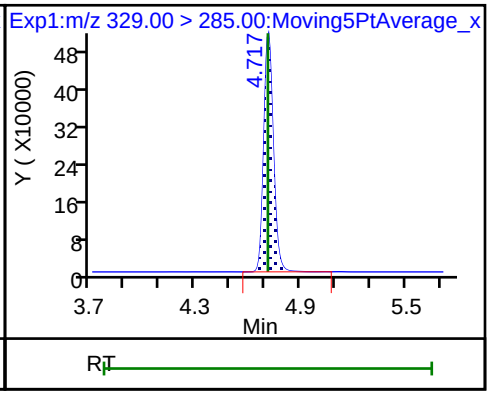
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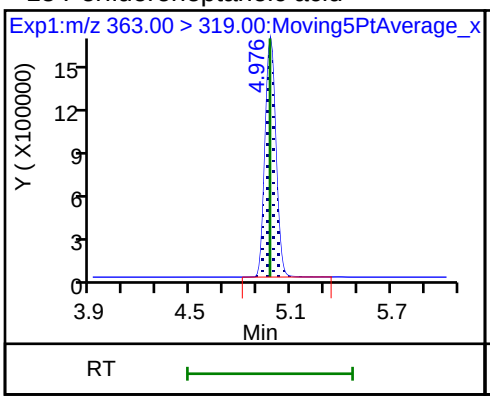
D 13 13C3 HFPO-DA



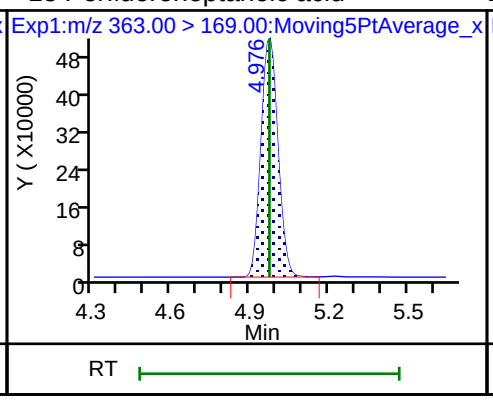
12 HFPO-DA



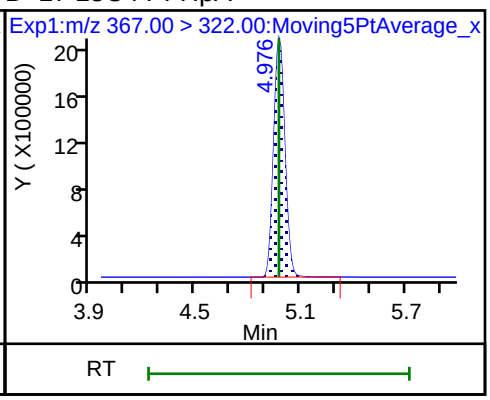
15 Perfluoroheptanoic acid



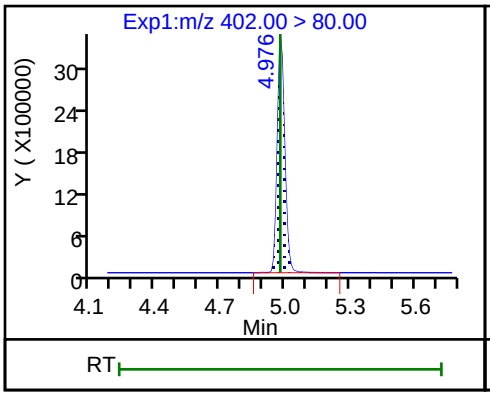
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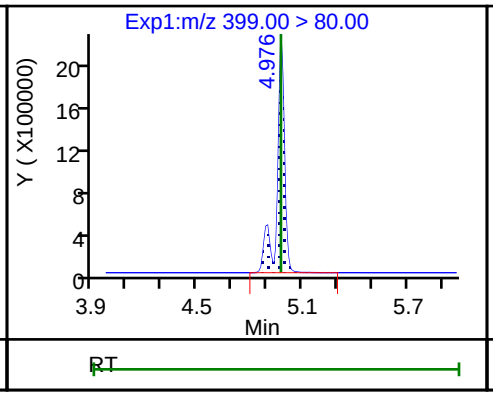
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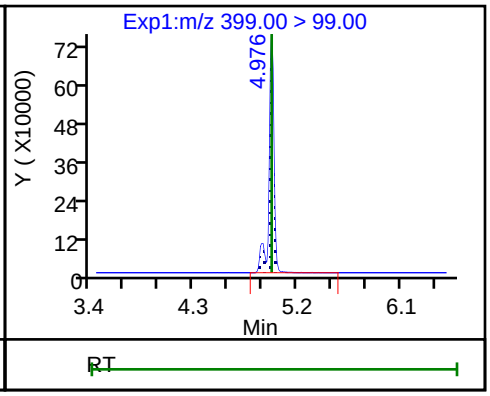
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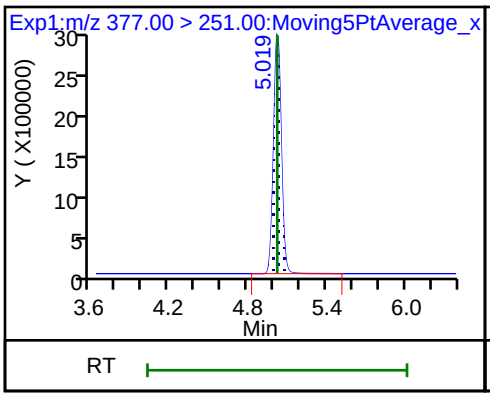
14 Perfluorohexanesulfonic acid



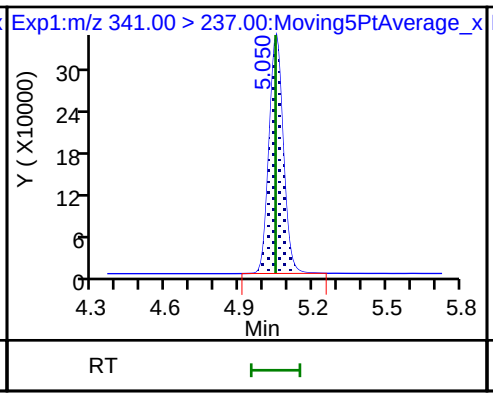
14 Perfluorohexanesulfonic acid



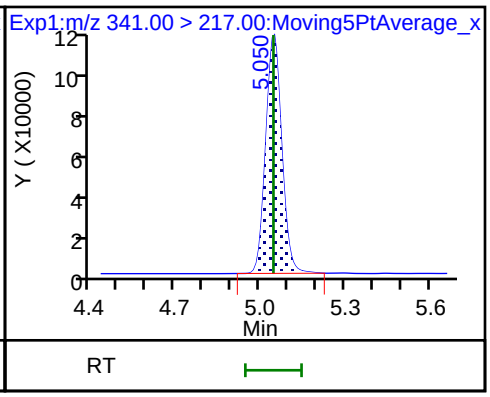
18 DONA



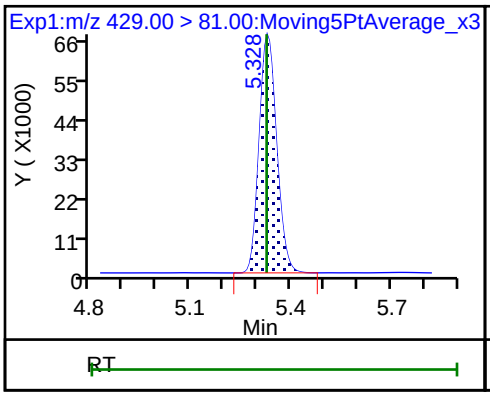
62 5:3 FTCA



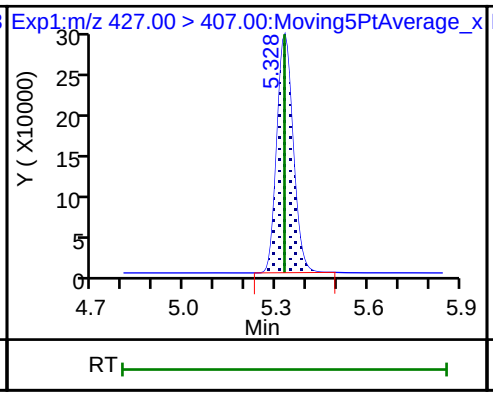
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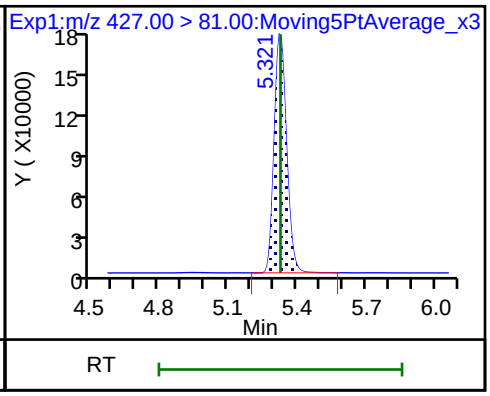
D 20 M2-6:2 FTS



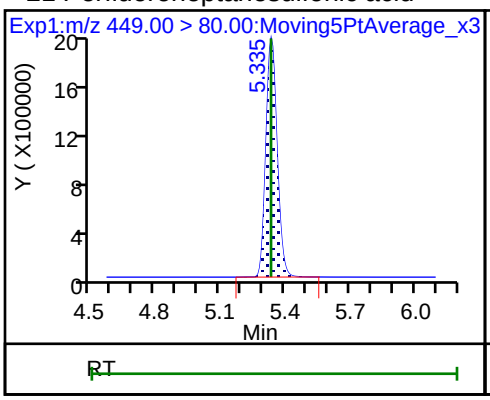
19 6:2 FTS



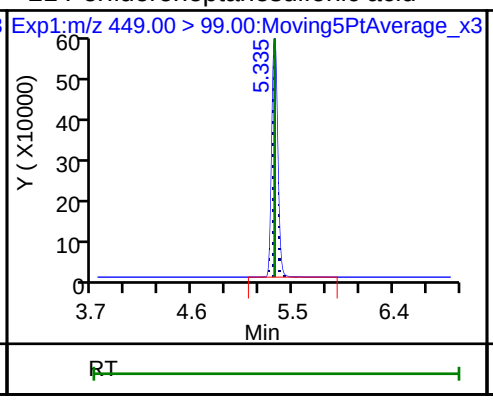
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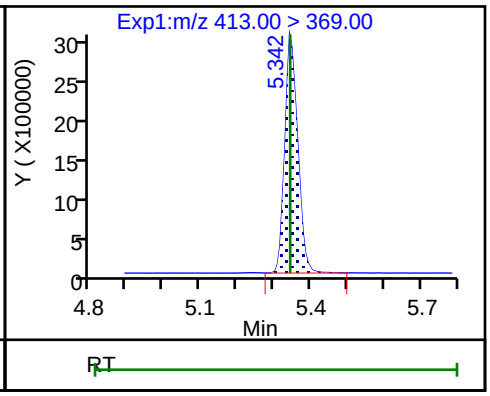
21 Perfluoroheptanesulfonic acid



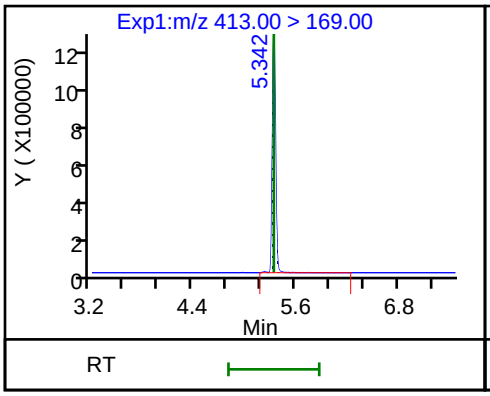
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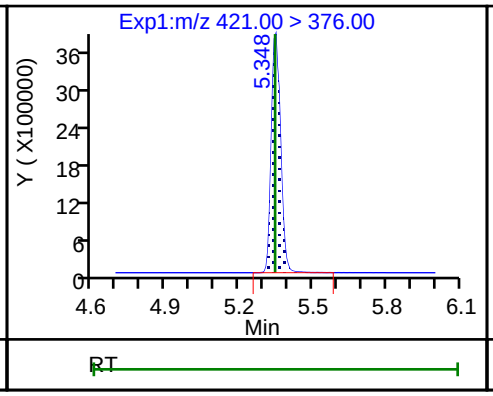
23 Perfluorooctanoic acid



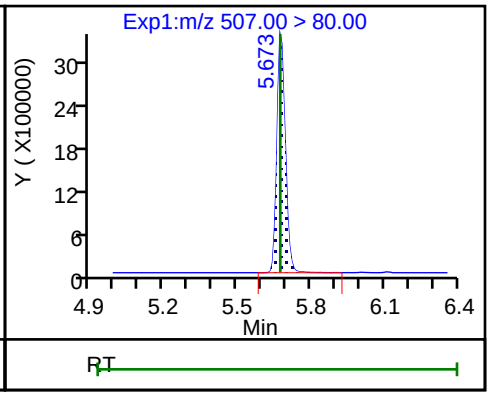
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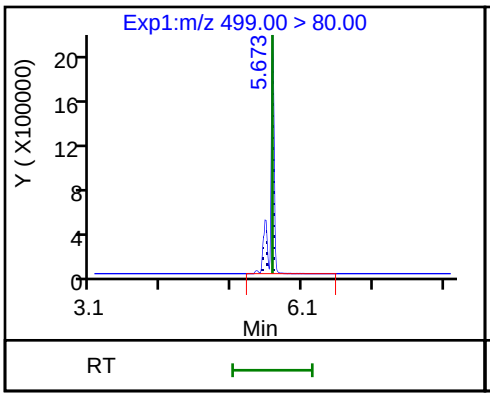
D 22 13C8 PFOA



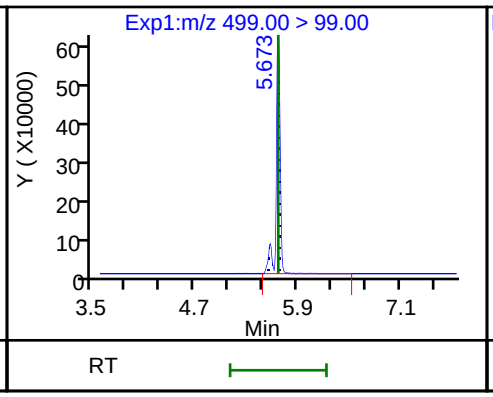
D 25 13C8 PFOS



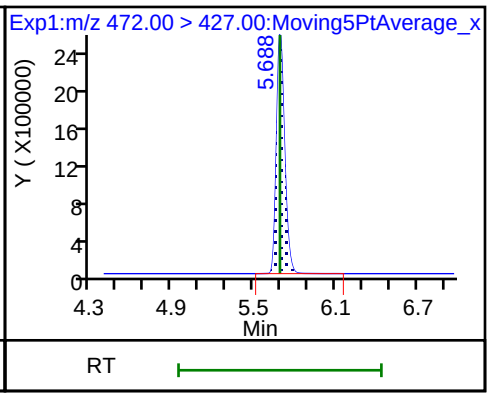
24 Perfluorooctanesulfonic acid



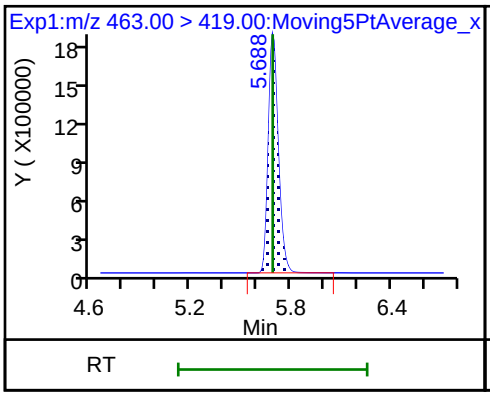
24 Perfluorooctanesulfonic acid



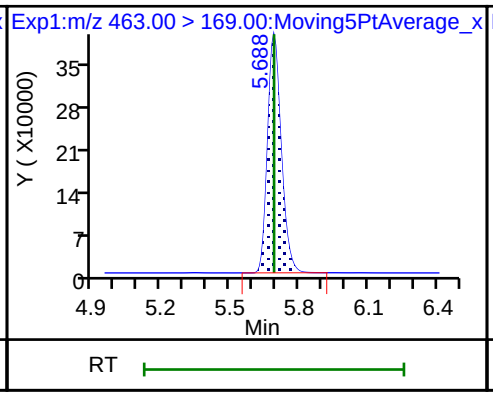
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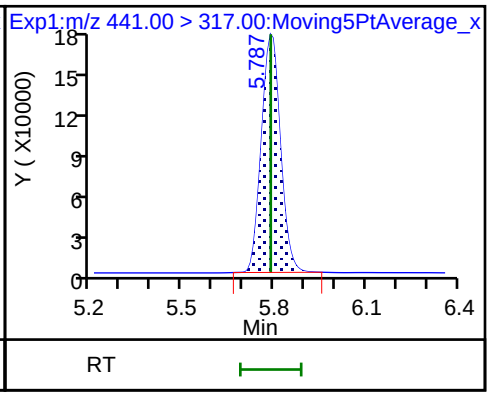
26 Perfluorononanoic acid



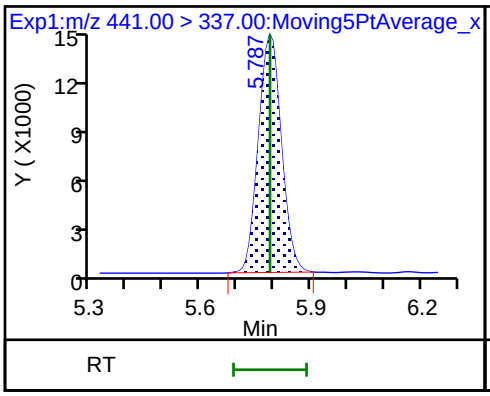
26 Perfluorononanoic acid



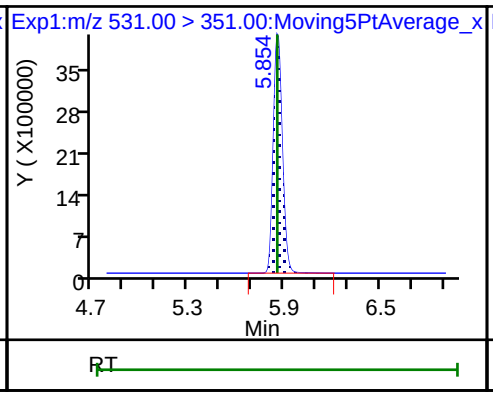
66 7:3 FTCA



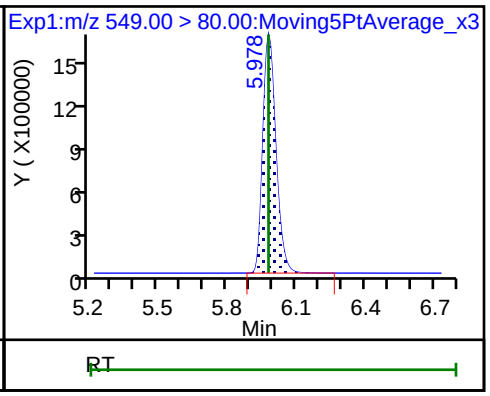
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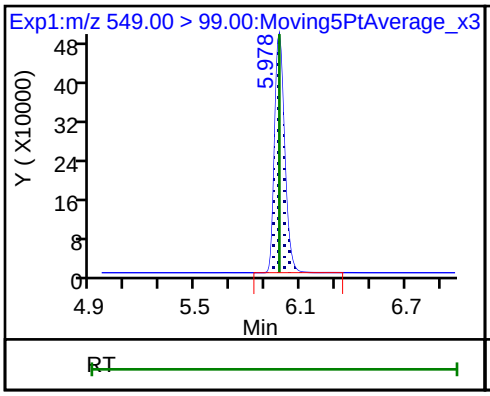
28 9ClFOS



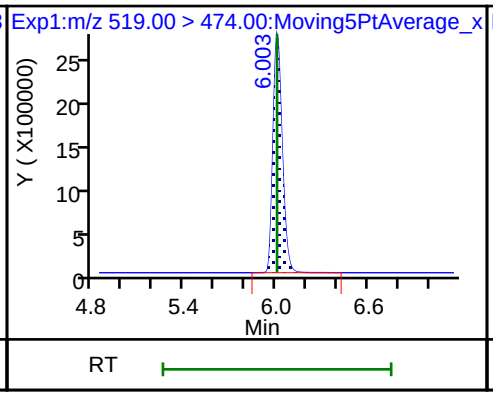
29 Perfluorononanesulfonic acid



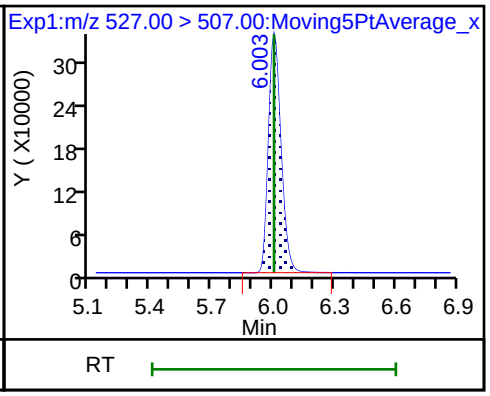
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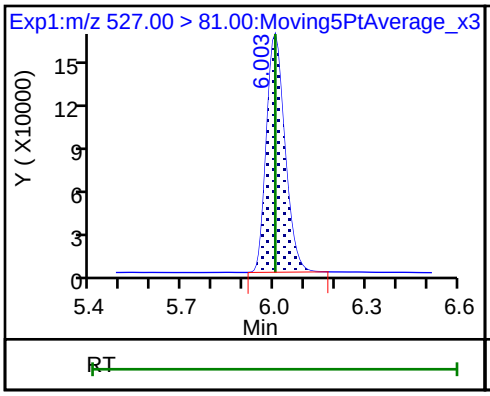
D 32 13C6 PFDA



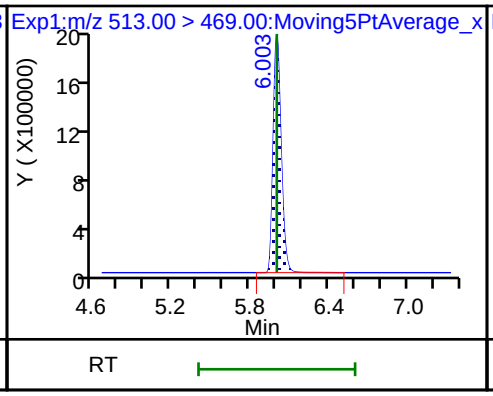
33 8:2 FTS



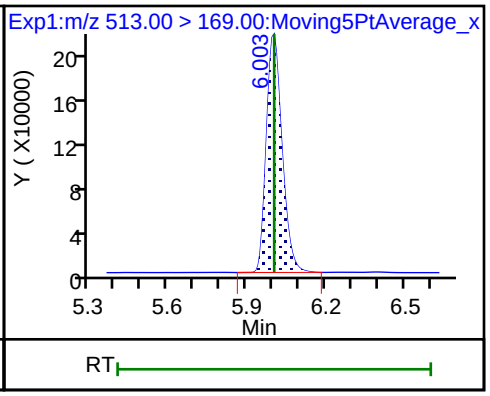
33 8:2 FTS



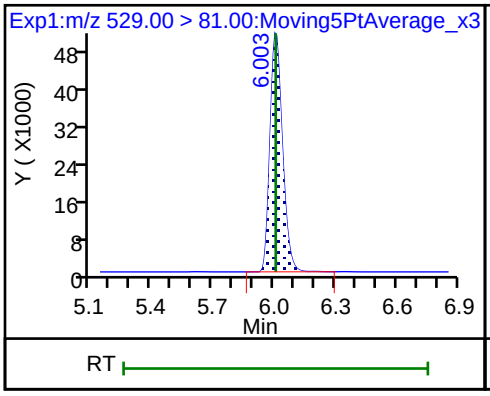
30 Perfluorodecanoic acid



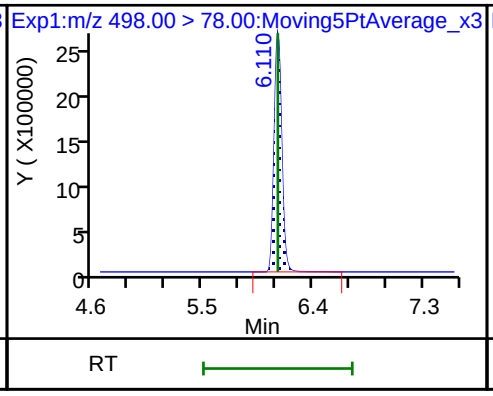
30 Perfluorodecanoic acid



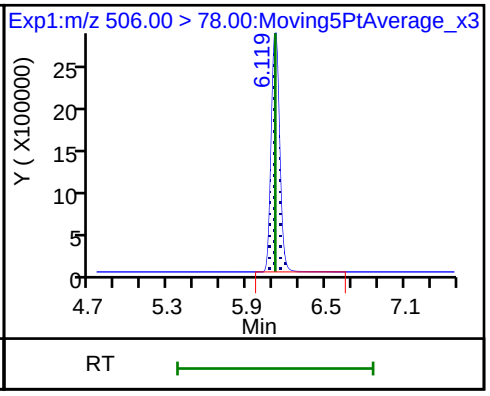
D 31 M2-8:2 FTS



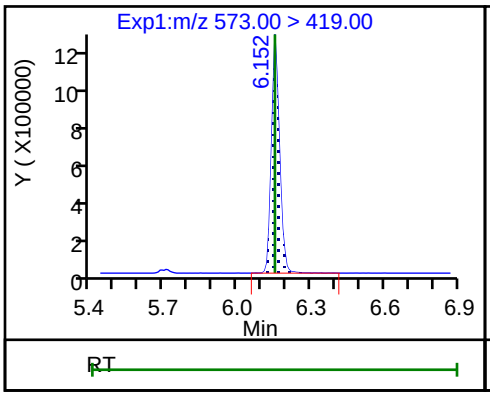
34 Perfluorooctanesulfonamide



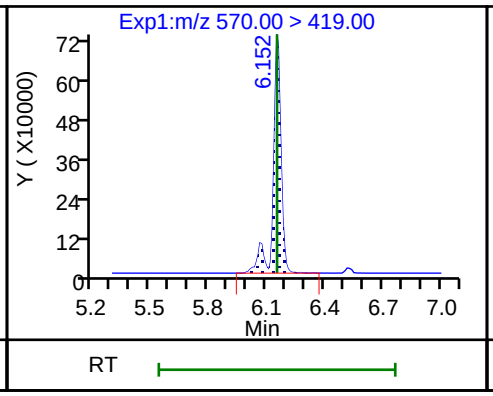
D 35 13C8 FOSA



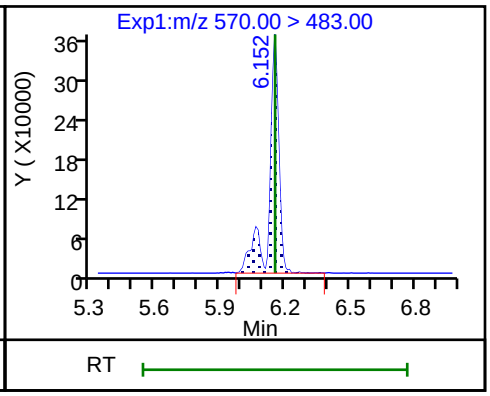
D 37 d3-NMeFOSAA



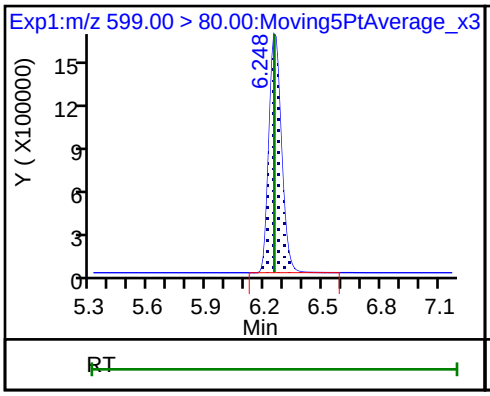
36 NMeFOSAA



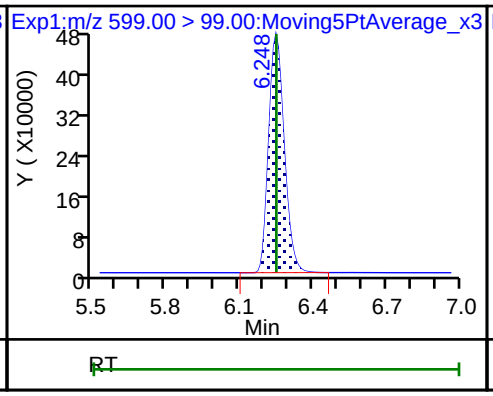
36 NMeFOSAA



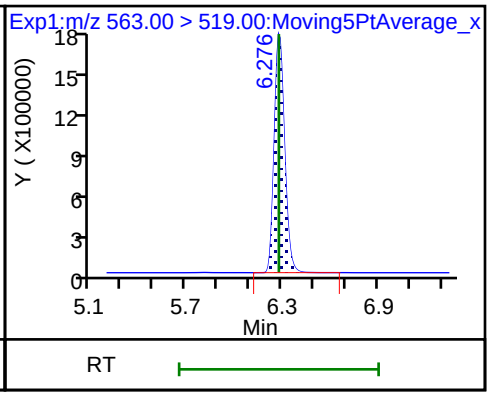
38 Perfluorodecanesulfonic acid



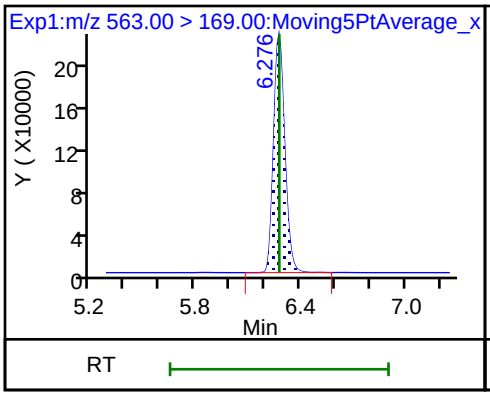
38 Perfluorodecanesulfonic acid



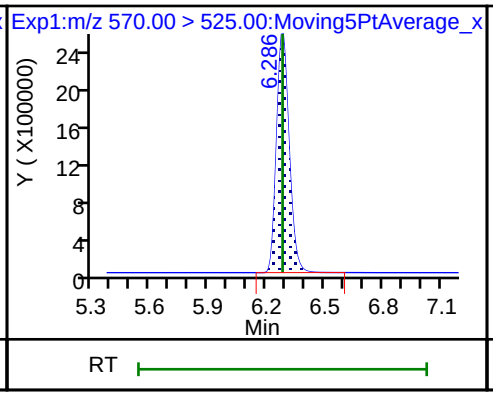
39 Perfluoroundecanoic acid



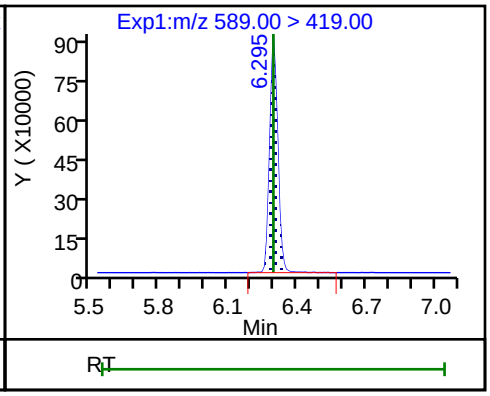
39 Perfluoroundecanoic acid



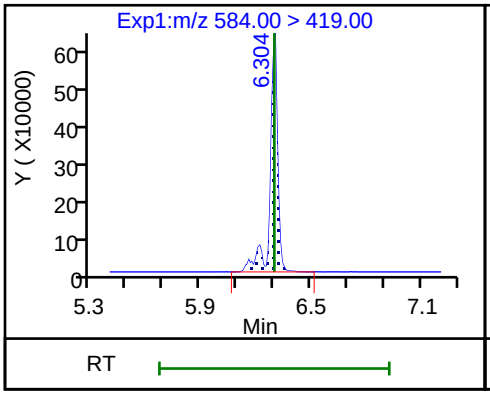
D 40 13C7 PFUnA



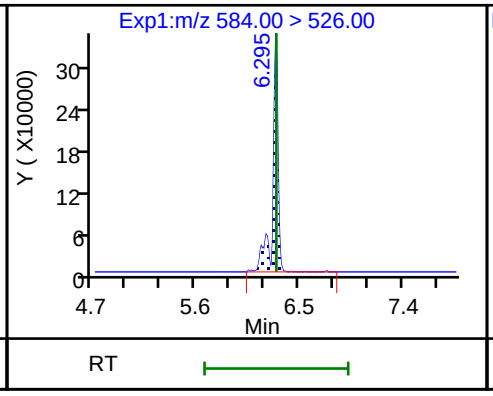
D 41 d5-NEtFOSAA



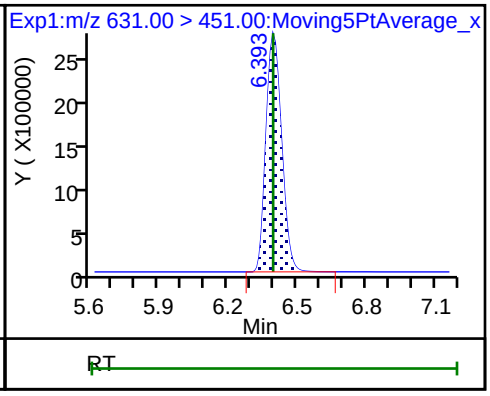
42 NEtFOSAA



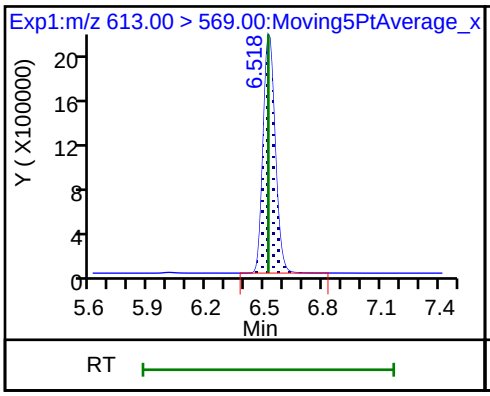
42 NEtFOSAA



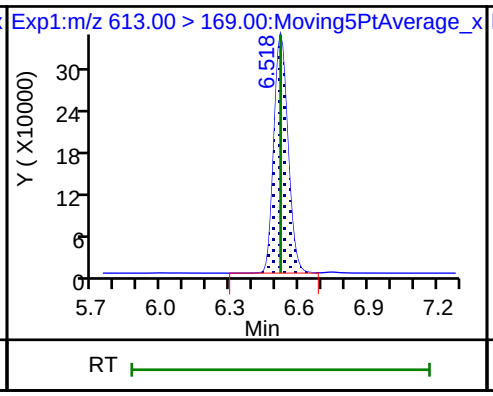
43 11ClFOS



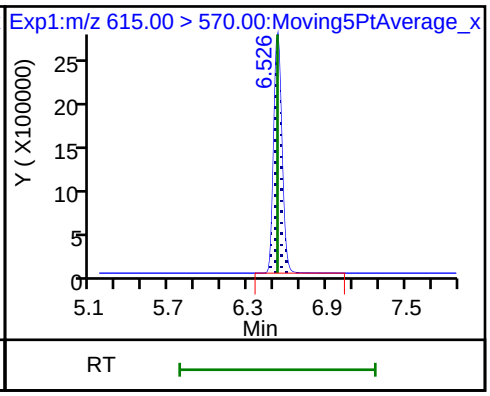
46 Perfluorododecanoic acid



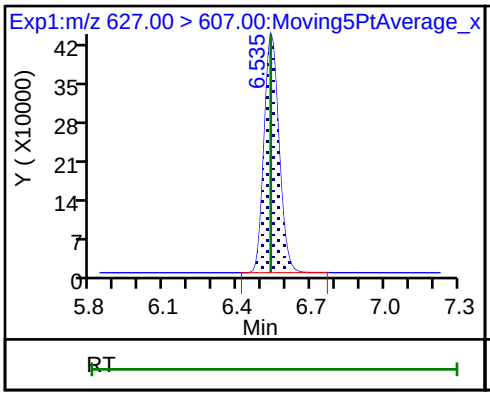
46 Perfluorododecanoic acid



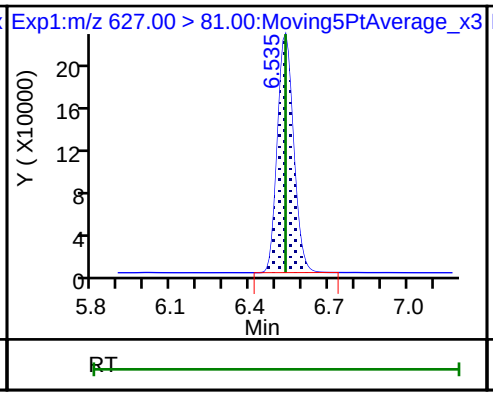
D 45 13C2-PFDoDA



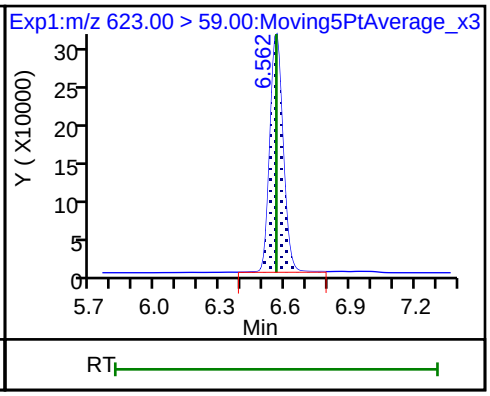
48 10:2 FTS



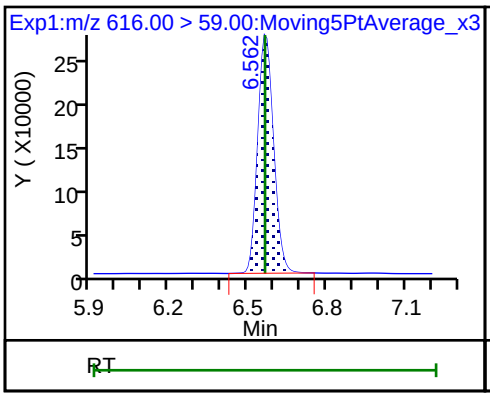
48 10:2 FTS



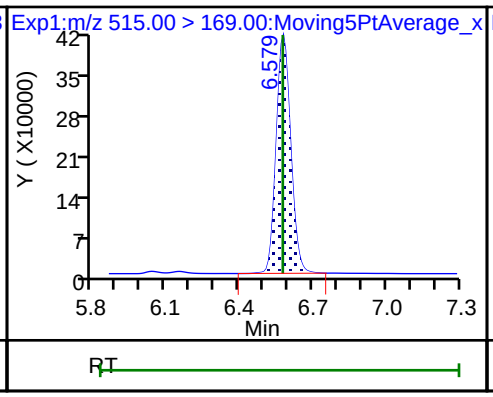
D 44 d7-N-MeFOSE-M



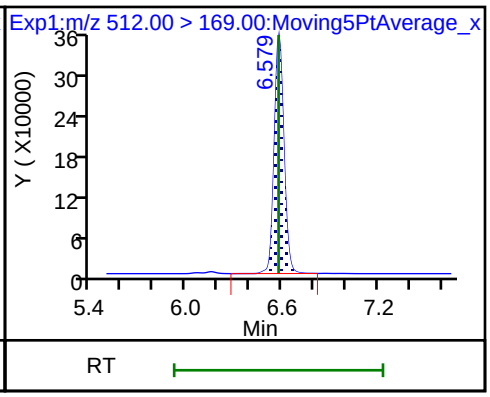
47 N-MeFOSE-M



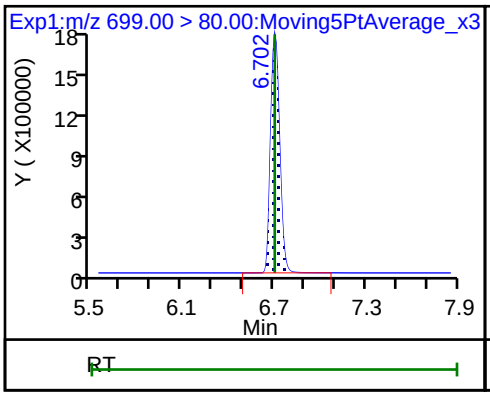
D 49 d3-NMePFOSA



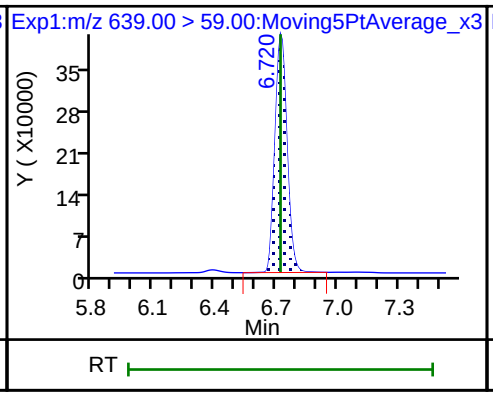
50 NMeFOSA



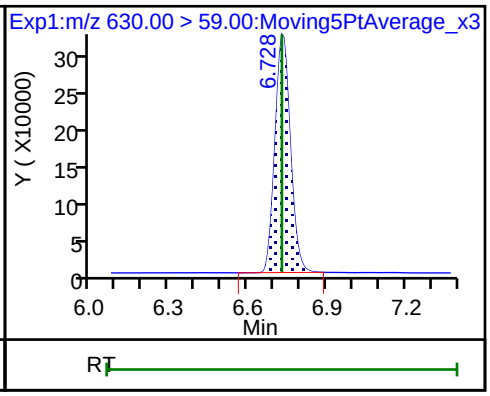
53 PFDoS



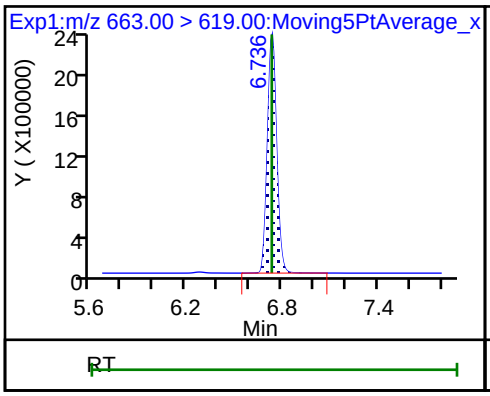
D 51 d9-N-EtFOSE-M



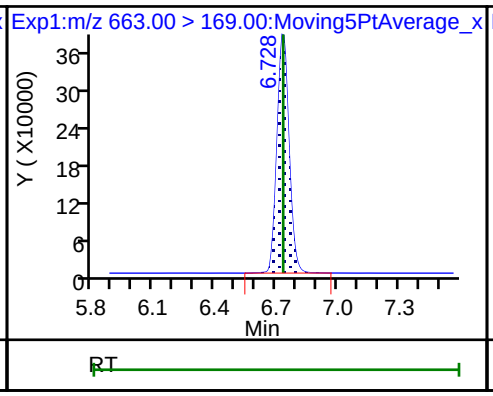
52 N-EtFOSE-M



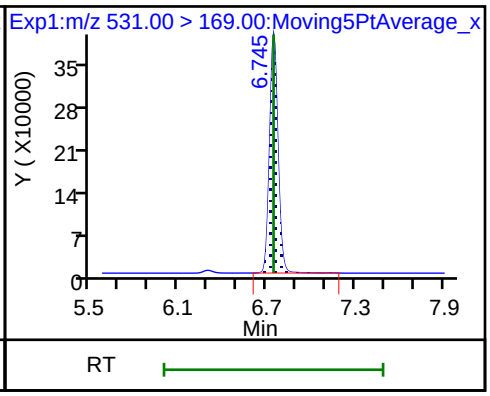
56 Perfluorotridecanoic acid



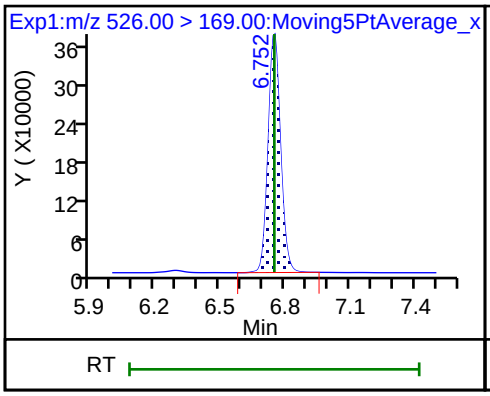
56 Perfluorotridecanoic acid



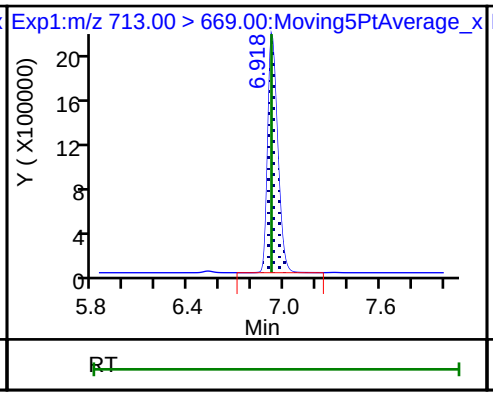
D 54 d5-NEtPFOSA



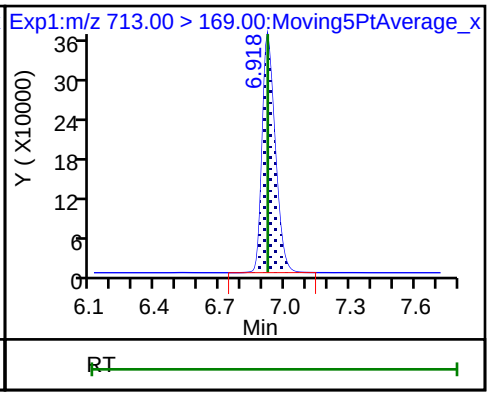
55 N-EtFOSA-M



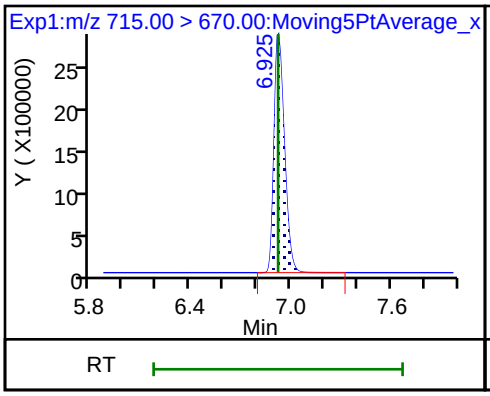
57 Perfluorotetradecanoic acid



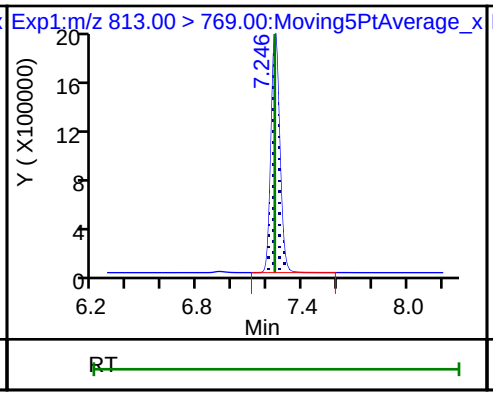
57 Perfluorotetradecanoic acid



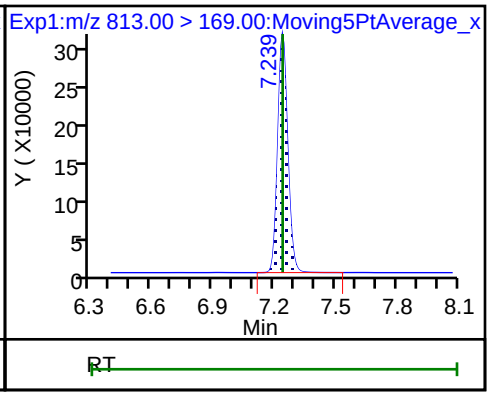
D 58 13C2 PFTeDA



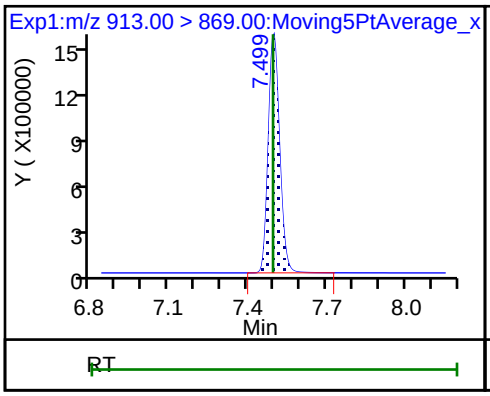
59 Perfluorohexadecanoic acid



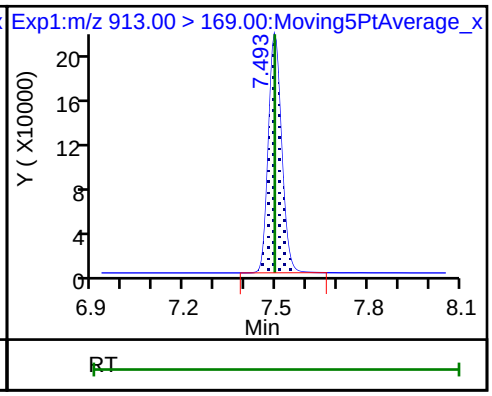
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-45.d
Lims ID: IC CAL 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 03-Apr-2022 17:55:03 ALS Bottle#: 20006 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 5
Misc. Info.: Plate: 1 Rack: 1 410-0053897-005
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:29 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:10:57
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 2 13C4 PFBA										
217.00 > 172.00	3.655	3.658	-0.003		8561467	9.85		98.5	101087	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.655	3.658	-0.003	1.000	14548747	20.4		102	28087	
63 PFECA F										
229.00 > 85.00	3.890	3.890	0.0	0.931	12141377	21.2		106	9278	
67 3:3 FTCA										
241.00 > 177.00	4.162	4.167	-0.005	0.997	875887	21.0	Target=1.30	105	26060	
241.00 > 117.00	4.162	4.167	-0.005	0.997	681533		1.29(0.65-1.94)	105	14220	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.169	4.177	-0.008	0.998	14981474	20.7		104	136705	
D 4 13C5 PFPeA										
268.00 > 223.00	4.176	4.178	-0.002		7028806	9.67		96.7	72814	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.228	4.230	-0.002	1.000	16477232	18.8	Target=2.82	106	16234	
299.00 > 99.00	4.220	4.230	-0.010	0.998	5790915		2.85(1.41-4.23)	106	15593	
D 6 13C3 PFBS										
302.00 > 80.00	4.228	4.230	-0.002		8476988	9.02		97.0	555571	
64 PFECA A										
279.00 > 85.00	4.297	4.300	-0.003	1.029	12388412	21.3		106	92358	
65 PES										
315.00 > 135.00	4.385	4.390	-0.005	0.957	44986411	15.5	Target=14.82	87.2	264262	
315.00 > 83.00	4.385	4.390	-0.005	0.957	3858801		11.66(7.41-22.22)	87.2	7241	
68 PFECA B										
295.00 > 201.00	4.505	4.509	-0.004	0.983	5105122	21.2		106	52593	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.544	4.545	-0.001		375698	9.26		99.1	11757	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.535	4.544	-0.009	0.998	3001346	19.7	Target=1.61	106	130092	
327.00 > 81.00	4.535	4.544	-0.009	0.998	1622009		1.85(0.81-2.42)	106	39268	
D 9 13C5 PFHxA										
318.00 > 273.00	4.584	4.585	-0.001		8494523	9.58		95.8	153952	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.574	4.582	-0.008	0.998	15751339	21.2	Target=13.95	106	261539	
313.00 > 119.00	4.574	4.582	-0.008	0.998	1142130		13.79(6.97-20.92)	106	41771	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.603	4.604	-0.001	1.089	15915349	19.8	Target=2.93	105	507901	
349.00 > 99.00	4.594	4.604	-0.010	1.086	5303549		3.00(1.47-4.40)	105	197654	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.707	4.712	-0.005		1118586	10.1		101	59213	
12 HFPO-DA										
329.00 > 285.00	4.707	4.712	-0.005	1.000	4689989	19.8		98.9	207623	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.972	4.973	-0.001	1.000	16368354	20.4	Target=3.12	102	140292	
363.00 > 169.00	4.972	4.973	-0.001	1.000	5222660		3.13(1.56-4.69)	102	31012	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.972	4.976	-0.004	1.000	15130319	19.6	Target=2.99	107	25386	
399.00 > 99.00	4.972	4.976	-0.004	1.000	4966256		3.05(1.49-4.48)	107	15428	
D 17 13C4 PFHpA										
367.00 > 322.00	4.972	4.976	-0.004		8421277	9.48		94.8	158149	
D 16 13C3 PFHxS										
402.00 > 80.00	4.972	4.977	-0.005		7506296	8.96		94.7	1534877	
18 DONA										
377.00 > 251.00	5.015	5.021	-0.006	1.009	26952534	19.5		103	721659	
62 5:3 FTCA										
341.00 > 237.00	5.039	5.047	-0.008	1.099	3377590	20.7	Target=3.15	103	27198	
341.00 > 217.00	5.039	5.047	-0.008	1.099	1079884		3.13(1.57-4.72)	103	15949	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.324	5.327	-0.003		241974	9.47		99.7	21956	
19 6:2 FTS										
427.00 > 407.00	5.324	5.327	-0.003	1.000	2478081	18.7	Target=1.62	98.4	74096	
427.00 > 81.00	5.318	5.327	-0.009	0.999	1463121		1.69(0.81-2.43)	98.4	30485	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.331	5.334	-0.003	1.072	15544952	20.1	Target=3.16	106	609176	
449.00 > 99.00	5.331	5.334	-0.003	1.072	4874896		3.19(1.58-4.74)	106	446428	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.338	5.342	-0.004	1.000	17113435	20.8	Target=2.36	104	478128	
413.00 > 169.00	5.344	5.342	0.002	1.001	7185871		2.38(1.18-3.54)	104	558831	
D 22 13C8 PFOA										
421.00 > 376.00	5.338	5.345	-0.007		9190607	9.42		94.2	1887196	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.669	5.672	-0.003	1.000	16525585	20.2	Target=3.73	109	9924	
499.00 > 99.00	5.669	5.672	-0.003	1.000	4471239		3.70(1.87-5.60)	109	10398	
D 25 13C8 PFOS										
507.00 > 80.00	5.669	5.674	-0.005		7281850	8.99		94.0	257133	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.685	5.690	-0.005	1.000	17246095	21.0	Target=4.38	105	318866	
463.00 > 169.00	5.685	5.690	-0.005	1.000	3944666		4.37(2.19-6.56)	105	74263	
D 27 13C9 PFNA										
472.00 > 427.00	5.685	5.691	-0.006		9621503	9.46		94.6	290272	
66 7:3 FTCA										
441.00 > 317.00	5.783	5.788	-0.005	1.262	1746718	20.5	Target=10.71	103	30990	
441.00 > 337.00	5.783	5.788	-0.005	1.262	153625		11.37(5.36-16.07)	103	5867	
28 9ClFOS										
531.00 > 351.00	5.850	5.855	-0.005	1.032	33637060	18.5		99.4	1723627	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.973	5.978	-0.005	1.054	14803691	20.7	Target=3.28	108	177650	
549.00 > 99.00	5.973	5.978	-0.005	1.054	4426049		3.34(1.64-4.92)	108	187912	
33 8:2 FTS										
527.00 > 507.00	5.998	6.003	-0.005	0.999	3156765	20.0	Target=2.01	104	188509	
527.00 > 81.00	5.998	6.003	-0.005	0.999	1533647		2.06(1.01-3.02)	104	30883	
30 Perfluorodecanoic acid										
513.00 > 469.00	5.998	6.003	-0.005	1.000	18594387	21.4	Target=8.83	107	447608	
513.00 > 169.00	5.998	6.003	-0.005	1.000	2017807		9.22(4.41-13.24)	107	48777	
D 32 13C6 PFDA										
519.00 > 474.00	5.998	6.004	-0.006		9985231	9.24		92.4	339688	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.006	0.0		201703	9.01		94.1	15825	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.105	6.112	-0.007	1.000	24633627	18.9		94.6	1130599	
D 35 13C8 FOSA										
506.00 > 78.00	6.105	6.114	-0.009		12945364	10.0		100	599749	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.147	6.152	-0.005		2781479	9.88		98.8	29494	
36 NMeFOSAA										
570.00 > 419.00	6.147	6.153	-0.006	1.000	5172060	21.1	Target=1.81	105	183110	
570.00 > 483.00	6.147	6.153	-0.006	1.000	2804046		1.84(0.91-2.72)	105	4335	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.242	6.250	-0.008	1.101	16913660	21.0	Target=3.48	109	946228	
599.00 > 99.00	6.242	6.250	-0.008	1.101	4827737		3.50(1.74-5.22)	109	122703	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.271	6.278	-0.007	0.999	18149923	20.9	Target=8.25	105	160915	
563.00 > 169.00	6.271	6.278	-0.007	0.999	2197716		8.26(4.12-12.37)	105	98119	
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.282	-0.002		10552683	9.36		93.6	156352	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.290	6.296	-0.006		2045442	9.35		93.5	278573	
42 NEtFOSAA										
584.00 > 419.00	6.299	6.300	-0.001	1.001	4247834	21.9	Target=1.66	109	755036	
584.00 > 526.00	6.290	6.300	-0.010	1.000	2579073		1.65(0.83-2.49)	109	421186	
43 11ClFOS										
631.00 > 451.00	6.388	6.394	-0.006	1.127	30161234	19.6		106	1584480	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										
613.00 > 569.00	6.513	6.518	-0.005	0.999	20930024	20.5	Target=5.87	102	112384	
613.00 > 169.00	6.513	6.518	-0.005	0.999	3607899		5.80(2.94-8.81)	102	85352	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.523	-0.001		11612294	9.73		97.3	210142	
48 10:2 FTS										
627.00 > 607.00	6.531	6.535	-0.004	1.087	3948190	20.1	Target=1.77	104	116778	
627.00 > 81.00	6.531	6.535	-0.004	1.087	2197839		1.80(0.88-2.65)	104	86196	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.559	-0.002		1354046	9.95		99.5	7577	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.564	-0.007	1.000	2781843	20.7		103	27733	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.576	-0.002		1745468	10.1		101	7283	
50 NMeFOSA										
512.00 > 169.00	6.574	6.576	-0.002	1.000	3576234	20.2		101	11148	
53 PFDoS										
699.00 > 80.00	6.696	6.702	-0.006	1.181	15934851	20.3		105	775570	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.720	-0.006		1616211	9.85		98.5	4035	
52 N-EtFOSE-M										
630.00 > 59.00	6.723	6.729	-0.006	1.001	3071461	20.7		103	29994	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.731	6.733	-0.002	1.032	20180216	19.8	Target=5.56	98.9	75186	
663.00 > 169.00	6.723	6.733	-0.010	1.031	3674688		5.49(2.78-8.34)	98.9	89341	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.744	-0.004		1598059	10.1		101	11414	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.750	-0.002	1.001	3529505	20.2		101	12703	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.914	6.919	-0.005	0.999	20623152	20.3	Target=5.83	102	44558	
713.00 > 169.00	6.914	6.919	-0.005	0.999	3547696		5.81(2.92-8.75)	102	87626	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.922	-0.001		11709816	9.71		97.1	255784	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.235	7.241	-0.006	1.045	15190935	20.0	Target=6.08	100	55492	
813.00 > 169.00	7.235	7.241	-0.006	1.045	2537808		5.99(3.04-9.12)	100	67037	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.489	7.495	-0.006	1.082	10862183	21.1	Target=7.30	105	59441	
913.00 > 169.00	7.489	7.495	-0.006	1.082	1495044		7.27(3.65-10.94)	105	41939	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD5_00014 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:26:30 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-45.d

Injection Date: 03-Apr-2022 17:55:03 Instrument ID: 29347

Lims ID: IC CAL 5

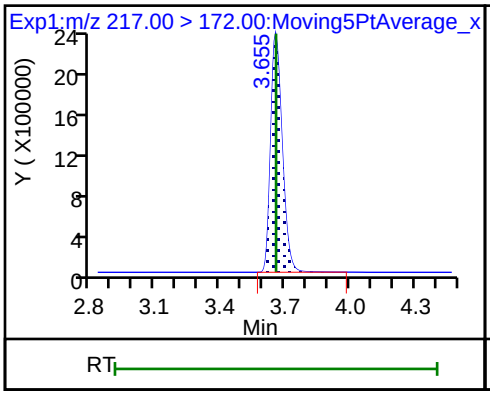
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20006 Worklist Smp#: 5

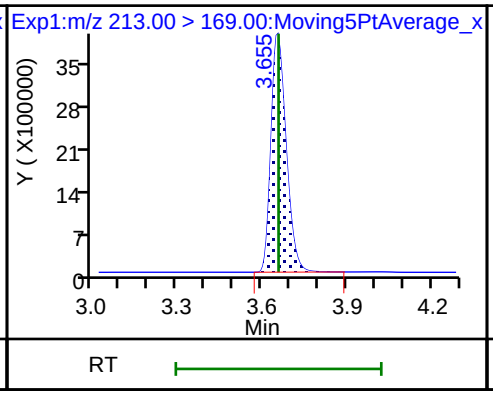
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

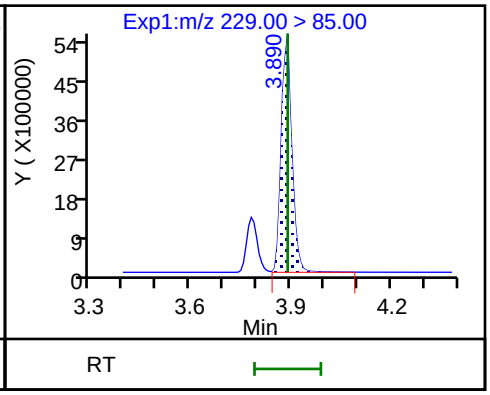
D 2 13C4 PFBA



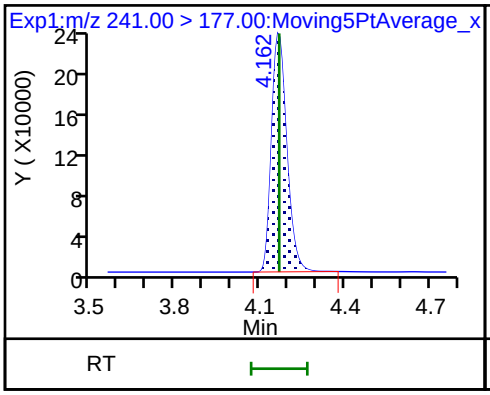
1 Perfluorobutanoic acid



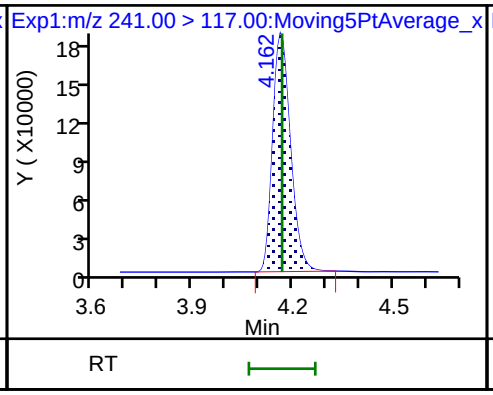
63 PFECA F



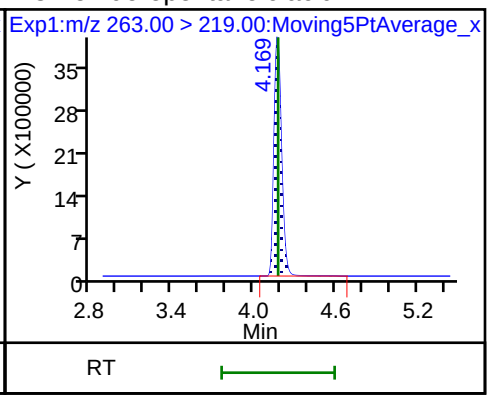
67 3:3 FTCA



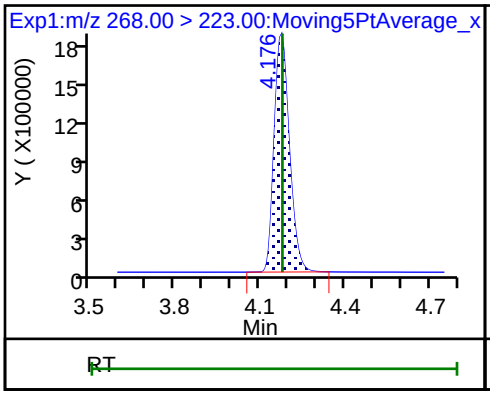
67 3:3 FTCA



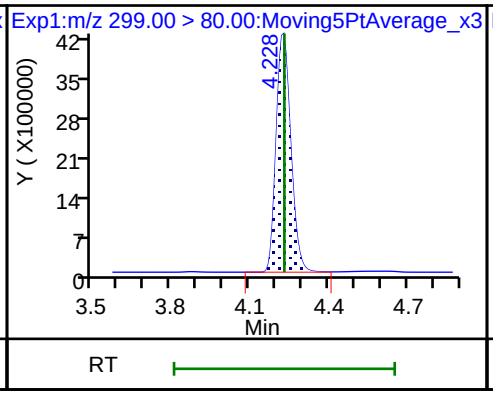
3 Perfluoropentanoic acid



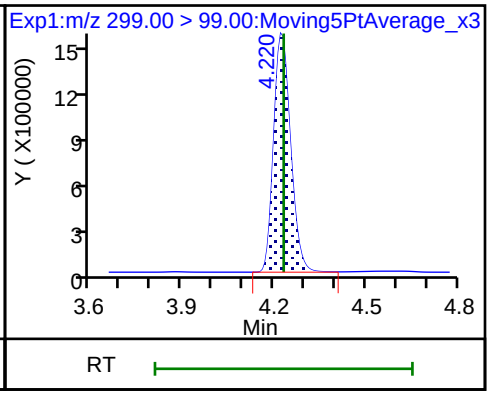
D 4 13C5 PFPeA



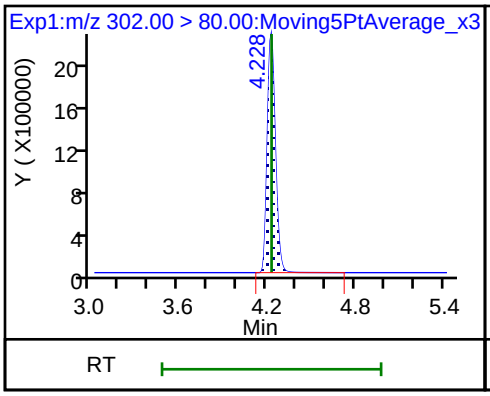
5 Perfluorobutanesulfonic acid



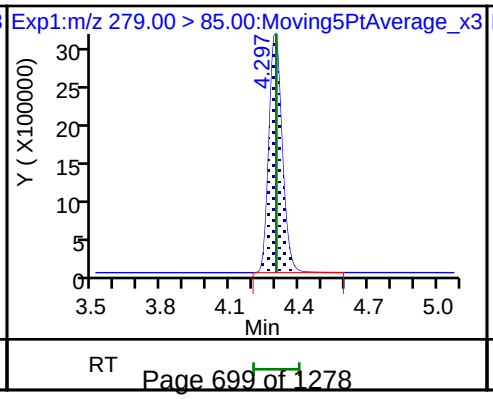
5 Perfluorobutanesulfonic acid



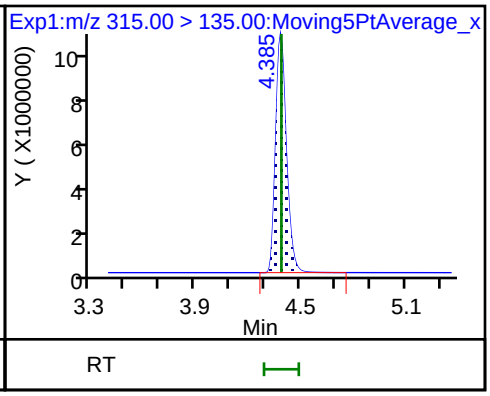
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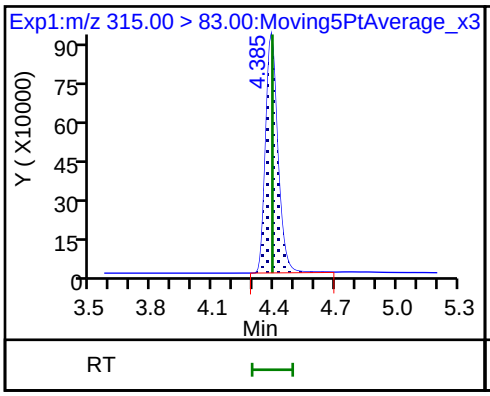
64 PFECA A



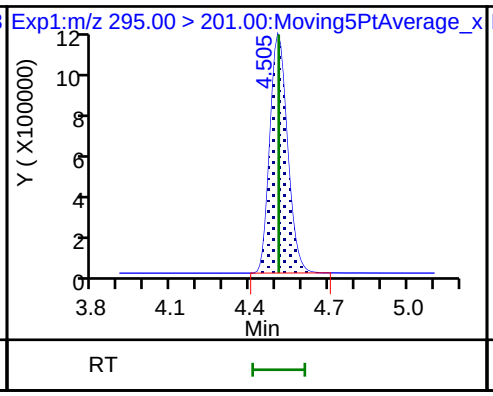
65 PES



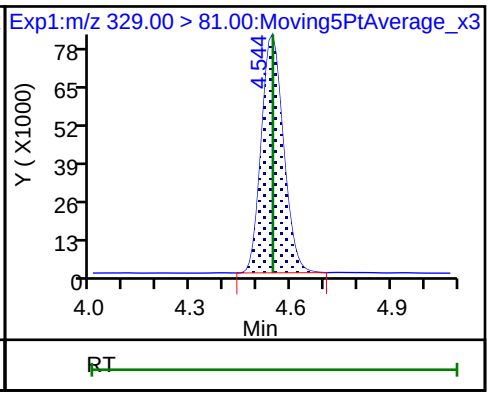
65 PES



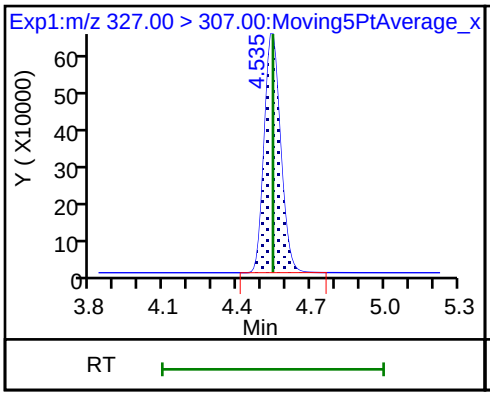
68 PFECA B



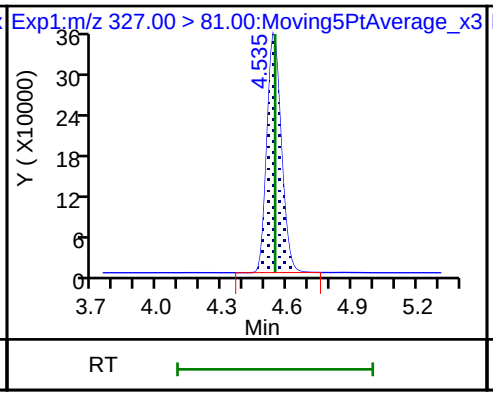
D 8 M2-4:2 FTS



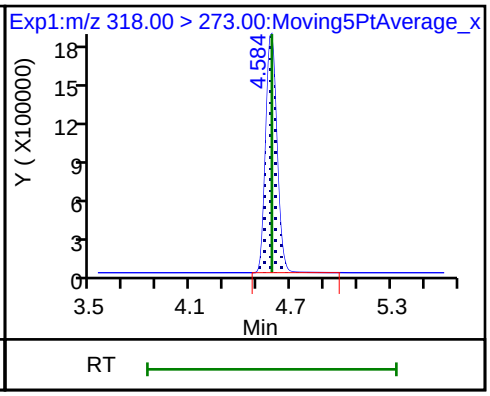
7 4:2 FTS



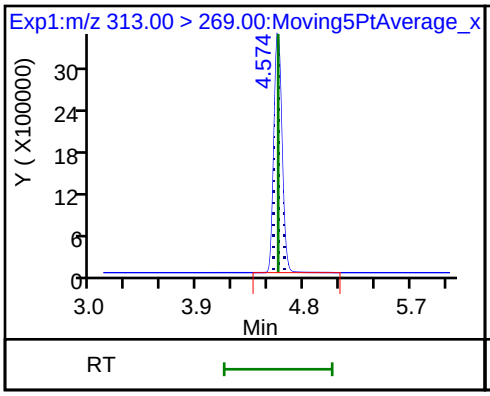
7 4:2 FTS



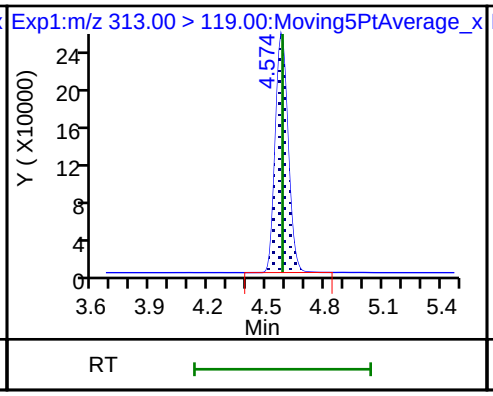
D 9 13C5 PFHxA



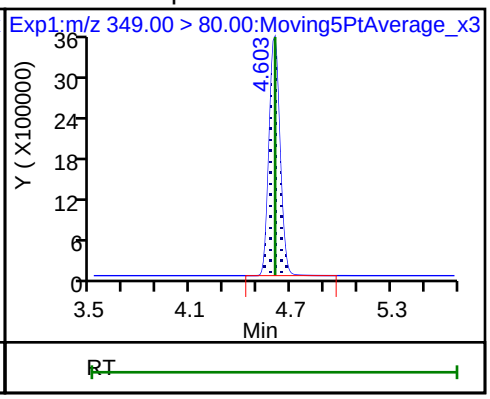
10 Perfluorohexanoic acid



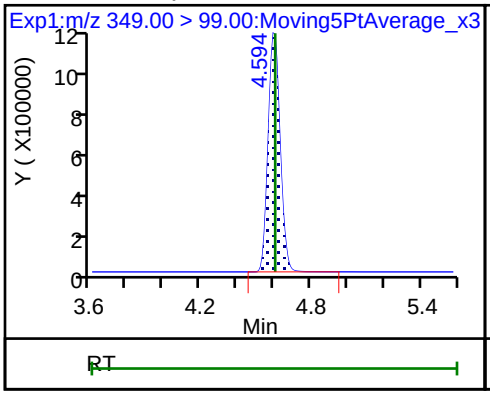
10 Perfluorohexanoic acid



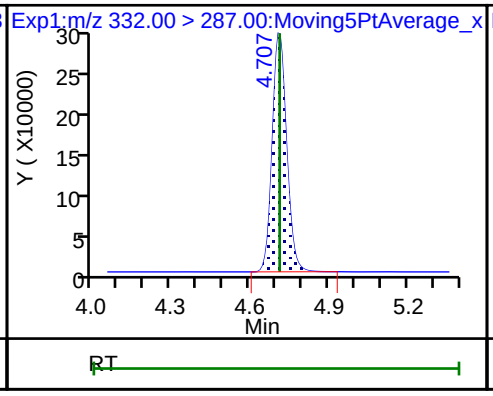
11 Perfluoropentanesulfonic acid



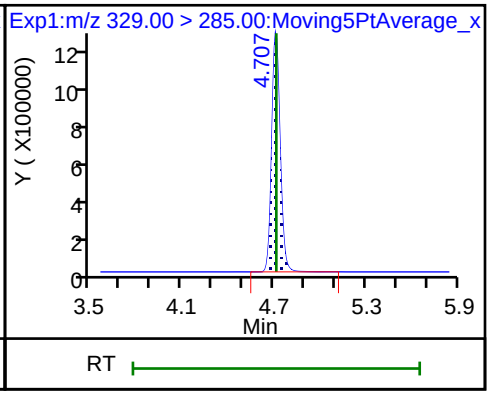
11 Perfluoropentanesulfonic acid



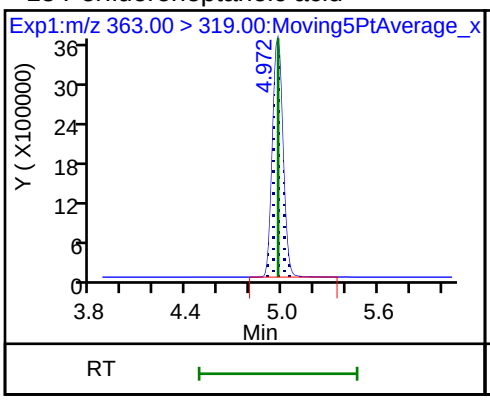
D 13 13C3 HFPO-DA



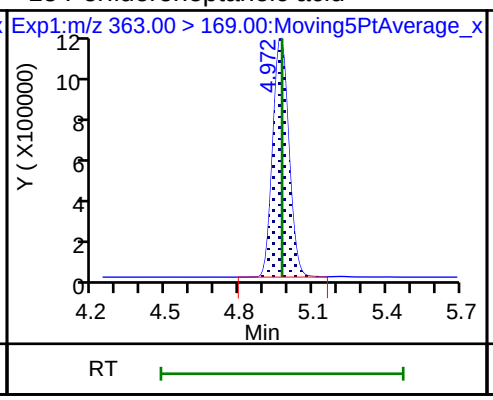
12 HFPO-DA



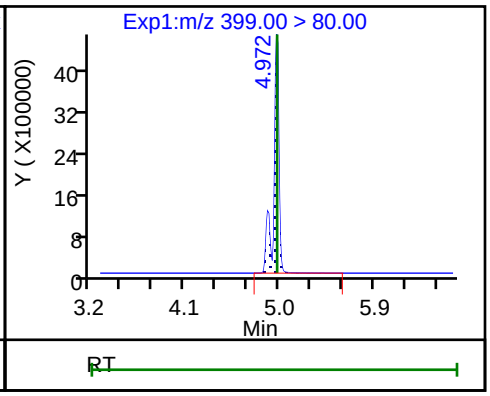
15 Perfluoroheptanoic acid



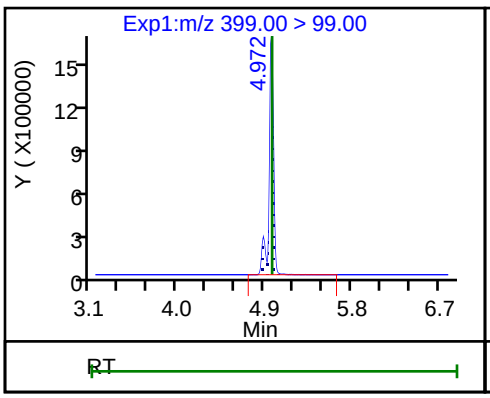
15 Perfluoroheptanoic acid



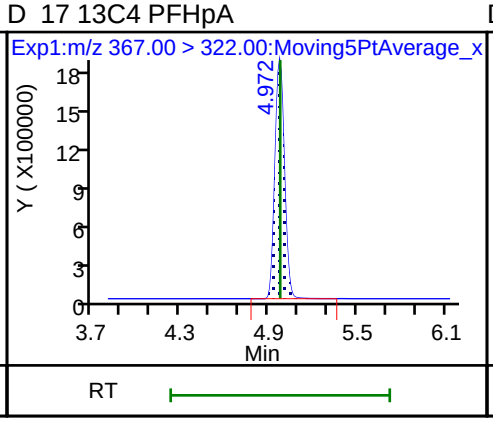
14 Perfluorohexanesulfonic acid



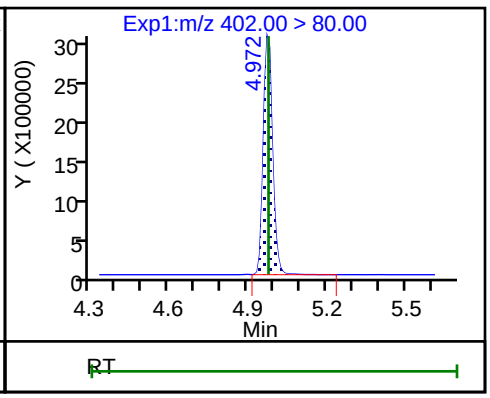
14 Perfluorohexanesulfonic acid



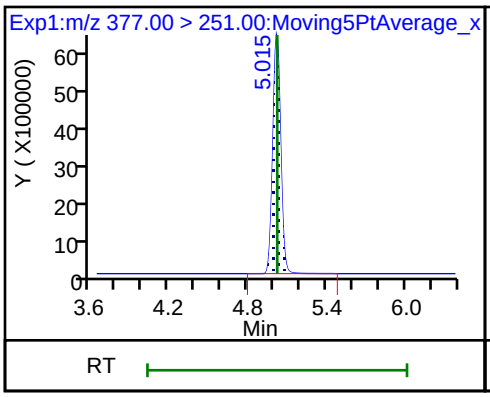
D 17 13C4 PFHpA



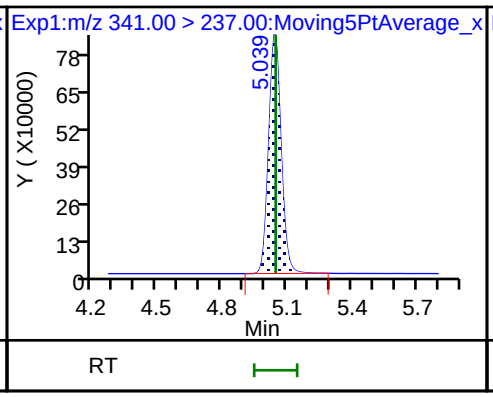
D 16 13C3 PFHxS



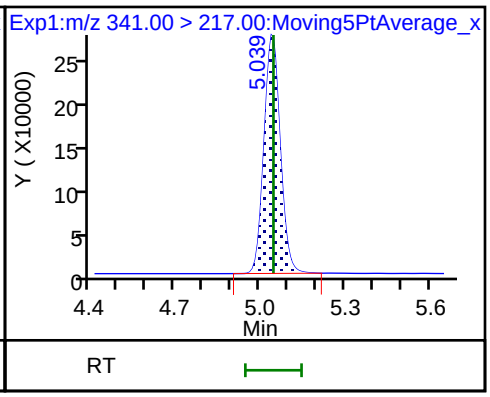
18 DONA



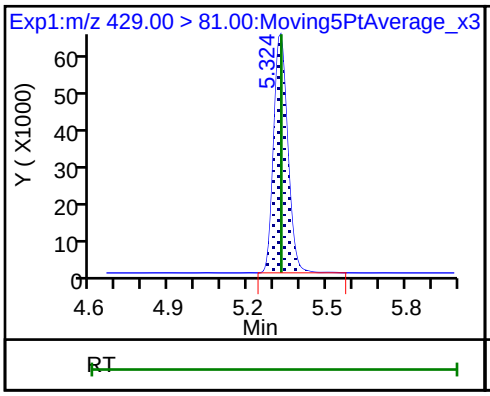
62 5:3 FTCA



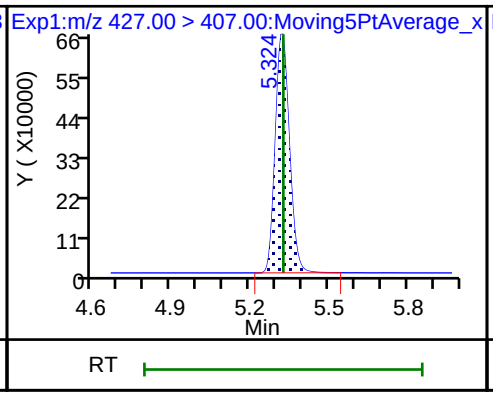
62 5:3 FTCA



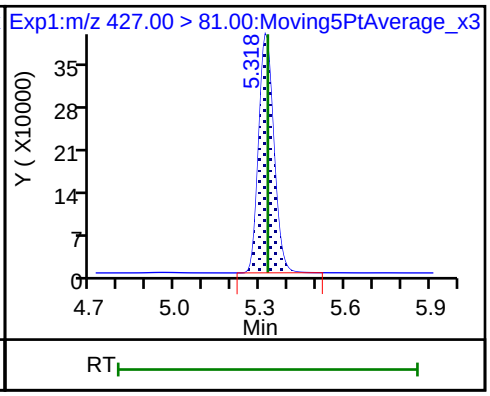
D 20 M2-6:2 FTS



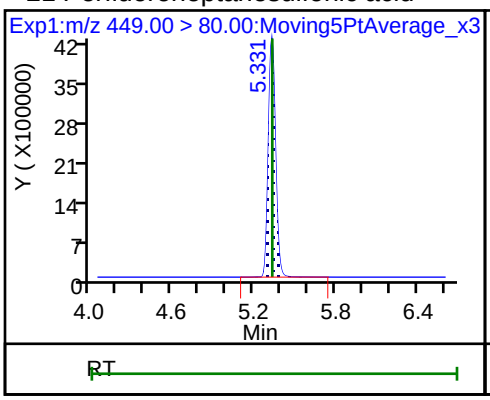
19 6:2 FTS



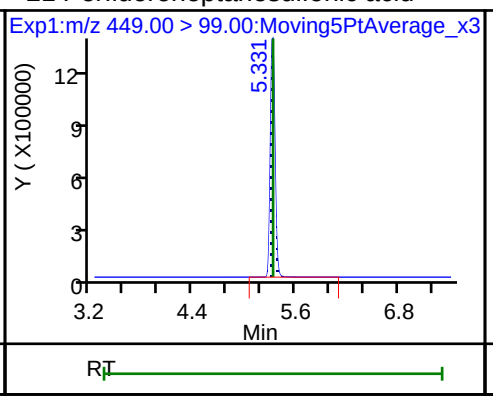
19 6:2 FTS



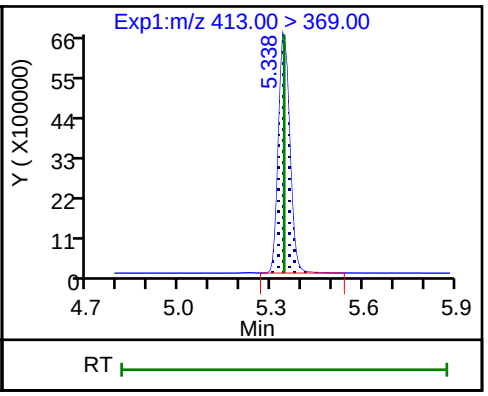
21 Perfluoroheptanesulfonic acid



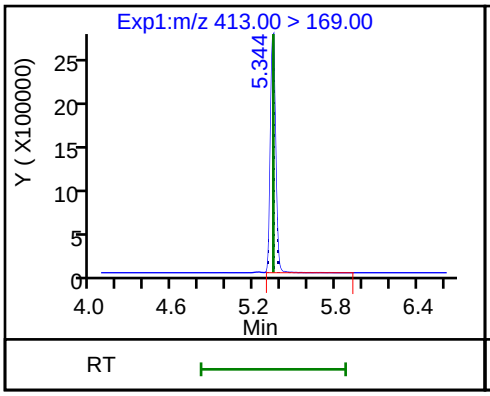
21 Perfluoroheptanesulfonic acid



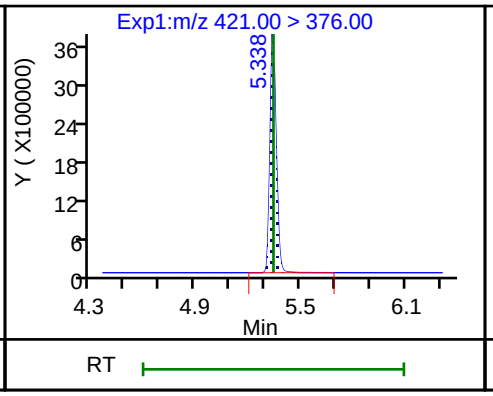
23 Perfluorooctanoic acid



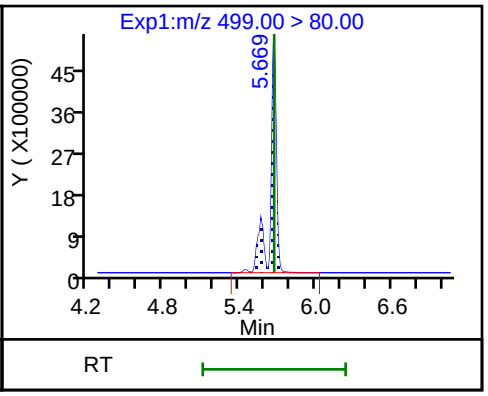
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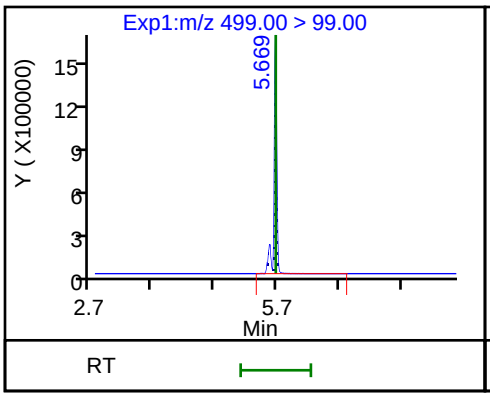
D 22 13C8 PFOA



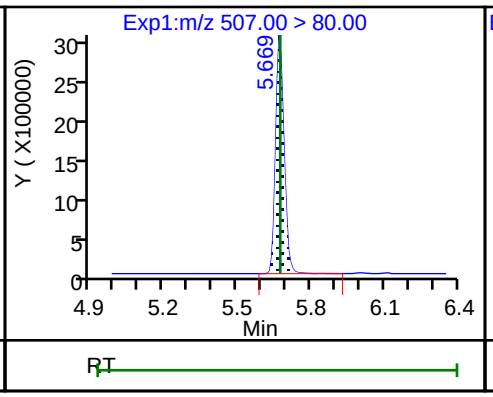
24 Perfluorooctanesulfonic acid



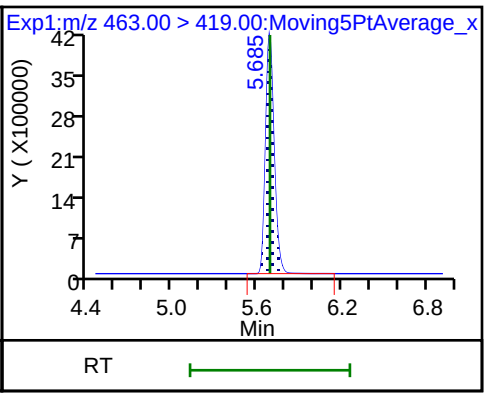
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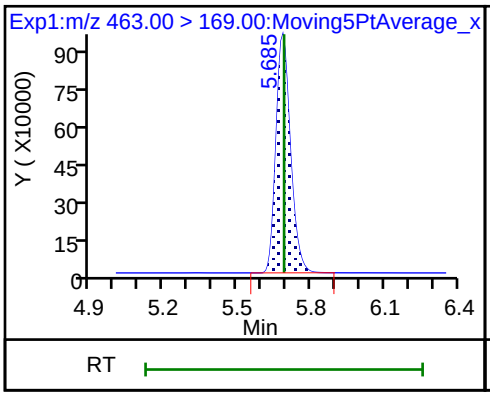
D 25 13C8 PFOS



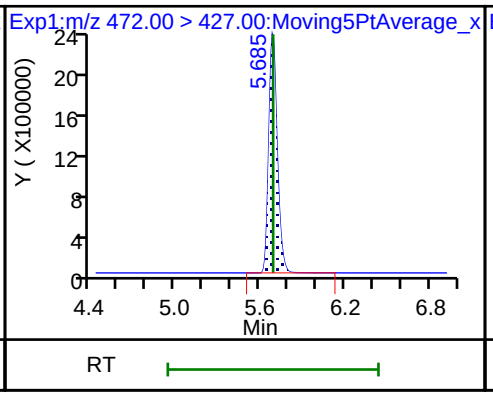
26 Perfluorononanoic acid



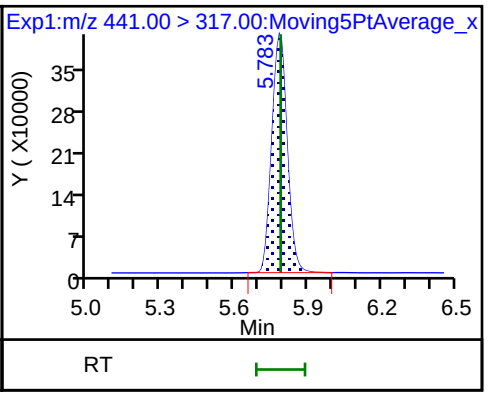
26 Perfluorononanoic acid



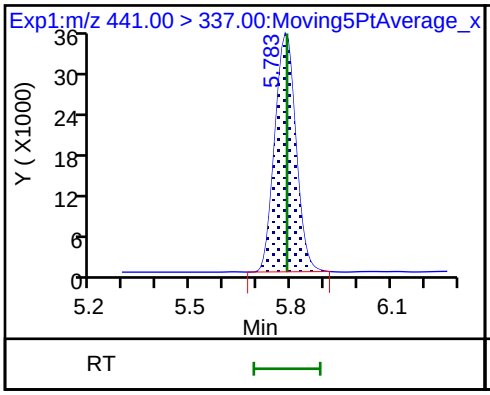
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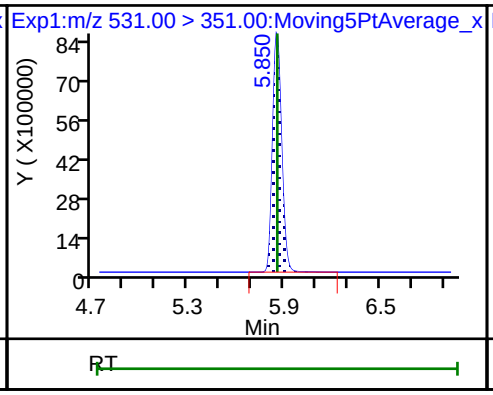
66 7:3 FTCA



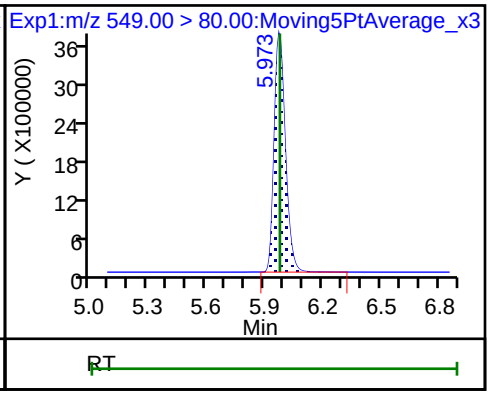
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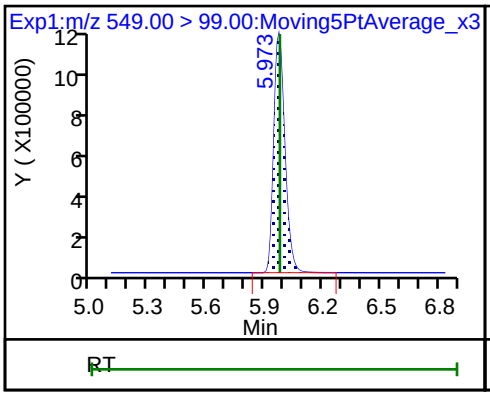
28 9ClFOS



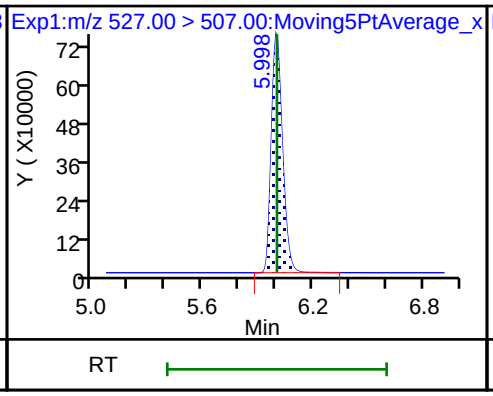
29 Perfluorononanesulfonic acid



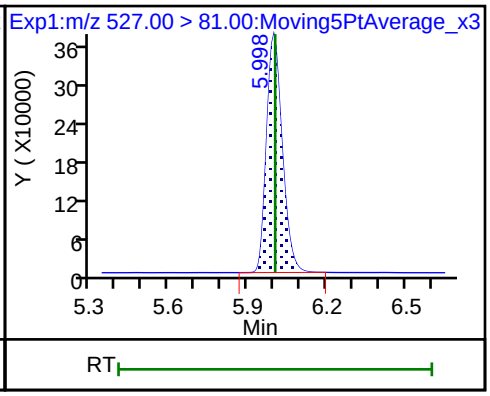
29 Perfluorononanesulfonic acid



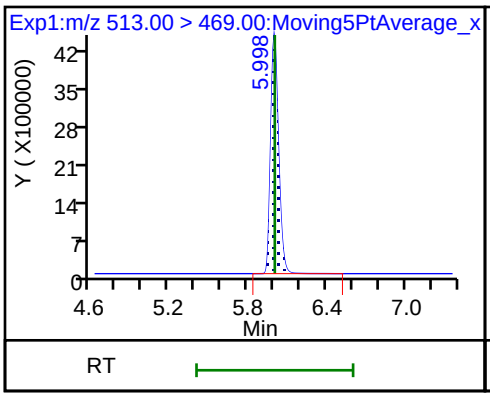
33 8:2 FTS



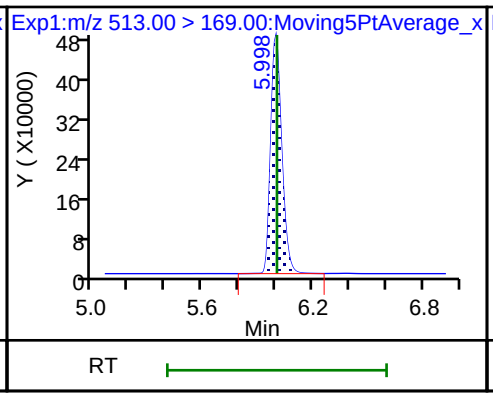
33 8:2 FTS



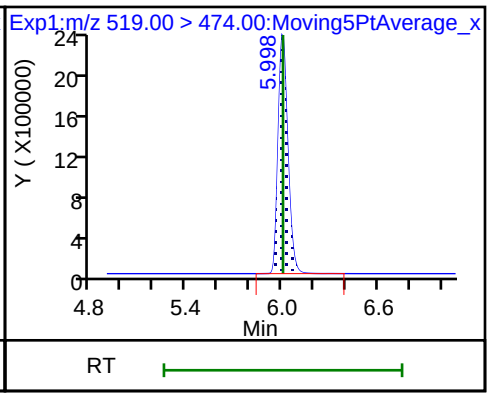
30 Perfluorodecanoic acid



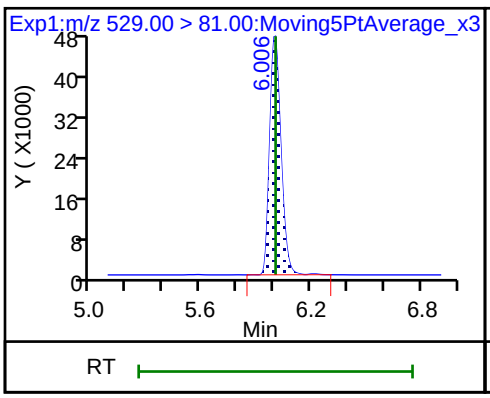
30 Perfluorodecanoic acid



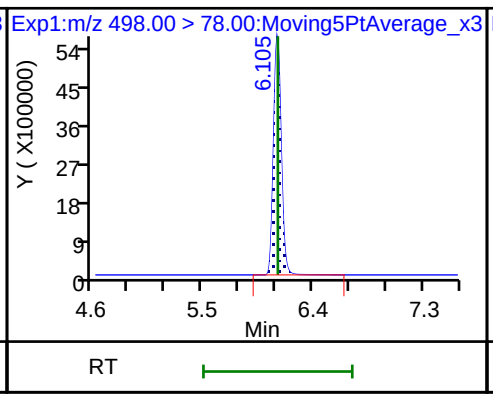
D 32 13C6 PFDA



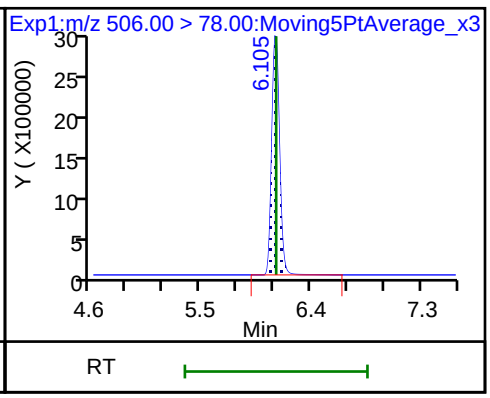
D 31 M2-8:2 FTS



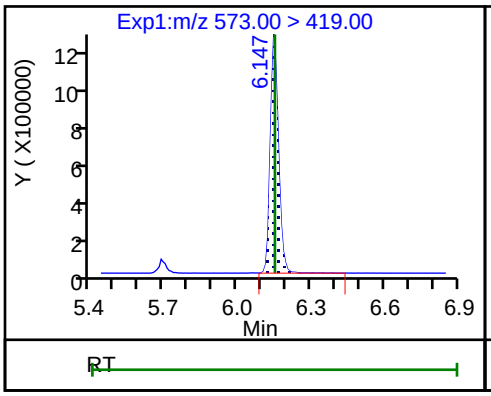
34 Perfluorooctanesulfonamide



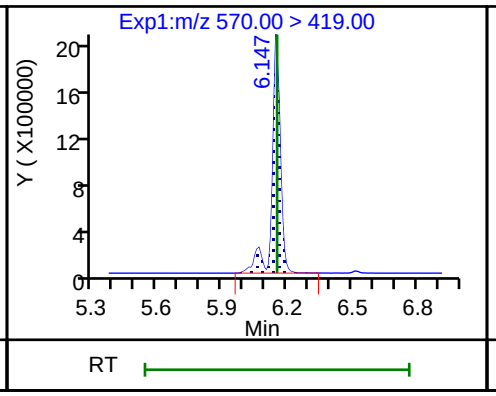
D 35 13C8 FOSA



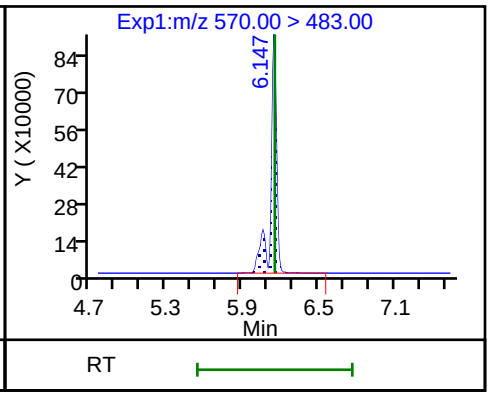
D 37 d3-NMeFOSAA



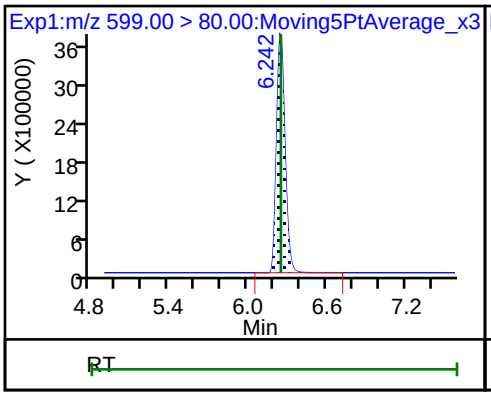
36 NMeFOSAA



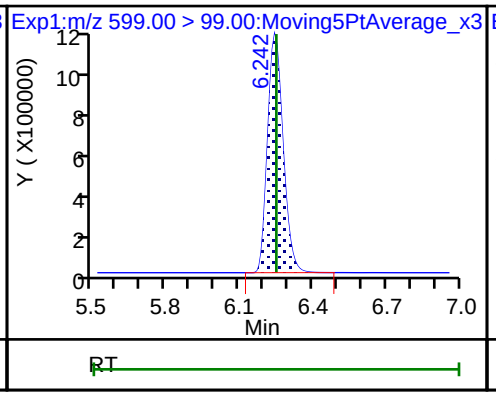
36 NMeFOSAA



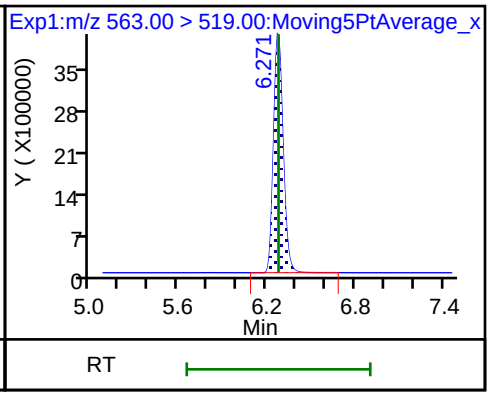
38 Perfluorodecanesulfonic acid



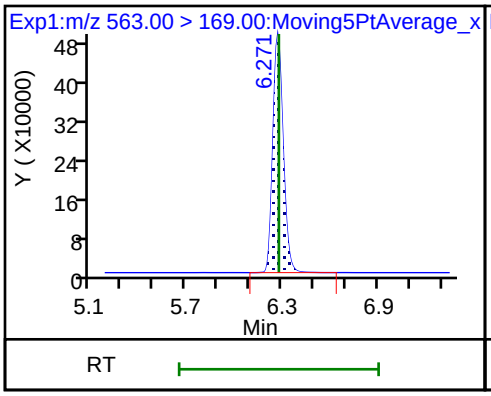
38 Perfluorodecanesulfonic acid



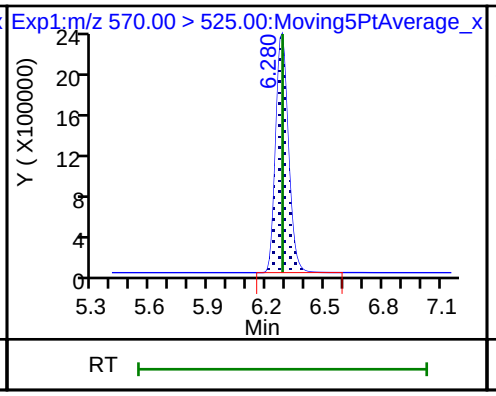
39 Perfluoroundecanoic acid



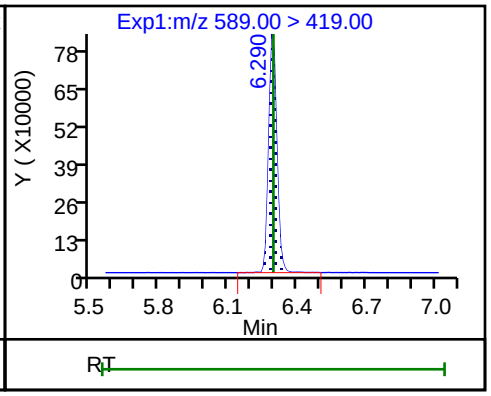
39 Perfluoroundecanoic acid



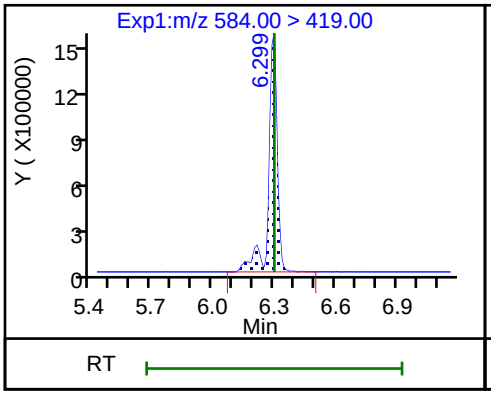
D 40 13C7 PFUnA



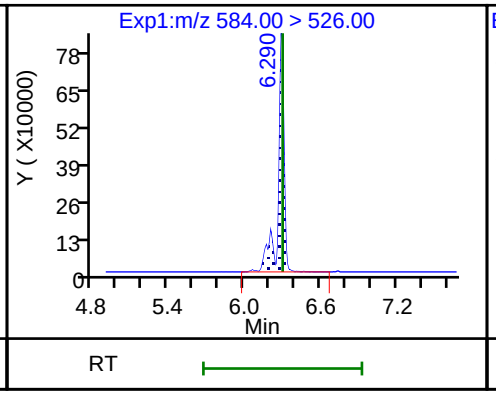
D 41 d5-NEtFOSAA



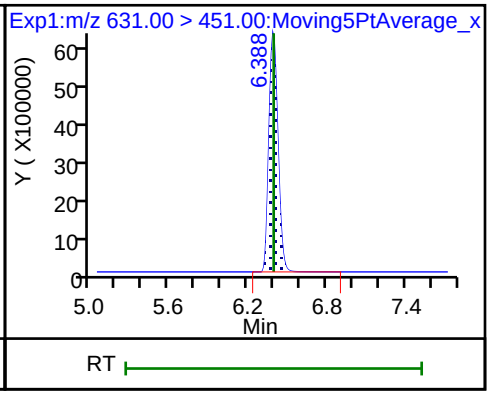
42 NEtFOSAA



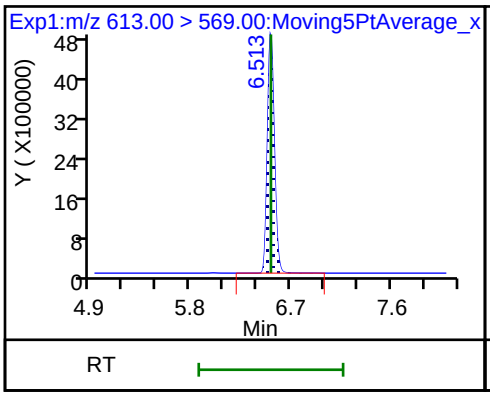
42 NEtFOSAA



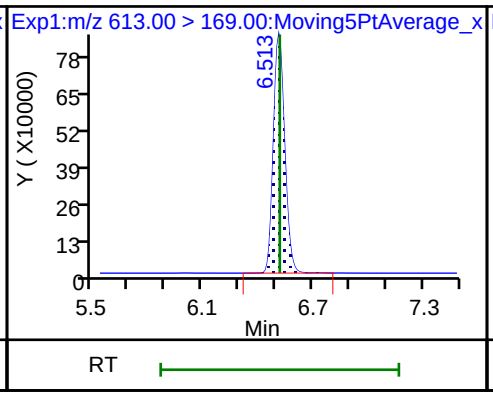
43 11ClFOS



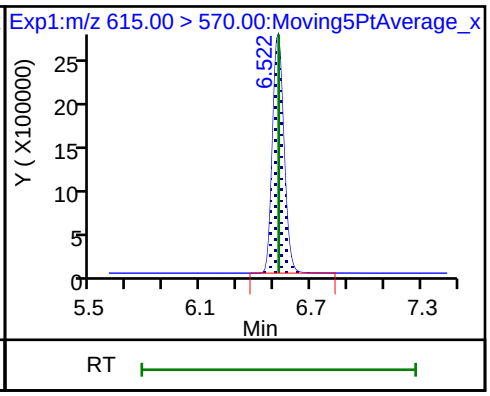
46 Perfluorododecanoic acid



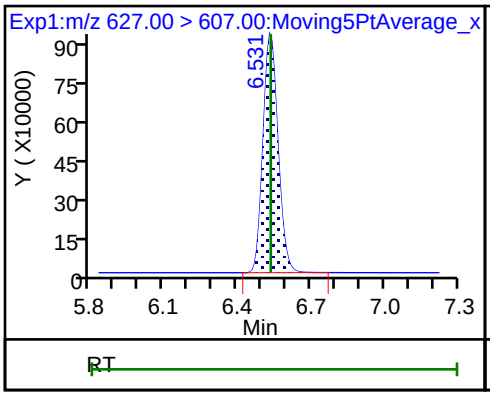
46 Perfluorododecanoic acid



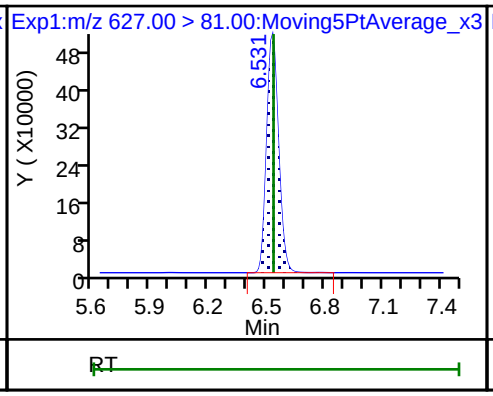
D 45 13C2-PFDoDA



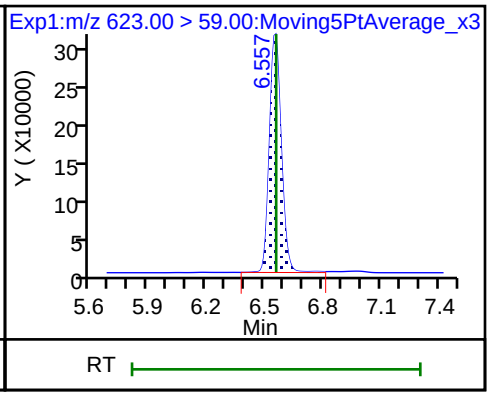
48 10:2 FTS



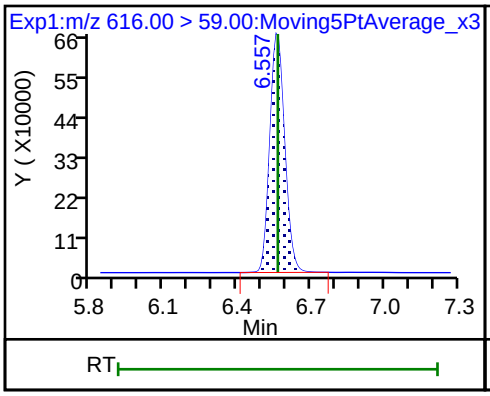
48 10:2 FTS



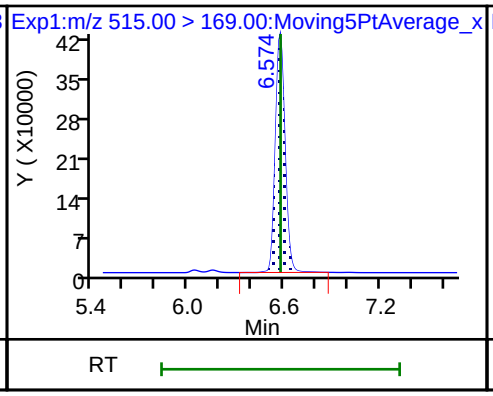
D 44 d7-N-MeFOSE-M



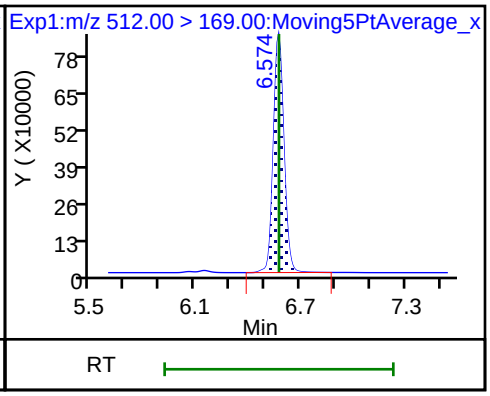
47 N-MeFOSE-M



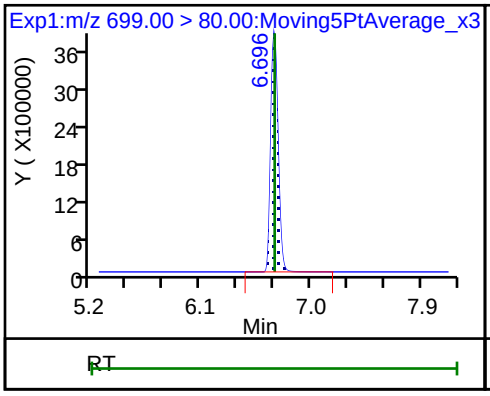
D 49 d3-NMePFOSA



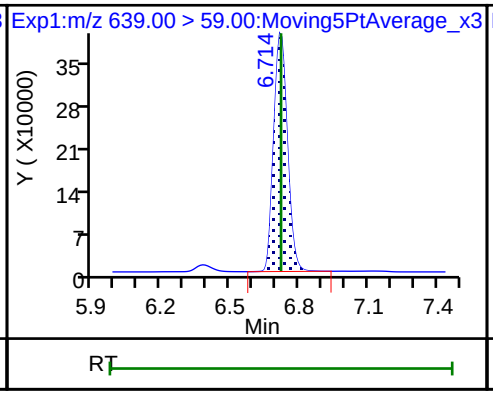
50 NMeFOSA



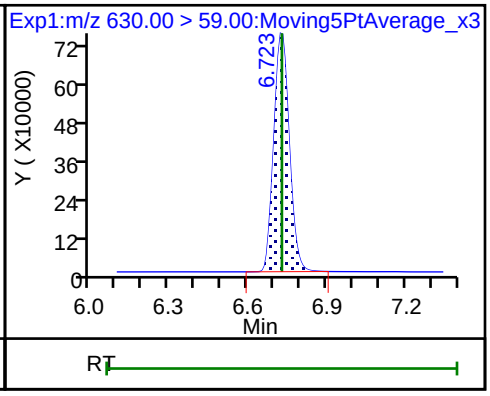
53 PFDoS



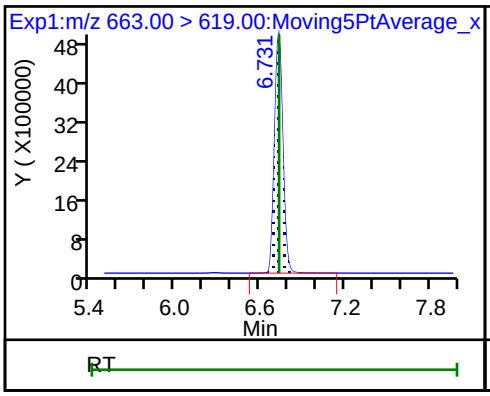
D 51 d9-N-EtFOSE-M



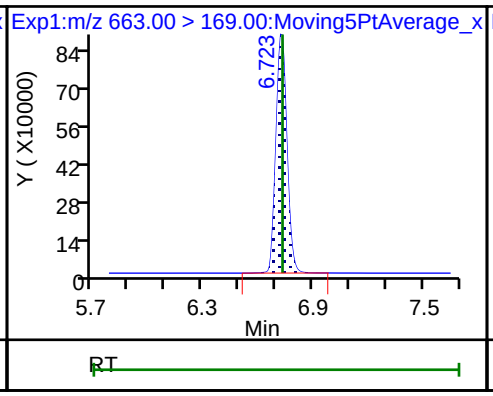
52 N-EtFOSE-M



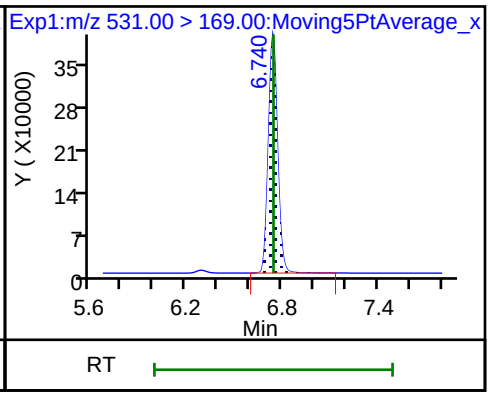
56 Perfluorotridecanoic acid



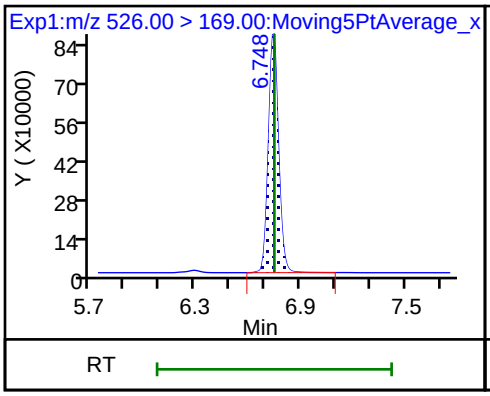
56 Perfluorotridecanoic acid



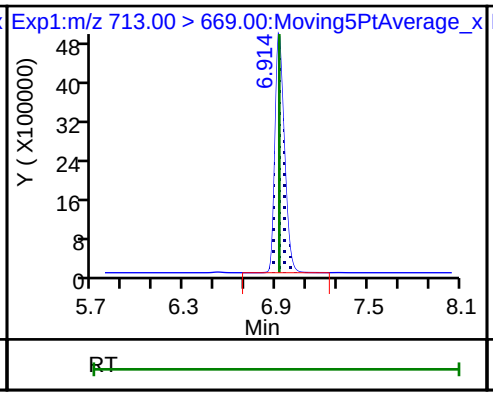
D 54 d5-NEtPFOSA



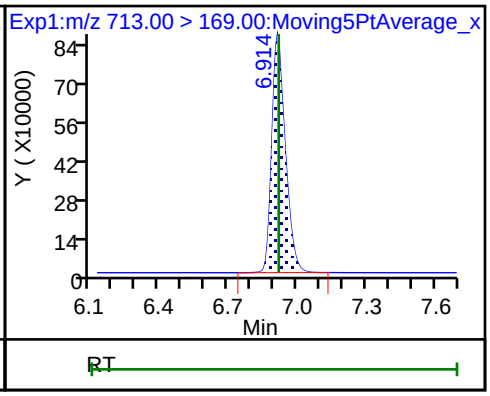
55 N-EtFOSA-M



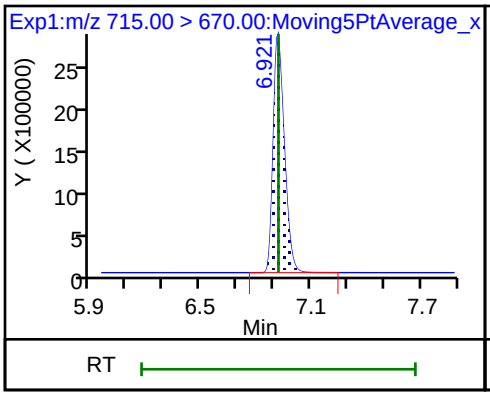
57 Perfluorotetradecanoic acid



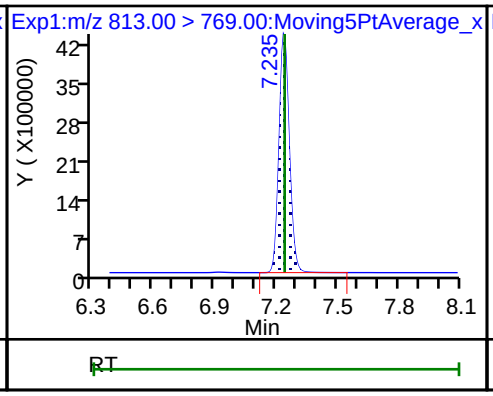
57 Perfluorotetradecanoic acid



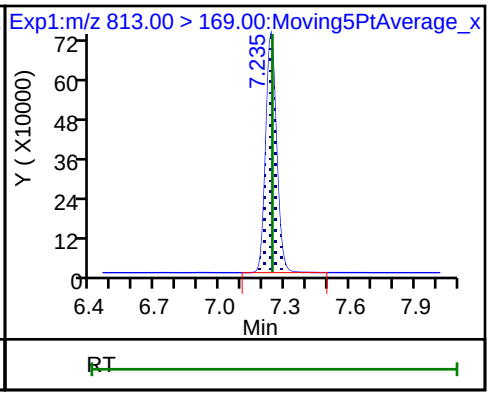
D 58 13C2 PFTeDA



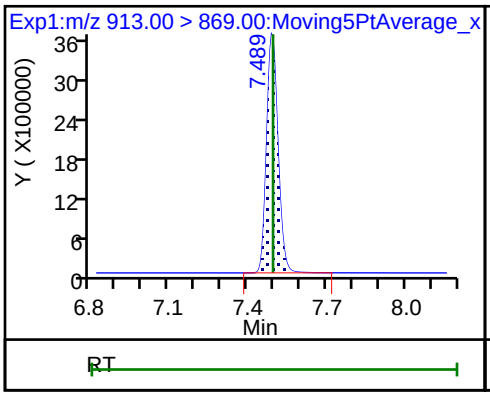
59 Perfluorohexadecanoic acid



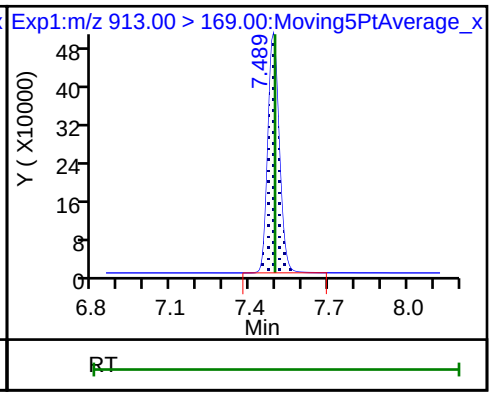
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-46.d
Lims ID: IC CAL 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 03-Apr-2022 18:05:40 ALS Bottle#: 20007 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 6
Misc. Info.: Plate: 1 Rack: 1 410-0053897-006
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:35 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:11:16
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.655	3.658	-0.003	1.000	31999492	47.1		94.3	49915	
D 2 13C4 PFBA										
217.00 > 172.00	3.655	3.658	-0.003		8136364	9.36		93.6	135177	
63 PFECA F										
229.00 > 85.00	3.890	3.890	0.0	0.931	26032392	48.5		97.1	8170	
67 3:3 FTCA										
241.00 > 177.00	4.169	4.167	0.002	0.998	2128700	54.3	Target=1.30	109	56113	
241.00 > 117.00	4.169	4.167	0.002	0.998	1638356		1.30(0.65-1.94)	109	28888	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.176	4.177	-0.001	1.000	31797742	46.9		93.7	277382	
D 4 13C5 PFPeA										
268.00 > 223.00	4.176	4.178	-0.002		6589192	9.07		90.7	63091	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.228	4.230	-0.002	1.000	32866404	39.3	Target=2.82	88.9	25451	
299.00 > 99.00	4.228	4.230	-0.002	1.000	12820048		2.56(1.41-4.23)	88.9	29098	
D 6 13C3 PFBS										
302.00 > 80.00	4.228	4.230	-0.002		8089225	8.61		92.5	420763	
64 PFECA A										
279.00 > 85.00	4.297	4.300	-0.003	1.029	26282352	48.2		96.3	131359	
65 PES										
315.00 > 135.00	4.393	4.390	0.003	0.958	61620611	22.7	Target=14.82	50.9	343983	
315.00 > 83.00	4.385	4.390	-0.005	0.957	9026983		6.83(7.41-22.22)	50.9	18014	
68 PFECA B										
295.00 > 201.00	4.505	4.509	-0.004	0.983	10894510	48.3		96.6	79431	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.544	4.544	0.0	1.000	6464128	46.8	Target=1.61	100	470192	
327.00 > 81.00	4.544	4.544	0.0	1.000	3496093		1.85(0.81-2.42)	100	76309	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.544	4.545	-0.001		341526	8.41		90.1	9486	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.584	4.582	0.002	1.000	32115474	46.0	Target=13.95	92.1	531796	
313.00 > 119.00	4.584	4.582	0.002	1.000	2408354		13.34(6.97-20.92)	92.1	87024	
D 9 13C5 PFHxA										
318.00 > 273.00	4.584	4.585	-0.001		7974766	8.99		89.9	194719	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.603	4.604	-0.001	1.089	31943932	41.5	Target=2.93	88.6	2377206	
349.00 > 99.00	4.603	4.604	-0.001	1.089	11626268		2.75(1.47-4.40)	88.6	523784	
12 HFPO-DA										
329.00 > 285.00	4.714	4.712	0.002	1.000	10981796	50.1		100	722271	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.714	4.712	0.002		1035193	9.37		93.7	69167	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.972	4.973	-0.001	1.000	30345921	45.5	Target=3.12	91.0	334728	
363.00 > 169.00	4.972	4.973	-0.001	1.000	10305050		2.94(1.56-4.69)	91.0	32680	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.972	4.976	-0.004	0.998	30115989	46.4	Target=2.99	102	2919212	
399.00 > 99.00	4.972	4.976	-0.004	0.998	10217577		2.95(1.49-4.48)	102	23304	
D 17 13C4 PFHpA										
367.00 > 322.00	4.972	4.976	-0.004		6985514	7.86		78.6	82727	
D 16 13C3 PFHxS										
402.00 > 80.00	4.982	4.977	0.005		6310415	7.53		79.6	636638	
18 DONA										
377.00 > 251.00	5.024	5.021	0.003	1.010	47525038	41.4		87.7	1393533	
62 5:3 FTCA										
341.00 > 237.00	5.046	5.047	-0.001	1.101	7357079	48.0	Target=3.15	95.9	33680	
341.00 > 217.00	5.046	5.047	-0.001	1.101	2339811		3.14(1.57-4.72)	95.9	20278	
19 6:2 FTS										
427.00 > 407.00	5.324	5.327	-0.003	1.000	5351327	49.9	Target=1.62	105	204566	
427.00 > 81.00	5.324	5.327	-0.003	1.000	3144917		1.70(0.81-2.43)	105	42549	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.324	5.327	-0.003		195315	7.64		80.5	13172	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.331	5.334	-0.003	1.070	31574779	48.7	Target=3.16	102	1189052	
449.00 > 99.00	5.331	5.334	-0.003	1.070	10596115		2.98(1.58-4.74)	102	951560	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.345	5.342	0.003	1.000	33770677	45.5	Target=2.36	91.1	668976	
413.00 > 169.00	5.345	5.342	0.003	1.000	15541910		2.17(1.18-3.54)	91.1	2864703	
D 22 13C8 PFOA										
421.00 > 376.00	5.345	5.345	0.0		8286261	8.49		84.9	648571	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.669	5.672	-0.003	0.999	35687900	45.5	Target=3.73	98.3	64958	
499.00 > 99.00	5.669	5.672	-0.003	0.999	10175312		3.51(1.87-5.60)	98.3	21321	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.674	0.003		6984762	8.62		90.2	135866	
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.691	0.002		8954194	8.80		88.0	306071	
26 Perfluorononanoic acid										
463.00 > 419.00	5.693	5.690	0.003	1.000	36035526	47.3	Target=4.38	94.5	769688	
463.00 > 169.00	5.685	5.690	-0.005	0.999	8619437		4.18(2.19-6.56)	94.5	98735	
66 7:3 FTCA										
441.00 > 317.00	5.791	5.788	0.003	1.263	3932718	49.2	Target=10.71	98.5	37540	
441.00 > 337.00	5.791	5.788	0.003	1.263	328250		11.98(5.36-16.07)	98.5	12431	
28 9ClFOS										
531.00 > 351.00	5.857	5.855	0.002	1.032	56691084	32.5		69.9	2295040	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.982	5.978	0.004	1.054	31301144	45.7	Target=3.28	95.2	319124	
549.00 > 99.00	5.973	5.978	-0.005	1.052	9902710		3.16(1.64-4.92)	95.2	355706	
D 32 13C6 PFDA										
519.00 > 474.00	6.006	6.004	0.002		9129639	8.45		84.5	432786	
33 8:2 FTS										
527.00 > 507.00	6.006	6.003	0.003	1.000	6565483	48.3	Target=2.01	101	384182	
527.00 > 81.00	5.998	6.003	-0.005	0.999	3097880		2.12(1.01-3.02)	101	90660	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.006	6.003	0.003	1.000	36624334	46.2	Target=8.83	92.3	944138	
513.00 > 169.00	5.998	6.003	-0.005	0.999	4485294		8.17(4.41-13.24)	92.3	76774	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.006	0.0		173810	7.77		81.1	10184	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.114	6.112	0.002	1.000	48998054	39.9		79.7	1556697	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.114	0.0		12230073	9.45		94.5	221428	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.152	0.003		2676956	9.51		95.1	19557	
36 NMeFOSAA										
570.00 > 419.00	6.155	6.153	0.002	1.000	11678997	49.4	Target=1.81	98.9	394443	
570.00 > 483.00	6.147	6.153	-0.006	0.999	6475122		1.80(0.91-2.72)	98.9	417302	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.252	6.250	0.002	1.101	35271098	45.7	Target=3.48	94.8	2627192	
599.00 > 99.00	6.243	6.250	-0.007	1.100	10766698		3.28(1.74-5.22)	94.8	185725	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.280	6.278	0.002	1.000	34938518	45.3	Target=8.25	90.7	362965	
563.00 > 169.00	6.271	6.278	-0.007	0.999	4749049		7.36(4.12-12.37)	90.7	174939	
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.282	-0.002		9371080	8.31		83.1	230923	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.296	0.003		1915779	8.75		87.5	195163	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.299	6.300	-0.001	1.000	8979265	49.4	Target=1.66	98.8	1025992	
584.00 > 526.00	6.299	6.300	-0.001	1.000	5761701		1.56(0.83-2.49)	98.8	653062	
43 11ClFOS										
631.00 > 451.00	6.399	6.394	0.005	1.127	52288229	35.5		76.3	2119295	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.522	6.518	0.004	1.000	40026018	44.2	Target=5.87	88.5	222768	
613.00 > 169.00	6.513	6.518	-0.005	0.999	7720263		5.18(2.94-8.81)	88.5	297927	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.523	-0.001		10284705	8.62		86.2	482851	
48 10:2 FTS										
627.00 > 607.00	6.540	6.535	0.005	1.089	8646380	51.0	Target=1.77	106	202833	
627.00 > 81.00	6.531	6.535	-0.004	1.087	4793156		1.80(0.88-2.65)	106	159475	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.559	-0.002		1292072	9.50		95.0	6173	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.564	0.002	1.001	6740947	52.5		105	55847	
50 NMeFOSA										
512.00 > 169.00	6.575	6.576	-0.001	1.000	8797913	50.7		101	13198	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.575	6.576	-0.001		1712688	9.94		99.4	6108	
53 PFDoS										
699.00 > 80.00	6.705	6.702	0.003	1.181	33282379	44.2		91.3	1595577	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.720	0.003		1441193	8.78		87.8	2093	
52 N-EtFOSE-M										
630.00 > 59.00	6.732	6.729	0.003	1.001	7027544	53.0		106	52343	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.732	6.733	-0.001	1.032	38241889	42.3	Target=5.56	84.6	166543	
663.00 > 169.00	6.732	6.733	-0.001	1.032	7785003		4.91(2.78-8.34)	84.6	381394	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.748	6.744	0.004		1528864	9.70		97.0	13095	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.750	-0.002	1.000	8388749	50.2		100	14453	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.919	0.002	1.000	41339664	43.4	Target=5.83	86.7	81575	
713.00 > 169.00	6.921	6.919	0.002	1.000	8177290		5.06(2.92-8.75)	86.7	178584	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.922	-0.001		10995088	9.12		91.2	237697	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.241	0.0	1.046	31680420	44.5	Target=6.08	89.1	144759	
813.00 > 169.00	7.241	7.241	0.0	1.046	5749014		5.51(3.04-9.12)	89.1	137947	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.495	-0.001	1.083	23697607	49.0	Target=7.30	98.0	57744	
913.00 > 169.00	7.494	7.495	-0.001	1.083	3493363		6.78(3.65-10.94)	98.0	68383	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD6_00014 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:26:36 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-46.d

Injection Date: 03-Apr-2022 18:05:40 Instrument ID: 29347

Lims ID: IC CAL 6

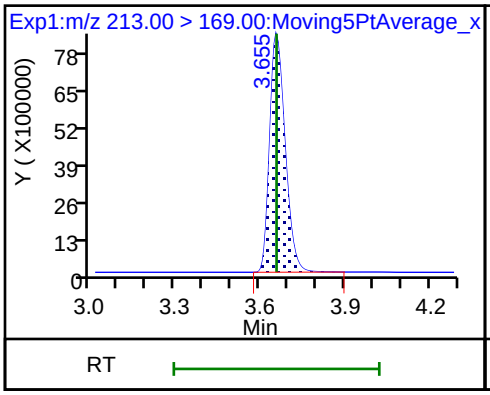
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20007 Worklist Smp#: 6

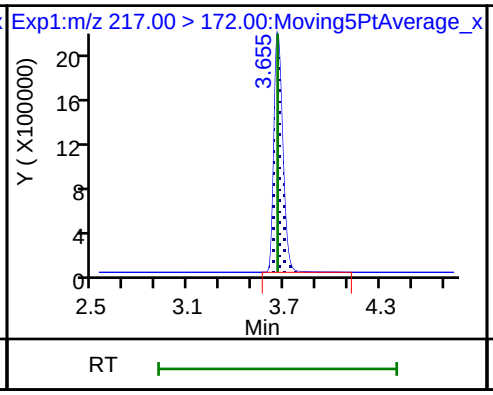
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

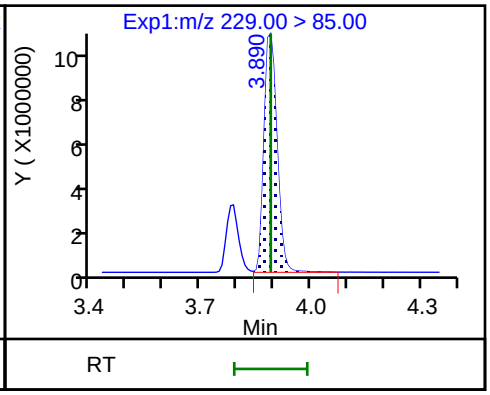
1 Perfluorobutanoic acid



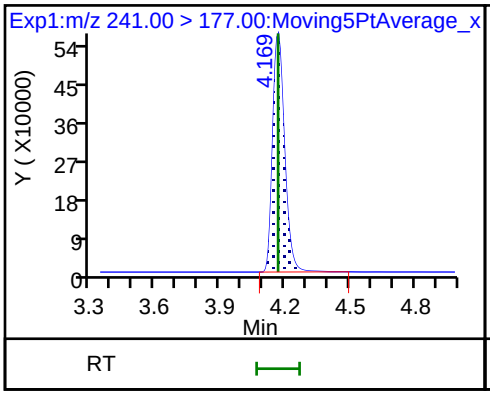
D 2 13C4 PFBA



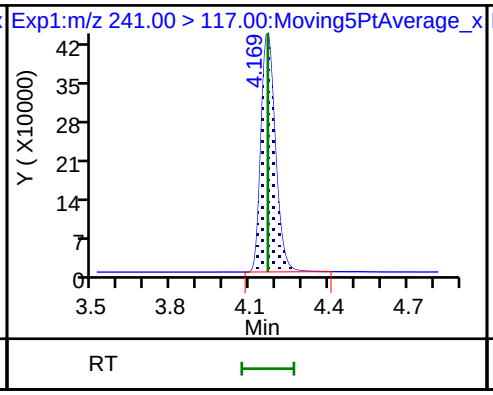
63 PFECA F



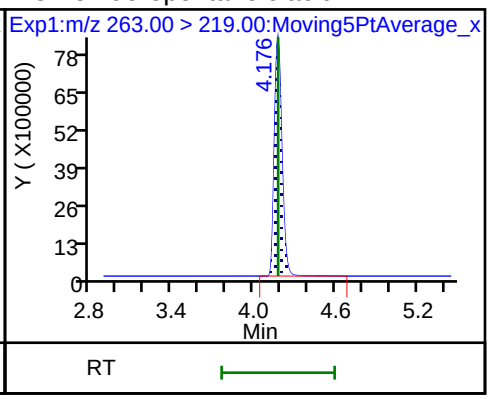
67 3:3 FTCA



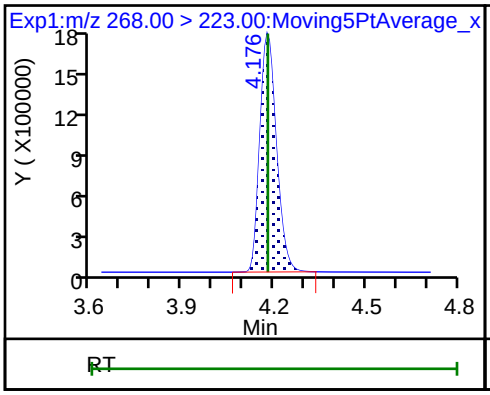
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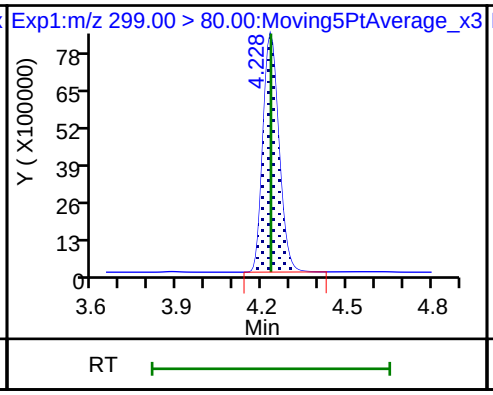
3 Perfluoropentanoic acid



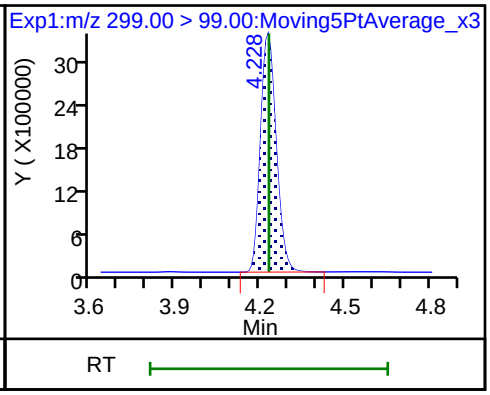
D 4 13C5 PFPeA



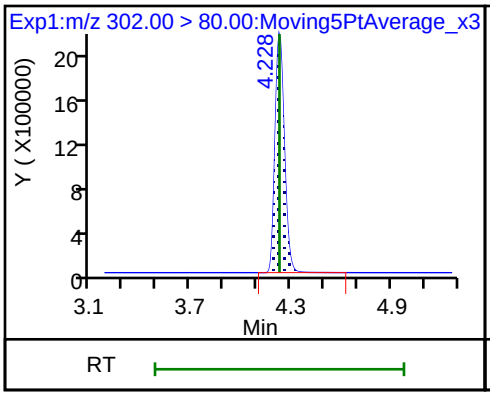
5 Perfluorobutanesulfonic acid



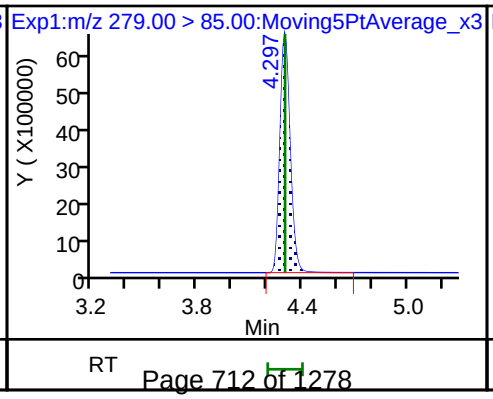
5 Perfluorobutanesulfonic acid



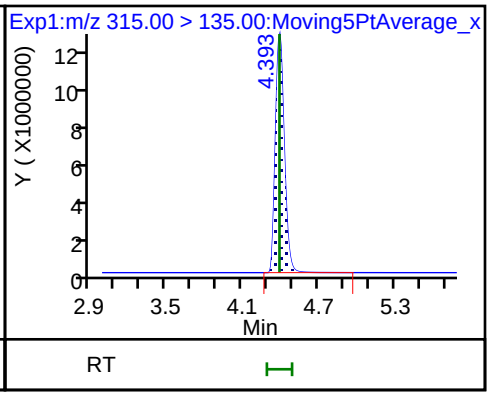
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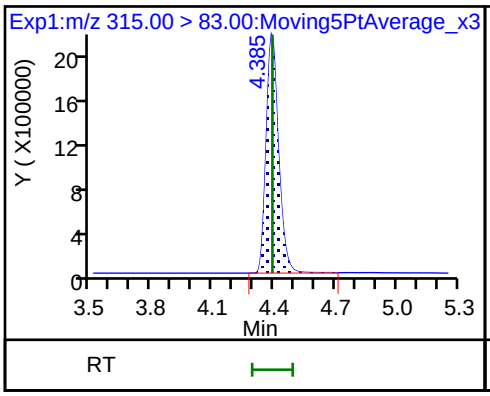
64 PFECA A



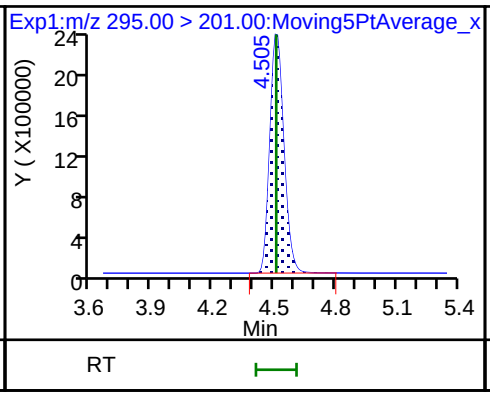
65 PES



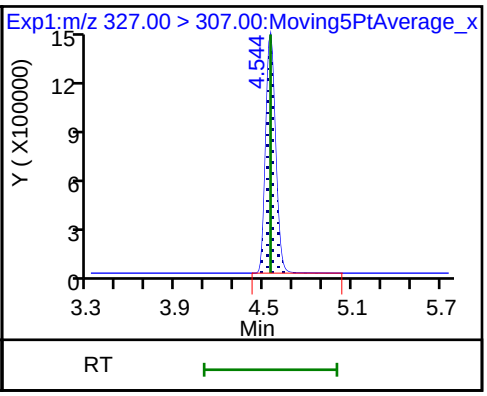
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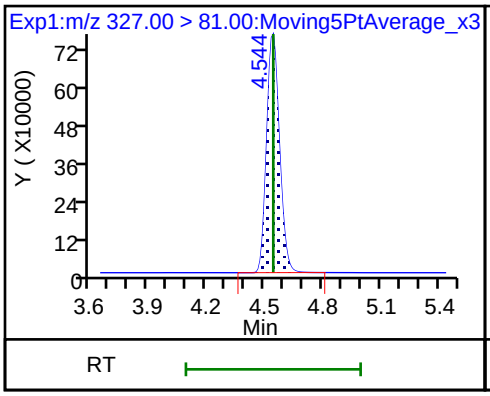
68 PFECA B



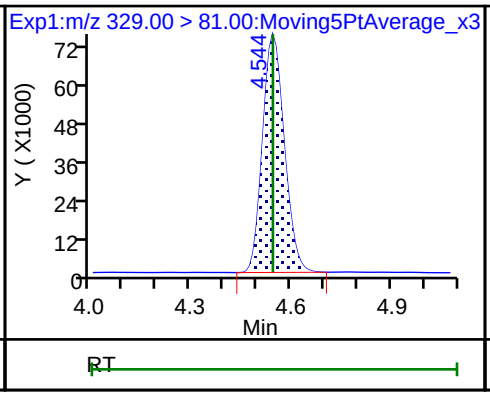
7 4:2 FTS



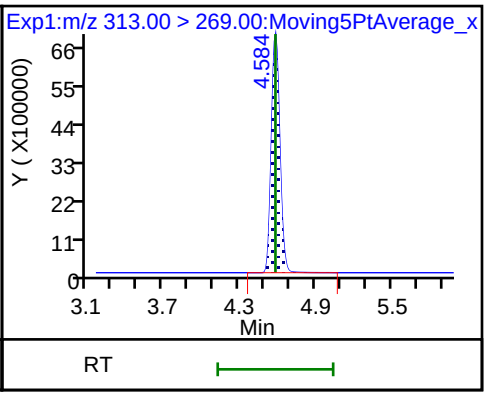
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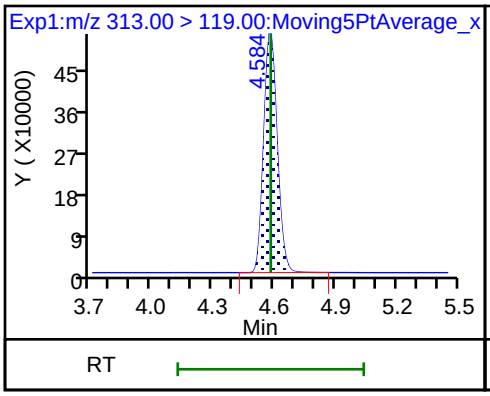
D 8 M2-4:2 FTS



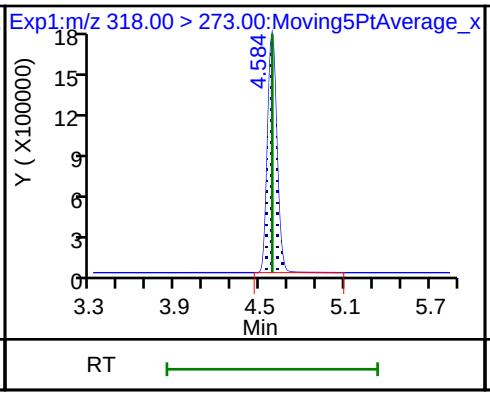
10 Perfluorohexanoic acid



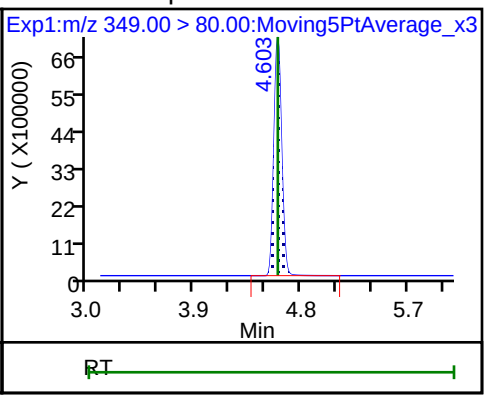
10 Perfluorohexanoic acid



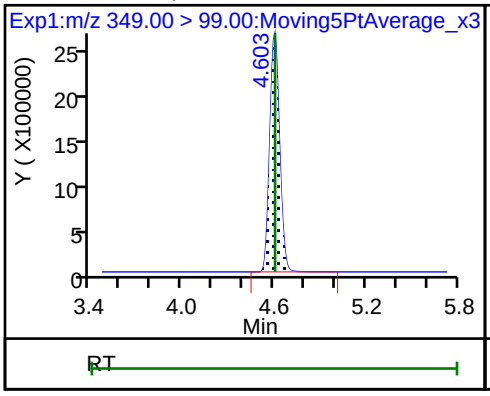
D 9 13C5 PFHxA



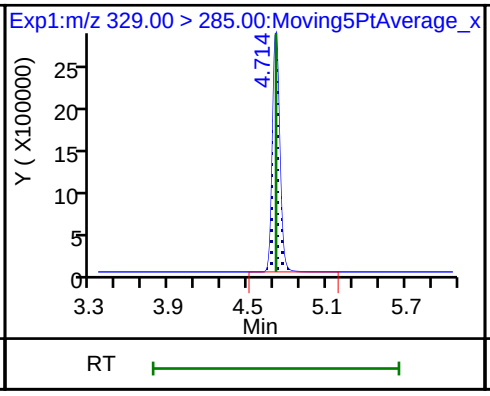
11 Perfluoropentanesulfonic acid



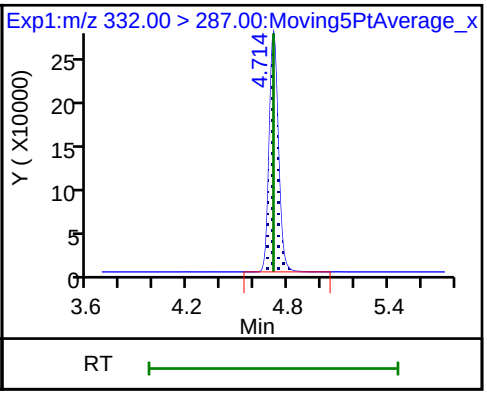
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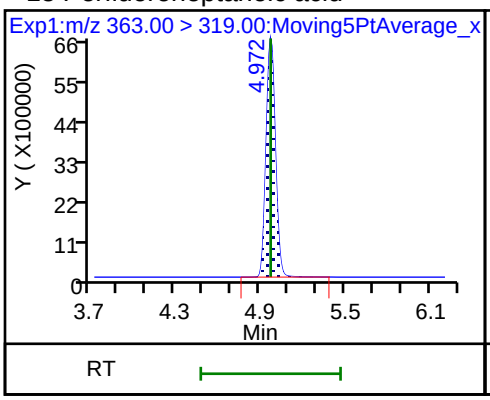
12 HFPO-DA



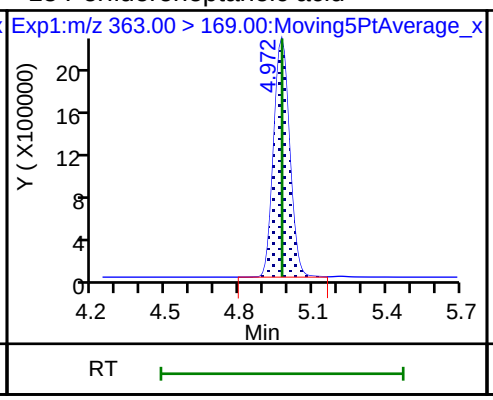
D 13 13C3 HFPO-DA



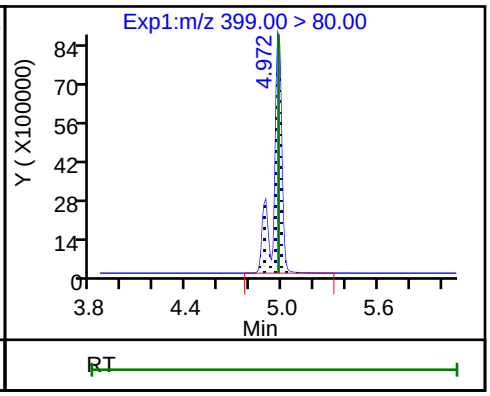
15 Perfluoroheptanoic acid



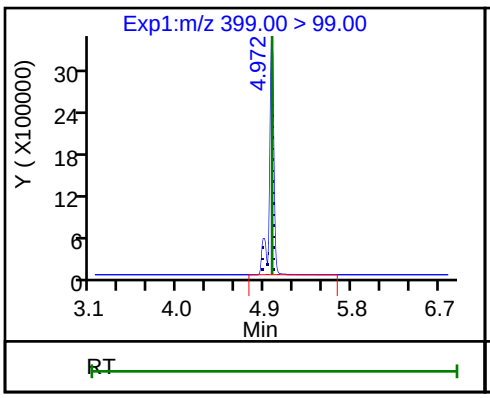
15 Perfluoroheptanoic acid



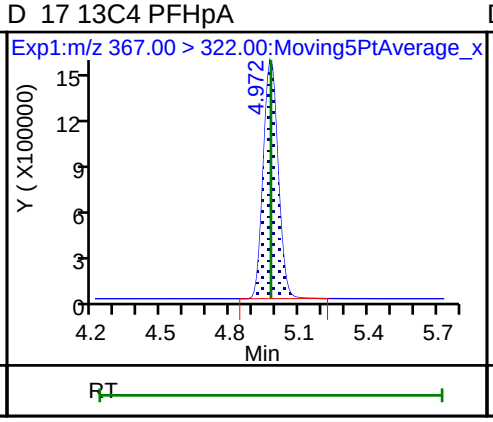
14 Perfluorohexanesulfonic acid



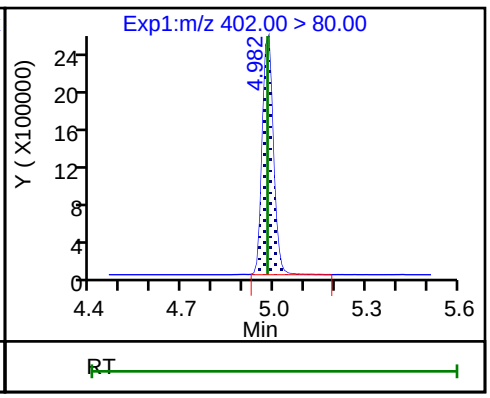
14 Perfluorohexanesulfonic acid



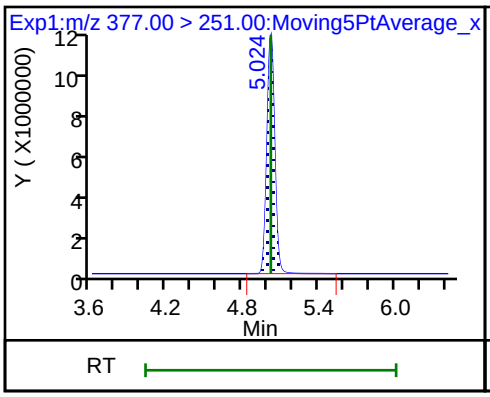
D 17 13C4 PFHpA



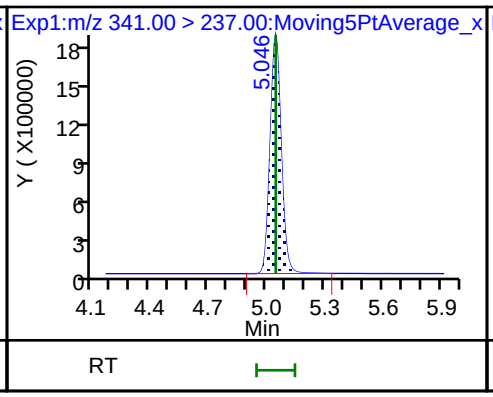
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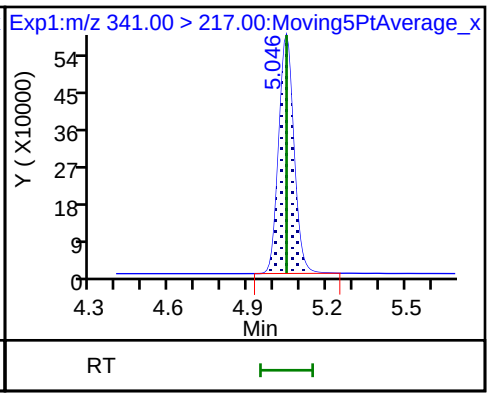
18 DONA



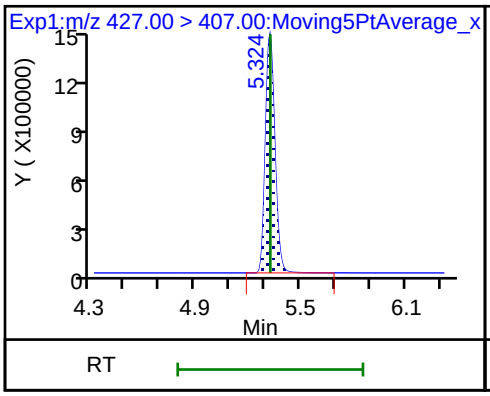
62 5:3 FTCA



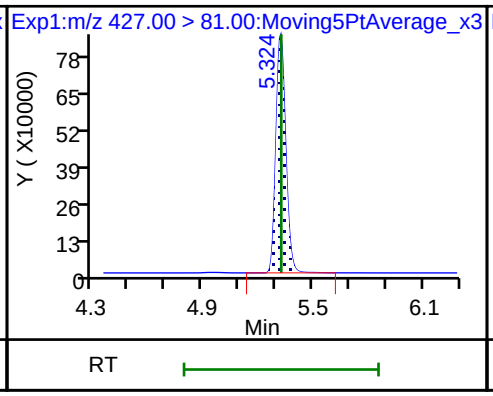
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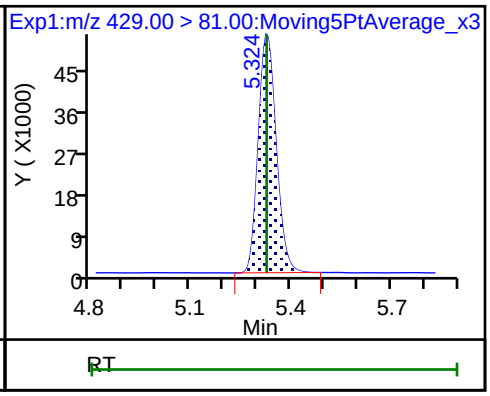
19 6:2 FTS



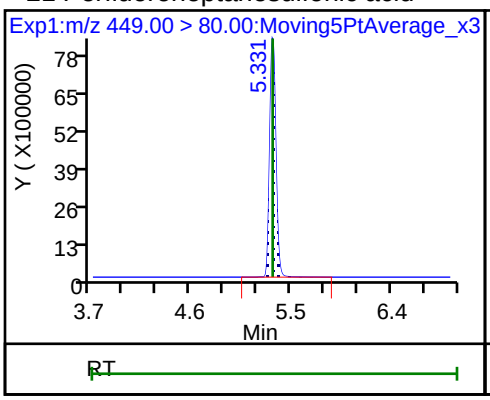
19 6:2 FTS



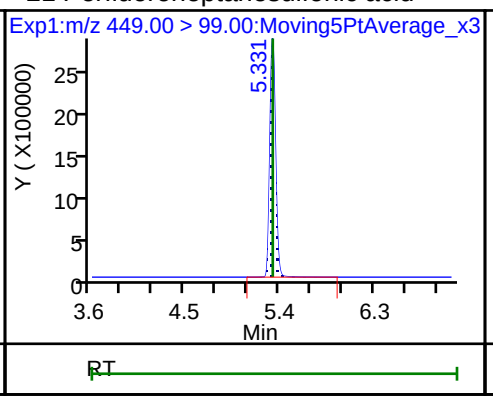
D 20 M2-6:2 FTS



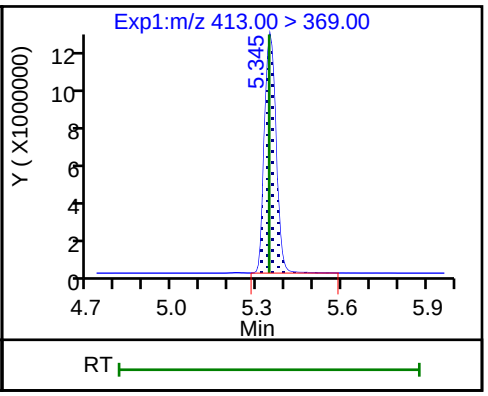
21 Perfluoroheptanesulfonic acid



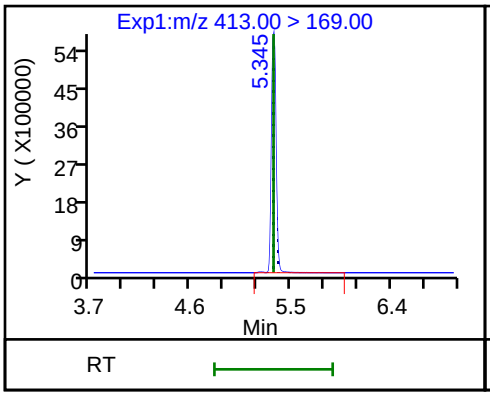
21 Perfluoroheptanesulfonic acid



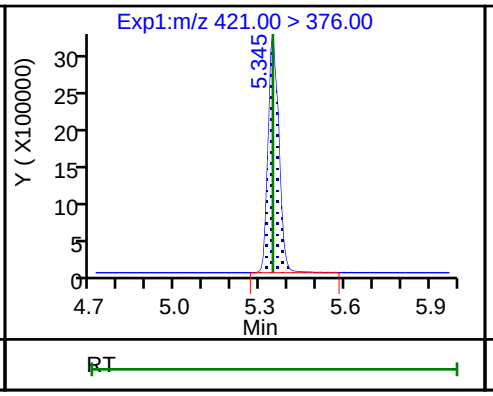
23 Perfluorooctanoic acid



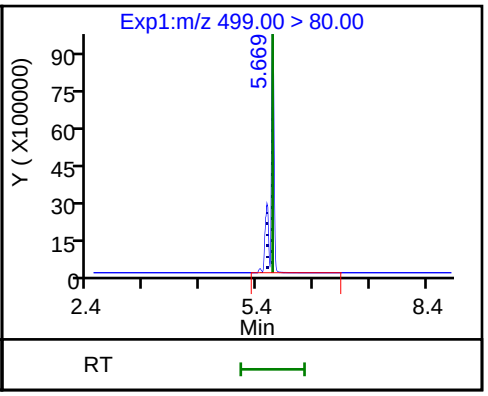
23 Perfluorooctanoic acid



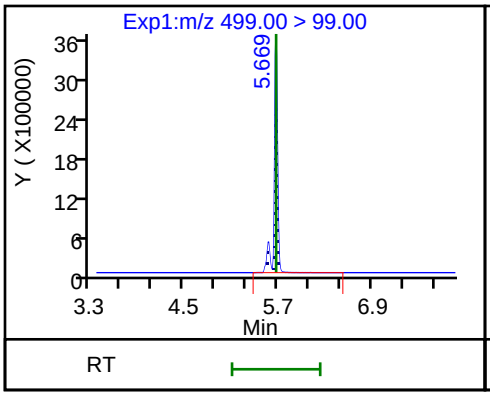
D 22 13C8 PFOA



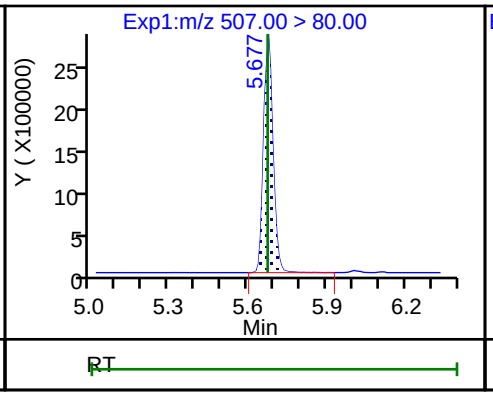
24 Perfluorooctanesulfonic acid



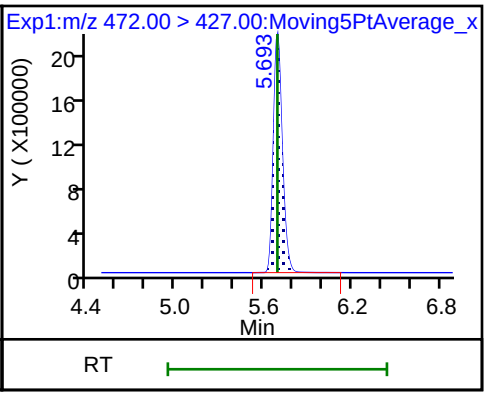
24 Perfluorooctanesulfonic acid



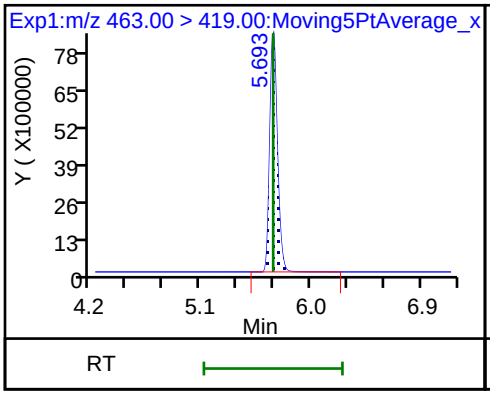
D 25 13C8 PFOS



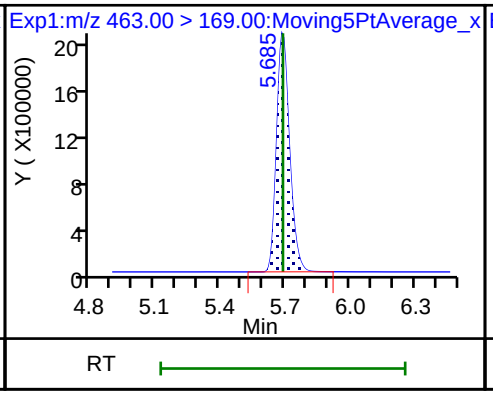
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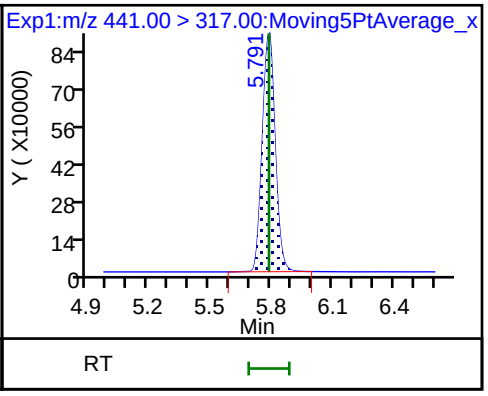
26 Perfluorononanoic acid



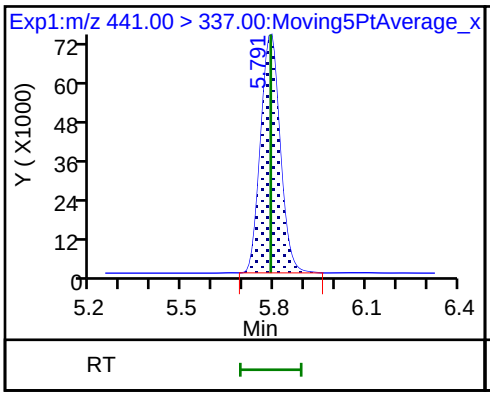
26 Perfluorononanoic acid



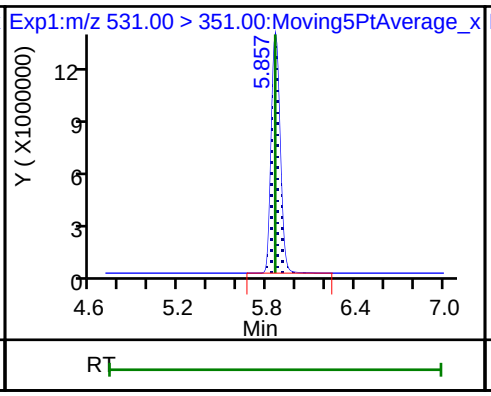
66 7:3 FTCA



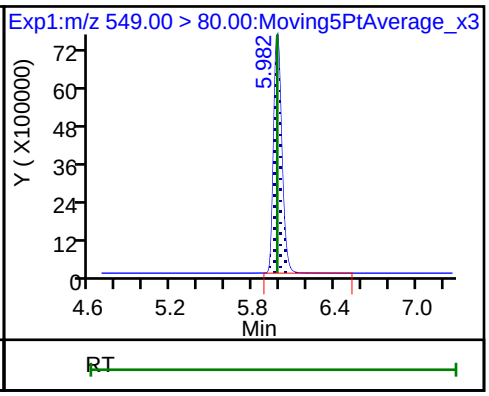
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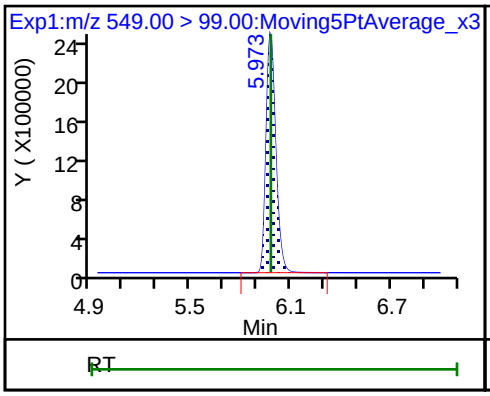
28 9ClFOS



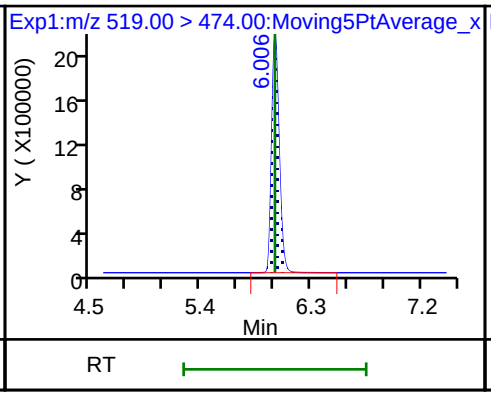
29 Perfluorononanesulfonic acid



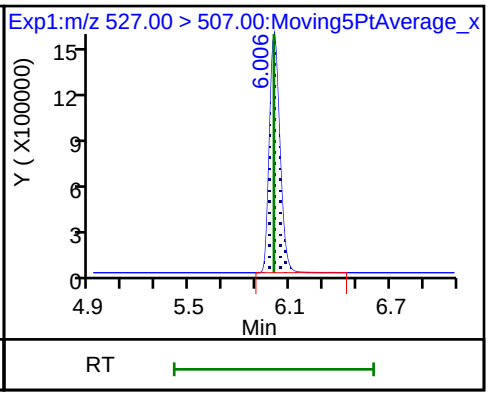
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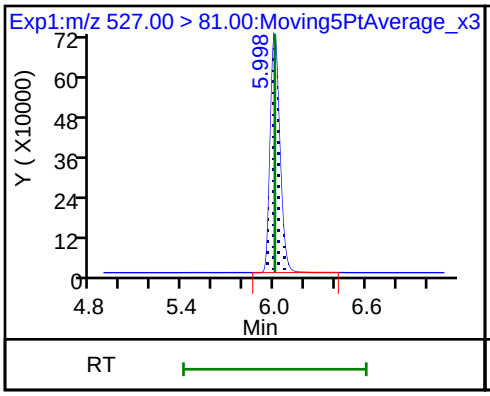
D 32 13C6 PFDA



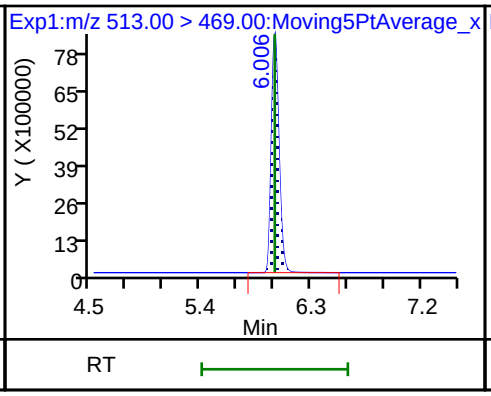
33 8:2 FTS



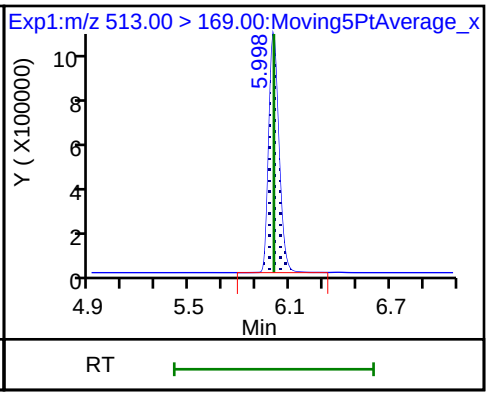
33 8:2 FTS



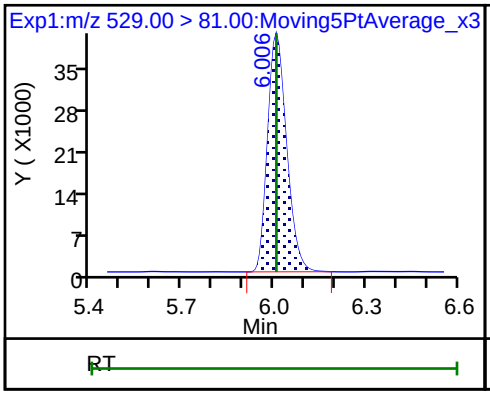
30 Perfluorodecanoic acid



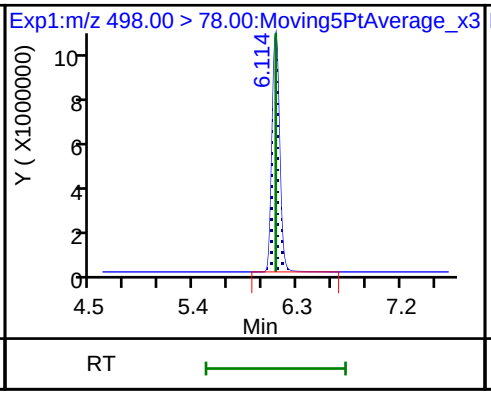
30 Perfluorodecanoic acid



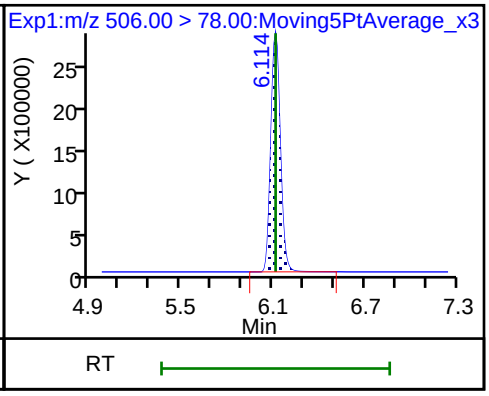
D 31 M2-8:2 FTS



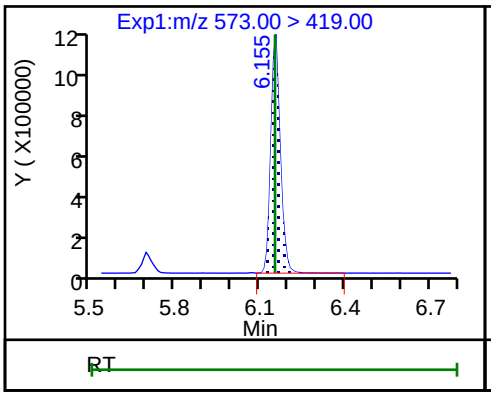
34 Perfluorooctanesulfonamide



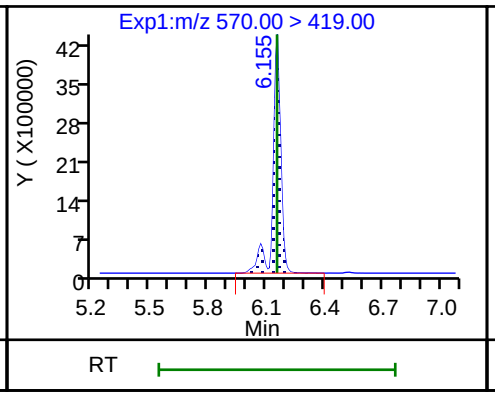
D 35 13C8 FOSA



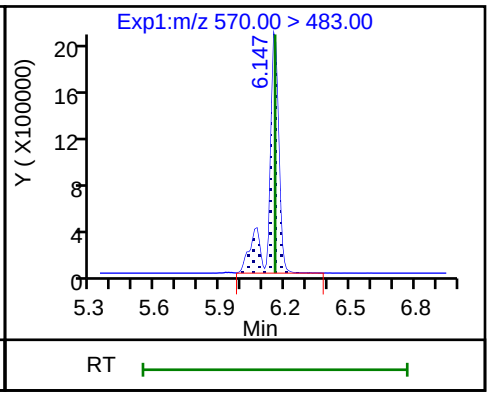
D 37 d3-NMeFOSAA



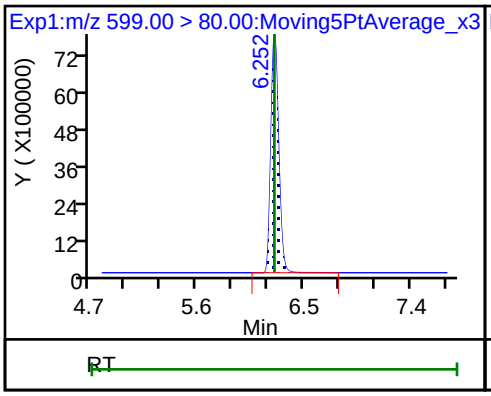
36 NMeFOSAA



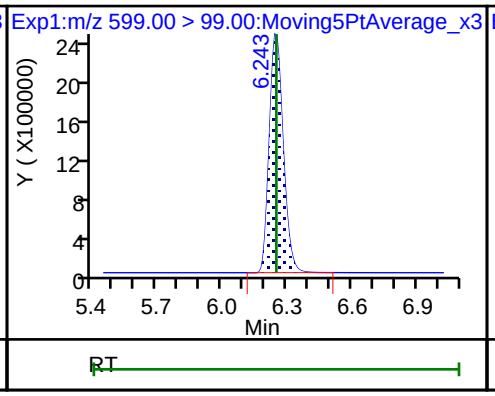
36 NMeFOSAA



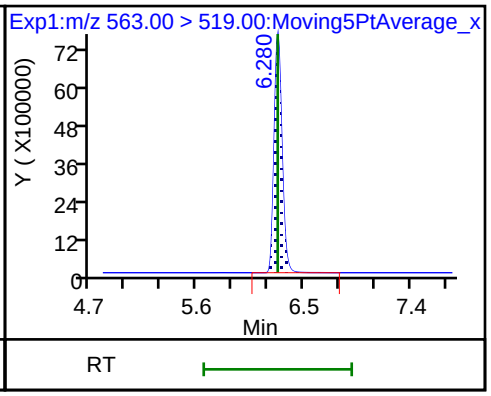
38 Perfluorodecanesulfonic acid



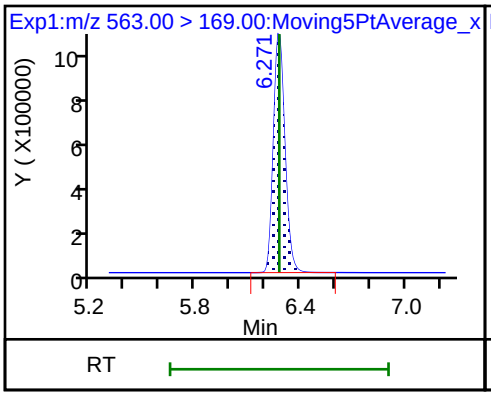
38 Perfluorodecanesulfonic acid



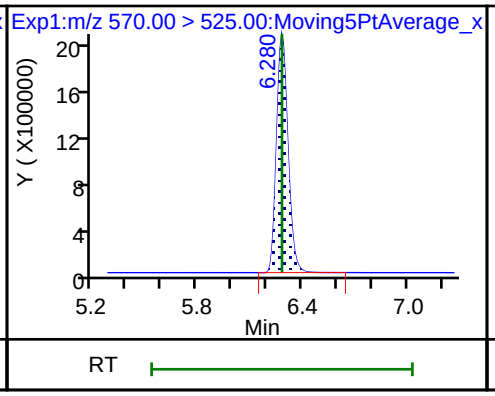
39 Perfluoroundecanoic acid



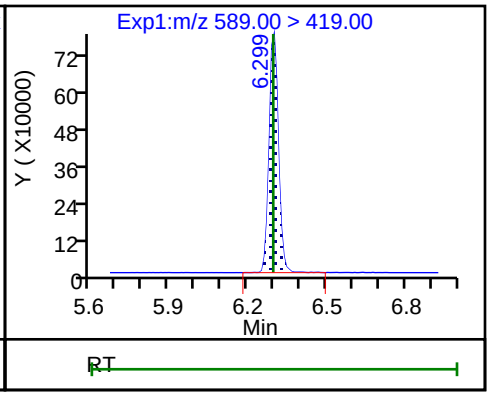
39 Perfluoroundecanoic acid



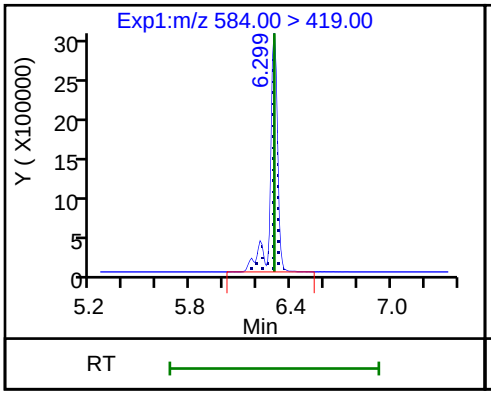
D 40 13C7 PFUnA



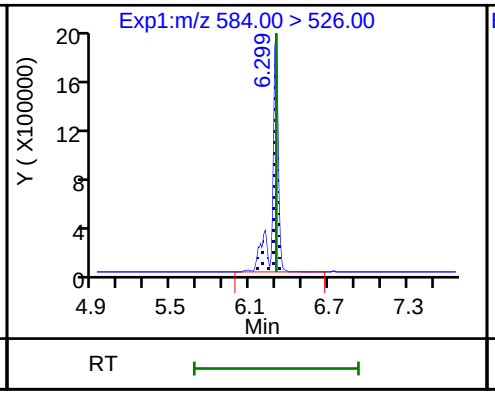
D 41 d5-NEtFOSAA



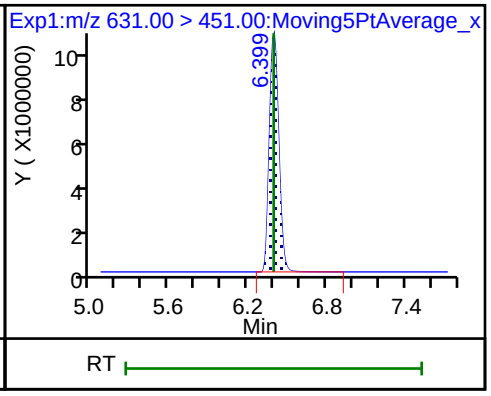
42 NEtFOSAA



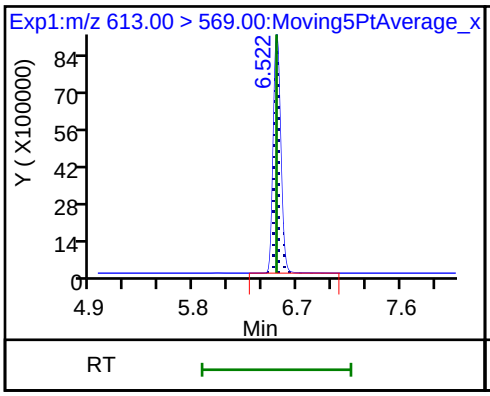
42 NEtFOSAA



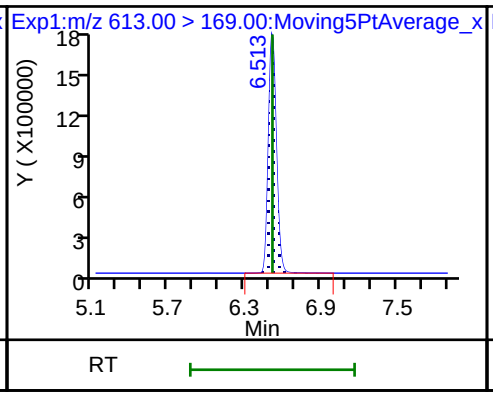
43 11ClFOS



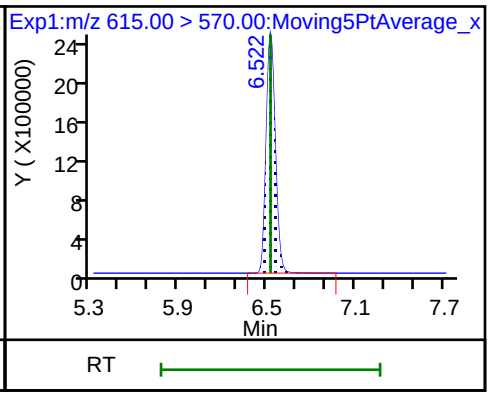
46 Perfluorododecanoic acid



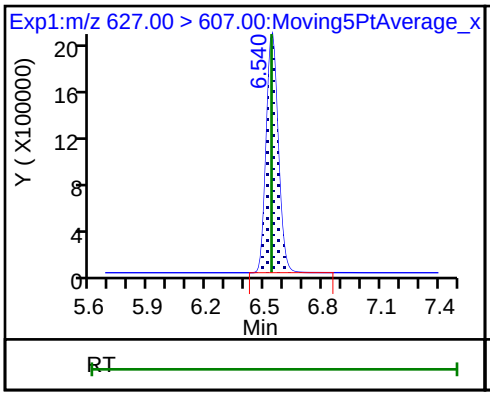
46 Perfluorododecanoic acid



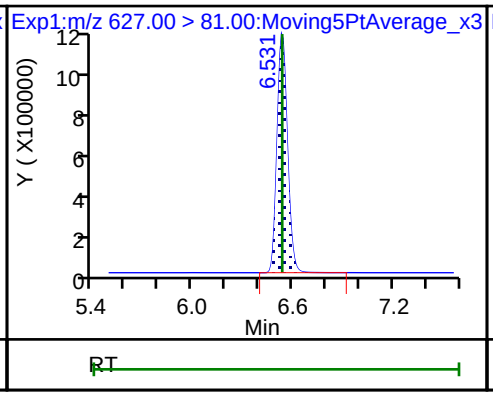
D 45 13C2-PFDoDA



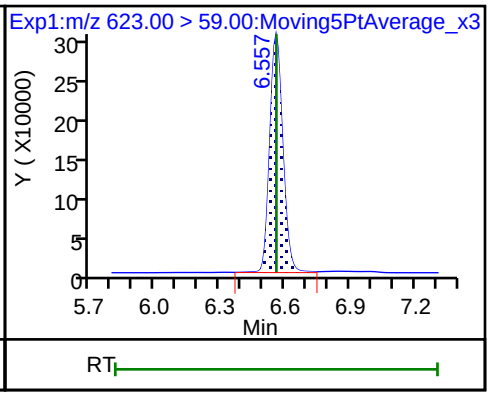
48 10:2 FTS



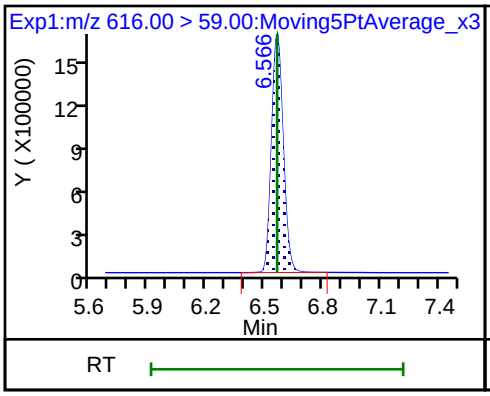
48 10:2 FTS



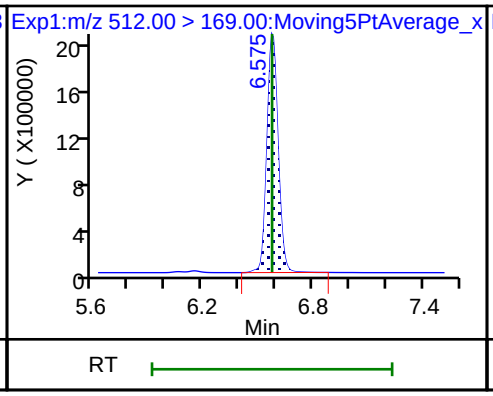
D 44 d7-N-MeFOSE-M



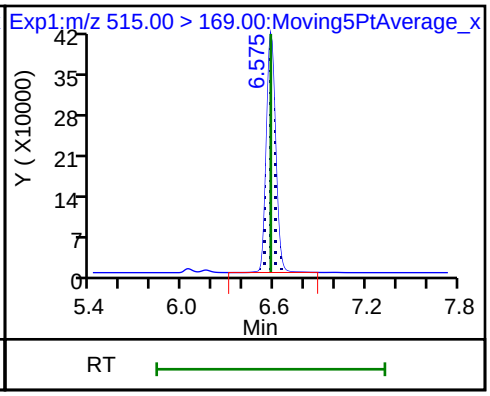
47 N-MeFOSE-M



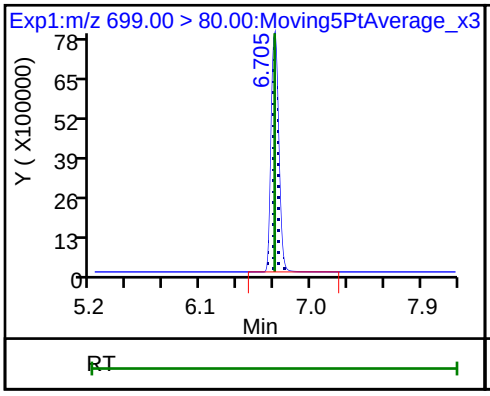
50 NMeFOSA



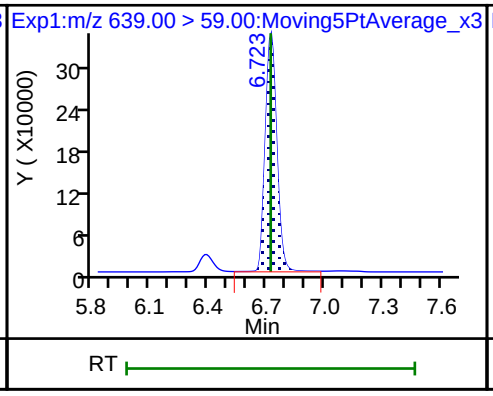
D 49 d3-NMePFOSA



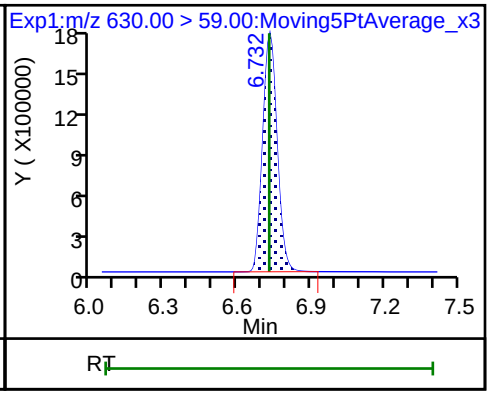
53 PFDoS



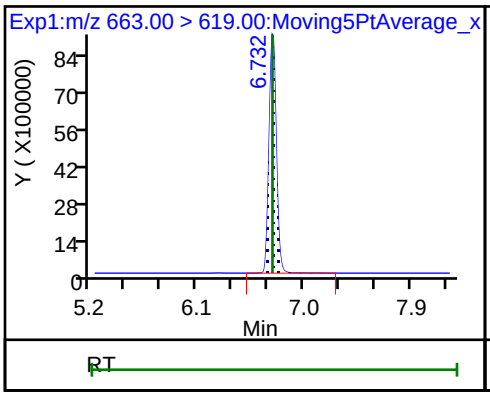
D 51 d9-N-EtFOSE-M



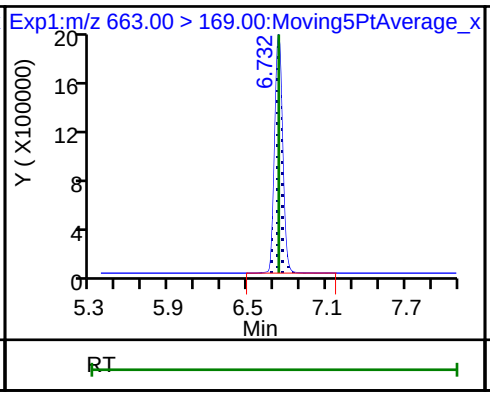
52 N-EtFOSE-M



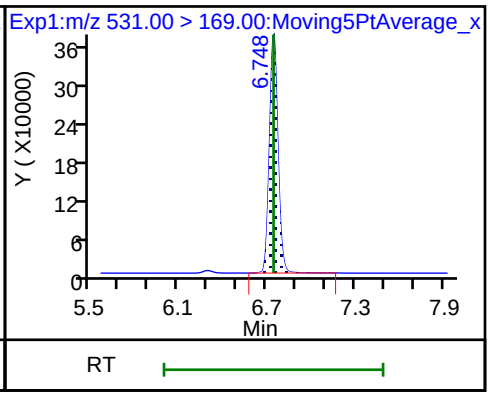
56 Perfluorotridecanoic acid



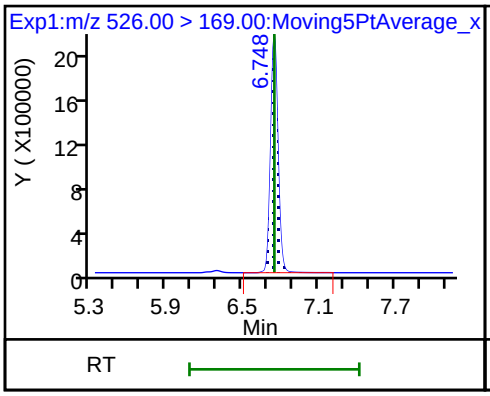
56 Perfluorotridecanoic acid



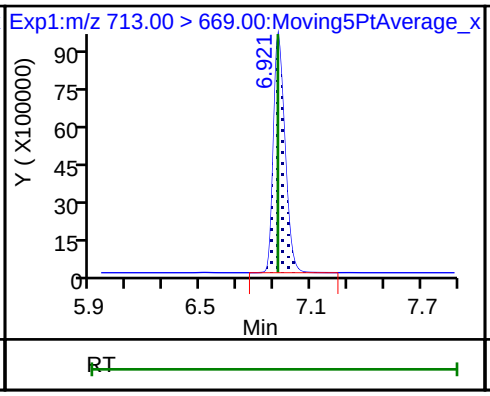
D 54 d5-NEtPFOSA



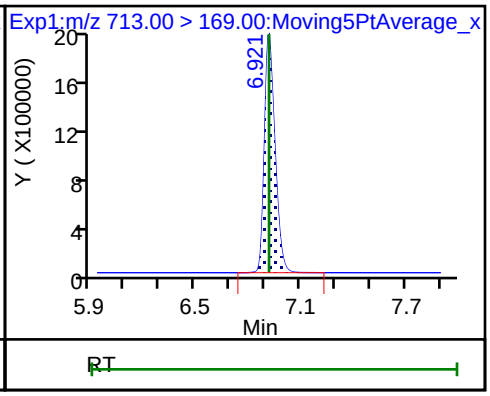
55 N-EtFOSA-M



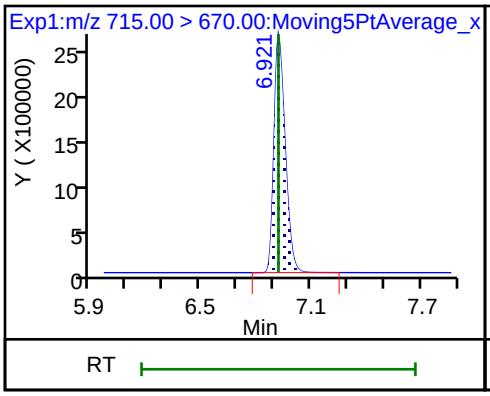
57 Perfluorotetradecanoic acid



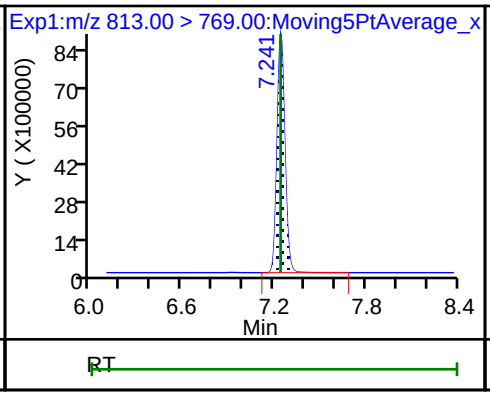
57 Perfluorotetradecanoic acid



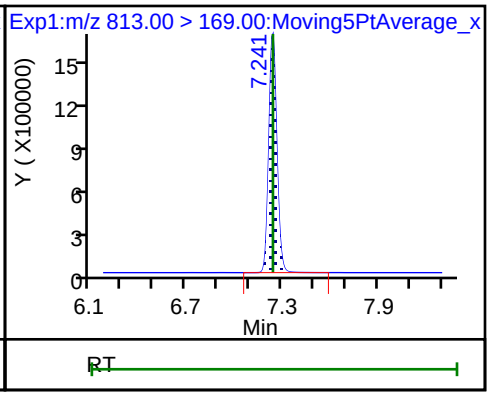
D 58 13C2 PFTeDA



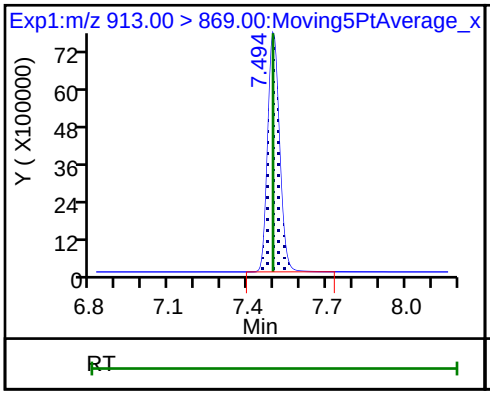
59 Perfluorohexadecanoic acid



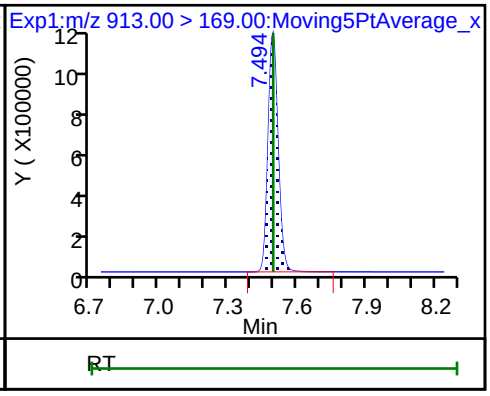
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d
Lims ID: IC CAL 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 03-Apr-2022 18:16:12 ALS Bottle#: 20008 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 7
Misc. Info.: Plate: 1 Rack: 1 410-0053897-007
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:40 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:11:32
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 2 13C4 PFBA										
217.00 > 172.00	3.662	3.658	0.004		7244875	8.33		83.3	124081	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.662	3.658	0.004	1.000	50672668	83.8		83.8	132460	
63 PFECA F										
229.00 > 85.00	3.897	3.890	0.007	0.932	40409011	86.2		86.2	6440	
67 3:3 FTCA										
241.00 > 177.00	4.175	4.167	0.008	0.998	3874537	113.1	Target=1.30	113	55563	
241.00 > 117.00	4.175	4.167	0.008	0.998	2977414		1.30(0.65-1.94)	113	38597	
D 4 13C5 PFPeA										
268.00 > 223.00	4.182	4.178	0.004		5759351	7.93		79.3	60322	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.182	4.177	0.005	1.000	49611060	83.7		83.7	400616	
D 6 13C3 PFBS										
302.00 > 80.00	4.235	4.230	0.005		7407561	7.88		84.7	478281	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.235	4.230	0.005	1.000	49851765	65.1	Target=2.82	73.6	30771	
299.00 > 99.00	4.235	4.230	0.005	1.000	23086021		2.16(1.41-4.23)	73.6	47786	
64 PFECA A										
279.00 > 85.00	4.304	4.300	0.004	1.029	41689524	87.4		87.4	119183	
65 PES										
315.00 > 135.00	4.400	4.390	0.010	0.958	63690053	27.8	Target=14.82	31.2	52968	
315.00 > 83.00	4.392	4.390	0.002	0.956	16619367		3.83(7.41-22.22)	31.2	27180	
68 PFECA B										
295.00 > 201.00	4.514	4.509	0.005	0.983	18553547	97.7		97.7	81741	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.553	4.544	0.009	1.000	11907582	93.5	Target=1.61	100	866945	
327.00 > 81.00	4.543	4.544	-0.001	0.998	6555652		1.82(0.81-2.42)	100	180709	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.553	4.545	0.008		314616	7.75		83.0	8699	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.593	4.582	0.011	1.000	49163411	83.7	Target=13.95	83.7	640752	
313.00 > 119.00	4.583	4.582	0.001	0.998	4490367		10.95(6.97-20.92)	83.7	139852	
D 9 13C5 PFHxA										
318.00 > 273.00	4.593	4.585	0.008		6716153	7.58		75.8	183063	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.611	4.604	0.007	1.089	48594498	69.0	Target=2.93	73.6	3557440	
349.00 > 99.00	4.611	4.604	0.007	1.089	20423510		2.38(1.47-4.40)	73.6	1521858	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.720	4.712	0.008		826788	7.49		74.9	52075	
12 HFPO-DA										
329.00 > 285.00	4.720	4.712	0.008	1.000	20720980	118.2		118	763672	
D 17 13C4 PFHpA										
367.00 > 322.00	4.981	4.976	0.005		5270510	5.93		59.3	56661	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.981	4.973	0.008	1.000	44478585	88.4	Target=3.12	88.4	605621	
363.00 > 169.00	4.981	4.973	0.008	1.000	15980636		2.78(1.56-4.69)	88.4	31053	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.981	4.976	0.005	1.000	49707351	98.1	Target=2.99	108	13355270	
399.00 > 99.00	4.981	4.976	0.005	1.000	16807896		2.96(1.49-4.48)	108	5164830	
D 16 13C3 PFHxS										
402.00 > 80.00	4.981	4.977	0.004		4926455	5.88		62.1	660959	
18 DONA										
377.00 > 251.00	5.032	5.021	0.011	1.010	61615042	71.2		75.3	403551	
62 5:3 FTCA										
341.00 > 237.00	5.053	5.047	0.006	1.100	12210351	94.5	Target=3.15	94.5	32381	
341.00 > 217.00	5.053	5.047	0.006	1.100	4008665		3.05(1.57-4.72)	94.5	19357	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.327	0.004		177999	6.97		73.3	12102	
19 6:2 FTS										
427.00 > 407.00	5.331	5.327	0.004	1.000	9330335	95.5	Target=1.62	101	312279	
427.00 > 81.00	5.331	5.327	0.004	1.000	5557182		1.68(0.81-2.43)	101	44761	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.338	5.334	0.004	1.072	49382730	97.5	Target=3.16	102	1567801	
449.00 > 99.00	5.338	5.334	0.004	1.072	18248928		2.71(1.58-4.74)	102	1626157	
D 22 13C8 PFOA										
421.00 > 376.00	5.344	5.345	-0.001		6946693	7.12		71.2	496324	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.350	5.342	0.008	1.001	52358137	84.2	Target=2.36	84.2	656451	
413.00 > 169.00	5.357	5.342	0.015	1.002	26004027		2.01(1.18-3.54)	84.2	757754	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.677	5.672	0.005	1.000	63093982	87.5	Target=3.73	94.6	51099	
499.00 > 99.00	5.677	5.672	0.005	1.000	18515381		3.41(1.87-5.60)	94.6	35104	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.674	0.003		6416406	7.92		82.8	95855	
D 27 13C9 PFNA										
472.00 > 427.00	5.701	5.691	0.010		7745364	7.61		76.1	359134	
26 Perfluorononanoic acid										
463.00 > 419.00	5.693	5.690	0.003	0.999	54807545	83.1	Target=4.38	83.1	723583	
463.00 > 169.00	5.693	5.690	0.003	0.999	15383970		3.56(2.19-6.56)	83.1	125514	
66 7:3 FTCA										
441.00 > 317.00	5.791	5.788	0.003	1.261	7031180	104.5	Target=10.71	105	38545	
441.00 > 337.00	5.791	5.788	0.003	1.261	590756		11.90(5.36-16.07)	105	15220	
28 9ClFOS										
531.00 > 351.00	5.864	5.855	0.009	1.033	63675289	39.7		42.7	2220793	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.978	0.003	1.054	48340927	76.8	Target=3.28	80.0	242678	
549.00 > 99.00	5.981	5.978	0.003	1.054	16997433		2.84(1.64-4.92)	80.0	1393492	
D 32 13C6 PFDA										
519.00 > 474.00	6.014	6.004	0.010		7667373	7.10		71.0	177486	
33 8:2 FTS										
527.00 > 507.00	6.006	6.003	0.003	0.999	10752163	91.6	Target=2.01	95.6	248146	
527.00 > 81.00	6.006	6.003	0.003	0.999	5377420		2.00(1.01-3.02)	95.6	114211	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.006	6.003	0.003	0.999	54129145	81.2	Target=8.83	81.2	868371	
513.00 > 169.00	6.006	6.003	0.003	0.999	7892878		6.86(4.41-13.24)	81.2	93397	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.014	6.006	0.008		150088	6.71		70.0	11377	
D 35 13C8 FOSA										
506.00 > 78.00	6.123	6.114	0.009		10764699	8.32		83.2	250141	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.123	6.112	0.011	1.000	61901079	57.2		57.2	1275330	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.162	6.152	0.010		2393529	8.50		85.0	9850	
36 NMeFOSAA										
570.00 > 419.00	6.162	6.153	0.009	1.000	21381008	101.2	Target=1.81	101	606826	
570.00 > 483.00	6.155	6.153	0.002	0.999	12267432		1.74(0.91-2.72)	101	26645	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.252	6.250	0.002	1.101	53249595	75.1	Target=3.48	77.9	2276982	
599.00 > 99.00	6.252	6.250	0.002	1.101	19403881		2.74(1.74-5.22)	77.9	869270	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.289	6.278	0.011	1.000	52850349	80.0	Target=8.25	80.0	185786	
563.00 > 169.00	6.280	6.278	0.002	0.999	8228843		6.42(4.12-12.37)	80.0	140088	
D 40 13C7 PFUnA										
570.00 > 525.00	6.289	6.282	0.007		8030848	7.12		71.2	253102	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.296	0.003		1644691	7.52		75.2	128281	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.308	6.300	0.008	1.001	16834125	107.9	Target=1.66	108	1846487	
584.00 > 526.00	6.308	6.300	0.008	1.001	10419534		1.62(0.83-2.49)	108	15707	
43 11ClFOS										
631.00 > 451.00	6.398	6.394	0.004	1.127	60128163	44.4		47.8	1619058	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.521	6.518	0.003	0.999	58243563	72.5	Target=5.87	72.5	350863	
613.00 > 169.00	6.521	6.518	0.003	0.999	13514666		4.31(2.94-8.81)	72.5	223253	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.530	6.523	0.007		9128481	7.65		76.5	211635	
48 10:2 FTS										
627.00 > 607.00	6.539	6.535	0.004	1.087	14694144	100.3	Target=1.77	104	1699796	
627.00 > 81.00	6.539	6.535	0.004	1.087	7929535		1.85(0.88-2.65)	104	131602	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.566	6.559	0.007		1144736	8.41		84.1	5186	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.564	0.002	1.000	12392415	109.0		109	84218	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.583	6.576	0.007		1697494	9.86		98.6	5428	
50 NMeFOSA										
512.00 > 169.00	6.583	6.576	0.007	1.000	16953073	98.6		98.6	14484	
53 PFDoS										
699.00 > 80.00	6.705	6.702	0.003	1.181	50512096	73.0		75.4	1954042	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.720	0.003		1267031	7.72		77.2	1142	
52 N-EtFOSE-M										
630.00 > 59.00	6.731	6.729	0.002	1.001	12568870	107.9		108	92376	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.739	6.733	0.006	1.032	55203981	68.8	Target=5.56	68.8	267498	
663.00 > 169.00	6.739	6.733	0.006	1.032	13098985		4.21(2.78-8.34)	68.8	187378	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.748	6.744	0.004		1416167	8.99		89.9	13275	
55 N-EtFOSA-M										
526.00 > 169.00	6.755	6.750	0.005	1.001	15675348	101.2		101	14545	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.926	6.919	0.007	1.000	58183324	70.8	Target=5.83	70.8	91850	
713.00 > 169.00	6.918	6.919	-0.001	0.999	13902543		4.19(2.92-8.75)	70.8	391674	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.926	6.922	0.004		9475870	7.86		78.6	354568	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.246	7.241	0.005	1.046	49125846	80.1	Target=6.08	80.1	229956	
813.00 > 169.00	7.240	7.241	-0.001	1.045	10606522		4.63(3.04-9.12)	80.1	150713	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.495	0.004	1.083	39183125	94.0	Target=7.30	94.0	125053	
913.00 > 169.00	7.494	7.495	-0.001	1.082	6530421		6.00(3.65-10.94)	94.0	64412	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD7_00015 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:26:42 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Injection Date: 03-Apr-2022 18:16:12 Instrument ID: 29347

Lims ID: IC CAL 7

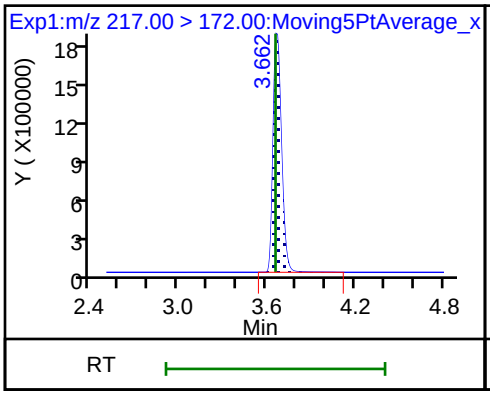
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20008 Worklist Smp#: 7

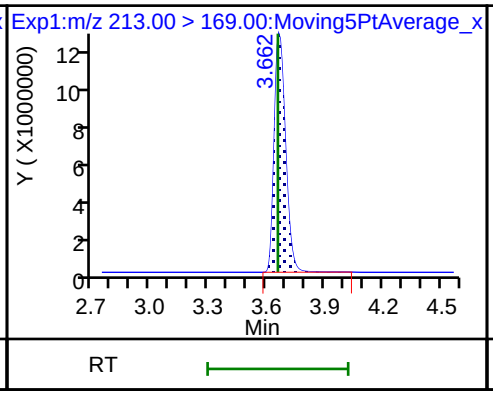
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

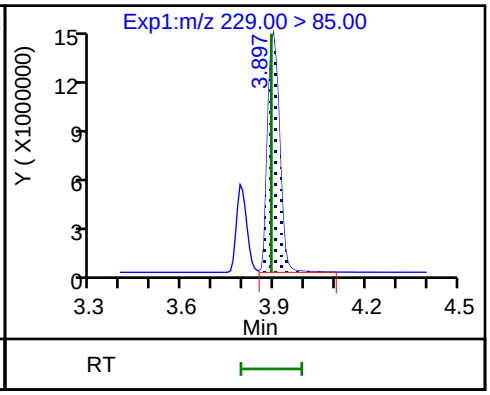
D 2 13C4 PFBA



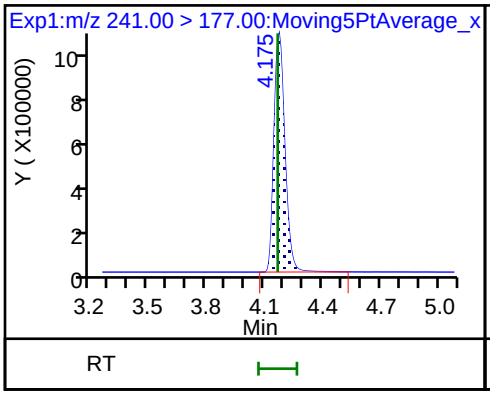
1 Perfluorobutanoic acid



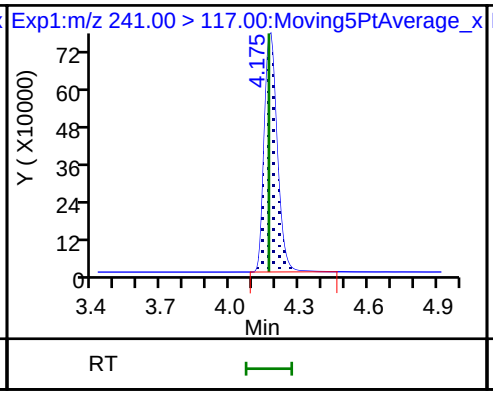
63 PFECA F



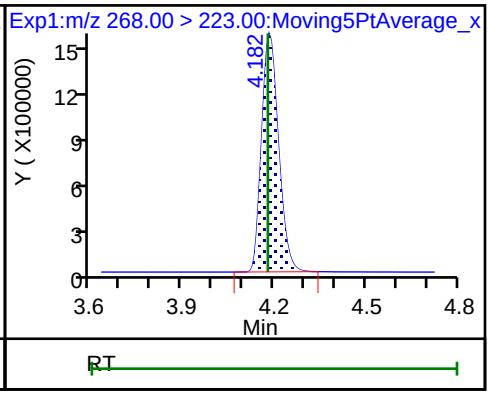
67 3:3 FTCA



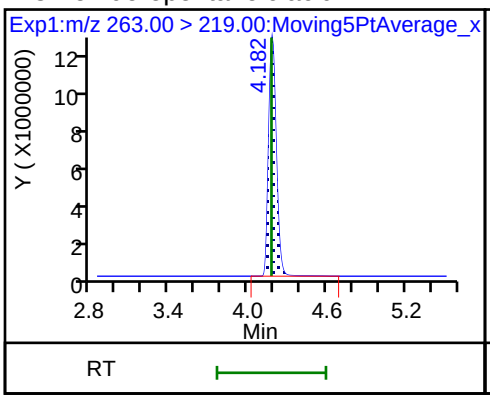
67 3:3 FTCA



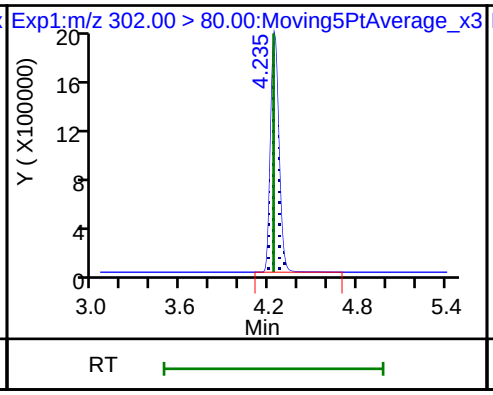
D 4 13C5 PFPeA



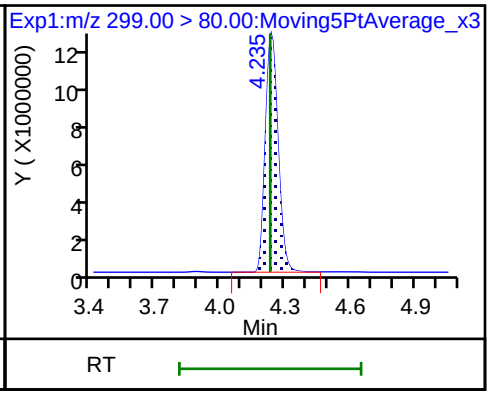
3 Perfluoropentanoic acid



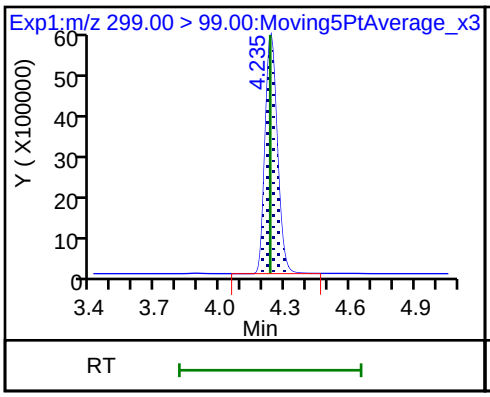
D 6 13C3 PFBS



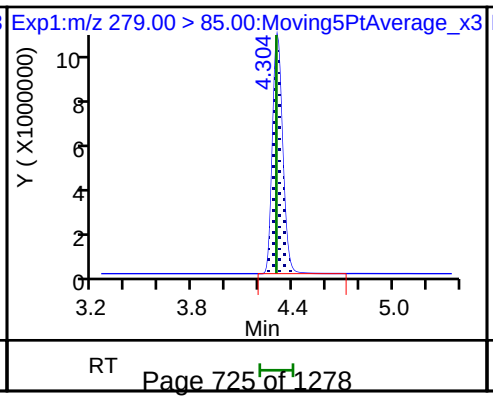
5 Perfluorobutanesulfonic acid



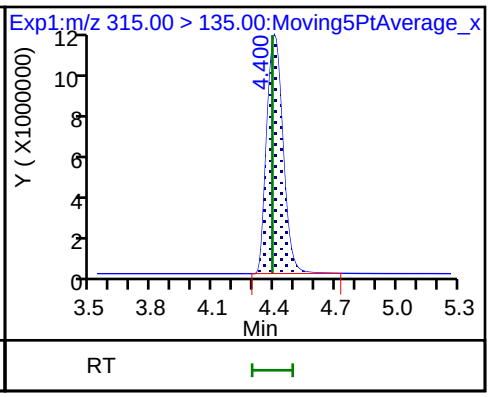
5 Perfluorobutanesulfonic acid



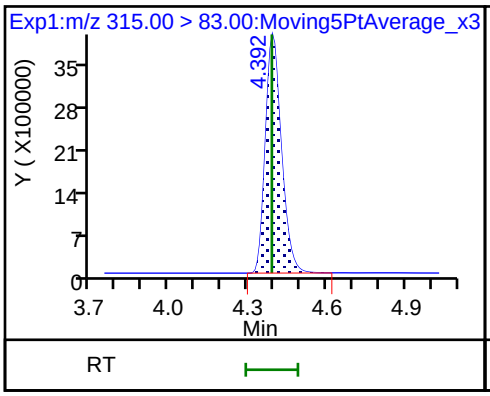
64 PFECA A



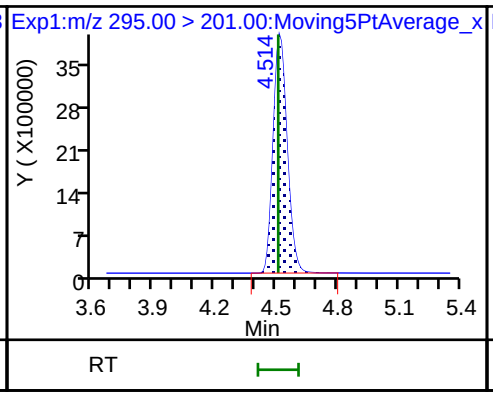
65 PES



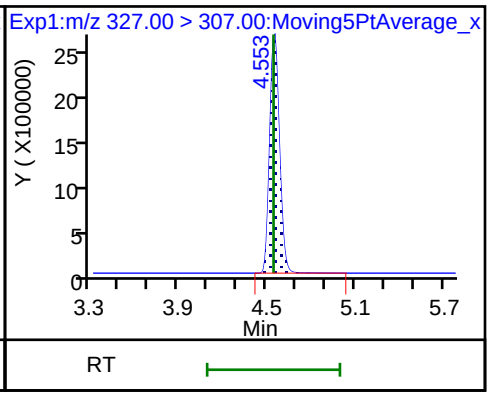
65 PES



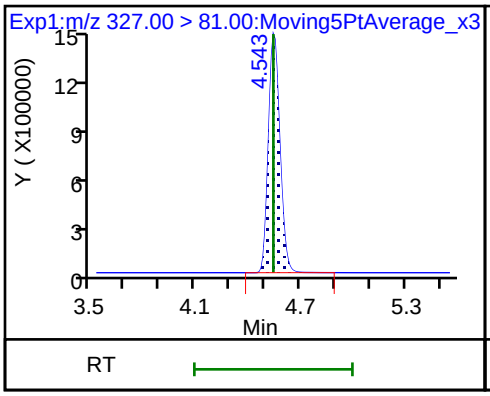
68 PFECA B



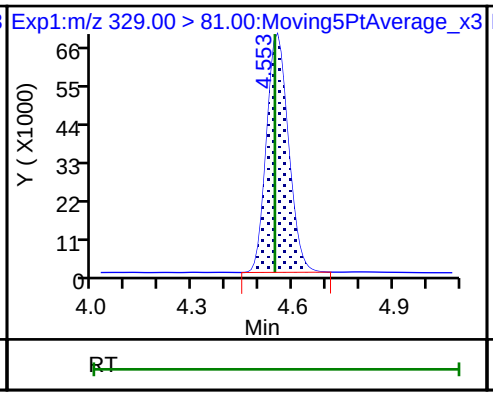
7 4:2 FTS



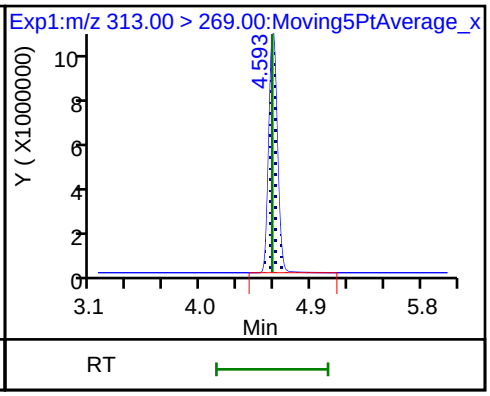
7 4:2 FTS



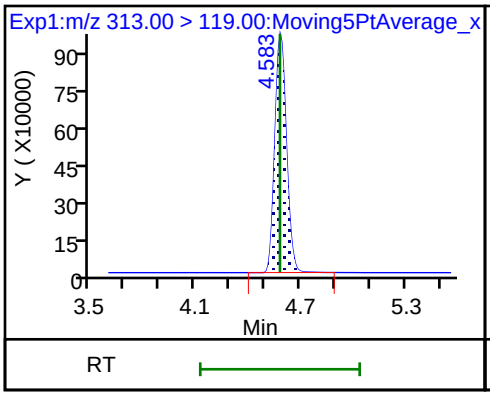
D 8 M2-4:2 FTS



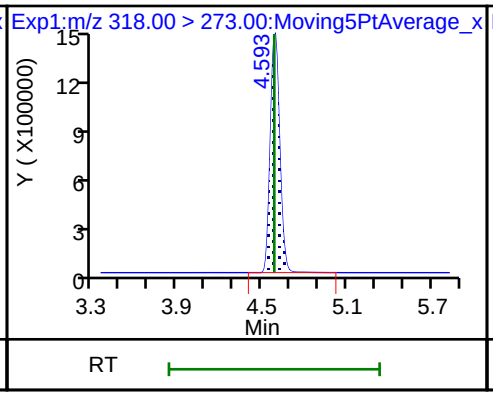
10 Perfluorohexanoic acid



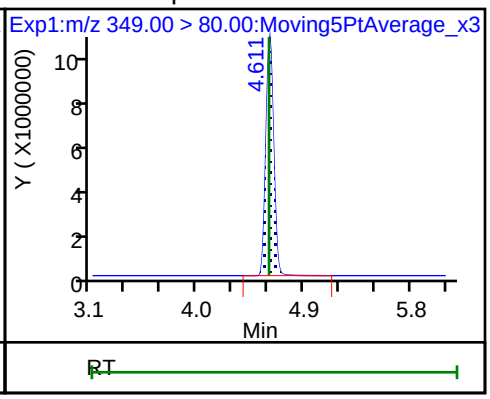
10 Perfluorohexanoic acid



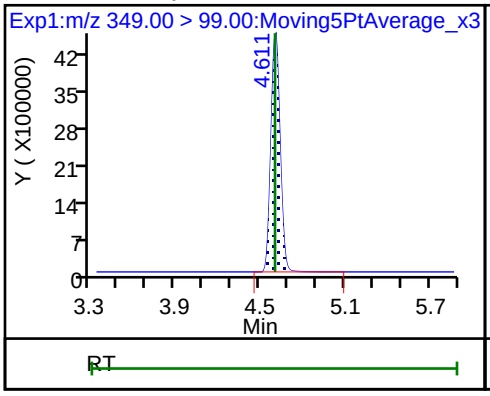
D 9 13C5 PFHxA



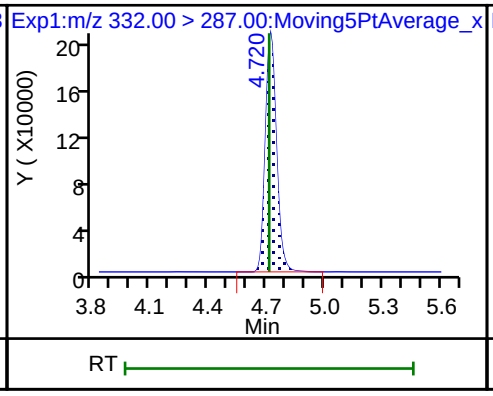
11 Perfluoropentanesulfonic acid



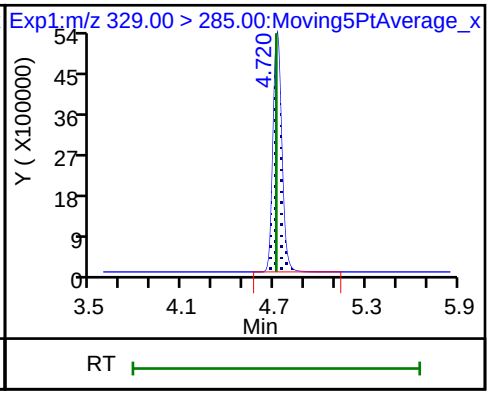
11 Perfluoropentanesulfonic acid



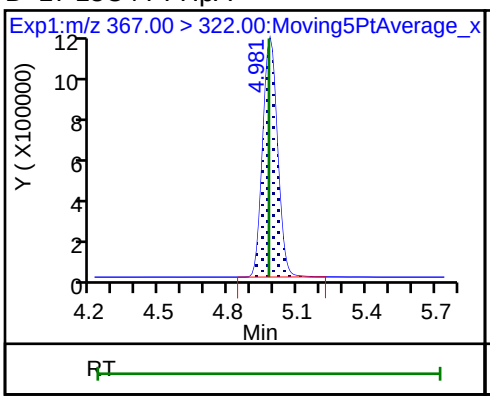
D 13 13C3 HFPO-DA



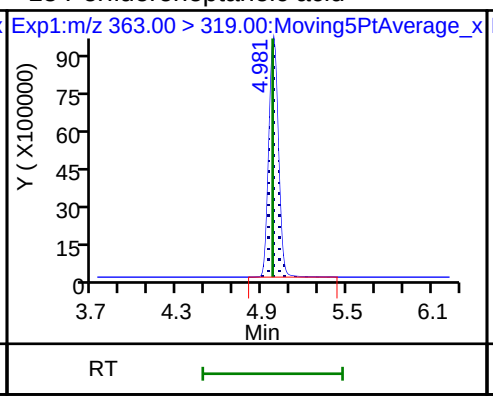
12 HFPO-DA



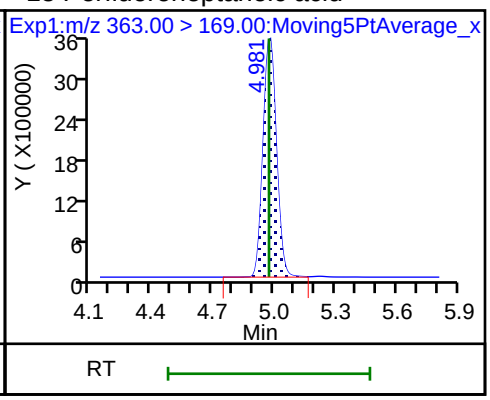
D 17 13C4 PFHpA



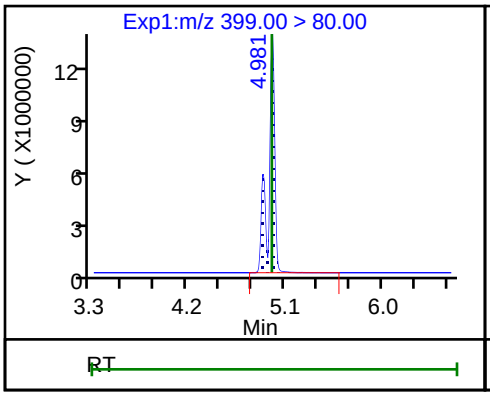
15 Perfluoroheptanoic acid



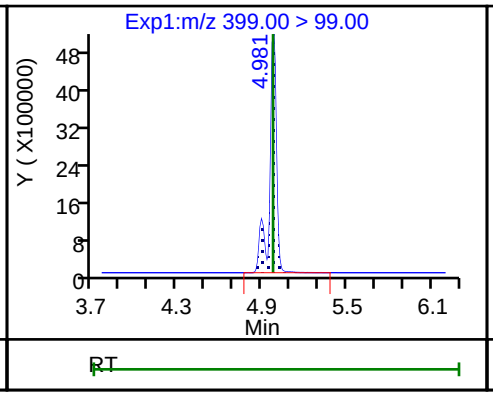
15 Perfluoroheptanoic acid



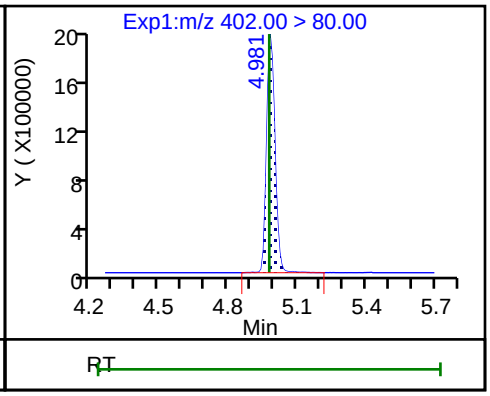
14 Perfluorohexanesulfonic acid



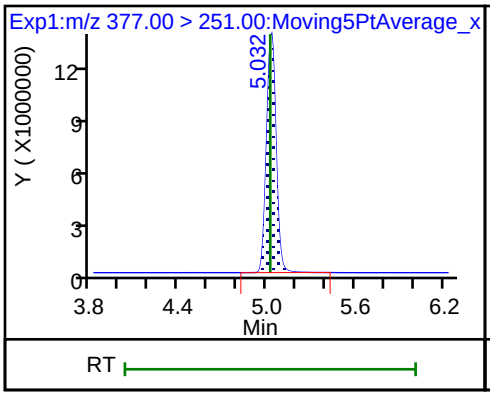
14 Perfluorohexanesulfonic acid



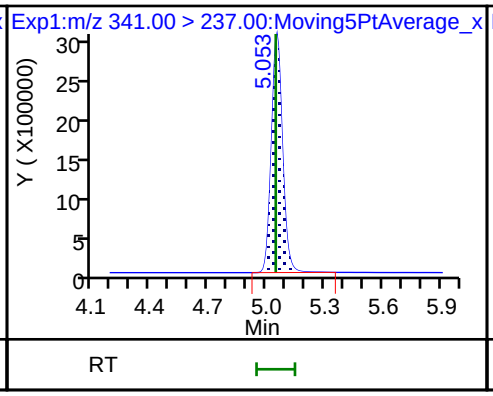
D 16 13C3 PFHxS



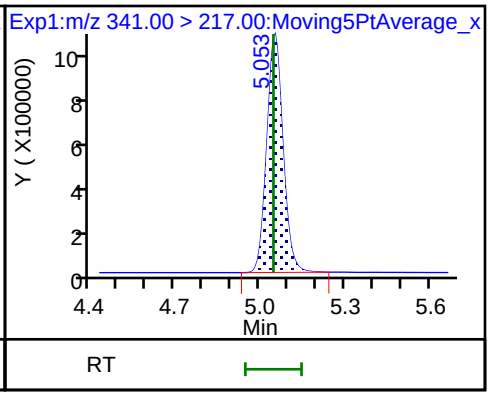
18 DONA



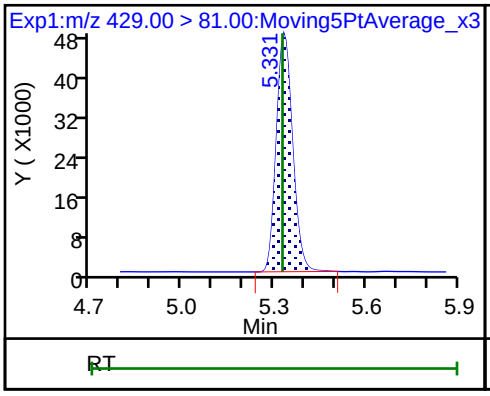
62 5:3 FTCA



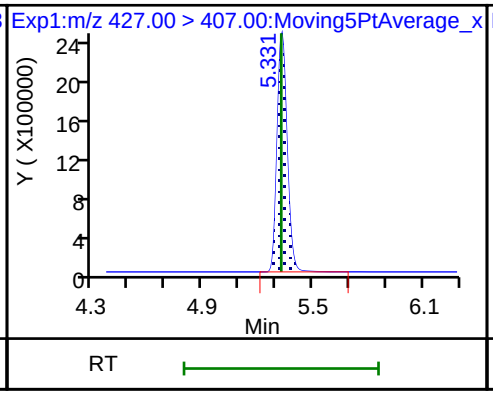
62 5:3 FTCA



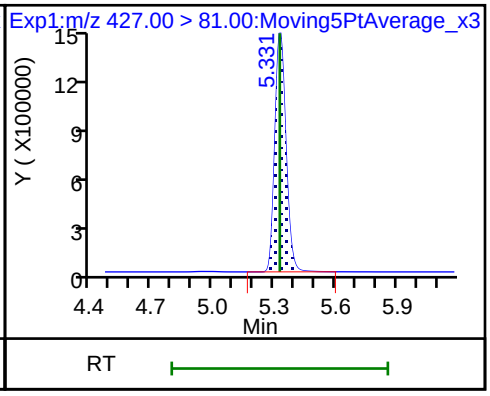
D 20 M2-6:2 FTS



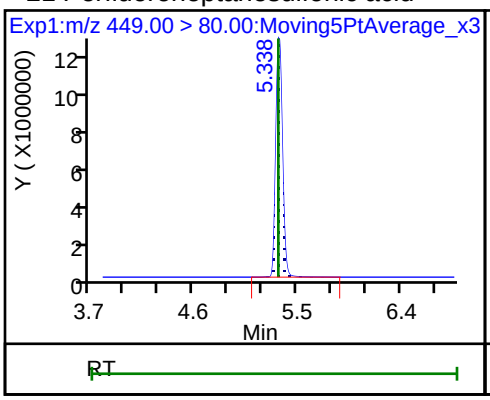
19 6:2 FTS



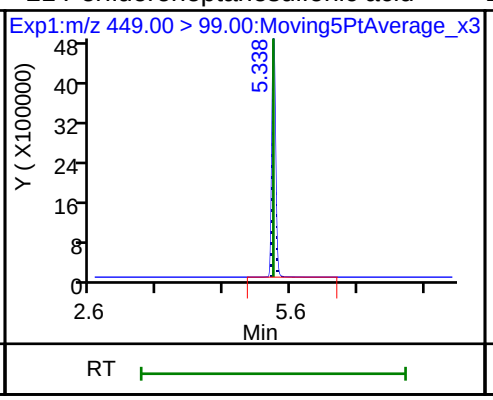
19 6:2 FTS



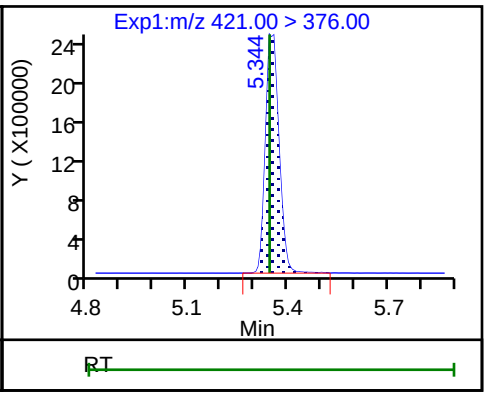
21 Perfluoroheptanesulfonic acid



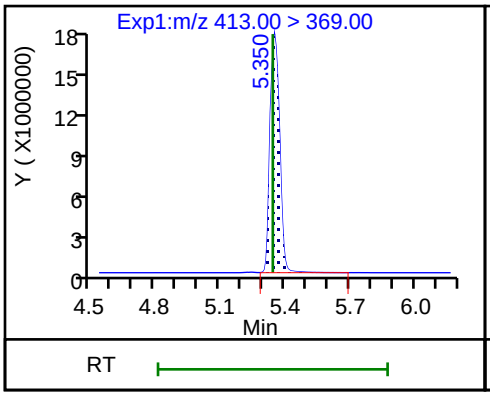
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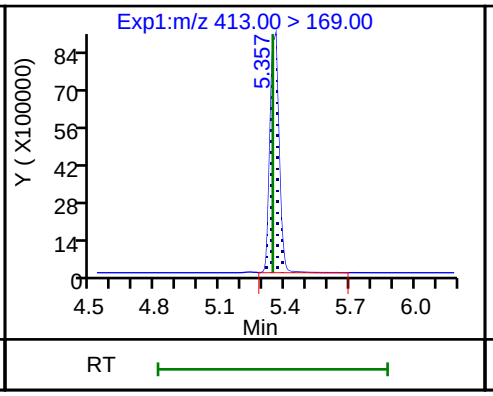
D 22 13C8 PFOA



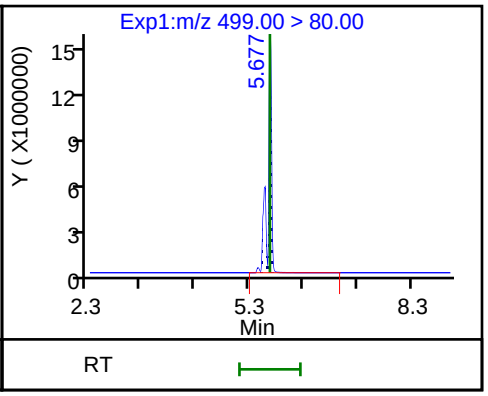
23 Perfluorooctanoic acid



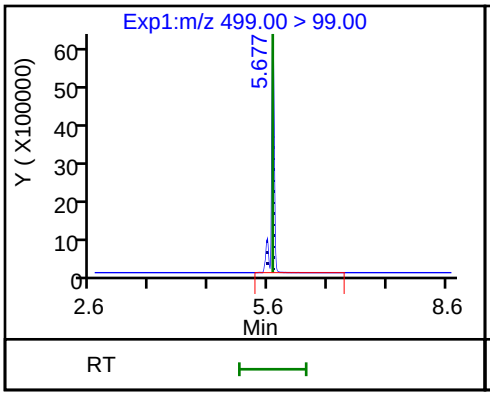
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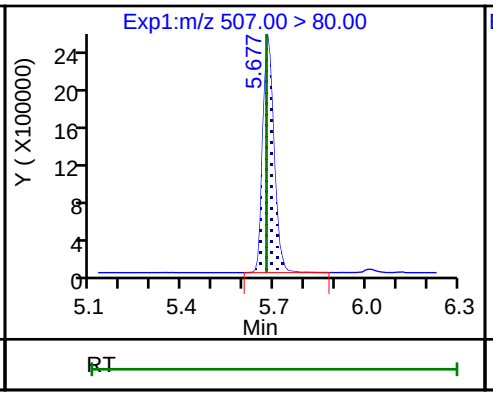
24 Perfluorooctanesulfonic acid



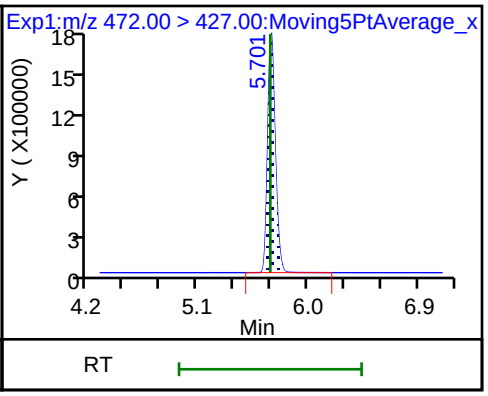
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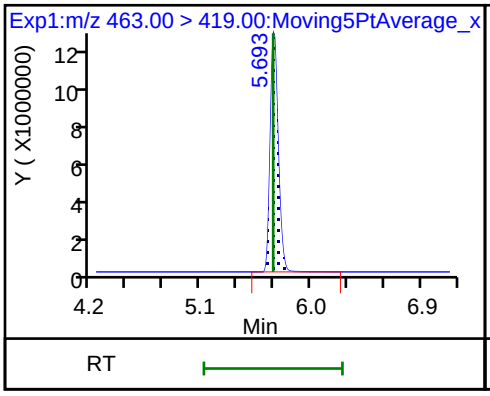
D 25 13C8 PFOS



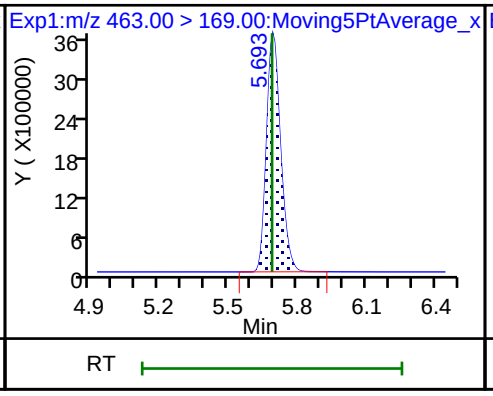
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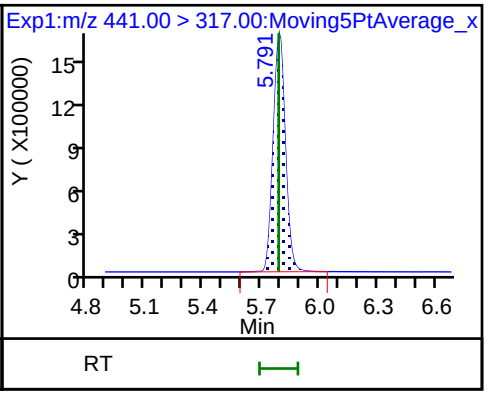
26 Perfluorononanoic acid



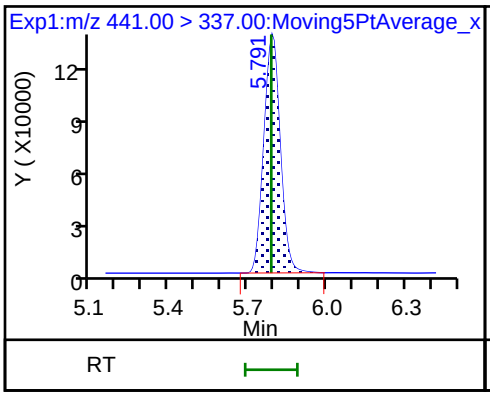
26 Perfluorononanoic acid



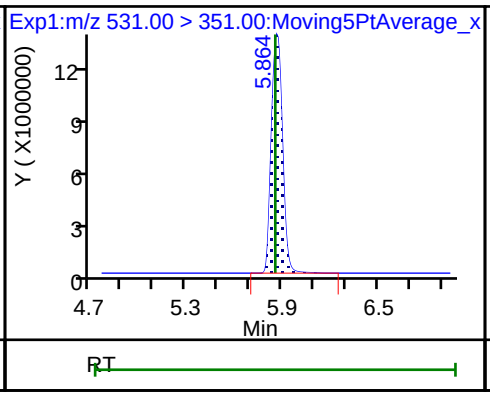
66 7:3 FTCA



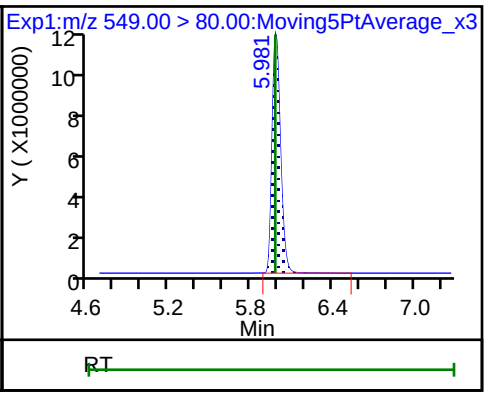
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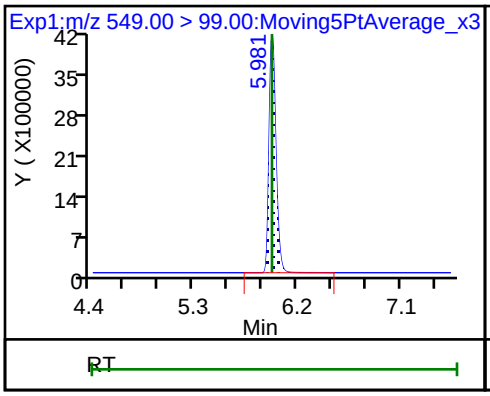
28 9ClFOS



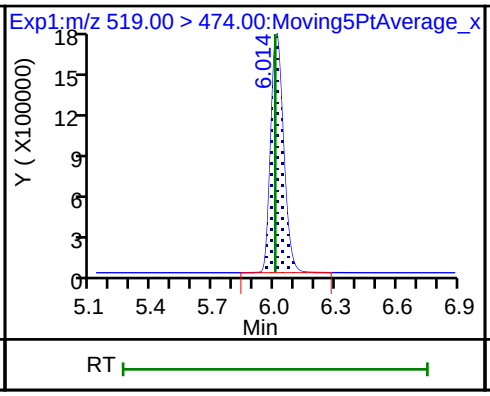
29 Perfluorononanesulfonic acid



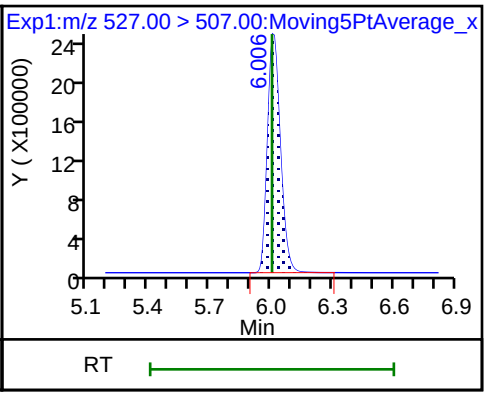
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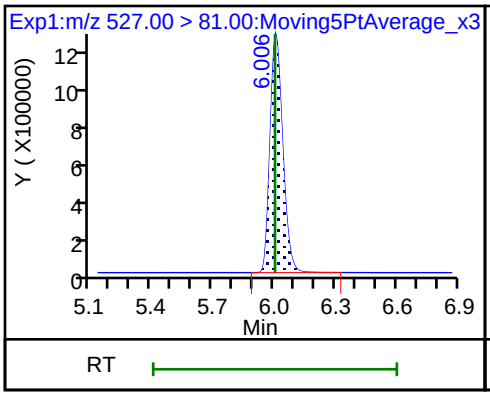
D 32 13C6 PFDA



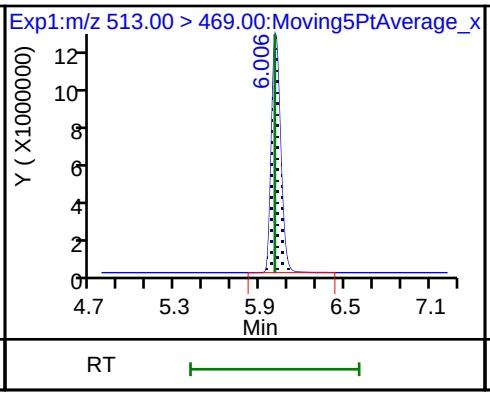
33 8:2 FTS



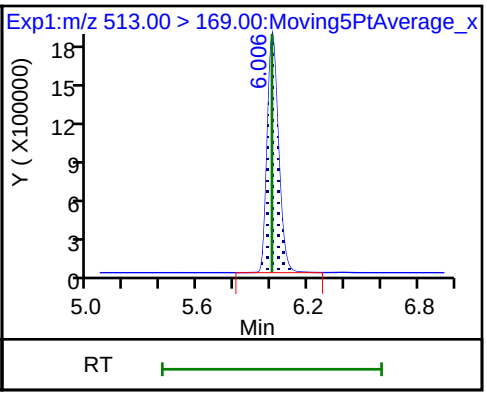
33 8:2 FTS



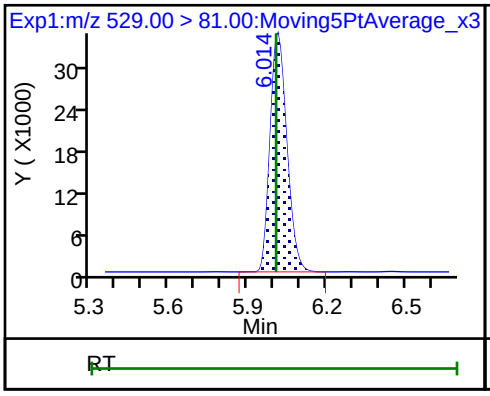
30 Perfluorodecanoic acid



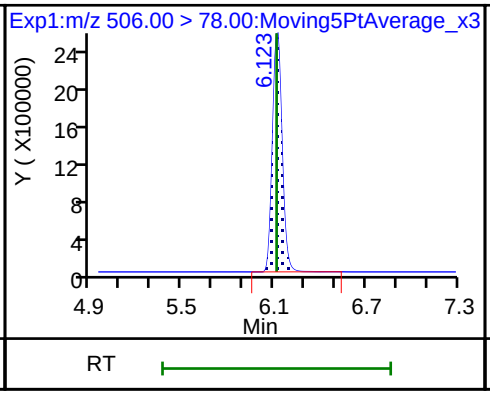
30 Perfluorodecanoic acid



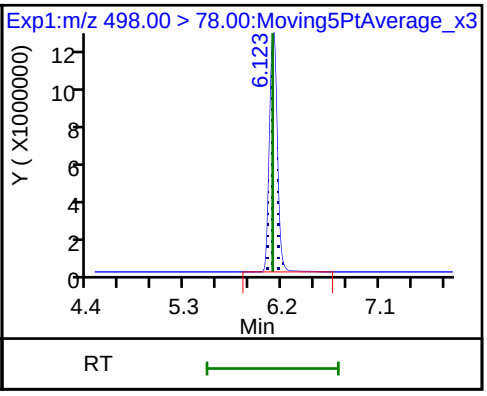
D 31 M2-8:2 FTS



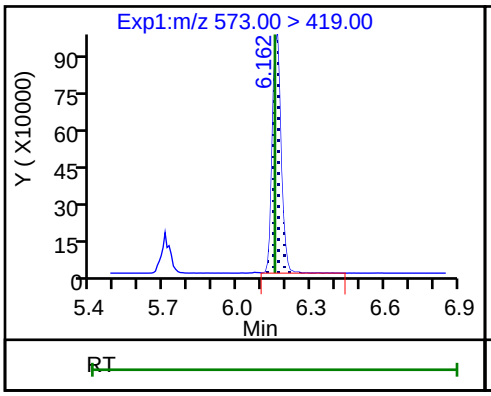
D 35 13C8 FOSA



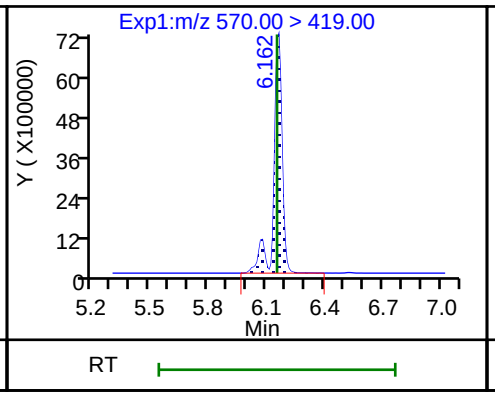
34 Perfluorooctanesulfonamide



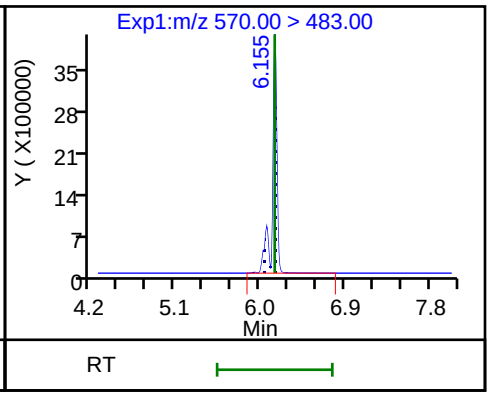
D 37 d3-NMeFOSAA



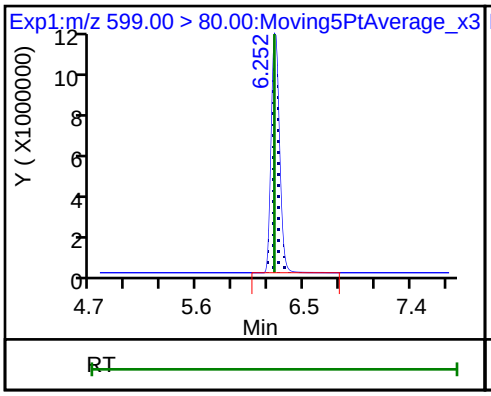
36 NMeFOSAA



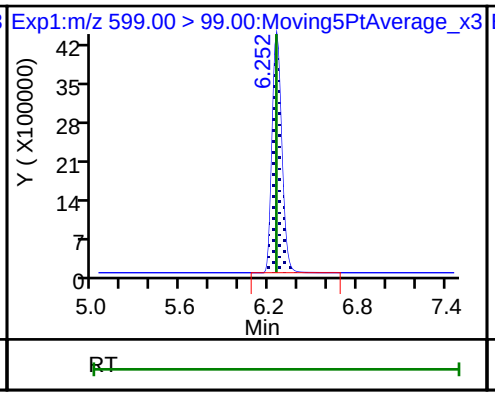
36 NMeFOSAA



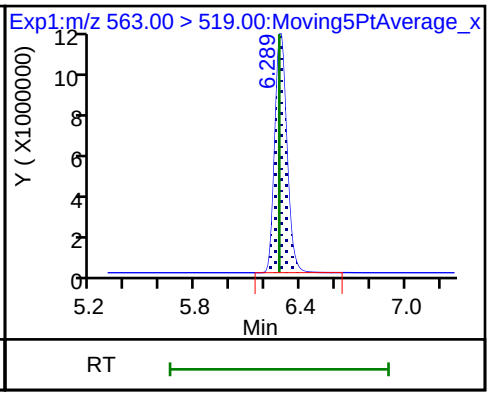
38 Perfluorodecanesulfonic acid



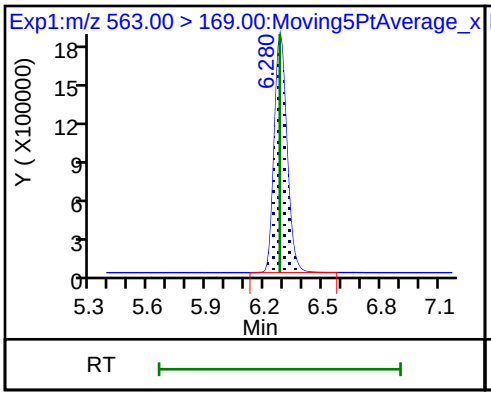
38 Perfluorodecanesulfonic acid



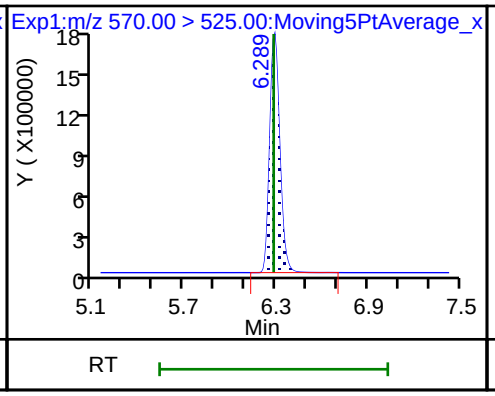
39 Perfluoroundecanoic acid



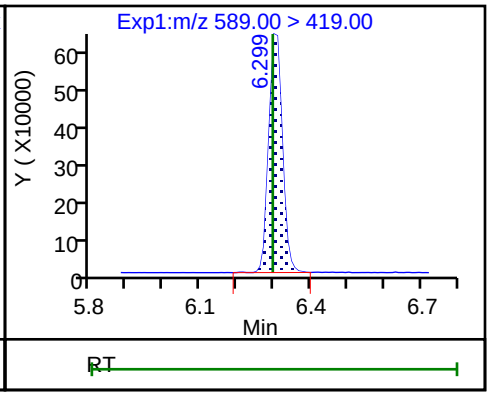
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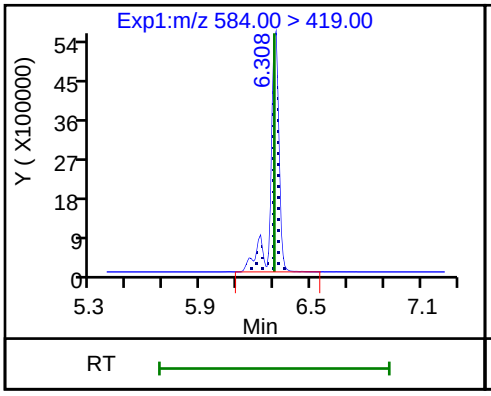
D 40 13C7 PFUnA



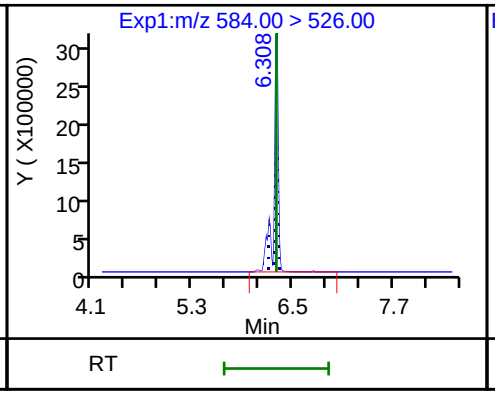
D 41 d5-NEtFOSAA



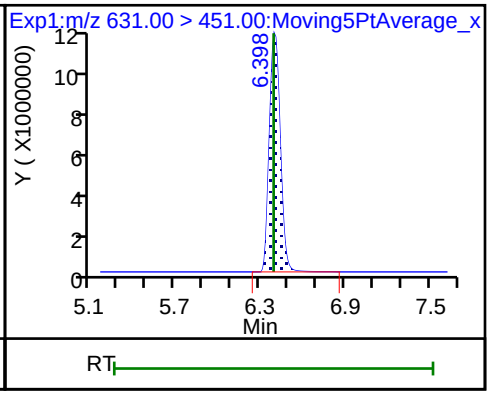
42 NEtFOSAA



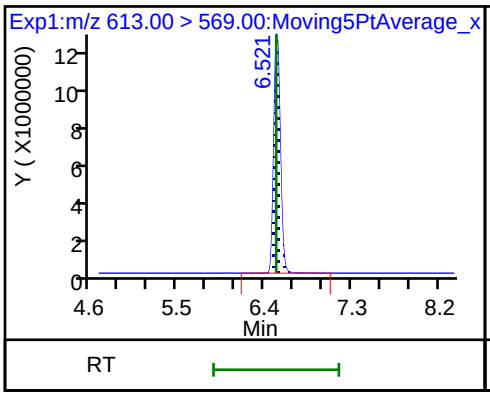
42 NEtFOSAA



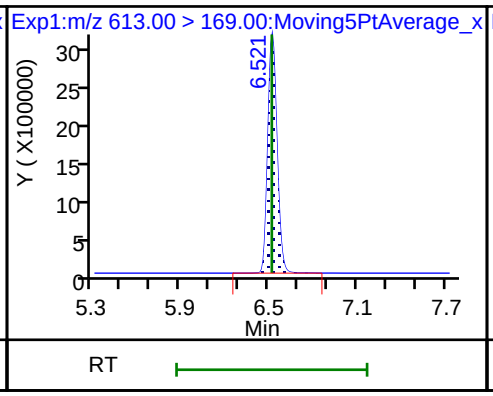
43 11ClFOS



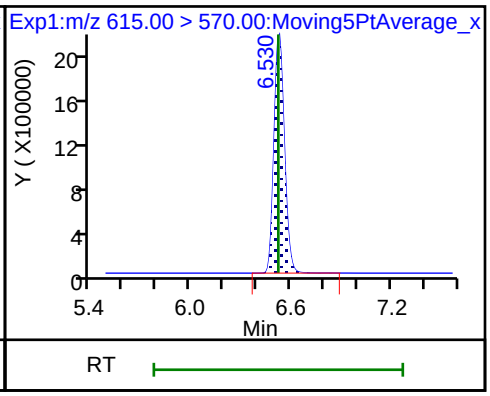
46 Perfluorododecanoic acid



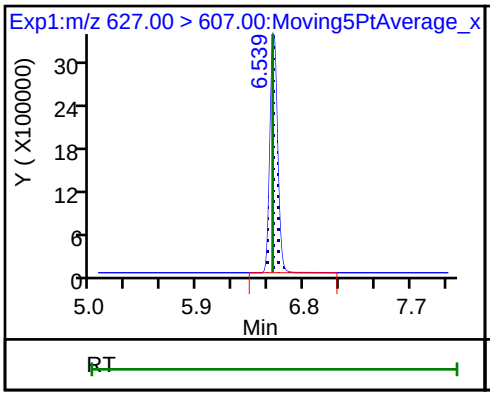
46 Perfluorododecanoic acid



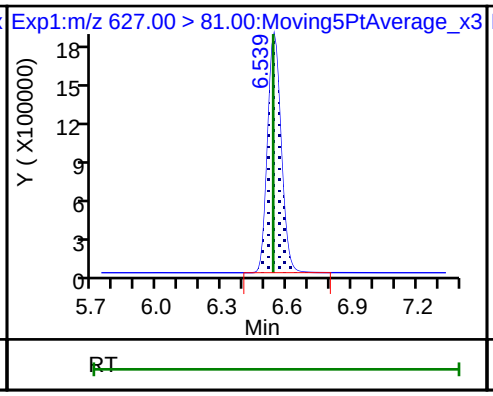
D 45 13C2-PFDoDA



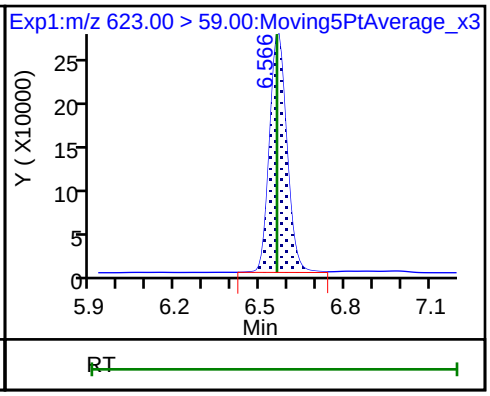
48 10:2 FTS



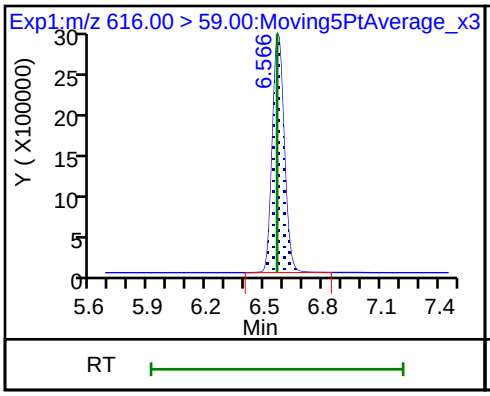
48 10:2 FTS



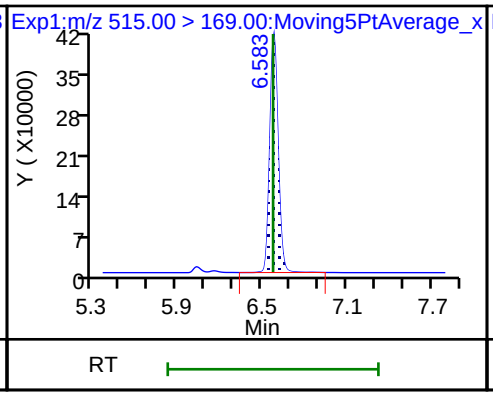
D 44 d7-N-MeFOSE-M



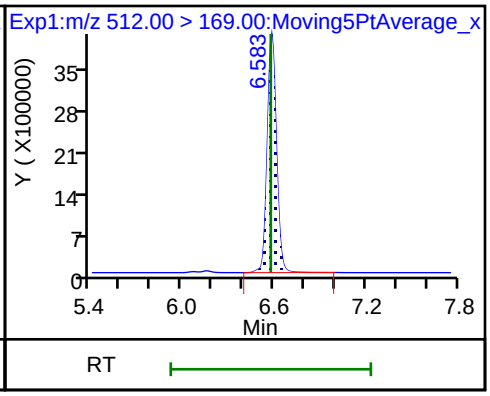
47 N-MeFOSE-M



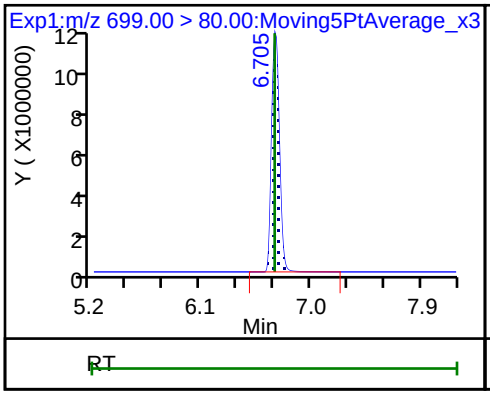
D 49 d3-NMePFOSA



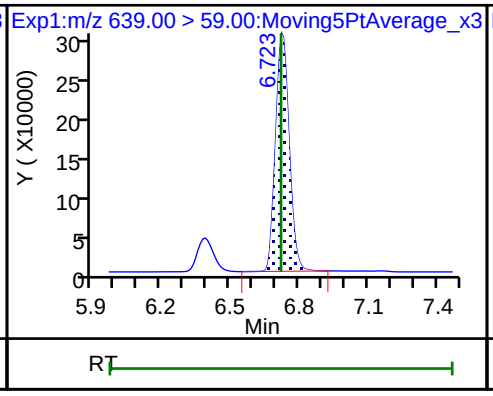
50 NMeFOSA



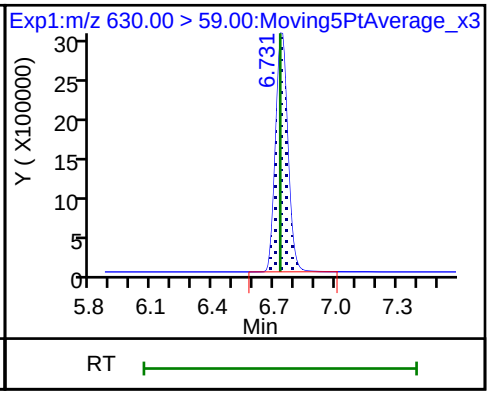
53 PFDoS



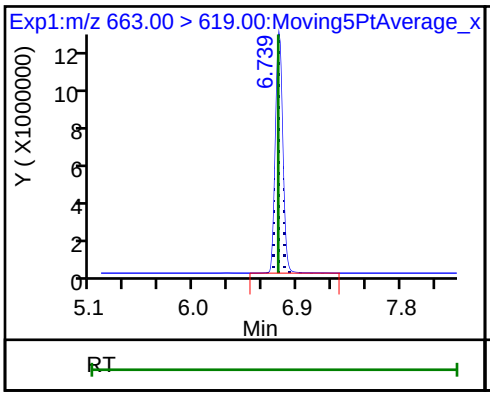
D 51 d9-N-EtFOSE-M



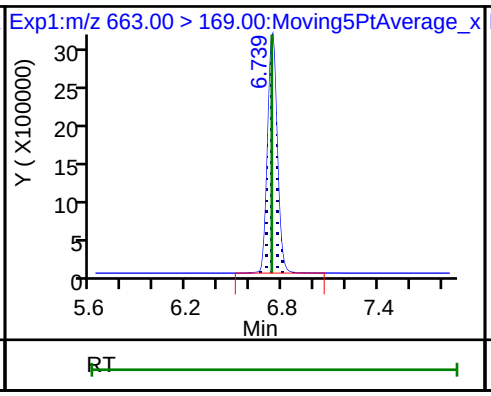
52 N-EtFOSE-M



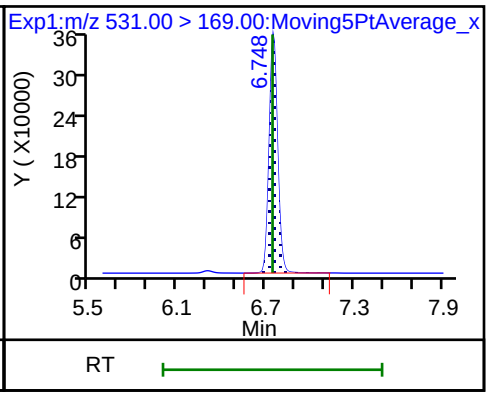
56 Perfluorotridecanoic acid



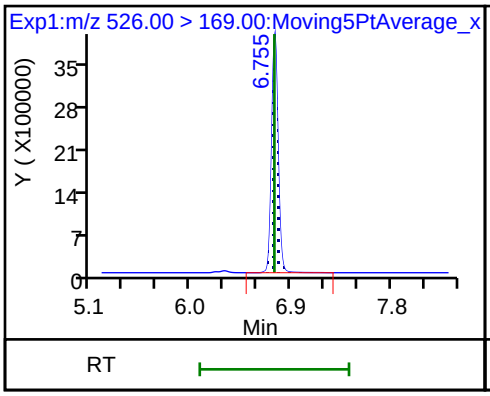
56 Perfluorotridecanoic acid



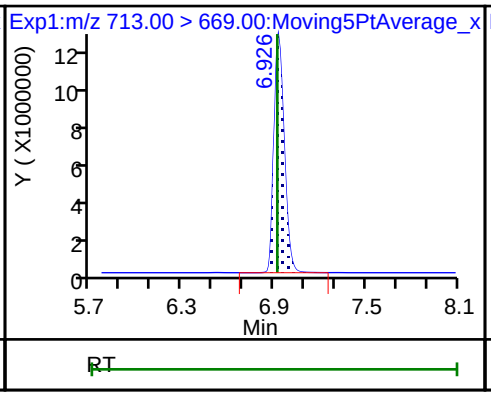
D 54 d5-NEtPFOSA



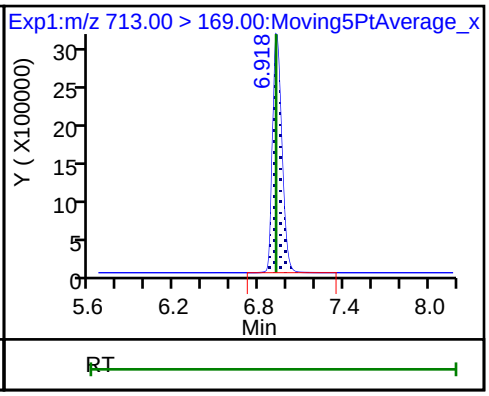
55 N-EtFOSA-M



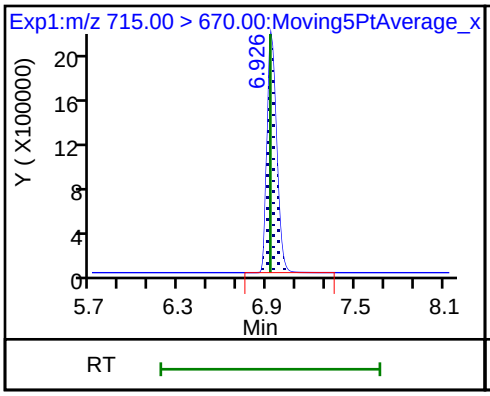
57 Perfluorotetradecanoic acid



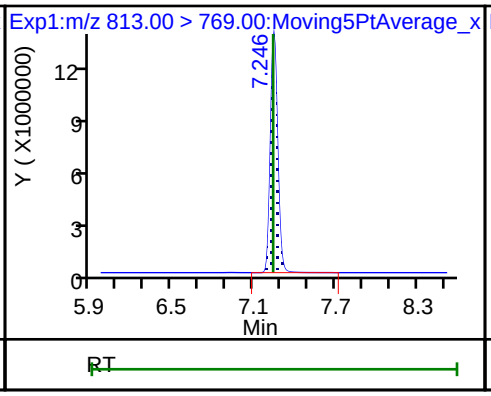
57 Perfluorotetradecanoic acid



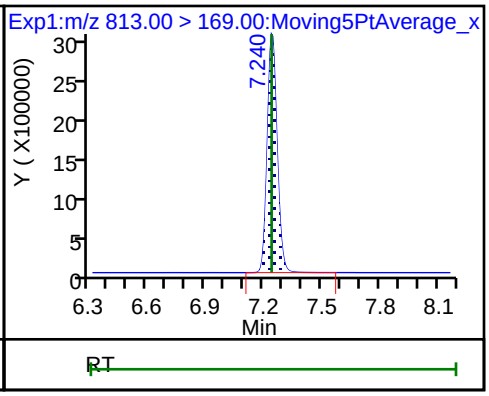
D 58 13C2 PFTeDA



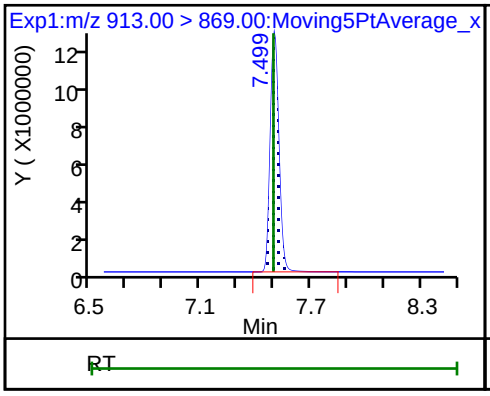
59 Perfluorohexadecanoic acid



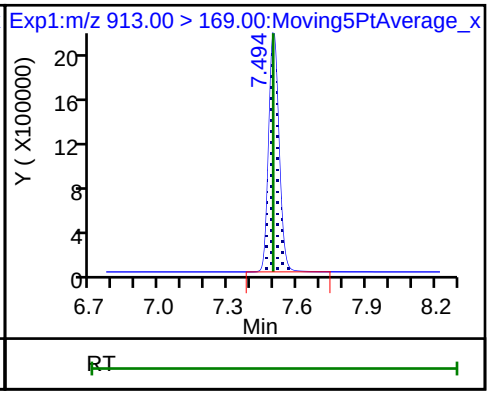
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Calibration / Perfluorobutanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

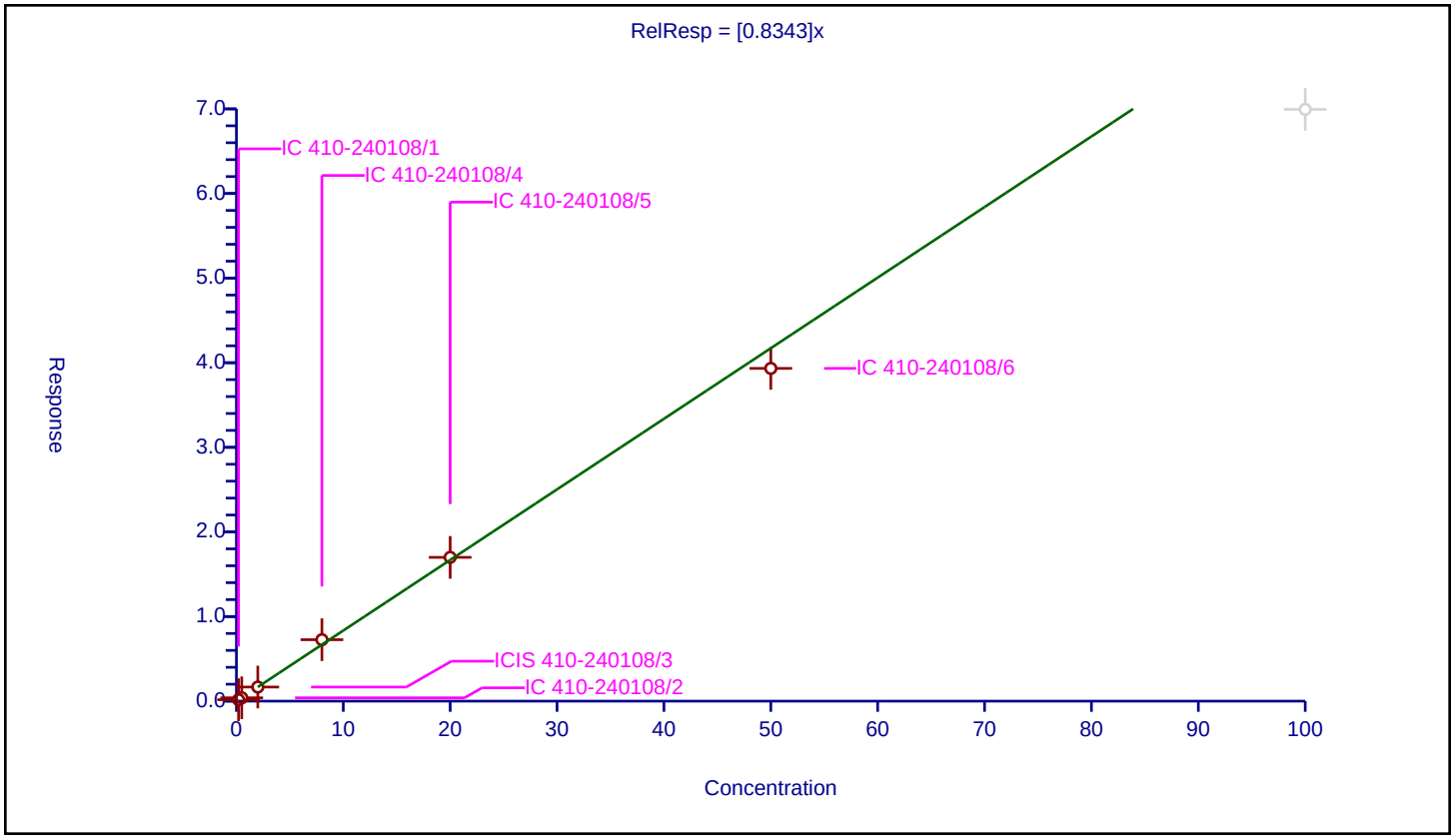
Curve Coefficients

Intercept:	0
Slope:	0.8343

Error Coefficients

Standard Error:	16000000
Relative Standard Error:	5.3
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.167692	10.0	9064011.0	0.838459	Y
2	IC 410-240108/2	0.5	0.395089	10.0	8811906.0	0.790179	Y
3	ICIS 410-240108/3	2.0	1.666726	10.0	9028031.0	0.833363	Y
4	IC 410-240108/4	8.0	7.259384	10.0	8574493.0	0.907423	Y
5	IC 410-240108/5	20.0	16.993287	10.0	8561467.0	0.849664	Y
6	IC 410-240108/6	50.0	39.328983	10.0	8136364.0	0.78658	Y
7	IC 410-240108/7	100.0	69.942777	10.0	7244875.0	0.699428	N



Calibration / PFECA F

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

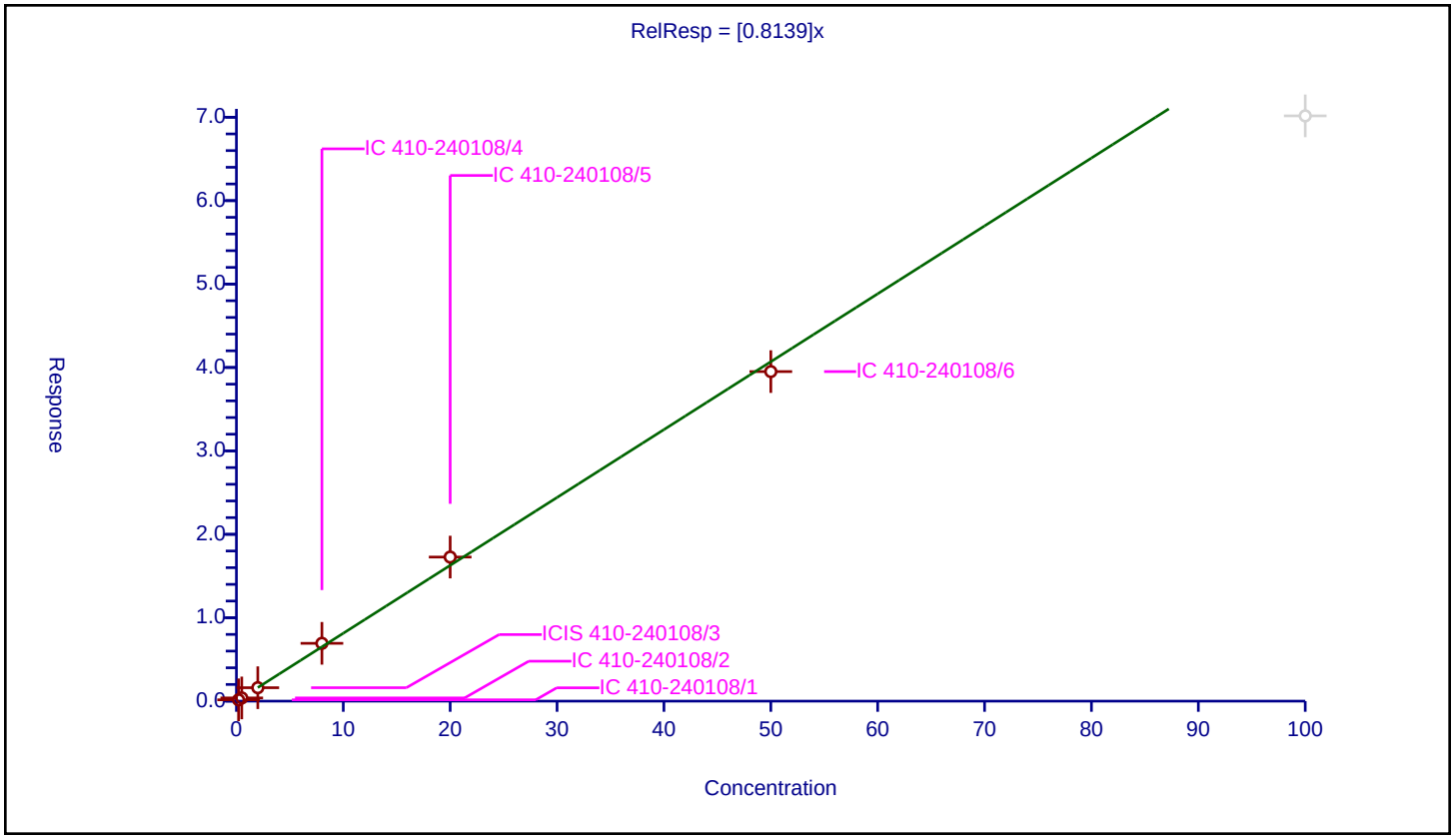
Curve Coefficients

Intercept:	0
Slope:	0.8139

Error Coefficients

Standard Error:	13100000
Relative Standard Error:	5.0
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.157568	10.0	7628473.0	0.787838	Y
2	IC 410-240108/2	0.5	0.385244	10.0	7275513.0	0.770489	Y
3	ICIS 410-240108/3	2.0	1.609777	10.0	7656785.0	0.804889	Y
4	IC 410-240108/4	8.0	6.929331	10.0	7415319.0	0.866166	Y
5	IC 410-240108/5	20.0	17.27374	10.0	7028806.0	0.863687	Y
6	IC 410-240108/6	50.0	39.507715	10.0	6589192.0	0.790154	Y
7	IC 410-240108/7	100.0	70.162438	10.0	5759351.0	0.701624	N



Calibration / 3:3 FTCA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

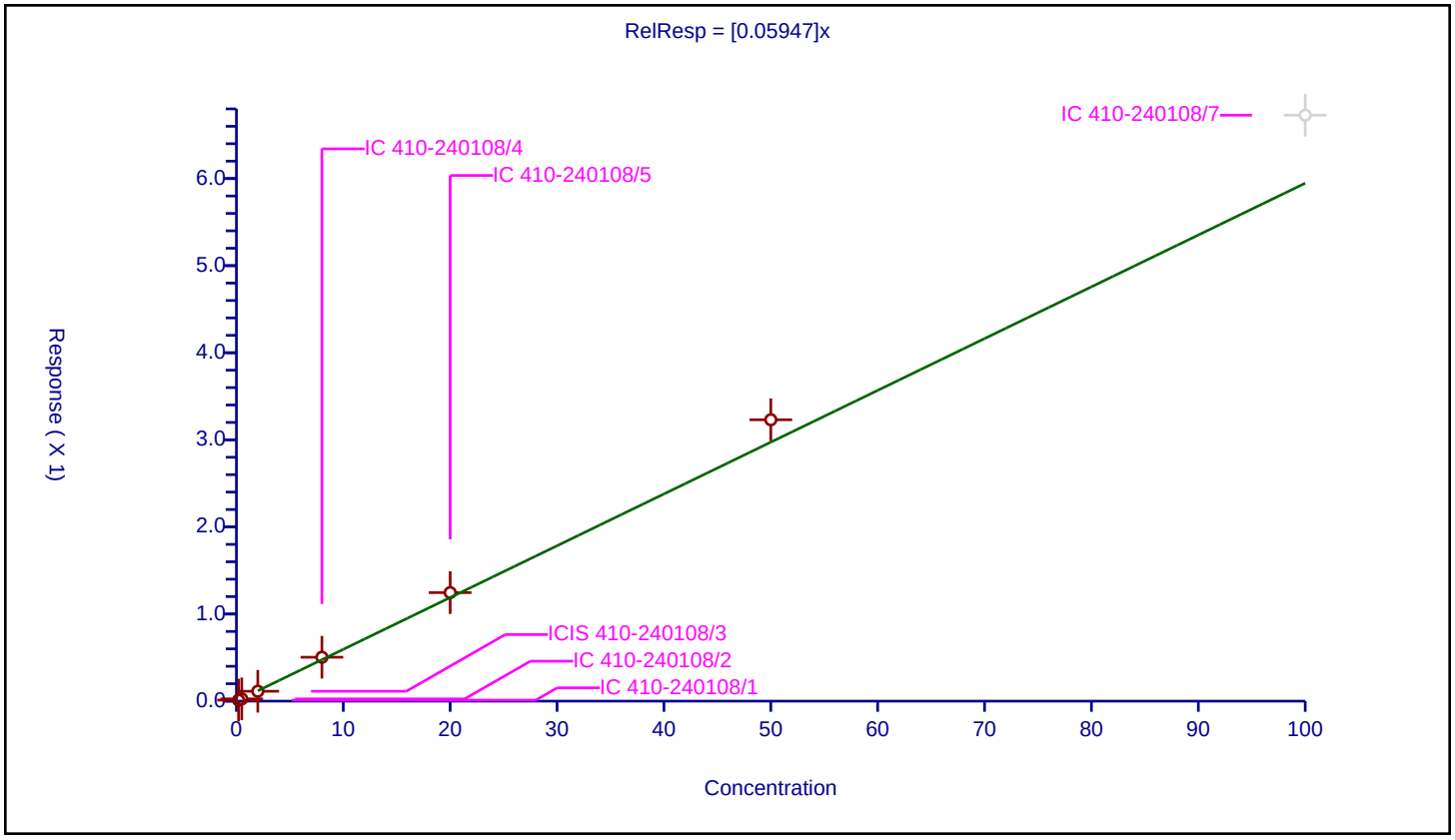
Curve Coefficients

Intercept:	0
Slope:	0.05947

Error Coefficients

Standard Error:	1040000
Relative Standard Error:	8.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.011673	10.0	7628473.0	0.058367	Y
2	IC 410-240108/2	0.5	0.02584	10.0	7275513.0	0.05168	Y
3	ICIS 410-240108/3	2.0	0.113683	10.0	7656785.0	0.056842	Y
4	IC 410-240108/4	8.0	0.503963	10.0	7415319.0	0.062995	Y
5	IC 410-240108/5	20.0	1.246139	10.0	7028806.0	0.062307	Y
6	IC 410-240108/6	50.0	3.230593	10.0	6589192.0	0.064612	Y
7	IC 410-240108/7	100.0	6.727385	10.0	5759351.0	0.067274	N



Calibration / Perfluoropentanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

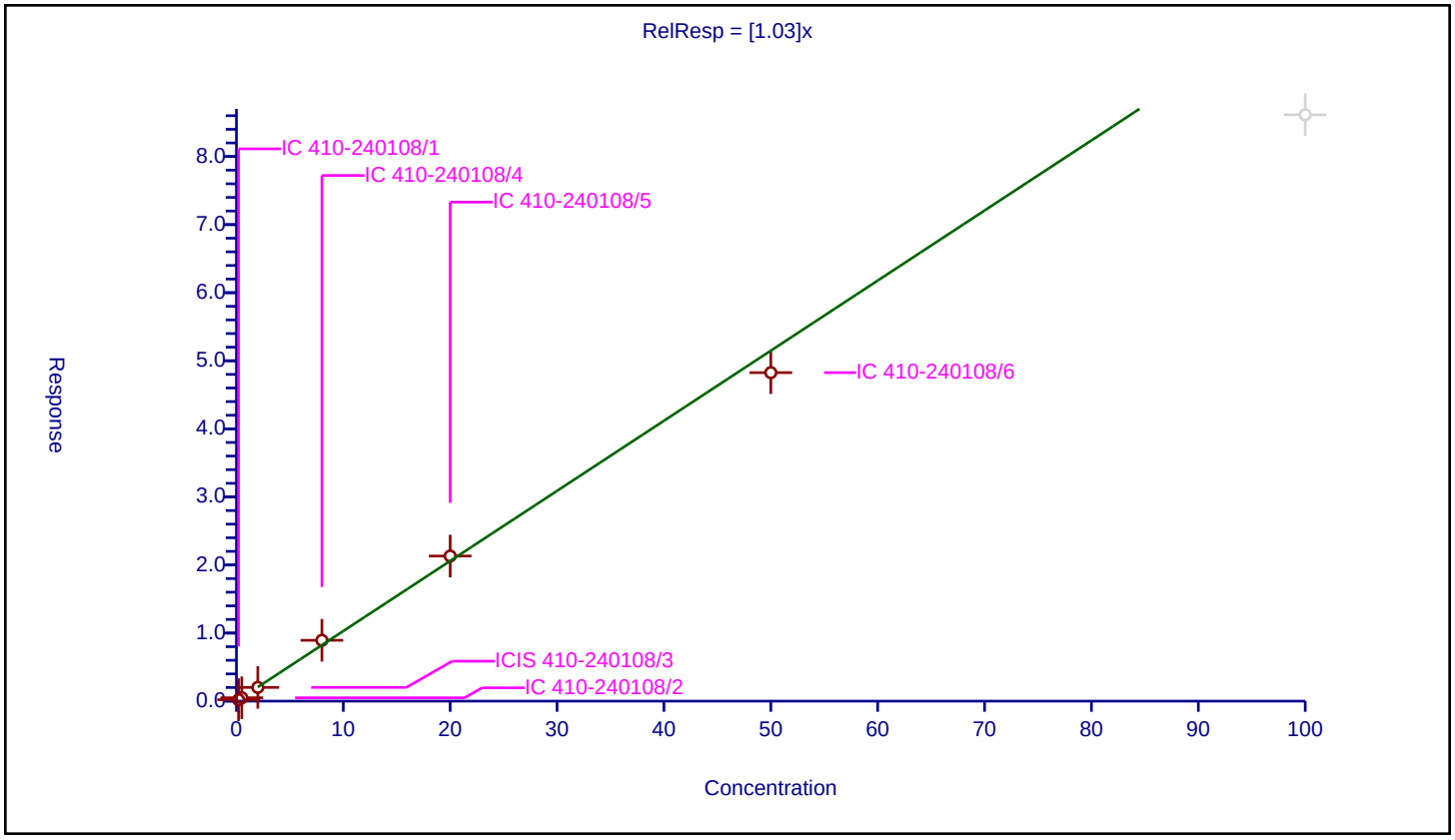
Curve Coefficients

Intercept:	0
Slope:	1.03

Error Coefficients

Standard Error:	16000000
Relative Standard Error:	5.4
Correlation Coefficient:	0.994
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.206912	10.0	7628473.0	1.034558	Y
2	IC 410-240108/2	0.5	0.49322	10.0	7275513.0	0.98644	Y
3	ICIS 410-240108/3	2.0	2.017885	10.0	7656785.0	1.008942	Y
4	IC 410-240108/4	8.0	8.936659	10.0	7415319.0	1.117082	Y
5	IC 410-240108/5	20.0	21.314394	10.0	7028806.0	1.06572	Y
6	IC 410-240108/6	50.0	48.257422	10.0	6589192.0	0.965148	Y
7	IC 410-240108/7	100.0	86.140018	10.0	5759351.0	0.8614	N



Calibration / Perfluorobutanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

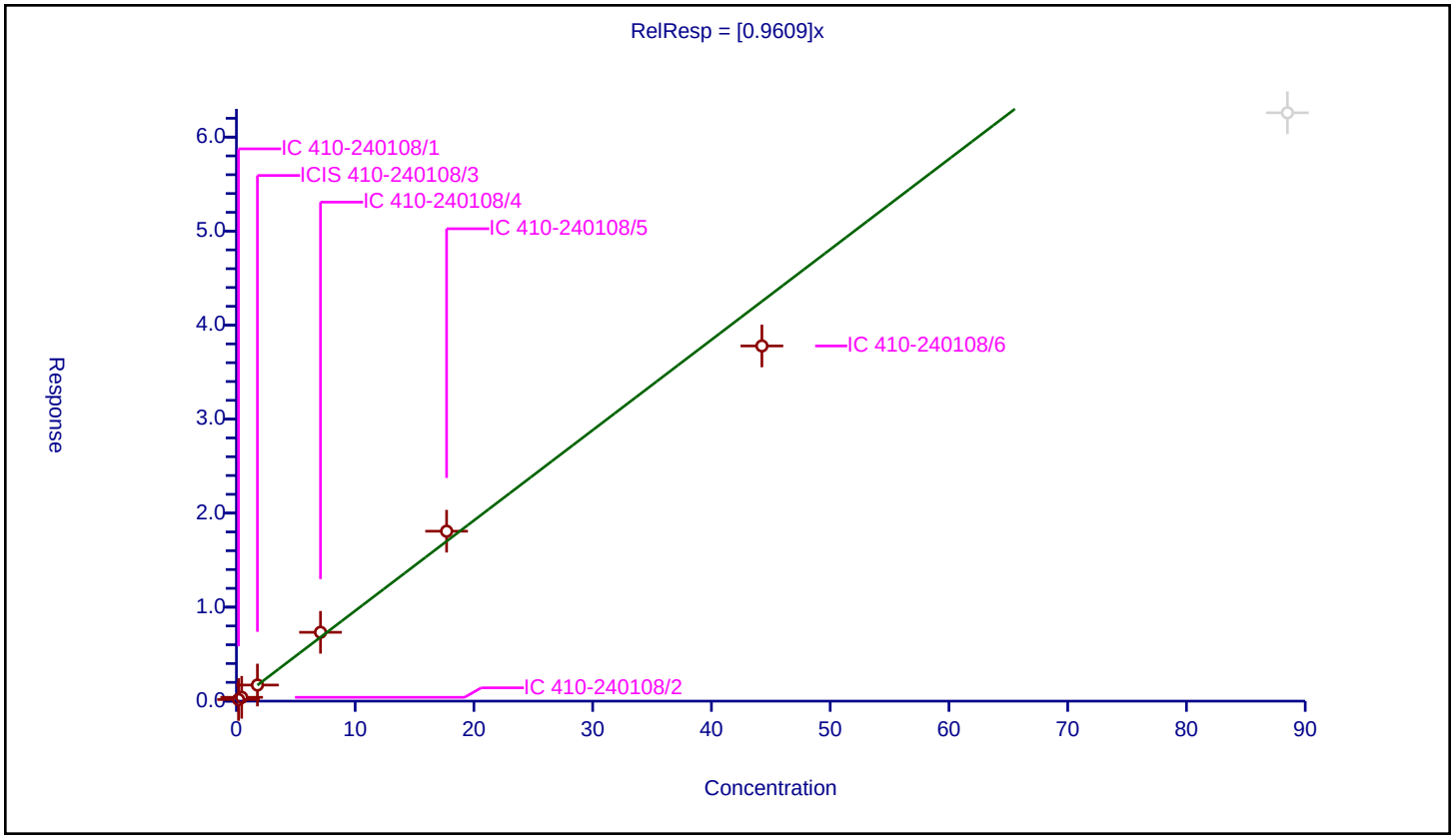
Curve Coefficients

Intercept:	0
Slope:	0.9609

Error Coefficients

Standard Error:	16800000
Relative Standard Error:	7.0
Correlation Coefficient:	0.989
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.177	0.171837	9.3	9160417.0	0.970831	Y
2	IC 410-240108/2	0.4425	0.406168	9.3	8759164.0	0.917895	Y
3	ICIS 410-240108/3	1.77	1.712594	9.3	9099755.0	0.967567	Y
4	IC 410-240108/4	7.08	7.322077	9.3	8862249.0	1.034192	Y
5	IC 410-240108/5	17.7	18.07697	9.3	8476988.0	1.021298	Y
6	IC 410-240108/6	44.25	37.785765	9.3	8089225.0	0.853916	Y
7	IC 410-240108/7	88.5	62.587593	9.3	7407561.0	0.707204	N



Calibration / PFECA A

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

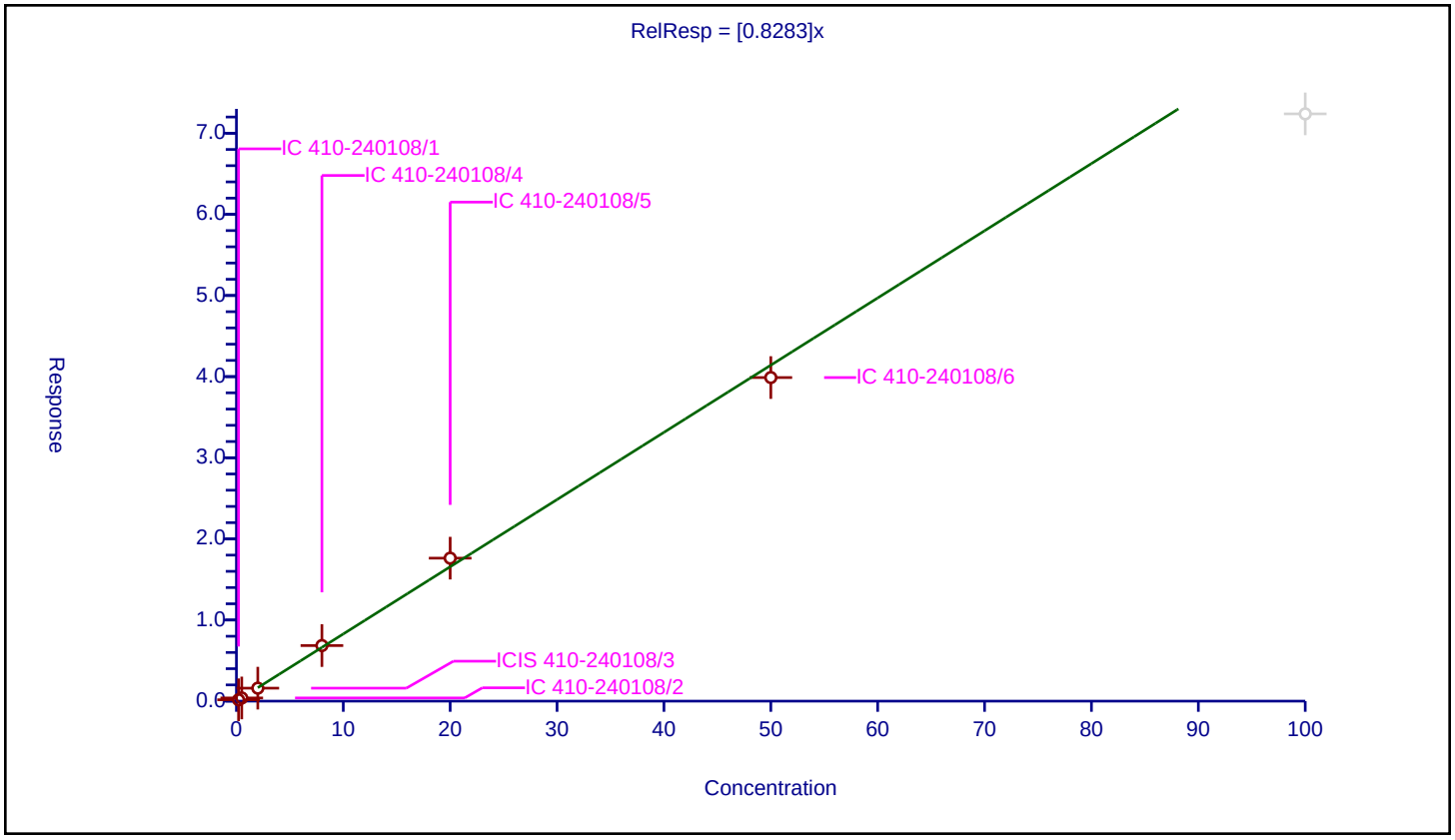
Curve Coefficients

Intercept:	0
Slope:	0.8283

Error Coefficients

Standard Error:	13200000
Relative Standard Error:	4.6
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.169165	10.0	7628473.0	0.845825	Y
2	IC 410-240108/2	0.5	0.393814	10.0	7275513.0	0.787628	Y
3	ICIS 410-240108/3	2.0	1.601496	10.0	7656785.0	0.800748	Y
4	IC 410-240108/4	8.0	6.851061	10.0	7415319.0	0.856383	Y
5	IC 410-240108/5	20.0	17.625201	10.0	7028806.0	0.88126	Y
6	IC 410-240108/6	50.0	39.887064	10.0	6589192.0	0.797741	Y
7	IC 410-240108/7	100.0	72.385802	10.0	5759351.0	0.723858	N



Calibration / PES

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

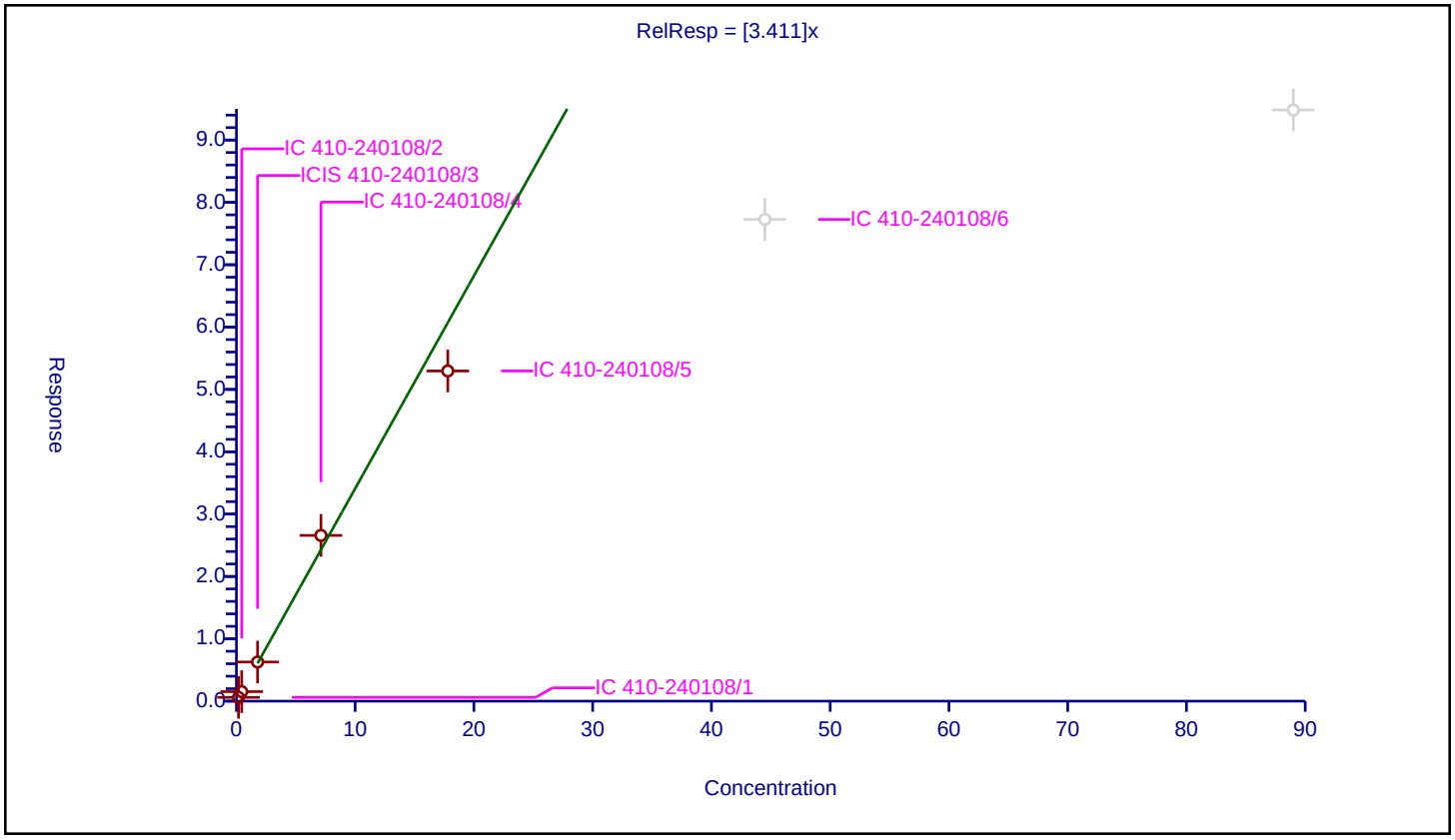
Curve Coefficients

Intercept:	0
Slope:	3.411

Error Coefficients

Standard Error:	25600000
Relative Standard Error:	8.1
Correlation Coefficient:	0.983
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.178	0.603685	10.0	9433849.0	3.391487	Y
2	IC 410-240108/2	0.445	1.525588	10.0	8895986.0	3.428288	Y
3	ICIS 410-240108/3	1.78	6.277629	10.0	9415459.0	3.526758	Y
4	IC 410-240108/4	7.12	26.581998	10.0	8980825.0	3.733427	Y
5	IC 410-240108/5	17.8	52.959314	10.0	8494523.0	2.975242	Y
6	IC 410-240108/6	44.5	77.269491	10.0	7974766.0	1.736393	N
7	IC 410-240108/7	89.0	94.831153	10.0	6716153.0	1.065519	N



Calibration / PFECA B

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

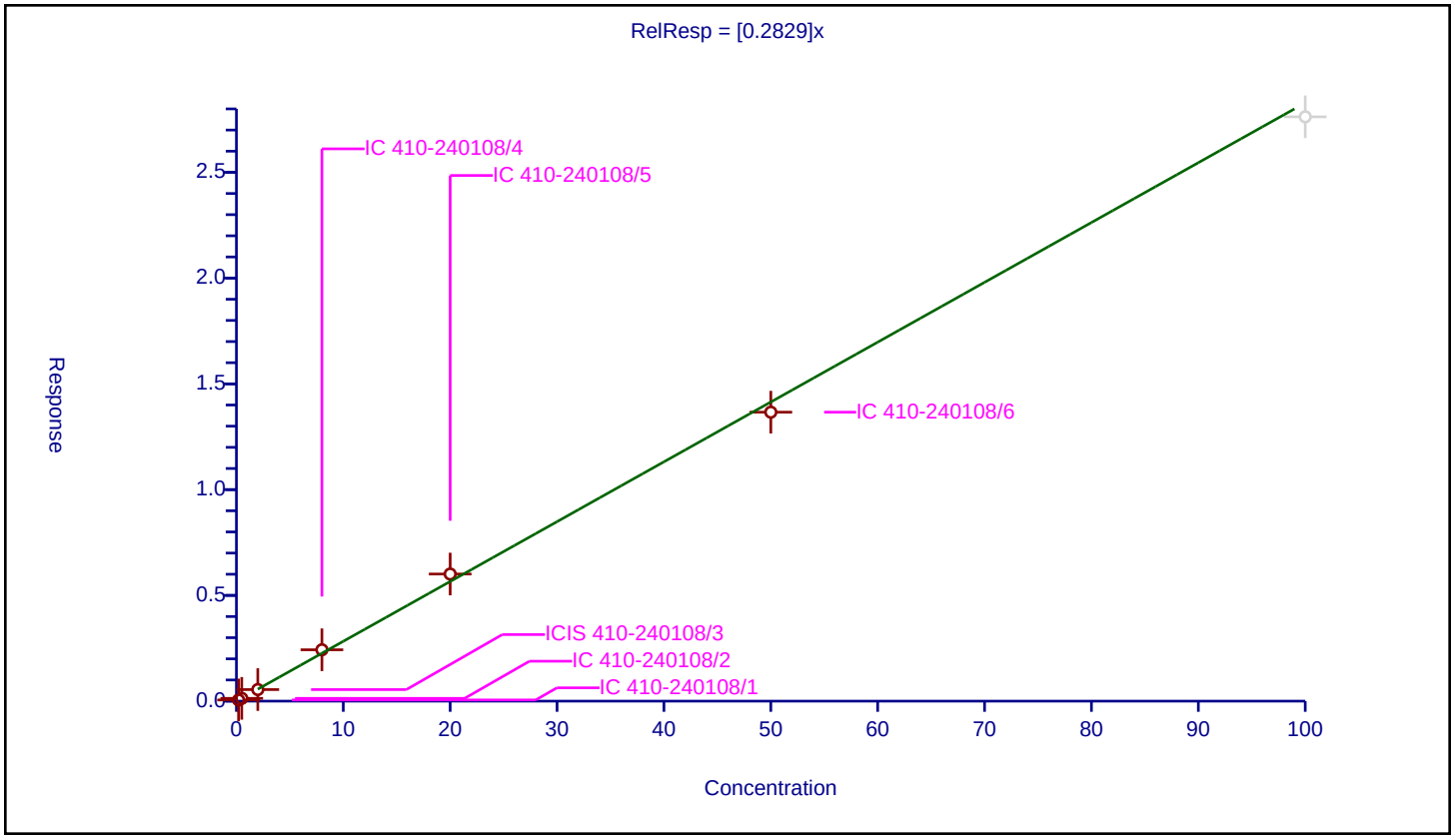
Curve Coefficients

Intercept:	0
Slope:	0.2829

Error Coefficients

Standard Error:	5470000
Relative Standard Error:	5.7
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.056525	10.0	9433849.0	0.282626	Y
2	IC 410-240108/2	0.5	0.131718	10.0	8895986.0	0.263436	Y
3	ICIS 410-240108/3	2.0	0.547609	10.0	9415459.0	0.273804	Y
4	IC 410-240108/4	8.0	2.428338	10.0	8980825.0	0.303542	Y
5	IC 410-240108/5	20.0	6.009898	10.0	8494523.0	0.300495	Y
6	IC 410-240108/6	50.0	13.661228	10.0	7974766.0	0.273225	Y
7	IC 410-240108/7	100.0	27.62526	10.0	6716153.0	0.276253	N



Calibration / 1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

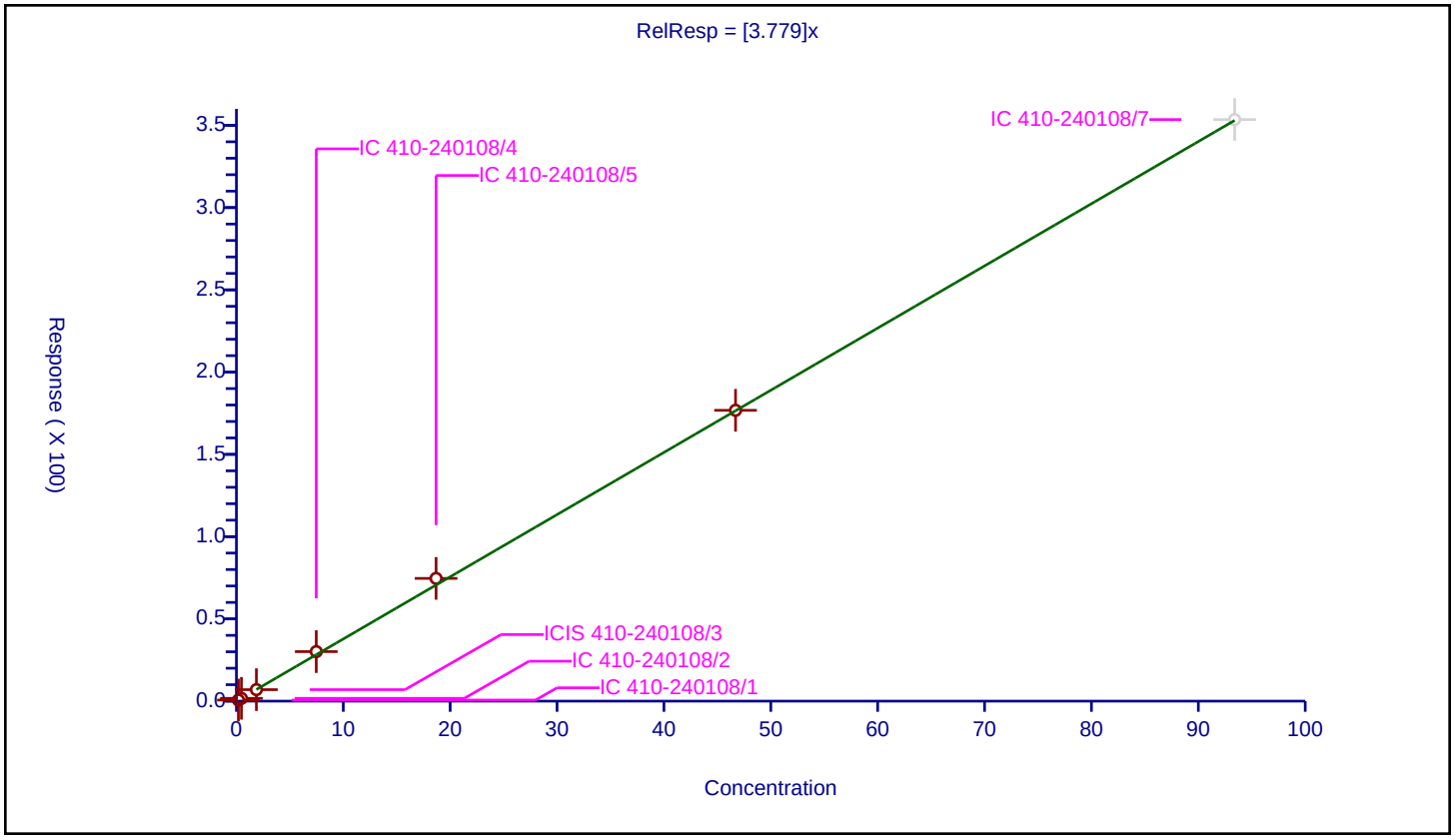
Curve Coefficients

Intercept:	0
Slope:	3.779

Error Coefficients

Standard Error:	3230000
Relative Standard Error:	5.5
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1868	0.650313	9.34	400924.0	3.481333	Y
2	IC 410-240108/2	0.467	1.702454	9.34	381631.0	3.645511	Y
3	ICIS 410-240108/3	1.868	6.987084	9.34	403246.0	3.740409	Y
4	IC 410-240108/4	7.472	30.11136	9.34	371584.0	4.029893	Y
5	IC 410-240108/5	18.68	74.614642	9.34	375698.0	3.99436	Y
6	IC 410-240108/6	46.7	176.779968	9.34	341526.0	3.785438	Y
7	IC 410-240108/7	93.4	353.50019	9.34	314616.0	3.784799	N



Calibration / Perfluorohexanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

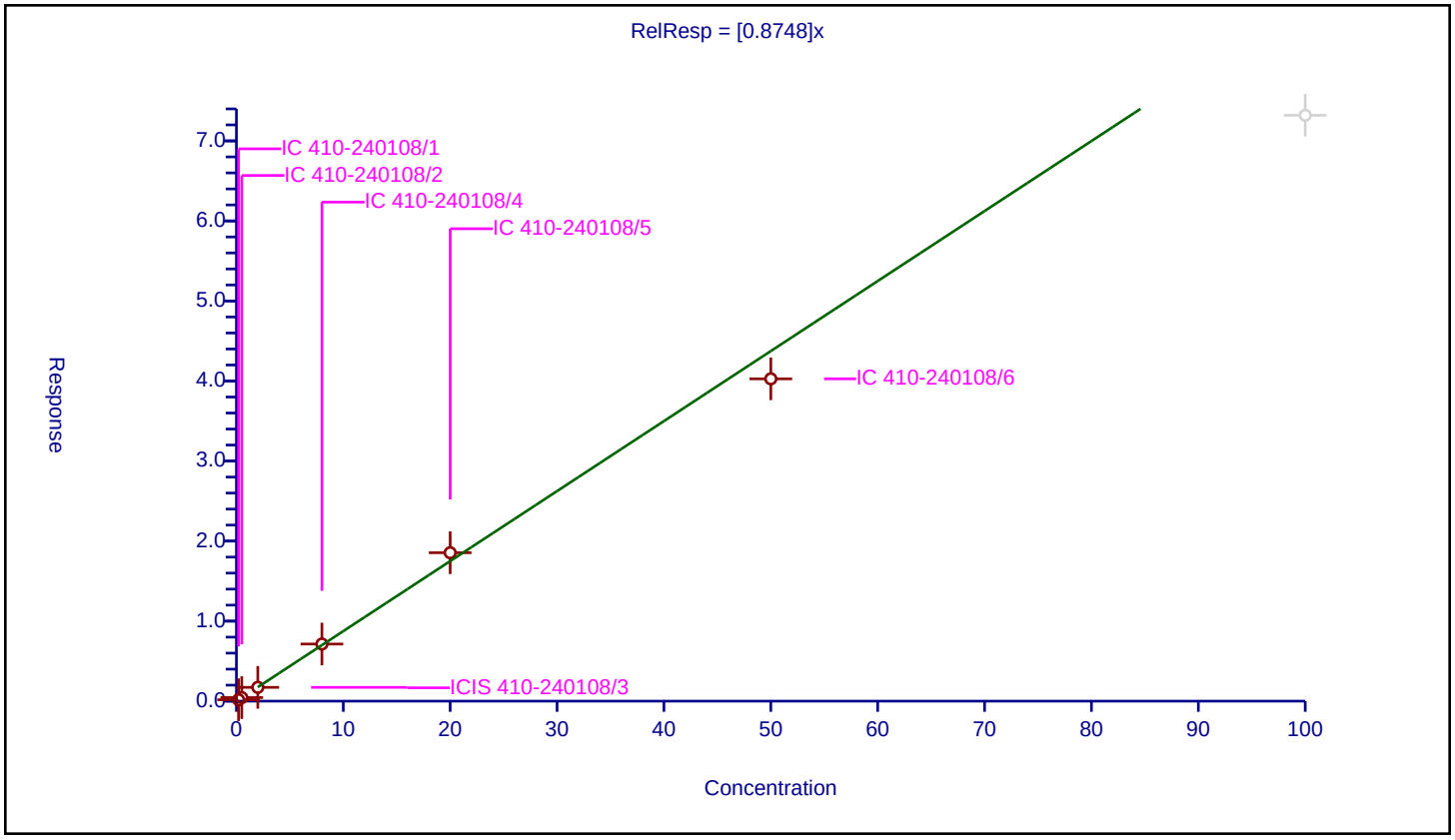
Curve Coefficients

Intercept:	0
Slope:	0.8748

Error Coefficients

Standard Error:	16300000
Relative Standard Error:	4.6
Correlation Coefficient:	0.992
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.175056	10.0	9433849.0	0.875279	Y
2	IC 410-240108/2	0.5	0.443916	10.0	8895986.0	0.887832	Y
3	ICIS 410-240108/3	2.0	1.722057	10.0	9415459.0	0.861029	Y
4	IC 410-240108/4	8.0	7.136967	10.0	8980825.0	0.892121	Y
5	IC 410-240108/5	20.0	18.542935	10.0	8494523.0	0.927147	Y
6	IC 410-240108/6	50.0	40.271368	10.0	7974766.0	0.805427	Y
7	IC 410-240108/7	100.0	73.201744	10.0	6716153.0	0.732017	N



Calibration / Perfluoropentanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

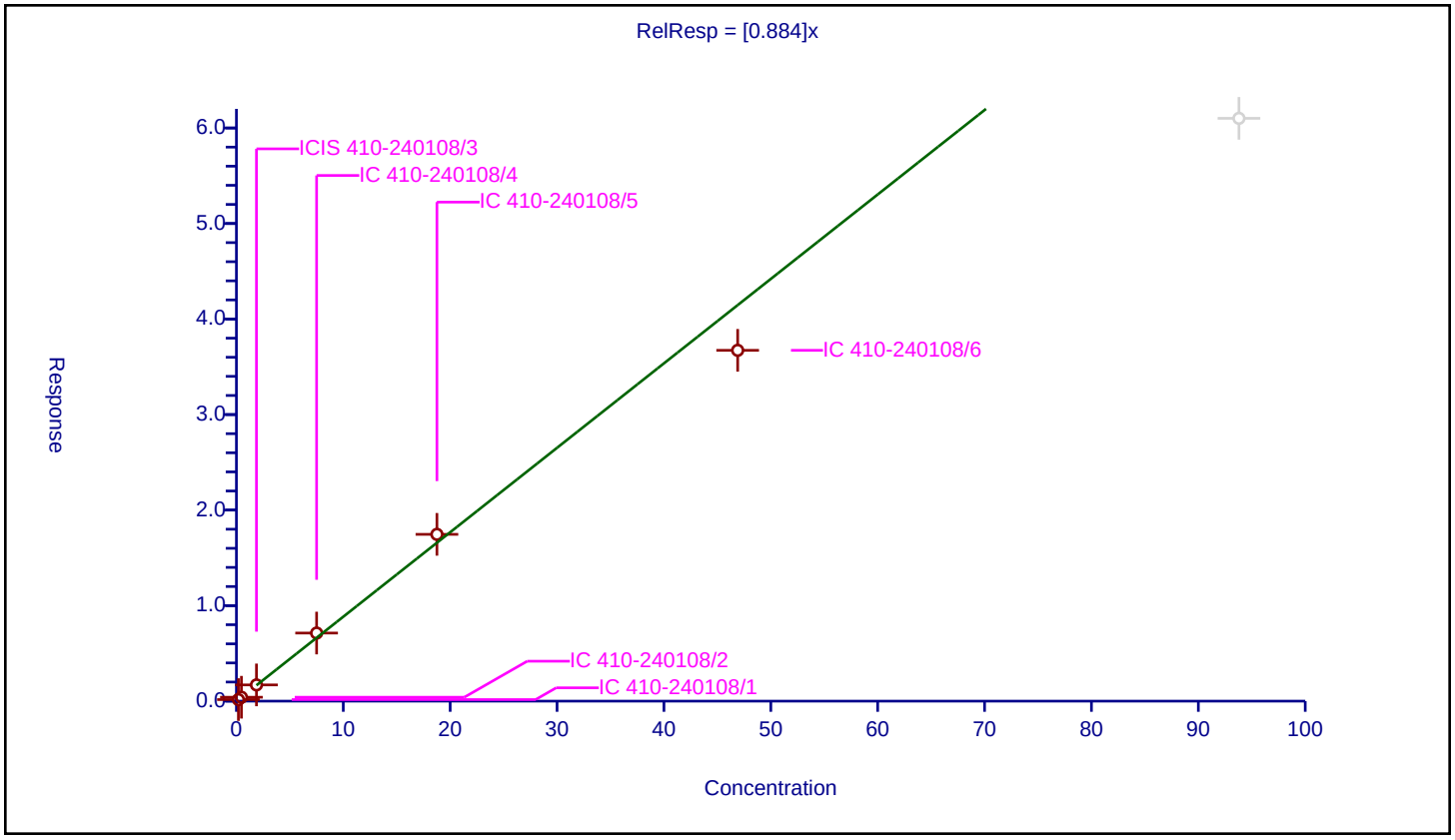
Curve Coefficients

Intercept:	0
Slope:	0.884

Error Coefficients

Standard Error:	16300000
Relative Standard Error:	6.7
Correlation Coefficient:	0.990
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1876	0.161827	9.3	9160417.0	0.862616	Y
2	IC 410-240108/2	0.469	0.408801	9.3	8759164.0	0.871643	Y
3	ICIS 410-240108/3	1.876	1.699796	9.3	9099755.0	0.906074	Y
4	IC 410-240108/4	7.504	7.127131	9.3	8862249.0	0.949778	Y
5	IC 410-240108/5	18.76	17.460535	9.3	8476988.0	0.930732	Y
6	IC 410-240108/6	46.9	36.72522	9.3	8089225.0	0.783054	Y
7	IC 410-240108/7	93.8	61.009127	9.3	7407561.0	0.650417	N



Calibration / Perfluoro(2-propoxypropanoic) acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

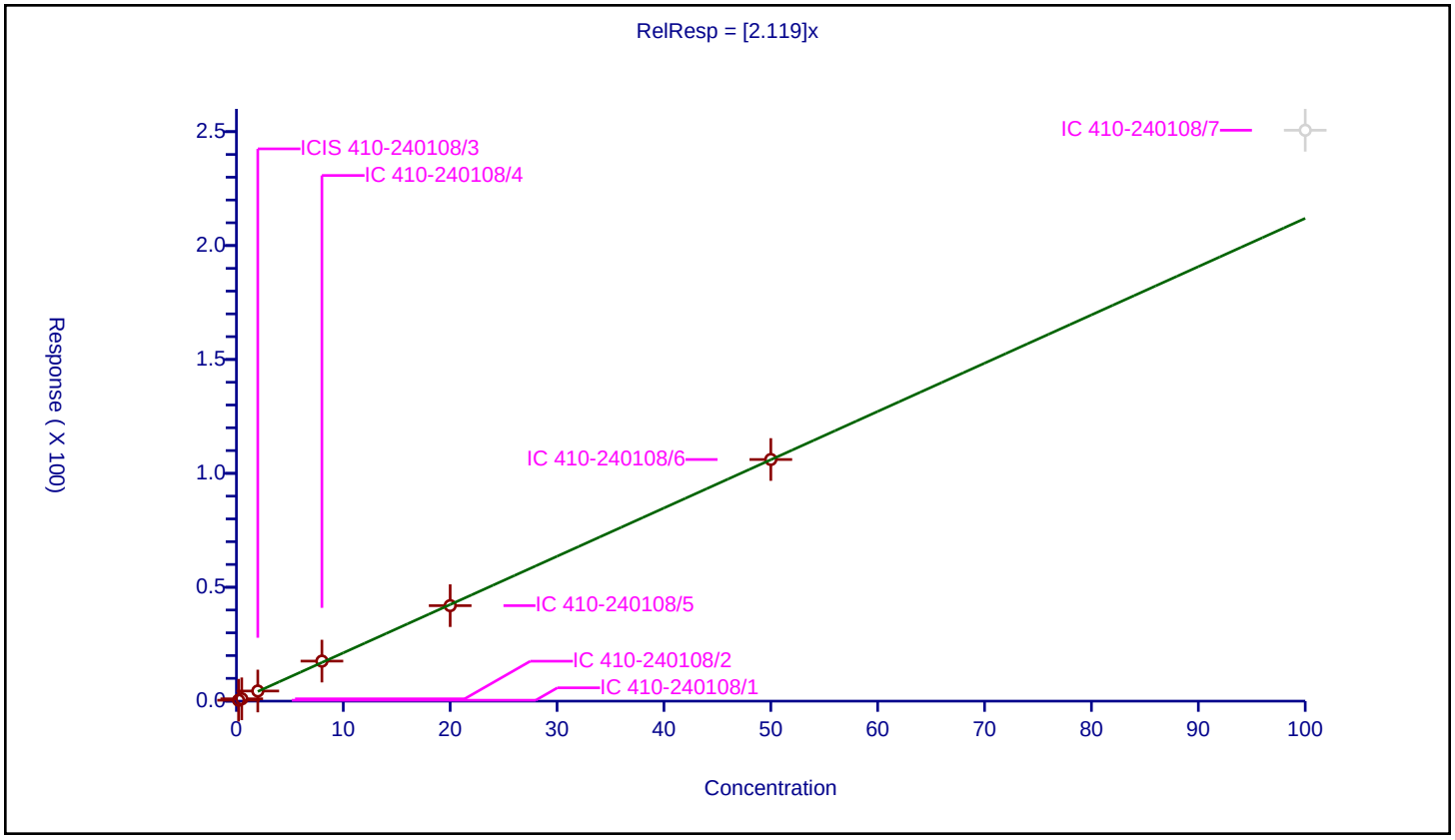
Curve Coefficients

Intercept:	0
Slope:	2.119

Error Coefficients

Standard Error:	5410000
Relative Standard Error:	3.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.407083	10.0	1143846.0	2.035414	Y
2	IC 410-240108/2	0.5	1.020969	10.0	1097957.0	2.041938	Y
3	ICIS 410-240108/3	2.0	4.448533	10.0	1129152.0	2.224267	Y
4	IC 410-240108/4	8.0	17.578374	10.0	1101764.0	2.197297	Y
5	IC 410-240108/5	20.0	41.927836	10.0	1118586.0	2.096392	Y
6	IC 410-240108/6	50.0	106.084527	10.0	1035193.0	2.121691	Y
7	IC 410-240108/7	100.0	250.620232	10.0	826788.0	2.506202	N



Calibration / Perfluoroheptanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

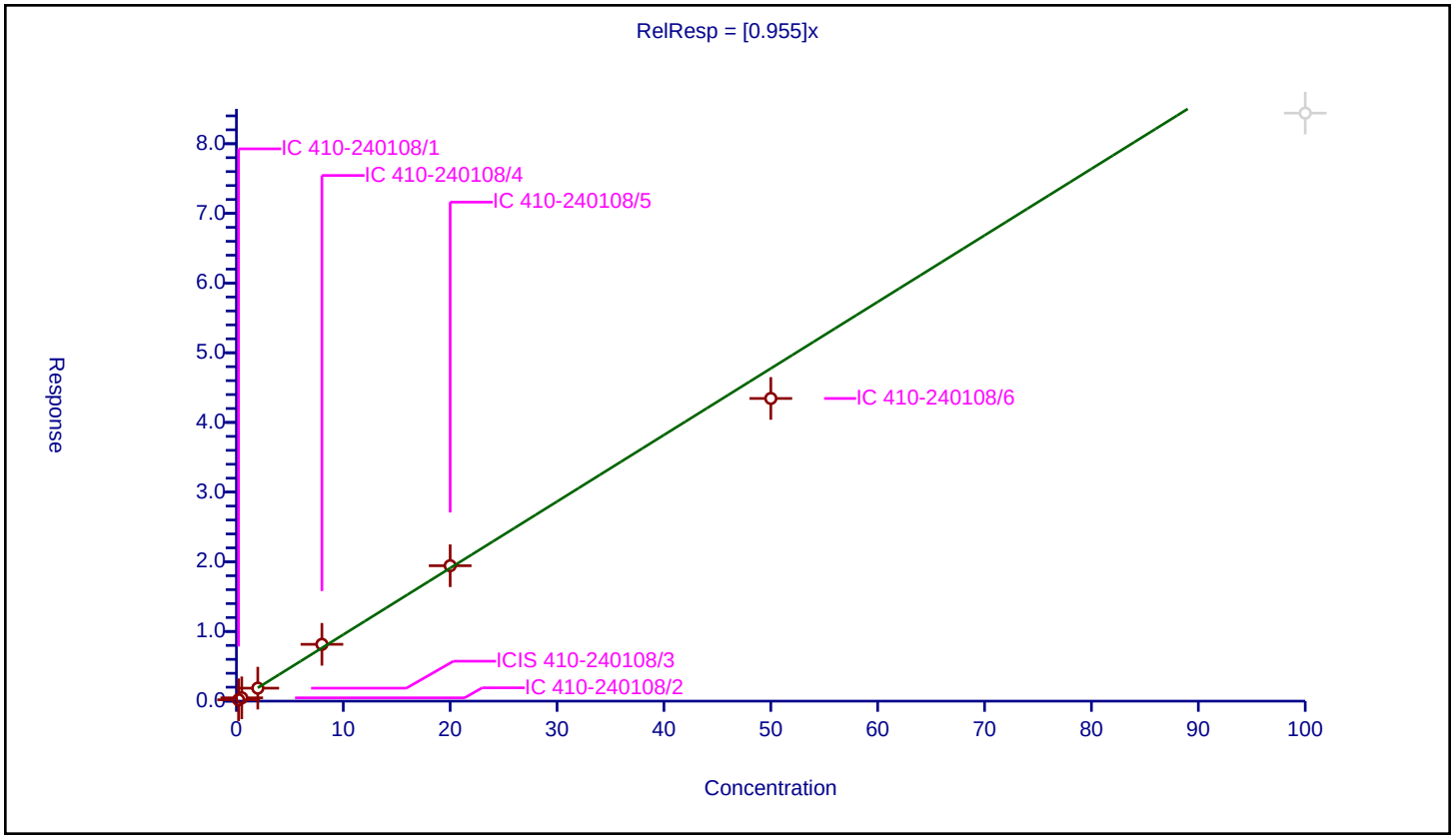
Curve Coefficients

Intercept:	0
Slope:	0.955

Error Coefficients

Standard Error:	15800000
Relative Standard Error:	5.5
Correlation Coefficient:	0.979
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.197878	10.0	9846121.0	0.98939	Y
2	IC 410-240108/2	0.5	0.474035	10.0	9309689.0	0.94807	Y
3	ICIS 410-240108/3	2.0	1.864363	10.0	9854716.0	0.932182	Y
4	IC 410-240108/4	8.0	8.155981	10.0	8875890.0	1.019498	Y
5	IC 410-240108/5	20.0	19.436903	10.0	8421277.0	0.971845	Y
6	IC 410-240108/6	50.0	43.441214	10.0	6985514.0	0.868824	Y
7	IC 410-240108/7	100.0	84.391425	10.0	5270510.0	0.843914	N



Calibration / Perfluorohexanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

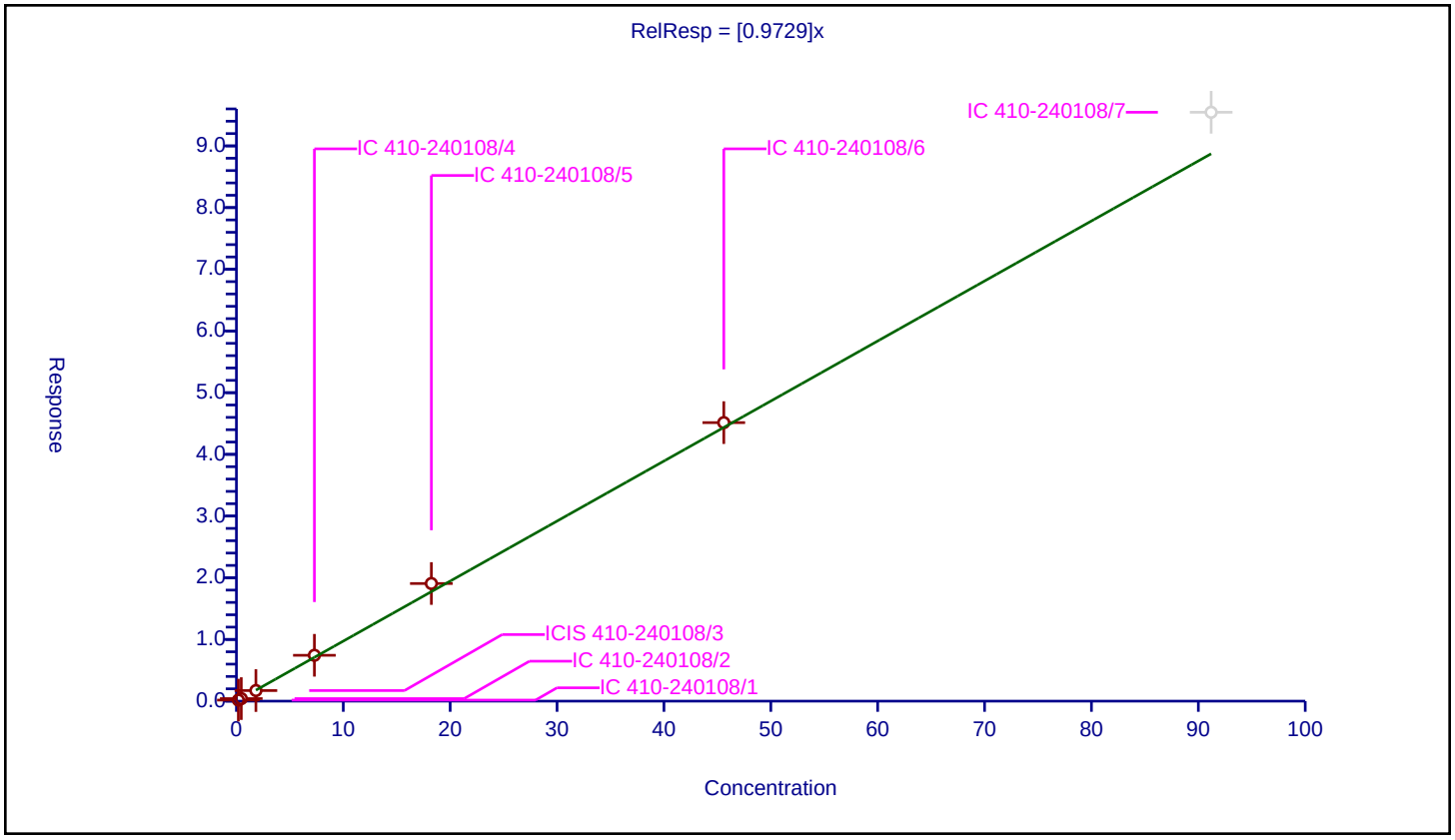
Curve Coefficients

Intercept:	0
Slope:	0.9729

Error Coefficients

Standard Error:	15400000
Relative Standard Error:	5.6
Correlation Coefficient:	0.989
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1824	0.171902	9.46	8591739.0	0.942443	Y
2	IC 410-240108/2	0.456	0.410469	9.46	8360589.0	0.900152	Y
3	ICIS 410-240108/3	1.824	1.715179	9.46	8747274.0	0.94034	Y
4	IC 410-240108/4	7.296	7.433174	9.46	8048553.0	1.018801	Y
5	IC 410-240108/5	18.24	19.068368	9.46	7506296.0	1.045415	Y
6	IC 410-240108/6	45.6	45.147151	9.46	6310415.0	0.990069	Y
7	IC 410-240108/7	91.2	95.450286	9.46	4926455.0	1.046604	N



Calibration / DONA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

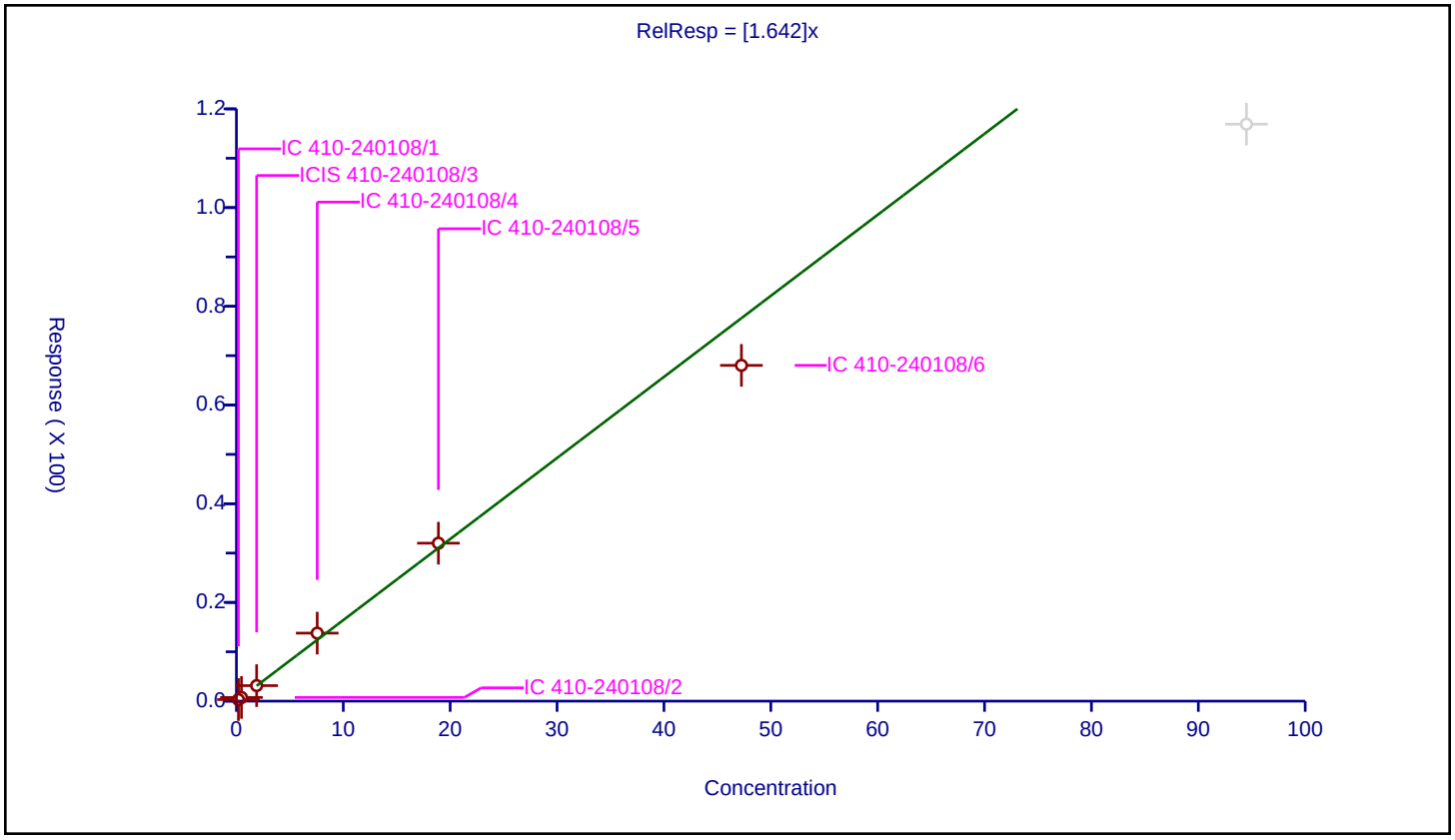
Curve Coefficients

Intercept:	0
Slope:	1.642

Error Coefficients

Standard Error:	25100000
Relative Standard Error:	7.8
Correlation Coefficient:	0.970
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.189	0.313117	10.0	9846121.0	1.656705	Y
2	IC 410-240108/2	0.4725	0.745058	10.0	9309689.0	1.576843	Y
3	ICIS 410-240108/3	1.89	3.145108	10.0	9854716.0	1.664079	Y
4	IC 410-240108/4	7.56	13.779173	10.0	8875890.0	1.822642	Y
5	IC 410-240108/5	18.9	32.005281	10.0	8421277.0	1.693401	Y
6	IC 410-240108/6	47.25	68.033702	10.0	6985514.0	1.439867	Y
7	IC 410-240108/7	94.5	116.905275	10.0	5270510.0	1.237093	N



Calibration / 5:3 FTCA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

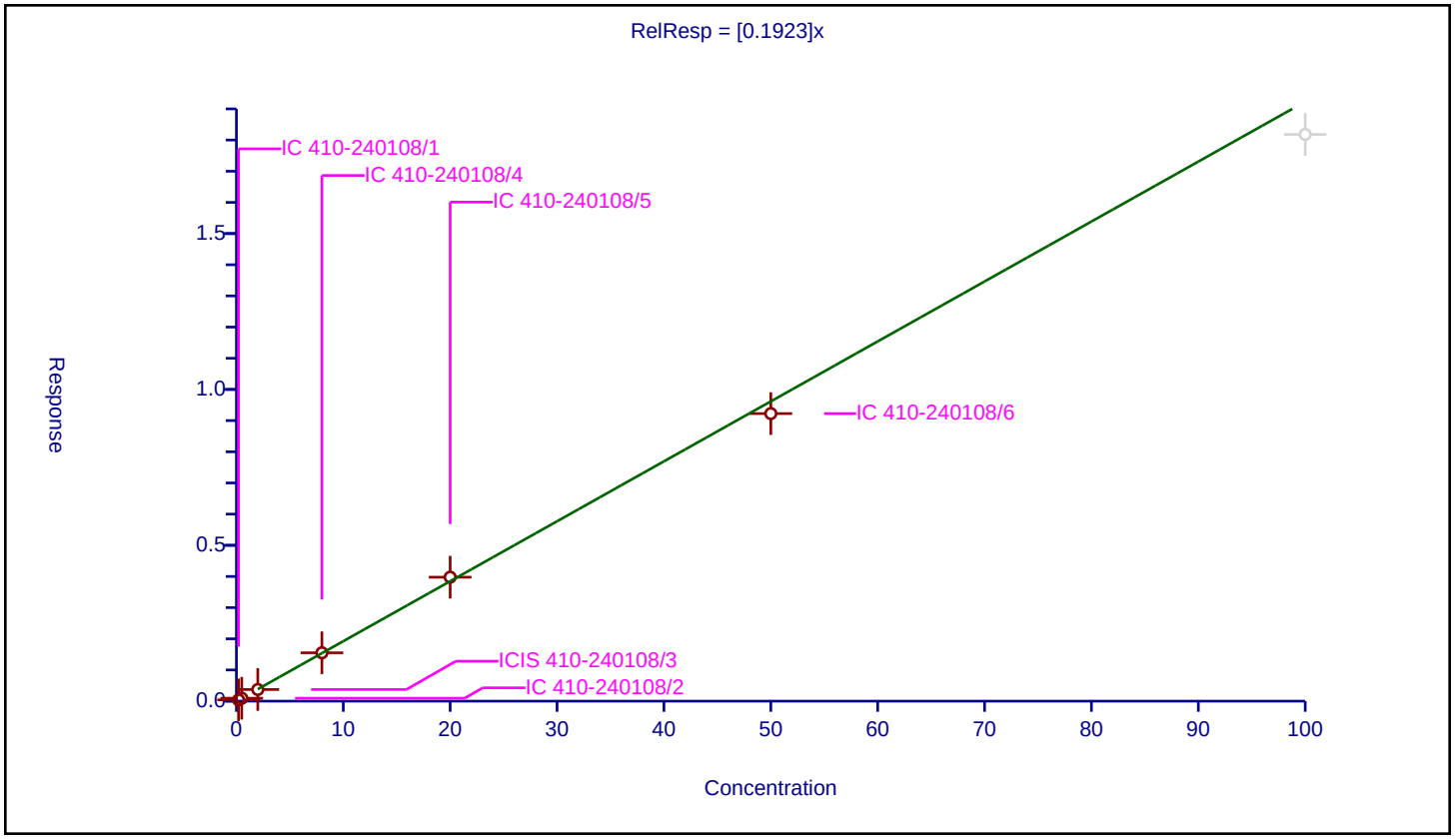
Curve Coefficients

Intercept:	0
Slope:	0.1923

Error Coefficients

Standard Error:	3680000
Relative Standard Error:	4.0
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.040664	10.0	9433849.0	0.203321	Y
2	IC 410-240108/2	0.5	0.093415	10.0	8895986.0	0.18683	Y
3	ICIS 410-240108/3	2.0	0.373185	10.0	9415459.0	0.186593	Y
4	IC 410-240108/4	8.0	1.551158	10.0	8980825.0	0.193895	Y
5	IC 410-240108/5	20.0	3.976197	10.0	8494523.0	0.19881	Y
6	IC 410-240108/6	50.0	9.225448	10.0	7974766.0	0.184509	Y
7	IC 410-240108/7	100.0	18.180573	10.0	6716153.0	0.181806	N



Calibration / 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

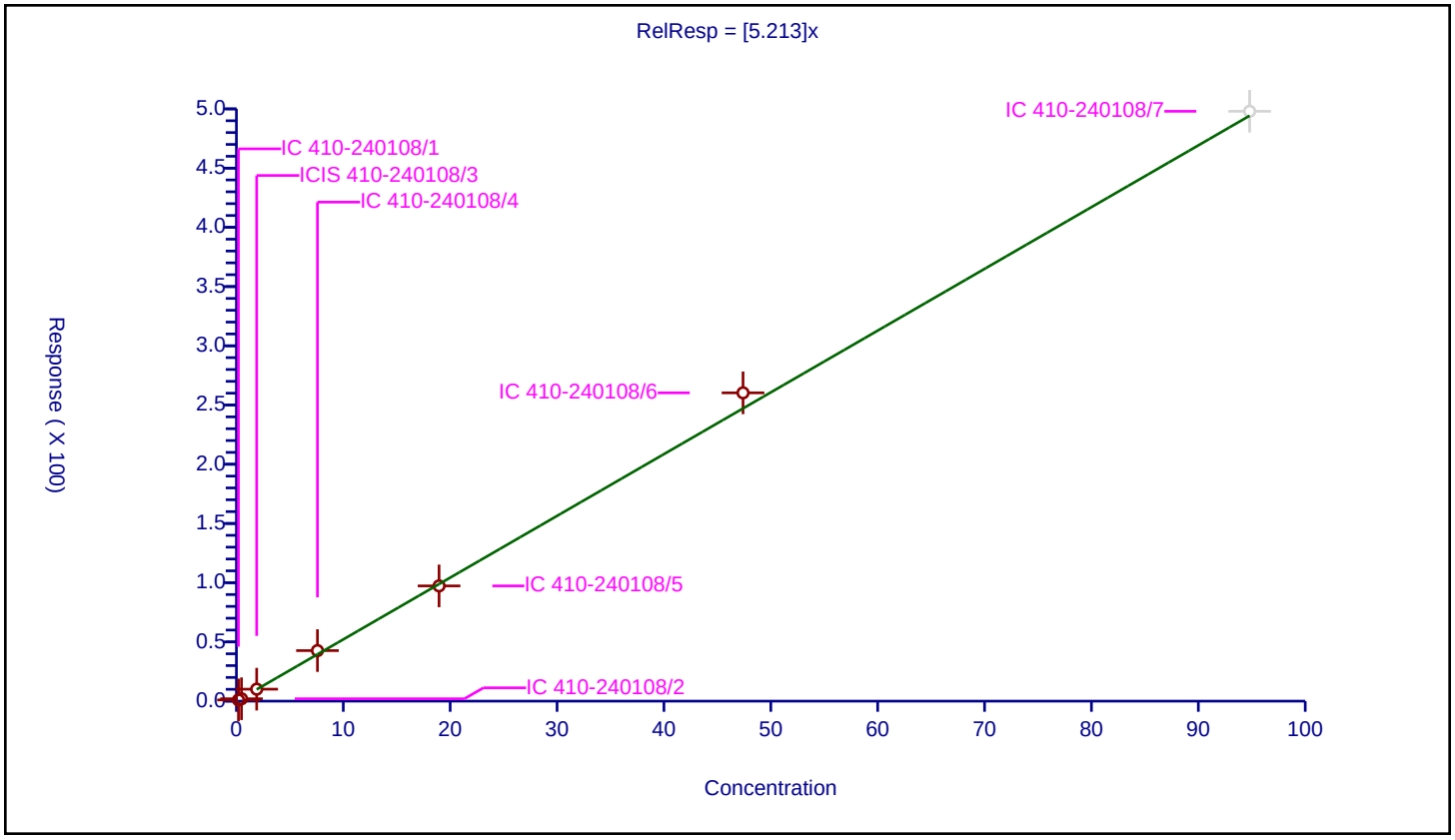
Curve Coefficients

Intercept:	0
Slope:	5.213

Error Coefficients

Standard Error:	2680000
Relative Standard Error:	9.5
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1896	1.029945	9.5	251330.0	5.432198	Y
2	IC 410-240108/2	0.474	2.021822	9.5	266310.0	4.265448	Y
3	ICIS 410-240108/3	1.896	10.115933	9.5	258903.0	5.335408	Y
4	IC 410-240108/4	7.584	42.656322	9.5	242423.0	5.624515	Y
5	IC 410-240108/5	18.96	97.290492	9.5	241974.0	5.131355	Y
6	IC 410-240108/6	47.4	260.285214	9.5	195315.0	5.491249	Y
7	IC 410-240108/7	94.8	497.970115	9.5	177999.0	5.252849	N



Calibration / Perfluoroheptanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

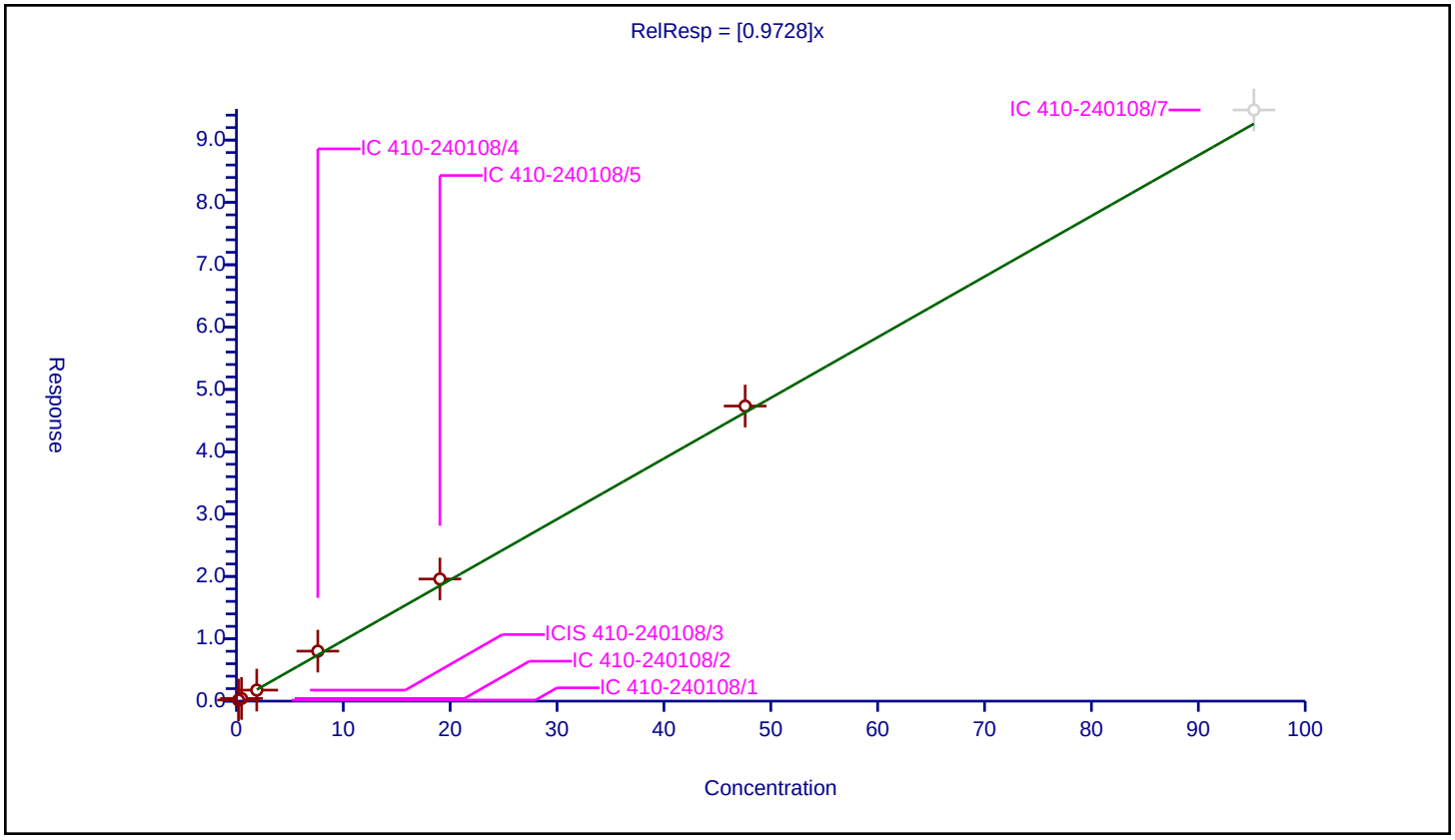
Curve Coefficients

Intercept:	0
Slope:	0.9728

Error Coefficients

Standard Error:	16100000
Relative Standard Error:	6.3
Correlation Coefficient:	0.990
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1904	0.175872	9.46	8591739.0	0.923697	Y
2	IC 410-240108/2	0.476	0.43145	9.46	8360589.0	0.906407	Y
3	ICIS 410-240108/3	1.904	1.770741	9.46	8747274.0	0.930011	Y
4	IC 410-240108/4	7.616	8.022951	9.46	8048553.0	1.053434	Y
5	IC 410-240108/5	19.04	19.59092	9.46	7506296.0	1.028935	Y
6	IC 410-240108/6	47.6	47.334036	9.46	6310415.0	0.994413	Y
7	IC 410-240108/7	95.2	94.826935	9.46	4926455.0	0.996081	N



Calibration / Perfluorooctanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

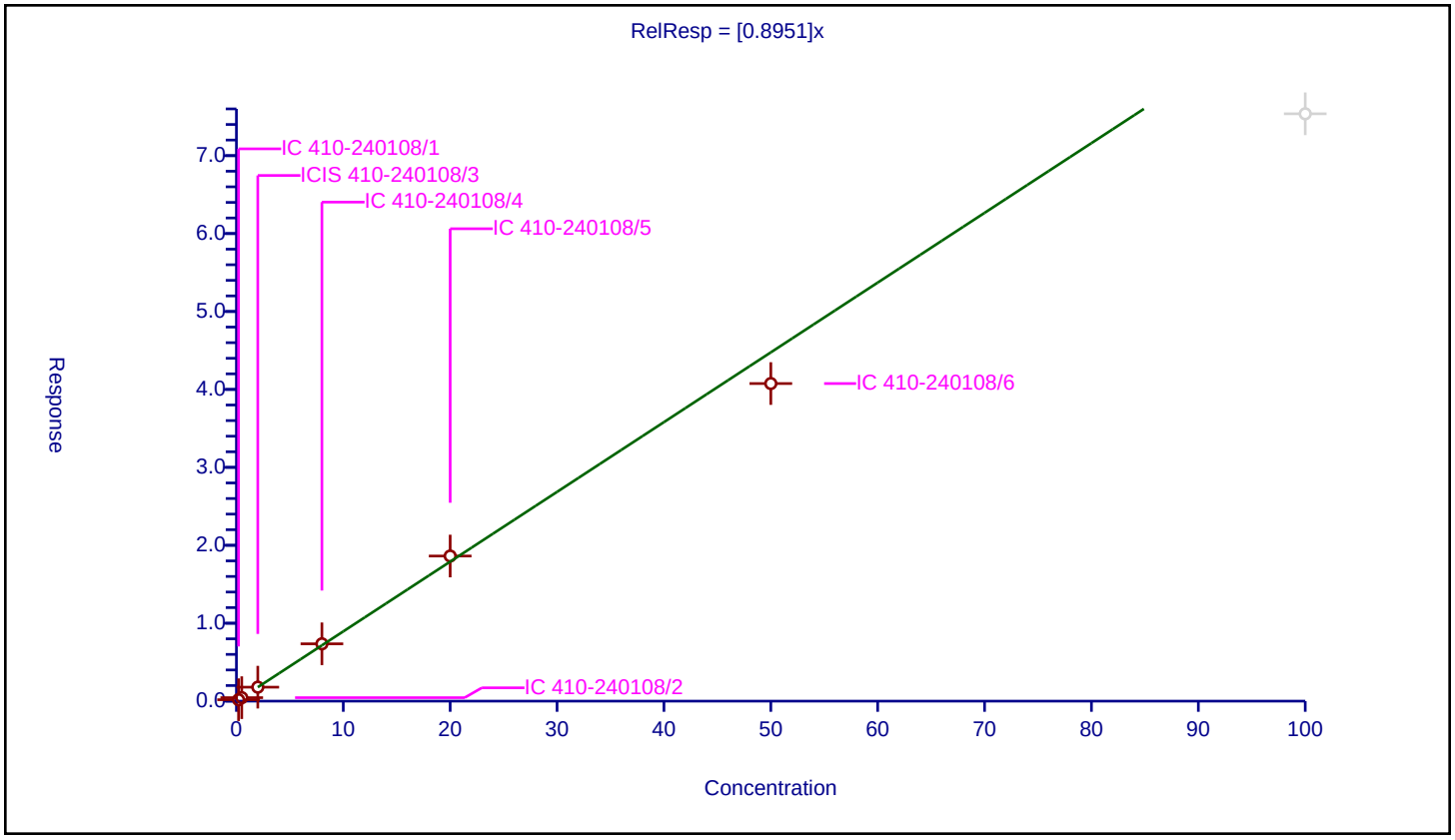
Curve Coefficients

Intercept:	0
Slope:	0.8951

Error Coefficients

Standard Error:	17300000
Relative Standard Error:	4.6
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.182684	10.0	10391749.0	0.913422	Y
2	IC 410-240108/2	0.5	0.44735	10.0	10173275.0	0.894699	Y
3	ICIS 410-240108/3	2.0	1.794045	10.0	10569984.0	0.897023	Y
4	IC 410-240108/4	8.0	7.355473	10.0	9943175.0	0.919434	Y
5	IC 410-240108/5	20.0	18.620571	10.0	9190607.0	0.931029	Y
6	IC 410-240108/6	50.0	40.755024	10.0	8286261.0	0.8151	Y
7	IC 410-240108/7	100.0	75.371313	10.0	6946693.0	0.753713	N



Calibration / Perfluorooctanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

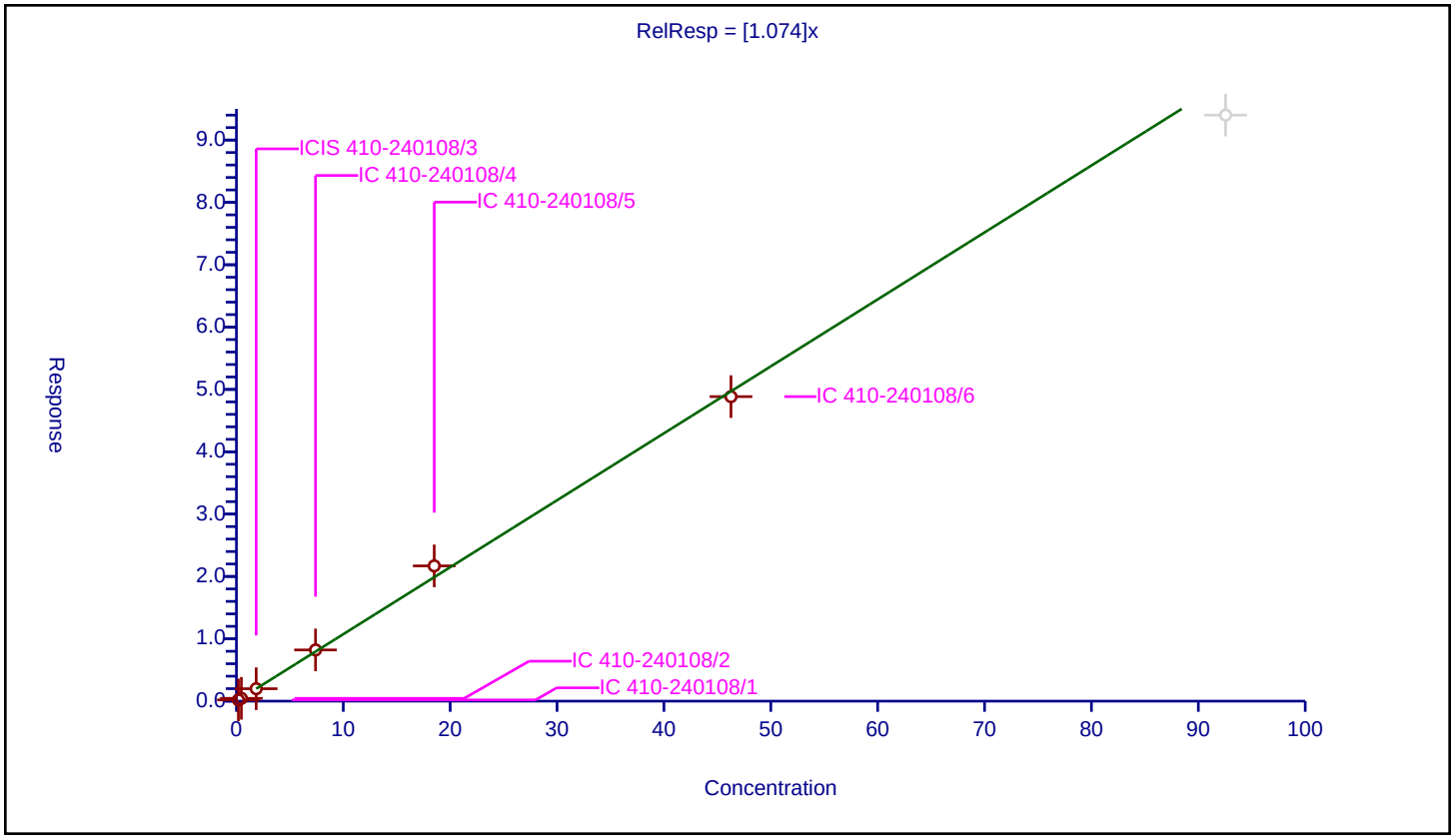
Curve Coefficients

Intercept:	0
Slope:	1.074

Error Coefficients

Standard Error:	17900000
Relative Standard Error:	6.1
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1851	0.195442	9.56	8218274.0	1.055872	Y
2	IC 410-240108/2	0.46275	0.450579	9.56	8013477.0	0.973699	Y
3	ICIS 410-240108/3	1.851	1.994586	9.56	8135428.0	1.077572	Y
4	IC 410-240108/4	7.404	8.21478	9.56	7839367.0	1.109506	Y
5	IC 410-240108/5	18.51	21.695667	9.56	7281850.0	1.172105	Y
6	IC 410-240108/6	46.275	48.845805	9.56	6984762.0	1.055555	Y
7	IC 410-240108/7	92.55	94.005658	9.56	6416406.0	1.015728	N



Calibration / Perfluorononanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

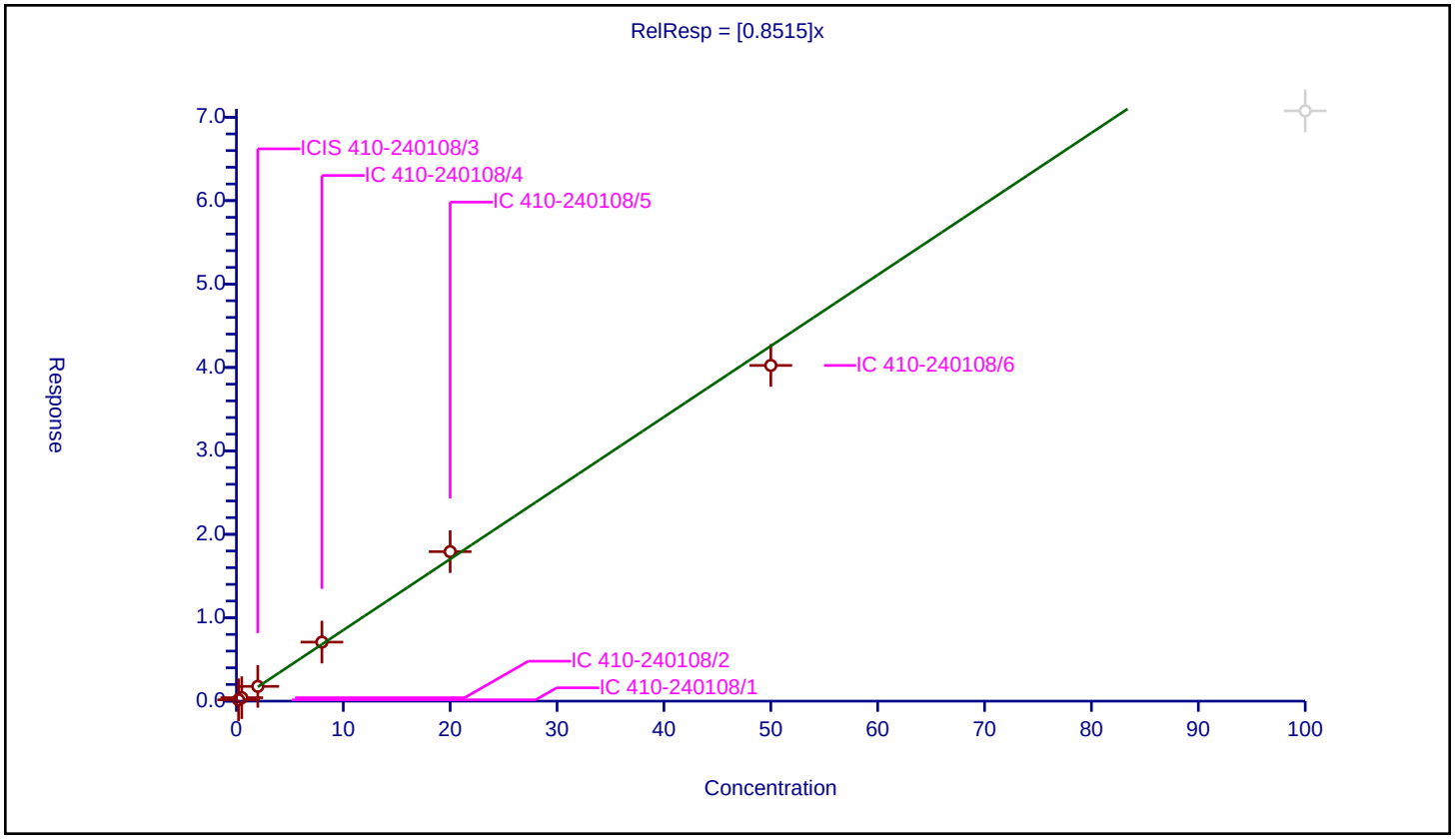
Curve Coefficients

Intercept:	0
Slope:	0.8515

Error Coefficients

Standard Error:	18200000
Relative Standard Error:	4.9
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.162456	10.0	10828839.0	0.81228	Y
2	IC 410-240108/2	0.5	0.412951	10.0	10574366.0	0.825903	Y
3	ICIS 410-240108/3	2.0	1.770418	10.0	10500969.0	0.885209	Y
4	IC 410-240108/4	8.0	7.07803	10.0	10564331.0	0.884754	Y
5	IC 410-240108/5	20.0	17.924533	10.0	9621503.0	0.896227	Y
6	IC 410-240108/6	50.0	40.244299	10.0	8954194.0	0.804886	Y
7	IC 410-240108/7	100.0	70.761742	10.0	7745364.0	0.707617	N



Calibration / 7:3 FTCA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

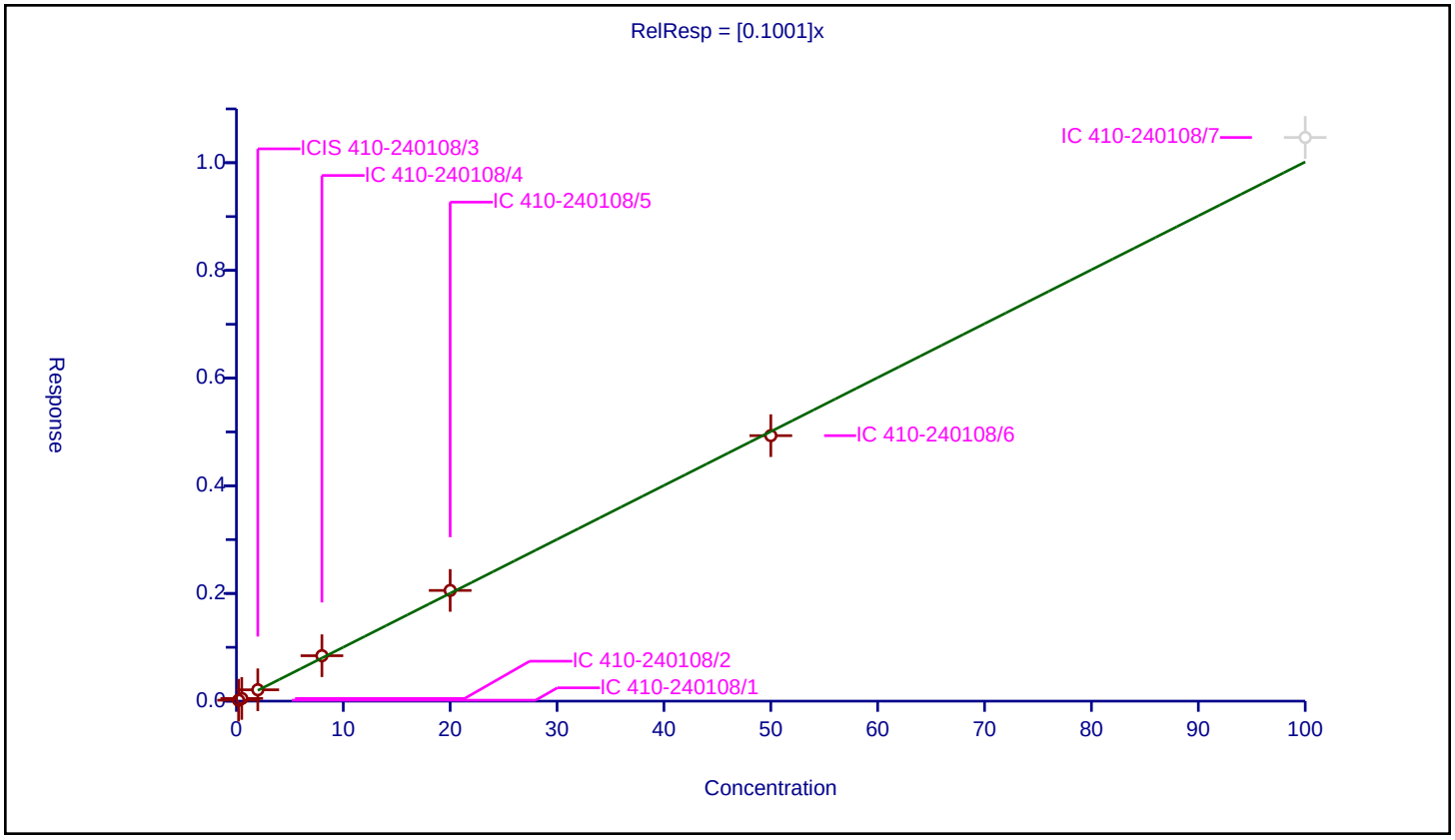
Curve Coefficients

Intercept:	0
Slope:	0.1001

Error Coefficients

Standard Error:	1960000
Relative Standard Error:	6.3
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.01772	10.0	9433849.0	0.088601	Y
2	IC 410-240108/2	0.5	0.049896	10.0	8895986.0	0.099791	Y
3	ICIS 410-240108/3	2.0	0.211174	10.0	9415459.0	0.105587	Y
4	IC 410-240108/4	8.0	0.843773	10.0	8980825.0	0.105472	Y
5	IC 410-240108/5	20.0	2.056287	10.0	8494523.0	0.102814	Y
6	IC 410-240108/6	50.0	4.931453	10.0	7974766.0	0.098629	Y
7	IC 410-240108/7	100.0	10.469059	10.0	6716153.0	0.104691	N



Calibration / 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

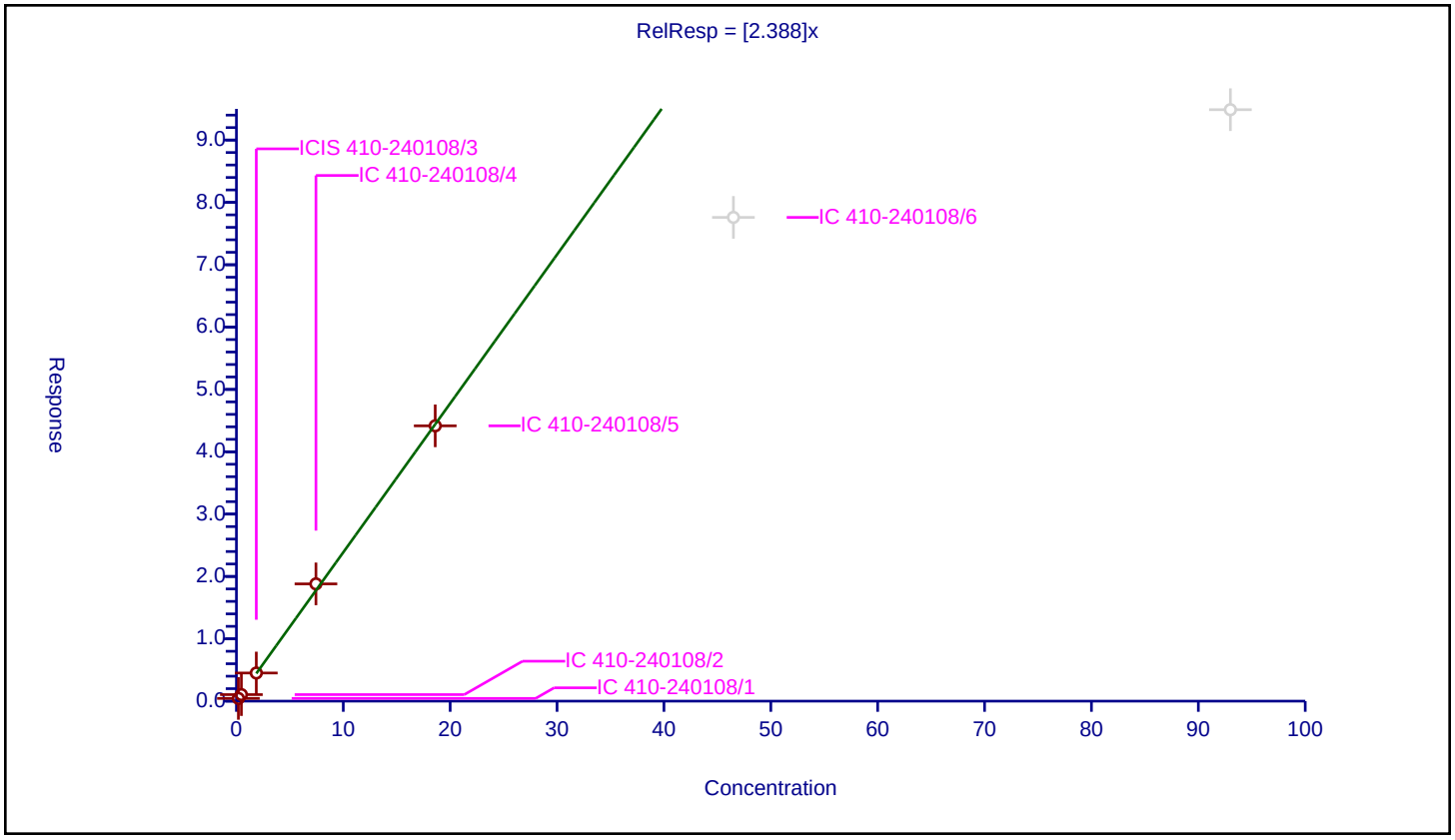
Curve Coefficients

Intercept:	0
Slope:	2.388

Error Coefficients

Standard Error:	18600000
Relative Standard Error:	4.2
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.186	0.437328	9.56	8218274.0	2.351226	Y
2	IC 410-240108/2	0.465	1.050204	9.56	8013477.0	2.258502	Y
3	ICIS 410-240108/3	1.86	4.515536	9.56	8135428.0	2.427708	Y
4	IC 410-240108/4	7.44	18.808742	9.56	7839367.0	2.528057	Y
5	IC 410-240108/5	18.6	44.160522	9.56	7281850.0	2.374222	Y
6	IC 410-240108/6	46.5	77.592732	9.56	6984762.0	1.668661	N
7	IC 410-240108/7	93.0	94.871765	9.56	6416406.0	1.020127	N



Calibration / Perfluorononanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

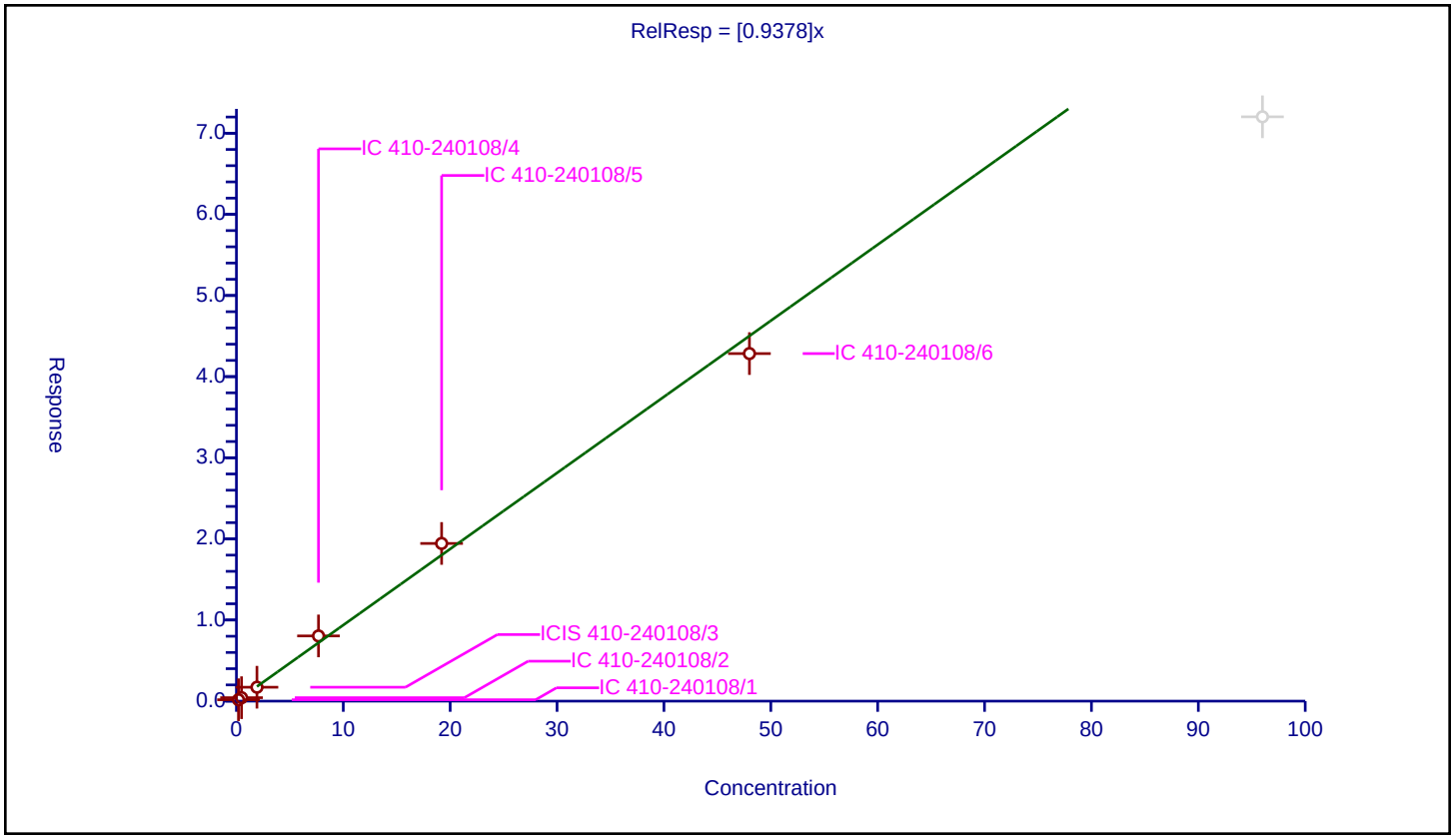
Curve Coefficients

Intercept:	0
Slope:	0.9378

Error Coefficients

Standard Error:	15800000
Relative Standard Error:	7.7
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.192	0.172388	9.56	8218274.0	0.897856	Y
2	IC 410-240108/2	0.48	0.42445	9.56	8013477.0	0.884272	Y
3	ICIS 410-240108/3	1.92	1.715223	9.56	8135428.0	0.893345	Y
4	IC 410-240108/4	7.68	8.036937	9.56	7839367.0	1.046476	Y
5	IC 410-240108/5	19.2	19.435073	9.56	7281850.0	1.012243	Y
6	IC 410-240108/6	48.0	42.84168	9.56	6984762.0	0.892535	Y
7	IC 410-240108/7	96.0	72.024629	9.56	6416406.0	0.750257	N



Calibration / 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

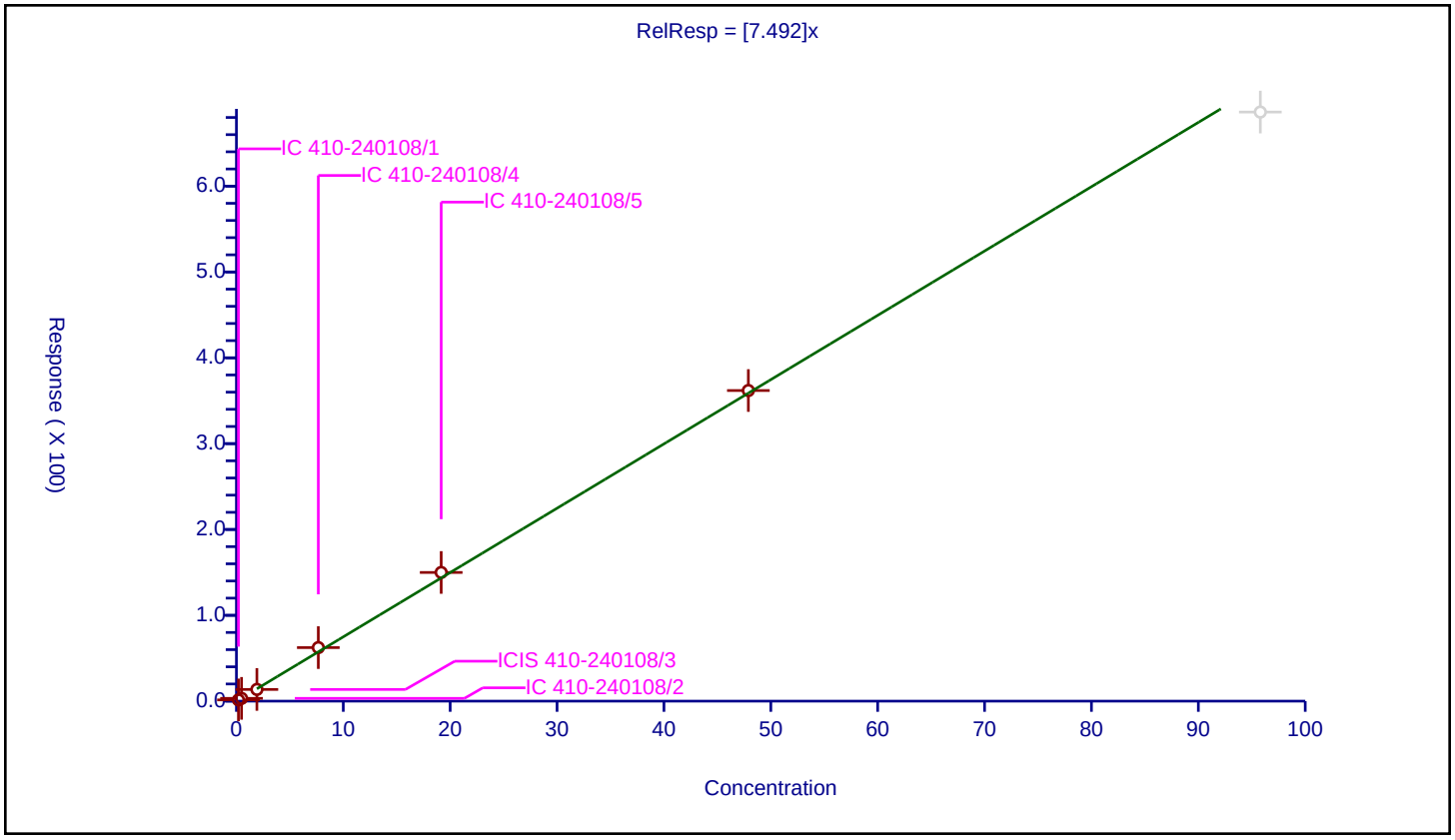
Curve Coefficients

Intercept:	0
Slope:	7.492

Error Coefficients

Standard Error:	3320000
Relative Standard Error:	6.5
Correlation Coefficient:	0.992
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1916	1.444088	9.58	228672.0	7.536996	Y
2	IC 410-240108/2	0.479	3.24121	9.58	232580.0	6.766618	Y
3	ICIS 410-240108/3	1.916	13.648729	9.58	232822.0	7.123554	Y
4	IC 410-240108/4	7.664	62.398999	9.58	216815.0	8.141832	Y
5	IC 410-240108/5	19.16	149.932369	9.58	201703.0	7.82528	Y
6	IC 410-240108/6	47.9	361.874041	9.58	173810.0	7.554782	Y
7	IC 410-240108/7	95.8	686.30218	9.58	150088.0	7.163906	N



Calibration / Perfluorodecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

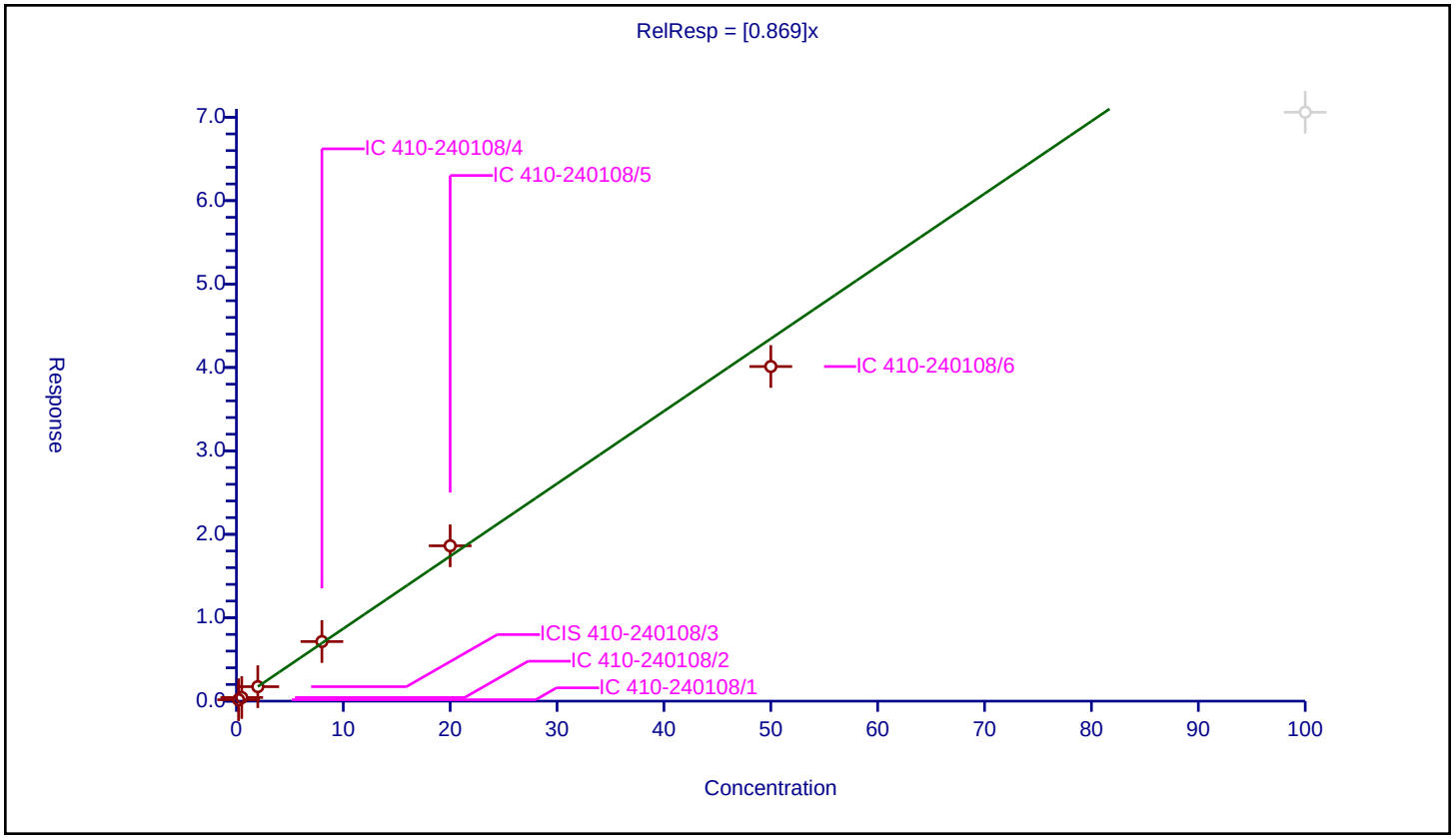
Curve Coefficients

Intercept:	0
Slope:	0.869

Error Coefficients

Standard Error:	18800000
Relative Standard Error:	4.9
Correlation Coefficient:	0.987
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.171433	10.0	11753891.0	0.857167	Y
2	IC 410-240108/2	0.5	0.431746	10.0	11128723.0	0.863492	Y
3	ICIS 410-240108/3	2.0	1.73416	10.0	11328908.0	0.86708	Y
4	IC 410-240108/4	8.0	7.144832	10.0	11501291.0	0.893104	Y
5	IC 410-240108/5	20.0	18.62189	10.0	9985231.0	0.931094	Y
6	IC 410-240108/6	50.0	40.115862	10.0	9129639.0	0.802317	Y
7	IC 410-240108/7	100.0	70.596729	10.0	7667373.0	0.705967	N



Calibration / Perfluorooctanesulfonamide

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

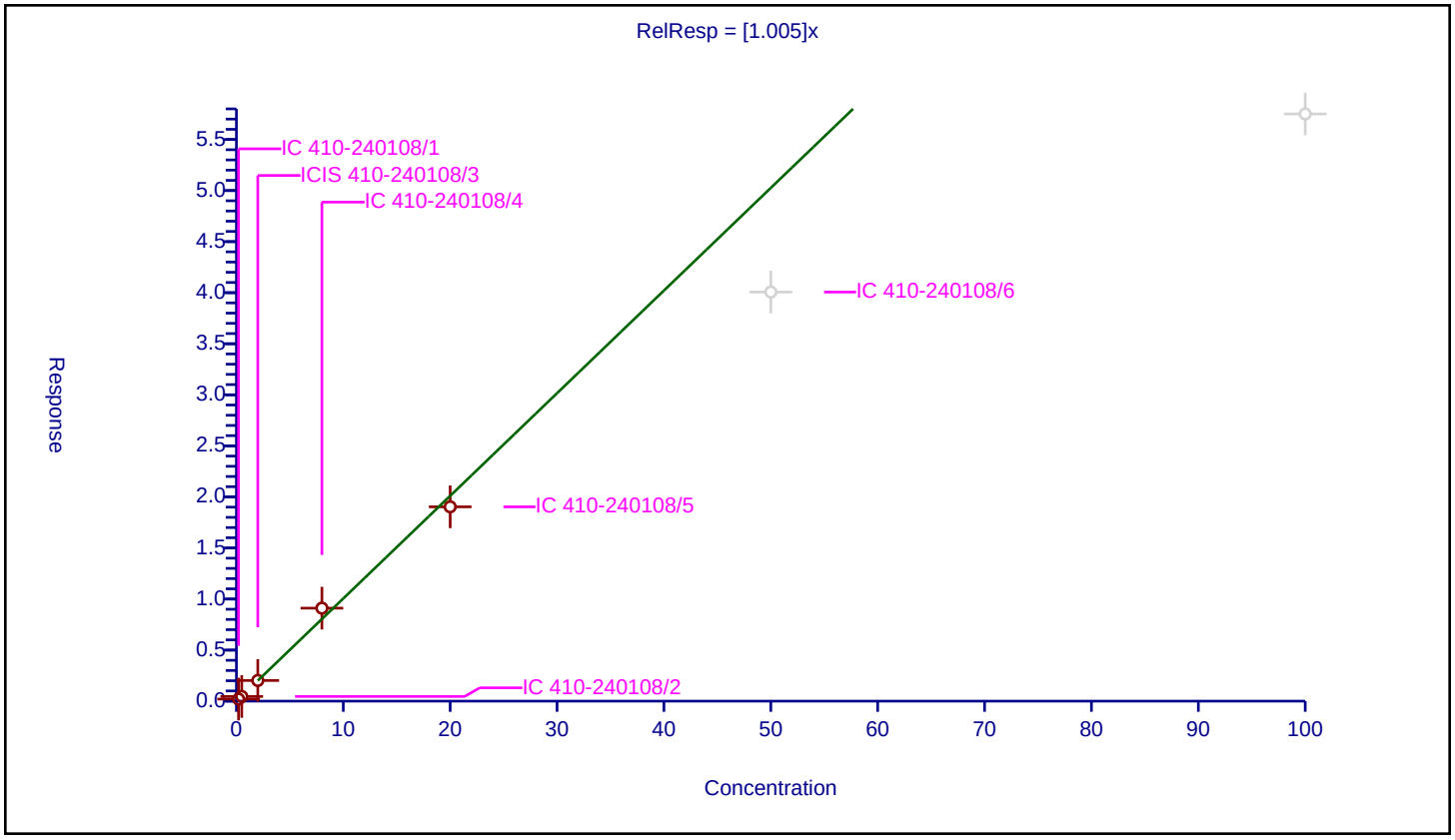
Curve Coefficients

Intercept:	0
Slope:	1.005

Error Coefficients

Standard Error:	13600000
Relative Standard Error:	8.4
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.201454	10.0	13533515.0	1.00727	Y
2	IC 410-240108/2	0.5	0.458556	10.0	13121068.0	0.917111	Y
3	ICIS 410-240108/3	2.0	2.023828	10.0	13374586.0	1.011914	Y
4	IC 410-240108/4	8.0	9.108264	10.0	12435387.0	1.138533	Y
5	IC 410-240108/5	20.0	19.028918	10.0	12945364.0	0.951446	Y
6	IC 410-240108/6	50.0	40.063583	10.0	12230073.0	0.801272	N
7	IC 410-240108/7	100.0	57.503771	10.0	10764699.0	0.575038	N



Calibration / N-methylperfluorooctanesulfonamidoacetic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

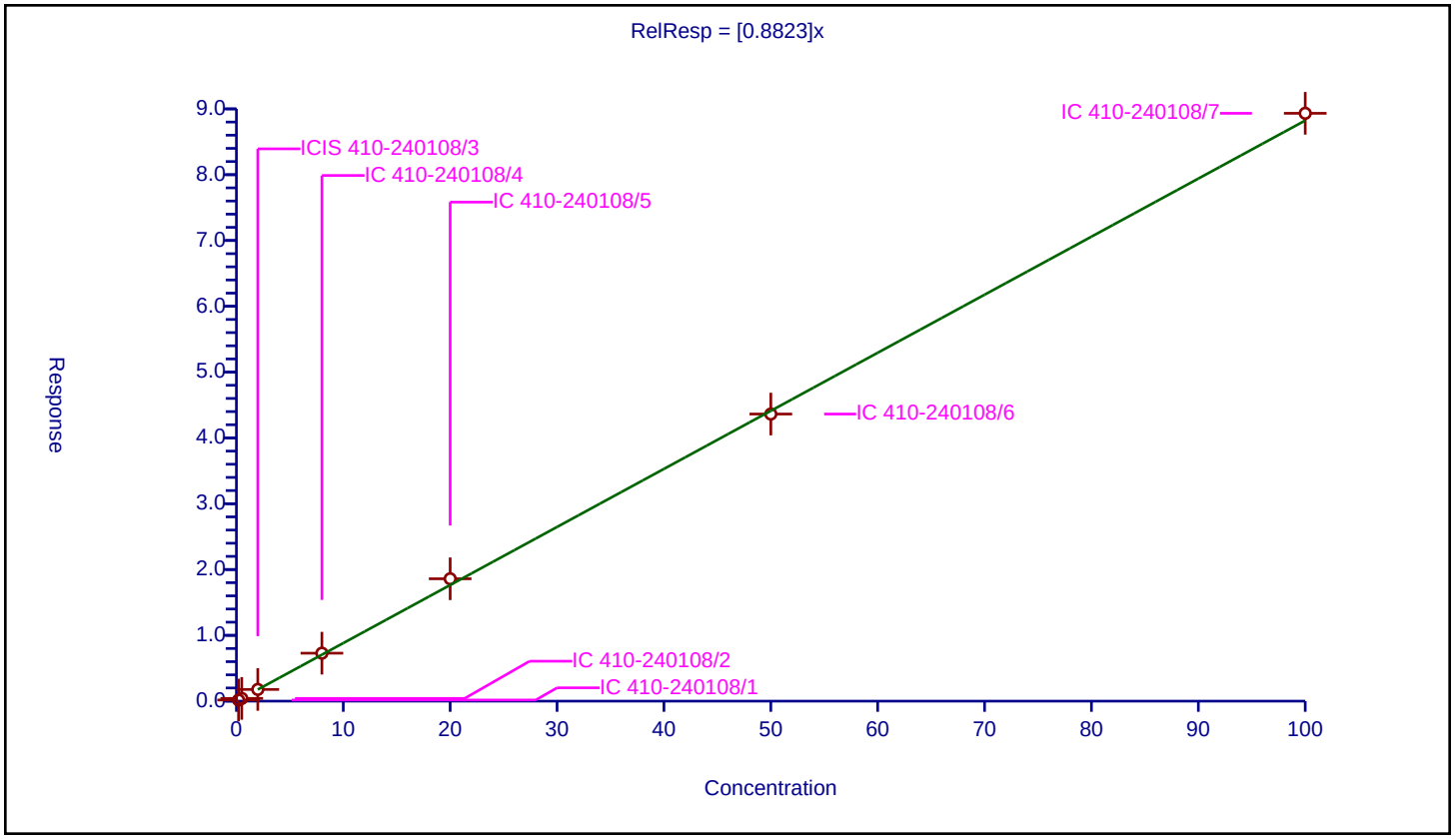
Curve Coefficients

Intercept:	0
Slope:	0.8823

Error Coefficients

Standard Error:	10200000
Relative Standard Error:	3.9
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.170339	10.0	2891823.0	0.851695	Y
2	IC 410-240108/2	0.5	0.414047	10.0	2880157.0	0.828094	Y
3	ICIS 410-240108/3	2.0	1.780078	10.0	2919068.0	0.890039	Y
4	IC 410-240108/4	8.0	7.287133	10.0	2740086.0	0.910892	Y
5	IC 410-240108/5	20.0	18.59464	10.0	2781479.0	0.929732	Y
6	IC 410-240108/6	50.0	43.6279	10.0	2676956.0	0.872558	Y
7	IC 410-240108/7	100.0	89.328385	10.0	2393529.0	0.893284	Y



Calibration / Perfluorodecanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

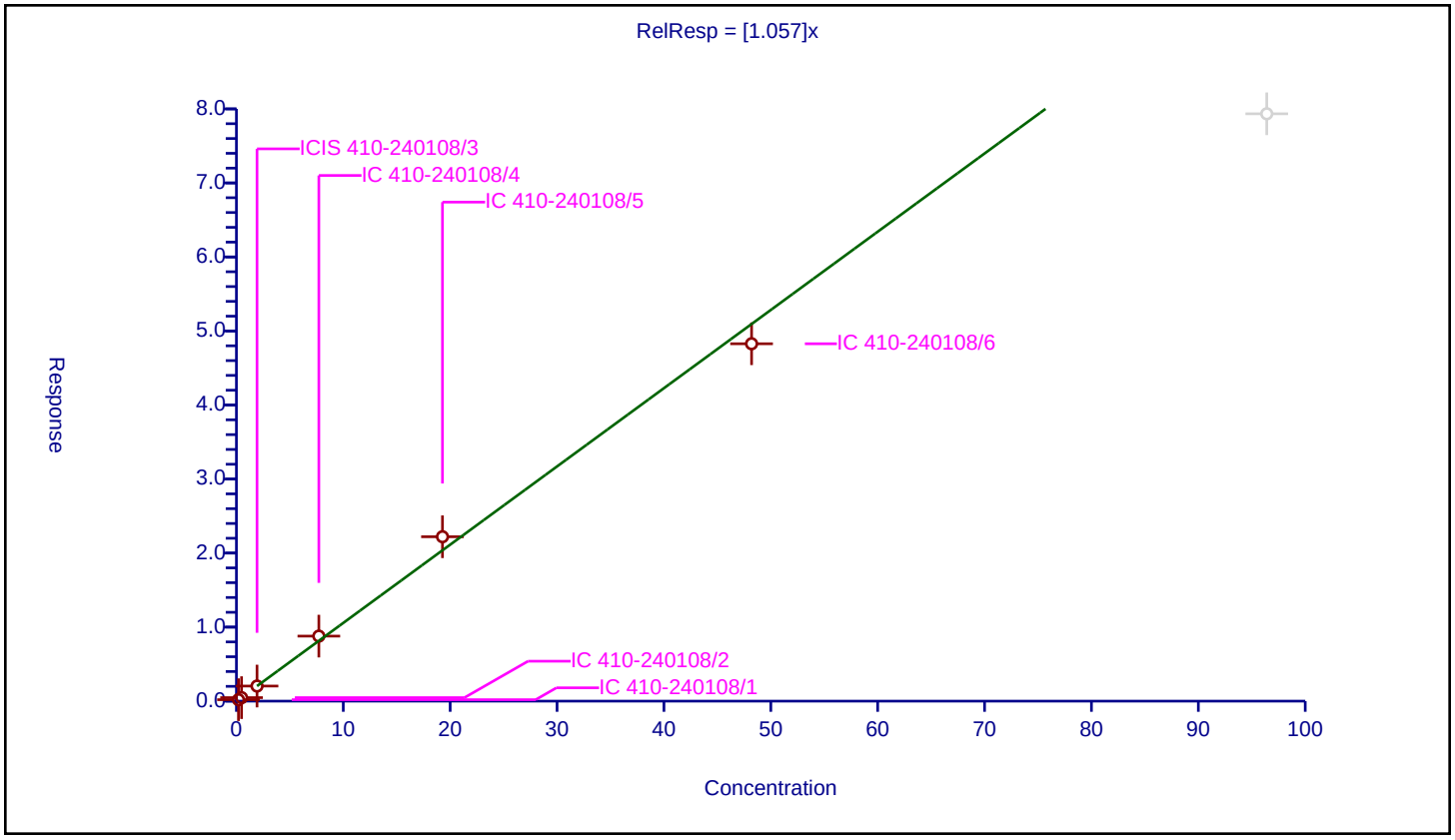
Curve Coefficients

Intercept:	0
Slope:	1.057

Error Coefficients

Standard Error:	17800000
Relative Standard Error:	6.9
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1928	0.194861	9.56	8218274.0	1.010692	Y
2	IC 410-240108/2	0.482	0.472238	9.56	8013477.0	0.979747	Y
3	ICIS 410-240108/3	1.928	2.039658	9.56	8135428.0	1.057914	Y
4	IC 410-240108/4	7.712	8.78497	9.56	7839367.0	1.13913	Y
5	IC 410-240108/5	19.28	22.205152	9.56	7281850.0	1.15172	Y
6	IC 410-240108/6	48.2	48.275331	9.56	6984762.0	1.001563	Y
7	IC 410-240108/7	96.4	79.338204	9.56	6416406.0	0.82301	N



Calibration / Perfluoroundecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

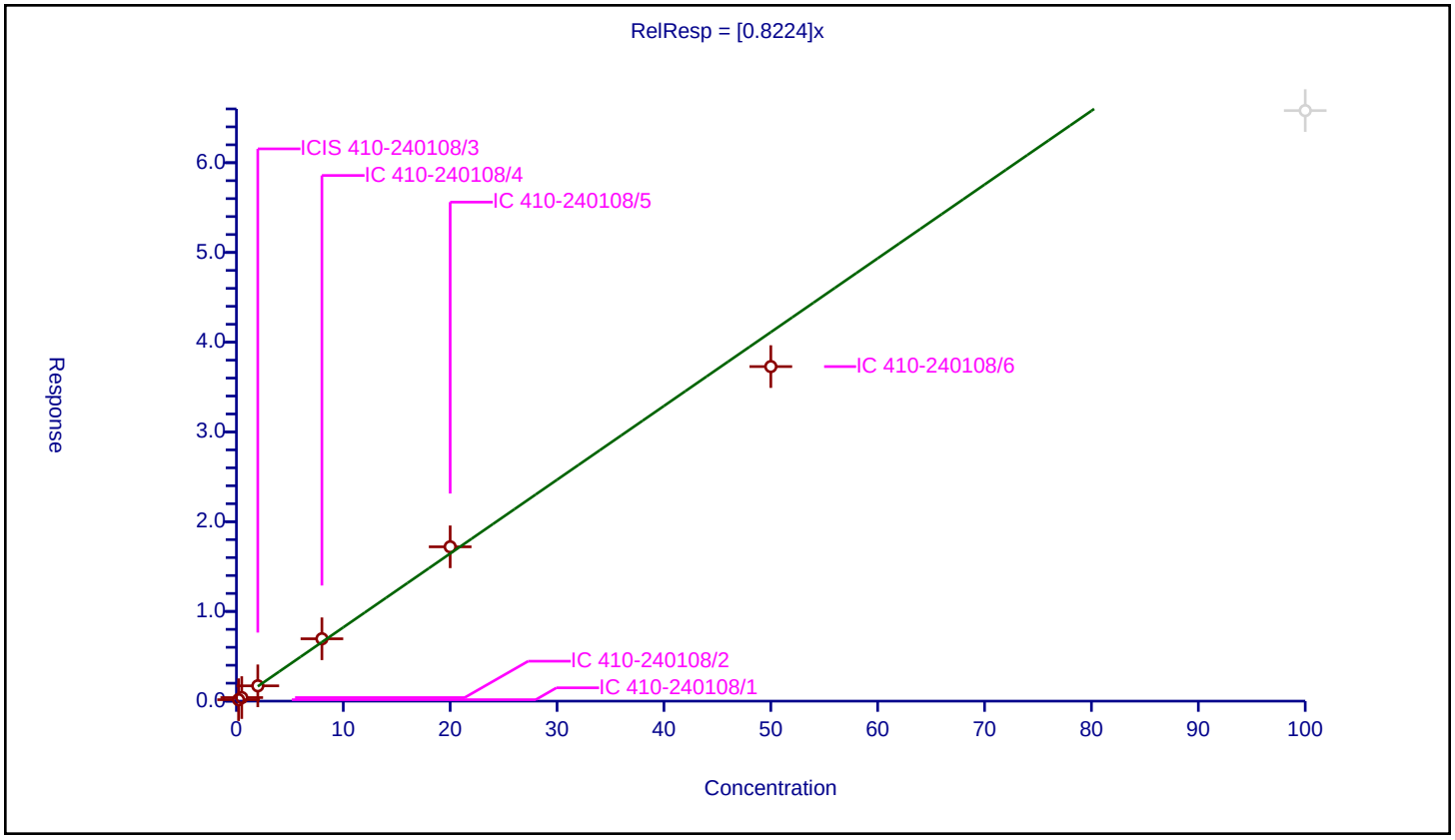
Curve Coefficients

Intercept:	0
Slope:	0.8224

Error Coefficients

Standard Error:	18000000
Relative Standard Error:	5.8
Correlation Coefficient:	0.985
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.16296	10.0	12404403.0	0.814799	Y
2	IC 410-240108/2	0.5	0.396408	10.0	11924584.0	0.792816	Y
3	ICIS 410-240108/3	2.0	1.704645	10.0	11998507.0	0.852323	Y
4	IC 410-240108/4	8.0	6.949388	10.0	11387600.0	0.868673	Y
5	IC 410-240108/5	20.0	17.199344	10.0	10552683.0	0.859967	Y
6	IC 410-240108/6	50.0	37.283342	10.0	9371080.0	0.745667	Y
7	IC 410-240108/7	100.0	65.809176	10.0	8030848.0	0.658092	N



Calibration / N-ethylperfluorooctanesulfonamidoacetic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

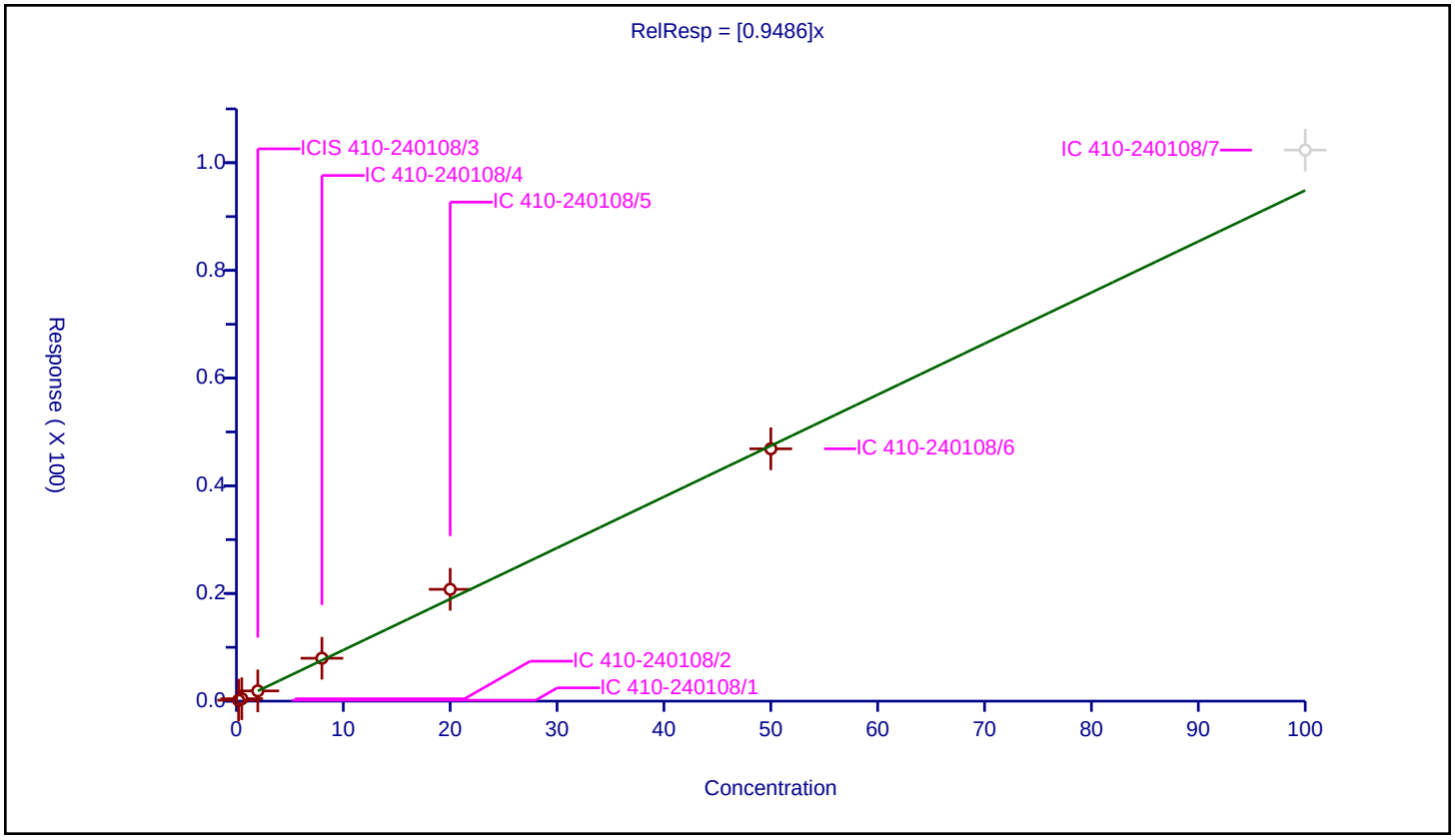
Curve Coefficients

Intercept:	0
Slope:	0.9486

Error Coefficients

Standard Error:	4520000
Relative Standard Error:	6.4
Correlation Coefficient:	0.994
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.17545	10.0	2380279.0	0.87725	Y
2	IC 410-240108/2	0.5	0.446342	10.0	2268708.0	0.892684	Y
3	ICIS 410-240108/3	2.0	1.900418	10.0	2318148.0	0.950209	Y
4	IC 410-240108/4	8.0	7.966669	10.0	2201688.0	0.995834	Y
5	IC 410-240108/5	20.0	20.767316	10.0	2045442.0	1.038366	Y
6	IC 410-240108/6	50.0	46.870046	10.0	1915779.0	0.937401	Y
7	IC 410-240108/7	100.0	102.354333	10.0	1644691.0	1.023543	N



Calibration / 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

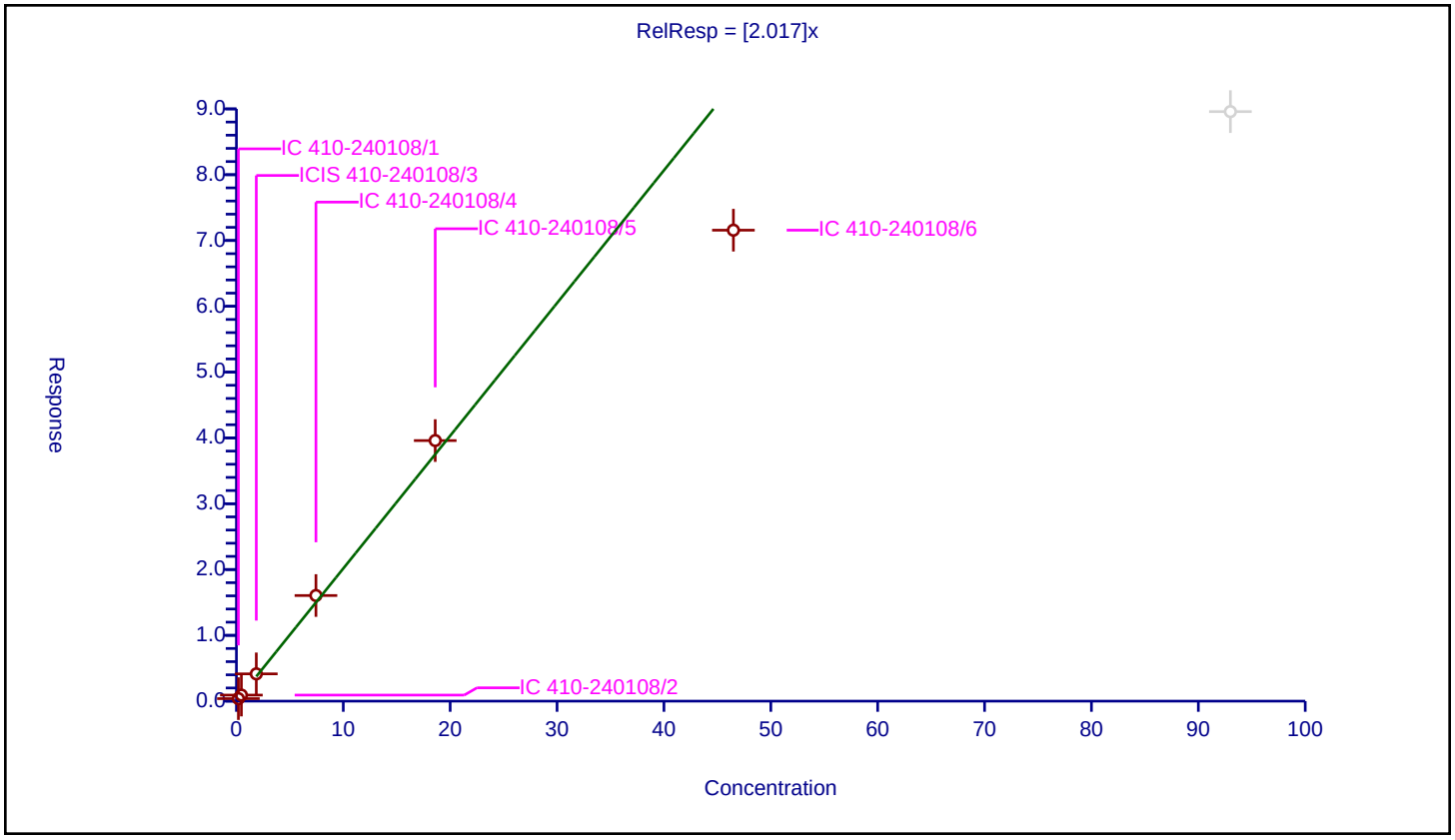
Curve Coefficients

Intercept:	0
Slope:	2.017

Error Coefficients

Standard Error:	27700000
Relative Standard Error:	12.3
Correlation Coefficient:	0.968
Coefficient of Determination (Adjusted):	0.981

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.186	0.38351	9.56	8218274.0	2.061881	Y
2	IC 410-240108/2	0.465	0.921888	9.56	8013477.0	1.982555	Y
3	ICIS 410-240108/3	1.86	4.146817	9.56	8135428.0	2.229471	Y
4	IC 410-240108/4	7.44	16.051667	9.56	7839367.0	2.157482	Y
5	IC 410-240108/5	18.6	39.597272	9.56	7281850.0	2.128886	Y
6	IC 410-240108/6	46.5	71.566572	9.56	6984762.0	1.539066	Y
7	IC 410-240108/7	93.0	89.586793	9.56	6416406.0	0.963299	N



Calibration / Perfluorododecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

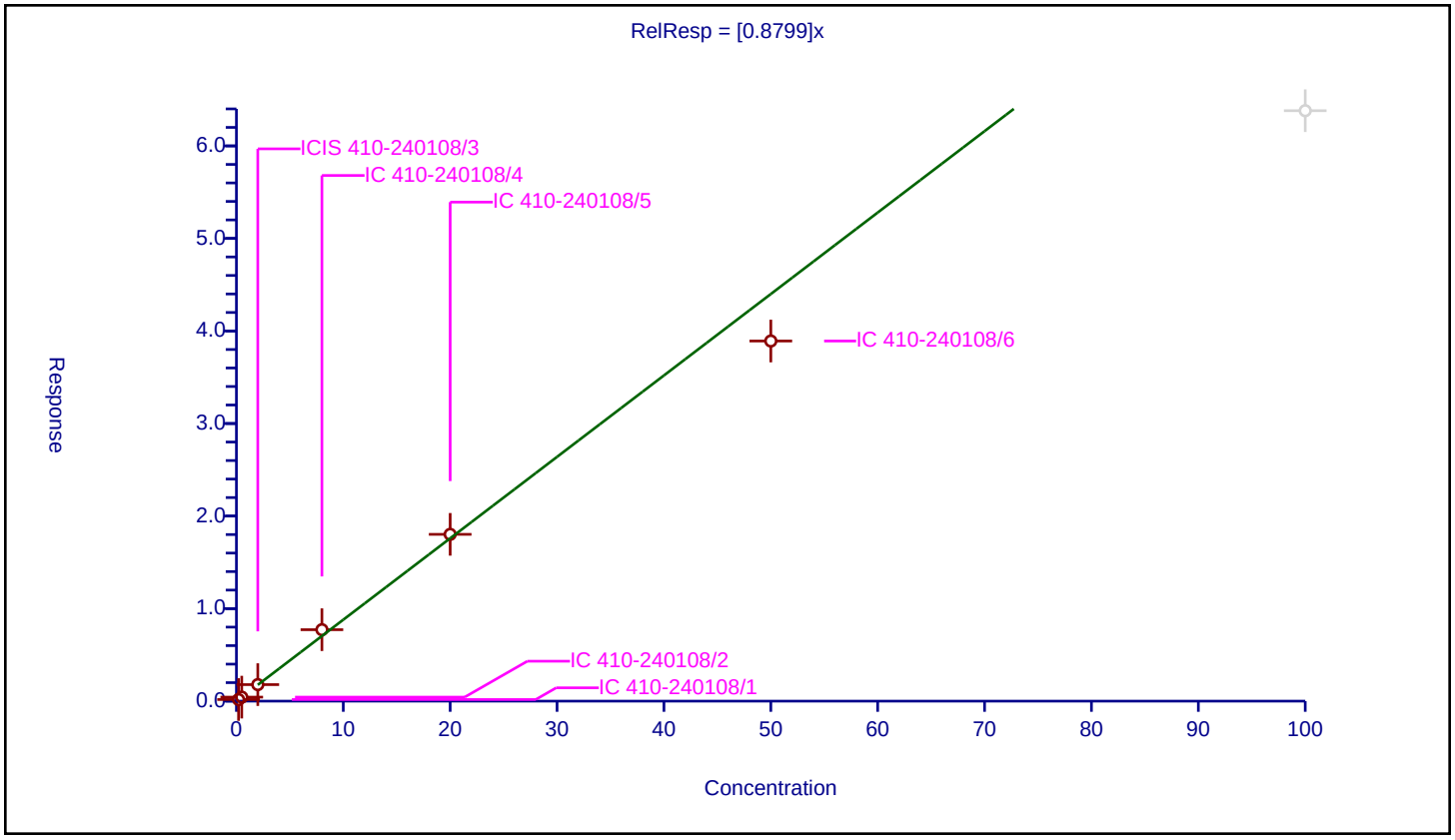
Curve Coefficients

Intercept:	0
Slope:	0.8799

Error Coefficients

Standard Error:	20600000
Relative Standard Error:	6.9
Correlation Coefficient:	0.984
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.175337	10.0	13102050.0	0.876687	Y
2	IC 410-240108/2	0.5	0.432766	10.0	11977216.0	0.865532	Y
3	ICIS 410-240108/3	2.0	1.785164	10.0	12892696.0	0.892582	Y
4	IC 410-240108/4	8.0	7.720602	10.0	11751365.0	0.965075	Y
5	IC 410-240108/5	20.0	18.024022	10.0	11612294.0	0.901201	Y
6	IC 410-240108/6	50.0	38.918003	10.0	10284705.0	0.77836	Y
7	IC 410-240108/7	100.0	63.804222	10.0	9128481.0	0.638042	N



Calibration / 1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

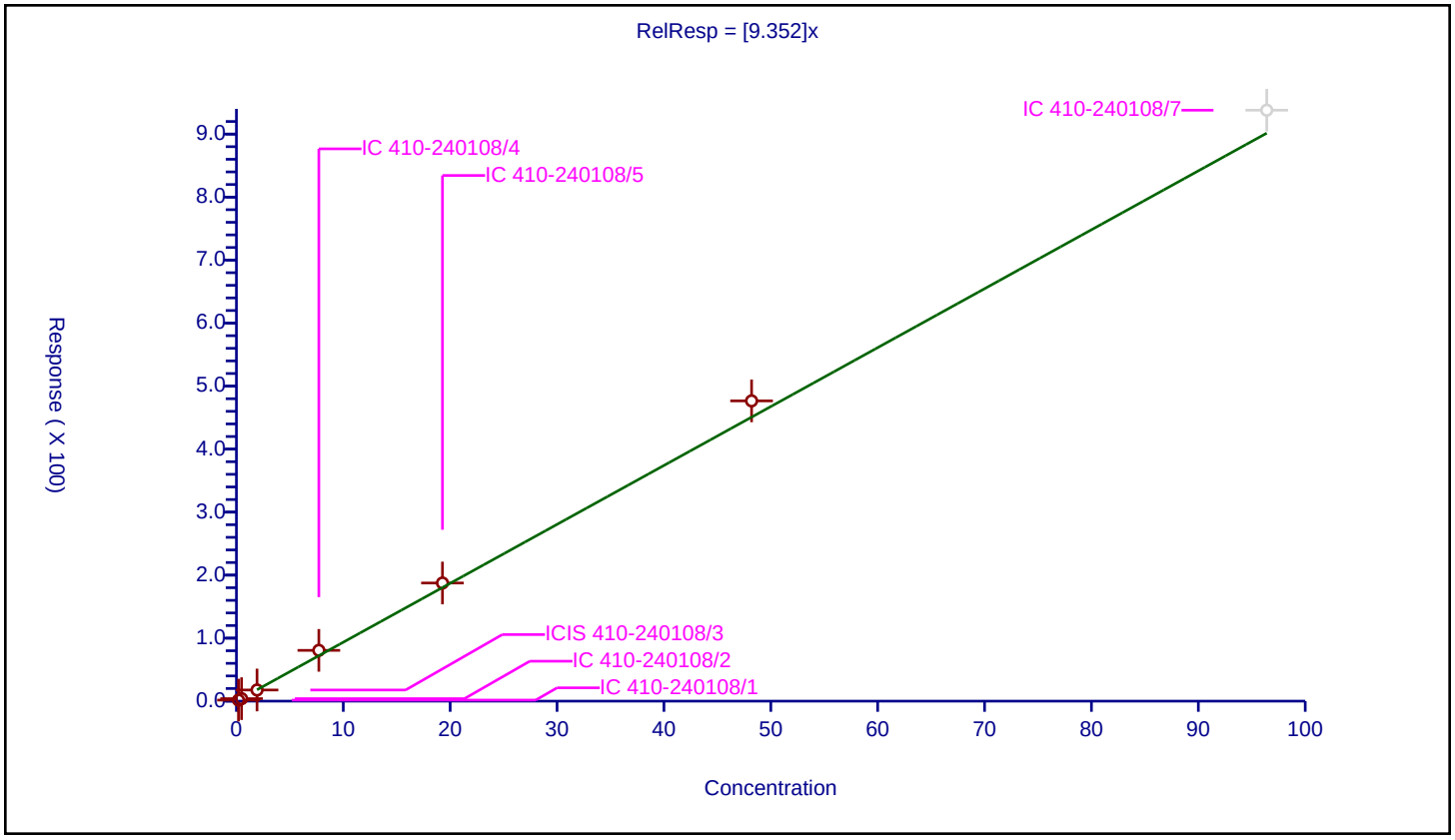
Curve Coefficients

Intercept:	0
Slope:	9.352

Error Coefficients

Standard Error:	4330000
Relative Standard Error:	8.9
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1928	1.670903	9.58	228672.0	8.666509	Y
2	IC 410-240108/2	0.482	3.959072	9.58	232580.0	8.213841	Y
3	ICIS 410-240108/3	1.928	17.672936	9.58	232822.0	9.166461	Y
4	IC 410-240108/4	7.712	80.585247	9.58	216815.0	10.449332	Y
5	IC 410-240108/5	19.28	187.521555	9.58	201703.0	9.726222	Y
6	IC 410-240108/6	48.2	476.568209	9.58	173810.0	9.887307	Y
7	IC 410-240108/7	96.4	937.915753	9.58	150088.0	9.729417	N



Calibration / 2-(N-methylperfluoro-1-octanesulfonamido) ethanol

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

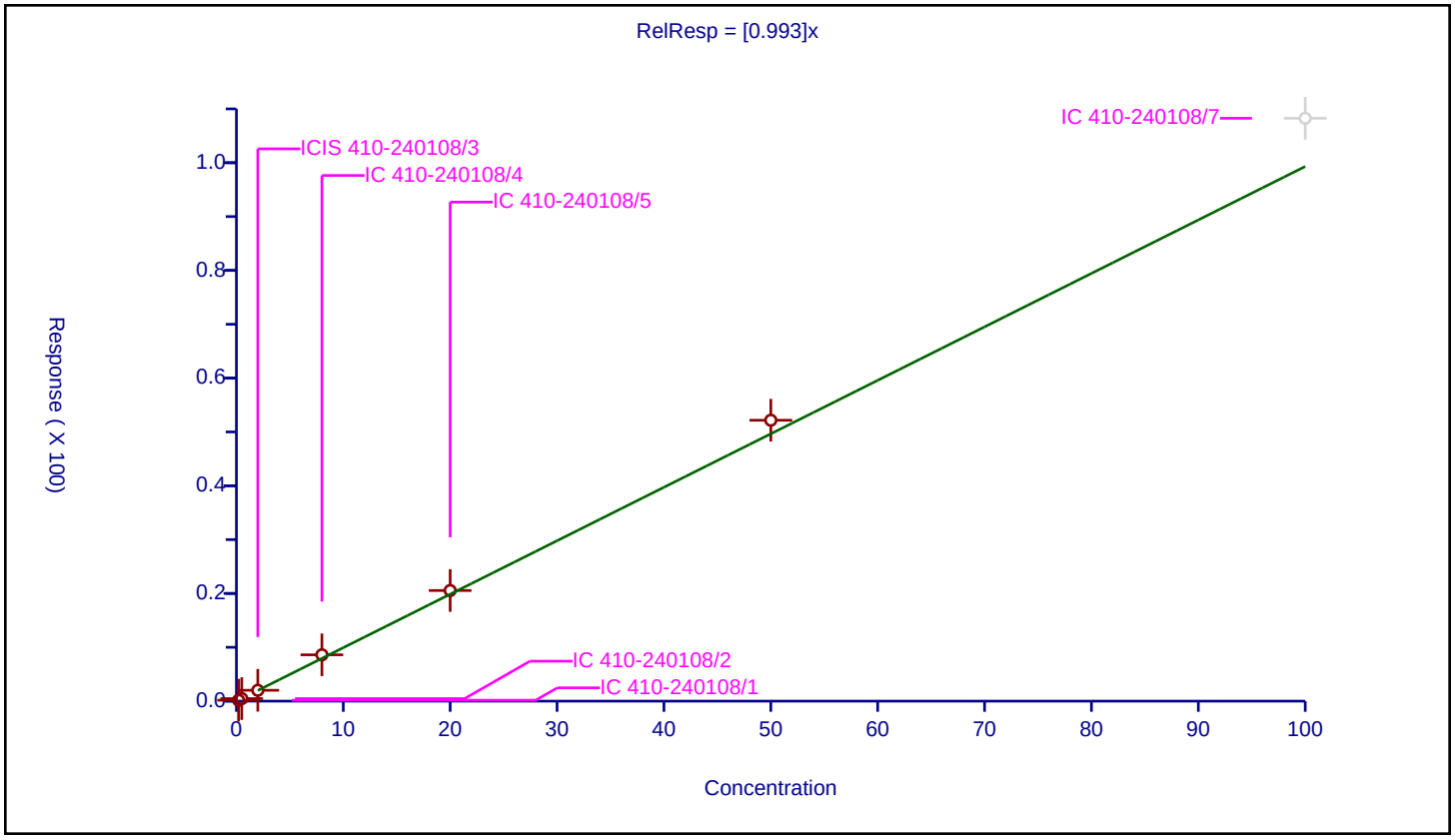
Curve Coefficients

Intercept:	0
Slope:	0.993

Error Coefficients

Standard Error:	3300000
Relative Standard Error:	7.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.172561	10.0	1407212.0	0.862805	Y
2	IC 410-240108/2	0.5	0.470505	10.0	1357861.0	0.941009	Y
3	ICIS 410-240108/3	2.0	2.015892	10.0	1407476.0	1.007946	Y
4	IC 410-240108/4	8.0	8.605732	10.0	1343594.0	1.075717	Y
5	IC 410-240108/5	20.0	20.544671	10.0	1354046.0	1.027234	Y
6	IC 410-240108/6	50.0	52.171605	10.0	1292072.0	1.043432	Y
7	IC 410-240108/7	100.0	108.255659	10.0	1144736.0	1.082557	N



Calibration / NMeFOSA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

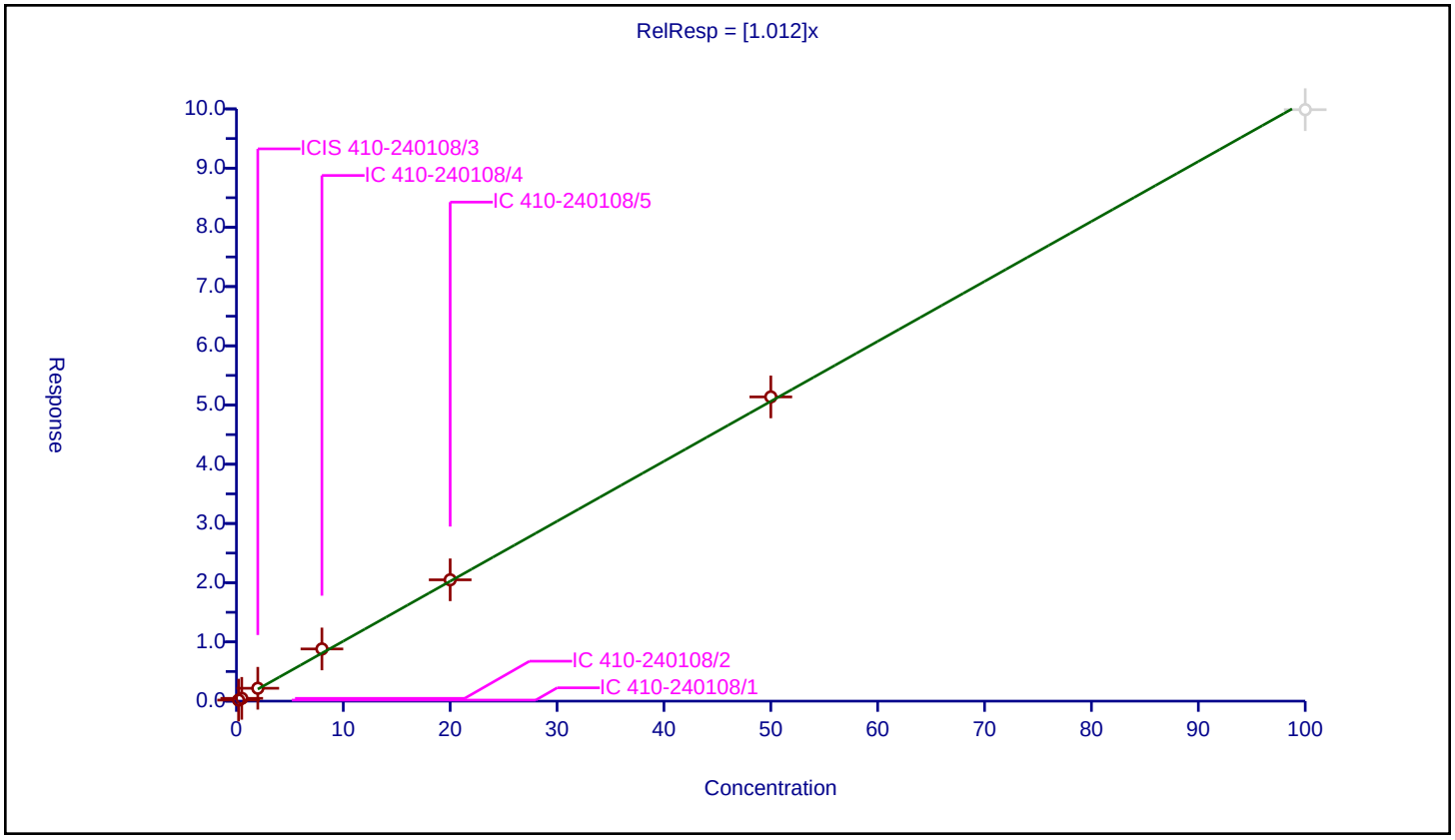
Curve Coefficients

Intercept:	0
Slope:	1.012

Error Coefficients

Standard Error:	4300000
Relative Standard Error:	8.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.178661	10.0	1723598.0	0.893306	Y
2	IC 410-240108/2	0.5	0.47067	10.0	1752034.0	0.94134	Y
3	ICIS 410-240108/3	2.0	2.173427	10.0	1712931.0	1.086713	Y
4	IC 410-240108/4	8.0	8.813552	10.0	1686690.0	1.101694	Y
5	IC 410-240108/5	20.0	20.488683	10.0	1745468.0	1.024434	Y
6	IC 410-240108/6	50.0	51.369035	10.0	1712688.0	1.027381	Y
7	IC 410-240108/7	100.0	99.871181	10.0	1697494.0	0.998712	N



Calibration / Perfluorododecanesulfonic acid (PFDoS)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

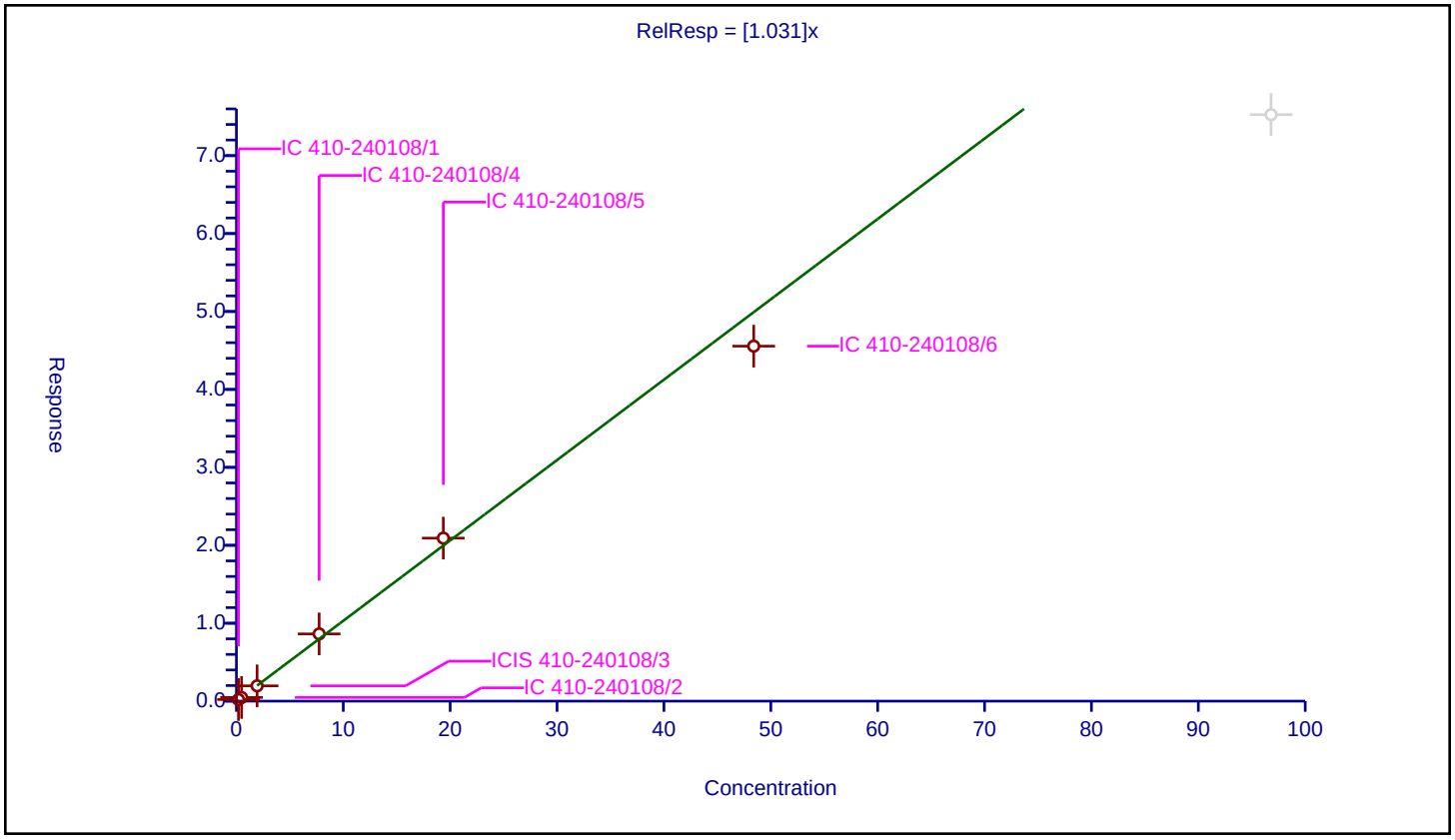
Curve Coefficients

Intercept:	0
Slope:	1.031

Error Coefficients

Standard Error:	16800000
Relative Standard Error:	6.5
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.1936	0.206129	9.56	8218274.0	1.064715	Y
2	IC 410-240108/2	0.484	0.470651	9.56	8013477.0	0.97242	Y
3	ICIS 410-240108/3	1.936	1.964262	9.56	8135428.0	1.014598	Y
4	IC 410-240108/4	7.744	8.627932	9.56	7839367.0	1.114144	Y
5	IC 410-240108/5	19.36	20.92012	9.56	7281850.0	1.080585	Y
6	IC 410-240108/6	48.4	45.553384	9.56	6984762.0	0.941186	Y
7	IC 410-240108/7	96.8	75.25952	9.56	6416406.0	0.777474	N



Calibration / 2-(N-ethylperfluoro-1-octanesulfonamido) ethanol

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

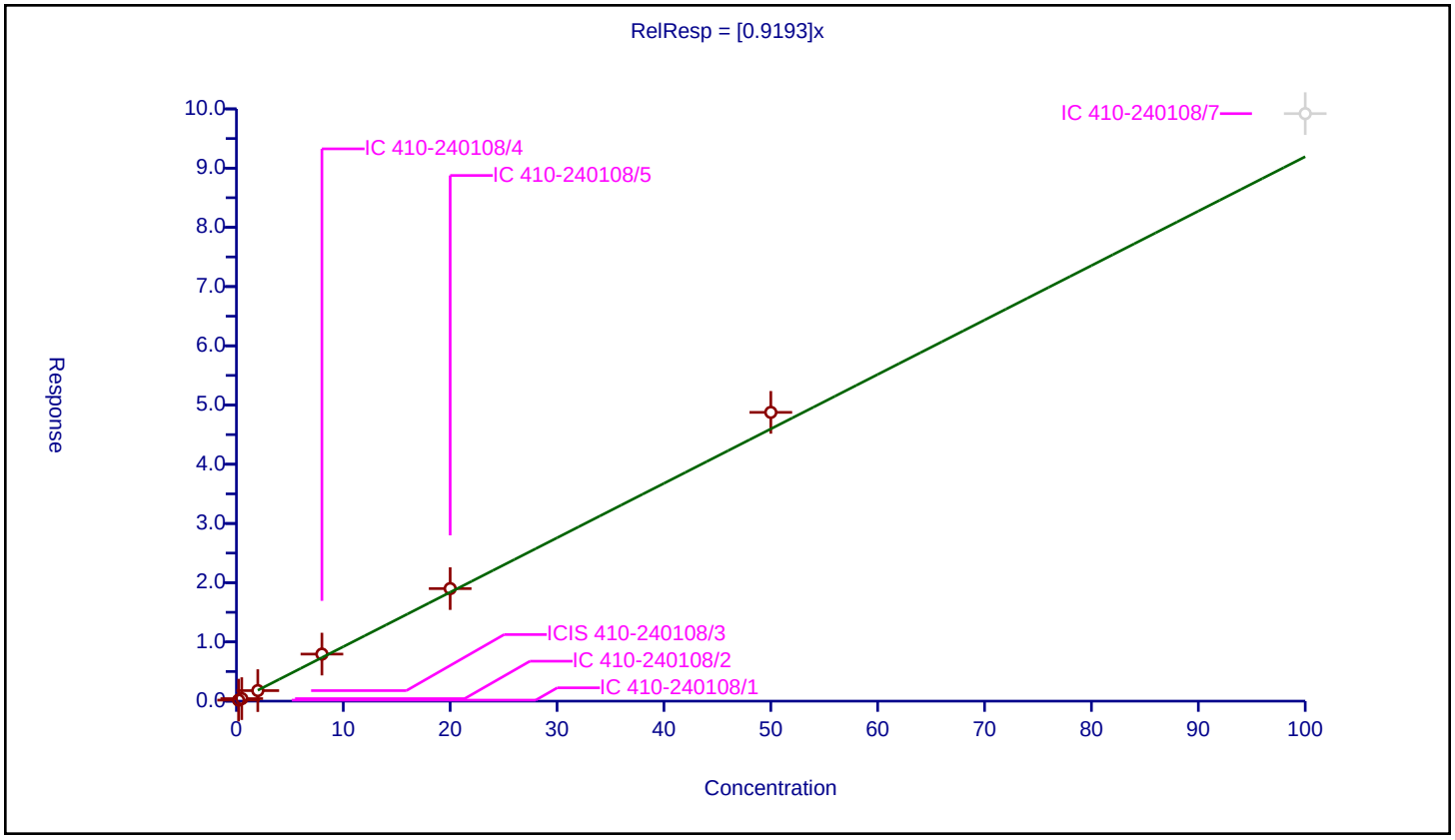
Curve Coefficients

Intercept:	0
Slope:	0.9193

Error Coefficients

Standard Error:	3480000
Relative Standard Error:	6.7
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.171072	10.0	1714013.0	0.855361	Y
2	IC 410-240108/2	0.5	0.426416	10.0	1699187.0	0.852831	Y
3	ICIS 410-240108/3	2.0	1.778981	10.0	1711980.0	0.889491	Y
4	IC 410-240108/4	8.0	7.942043	10.0	1662591.0	0.992755	Y
5	IC 410-240108/5	20.0	19.004084	10.0	1616211.0	0.950204	Y
6	IC 410-240108/6	50.0	48.761991	10.0	1441193.0	0.97524	Y
7	IC 410-240108/7	100.0	99.199388	10.0	1267031.0	0.991994	N



Calibration / Perfluorotridecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

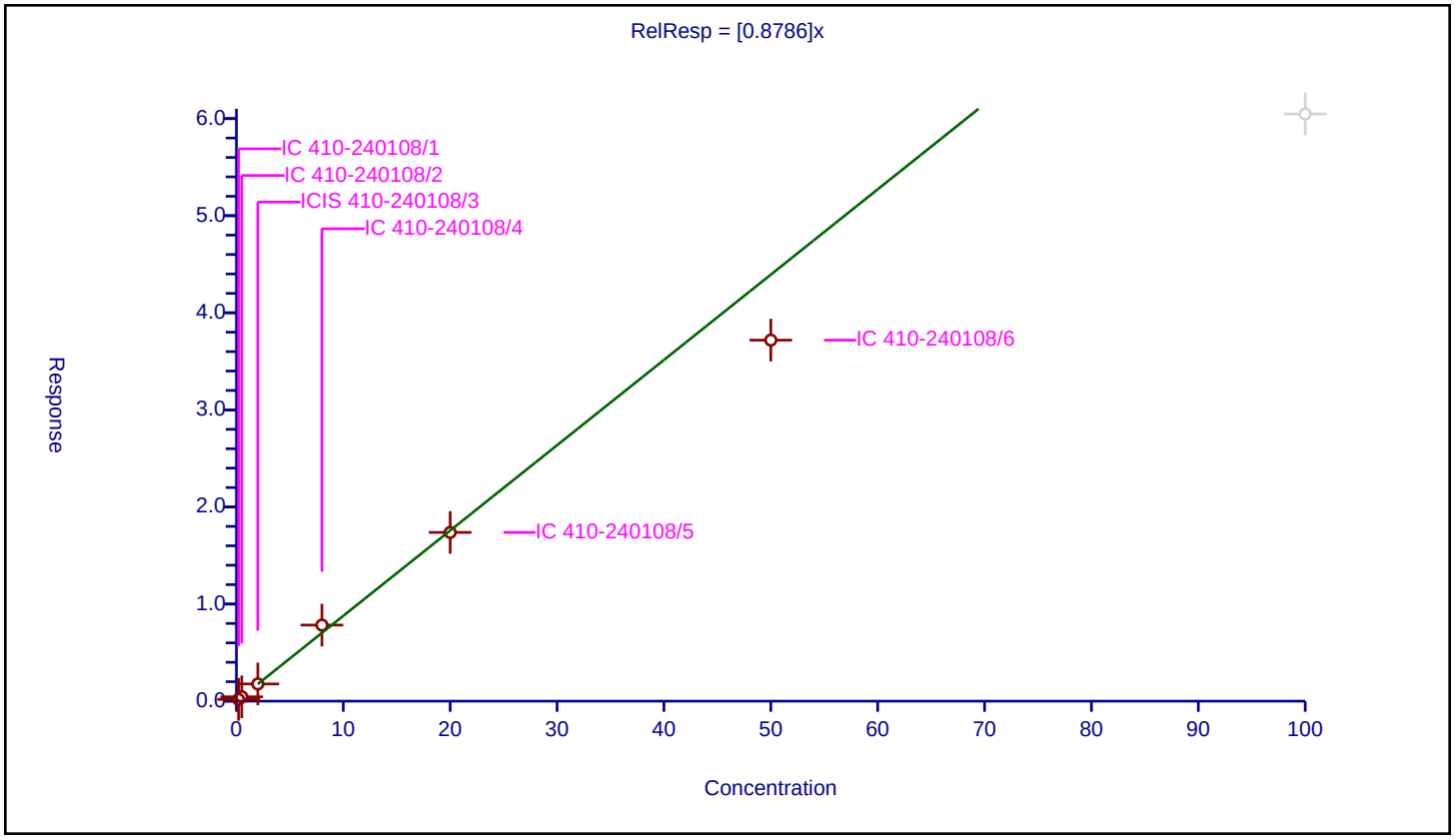
Curve Coefficients

Intercept:	0
Slope:	0.8786

Error Coefficients

Standard Error:	19800000
Relative Standard Error:	8.7
Correlation Coefficient:	0.982
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.180174	10.0	13102050.0	0.90087	Y
2	IC 410-240108/2	0.5	0.447069	10.0	11977216.0	0.894138	Y
3	ICIS 410-240108/3	2.0	1.769736	10.0	12892696.0	0.884868	Y
4	IC 410-240108/4	8.0	7.831999	10.0	11751365.0	0.979	Y
5	IC 410-240108/5	20.0	17.37832	10.0	11612294.0	0.868916	Y
6	IC 410-240108/6	50.0	37.183263	10.0	10284705.0	0.743665	Y
7	IC 410-240108/7	100.0	60.474444	10.0	9128481.0	0.604744	N



Calibration / N-ethylperfluoro-1-octanesulfonamide

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

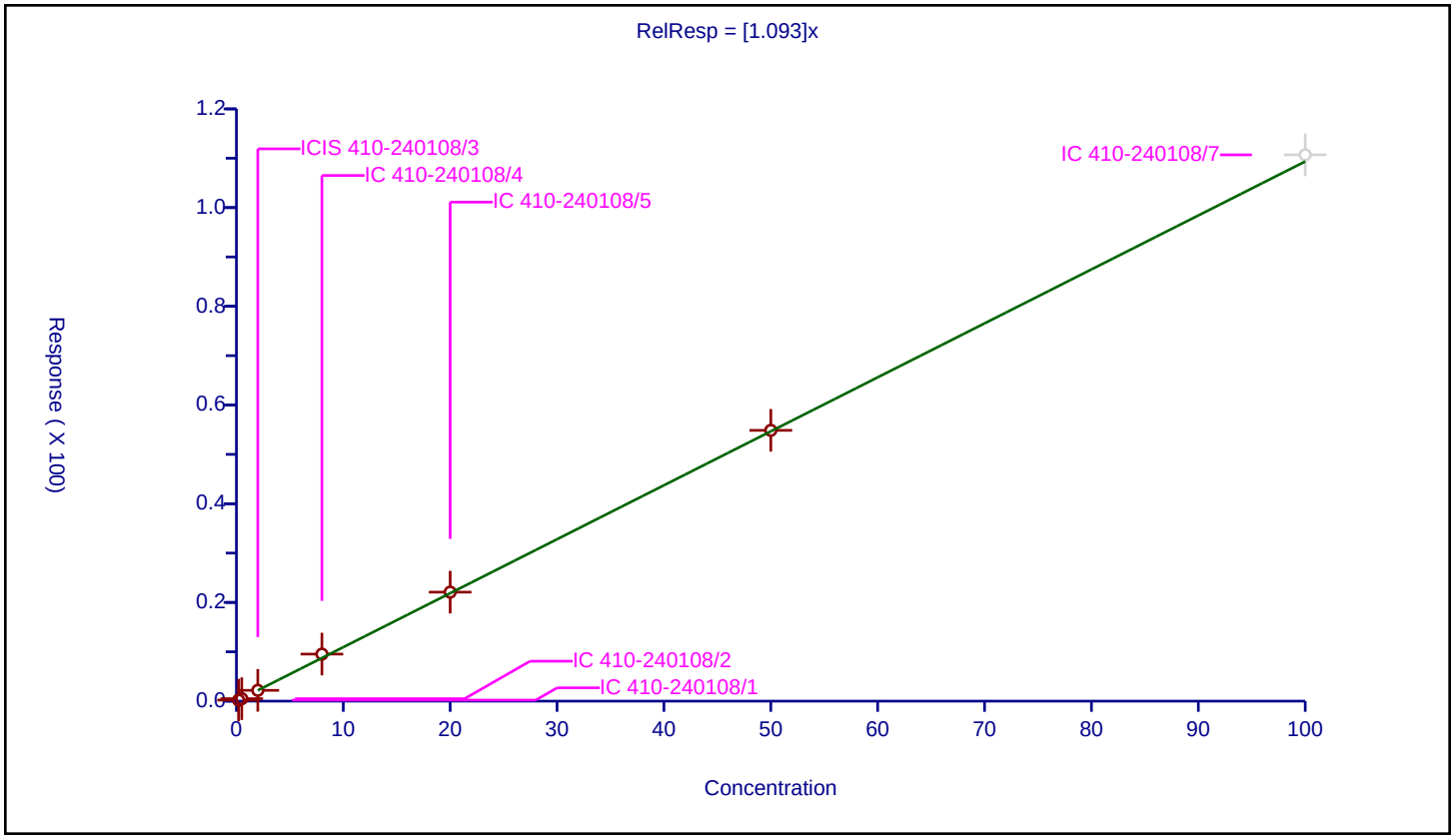
Curve Coefficients

Intercept:	0
Slope:	1.093

Error Coefficients

Standard Error:	4130000
Relative Standard Error:	5.6
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.214371	10.0	1580441.0	1.071853	Y
2	IC 410-240108/2	0.5	0.500758	10.0	1587372.0	1.001517	Y
3	ICIS 410-240108/3	2.0	2.188271	10.0	1597800.0	1.094136	Y
4	IC 410-240108/4	8.0	9.531357	10.0	1559929.0	1.19142	Y
5	IC 410-240108/5	20.0	22.0862	10.0	1598059.0	1.10431	Y
6	IC 410-240108/6	50.0	54.869164	10.0	1528864.0	1.097383	Y
7	IC 410-240108/7	100.0	110.688556	10.0	1416167.0	1.106886	N



Calibration / Perfluorotetradecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

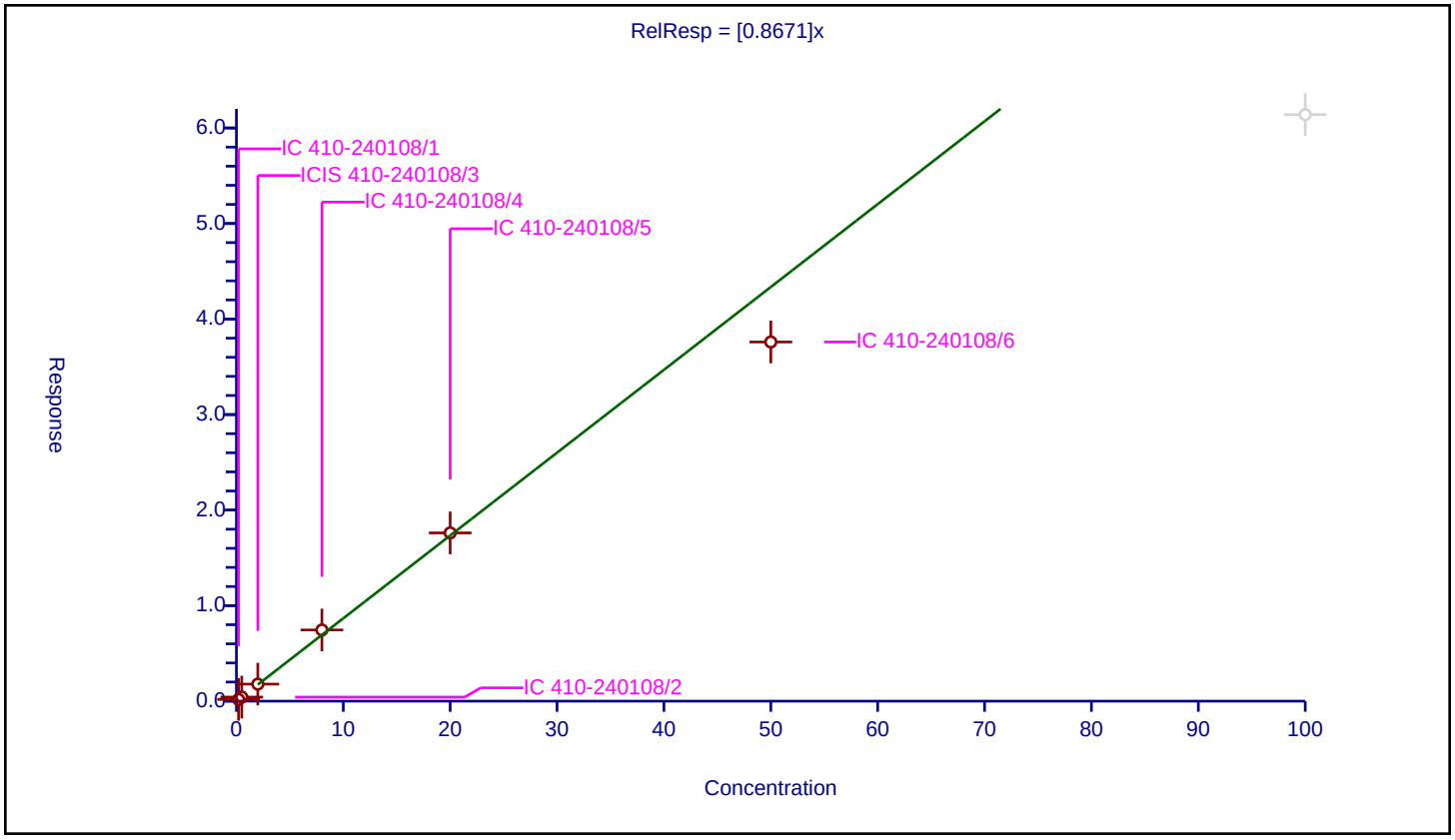
Curve Coefficients

Intercept:	0
Slope:	0.8671

Error Coefficients

Standard Error:	21100000
Relative Standard Error:	7.1
Correlation Coefficient:	0.989
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.178741	10.0	12605713.0	0.893706	Y
2	IC 410-240108/2	0.5	0.426463	10.0	12362942.0	0.852926	Y
3	ICIS 410-240108/3	2.0	1.784313	10.0	12655384.0	0.892157	Y
4	IC 410-240108/4	8.0	7.450586	10.0	12037995.0	0.931323	Y
5	IC 410-240108/5	20.0	17.61185	10.0	11709816.0	0.880592	Y
6	IC 410-240108/6	50.0	37.598302	10.0	10995088.0	0.751966	Y
7	IC 410-240108/7	100.0	61.401564	10.0	9475870.0	0.614016	N



Calibration / Perfluorohexadecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

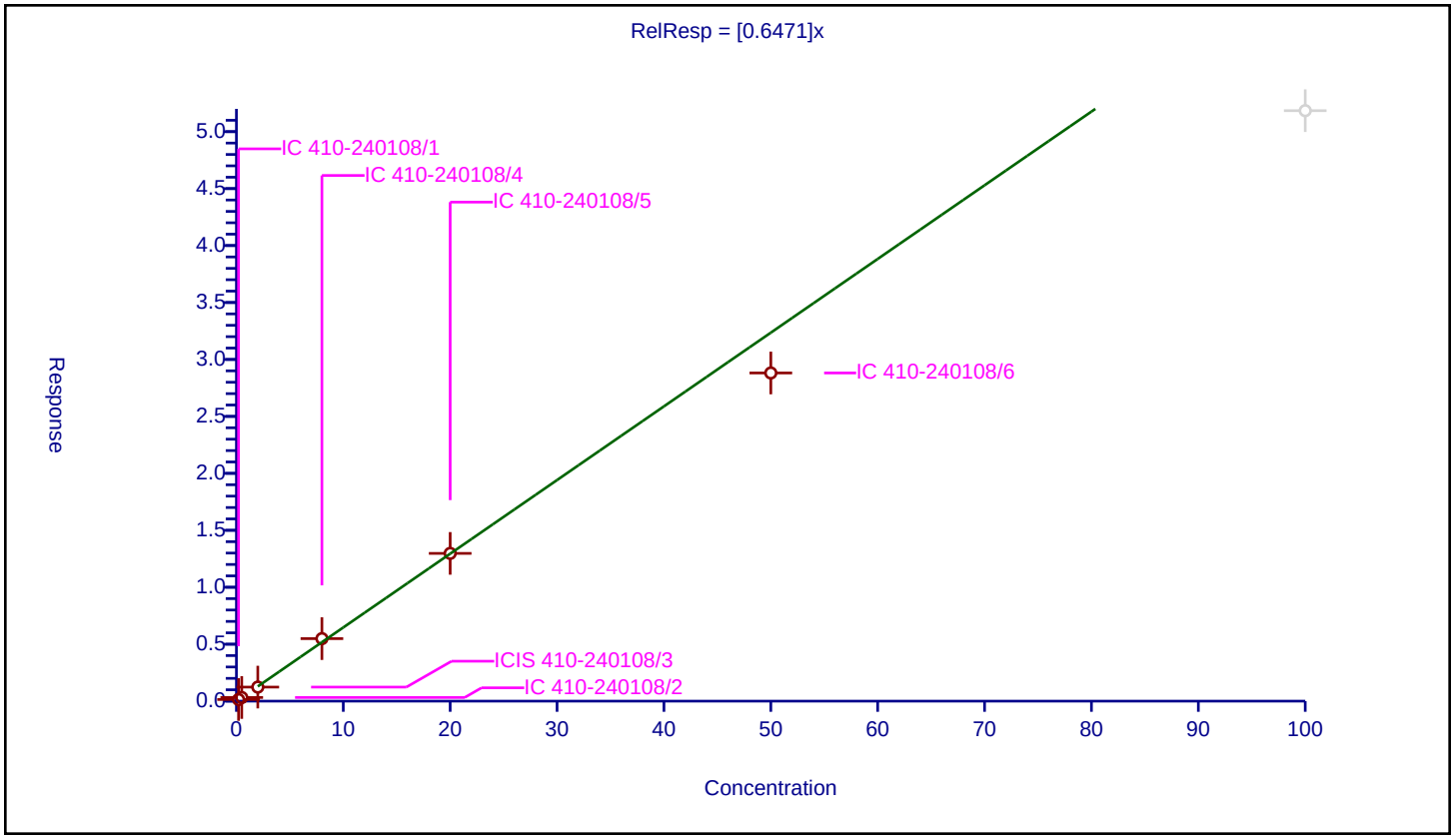
Curve Coefficients

Intercept:	0
Slope:	0.6471

Error Coefficients

Standard Error:	16000000
Relative Standard Error:	7.7
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.143217	10.0	12605713.0	0.716084	Y
2	IC 410-240108/2	0.5	0.319118	10.0	12362942.0	0.638236	Y
3	ICIS 410-240108/3	2.0	1.234091	10.0	12655384.0	0.617045	Y
4	IC 410-240108/4	8.0	5.488781	10.0	12037995.0	0.686098	Y
5	IC 410-240108/5	20.0	12.972821	10.0	11709816.0	0.648641	Y
6	IC 410-240108/6	50.0	28.813248	10.0	10995088.0	0.576265	Y
7	IC 410-240108/7	100.0	51.843098	10.0	9475870.0	0.518431	N



Calibration / Perfluorooctadecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

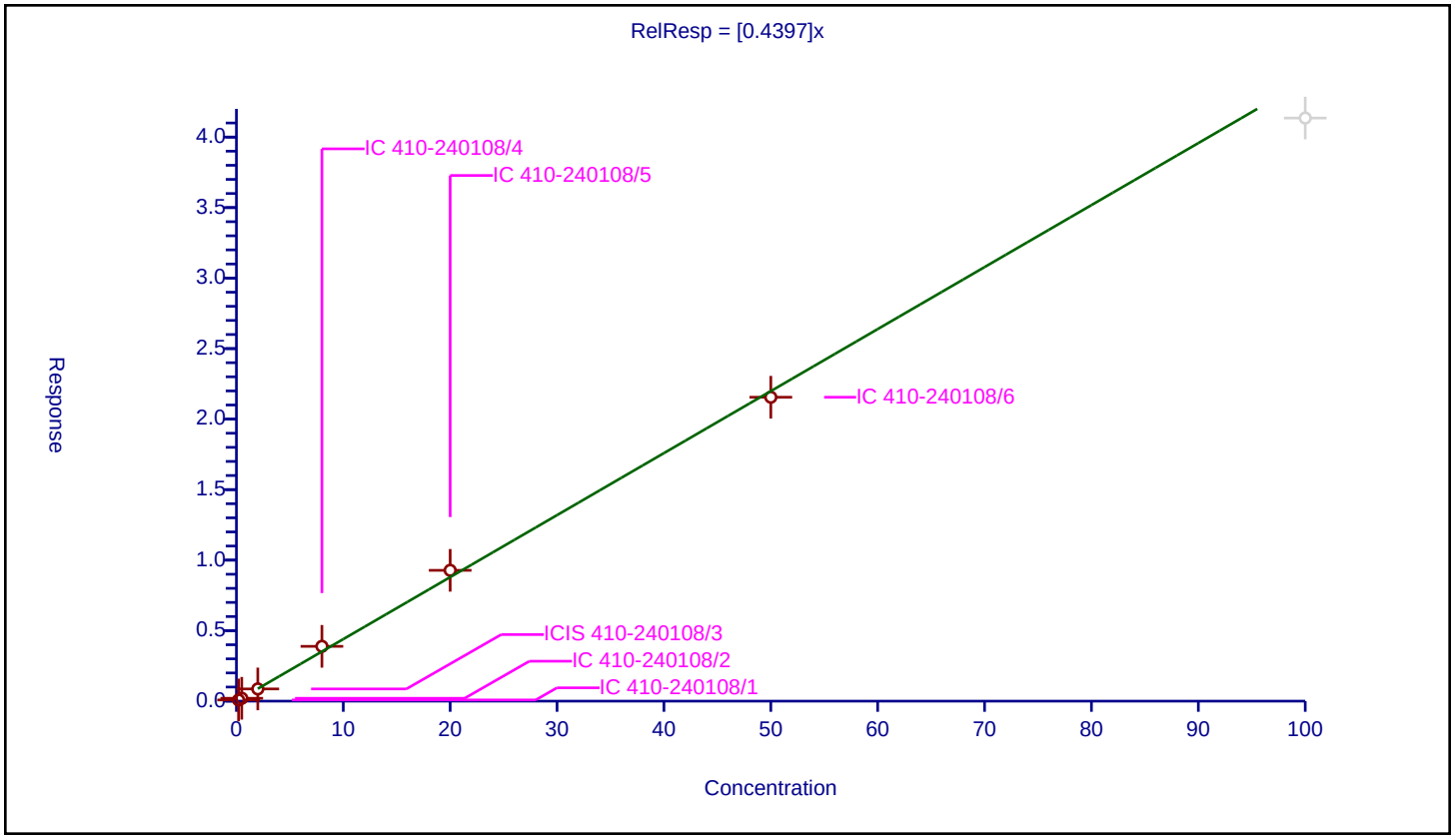
Curve Coefficients

Intercept:	0
Slope:	0.4397

Error Coefficients

Standard Error:	11900000
Relative Standard Error:	6.8
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-240108/1	0.2	0.083958	10.0	12605713.0	0.41979	Y
2	IC 410-240108/2	0.5	0.202341	10.0	12362942.0	0.404682	Y
3	ICIS 410-240108/3	2.0	0.866281	10.0	12655384.0	0.433141	Y
4	IC 410-240108/4	8.0	3.886995	10.0	12037995.0	0.485874	Y
5	IC 410-240108/5	20.0	9.276135	10.0	11709816.0	0.463807	Y
6	IC 410-240108/6	50.0	21.552903	10.0	10995088.0	0.431058	Y
7	IC 410-240108/7	100.0	41.350425	10.0	9475870.0	0.413504	N



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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-242022/1	22APR07-19.d
Level 2	IC 410-242022/2	22APR07-20.d
Level 3	ICIS 410-242022/3	22APR07-21.d
Level 4	IC 410-242022/4	22APR07-22.d
Level 5	IC 410-242022/5	22APR07-23.d
Level 6	IC 410-242022/6	22APR07-24.d
Level 7	IC 410-242022/7	22APR07-25.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid	3.655	3.664	3.656	3.663	3.654	3.663	3.656				3.293 - 4.025	3.659
PFMPA	3.890	3.891	3.891	3.898	3.889	3.890	+++++				3.791 - 3.991	3.892
3:3 FTCA	4.172	4.172	4.166	4.172	4.167	4.176	+++++				4.070 - 4.270	4.171
Perfluoropentanoic acid	4.179	4.180	4.180	4.180	4.174	4.183	+++++				3.760 - 4.596	4.179
Perfluorobutanesulfonic acid	4.231	4.232	4.232	4.231	4.226	4.236	+++++				3.808 - 4.655	4.231
PFMBA	4.300	4.301	4.301	4.301	4.296	4.305	+++++				4.201 - 4.401	4.301
PFEESA	4.388	4.397	4.389	4.397	4.391	+++++	+++++				4.294 - 4.494	4.392
NFDHA	4.509	4.521	4.511	4.520	4.513	4.515	+++++				4.414 - 4.614	4.515
4:2 Fluorotelomer sulfonic acid	4.549	4.550	4.541	4.549	4.543	+++++	+++++				4.092 - 5.001	4.546
Perfluorohexanoic acid	4.588	4.589	4.580	4.589	4.582	4.594	4.579				4.127 - 5.045	4.586
Perfluoropentanesulfonic acid	4.608	4.609	4.609	4.608	4.602	4.612	+++++				2.914 - 6.302	4.608
Perfluoro(2-propoxypropanoic) acid	4.717	4.718	4.711	4.717	4.712	4.721	+++++				3.772 - 5.658	4.716
Perfluoroheptanoic acid	4.976	4.977	4.979	4.976	4.970	4.982	+++++				4.478 - 5.474	4.977
Perfluorohexanesulfonic acid	4.976	4.987	4.979	4.986	4.979	4.982	+++++				2.988 - 6.974	4.982
DONA	5.028	5.029	5.023	5.028	5.023	5.032	+++++				4.030 - 6.023	5.027
5:3 FTCA	5.051	5.058	5.052	5.051	5.045	5.054	+++++				4.951 - 5.151	5.052
6:2 Fluorotelomer sulfonic acid	5.328	5.336	5.330	5.335	5.323	+++++	+++++				4.796 - 5.863	5.330
Perfluoroheptanesulfonic acid	5.335	5.343	5.337	5.342	5.337	5.344	+++++				3.346 - 7.332	5.340
Perfluorooctanoic acid	5.348	5.355	5.343	5.348	5.343	5.357	+++++				4.813 - 5.883	5.349
Perfluorooctanesulfonic acid	5.673	5.683	5.676	5.681	5.676	5.685	5.668				5.110 - 6.245	5.677
Perfluorononanoic acid	5.689	5.699	5.692	5.697	5.692	5.701	+++++				5.125 - 6.264	5.695
7:3 FTCA	5.796	5.798	5.790	5.796	5.790	5.798	+++++				5.694 - 5.894	5.795
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	5.855	5.864	5.857	5.862	5.856	+++++	+++++				4.724 - 6.995	5.859
Perfluorononanesulfonic acid	5.979	5.989	5.981	5.987	5.981	5.990	+++++				3.712 - 8.255	5.985
Perfluorodecanoic acid	6.003	6.005	6.006	6.011	6.005	6.014	+++++				5.406 - 6.608	6.007
8:2 Fluorotelomer sulfonic acid	6.003	6.013	6.006	6.011	6.005	+++++	+++++				5.407 - 6.609	6.008
Perfluorooctanesulfonamide	6.101	6.113	6.105	6.110	6.104	+++++	+++++				5.496 - 6.718	6.107
NMeFOSAA	6.152	6.162	6.155	6.160	6.154	+++++	+++++				5.541 - 6.772	6.157

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorodecanesulfonic acid	6.248	6.261	6.252	6.257	6.251	+++++	+++++				3.983 - 8.526	6.254
Perfluoroundecanoic acid	6.276	6.289	6.280	6.286	6.279	6.290	+++++				5.654 - 6.911	6.283
NEtFOSAA	6.295	6.298	6.299	6.305	6.298	6.309	+++++				5.670 - 6.930	6.301
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	6.393	6.398	6.398	6.404	6.398	+++++	+++++				5.262 - 7.534	6.398
Perfluorododecanoic acid	6.518	6.530	6.521	6.527	6.522	6.531	+++++				5.872 - 7.177	6.525
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	6.536	6.539	6.539	6.544	6.539	+++++	+++++				4.138 - 8.944	6.539
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	6.553	6.557	6.557	6.562	6.557	6.566	+++++				5.904 - 7.214	6.559
NMeFOSA	6.571	6.574	6.566	6.570	6.566	6.575	+++++				5.913 - 7.227	6.570
Perfluorododecanesulfonic acid (PFDoS)	6.702	6.706	6.705	6.711	6.705	6.706	+++++				4.434 - 8.977	6.706
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	6.720	6.724	6.724	6.728	6.723	6.732	+++++				6.053 - 7.396	6.725
Perfluorotridecanoic acid	6.737	6.740	6.732	6.737	6.731	6.740	+++++				4.125 - 9.346	6.736
N-ethylperfluoro-1-octanesulfonamide	6.737	6.740	6.740	6.745	6.740	6.748	+++++				6.068 - 7.415	6.742
Perfluorotetradecanoic acid	6.919	6.928	6.921	6.925	6.920	+++++	+++++				4.154 - 9.692	6.923
Perfluorohexadecanoic acid	7.240	7.248	7.241	7.246	7.241	7.247	+++++				4.474 - 10.013	7.244
Perfluorooctadecanoic acid	7.494	7.499	7.494	7.499	7.493	7.499	+++++				4.726 - 10.265	7.496
13C4 PFBA	3.655	3.664	3.656	3.663	3.654	3.663	3.656				2.909 - 4.409	3.659
13C5 PFPeA	4.179	4.187	4.180	4.187	4.174	4.183	+++++				3.431 - 4.931	4.182
13C3 PFBS	4.231	4.239	4.232	4.239	4.234	4.236	+++++				3.485 - 4.985	4.235
M2-4:2 FTS	4.549	4.550	4.550	4.549	4.543	4.554	+++++				3.799 - 5.299	4.549
13C5 PFHxA	4.588	4.589	4.590	4.589	4.582	4.594	4.579				3.837 - 5.337	4.587
13C3 HFPO-DA	4.717	4.718	4.711	4.717	4.712	4.721	4.711				3.965 - 5.465	4.715
13C4 PFHpA	4.976	4.987	4.979	4.986	4.979	4.982	+++++				4.231 - 5.731	4.982
13C3 PFHxS	4.976	4.987	4.979	4.986	4.979	4.991	+++++				4.233 - 5.733	4.983
M2-6:2 FTS	5.328	5.336	5.330	5.335	5.330	+++++	+++++				4.582 - 6.082	5.332
13C8 PFOA	5.348	5.355	5.350	5.354	5.343	5.357	+++++				4.601 - 6.101	5.351
13C8 PFOS	5.681	5.683	5.676	5.681	5.676	5.685	5.668				4.929 - 6.429	5.679
13C9 PFNA	5.697	5.699	5.692	5.697	5.692	5.701	+++++				4.946 - 6.446	5.696
M2-8:2 FTS	6.003	6.013	6.006	6.011	6.005	+++++	+++++				5.258 - 6.758	6.008
13C6 PFDA	6.003	6.013	6.006	6.011	6.005	6.014	+++++				5.258 - 6.758	6.009
13C8 FOSA	6.110	6.113	6.105	6.110	6.104	6.114	+++++				5.359 - 6.859	6.109
d3-NMeFOSAA	6.152	6.162	6.155	6.152	6.154	6.155	+++++				5.405 - 6.905	6.155
13C7 PFUnA	6.286	6.289	6.280	6.286	6.279	6.290	+++++				5.534 - 7.034	6.285
d5-NEtFOSAA	6.295	6.298	6.299	6.305	6.298	6.299	+++++				5.549 - 7.049	6.299

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C2-PFDoDA	6.527	6.530	6.521	6.527	6.522	6.531	+++++				5.776 - 7.276	6.526
d7-N-MeFOSE-M	6.545	6.557	6.548	6.553	6.548	6.558	+++++				5.801 - 7.301	6.552
d3-NMePFOSA	6.571	6.574	6.566	6.570	6.566	6.575	+++++				5.820 - 7.320	6.570
d9-N-EtFOSE-M	6.711	6.715	6.714	6.720	6.714	6.715	+++++				5.965 - 7.465	6.715
d5-NEtPFOSA	6.737	6.740	6.732	6.737	6.731	6.740	+++++				5.986 - 7.486	6.736
13C2 PFTeDA	6.919	6.928	6.921	6.925	6.920	6.928	+++++				6.173 - 7.673	6.924

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-242022/1	22APR07-19.d
Level 2	IC 410-242022/2	22APR07-20.d
Level 3	ICIS 410-242022/3	22APR07-21.d
Level 4	IC 410-242022/4	22APR07-22.d
Level 5	IC 410-242022/5	22APR07-23.d
Level 6	IC 410-242022/6	22APR07-24.d
Level 7	IC 410-242022/7	22APR07-25.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C4 PFBA	842844 791342	854774 762549	896075 691104	828423	Ave		809587.143				8.4					
13C5 PFPeA	720207 657977	719217 620343	747433 +++++	699132	Ave		694051.383				6.7					
13C3 PFBS	941789 880016	954511 848051	978940 +++++	933715	Ave		922837.007				5.3					
M2-4:2 FTS	48880 41696	45527 36674	46793 +++++	42210	Ave		43630.1570				10.0					
13C5 PFHxA	869084 778566	869878 722198	901096 634638	817101	Ave		798937.243				11.9					
13C3 HFPO-DA	92388 86855	92742 81937	87276 78251	86719	Ave		86595.3000				6.0					
13C4 PFHpA	922645 766357	929400 648841	924433 +++++	853335	Ave		840835.217				13.5					
13C3 PFHxS	881036 755429	902364 666742	900311 +++++	853950	Ave		826638.584				11.5					
M2-6:2 FTS	29407 26023	31758 +++++	29932 +++++	28200	Ave		29063.9368				7.3					
13C8 PFOA	972820 854253	957827 775490	976372 +++++	942764	Ave		913254.300				8.9					
13C8 PFOS	781469 720870	788255 701747	831308 617996	781432	Ave		746153.781				9.6					
13C9 PFNA	988284 878524	978575 808774	1019360 +++++	936744	Ave		935043.567				8.4					
M2-8:2 FTS	25296 22048	24707 +++++	26290 +++++	23064	Ave		24281.0230				7.0					

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C6 PFDA	1079300 939431	1072338 877500	1092051 +++++	1006746	Ave		1011227.53				8.6					
13C8 FOSA	1240872 1225390	1280424 1178444	1277541 +++++	1249094	Ave		1241960.82				3.0					
d3-NMeFOSAA	283187 288700	301698 272851	307425 +++++	284346	Ave		289701.000				4.4					
13C7 PFUnA	1116283 944762	1065063 865828	1134316 +++++	1041918	Ave		1028028.32				10.1					
d5-NEtFOSAA	233835 210487	236206 189230	236478 +++++	224773	Ave		221834.883				8.5					
13C2-PFDoDA	1111270 1003056	1110974 912483	1178745 +++++	1072244	Ave		1064795.27				8.8					
d7-N-MeFOSE-M	119621 113402	119436 105954	122172 +++++	116281	Ave		116144.400				5.0					
d3-NMePFOSA	153974 153731	161035 159555	161039 +++++	151694	Ave		156837.883				2.7					
d9-N-EtFOSE-M	147784 131832	151568 117767	148700 +++++	140148	Ave		139632.883				9.2					
d5-NEtPFOSA	143727 139704	144687 136221	141596 +++++	138525	Ave		140743.233				2.3					
13C2 PFTeDA	1110642 1013392	1104110 960273	1148824 +++++	1030106	Ave		1061224.68				6.7					

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

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	0.8312 0.7916	0.7927 0.7126	0.8393	0.9118	0.8756	AveID		0.8221				7.9		20.0			
PFMPA	0.7731 0.7713	0.7817 +++++	0.7873	0.8762	0.8655	AveID		0.8092				6.0		20.0			
3:3 FTCA	0.0538 0.0655	0.0532 +++++	0.0582	0.0648	0.0658	AveID		0.0602				9.8		20.0			
Perfluoropentanoic acid	1.0696 0.9777	1.0098 +++++	1.0004	1.1359	1.0871	AveID		1.0467				5.8		20.0			
Perfluorobutanesulfonic acid	0.9884 0.8634	0.9375 +++++	0.9671	0.9965	0.9955	AveID		0.9581				5.4		20.0			
PFMBA	0.7745 0.7613	0.7735 +++++	0.7806	0.8449	0.8859	AveID		0.8034				6.2		20.0			
PFEESA	3.3939 +++++	3.3894 +++++	3.5170	3.8253	3.1564	AveID		3.4564				7.1		20.0			
NFDHA	0.2956 0.2917	0.2634 +++++	0.2807	0.3121	0.3050	AveID		0.2914				6.0		20.0			
4:2 Fluorotelomer sulfonic acid	3.5606 +++++	3.5130 +++++	3.7780	4.3648	3.9679	AveID		3.8369				9.0		20.0			
Perfluorohexanoic acid	0.8966 0.8274	0.8475 0.7315	0.8587	0.8962	0.9175	AveID		0.8536				7.3		20.0			
Perfluoropentanesulfonic acid	0.8885 0.7927	0.8687 +++++	0.9263	0.9583	0.9425	AveID		0.8962				6.8		20.0			
Perfluoro(2-propoxypropanoic) acid	2.2192 2.5353	2.2854 +++++	2.4678	2.5645	2.6258	AveID		2.4497				6.6		20.0			
Perfluoroheptanoic acid	0.9957 0.8980	0.8878 +++++	0.9576	1.0222	0.9824	AveID		0.9573				5.7		20.0			
Perfluorohexanesulfonic acid	0.9429 0.9708	0.8709 +++++	0.9807	1.0141	1.0680	AveID		0.9746				6.8		20.0			
DONA	1.5801 1.4599	1.5206 +++++	1.7149	1.7772	1.6730	AveID		1.6209				7.5		20.0			
5:3 FTCA	0.1976 0.1905	0.1899 +++++	0.1947	0.2146	0.1975	AveID		0.1975				4.6		20.0			
6:2 Fluorotelomer sulfonic acid	5.4742 +++++	4.5842 +++++	5.2203	5.5994	5.4433	AveID		5.2643				7.7		20.0			
Perfluoroheptanesulfonic acid	0.8918 0.9784	0.8884 +++++	0.9585	1.0462	1.0449	AveID		0.9680				7.2		20.0			

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

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								
Perfluorooctanoic acid	0.9335 0.8161	0.9074 +++++	0.9182	0.9221	0.9150	AveID		0.9021				4.8		20.0			
Perfluorooctanesulfonic acid	1.1237 1.0870	1.1001 1.0749	1.0710	1.1478	1.1786	AveID		1.1119				3.6		20.0			
Perfluorononanoic acid	0.9129 0.8632	0.8503 +++++	0.8748	0.9561	0.9477	AveID		0.9008				5.0		20.0			
7:3 FTCA	0.1090 0.1021	0.1066 +++++	0.1030	0.1048	0.1034	AveID		0.1048				2.5		20.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	2.3236 +++++	2.2754 +++++	2.3909	2.4116	2.3307	AveID		2.3464				2.3		20.0			
Perfluorononanesulfonic acid	0.9058 0.8843	0.9122 +++++	0.9362	1.0111	0.9686	AveID		0.9364				5.0		20.0			
Perfluorodecanoic acid	0.8569 0.7755	0.8417 +++++	0.8651	0.9440	0.9104	AveID		0.8656				6.7		20.0			
8:2 Fluorotelomer sulfonic acid	7.4345 +++++	7.4742 +++++	7.5754	8.6869	8.0936	AveID		7.8529				6.8		20.0			
Perfluorooctanesulfonamide	1.0336 +++++	0.9692 +++++	1.0657	1.1083	1.0028	AveID		1.0359				5.2		20.0			
NMeFOSAA	0.8148 +++++	0.8297 +++++	0.8979	0.9350	0.8882	AveID		0.8731				5.7		20.0			
Perfluorodecanesulfonic acid	1.0110 +++++	0.9627 +++++	1.0261	1.1049	1.0831	AveID		1.0376				5.5		20.0			
Perfluoroundecanoic acid	0.7685 0.7810	0.8168 +++++	0.8415	0.8420	0.8749	AveID		0.8208				4.9		20.0			
NEtFOSAA	0.8587 0.9687	0.8823 +++++	0.9596	0.9684	1.0017	AveID		0.9399				6.0		20.0			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	2.0400 +++++	2.0636 +++++	2.0787	2.1368	2.0560	AveID		2.0750				1.8		20.0			
Perfluorododecanoic acid	0.9525 0.7868	0.8536 +++++	0.8484	0.9595	0.8838	AveID		0.8808				7.5		20.0			
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	8.9863 +++++	8.5653 +++++	8.1285	9.7728	9.0470	AveID		8.9000				6.9		20.0			
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	1.0531 1.0763	0.9974 +++++	1.0405	1.0813	1.0485	AveID		1.0495				2.9		20.0			

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

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								
NMeFOSA	1.1062 0.9979	0.8832 +++++	1.0181	1.1367	1.0746	AveID		1.0361				8.8		20.0			
Perfluorododecanesulfonic acid (PFDoS)	0.9867 0.9023	0.9727 +++++	0.9371	1.0837	1.0258	AveID		0.9847				6.5		20.0			
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	0.8326 1.0029	0.9611 +++++	0.9147	0.9907	0.9710	AveID		0.9455				6.7		20.0			
Perfluorotridecanoic acid	0.8995 0.7791	0.8553 +++++	0.8645	0.9717	0.9235	AveID		0.8823				7.5		20.0			
N-ethylperfluoro-1-octanesulfonamide	1.1062 1.1320	1.0206 +++++	1.1445	1.1913	1.1130	AveID		1.1179				5.0		20.0			
Perfluorotetradecanoic acid	0.9310 +++++	0.8393 +++++	0.8614	0.9357	0.8873	AveID		0.8909				4.8		20.0			
Perfluorohexadecanoic acid	0.6889 0.5868	0.6058 +++++	0.5839	0.6841	0.6391	AveID		0.6314				7.4		20.0			
Perfluorooctadecanoic acid	0.3913 0.4309	0.3757 +++++	0.3950	0.4649	0.4521	AveID		0.4183				8.7		20.0			

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

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-242022/1	22APR07-19.d
Level 2	IC 410-242022/2	22APR07-20.d
Level 3	ICIS 410-242022/3	22APR07-21.d
Level 4	IC 410-242022/4	22APR07-22.d
Level 5	IC 410-242022/5	22APR07-23.d
Level 6	IC 410-242022/6	22APR07-24.d
Level 7	IC 410-242022/7	22APR07-25.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	Ave	8428439 7625489	8547737 6911041	8960747	8284230	7913417	10.0 10.0	10.0 10.0	10.0	10.0	10.0
13C5 PFPeA	Ave	7202065 6203426	7192173 +++++	7474328	6991321	6579770	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C3 PFBS	Ave	8758635 7886874	8876954 +++++	9104139	8683554	8184149	9.30 9.30	9.30 +++++	9.30	9.30	9.30
M2-4:2 FTS	Ave	456543 342538	425226 +++++	437049	394237	389441	9.34 9.34	9.34 +++++	9.34	9.34	9.34
13C5 PFHxA	Ave	8690838 7221982	8698782 6346379	9010958	8171013	7785655	10.0 10.0	10.0 10.0	10.0	10.0	10.0
13C3 HFPO-DA	Ave	923877 819368	927418 782513	872757	867189	868549	10.0 10.0	10.0 10.0	10.0	10.0	10.0
13C4 PFHpA	Ave	9226450 6488407	9294003 +++++	9244334	8533353	7663566	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C3 PFHxS	Ave	8334602 6307380	8536362 +++++	8516938	8078364	7146360	9.46 9.46	9.46 +++++	9.46	9.46	9.46
M2-6:2 FTS	Ave	279367 +++++	301697 +++++	284350	267903	247220	9.50 +++++	9.50 +++++	9.50	9.50	9.50
13C8 PFOA	Ave	9728197 7754903	9578267 +++++	9763718	9427644	8542529	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C8 PFOS	Ave	7470848 6708703	7535715 5908038	7947303	7470489	6891515	9.56 9.56	9.56 9.56	9.56	9.56	9.56
13C9 PFNA	Ave	9882842 8087740	9785752 +++++	10193604	9367436	8785240	10.0 10.0	10.0 +++++	10.0	10.0	10.0
M2-8:2 FTS	Ave	242338 +++++	236696 +++++	251855	220951	211221	9.58 +++++	9.58 +++++	9.58	9.58	9.58
13C6 PFDA	Ave	10793001	10723375	10920508	10067461	9394311	10.0	10.0	10.0	10.0	10.0

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
		8774996	+++++				10.0	+++++			
13C8 FOSA	Ave	12408720 11784443	12804238 +++++	12775409	12490941	12253898	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d3-NMeFOSAA	Ave	2831867 2728505	3016976 +++++	3074251	2843461	2887000	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C7 PFUnA	Ave	11162826 8658280	10650634 +++++	11343158	10419180	9447621	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d5-NEtFOSAA	Ave	2338350 1892302	2362059 +++++	2364784	2247729	2104869	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C2-PFDoDA	Ave	11112703 9124826	11109736 +++++	11787445	10722444	10030562	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d7-N-MeFOSE-M	Ave	1196209 1059542	1194357 +++++	1221723	1162812	1134021	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d3-NMePFOSA	Ave	1539739 1595545	1610348 +++++	1610387	1516940	1537314	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d9-N-EtFOSE-M	Ave	1477840 1177671	1515675 +++++	1486996	1401476	1318315	10.0 10.0	10.0 +++++	10.0	10.0	10.0
d5-NEtPFOSA	Ave	1437270 1362206	1446865 +++++	1415957	1385253	1397043	10.0 10.0	10.0 +++++	10.0	10.0	10.0
13C2 PFTeDA	Ave	11106423 9602734	11041097 +++++	11488242	10301061	10133924	10.0 10.0	10.0 +++++	10.0	10.0	10.0

Curve Type Legend
Ave = Average

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-242022/1	22APR07-19.d
Level 2	IC 410-242022/2	22APR07-20.d
Level 3	ICIS 410-242022/3	22APR07-21.d
Level 4	IC 410-242022/4	22APR07-22.d
Level 5	IC 410-242022/5	22APR07-23.d
Level 6	IC 410-242022/6	22APR07-24.d
Level 7	IC 410-242022/7	22APR07-25.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	140116 30180540	338776 49244878	1504143	6042988	13858233	0.200 50.0	0.500 100	2.00	8.00	20.0
PFMPA		AveID	111362 23922488	281104 +++++	1176895	4900359	11389480	0.200 50.0	0.500 +++++	2.00	8.00	20.0
3:3 FTCA		AveID	7753 2032845	19135 +++++	87022	362579	865441	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluoropentanoic acid		AveID	154061 30325989	363144 +++++	1495432	6353136	14305553	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorobutanesulfonic acid		AveID	164761 32399963	395958 +++++	1675796	6587539	15505744	0.177 44.3	0.443 +++++	1.77	7.08	17.7
PFMBA		AveID	111567 23611802	278152 +++++	1166831	4725671	11658532	0.200 50.0	0.500 +++++	2.00	8.00	20.0
PFEESA		AveID	525029 +++++	1312007 +++++	5641043	22254460	43743380	0.178 +++++	0.445 +++++	1.78	7.12	17.8
NFDHA		AveID	51381 10532634	114577 +++++	505910	2039890	4749501	0.200 50.0	0.500 +++++	2.00	8.00	20.0
4:2 Fluorotelomer sulfonic acid		AveID	32511 +++++	74691 +++++	330237	1376616	3090514	0.187 +++++	0.467 +++++	1.87	7.47	18.7

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

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
Perfluorohexanoic acid		AveI D	155849 29878709	368604 46420645	1547486	5858092	14287038	0.200 50.0	0.500 100	2.00	8.00	20.0
Perfluoropentanesulfonic acid		AveI D	156971 31529090	388875 +++++	1701067	6714599	15559762	0.188 46.9	0.469 +++++	1.88	7.50	18.8
Perfluoro(2-propoxypropanoic) acid		AveI D	41005 10386907	105977 +++++	430758	1779125	4561336	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluoroheptanoic acid		AveI D	183742 29134441	412546 +++++	1770456	6978036	15057127	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorohexanesulfonic acid		AveI D	151523 29516697	358356 +++++	1610517	6318577	14716601	0.182 45.6	0.456 +++++	1.82	7.30	18.2
DONA		AveI D	275541 44757655	667750 +++++	2996180	11465110	24232135	0.189 47.3	0.473 +++++	1.89	7.56	18.9
5:3 FTCA		AveI D	34354 6878775	82593 +++++	350975	1402827	3075002	0.200 50.0	0.500 +++++	2.00	8.00	20.0
6:2 Fluorotelomer sulfonic acid		AveI D	30522 +++++	69007 +++++	296252	1197557	2685736	0.190 +++++	0.474 +++++	1.90	7.58	19.0
Perfluoroheptanesulfonic acid		AveI D	149595 31052474	381604 +++++	1643131	6804034	15028816	0.190 47.6	0.476 +++++	1.90	7.62	19.0
Perfluorooctanoic acid		AveI D	181629 31644583	434548 +++++	1792981	6954477	15633611	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorooctanesulfonic acid		AveI D	162546 35297093	401277 61480520	1648058	6640924	15726775	0.185 46.3	0.463 92.6	1.85	7.40	18.5
Perfluorononanoic acid		AveI D	180435 34907956	416022 +++++	1783533	7165314	16651442	0.200 50.0	0.500 +++++	2.00	8.00	20.0

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

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
7:3 FTCA		AveI D	18944 3686014	46369 +++++	185672	685092	1610228	0.200 50.0	0.500 +++++	2.00	8.00	20.0
9-Chlorohexadecafluoro-3-oxanona ne-1-sulfonic acid		AveI D	337736 +++++	834015 +++++	3696867	14020631	31251015	0.186 +++++	0.465 +++++	1.86	7.44	18.6
Perfluorononanesulfonic acid		AveI D	135901 29785208	345155 +++++	1494206	6068181	13405831	0.192 48.0	0.480 +++++	1.92	7.68	19.2
Perfluorodecanoic acid		AveI D	184974 34024530	451279 +++++	1889558	7602872	17104871	0.200 50.0	0.500 +++++	2.00	8.00	20.0
8:2 Fluorotelomer sulfonic acid		AveI D	36033 +++++	88456 +++++	381581	1535497	3419089	0.192 +++++	0.479 +++++	1.92	7.66	19.2
Perfluorooctanesulfonamide		AveI D	256520 +++++	620484 +++++	2722846	11075084	24577583	0.200 +++++	0.500 +++++	2.00	8.00	20.0
NMeFOSAA		AveI D	46146 +++++	125153 +++++	552103	2126799	5128259	0.200 +++++	0.500 +++++	2.00	8.00	20.0
Perfluorodecanesulfonic acid		AveI D	152331 +++++	365783 +++++	1644660	6658400	15053228	0.193 +++++	0.482 +++++	1.93	7.71	19.3
Perfluoroundecanoic acid		AveI D	171565 33808979	434970 +++++	1909017	7018237	16530761	0.200 50.0	0.500 +++++	2.00	8.00	20.0
NEtFOSAA		AveI D	40159 9164921	104200 +++++	453829	1741331	4216831	0.200 50.0	0.500 +++++	2.00	8.00	20.0
11-Chloroeicosafluoro-3-oxaundec ane-1-sulfonic acid		AveI D	296520 +++++	756405 +++++	3214196	12423182	27566823	0.186 +++++	0.465 +++++	1.86	7.44	18.6
Perfluorododecanoic acid		AveI D	211696 35895934	474176 +++++	2000038	8230955	17729611	0.200 50.0	0.500 +++++	2.00	8.00	20.0

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

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

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
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)		AveID	43827 +++++	102004 +++++	412006	1738267	3845774	0.193 +++++	0.482 +++++	1.93	7.71	19.3
2-(N-methylperfluoro-1-octanesulfonamido) ethanol		AveID	25195 5701712	59565 +++++	254235	1005855	2378007	0.200 50.0	0.500 +++++	2.00	8.00	20.0
NMeFOSA		AveID	34066 7961034	71116 +++++	327911	1379447	3303907	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorododecanesulfonic acid (PFDoS)		AveID	149274 30645413	371089 +++++	1508216	6557680	14315532	0.194 48.4	0.484 +++++	1.94	7.74	19.4
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol		AveID	24608 5905195	72838 +++++	272034	1110799	2560051	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorotridecanoic acid		AveID	199922 35548038	475092 +++++	2038083	8335016	18525956	0.200 50.0	0.500 +++++	2.00	8.00	20.0
N-ethylperfluoro-1-octanesulfonamide		AveID	31797 7709981	73836 +++++	324126	1320174	3109840	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorotetradecanoic acid		AveID	206804 +++++	463317 +++++	1979136	7711342	17984504	0.200 +++++	0.500 +++++	2.00	8.00	20.0
Perfluorohexadecanoic acid		AveID	153026 28172314	334460 +++++	1341483	5637536	12953976	0.200 50.0	0.500 +++++	2.00	8.00	20.0
Perfluorooctadecanoic acid		AveID	86927 20687141	207389 +++++	907502	3831093	9163837	0.200 50.0	0.500 +++++	2.00	8.00	20.0

Curve Type Legend
AveID = Average isotope dilution

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-242022/1	22APR07-19.d
Level 2	IC 410-242022/2	22APR07-20.d
Level 3	ICIS 410-242022/3	22APR07-21.d
Level 4	IC 410-242022/4	22APR07-22.d
Level 5	IC 410-242022/5	22APR07-23.d
Level 6	IC 410-242022/6	22APR07-24.d
Level 7	IC 410-242022/7	22APR07-25.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanoic acid	1.1 -13.3	-3.6	2.1	10.9	6.5	-3.7	30 30	30	30	30	30	30
PFMPA	-4.5 +++++	-3.4	-2.7	8.3	7.0	-4.7	30	30	30	30	30	30
3:3 FTCA	-10.6 +++++	-11.7	-3.3	7.6	9.2	8.8	30	30	30	30	30	30
Perfluoropentanoic acid	2.2 +++++	-3.5	-4.4	8.5	3.9	-6.6	30	30	30	30	30	30
Perfluorobutanesulfonic acid	3.2 +++++	-2.1	0.9	4.0	3.9	-9.9	30	30	30	30	30	30
PFMBA	-3.6 +++++	-3.7	-2.8	5.2	10.3	-5.3	30	30	30	30	30	30
PFEESA	-1.8 +++++	-1.9	1.8	10.7	-8.7	+++++	30	30	30	30	30	
NFDHA	1.4 +++++	-9.6	-3.7	7.1	4.7	0.1	30	30	30	30	30	30
4:2 Fluorotelomer sulfonic acid	-7.2 +++++	-8.4	-1.5	13.8	3.4	+++++	30	30	30	30	30	
Perfluorohexanoic acid	5.0 -14.3	-0.7	0.6	5.0	7.5	-3.1	30 30	30	30	30	30	30
Perfluoropentanesulfonic acid	-0.9 +++++	-3.1	3.4	6.9	5.2	-11.5	30	30	30	30	30	30
Perfluoro(2-propoxypropanoic) acid	-9.4 +++++	-6.7	0.7	4.7	7.2	3.5	30	30	30	30	30	30
Perfluoroheptanoic acid	4.0 +++++	-7.3	0.0	6.8	2.6	-6.2	30	30	30	30	30	30
Perfluorohexanesulfonic acid	-3.3 +++++	-10.6	0.6	4.1	9.6	-0.4	30	30	30	30	30	30

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
DONA	-2.5 +++++	-6.2	5.8	9.6	3.2	-9.9	30	30	30	30	30	30
5:3 FTCA	0.1 +++++	-3.8	-1.4	8.7	0.0	-3.5	30	30	30	30	30	30
6:2 Fluorotelomer sulfonic acid	4.0 +++++	-12.9	-0.8	6.4	3.4	+++++	30	30	30	30	30	
Perfluoroheptanesulfonic acid	-7.9 +++++	-8.2	-1.0	8.1	7.9	1.1	30	30	30	30	30	30
Perfluorooctanoic acid	3.5 +++++	0.6	1.8	2.2	1.4	-9.5	30	30	30	30	30	30
Perfluorooctanesulfonic acid	1.1 -3.3	-1.1	-3.7	3.2	6.0	-2.2	30 30	30	30	30	30	30
Perfluorononanoic acid	1.3 +++++	-5.6	-2.9	6.1	5.2	-4.2	30	30	30	30	30	30
7:3 FTCA	4.0 +++++	1.7	-1.7	0.0	-1.3	-2.6	30	30	30	30	30	30
9-Chlorohexadecafluoro-3-oxanonane -1-sulfonic acid	-1.0 +++++	-3.0	1.9	2.8	-0.7	+++++	30	30	30	30	30	
Perfluorononanesulfonic acid	-3.3 +++++	-2.6	0.0	8.0	3.4	-5.6	30	30	30	30	30	30
Perfluorodecanoic acid	-1.0 +++++	-2.8	-0.1	9.1	5.2	-10.4	30	30	30	30	30	30
8:2 Fluorotelomer sulfonic acid	-5.3 +++++	-4.8	-3.5	10.6	3.1	+++++	30	30	30	30	30	
Perfluorooctanesulfonamide	-0.2 +++++	-6.4	2.9	7.0	-3.2	+++++	30	30	30	30	30	
NMeFOSAA	-6.7 +++++	-5.0	2.8	7.1	1.7	+++++	30	30	30	30	30	
Perfluorodecanesulfonic acid	-2.6 +++++	-7.2	-1.1	6.5	4.4	+++++	30	30	30	30	30	
Perfluoroundecanoic acid	-6.4 +++++	-0.5	2.5	2.6	6.6	-4.8	30	30	30	30	30	30
NEtFOSAA	-8.6 +++++	-6.1	2.1	3.0	6.6	3.1	30	30	30	30	30	30
11-Chloroeicosafluoro-3-oxaundecan e-1-sulfonic acid	-1.7 +++++	-0.5	0.2	3.0	-0.9	+++++	30	30	30	30	30	
Perfluorododecanoic acid	8.1 +++++	-3.1	-3.7	8.9	0.3	-10.7	30	30	30	30	30	30

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-78012-1 Analy Batch No.: 242022

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/07/2022 09:52 Calibration End Date: 04/07/2022 10:55 Calibration ID: 36957

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	1.0 +++++	-3.8	-8.7	9.8	1.7	+++++	30	30	30	30	30	
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	0.3 +++++	-5.0	-0.9	3.0	-0.1	2.5	30	30	30	30	30	30
NMeFOSA	6.8 +++++	-14.8	-1.7	9.7	3.7	-3.7	30	30	30	30	30	30
Perfluorododecanesulfonic acid (PFDoS)	0.2 +++++	-1.2	-4.8	10.1	4.2	-8.4	30	30	30	30	30	30
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	-11.9 +++++	1.7	-3.3	4.8	2.7	6.1	30	30	30	30	30	30
Perfluorotridecanoic acid	2.0 +++++	-3.1	-2.0	10.1	4.7	-11.7	30	30	30	30	30	30
N-ethylperfluoro-1-octanesulfonamide	-1.1 +++++	-8.7	2.4	6.6	-0.4	1.3	30	30	30	30	30	30
Perfluorotetradecanoic acid	4.5 +++++	-5.8	-3.3	5.0	-0.4	+++++	30	30	30	30	30	
Perfluorohexadecanoic acid	9.1 +++++	-4.1	-7.5	8.3	1.2	-7.1	30	30	30	30	30	30
Perfluorooctadecanoic acid	-6.4 +++++	-10.2	-5.6	11.1	8.1	3.0	30	30	30	30	30	30

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d
Lims ID: IC CAL 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 07-Apr-2022 09:52:02 ALS Bottle#: 20002 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 1
Misc. Info.: Plate: 1 Rack: 1 410-0054309-001
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:43:27 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 10:19:00
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.655	3.659	-0.004	1.000	140116	0.2022		101	268	
D 2 13C4 PFBA										
217.00 > 172.00	3.655	3.659	-0.004		8428439	10.4		104	134200	
63 PFECA F										
229.00 > 85.00	3.890	3.891	-0.001	0.931	111362	0.1911		95.5	5990	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.170	0.002	0.998	7753	0.1787	Target=1.31	89.4	684	
241.00 > 117.00	4.165	4.170	-0.005	0.997	6492		1.19(0.66-1.97)	89.4	252	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.179	4.178	0.001	1.000	154061	0.2044		102	571	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.181	-0.002		7202065	10.4		104	72064	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.231	0.0	1.000	164761	0.1826	Target=2.86	103	217	
299.00 > 99.00	4.231	4.231	0.0	1.000	59063		2.79(1.43-4.29)	103	210	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.235	-0.004		8758635	9.49		102	463451	
64 PFECA A										
279.00 > 85.00	4.300	4.301	-0.001	1.029	111567	0.1928		96.4	2886	
65 PES										
315.00 > 135.00	4.388	4.394	-0.006	0.956	525029	0.1748	Target=14.03	98.2	21122	
315.00 > 83.00	4.396	4.394	0.002	0.958	43607		12.04(7.01-21.04)	98.2	41.5	
68 PFECA B										
295.00 > 201.00	4.509	4.514	-0.005	0.983	51381	0.2029		101	1846	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.549	4.546	0.003	1.000	32511	0.1733	Target=1.58	92.8	2346	
327.00 > 81.00	4.559	4.546	0.013	1.002	27741		1.17(0.79-2.36)	92.8	496	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.549	0.0		456543	10.5		112	12506	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.588	4.586	0.002	1.000	155849	0.2101	Target=13.65	105	1391	
313.00 > 119.00	4.588	4.586	0.002	1.000	10674		14.60(6.82-20.47)	105	451	
D 9 13C5 PFHxA										
318.00 > 273.00	4.588	4.587	0.001		8690838	10.9		109	175415	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.608	4.608	0.0	1.089	156971	0.1860	Target=3.02	99.1	8991	
349.00 > 99.00	4.608	4.608	0.0	1.089	51354		3.06(1.51-4.53)	99.1	2326	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.717	4.715	0.002		923877	10.7		107	49419	
12 HFPO-DA										
329.00 > 285.00	4.717	4.715	0.002	1.000	41005	0.1812		90.6	1009	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.976	4.976	0.0	1.000	183742	0.2080	Target=3.04	104	1482	
363.00 > 169.00	4.976	4.976	0.0	1.000	60162		3.05(1.52-4.56)	104	1722	
D 17 13C4 PFHpA										
367.00 > 322.00	4.976	4.981	-0.005		9226450	11.0		110	298129	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.976	4.981	-0.005	1.000	151523	0.1765	Target=2.99	96.7	45758	
399.00 > 99.00	4.976	4.981	-0.005	1.000	50914		2.98(1.50-4.49)	96.7	20471	
D 16 13C3 PFHxS										
402.00 > 80.00	4.976	4.983	-0.007		8334602	10.1		107	827782	
18 DONA										
377.00 > 251.00	5.028	5.026	0.002	1.010	275541	0.1842		97.5	6087	
62 5:3 FTCA										
341.00 > 237.00	5.051	5.051	0.0	1.101	34354	0.2002	Target=3.41	100	782	
341.00 > 217.00	5.051	5.051	0.0	1.101	9052		3.80(1.70-5.11)	100	265	
19 6:2 FTS										
427.00 > 407.00	5.328	5.330	-0.002	1.000	30522	0.1972	Target=1.71	104	2138	
427.00 > 81.00	5.328	5.330	-0.002	1.000	17805		1.71(0.85-2.56)	104	841	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.328	5.332	-0.004		279367	9.61		101	19069	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.335	5.339	-0.004	1.072	149595	0.1754	Target=3.21	92.1	6977	
449.00 > 99.00	5.335	5.339	-0.004	1.072	47143		3.17(1.60-4.81)	92.1	2632	
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.348	5.348	0.0	1.000	181629	0.2070	Target=2.40	103	5449	M
413.00 > 169.00	5.348	5.348	0.0	1.000	75168		2.42(1.20-3.60)	103	5700	M
D 22 13C8 PFOA										
421.00 > 376.00	5.348	5.351	-0.003		9728197	10.7		107	774969	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.673	5.677	-0.004	0.999	162546	0.1871	Target=3.65	101	59214	
499.00 > 99.00	5.673	5.677	-0.004	0.999	46390		3.50(1.83-5.48)	101	115	
D 25 13C8 PFOS										
507.00 > 80.00	5.681	5.679	0.002		7470848	10.0		105	1070293	
26 Perfluorononanoic acid										
463.00 > 419.00	5.689	5.694	-0.005	0.999	180435	0.2027	Target=4.51	101	1922	
463.00 > 169.00	5.689	5.694	-0.005	0.999	37613		4.80(2.25-6.76)	101	1327	
D 27 13C9 PFNA										
472.00 > 427.00	5.697	5.696	0.001		9882842	10.6		106	336886	
66 7:3 FTCA										M
441.00 > 317.00	5.796	5.794	0.002	1.263	18944	0.2080	Target=10.25	104	945	M
441.00 > 337.00	5.796	5.794	0.002	1.263	2042		9.28(5.12-15.37)	104	104	M
28 9ClFOS										
531.00 > 351.00	5.855	5.859	-0.004	1.031	337736	0.1842		99.0	14894	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.979	5.984	-0.005	1.052	135901	0.1857	Target=3.43	96.7	8503	
549.00 > 99.00	5.979	5.984	-0.005	1.052	39744		3.42(1.72-5.15)	96.7	2068	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.003	6.007	-0.004	1.000	184974	0.1980	Target=8.86	99.0	2848	
513.00 > 169.00	6.003	6.007	-0.004	1.000	21109		8.76(4.43-13.29)	99.0	405	
33 8:2 FTS										
527.00 > 507.00	6.003	6.008	-0.005	1.000	36033	0.1814	Target=1.91	94.7	2219	
527.00 > 81.00	6.003	6.008	-0.005	1.000	19567		1.84(0.96-2.87)	94.7	332	
D 32 13C6 PFDA										
519.00 > 474.00	6.003	6.008	-0.005		10793001	10.7		107	515240	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.003	6.008	-0.005		242338	9.98		104	14527	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.101	6.107	-0.006	0.999	256520	0.1996		99.8	6625	
D 35 13C8 FOSA										
506.00 > 78.00	6.110	6.109	0.001		12408720	10.0		99.9	413085	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.152	6.155	-0.003		2831867	9.78		97.8	414817	
36 NMeFOSAA										M
570.00 > 419.00	6.152	6.156	-0.004	1.000	46146	0.1866	Target=1.78	93.3	2057	M
570.00 > 483.00	6.152	6.156	-0.004	1.000	29702		1.55(0.89-2.67)	93.3	42.8	M
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.248	6.255	-0.007	1.100	152331	0.1879	Target=3.62	97.4	6889	
599.00 > 99.00	6.248	6.255	-0.007	1.100	40060		3.80(1.81-5.43)	97.4	1816	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.276	6.283	-0.007	0.999	171565	0.1873	Target=8.28	93.6	1103	
563.00 > 169.00	6.276	6.283	-0.007	0.999	21197		8.09(4.14-12.42)	93.6	1199	
D 40 13C7 PFUnA										
570.00 > 525.00	6.286	6.284	0.002		11162826	10.9		109	499454	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.295	6.299	-0.004		2338350	10.5		105	480746	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.295	6.300	-0.005	1.000	40159	0.1827	Target=1.66	91.4	16211	
584.00 > 526.00	6.295	6.300	-0.005	1.000	25871		1.55(0.83-2.49)	91.4	56.7	
43 11ClFOS										
631.00 > 451.00	6.393	6.398	-0.005	1.125	296520	0.1829		98.3	9043	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.518	6.524	-0.006	0.999	211696	0.2163	Target=5.73	108	814	
613.00 > 169.00	6.518	6.524	-0.006	0.999	36037		5.87(2.87-8.60)	108	787	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.527	6.526	0.001		11112703	10.4		104	291533	
48 10:2 FTS										
627.00 > 607.00	6.536	6.541	-0.005	1.089	43827	0.1947	Target=1.71	101	3500	
627.00 > 81.00	6.536	6.541	-0.005	1.089	24267		1.81(0.85-2.56)	101	953	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.545	6.551	-0.006		1196209	10.3		103	5051	
47 N-MeFOSE-M										
616.00 > 59.00	6.553	6.559	-0.006	1.001	25195	0.2007		100	248	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.571	6.570	0.001		1539739	9.82		98.2	6075	
50 NMeFOSA										
512.00 > 169.00	6.571	6.570	0.001	1.000	34066	0.2135		107	1198	
53 PFDoS										M
699.00 > 80.00	6.702	6.706	-0.004	1.180	149274	0.1940		100	3943	M
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.711	6.715	-0.004		1477840	10.6		106	10556	
52 N-EtFOSE-M										
630.00 > 59.00	6.720	6.725	-0.005	1.001	24608	0.1761		88.1	339	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.737	6.736	0.001	1.032	199922	0.2039	Target=5.39	102	513	
663.00 > 169.00	6.728	6.736	-0.008	1.031	37459		5.34(2.69-8.08)	102	1557	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.737	6.736	0.001		1437270	10.2		102	9895	
55 N-EtFOSA-M										
526.00 > 169.00	6.737	6.741	-0.004	1.000	31797	0.1979		98.9	975	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.919	6.923	-0.004	1.000	206804	0.2090	Target=5.85	104	385	
713.00 > 169.00	6.919	6.923	-0.004	1.000	33353		6.20(2.93-8.78)	104	2037	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.919	6.923	-0.004		11106423	10.5		105	262278	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.240	7.243	-0.003	1.046	153026	0.2182	Target=6.08	109	534	
813.00 > 169.00	7.240	7.243	-0.003	1.046	24882		6.15(3.04-9.13)	109	1425	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.495	-0.001	1.083	86927	0.1871	Target=7.13	93.6	1952	
913.00 > 169.00	7.489	7.495	-0.006	1.082	11633		7.47(3.56-10.69)	93.6	980	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD1_00013 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:43:29 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d

Injection Date: 07-Apr-2022 09:52:02 Instrument ID: 29347

Lims ID: IC CAL 1

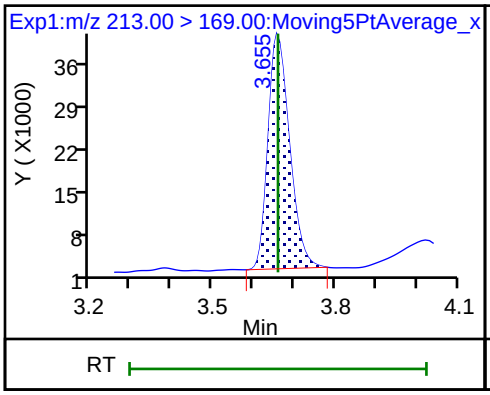
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20002 Worklist Smp#: 1

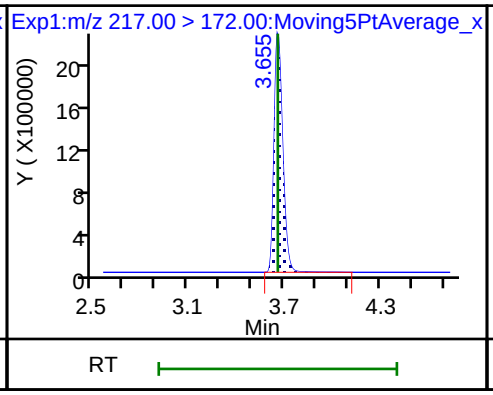
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

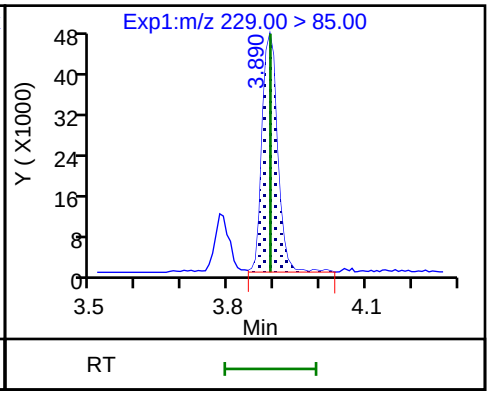
1 Perfluorobutanoic acid



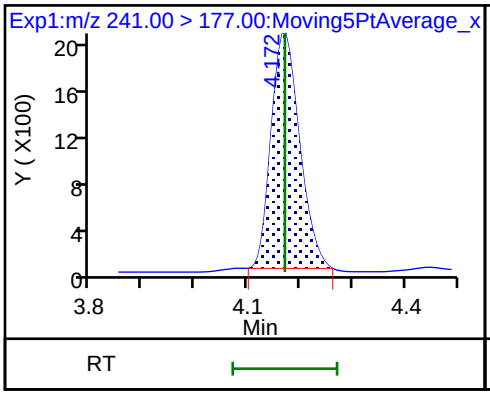
D 2 13C4 PFBA



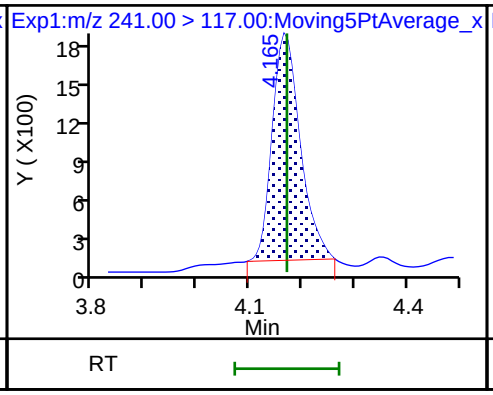
63 PFECA F



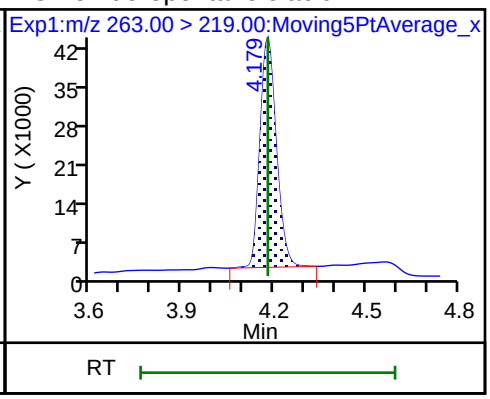
67 3:3 FTCA



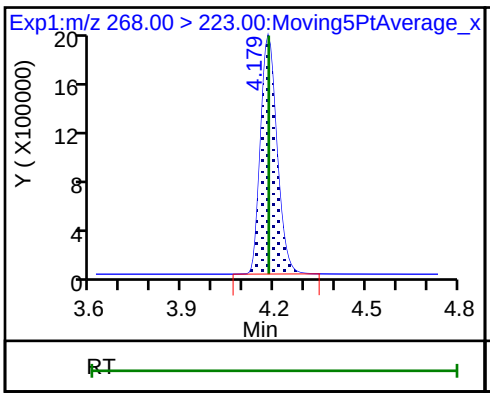
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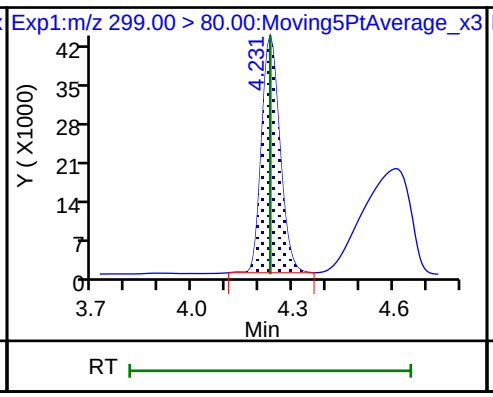
3 Perfluoropentanoic acid



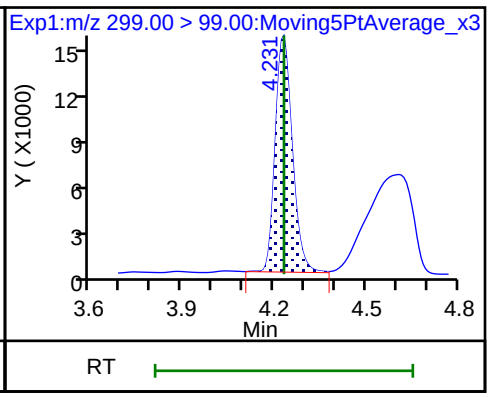
D 4 13C5 PFPeA



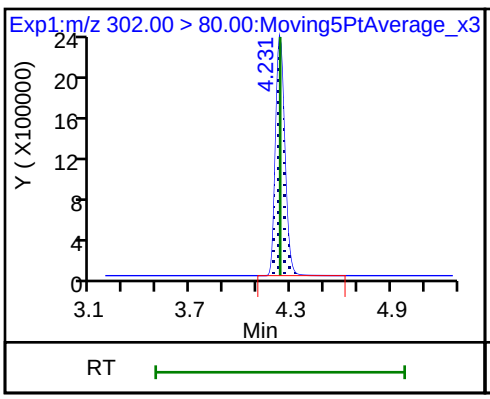
5 Perfluorobutanesulfonic acid



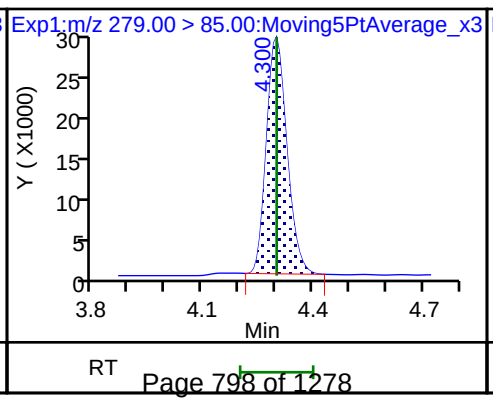
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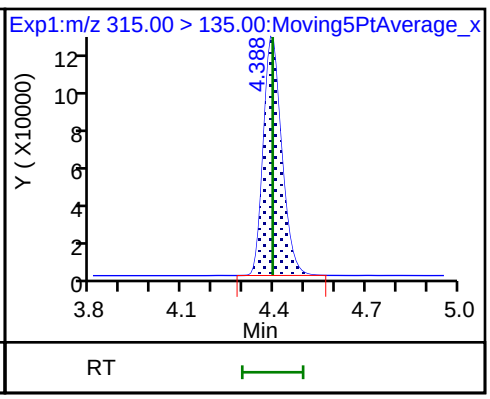
D 6 13C3 PFBS



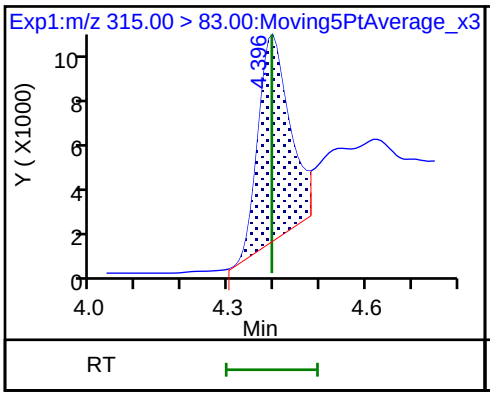
64 PFECA A



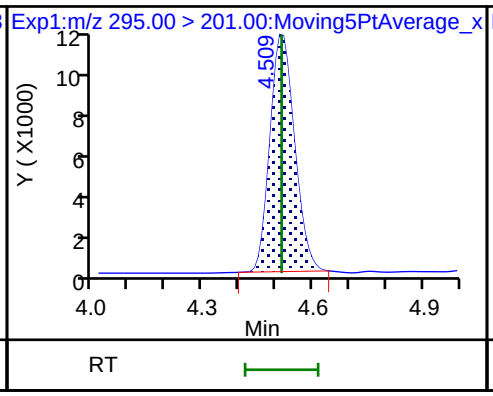
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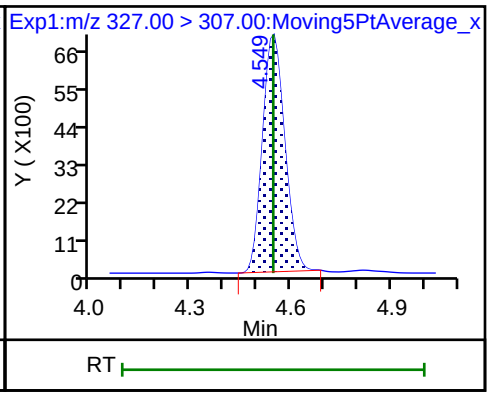
65 PES



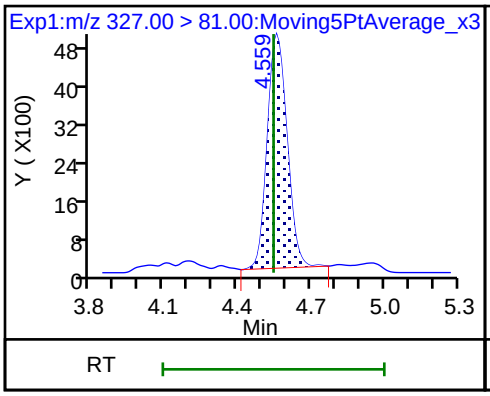
68 PFECA B



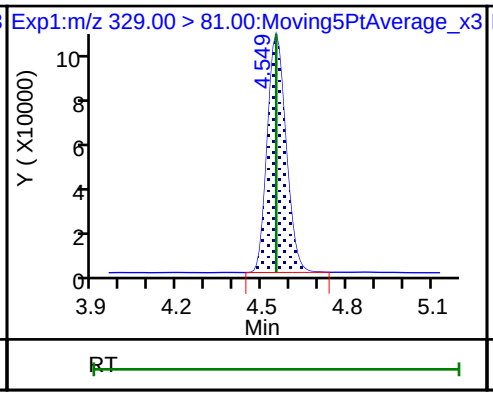
7 4:2 FTS



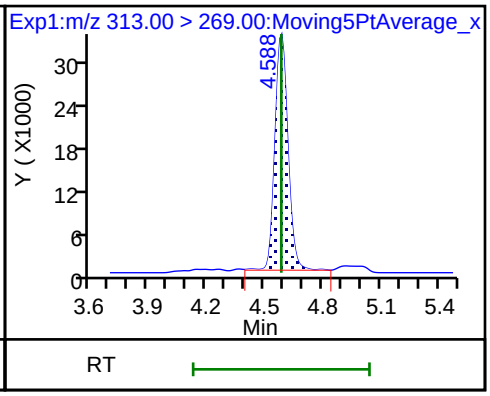
7 4:2 FTS



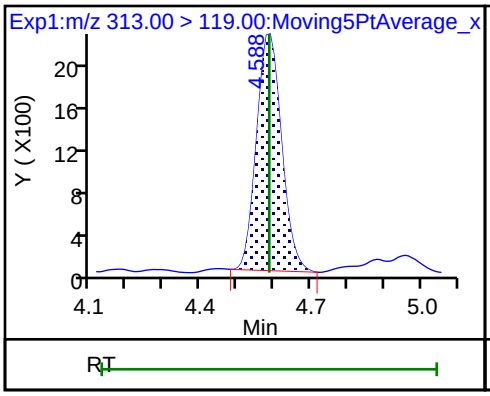
D 8 M2-4:2 FTS



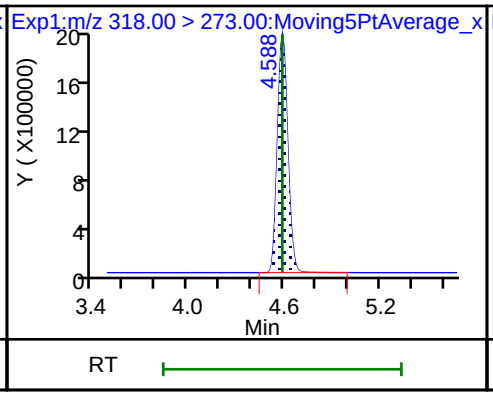
10 Perfluorohexanoic acid



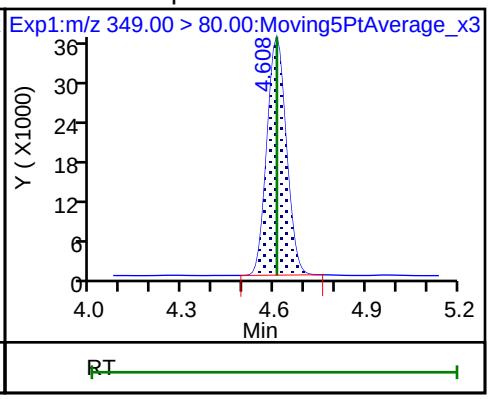
10 Perfluorohexanoic acid



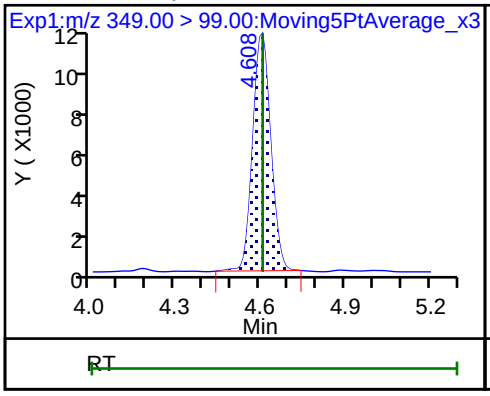
D 9 13C5 PFHxA



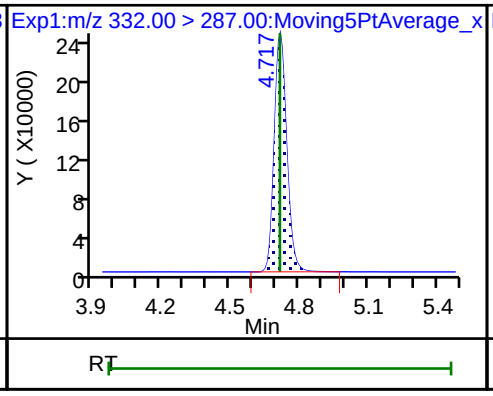
11 Perfluoropentanesulfonic acid



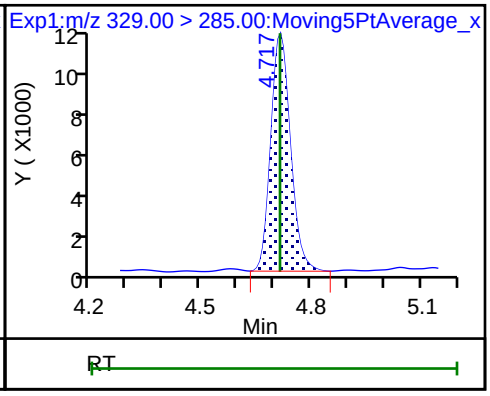
11 Perfluoropentanesulfonic acid



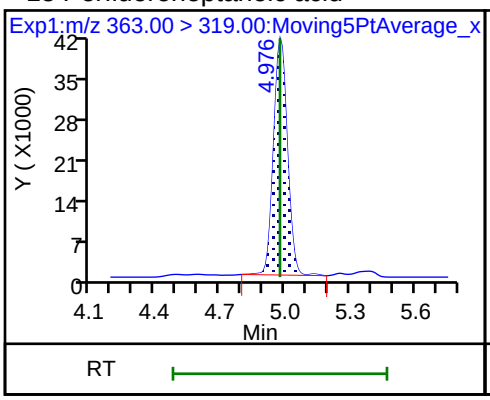
D 13 13C3 HFPO-DA



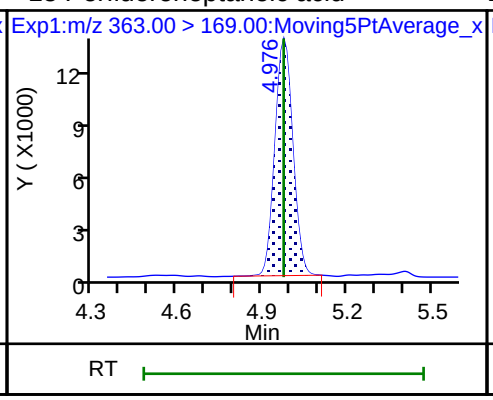
12 HFPO-DA



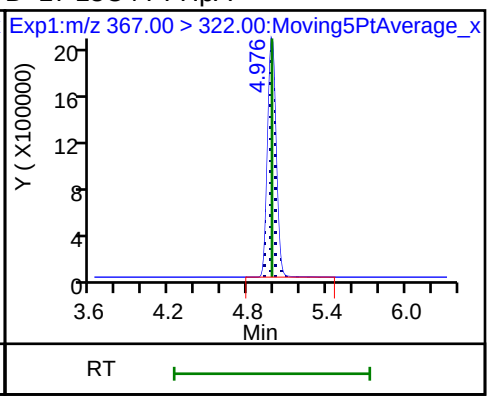
15 Perfluoroheptanoic acid



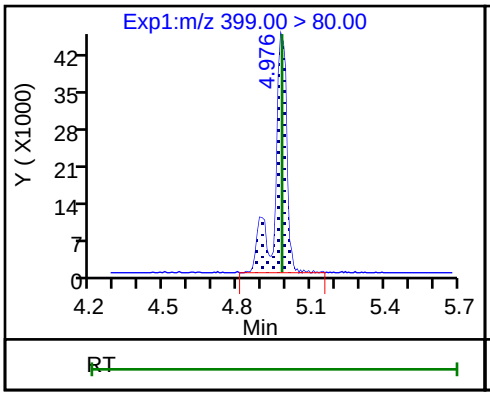
15 Perfluoroheptanoic acid



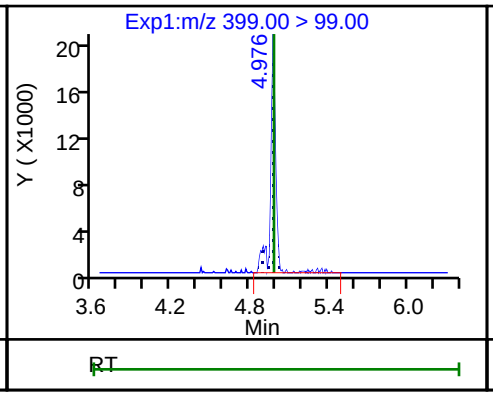
D 17 13C4 PFHpA



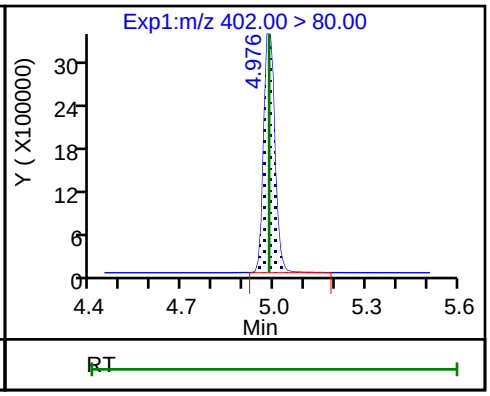
14 Perfluorohexanesulfonic acid



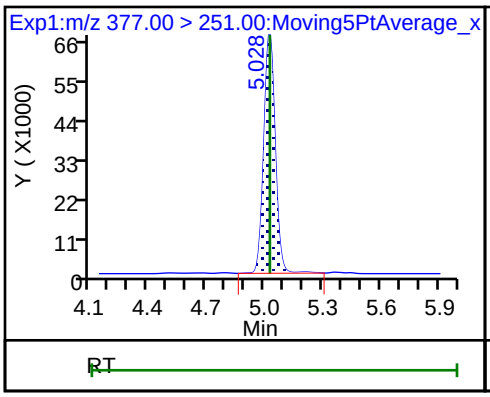
14 Perfluorohexanesulfonic acid



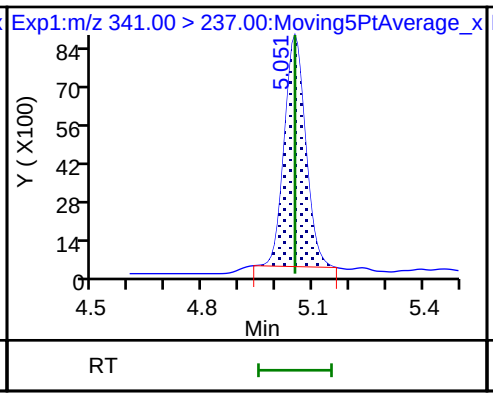
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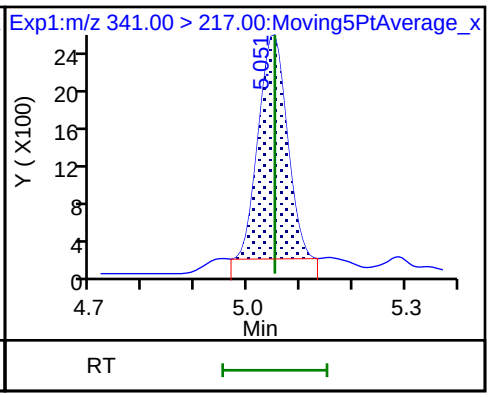
18 DONA



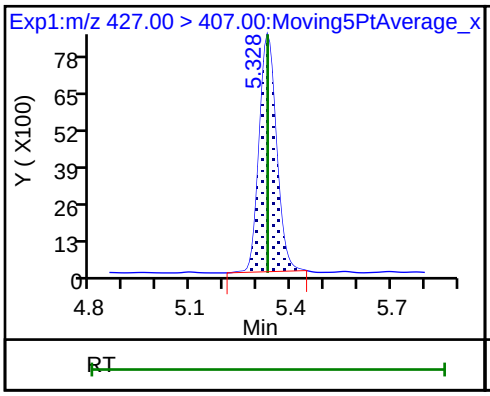
62 5:3 FTCA



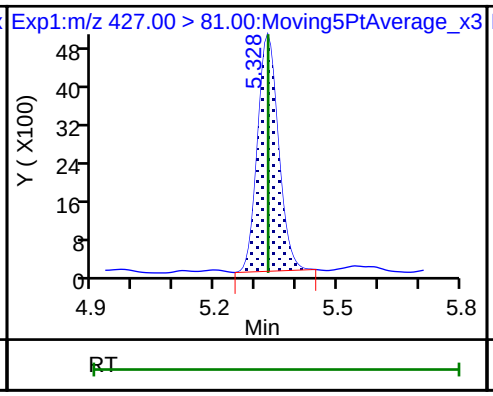
62 5:3 FTCA



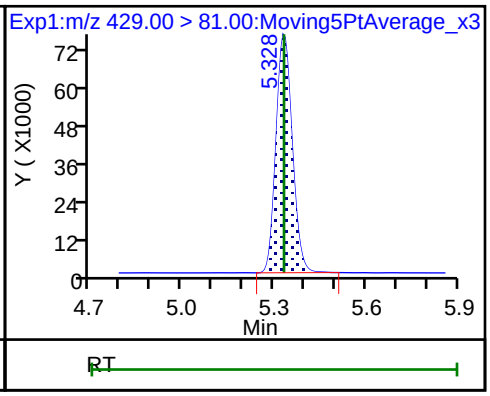
19 6:2 FTS



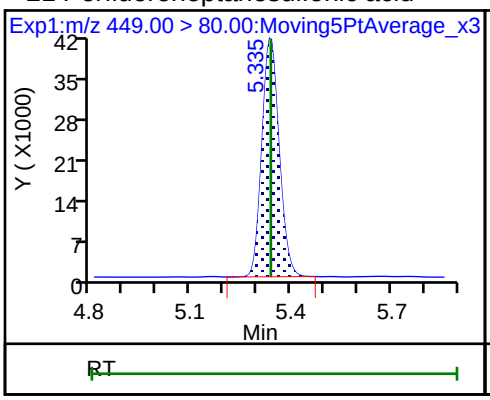
19 6:2 FTS



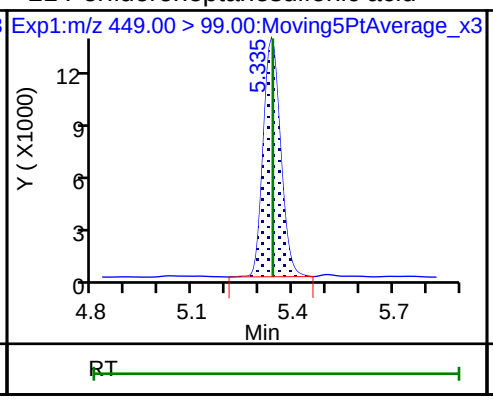
D 20 M2-6:2 FTS



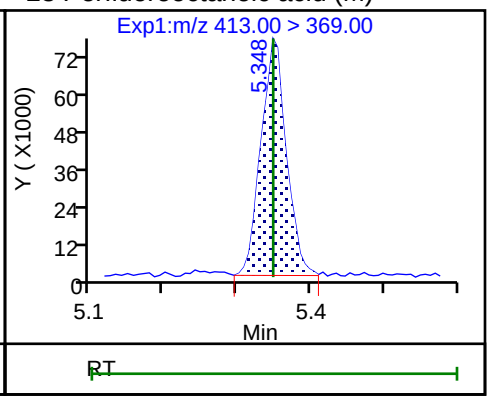
21 Perfluoroheptanesulfonic acid



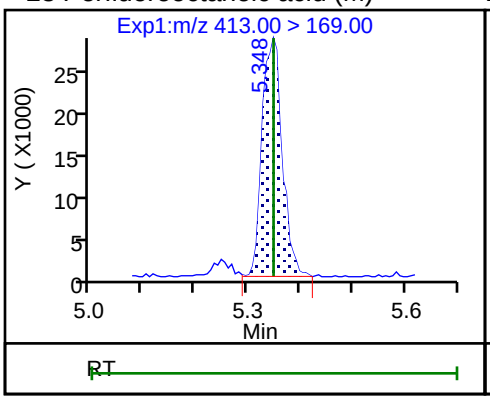
21 Perfluoroheptanesulfonic acid



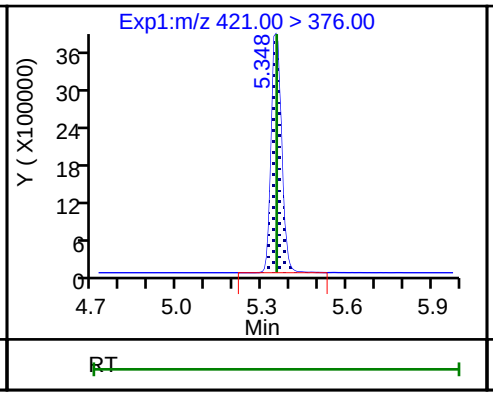
23 Perfluorooctanoic acid (M)



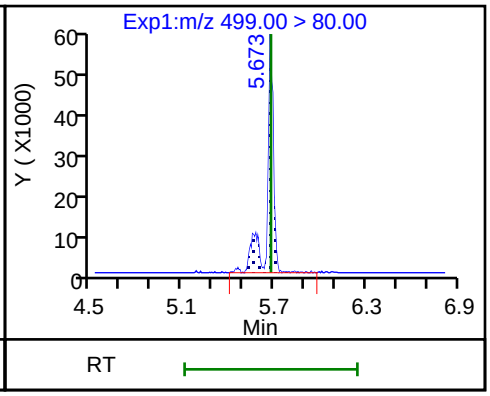
23 Perfluorooctanoic acid (M)



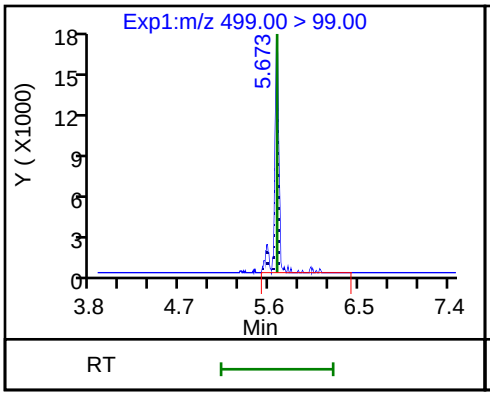
D 22 13C8 PFOA



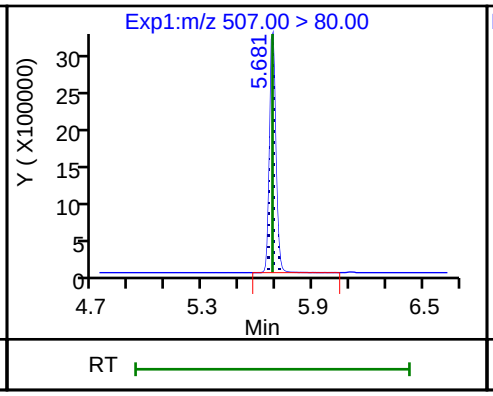
24 Perfluorooctanesulfonic acid



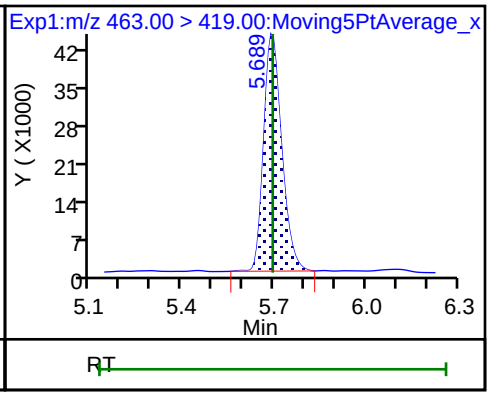
24 Perfluorooctanesulfonic acid



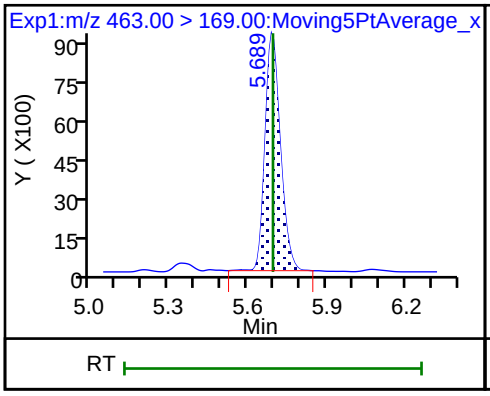
D 25 13C8 PFOS



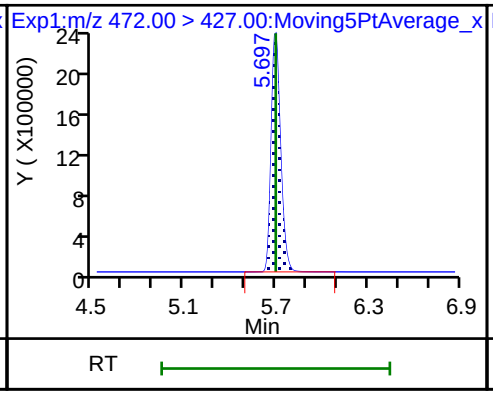
26 Perfluorononanoic acid



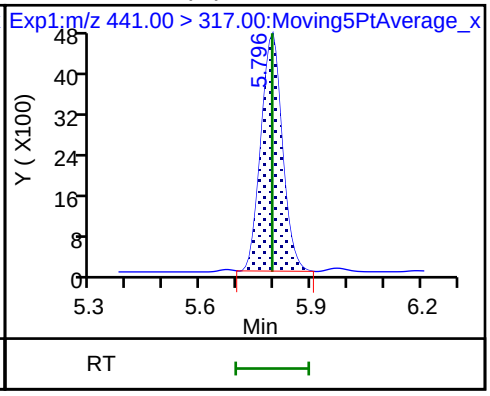
26 Perfluorononanoic acid



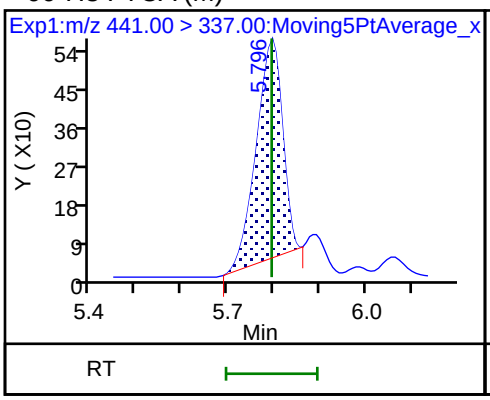
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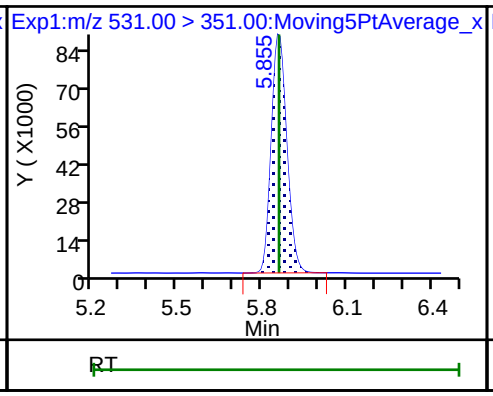
66 7:3 FTCA (M)



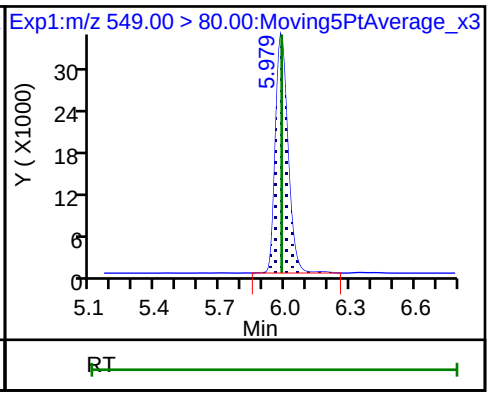
66 7:3 FTCA (M)



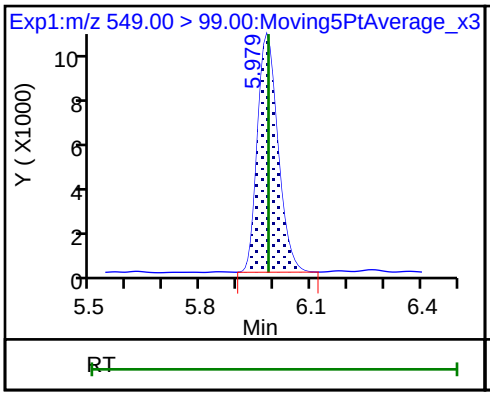
28 9ClFOS



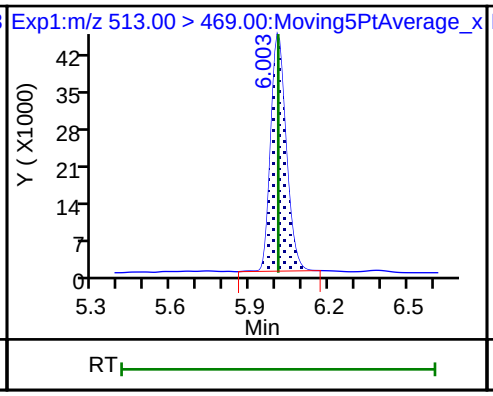
29 Perfluorononanesulfonic acid



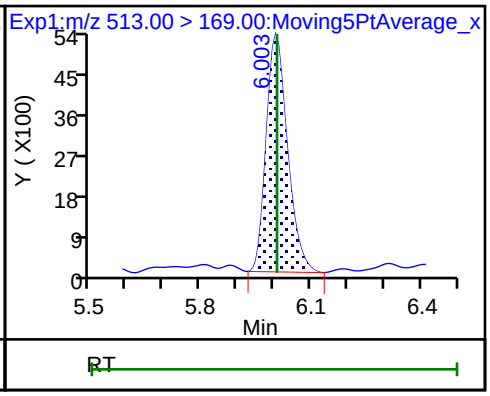
29 Perfluorononanesulfonic acid



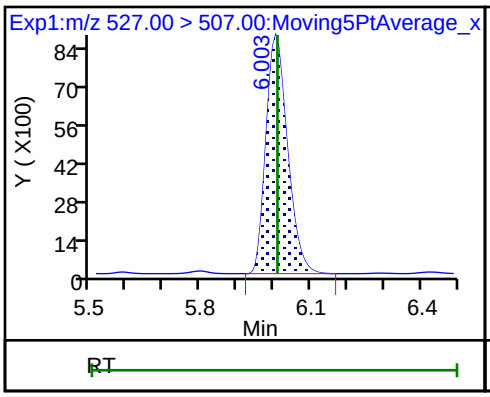
30 Perfluorodecanoic acid



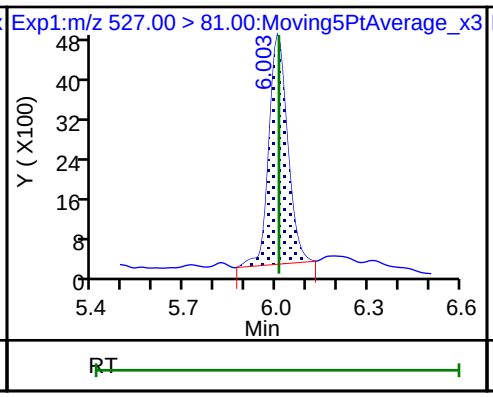
30 Perfluorodecanoic acid



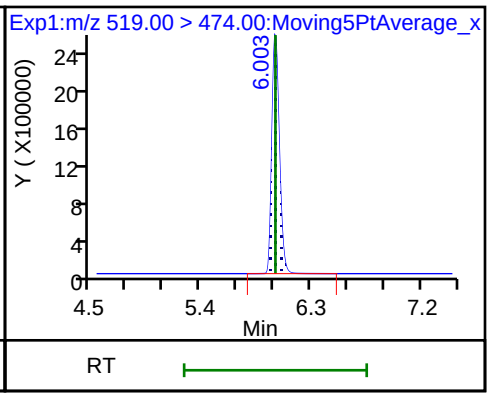
33 8:2 FTS



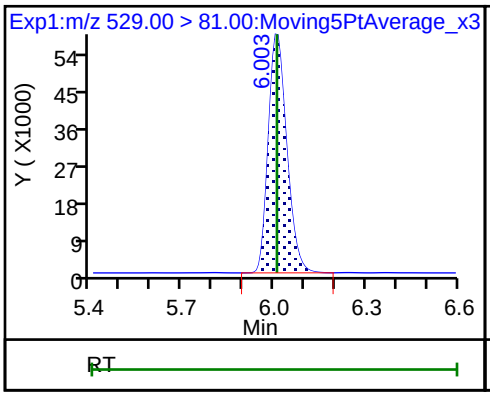
33 8:2 FTS



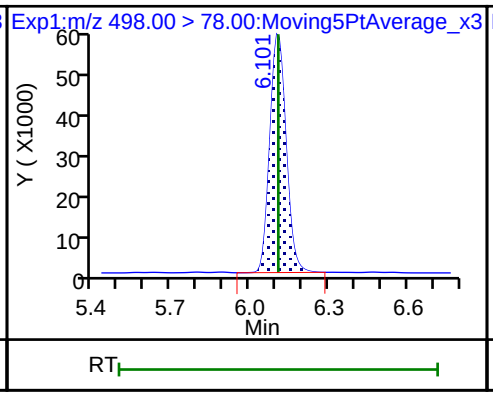
D 32 13C6 PFDA



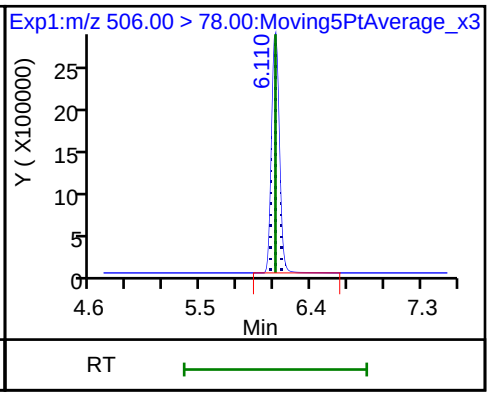
D 31 M2-8:2 FTS



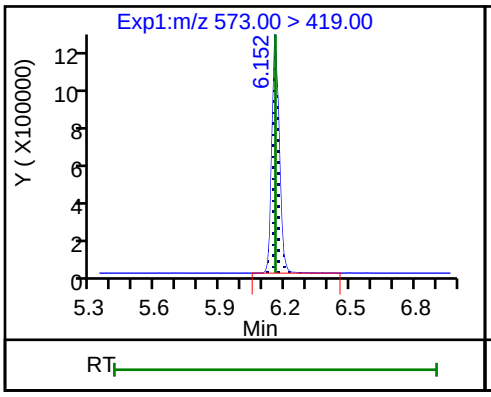
34 Perfluorooctanesulfonamide



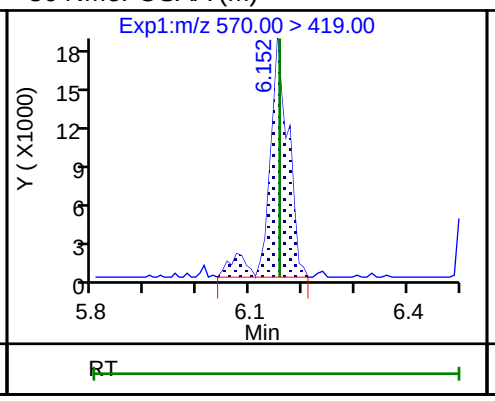
D 35 13C8 FOSA



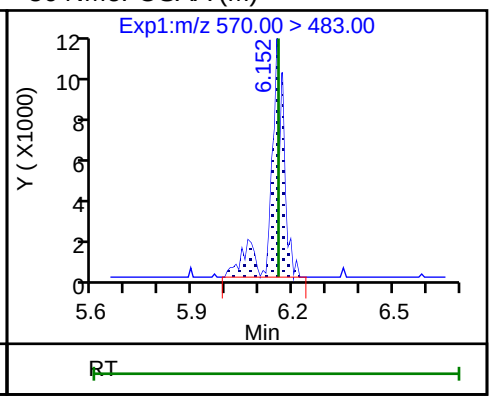
D 37 d3-NMeFOSAA



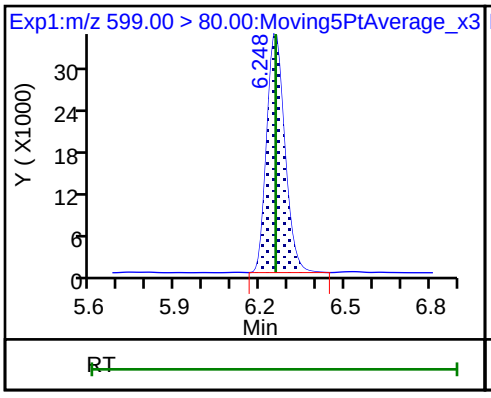
36 NMeFOSAA (M)



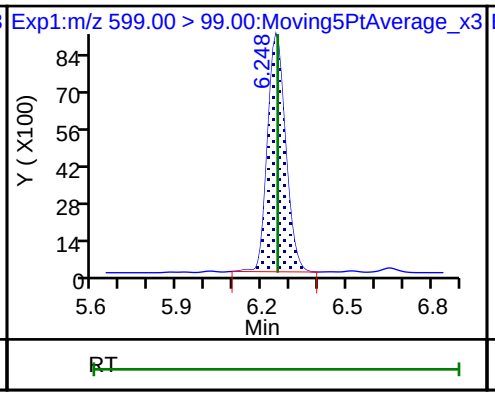
36 NMeFOSAA (M)



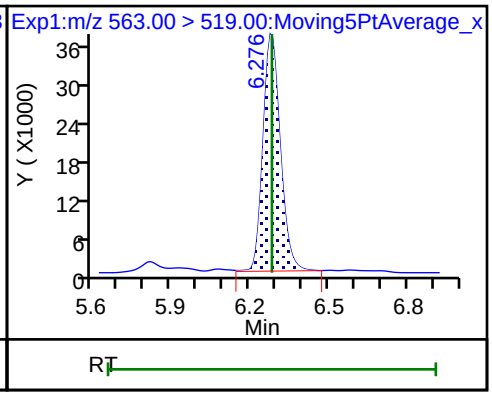
38 Perfluorodecanesulfonic acid



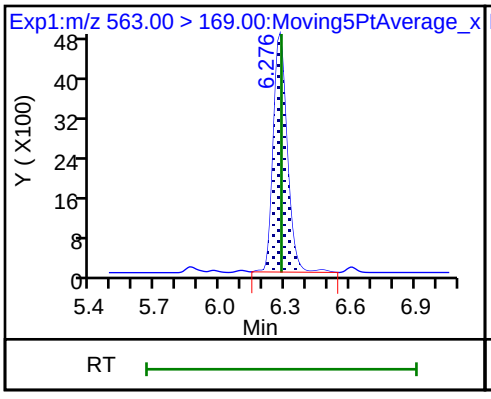
38 Perfluorodecanesulfonic acid



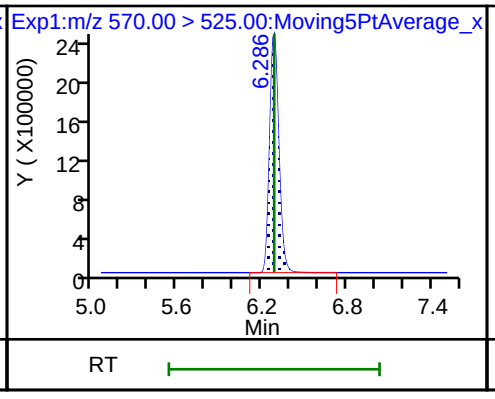
39 Perfluoroundecanoic acid



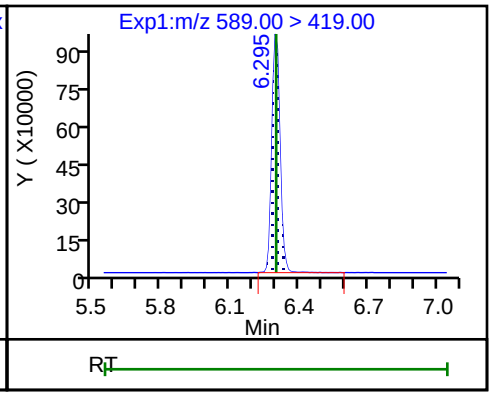
39 Perfluoroundecanoic acid



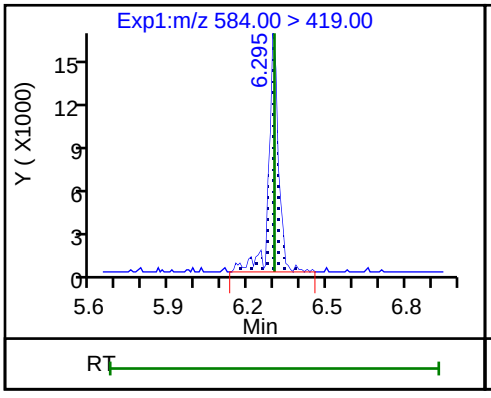
D 40 13C7 PFUnA



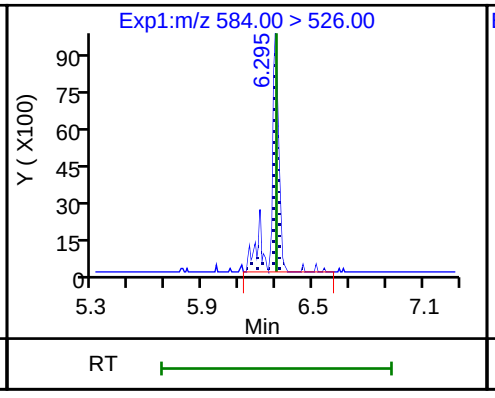
D 41 d5-NEtFOSAA



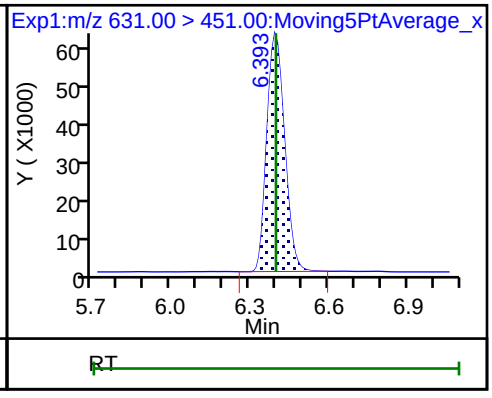
42 NEtFOSAA



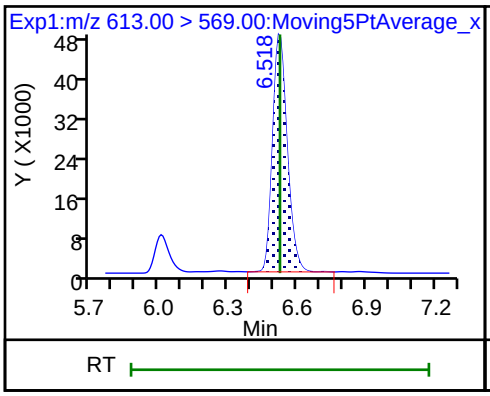
42 NEtFOSAA



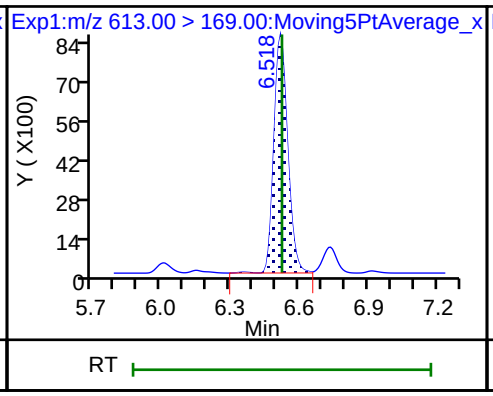
43 11ClFOS



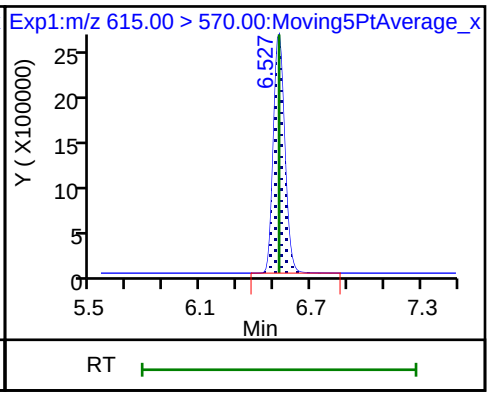
46 Perfluorododecanoic acid



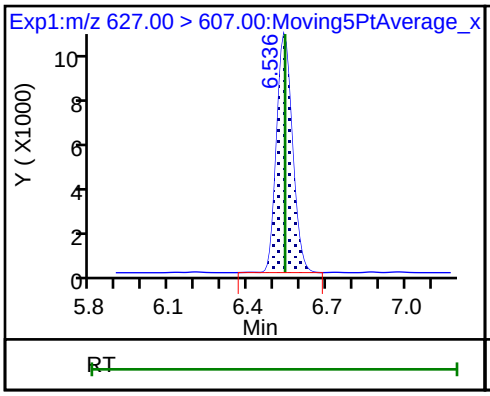
46 Perfluorododecanoic acid



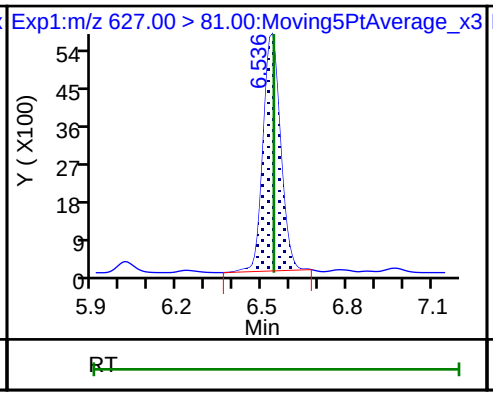
D 45 13C2-PFDoDA



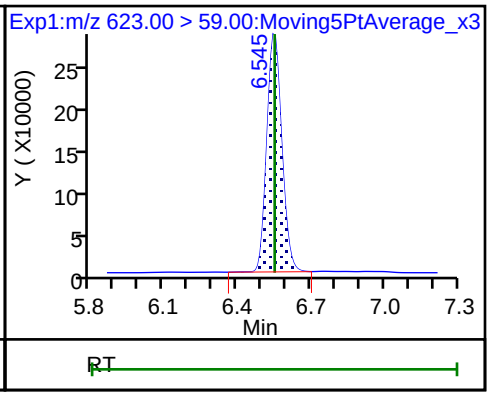
48 10:2 FTS



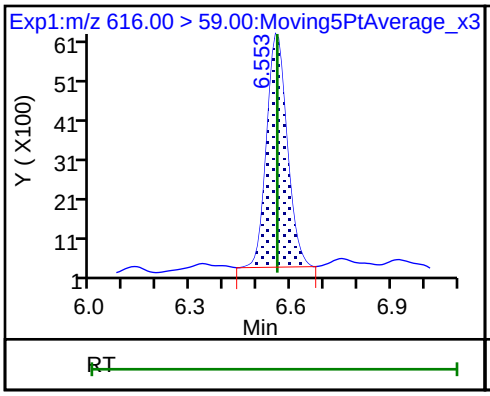
48 10:2 FTS



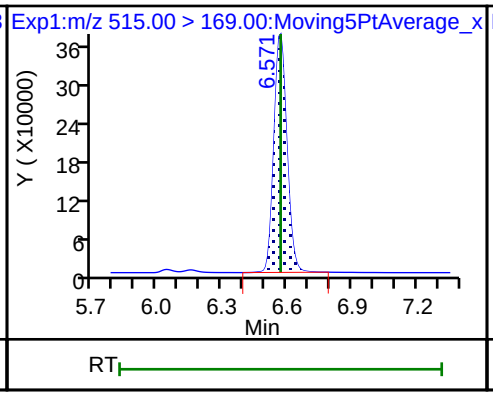
D 44 d7-N-MeFOSE-M



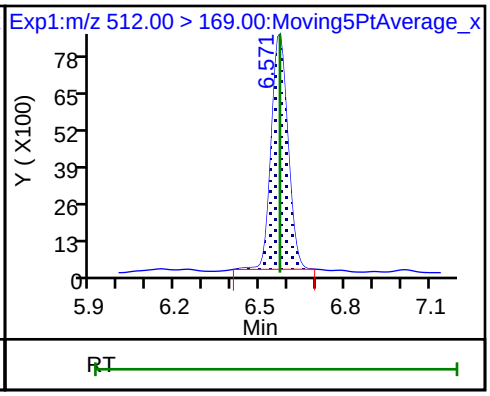
47 N-MeFOSE-M



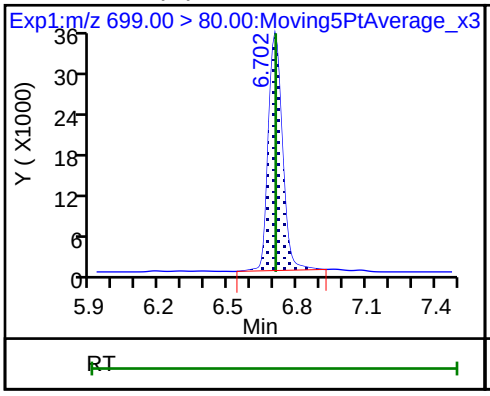
D 49 d3-NMePFOSA



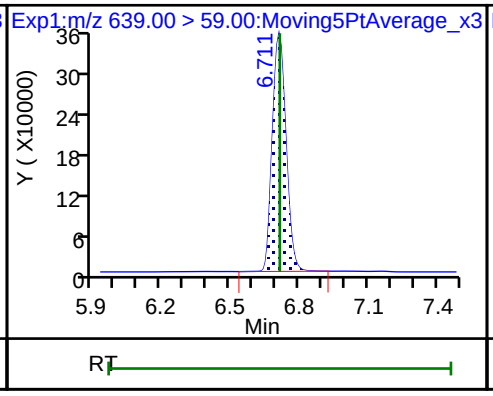
50 NMeFOSA



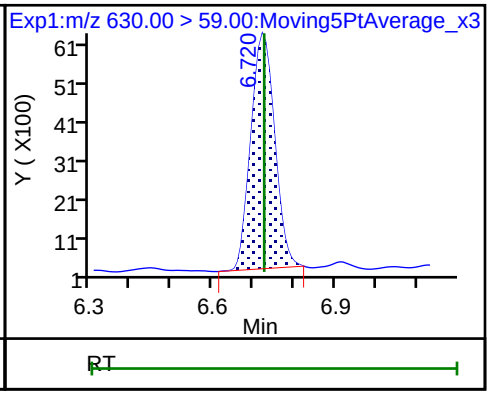
53 PFDoS (M)



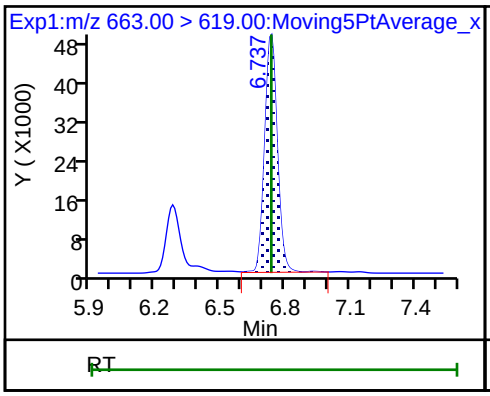
D 51 d9-N-EtFOSE-M



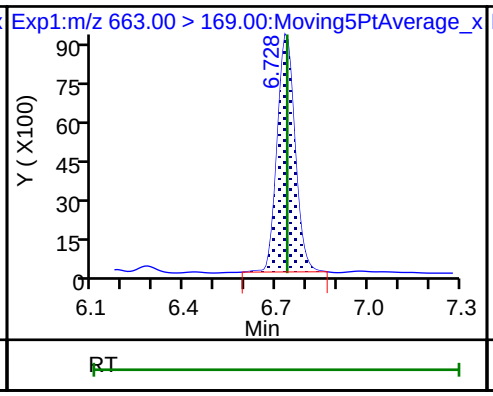
52 N-EtFOSE-M



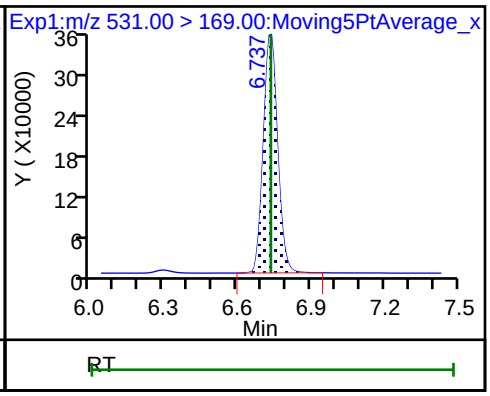
56 Perfluorotridecanoic acid



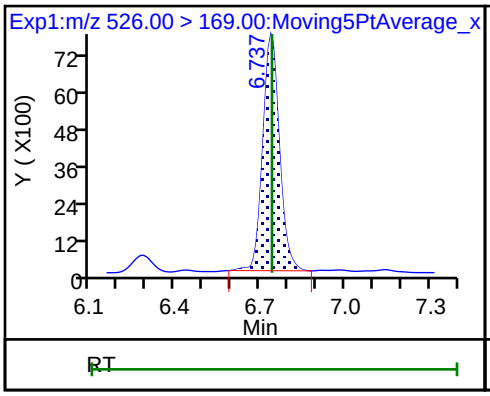
56 Perfluorotridecanoic acid



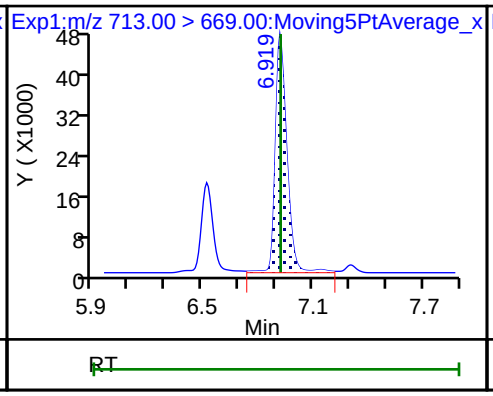
D 54 d5-NEtPFOSA



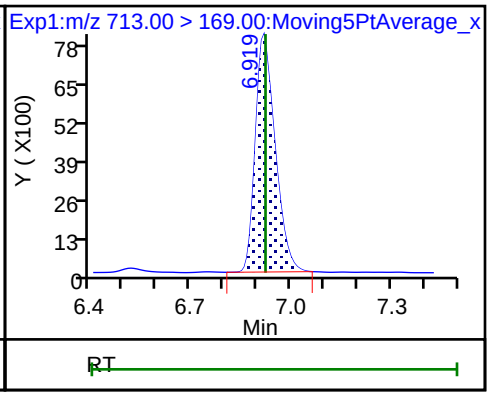
55 N-EtFOSA-M



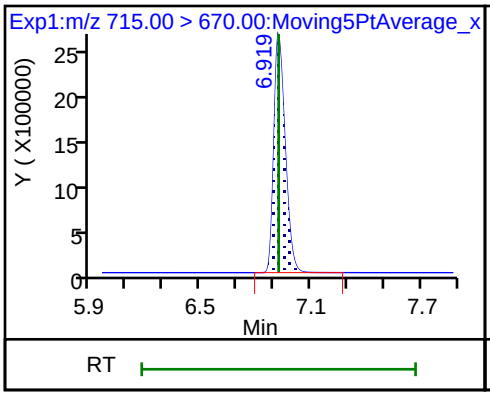
57 Perfluorotetradecanoic acid



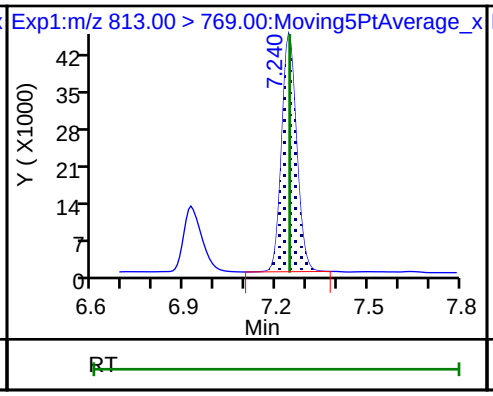
57 Perfluorotetradecanoic acid



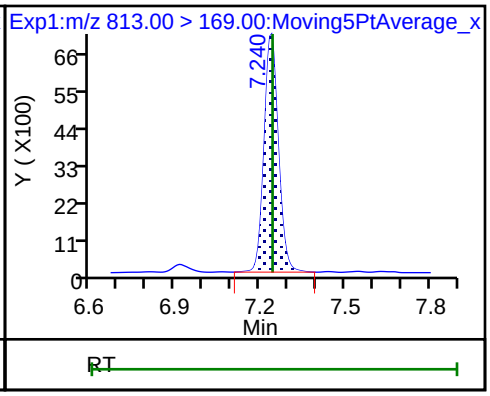
D 58 13C2 PFTeDA



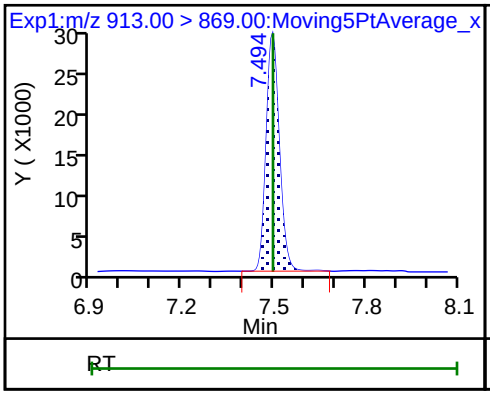
59 Perfluorohexadecanoic acid



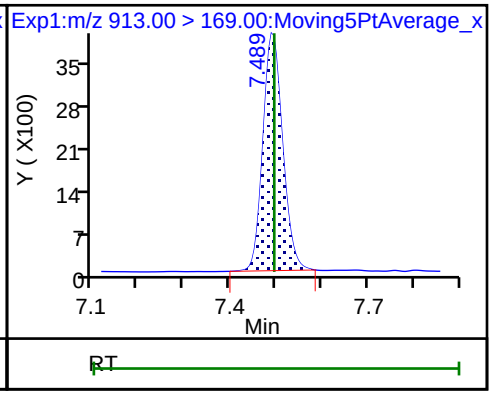
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

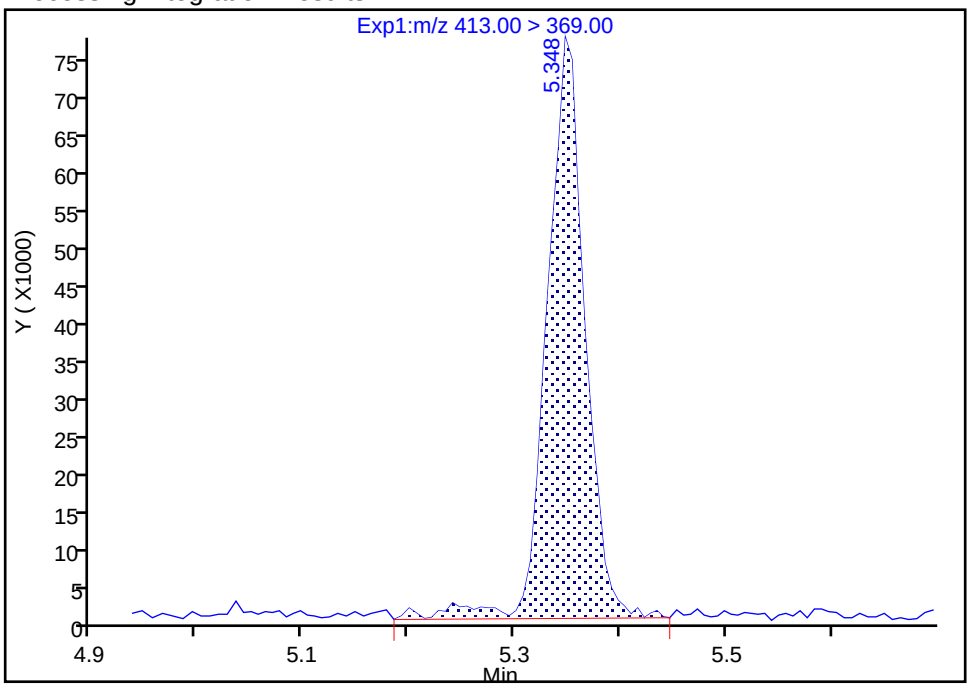
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d				
Injection Date:	07-Apr-2022 09:52:02	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

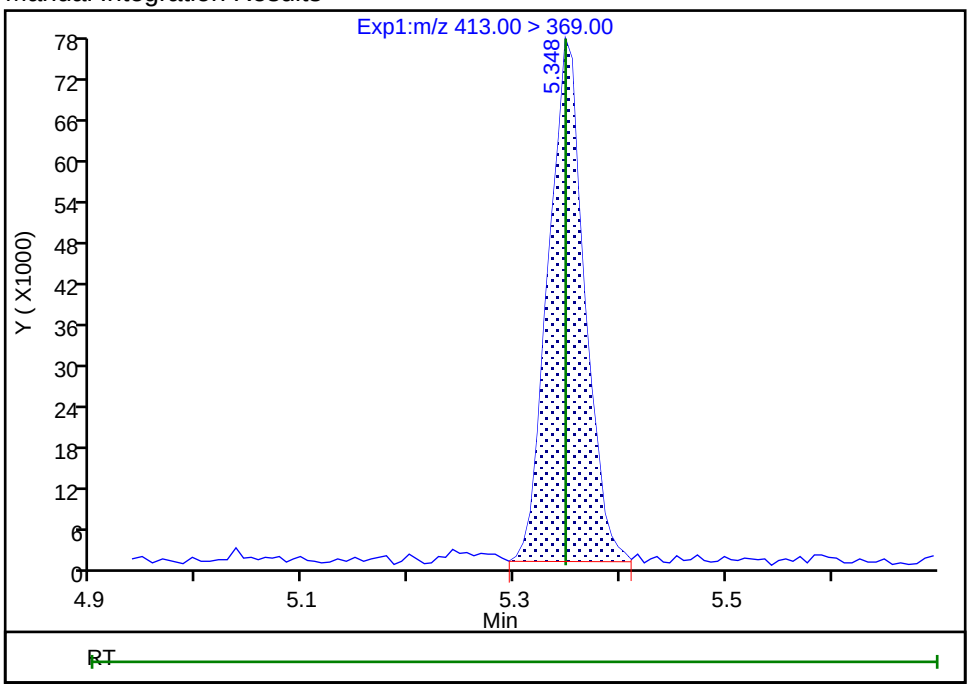
Processing Integration Results

RT: 5.35
Area: 191693
Amount: 0.200000
Amount Units: ng/ml



Manual Integration Results

RT: 5.35
Area: 181629
Amount: 0.206976
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:18:28

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

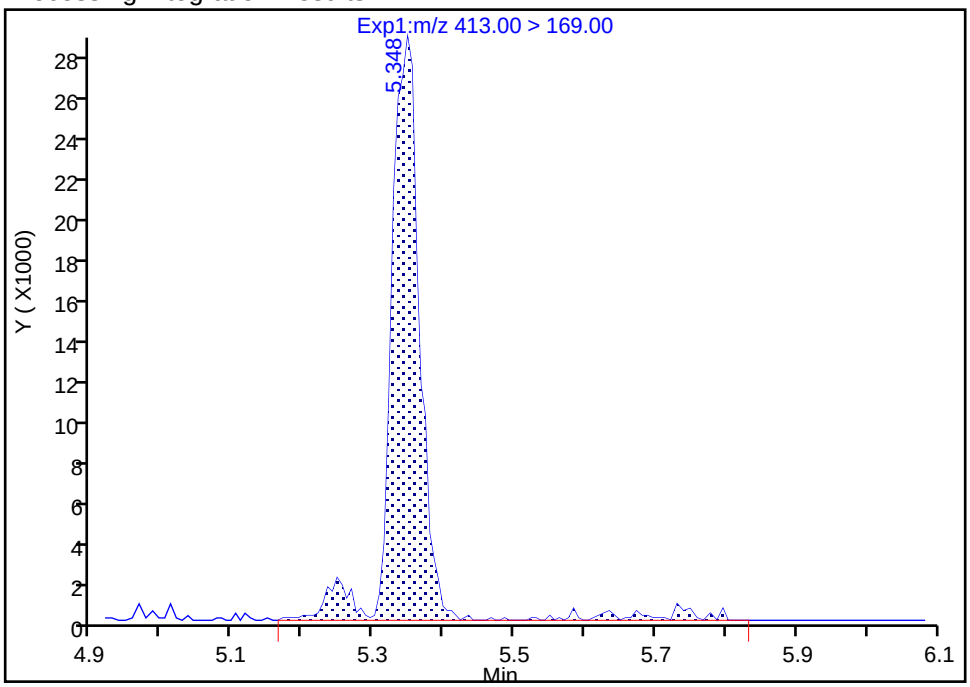
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d				
Injection Date:	07-Apr-2022 09:52:02	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

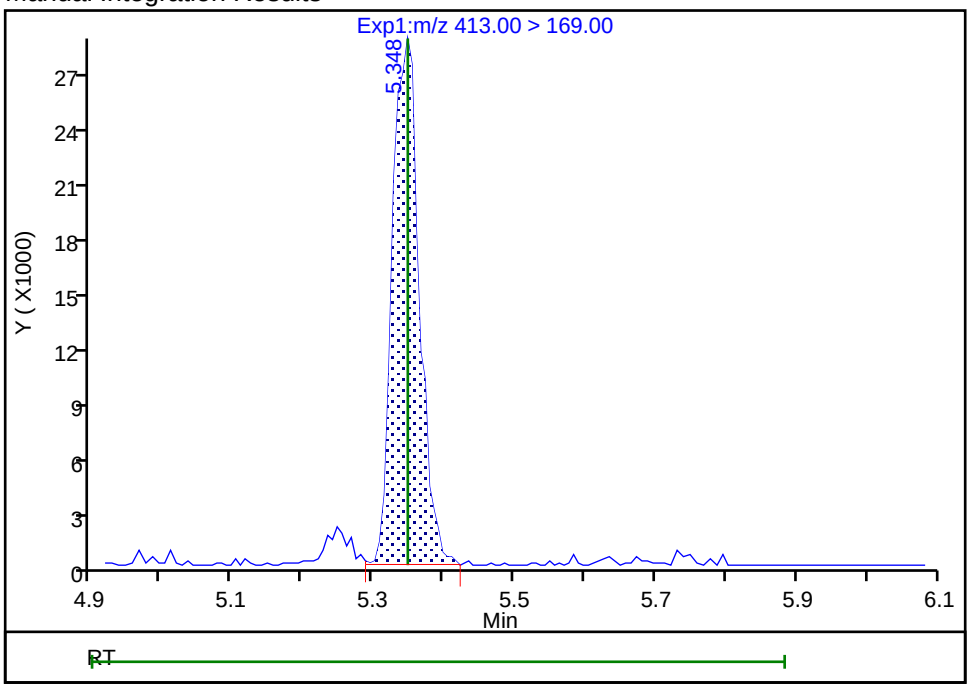
Processing Integration Results

RT: 5.35
Area: 84296
Amount: 0.200000
Amount Units: ng/ml



Manual Integration Results

RT: 5.35
Area: 75168
Amount: 0.206976
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:18:34

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

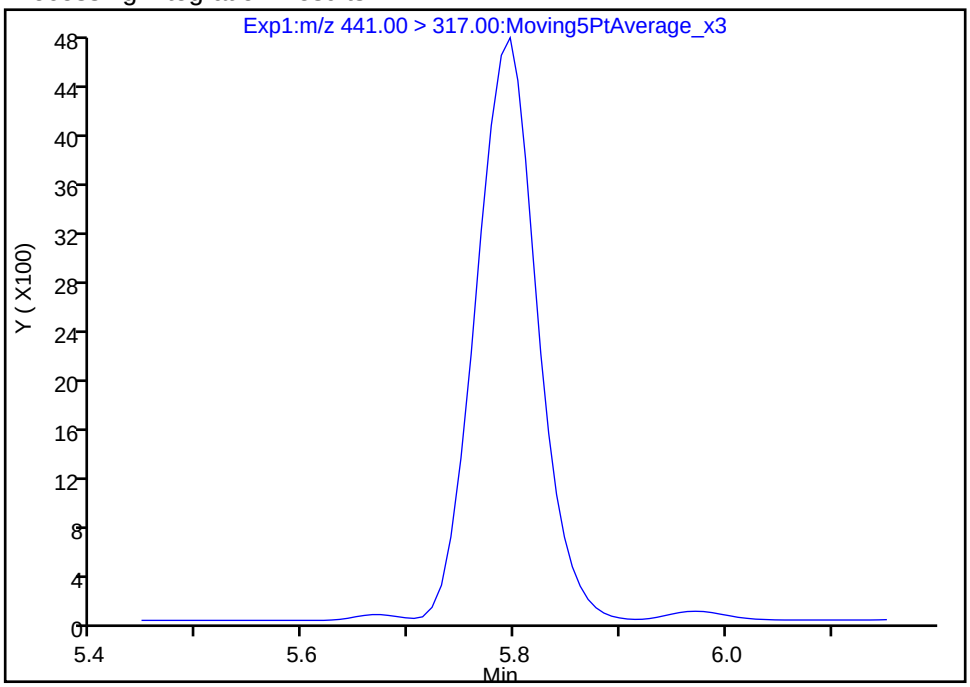
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d				
Injection Date:	07-Apr-2022 09:52:02	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

66 7:3 FTCA, CAS: 812-70-4

Signal: 1

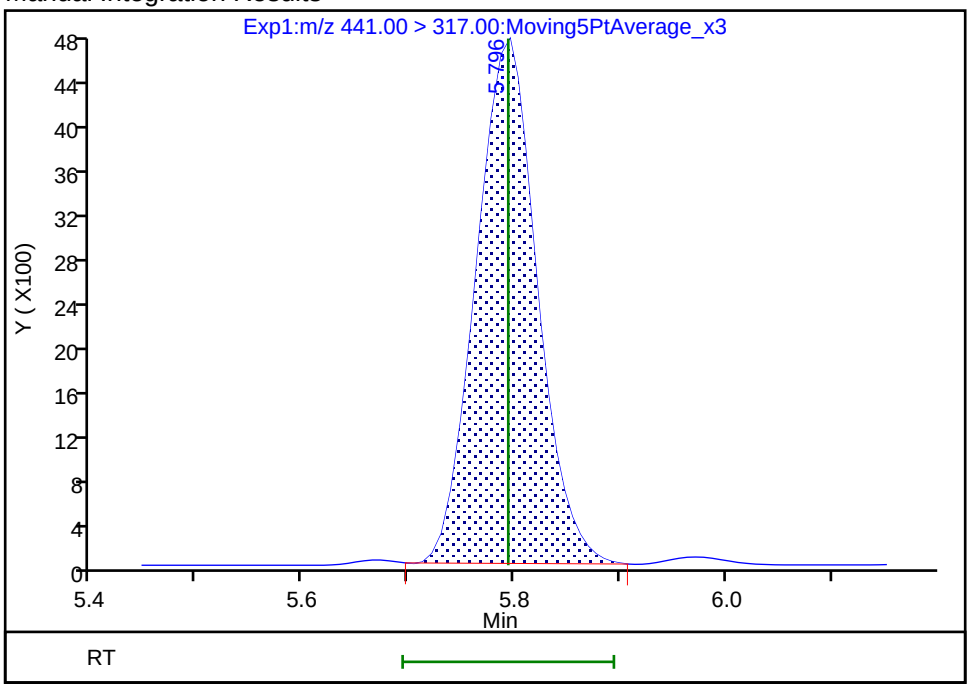
Processing Integration Results

Not Detected
Expected RT: 5.79



Manual Integration Results

RT: 5.80
Area: 18944
Amount: 0.207954
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:10:22
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

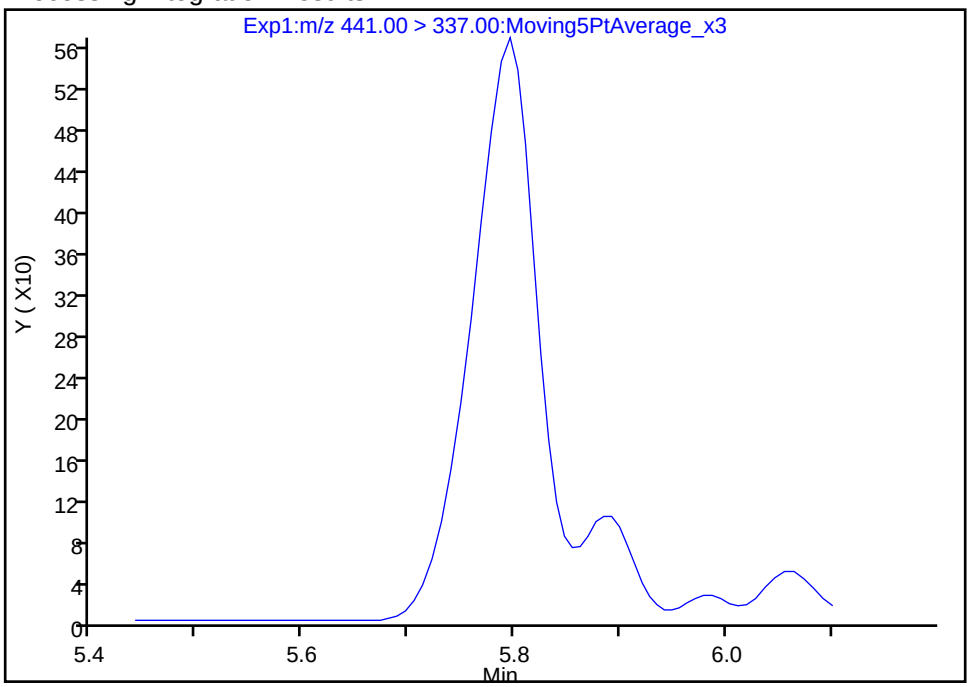
Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d
Injection Date: 07-Apr-2022 09:52:02 Instrument ID: 29347
Lims ID: IC CAL 1
Client ID:
Operator ID: US19_USR_INS75556 ALS Bottle#: 20002 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3
Column: Detector EXP1

66 7:3 FTCA, CAS: 812-70-4

Signal: 2

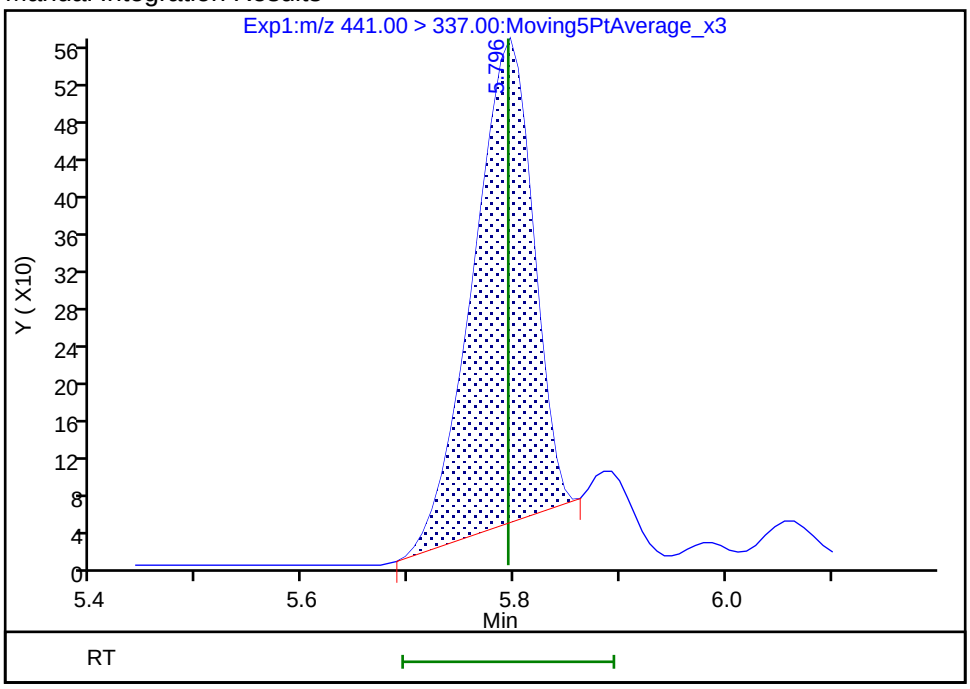
Not Detected
Expected RT: 5.79

Processing Integration Results



Manual Integration Results

RT: 5.80
Area: 2042
Amount: 0.207954
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:10:27
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

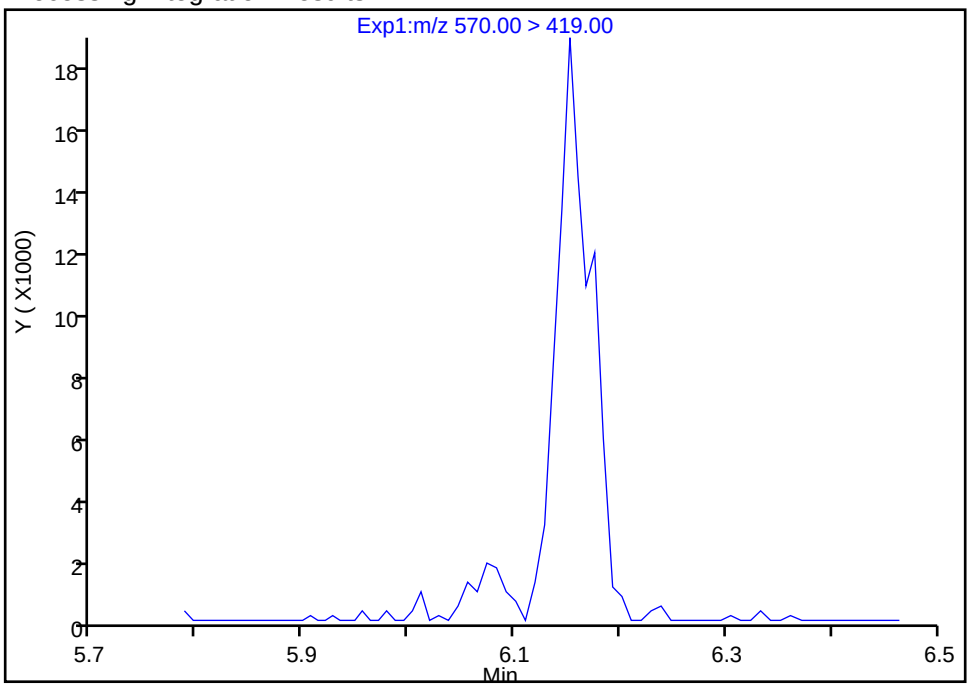
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d				
Injection Date:	07-Apr-2022 09:52:02	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

36 NMeFOSAA, CAS: 2355-31-9

Signal: 1

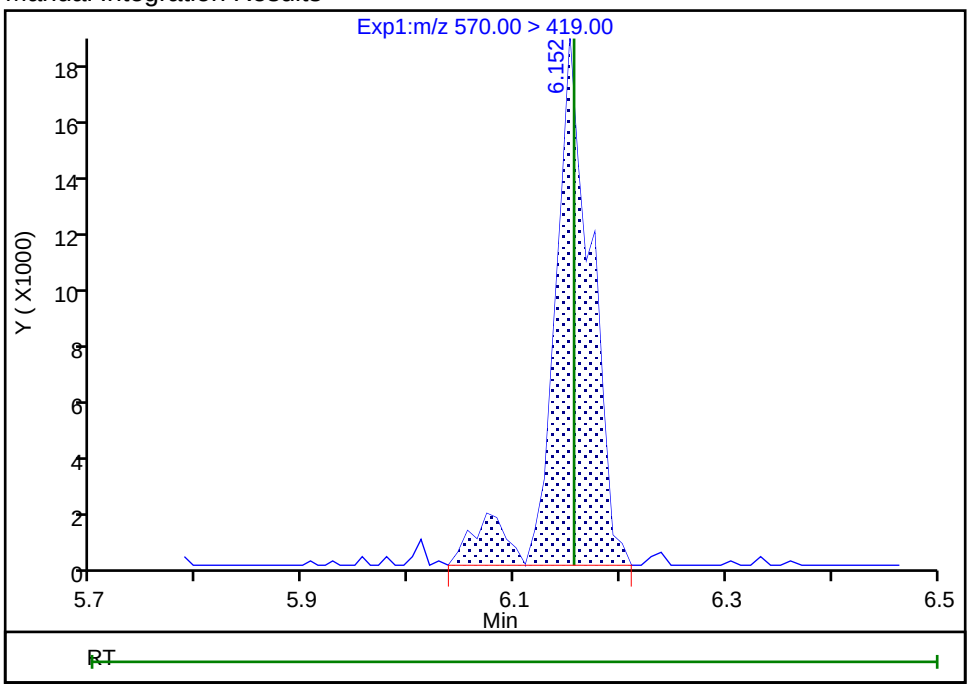
Not Detected
Expected RT: 6.16

Processing Integration Results



Manual Integration Results

RT: 6.15
Area: 46146
Amount: 0.186637
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:10:41
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

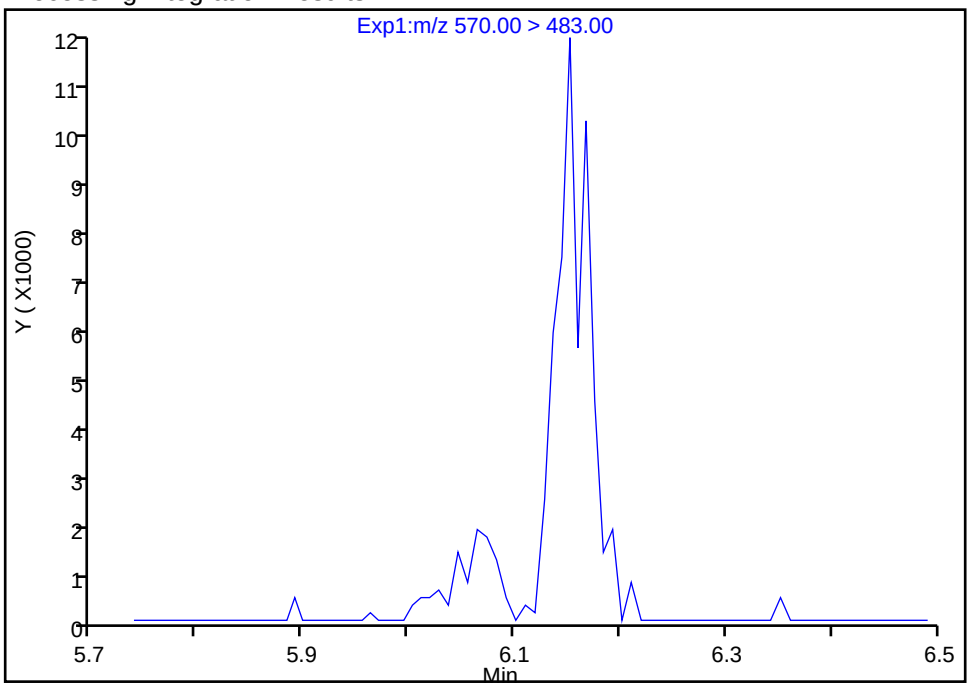
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d				
Injection Date:	07-Apr-2022 09:52:02	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

36 NMeFOSAA, CAS: 2355-31-9

Signal: 2

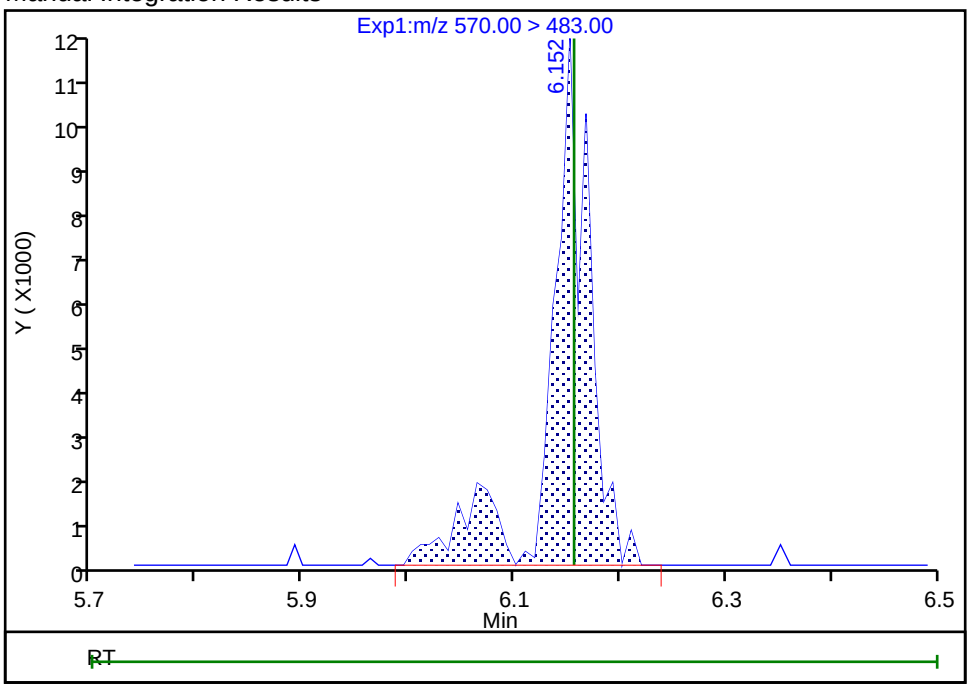
Processing Integration Results

Not Detected
Expected RT: 6.16



Manual Integration Results

RT: 6.15
Area: 29702
Amount: 0.186637
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:10:51
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

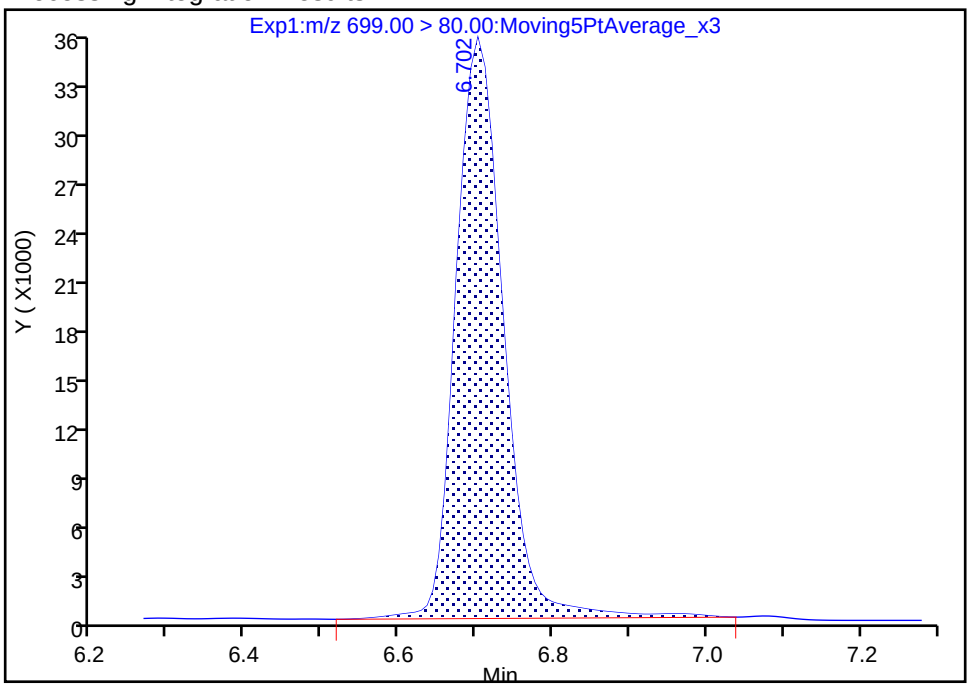
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-19.d				
Injection Date:	07-Apr-2022 09:52:02	Instrument ID:	29347		
Lims ID:	IC CAL 1				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20002	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

53 PFDoS, CAS: 79780-39-5

Signal: 1

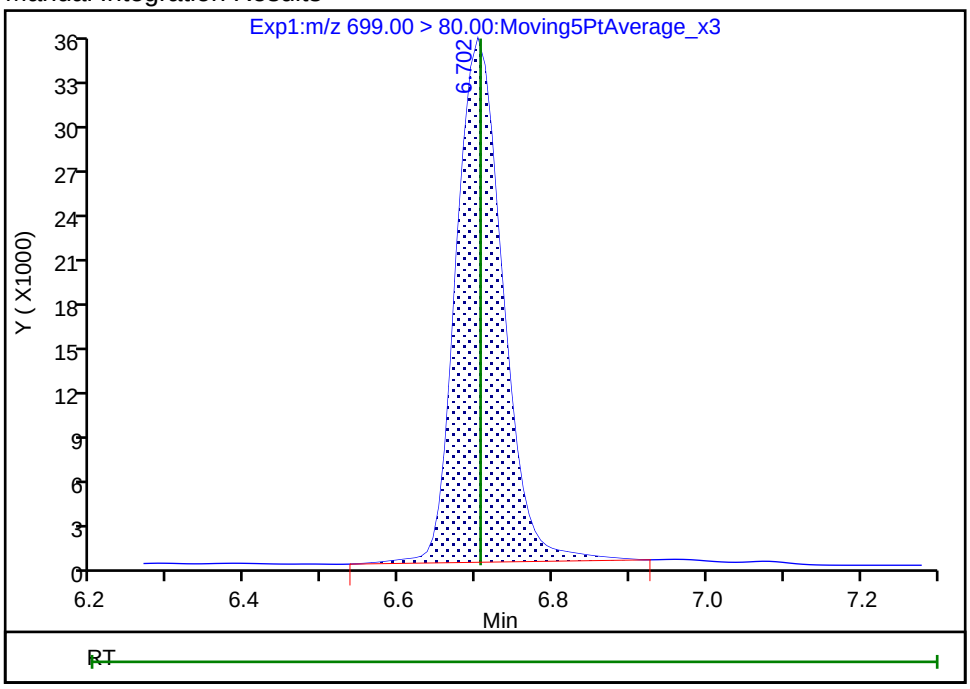
Processing Integration Results

RT: 6.70
Area: 152643
Amount: 0.193600
Amount Units: ng/ml



Manual Integration Results

RT: 6.70
Area: 149274
Amount: 0.193987
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:11:23

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-20.d
Lims ID: IC CAL 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 07-Apr-2022 10:02:35 ALS Bottle#: 20003 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 2
Misc. Info.: Plate: 1 Rack: 1 410-0054309-002
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:43:35 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 10:27:18
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 2 13C4 PFBA										
217.00 > 172.00	3.664	3.659	0.005		8547737	10.6		106	135170	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.664	3.659	0.005	1.000	338776	0.4821		96.4	644	
63 PFECA F										
229.00 > 85.00	3.891	3.891	0.0	0.929	281104	0.4830		96.6	8101	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.170	0.002	0.997	19135	0.4417	Target=1.31	88.3	1699	
241.00 > 117.00	4.172	4.170	0.002	0.997	15524		1.23(0.66-1.97)	88.3	600	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.180	4.178	0.002	0.998	363144	0.4824		96.5	1490	
D 4 13C5 PFPeA										
268.00 > 223.00	4.187	4.181	0.006		7192173	10.4		104	66369	
D 6 13C3 PFBS										
302.00 > 80.00	4.239	4.235	0.004		8876954	9.62		103	581576	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.232	4.231	0.001	0.998	395958	0.4330	Target=2.86	97.9	532	
299.00 > 99.00	4.232	4.231	0.001	0.998	130991		3.02(1.43-4.29)	97.9	472	
64 PFECA A										
279.00 > 85.00	4.301	4.301	0.0	1.027	278152	0.4814		96.3	7224	
65 PES										
315.00 > 135.00	4.397	4.394	0.003	0.958	1312007	0.4364	Target=14.03	98.1	45421	
315.00 > 83.00	4.397	4.394	0.003	0.958	82131		15.97(7.01-21.04)	98.1	92.3	
68 PFECA B										
295.00 > 201.00	4.521	4.514	0.007	0.985	114577	0.4520		90.4	4171	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.550	4.546	0.004	1.000	74691	0.4276	Target=1.58	91.6	5485	
327.00 > 81.00	4.550	4.546	0.004	1.000	56085		1.33(0.79-2.36)	91.6	1219	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.550	4.549	0.001		425226	9.75		104	13122	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.589	4.586	0.003	1.000	368604	0.4964	Target=13.65	99.3	3006	
313.00 > 119.00	4.589	4.586	0.003	1.000	27291		13.51(6.82-20.47)	99.3	1027	
D 9 13C5 PFHxA										
318.00 > 273.00	4.589	4.587	0.002		8698782	10.9		109	239721	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.609	4.608	0.001	1.087	388875	0.4546	Target=3.02	96.9	22432	
349.00 > 99.00	4.609	4.608	0.001	1.087	127463		3.05(1.51-4.53)	96.9	5861	
12 HFPO-DA										
329.00 > 285.00	4.718	4.715	0.003	1.000	105977	0.4665		93.3	3143	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.718	4.715	0.003		927418	10.7		107	62368	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.977	4.976	0.001	0.998	412546	0.4637	Target=3.04	92.7	2653	
363.00 > 169.00	4.977	4.976	0.001	0.998	137585		3.00(1.52-4.56)	92.7	3091	
D 17 13C4 PFHpA										
367.00 > 322.00	4.987	4.981	0.006		9294003	11.1		111	265536	
D 16 13C3 PFHxS										
402.00 > 80.00	4.987	4.983	0.004		8536362	10.3		109	1178363	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.987	4.981	0.006	1.000	358356	0.4075	Target=2.99	89.4	128846	
399.00 > 99.00	4.977	4.981	-0.004	0.998	129496		2.77(1.50-4.49)	89.4	45649	
18 DONA										
377.00 > 251.00	5.029	5.026	0.003	1.008	667750	0.4432		93.8	12744	
62 5:3 FTCA										
341.00 > 237.00	5.058	5.051	0.007	1.102	82593	0.4808	Target=3.41	96.2	1710	
341.00 > 217.00	5.051	5.051	0.0	1.101	22157		3.73(1.70-5.11)	96.2	657	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.336	5.332	0.004		301697	10.4		109	20964	
19 6:2 FTS										
427.00 > 407.00	5.336	5.330	0.006	1.000	69007	0.4128	Target=1.71	87.1	4836	
427.00 > 81.00	5.329	5.330	-0.001	0.999	39161		1.76(0.85-2.56)	87.1	2117	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.343	5.339	0.004	1.071	381604	0.4369	Target=3.21	91.8	26815	
449.00 > 99.00	5.343	5.339	0.004	1.071	115359		3.31(1.60-4.81)	91.8	6411	
D 22 13C8 PFOA										
421.00 > 376.00	5.355	5.351	0.004		9578267	10.5		105	950388	
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.355	5.348	0.007	1.000	434548	0.5029	Target=2.40	101	16764	
413.00 > 169.00	5.349	5.348	0.001	0.999	168752		2.58(1.20-3.60)	101	13207	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.683	5.677	0.006	1.000	401277	0.4578	Target=3.65	98.9	138047	
499.00 > 99.00	5.683	5.677	0.006	1.000	105199		3.81(1.83-5.48)	98.9	205	
D 25 13C8 PFOS										
507.00 > 80.00	5.683	5.679	0.004		7535715	10.1		106	345996	
26 Perfluorononanoic acid										
463.00 > 419.00	5.699	5.694	0.005	1.000	416022	0.4719	Target=4.51	94.4	5563	
463.00 > 169.00	5.699	5.694	0.005	1.000	95242		4.37(2.25-6.76)	94.4	2872	
D 27 13C9 PFNA										
472.00 > 427.00	5.699	5.696	0.003		9785752	10.5		105	213640	
66 7:3 FTCA										
441.00 > 317.00	5.798	5.794	0.004	1.263	46369	0.5085	Target=10.25	102	2269	
441.00 > 337.00	5.789	5.794	-0.005	1.261	4633		10.01(5.12-15.37)	102	242	
28 9ClFOS										
531.00 > 351.00	5.864	5.859	0.005	1.032	834015	0.4509		97.0	36708	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.989	5.984	0.005	1.054	345155	0.4676	Target=3.43	97.4	21650	
549.00 > 99.00	5.981	5.984	-0.003	1.052	95386		3.62(1.72-5.15)	97.4	4784	
D 32 13C6 PFDA										
519.00 > 474.00	6.013	6.008	0.005		10723375	10.6		106	506567	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.013	6.008	0.005		236696	9.75		102	11162	
30 Perfluorodecanoic acid										M
513.00 > 469.00	6.005	6.007	-0.002	0.999	451279	0.4862	Target=8.86	97.2	5657	
513.00 > 169.00	6.005	6.007	-0.002	0.999	47163		9.57(4.43-13.29)	97.2	1015	M
33 8:2 FTS										
527.00 > 507.00	6.013	6.008	0.005	1.000	88456	0.4559	Target=1.91	95.2	5295	
527.00 > 81.00	6.005	6.008	-0.003	0.999	52068		1.70(0.96-2.87)	95.2	814	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.113	6.107	0.006	1.000	620484	0.4678		93.6	18117	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.109	0.004		12804238	10.3		103	376694	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.162	6.155	0.007		3016976	10.4		104	424588	
36 NMeFOSAA										
570.00 > 419.00	6.162	6.158	0.004	1.000	125153	0.4751	Target=1.78	95.0	4734	
570.00 > 483.00	6.154	6.158	-0.004	0.999	66161		1.89(0.89-2.67)	95.0	97.5	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.261	6.255	0.006	1.102	365783	0.4472	Target=3.62	92.8	16749	
599.00 > 99.00	6.251	6.255	-0.004	1.100	106408		3.44(1.81-5.43)	92.8	6024	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.289	6.283	0.006	1.000	434970	0.4976	Target=8.28	99.5	2477	
563.00 > 169.00	6.279	6.283	-0.004	0.999	50496		8.61(4.14-12.42)	99.5	2794	
D 40 13C7 PFUnA										
570.00 > 525.00	6.289	6.284	0.005		10650634	10.4		104	264932	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.299	-0.001		2362059	10.6		106	324755	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.298	6.300	-0.002	1.000	104200	0.4694	Target=1.66	93.9	174	
584.00 > 526.00	6.308	6.300	0.008	1.001	58372		1.79(0.83-2.49)	93.9	111	
43 11ClFOS										
631.00 > 451.00	6.398	6.398	0.0	1.126	756405	0.4624		99.5	22900	
46 Perfluorododecanoic acid										M
613.00 > 569.00	6.530	6.524	0.006	1.000	474176	0.4846	Target=5.73	96.9	1783	
613.00 > 169.00	6.522	6.524	-0.002	0.999	78789		6.02(2.87-8.60)	96.9	1710	M
D 45 13C2-PFDoDA										
615.00 > 570.00	6.530	6.526	0.004		11109736	10.4		104	664173	
48 10:2 FTS										
627.00 > 607.00	6.539	6.541	-0.002	1.087	102004	0.4639	Target=1.71	96.2	8232	
627.00 > 81.00	6.539	6.541	-0.002	1.087	60304		1.69(0.85-2.56)	96.2	2066	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.551	0.006		1194357	10.3		103	6054	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.559	-0.002	1.000	59565	0.4752		95.0	664	
50 NMeFOSA										
512.00 > 169.00	6.574	6.570	0.004	1.000	71116	0.4262		85.2	2416	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.570	0.004		1610348	10.3		103	3897	
53 PFDoS										
699.00 > 80.00	6.706	6.706	0.0	1.180	371089	0.4781		98.8	11254	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.715	6.715	0.0		1515675	10.9		109	10013	
52 N-EtFOSE-M										
630.00 > 59.00	6.724	6.725	-0.001	1.001	72838	0.5083		102	1126	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.736	0.004	1.032	475092	0.4847	Target=5.39	96.9	1240	
663.00 > 169.00	6.740	6.736	0.004	1.032	88733		5.35(2.69-8.08)	96.9	3775	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.736	0.004		1446865	10.3		103	10102	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.741	-0.001	1.000	73836	0.4565		91.3	1861	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.923	0.005		11041097	10.4		104	260937	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.928	6.923	0.005	1.000	463317	0.4710	Target=5.85	94.2	884	
713.00 > 169.00	6.921	6.923	-0.002	0.999	79887		5.80(2.93-8.78)	94.2	4792	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.248	7.243	0.005	1.046	334460	0.4797	Target=6.08	95.9	1293	
813.00 > 169.00	7.241	7.243	-0.002	1.045	52856		6.33(3.04-9.13)	95.9	3102	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.495	0.004	1.082	207389	0.4490	Target=7.13	89.8	4717	
913.00 > 169.00	7.494	7.495	-0.001	1.082	28887		7.18(3.56-10.69)	89.8	2440	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD2_00013 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:43:36 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-20.d

Injection Date: 07-Apr-2022 10:02:35 Instrument ID: 29347

Lims ID: IC CAL 2

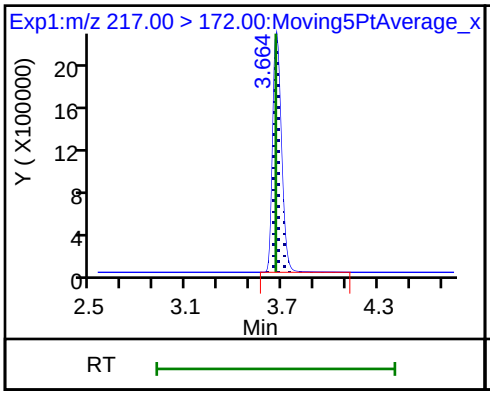
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20003 Worklist Smp#: 2

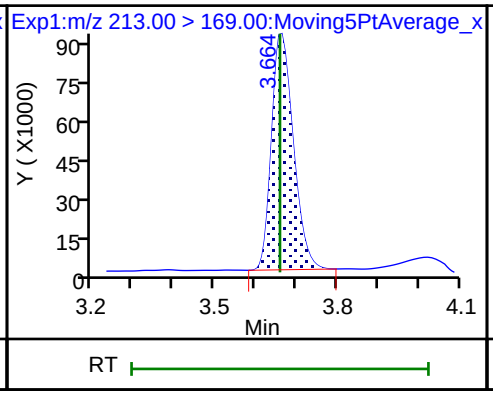
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

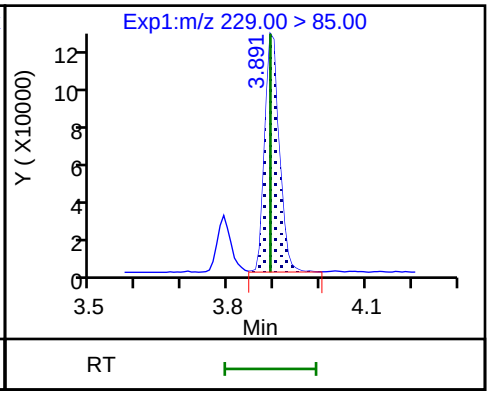
D 2 13C4 PFBA



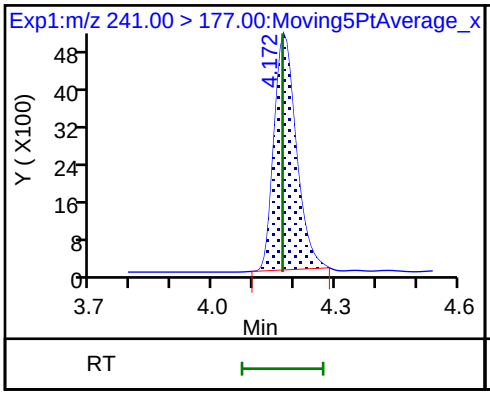
1 Perfluorobutanoic acid



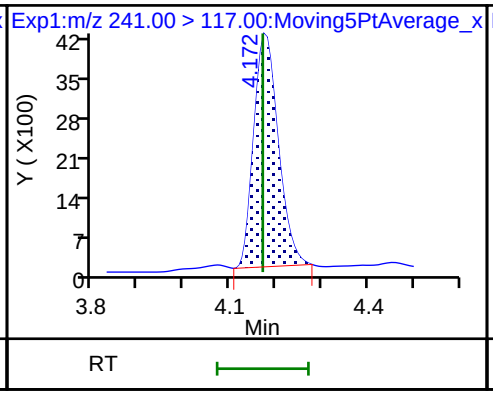
63 PFECA F



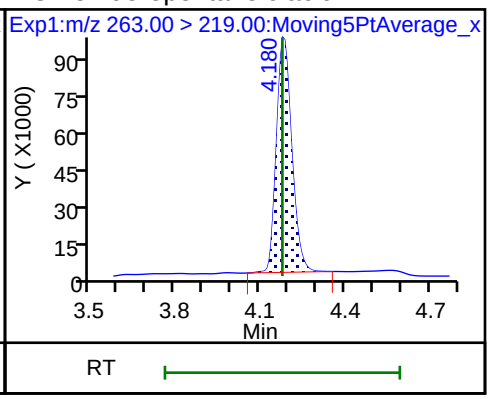
67 3:3 FTCA



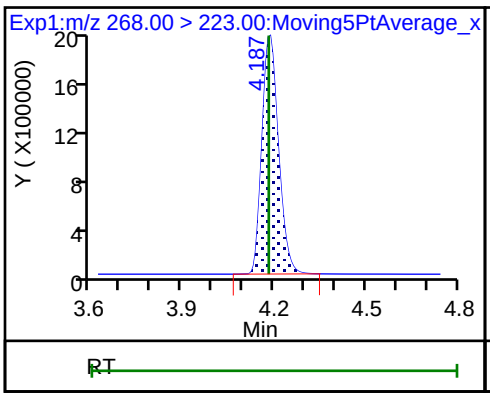
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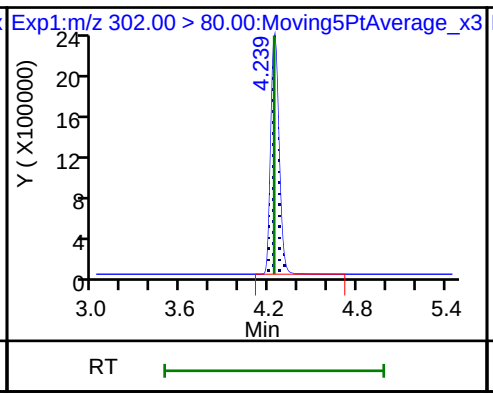
3 Perfluoropentanoic acid



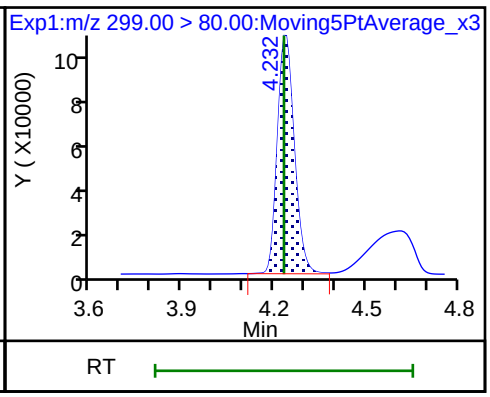
D 4 13C5 PFPeA



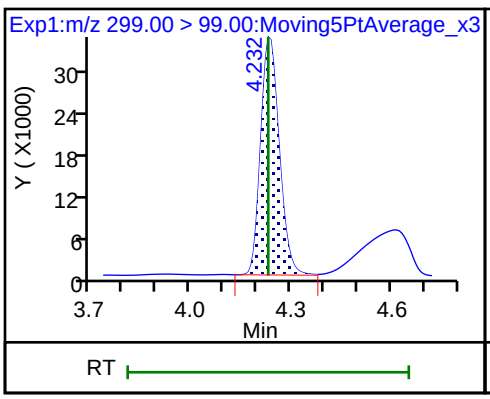
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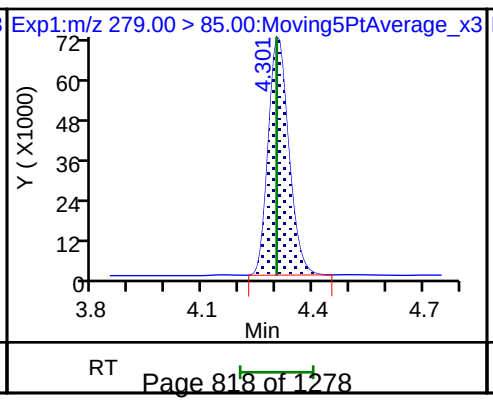
5 Perfluorobutanesulfonic acid



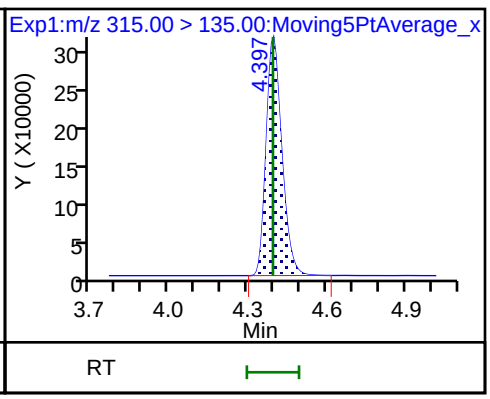
5 Perfluorobutanesulfonic acid



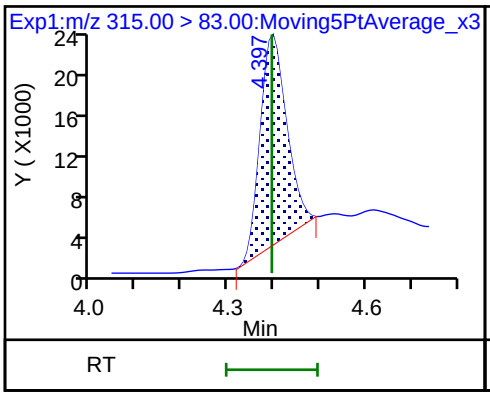
64 PFECA A



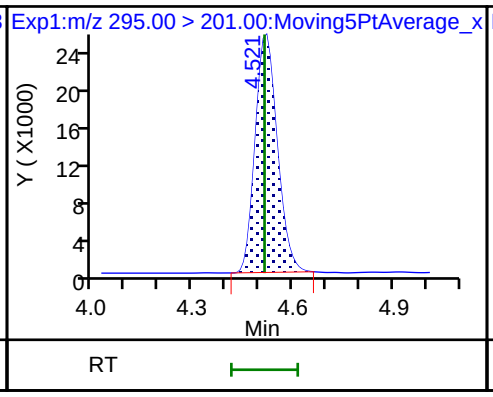
65 PES



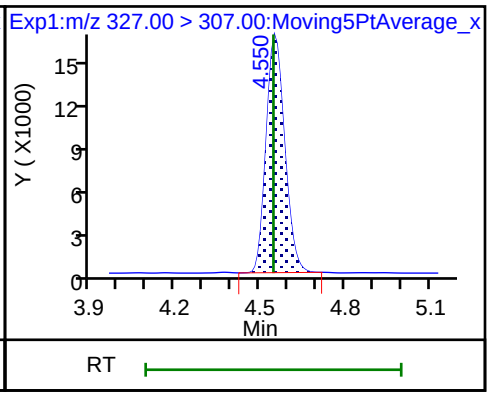
65 PES



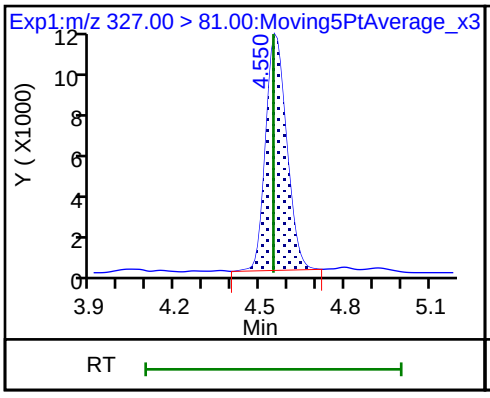
68 PFECA B



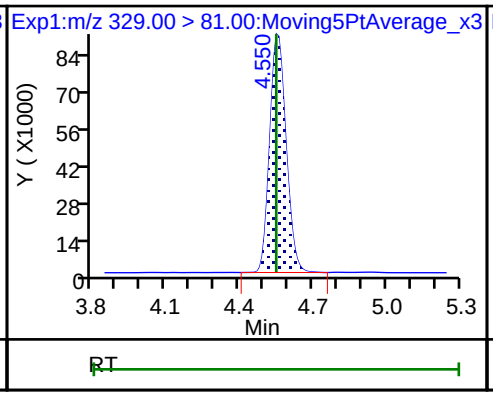
7 4:2 FTS



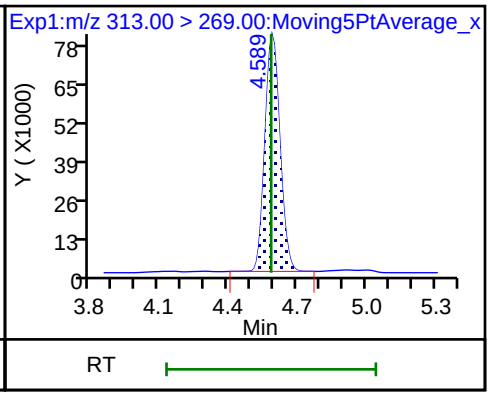
7 4:2 FTS



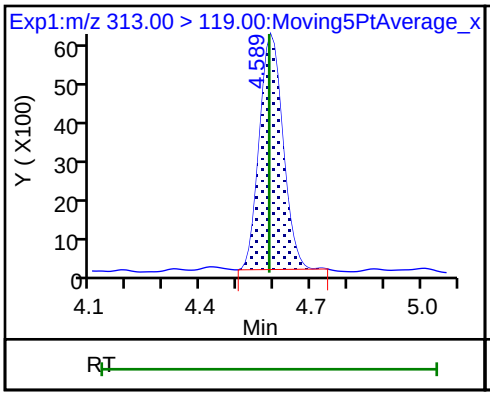
D 8 M2-4:2 FTS



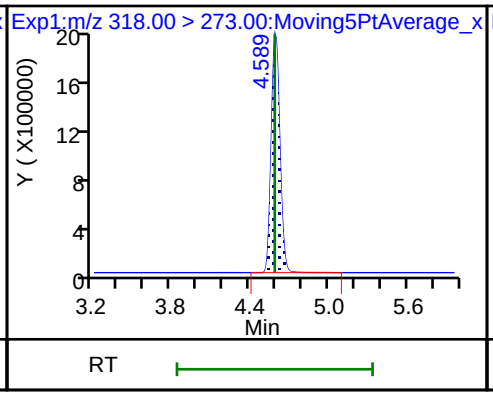
10 Perfluorohexanoic acid



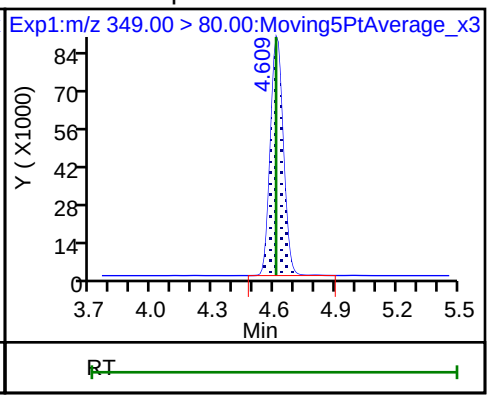
10 Perfluorohexanoic acid



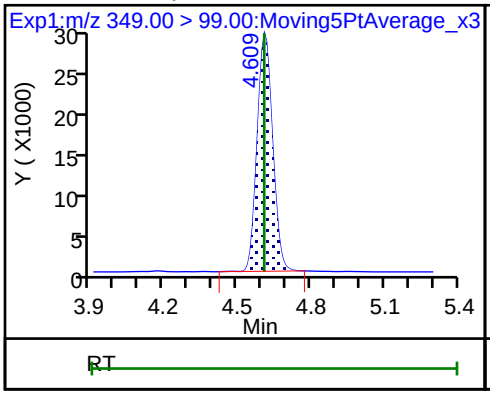
D 9 13C5 PFHxA



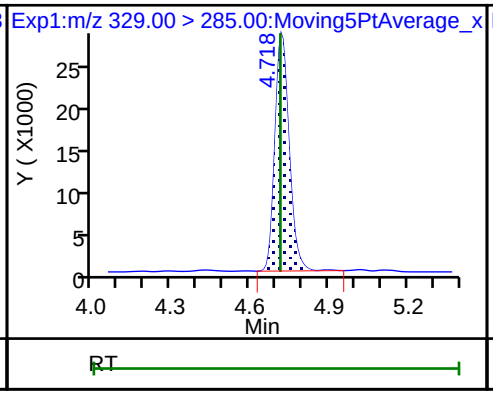
11 Perfluoropentanesulfonic acid



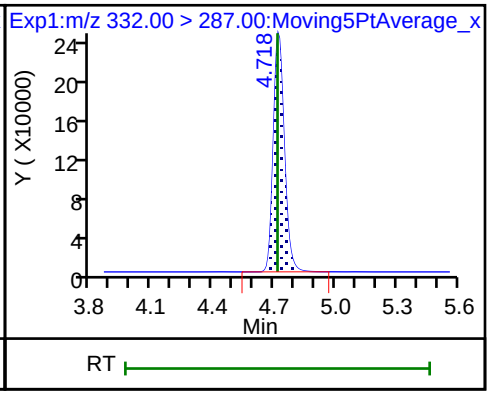
11 Perfluoropentanesulfonic acid



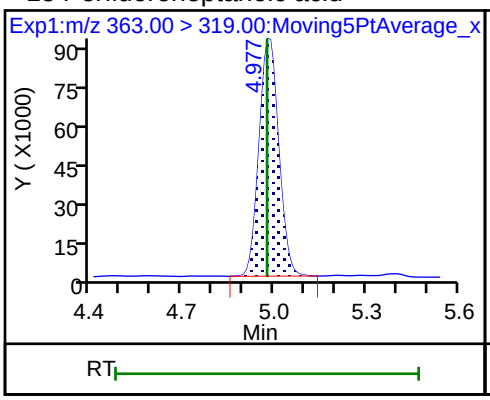
12 HFPO-DA



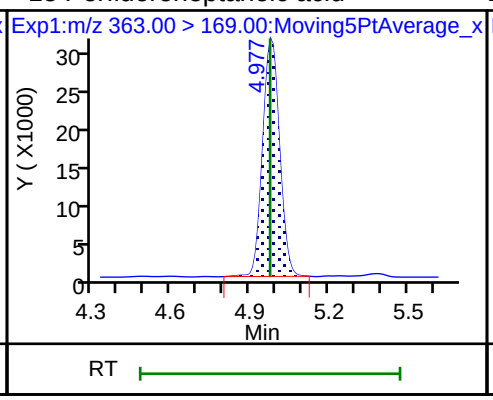
D 13 13C3 HFPO-DA



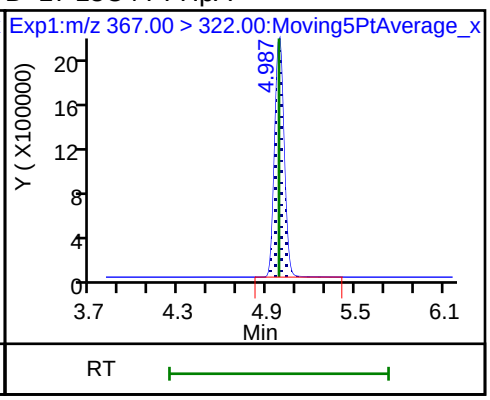
15 Perfluoroheptanoic acid



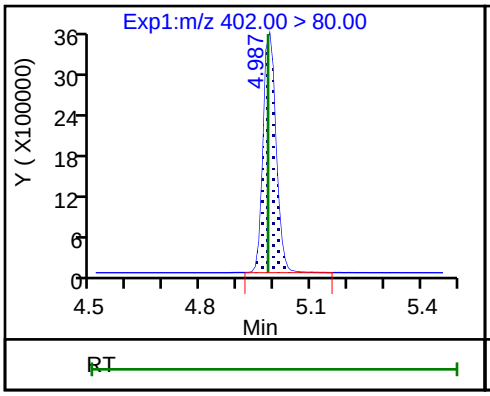
15 Perfluoroheptanoic acid



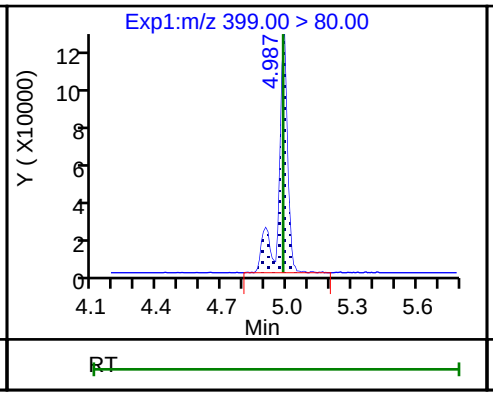
D 17 13C4 PFHpA



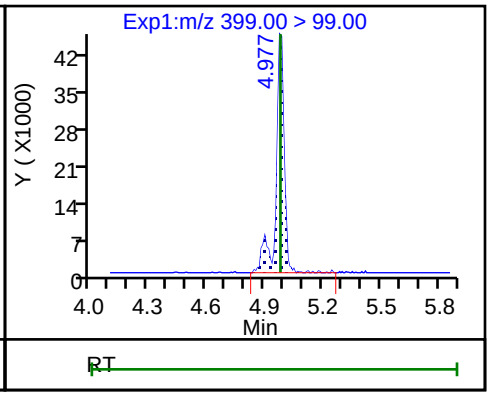
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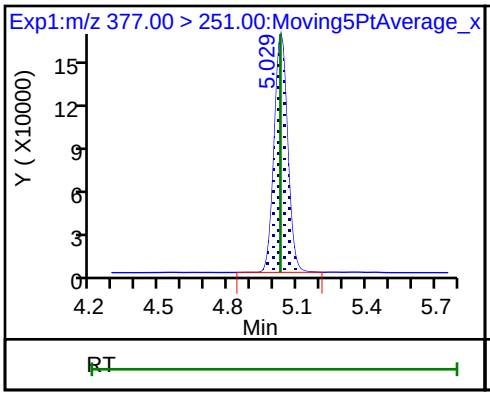
14 Perfluorohexanesulfonic acid



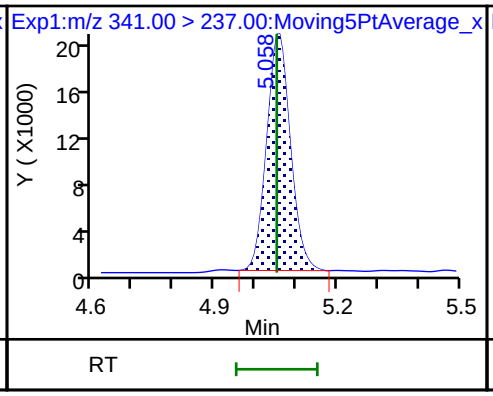
14 Perfluorohexanesulfonic acid



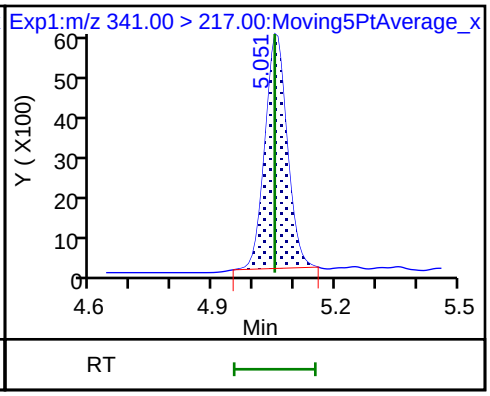
18 DONA



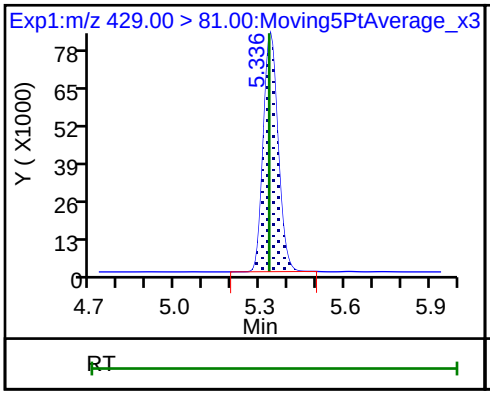
62 5:3 FTCA



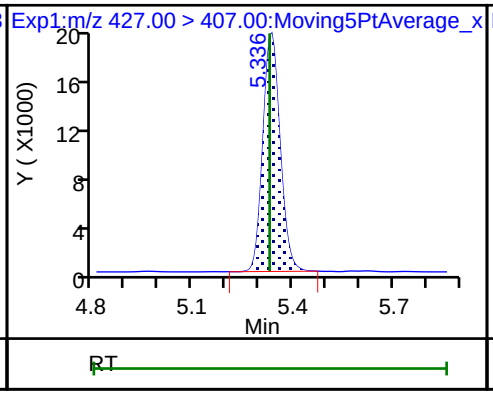
62 5:3 FTCA



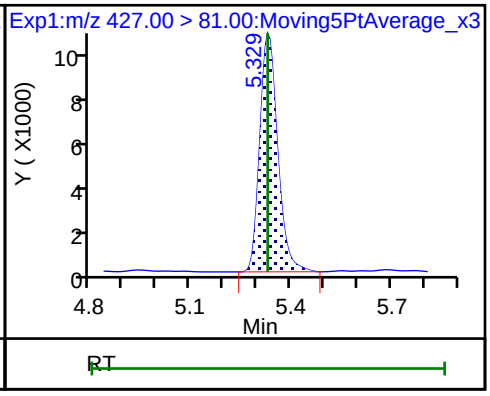
D 20 M2-6:2 FTS



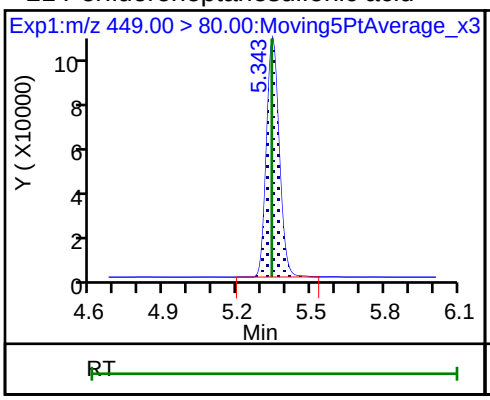
19 6:2 FTS



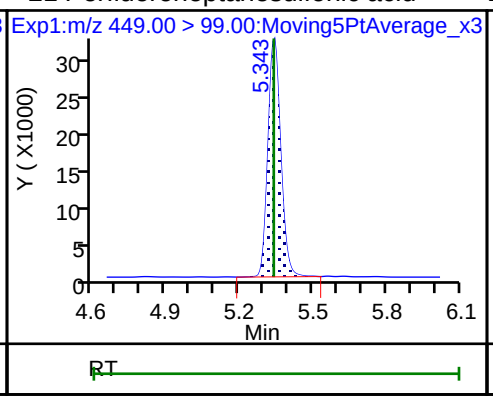
19 6:2 FTS



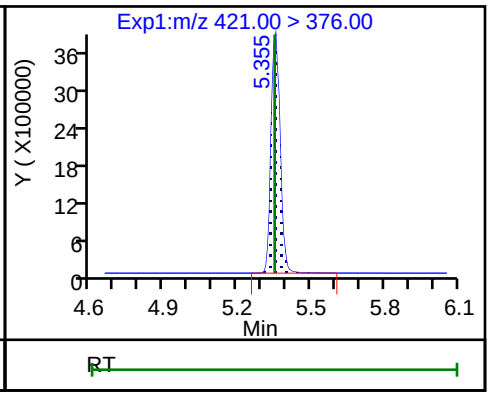
21 Perfluoroheptanesulfonic acid



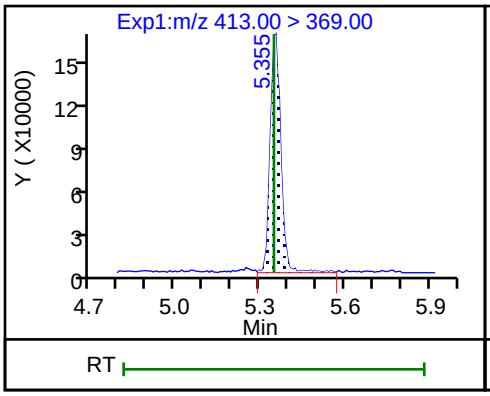
21 Perfluoroheptanesulfonic acid



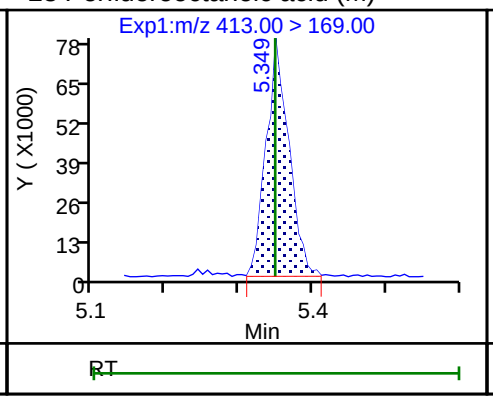
D 22 13C8 PFOA



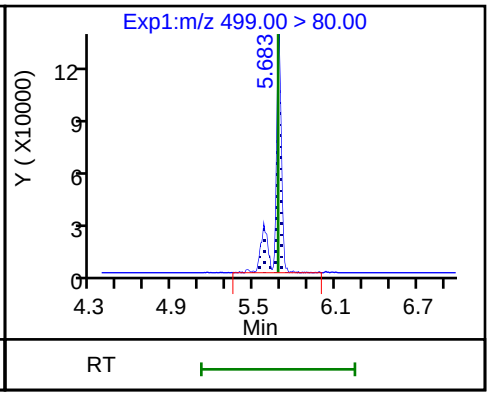
23 Perfluorooctanoic acid



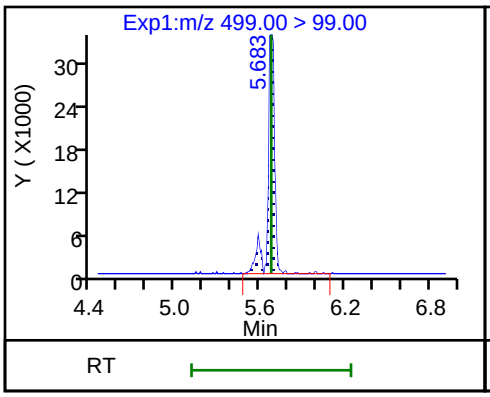
23 Perfluorooctanoic acid (M)



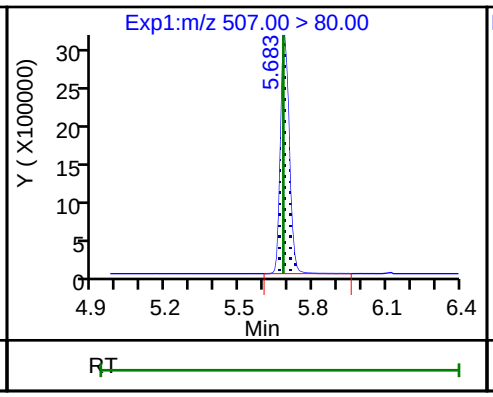
24 Perfluorooctanesulfonic acid



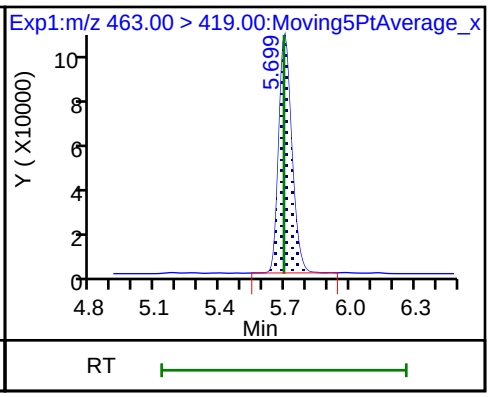
24 Perfluorooctanesulfonic acid



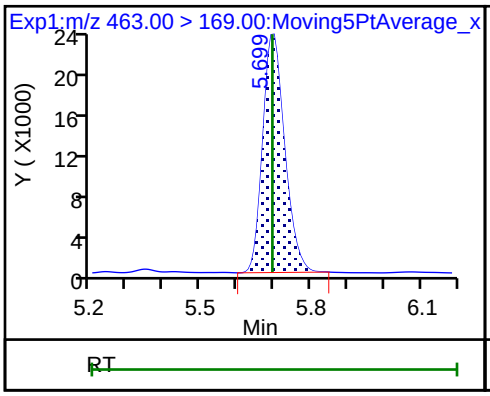
D 25 13C8 PFOS



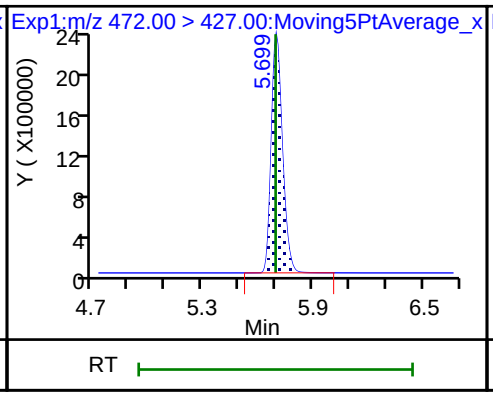
26 Perfluorononanoic acid



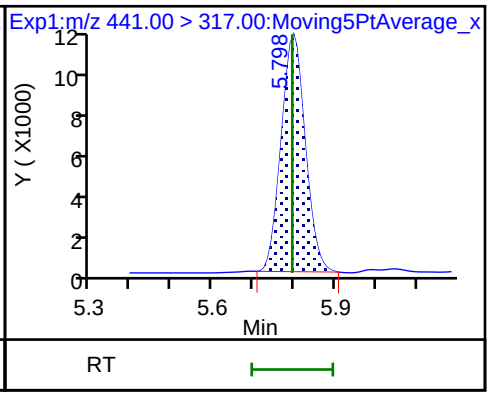
26 Perfluorononanoic acid



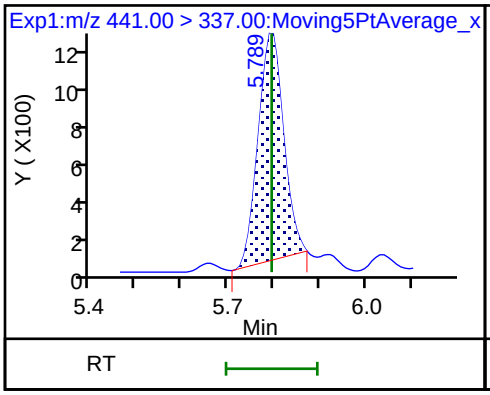
D 27 13C9 PFNA



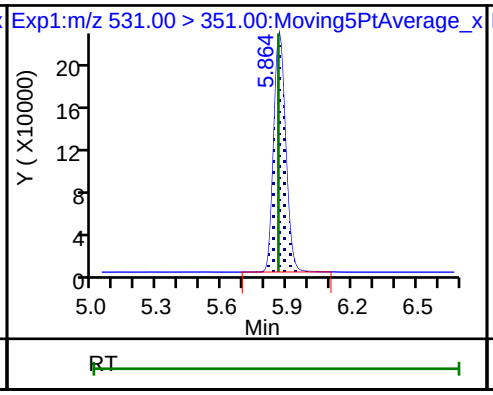
66 7:3 FTCA



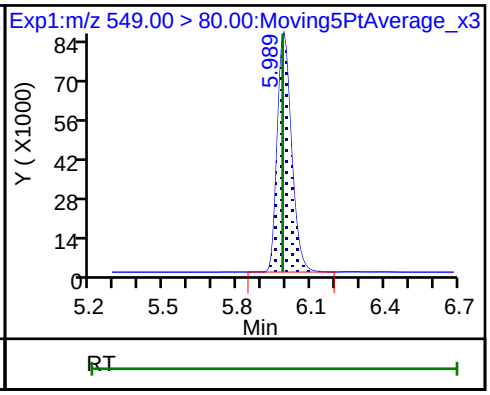
66 7:3 FTCA



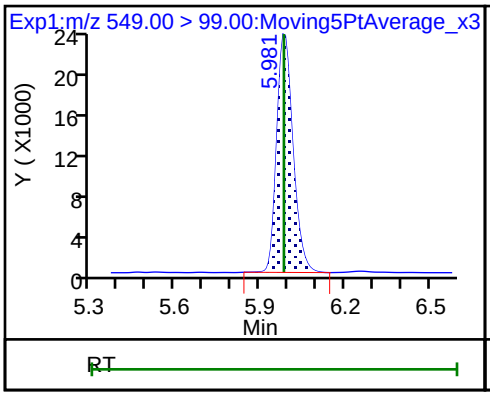
28 9ClFOS



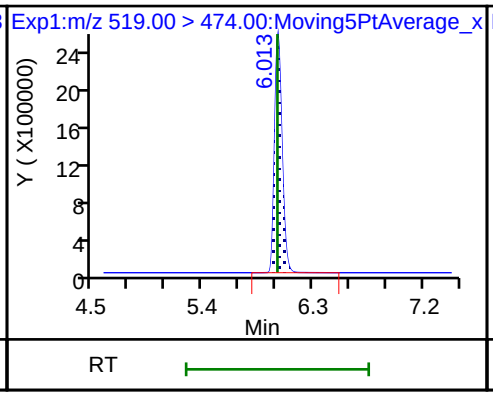
29 Perfluorononanesulfonic acid



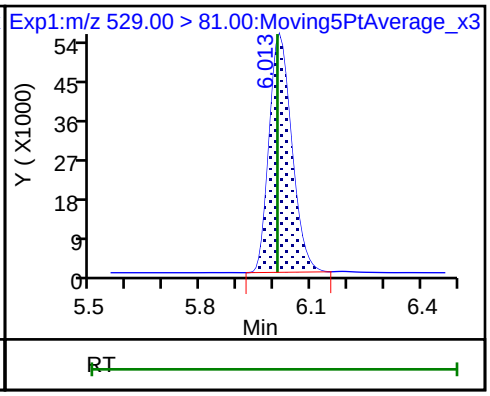
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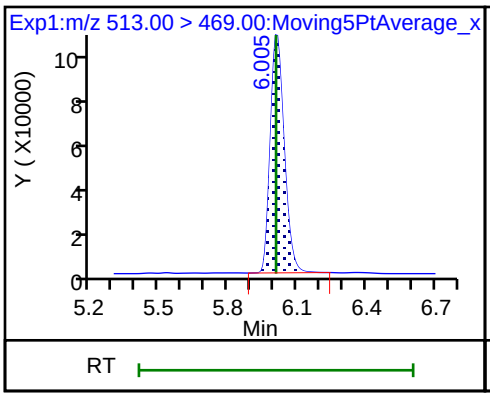
D 32 13C6 PFDA



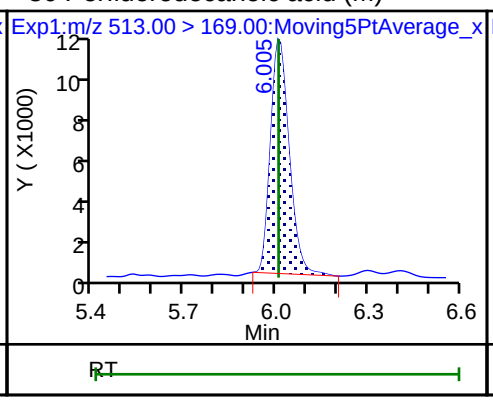
D 31 M2-8:2 FTS



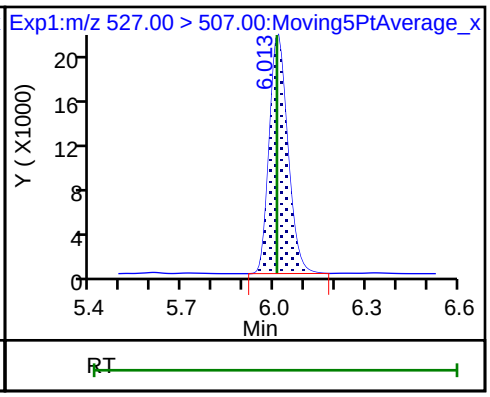
30 Perfluorodecanoic acid



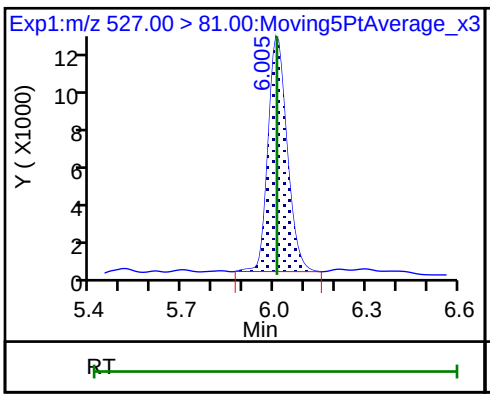
30 Perfluorodecanoic acid (M)



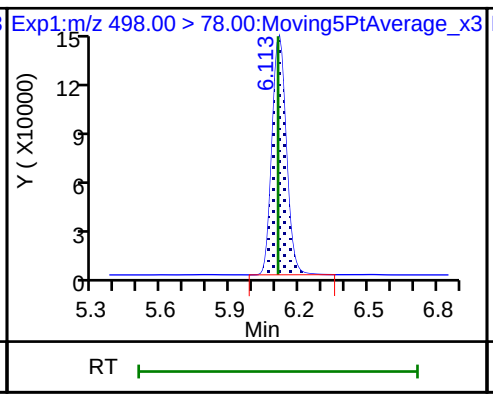
33 8:2 FTS



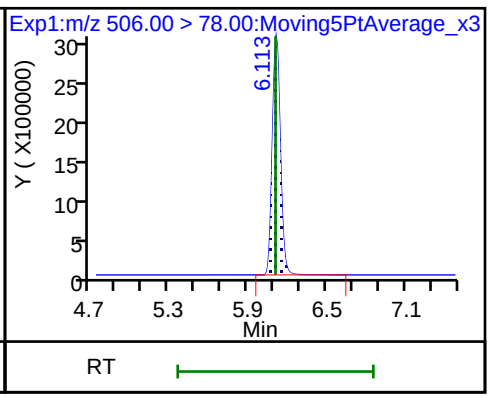
33 8:2 FTS



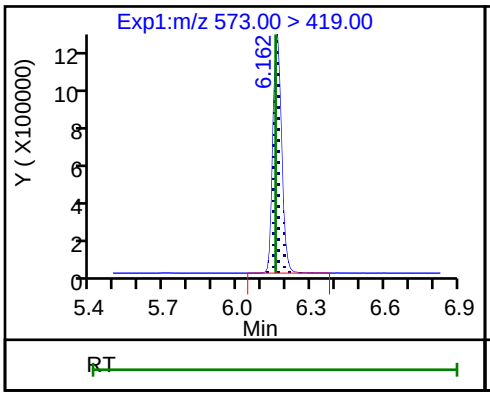
34 Perfluorooctanesulfonamide



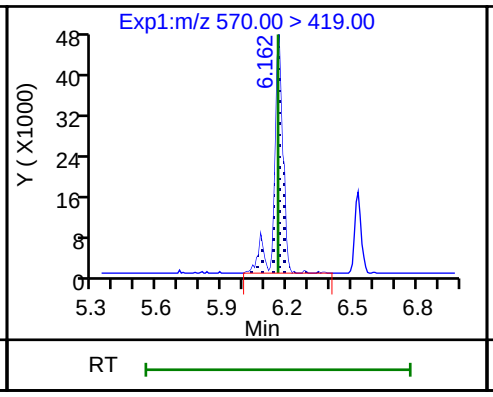
D 35 13C8 FOSA



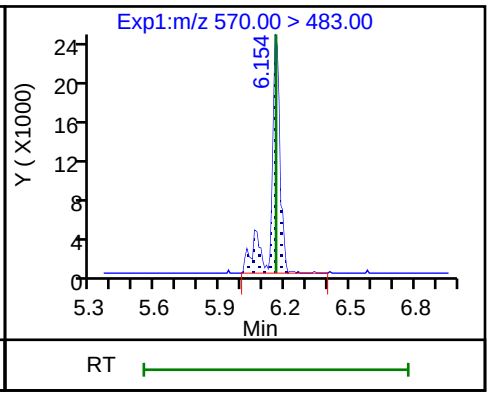
D 37 d3-NMeFOSAA



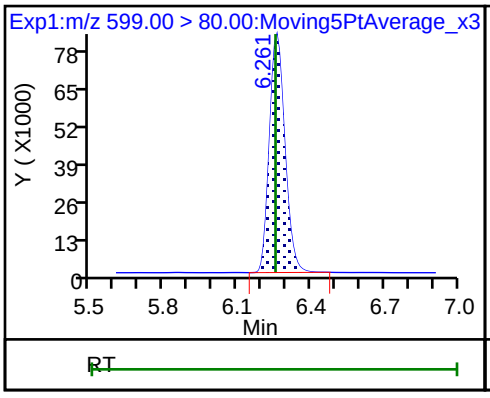
36 NMeFOSAA



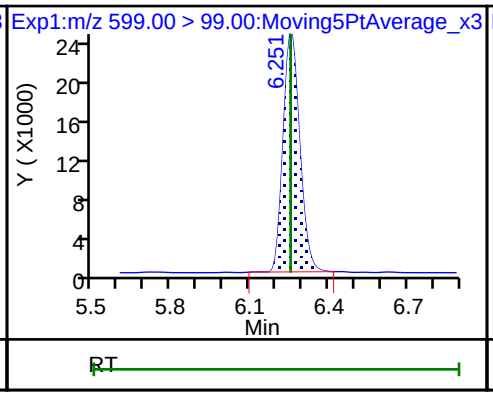
36 NMeFOSAA



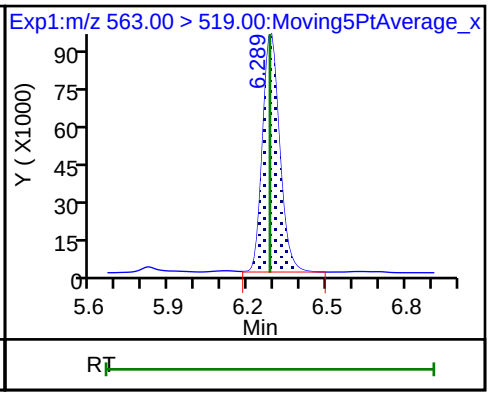
38 Perfluorodecanesulfonic acid



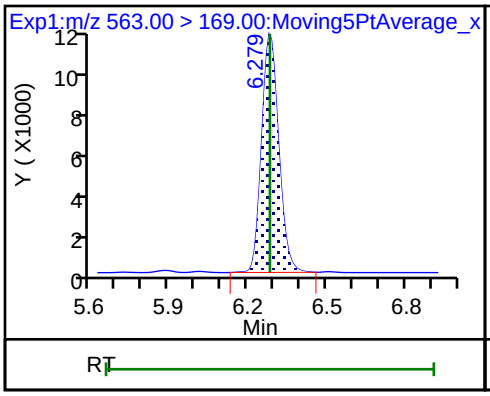
38 Perfluorodecanesulfonic acid



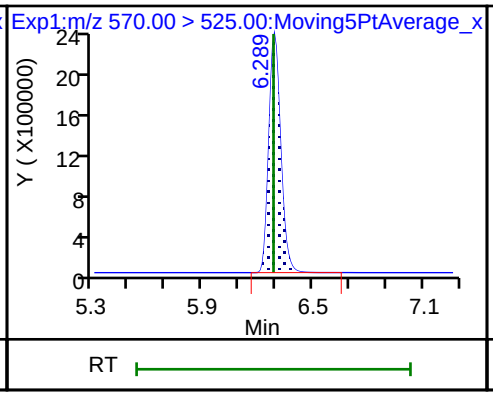
39 Perfluoroundecanoic acid



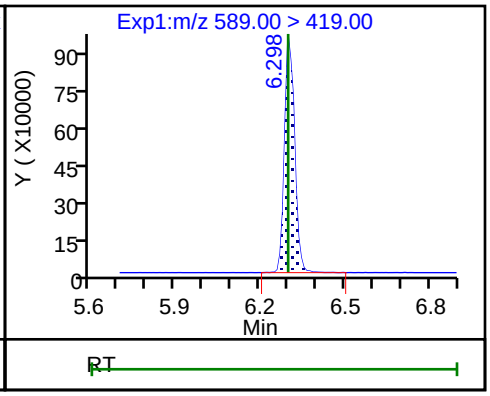
39 Perfluoroundecanoic acid



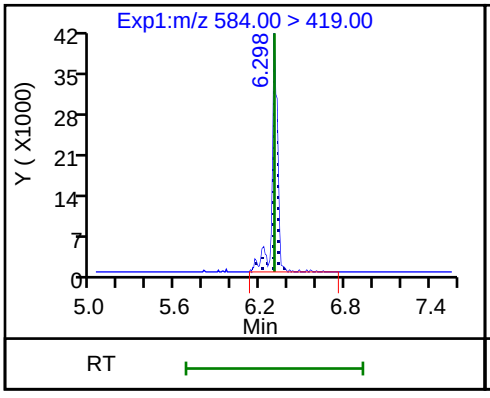
D 40 13C7 PFUnA



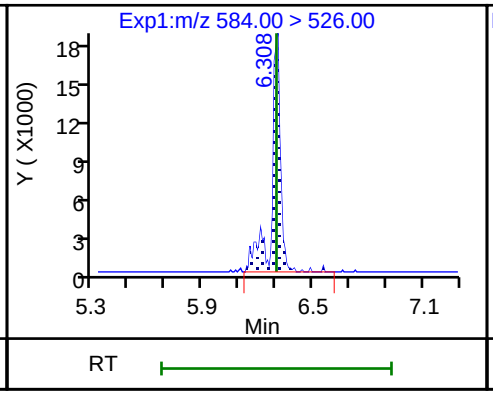
D 41 d5-NEtFOSAA



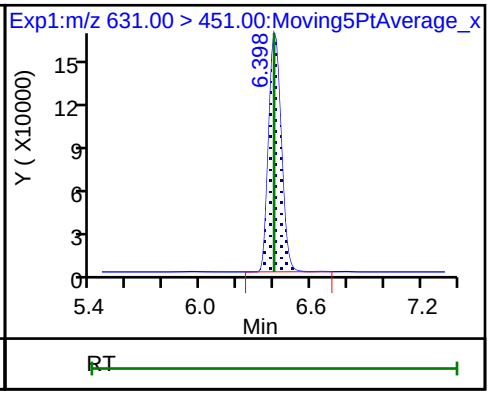
42 NEtFOSAA



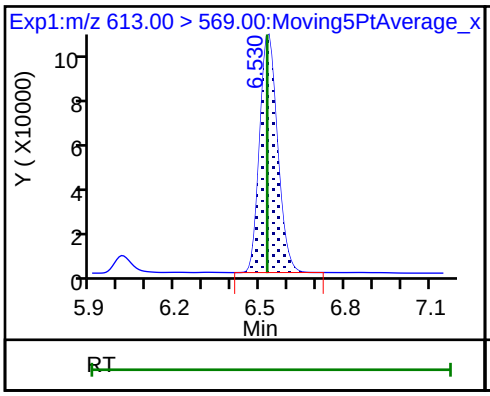
42 NEtFOSAA



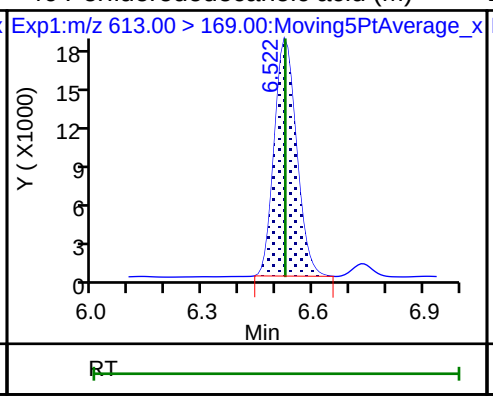
43 11ClFOS



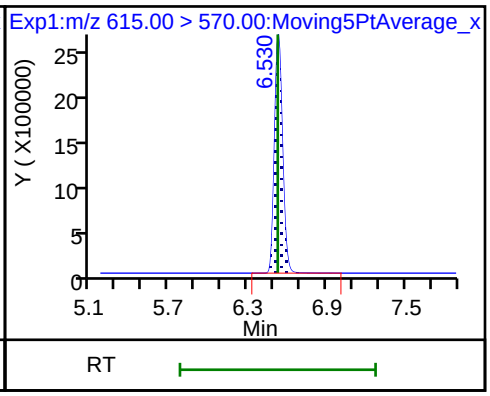
46 Perfluorododecanoic acid



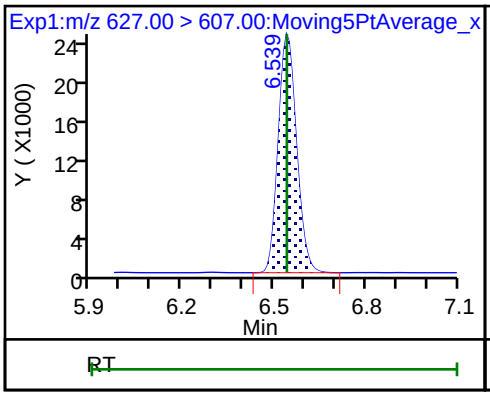
46 Perfluorododecanoic acid (M)



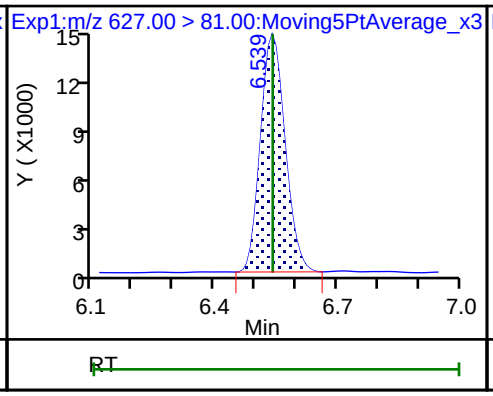
D 45 13C2-PFDoDA



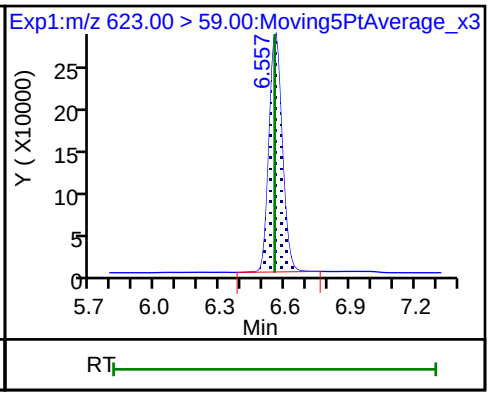
48 10:2 FTS



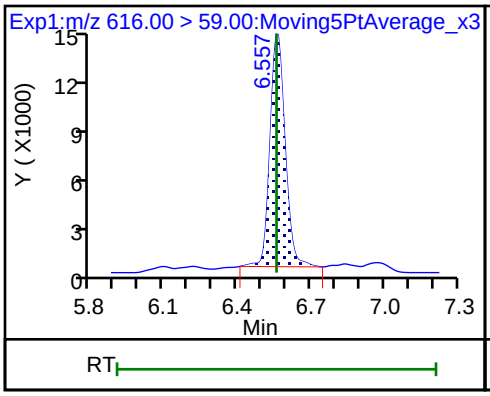
48 10:2 FTS



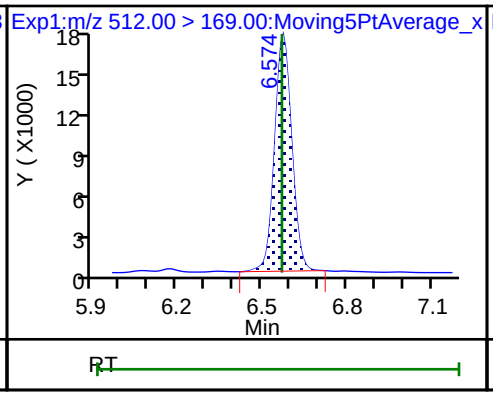
D 44 d7-N-MeFOSE-M



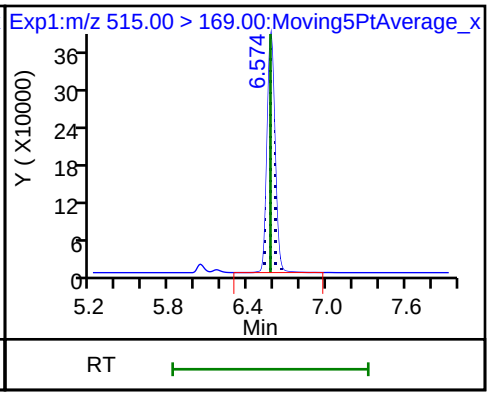
47 N-MeFOSE-M



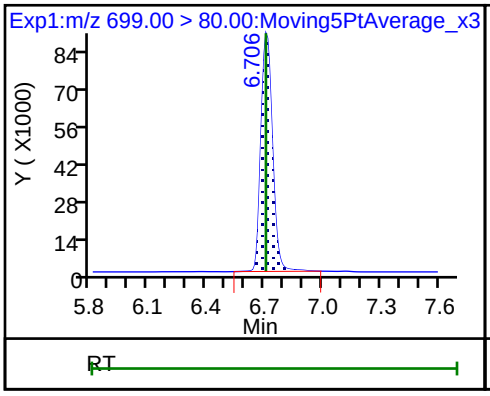
50 NMeFOSA



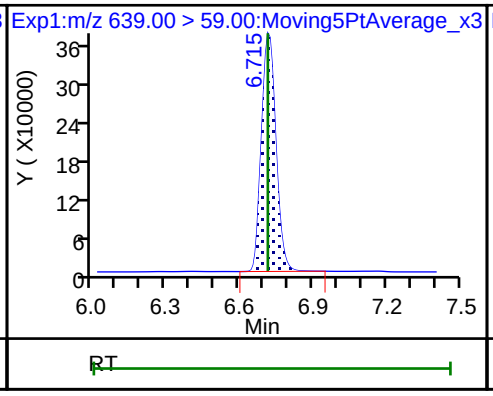
D 49 d3-NMePFOSA



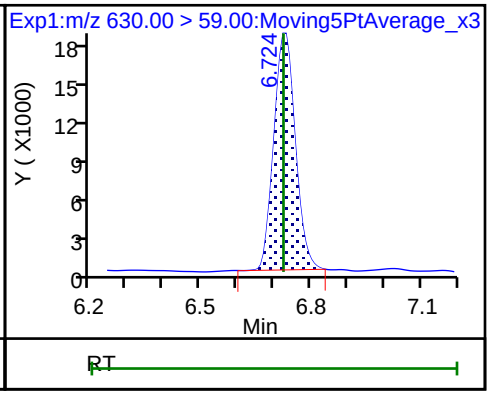
53 PFDoS



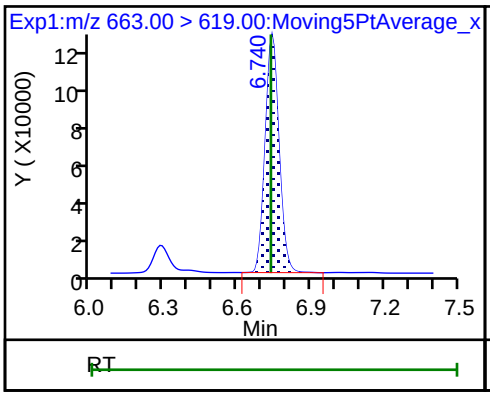
D 51 d9-N-EtFOSE-M



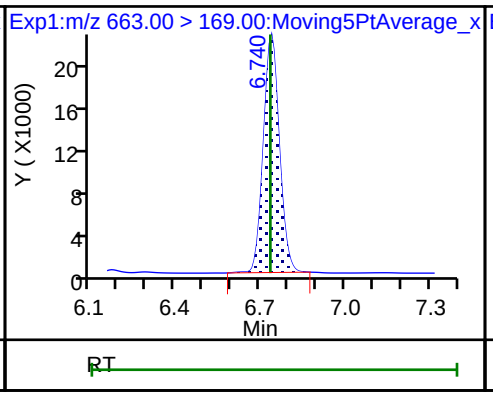
52 N-EtFOSE-M



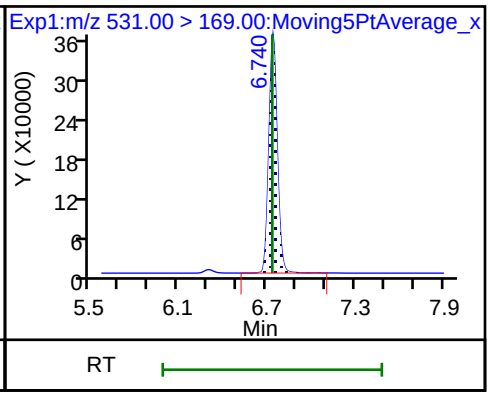
56 Perfluorotridecanoic acid



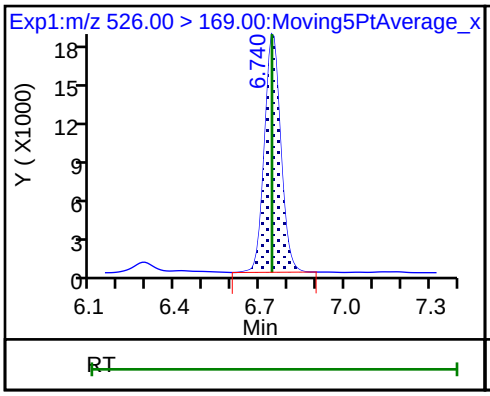
56 Perfluorotridecanoic acid



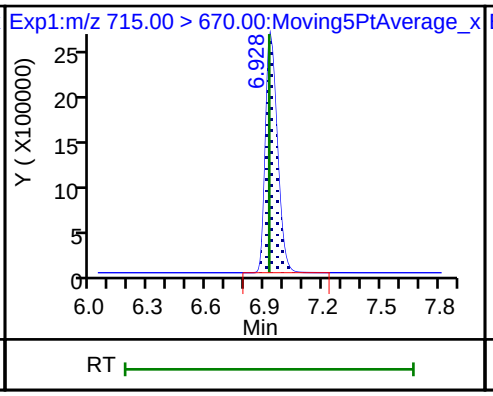
D 54 d5-NEtPFOSA



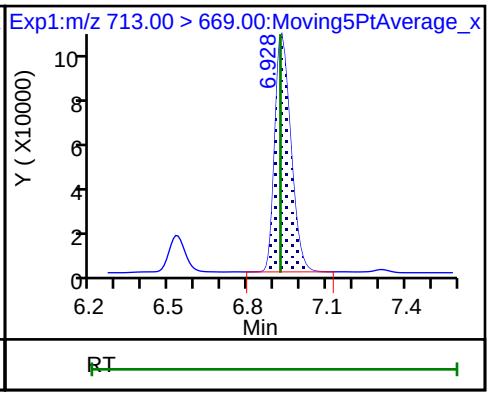
55 N-EtFOSA-M



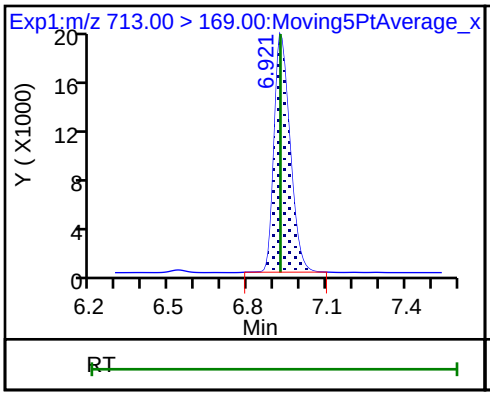
D 58 13C2 PFTeDA



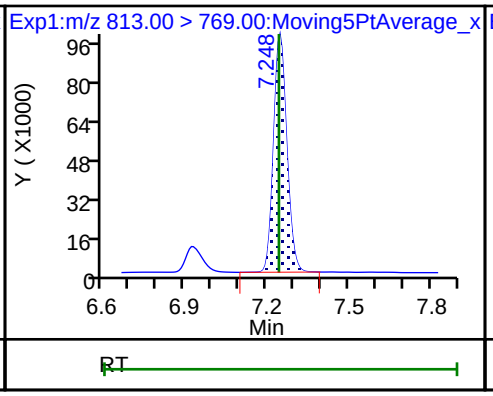
57 Perfluorotetradecanoic acid



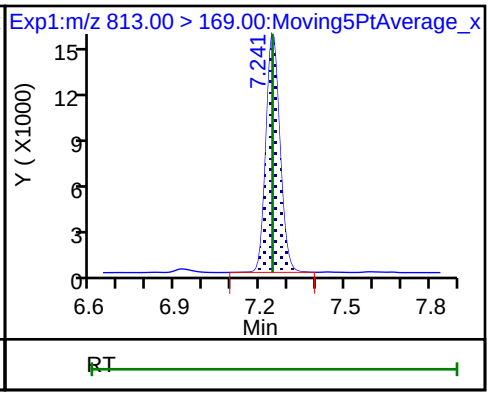
57 Perfluorotetradecanoic acid



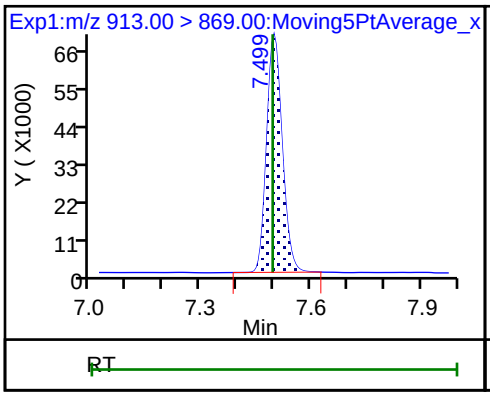
59 Perfluorohexadecanoic acid



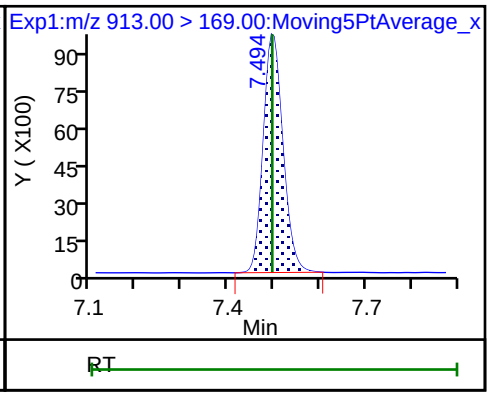
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

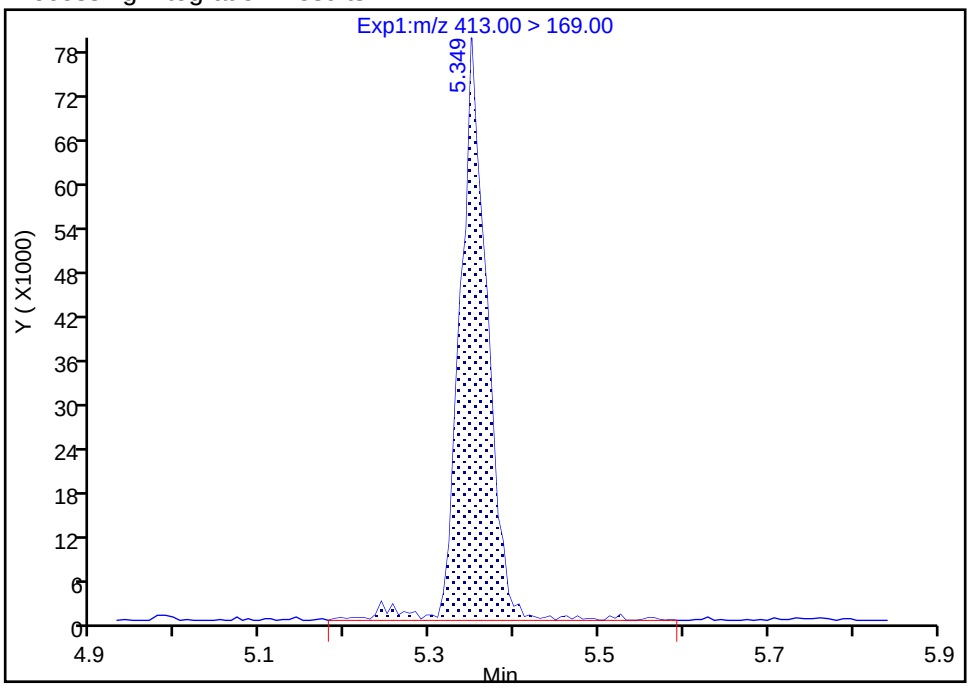
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-20.d				
Injection Date:	07-Apr-2022 10:02:35	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

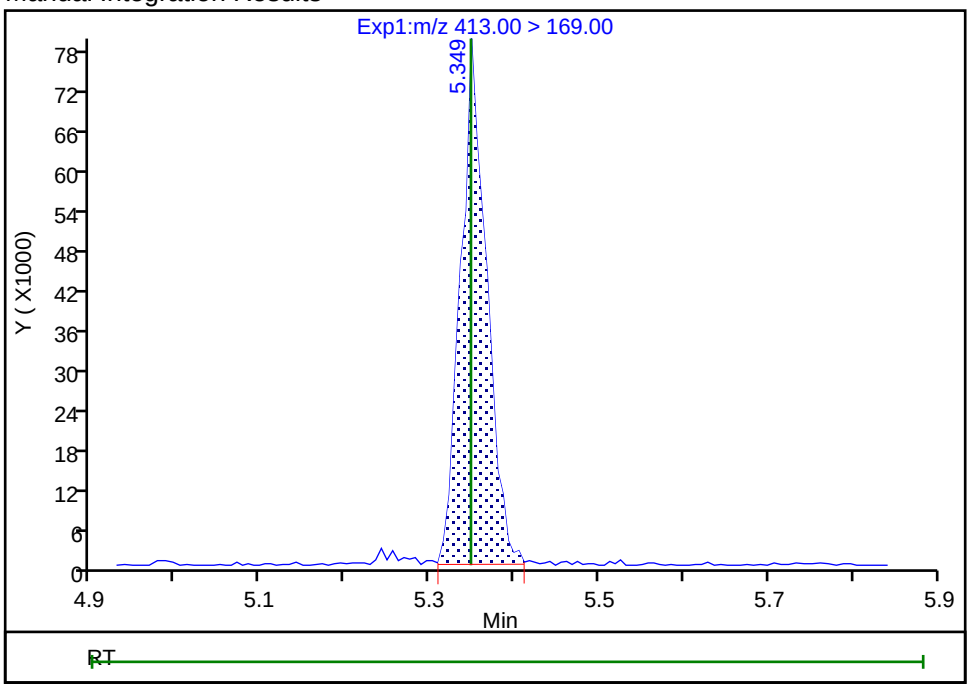
Processing Integration Results

RT: 5.35
Area: 178104
Amount: 0.492896
Amount Units: ng/ml



Manual Integration Results

RT: 5.35
Area: 168752
Amount: 0.502943
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:19:52

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

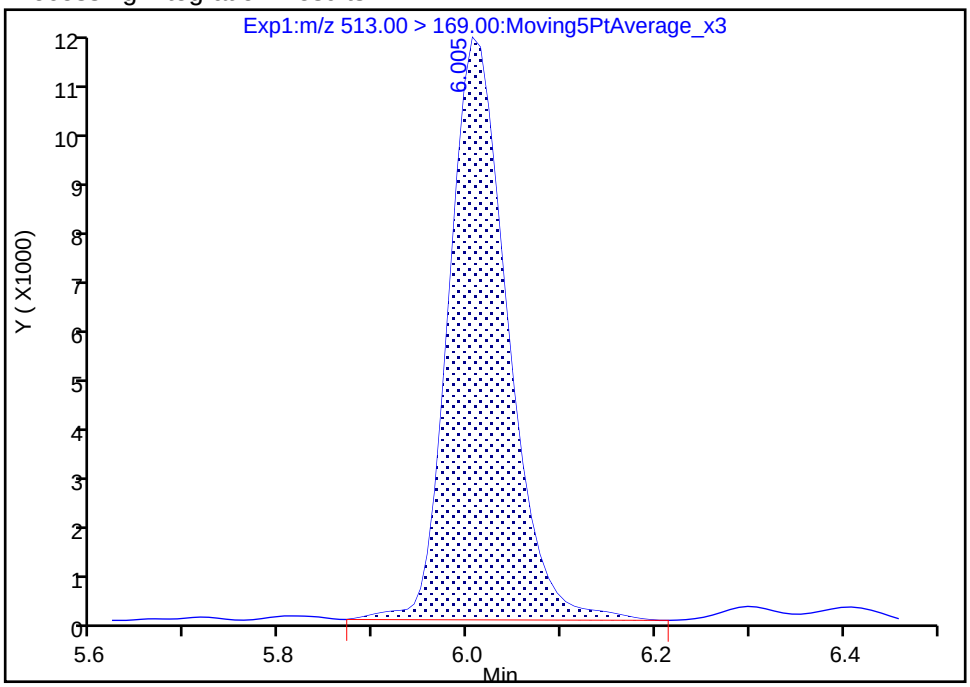
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Injection Date:	07-Apr-2022 10:02:35	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

30 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 2

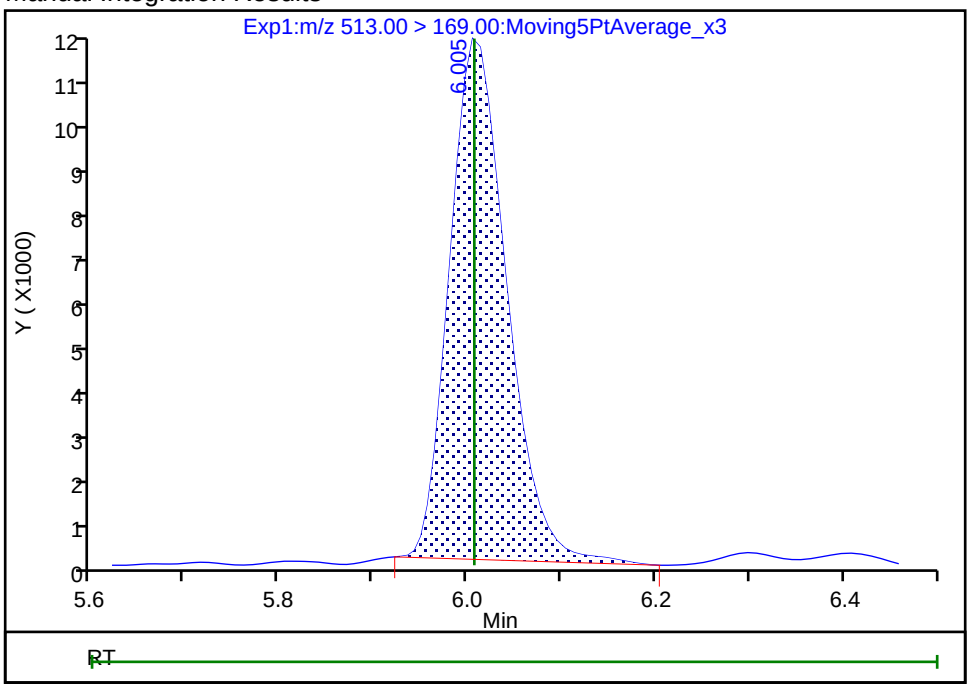
Processing Integration Results

RT: 6.01
Area: 48819
Amount: 0.495513
Amount Units: ng/ml



Manual Integration Results

RT: 6.01
Area: 47163
Amount: 0.486180
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:20:03

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

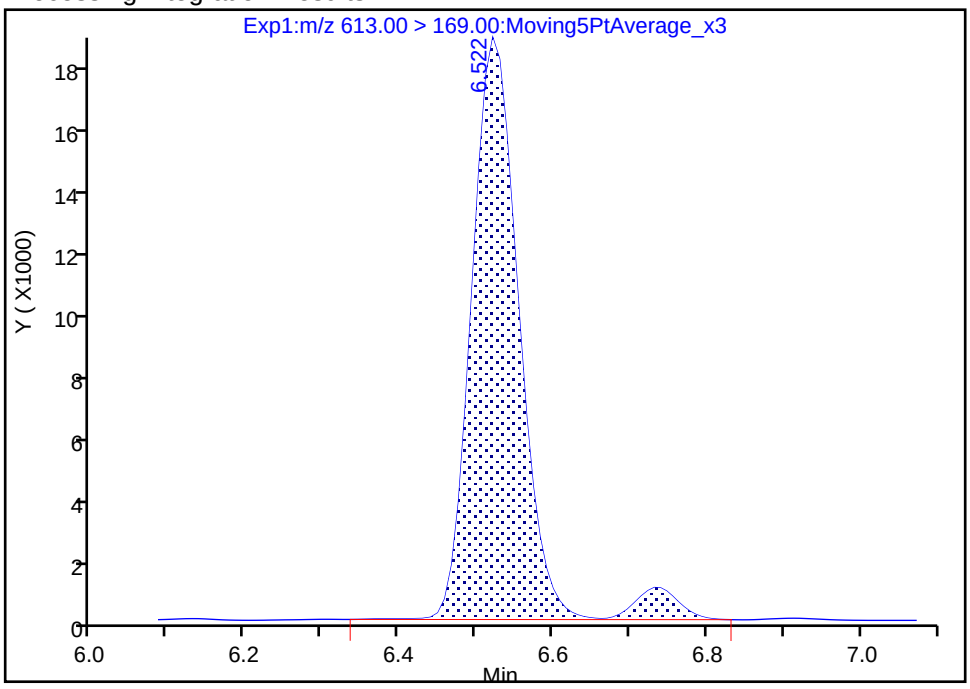
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Injection Date:	07-Apr-2022 10:02:35	Instrument ID:	29347		
Lims ID:	IC CAL 2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

46 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 2

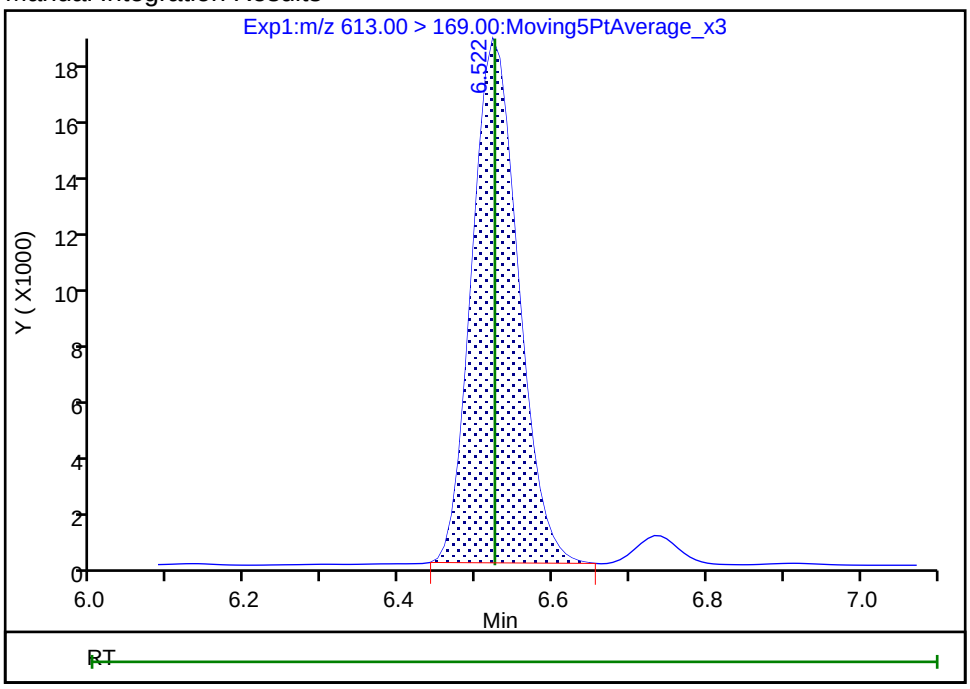
Processing Integration Results

RT: 6.52
Area: 83699
Amount: 0.472628
Amount Units: ng/ml



Manual Integration Results

RT: 6.52
Area: 78789
Amount: 0.484591
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:20:21

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-21.d
Lims ID: ICIS CAL 3
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 07-Apr-2022 10:13:08 ALS Bottle#: 20004 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICIS CAL 3
Misc. Info.: Plate: 1 Rack: 1 410-0054309-003
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:43:42 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 10:30:01
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 2 13C4 PFBA										
217.00 > 172.00	3.656	3.659	-0.003		8960747	11.1		111	132752	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.659	-0.003	1.000	1504143	2.04		102	2811	
63 PFECA F										
229.00 > 85.00	3.891	3.891	0.0	0.931	1176895	1.95		97.3	9308	
67 3:3 FTCA										
241.00 > 177.00	4.166	4.170	-0.004	0.997	87022	1.93	Target=1.31	96.7	4638	
241.00 > 117.00	4.166	4.170	-0.004	0.997	64609		1.35(0.66-1.97)	96.7	2194	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.180	4.178	0.002	1.000	1495432	1.91		95.6	6499	
D 4 13C5 PFPeA										
268.00 > 223.00	4.180	4.181	-0.001		7474328	10.8		108	75272	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.232	4.231	0.001	1.000	1675796	1.79	Target=2.86	101	2069	
299.00 > 99.00	4.232	4.231	0.001	1.000	575673		2.91(1.43-4.29)	101	1898	
D 6 13C3 PFBS										
302.00 > 80.00	4.232	4.235	-0.003		9104139	9.87		106	480628	
64 PFECA A										
279.00 > 85.00	4.301	4.301	0.0	1.029	1166831	1.94		97.2	24811	
65 PES										
315.00 > 135.00	4.389	4.394	-0.005	0.956	5641043	1.81	Target=14.03	102	125834	
315.00 > 83.00	4.389	4.394	-0.005	0.956	373603		15.10(7.01-21.04)	102	482	
68 PFECA B										
295.00 > 201.00	4.511	4.514	-0.003	0.983	505910	1.93		96.3	15907	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.541	4.546	-0.005	0.998	330237	1.84	Target=1.58	98.5	23798	
327.00 > 81.00	4.541	4.546	-0.005	0.998	194909		1.69(0.79-2.36)	98.5	5141	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.550	4.549	0.001		437049	10.0		107	13630	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.580	4.586	-0.006	0.998	1547486	2.01	Target=13.65	101	14006	
313.00 > 119.00	4.580	4.586	-0.006	0.998	110283		14.03(6.82-20.47)	101	4034	
D 9 13C5 PFHxA										
318.00 > 273.00	4.590	4.587	0.003		9010958	11.3		113	152870	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.609	4.608	0.001	1.089	1701067	1.94	Target=3.02	103	76924	
349.00 > 99.00	4.600	4.608	-0.008	1.087	542590		3.14(1.51-4.53)	103	20392	
12 HFPO-DA										
329.00 > 285.00	4.711	4.715	-0.004	1.000	430758	2.01		101	16332	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.711	4.715	-0.004		872757	10.1		101	46034	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.979	4.976	0.003	1.000	1770456	2.00	Target=3.04	100	14193	
363.00 > 169.00	4.970	4.976	-0.006	0.998	580409		3.05(1.52-4.56)	100	10798	
D 17 13C4 PFHpA										
367.00 > 322.00	4.979	4.981	-0.002		9244334	11.0		110	210152	
D 16 13C3 PFHxS										
402.00 > 80.00	4.979	4.983	-0.004		8516938	10.3		109	884551	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.979	4.981	-0.002	1.000	1610517	1.84	Target=2.99	101	275888	
399.00 > 99.00	4.970	4.981	-0.011	0.998	532336		3.03(1.50-4.49)	101	179202	
18 DONA										
377.00 > 251.00	5.023	5.026	-0.003	1.009	2996180	2.00		106	67689	
62 5:3 FTCA										
341.00 > 237.00	5.052	5.051	0.001	1.101	350975	1.97	Target=3.41	98.6	5971	
341.00 > 217.00	5.045	5.051	-0.006	1.099	109160		3.22(1.70-5.11)	98.6	3076	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.330	5.332	-0.002		284350	9.78		103	19257	
19 6:2 FTS										
427.00 > 407.00	5.330	5.330	0.0	1.000	296252	1.88	Target=1.71	99.2	20088	
427.00 > 81.00	5.330	5.330	0.0	1.000	175140		1.69(0.85-2.56)	99.2	9479	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.339	-0.002	1.072	1643131	1.89	Target=3.21	99.0	65726	
449.00 > 99.00	5.337	5.339	-0.002	1.072	497341		3.30(1.60-4.81)	99.0	27917	
D 22 13C8 PFOA										
421.00 > 376.00	5.350	5.351	-0.001		9763718	10.7		107	969276	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.343	5.348	-0.005	0.999	1792981	2.04	Target=2.40	102	54576	
413.00 > 169.00	5.350	5.348	0.002	1.000	723158		2.48(1.20-3.60)	102	71892	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.676	5.677	-0.001	1.000	1648058	1.78	Target=3.65	96.3	2289	
499.00 > 99.00	5.668	5.677	-0.009	0.999	452383		3.64(1.83-5.48)	96.3	948	
D 25 13C8 PFOS										
507.00 > 80.00	5.676	5.679	-0.003		7947303	10.7		111	528760	
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.694	-0.002	1.000	1783533	1.94	Target=4.51	97.1	22748	
463.00 > 169.00	5.692	5.694	-0.002	1.000	389666		4.58(2.25-6.76)	97.1	11799	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.696	-0.004		10193604	10.9		109	274250	
66 7:3 FTCA										
441.00 > 317.00	5.790	5.794	-0.004	1.261	185672	1.97	Target=10.25	98.3	7297	
441.00 > 337.00	5.790	5.794	-0.004	1.261	15588		11.91(5.12-15.37)	98.3	756	
28 9ClFOS										
531.00 > 351.00	5.857	5.859	-0.002	1.032	3696867	1.90		102	163261	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.984	-0.003	1.054	1494206	1.92	Target=3.43	100.0	53799	
549.00 > 99.00	5.981	5.984	-0.003	1.054	420575		3.55(1.72-5.15)	100.0	21422	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.006	6.007	-0.001	1.000	1889558	2.00	Target=8.86	99.9	45295	
513.00 > 169.00	5.998	6.007	-0.009	0.999	211914		8.92(4.43-13.29)	99.9	4606	
D 32 13C6 PFDA										
519.00 > 474.00	6.006	6.008	-0.002		10920508	10.8		108	434474	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.008	-0.002		251855	10.4		108	19760	
33 8:2 FTS										
527.00 > 507.00	6.006	6.008	-0.002	1.000	381581	1.85	Target=1.91	96.5	22687	
527.00 > 81.00	6.006	6.008	-0.002	1.000	193008		1.98(0.96-2.87)	96.5	3303	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.105	6.107	-0.002	1.000	2722846	2.06		103	80087	
D 35 13C8 FOSA										
506.00 > 78.00	6.105	6.109	-0.004		12775409	10.3		103	135933	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.155	0.0		3074251	10.6		106	440478	
36 NMeFOSAA										M
570.00 > 419.00	6.155	6.157	-0.002	1.000	552103	2.06	Target=1.78	103	23857	
570.00 > 483.00	6.155	6.157	-0.002	1.000	312739		1.77(0.89-2.67)	103	738	M
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.252	6.255	-0.003	1.101	1644660	1.91	Target=3.62	98.9	53379	
599.00 > 99.00	6.252	6.255	-0.003	1.101	446148		3.69(1.81-5.43)	98.9	20348	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.280	6.283	-0.003	1.000	1909017	2.05	Target=8.28	103	11957	
563.00 > 169.00	6.280	6.283	-0.003	1.000	217959		8.76(4.14-12.42)	103	12160	
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.284	-0.004		11343158	11.0		110	195074	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.299	0.0		2364784	10.7		107	243603	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.299	6.300	-0.001	1.000	453829	2.04	Target=1.66	102	168363	
584.00 > 526.00	6.299	6.300	-0.001	1.000	273412		1.66(0.83-2.49)	102	382	
43 11ClFOS										
631.00 > 451.00	6.398	6.398	0.0	1.127	3214196	1.86		100	114466	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.521	6.524	-0.003	1.000	2000038	1.93	Target=5.73	96.3	7386	
613.00 > 169.00	6.521	6.524	-0.003	1.000	340740		5.87(2.87-8.60)	96.3	6203	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.521	6.526	-0.005		11787445	11.1		111	214205	
48 10:2 FTS										
627.00 > 607.00	6.539	6.541	-0.002	1.089	412006	1.76	Target=1.71	91.3	32223	
627.00 > 81.00	6.539	6.541	-0.002	1.089	251898		1.64(0.85-2.56)	91.3	8454	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.551	-0.003		1221723	10.5		105	6720	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.559	-0.002	1.001	254235	1.98		99.1	2754	
50 NMeFOSA										
512.00 > 169.00	6.566	6.570	-0.004	1.000	327911	1.97		98.3	5538	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.566	6.570	-0.004		1610387	10.3		103	4915	
53 PFDoS										
699.00 > 80.00	6.705	6.706	-0.001	1.181	1508216	1.84		95.2	46069	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.715	-0.001		1486996	10.6		106	9506	
52 N-EtFOSE-M										
630.00 > 59.00	6.724	6.725	-0.001	1.001	272034	1.93		96.7	3719	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.732	6.736	-0.004	1.032	2038083	1.96	Target=5.39	98.0	5466	
663.00 > 169.00	6.732	6.736	-0.004	1.032	358361		5.69(2.69-8.08)	98.0	14779	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.732	6.736	-0.004		1415957	10.1		101	9483	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.741	-0.001	1.001	324126	2.05		102	4785	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.923	-0.002		11488242	10.8		108	304229	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.923	-0.002	1.000	1979136	1.93	Target=5.85	96.7	3527	
713.00 > 169.00	6.921	6.923	-0.002	1.000	348769		5.67(2.93-8.78)	96.7	16952	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.243	-0.002	1.046	1341483	1.85	Target=6.08	92.5	4462	
813.00 > 169.00	7.241	7.243	-0.002	1.046	221260		6.06(3.04-9.13)	92.5	12958	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.495	-0.001	1.083	907502	1.89	Target=7.13	94.4	18114	
913.00 > 169.00	7.494	7.495	-0.001	1.083	128436		7.07(3.56-10.69)	94.4	8611	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD3_00015 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:43:44 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-21.d

Injection Date: 07-Apr-2022 10:13:08 Instrument ID: 29347

Lims ID: ICIS CAL 3

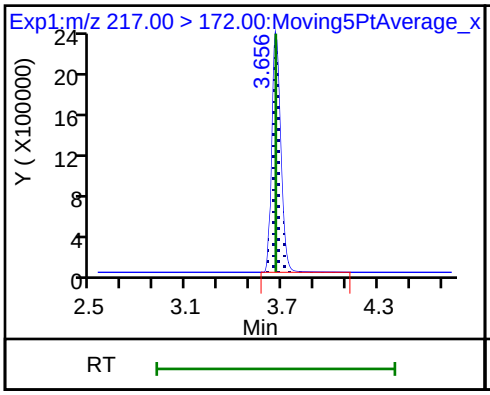
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20004 Worklist Smp#: 3

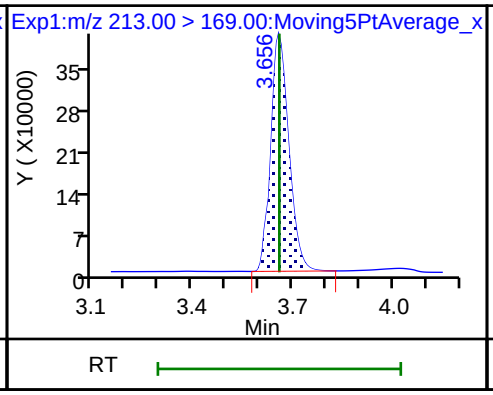
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

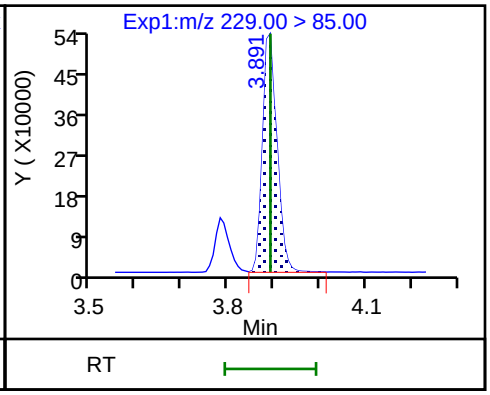
D 2 13C4 PFBA



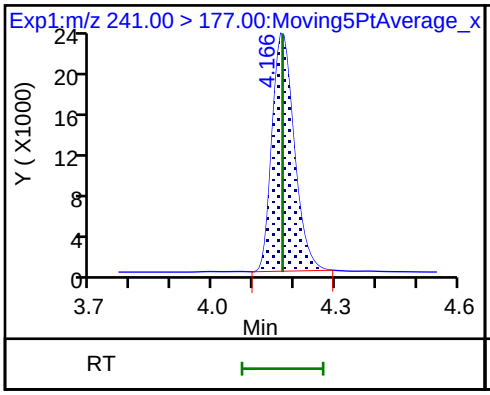
1 Perfluorobutanoic acid



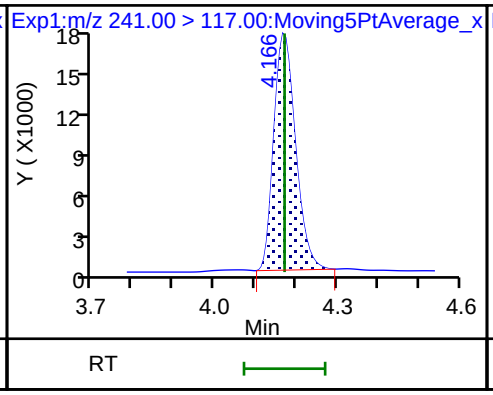
63 PFECA F



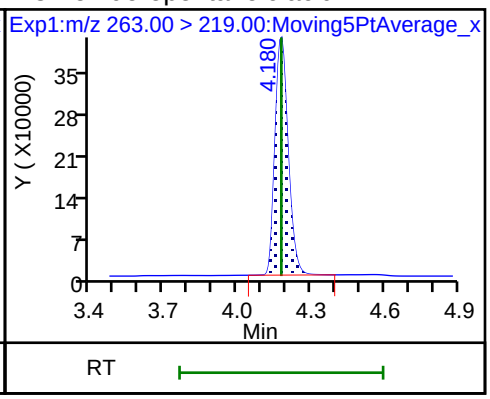
67 3:3 FTCA



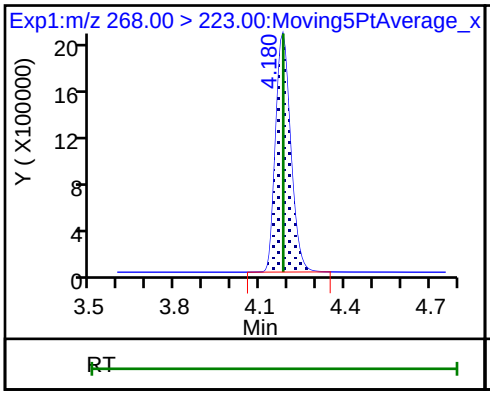
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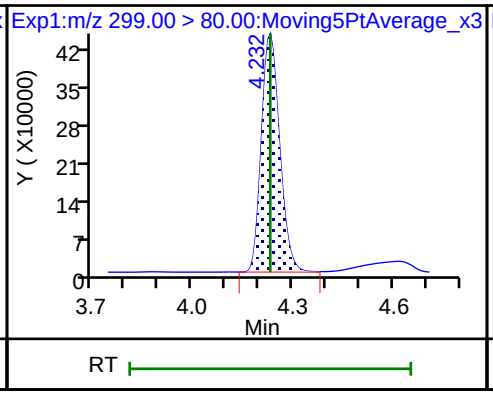
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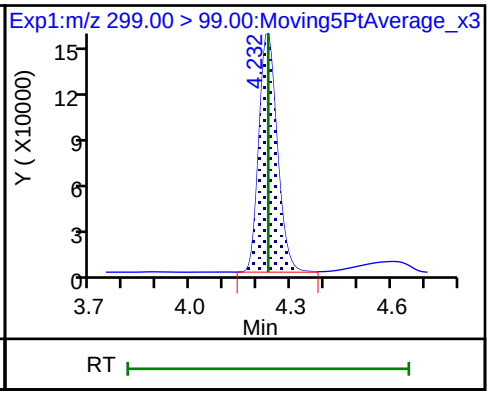
D 4 13C5 PFPeA



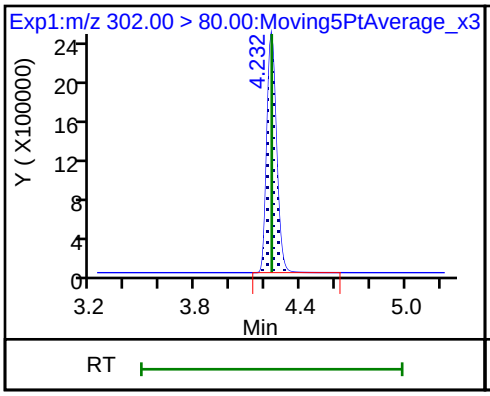
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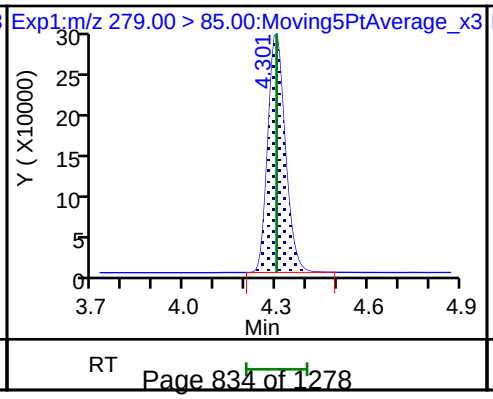
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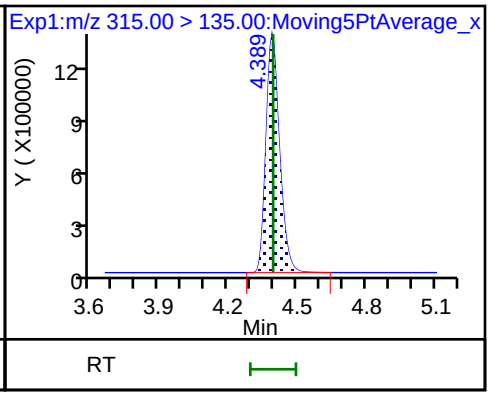
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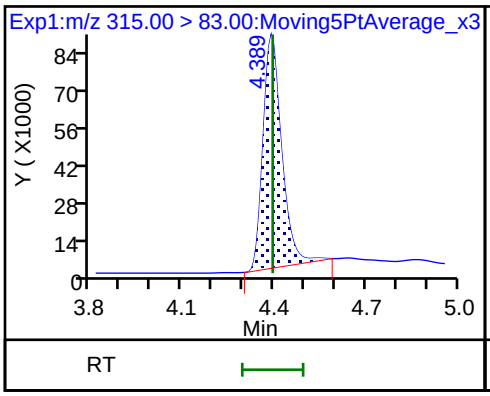
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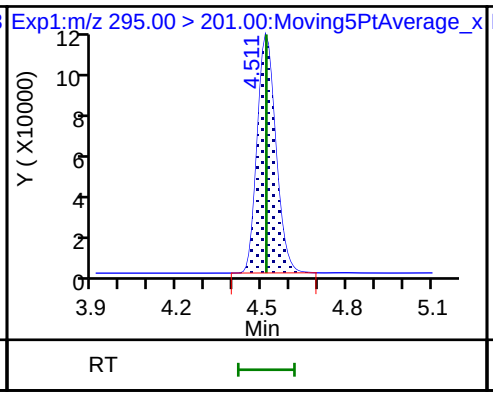
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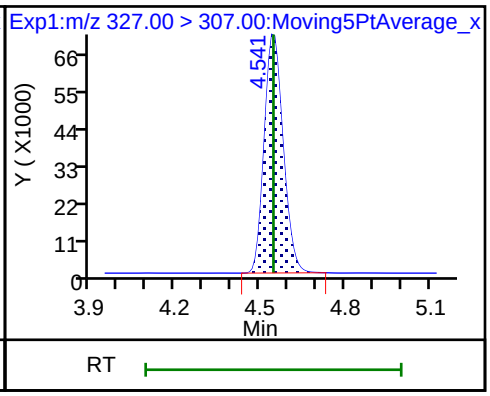
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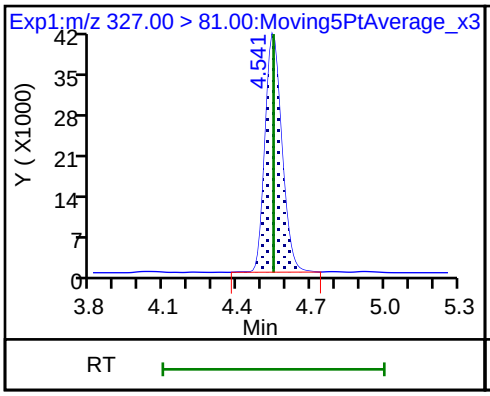
68 PFECA B



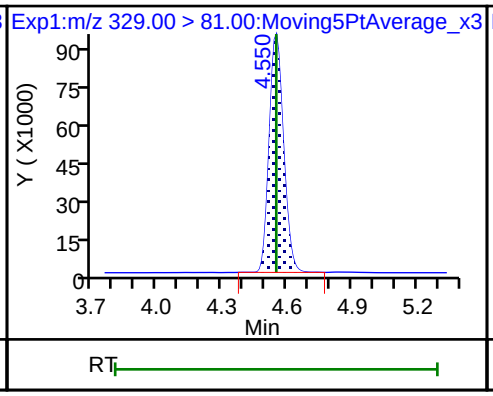
7 4:2 FTS



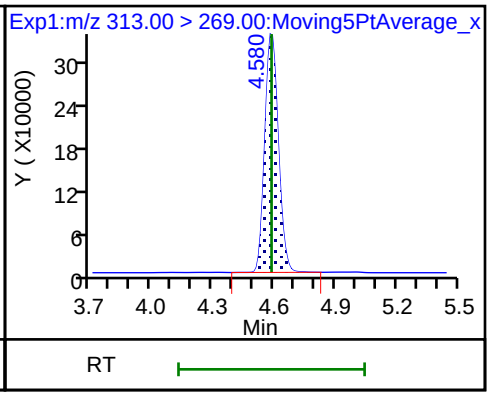
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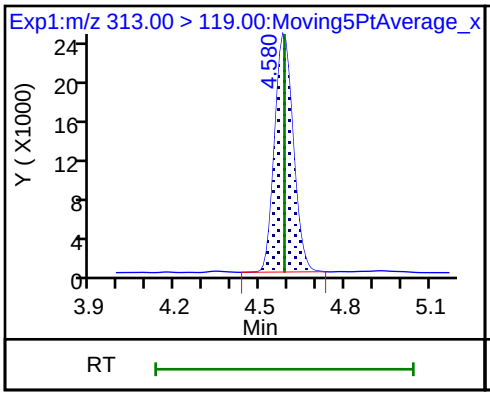
D 8 M2-4:2 FTS



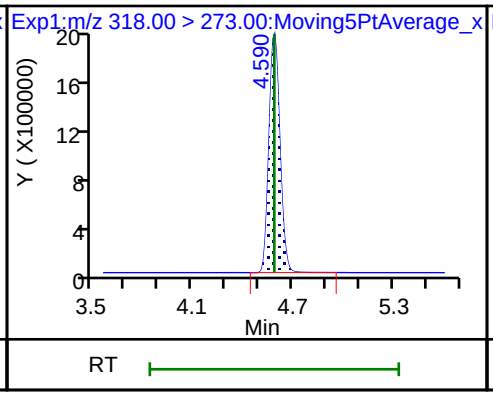
10 Perfluorohexanoic acid



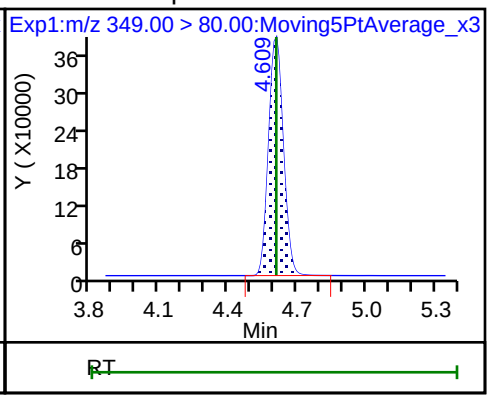
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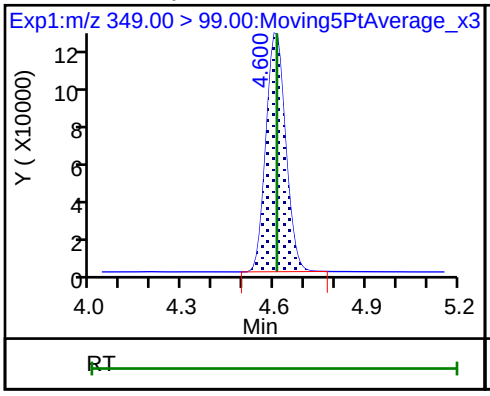
D 9 13C5 PFHxA



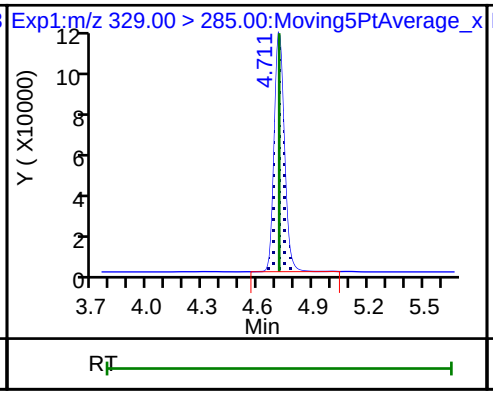
11 Perfluoropentanesulfonic acid



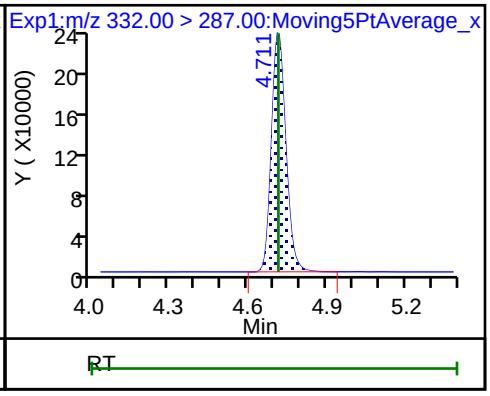
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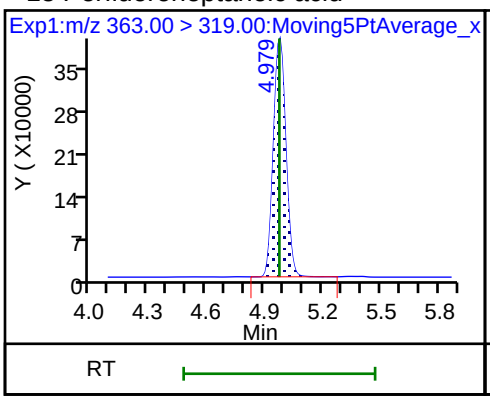
12 HFPO-DA



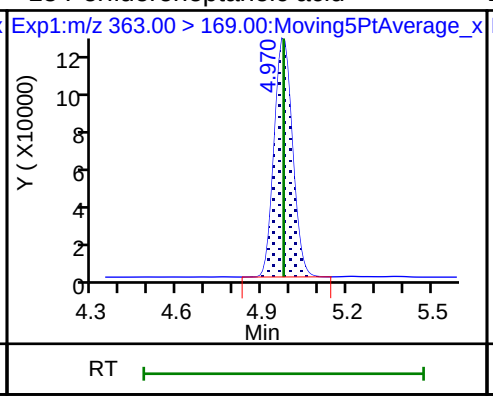
D 13 13C3 HFPO-DA



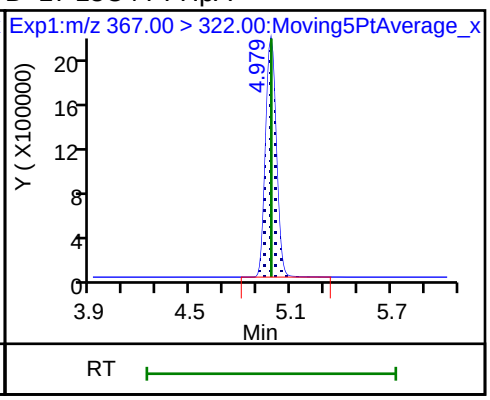
15 Perfluoroheptanoic acid



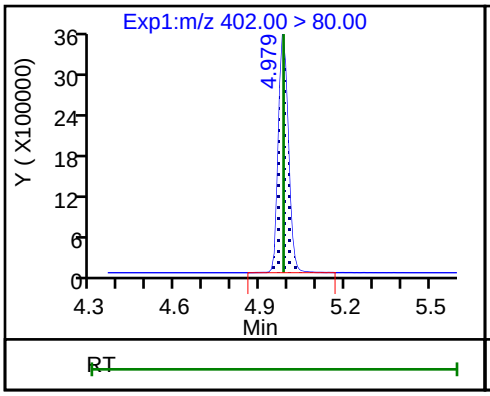
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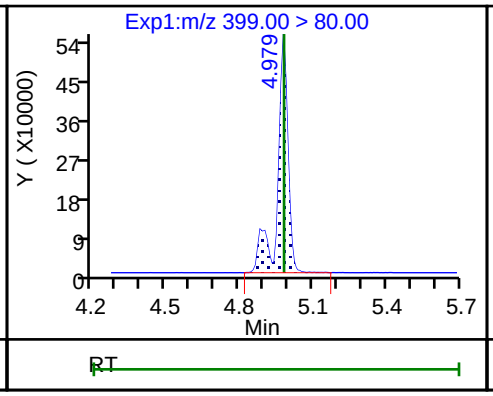
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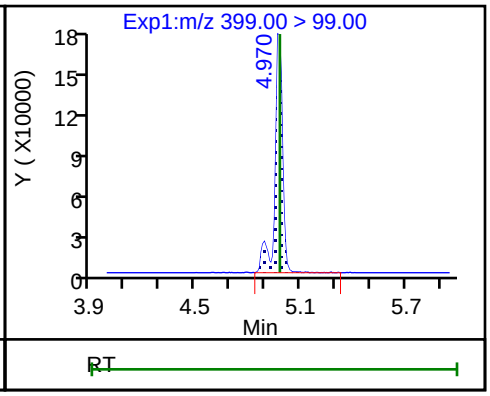
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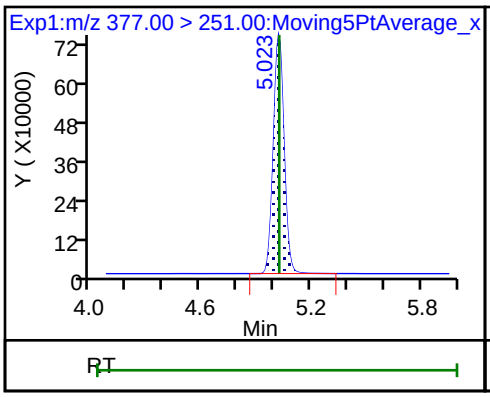
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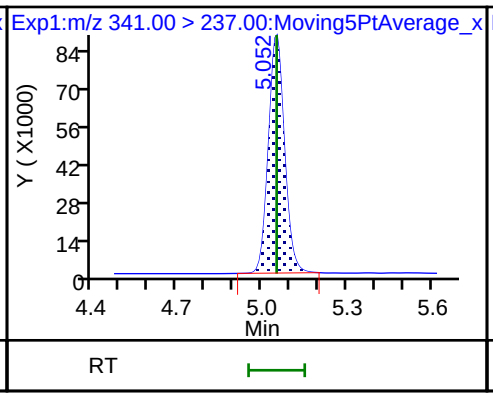
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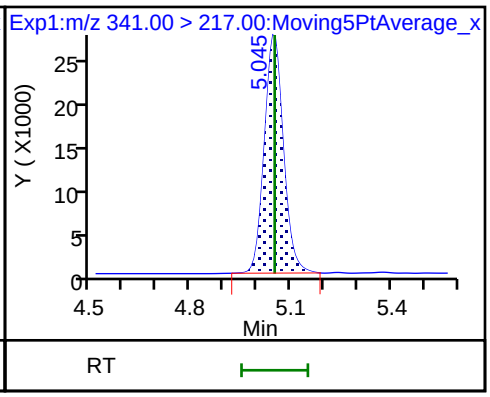
18 DONA



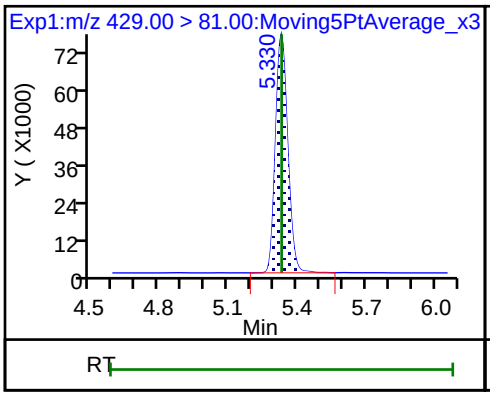
62 5:3 FTCA



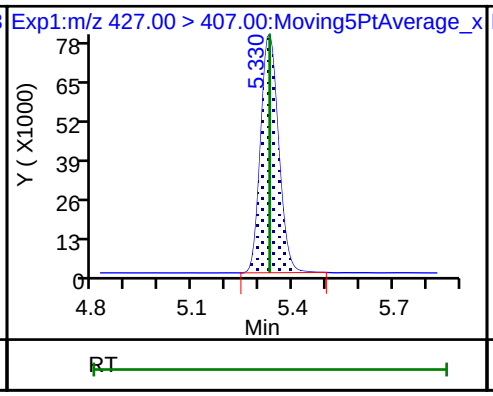
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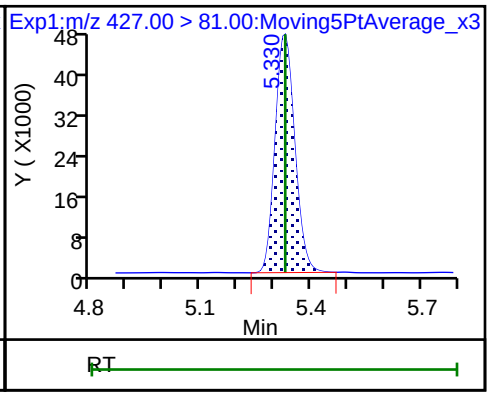
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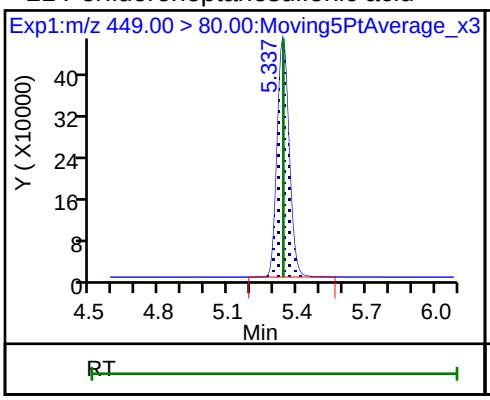
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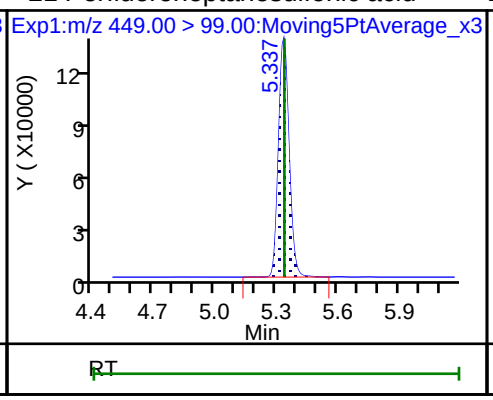
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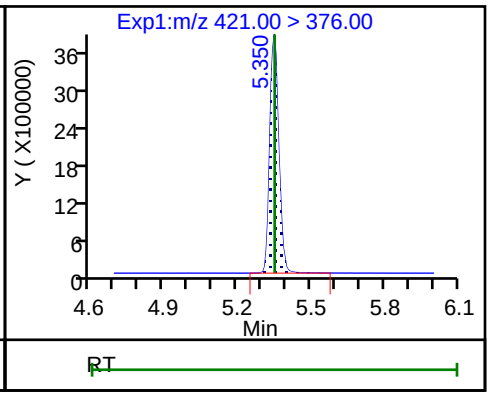
21 Perfluoroheptanesulfonic acid



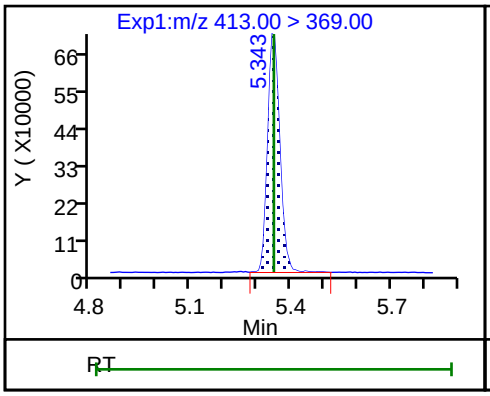
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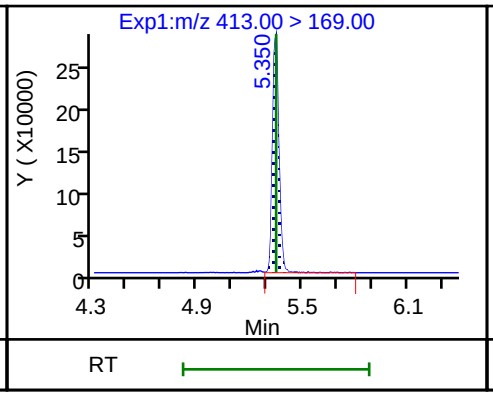
D 22 13C8 PFOA



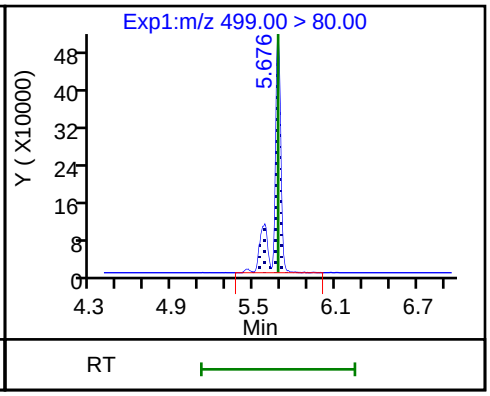
23 Perfluorooctanoic acid



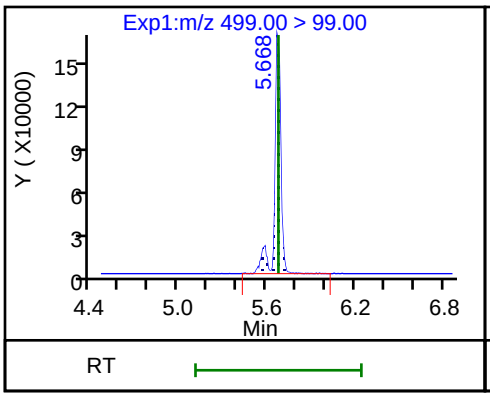
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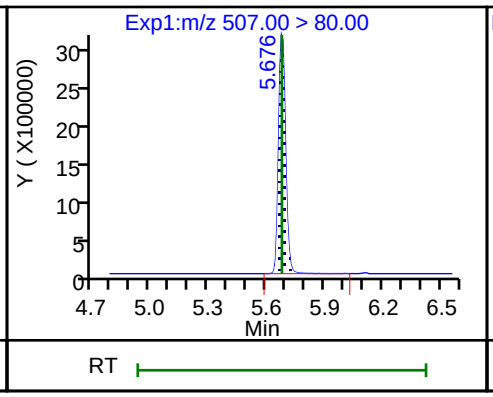
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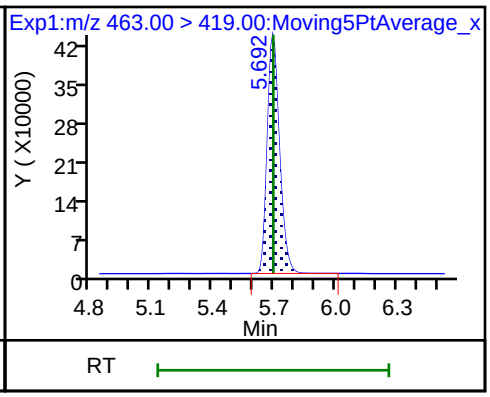
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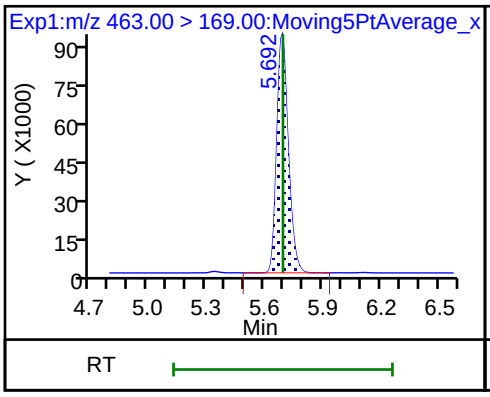
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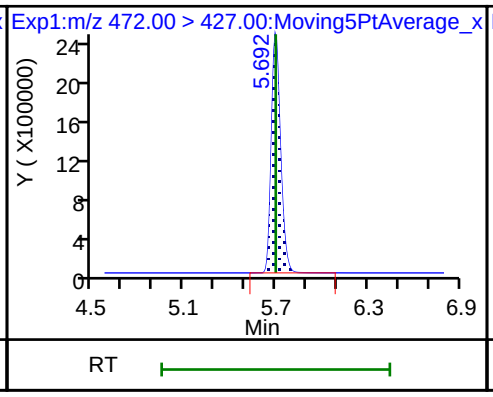
26 Perfluorononanoic acid



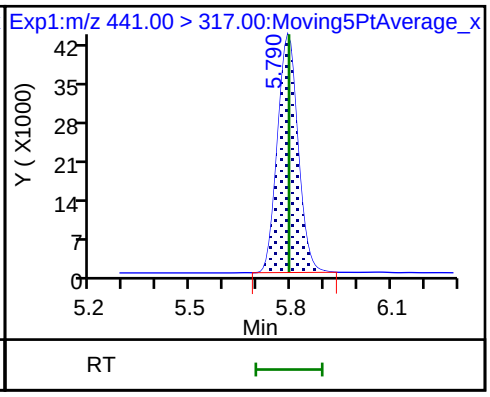
26 Perfluorononanoic acid



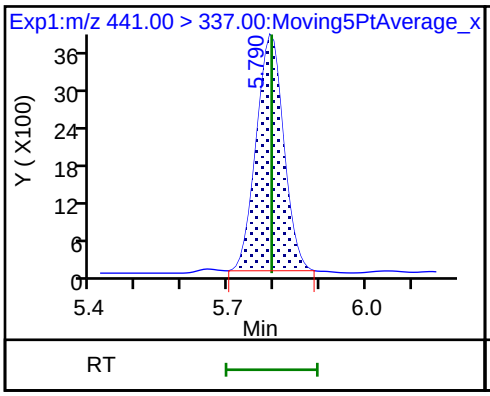
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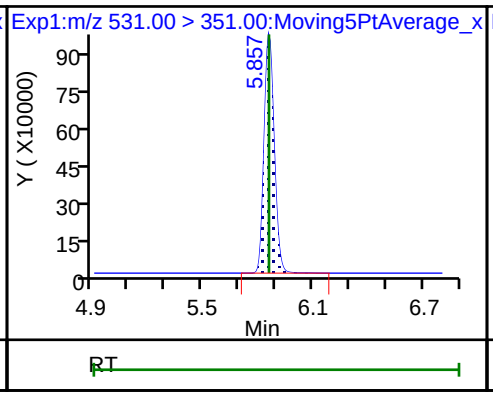
66 7:3 FTCA



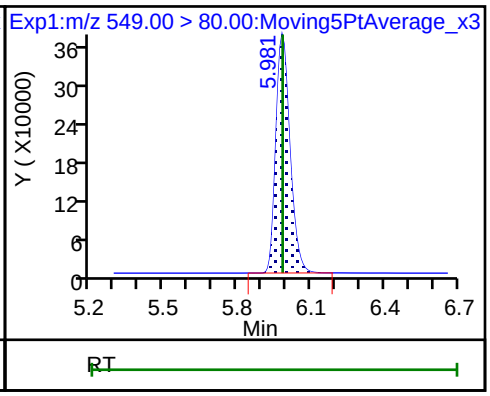
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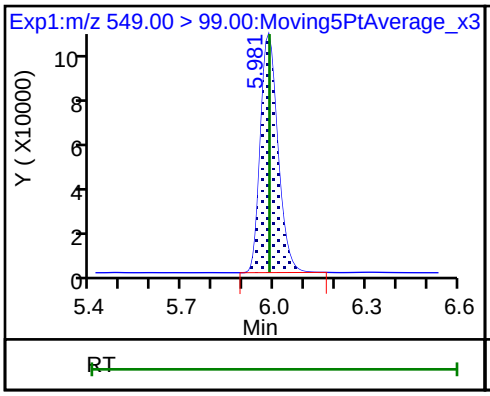
28 9ClFOS



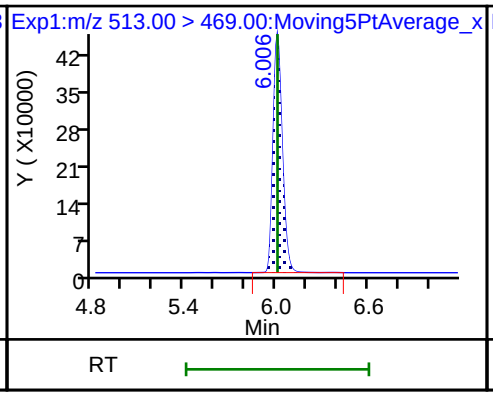
29 Perfluorononanesulfonic acid



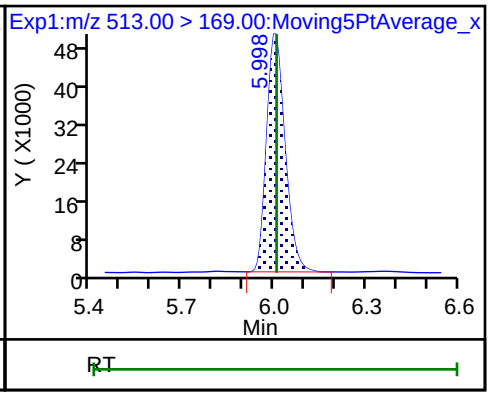
29 Perfluorononanesulfonic acid



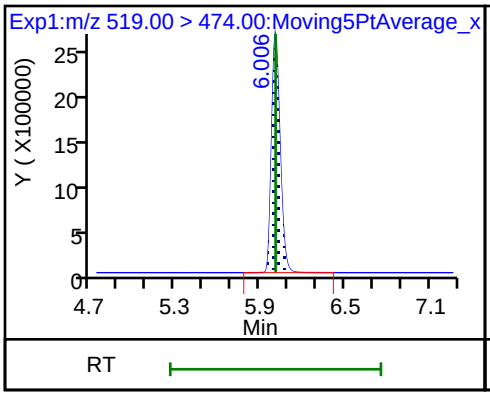
30 Perfluorodecanoic acid



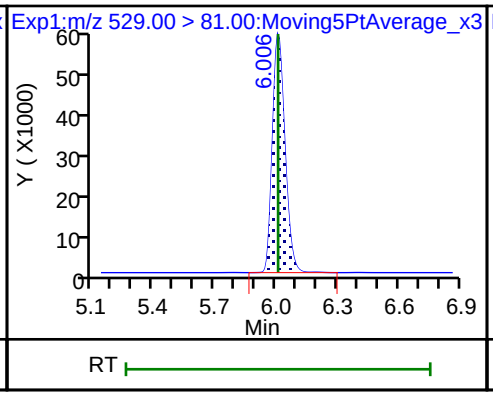
30 Perfluorodecanoic acid



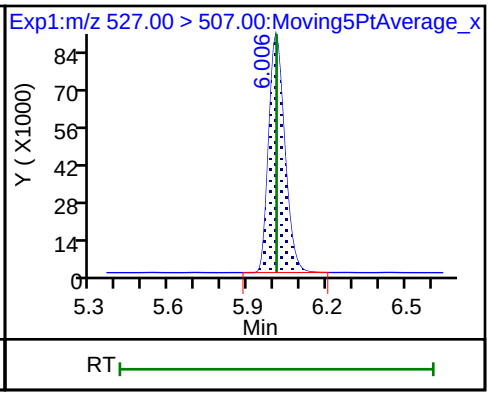
D 32 13C6 PFDA



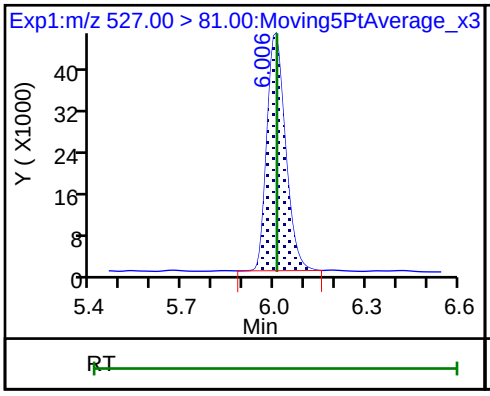
D 31 M2-8:2 FTS



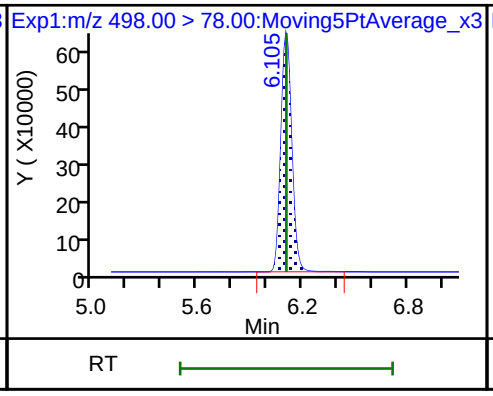
33 8:2 FTS



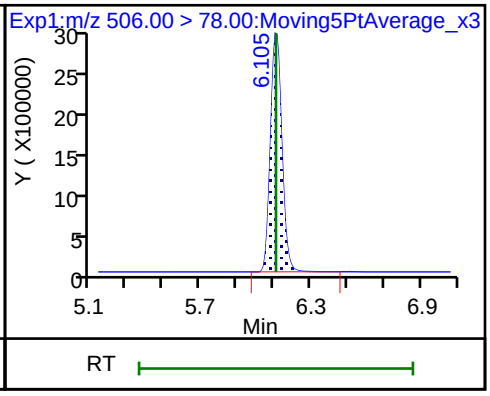
33 8:2 FTS



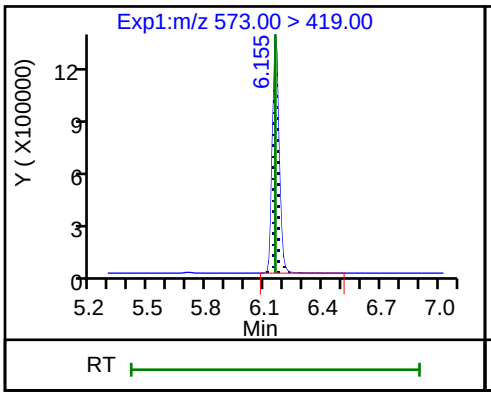
34 Perfluorooctanesulfonamide



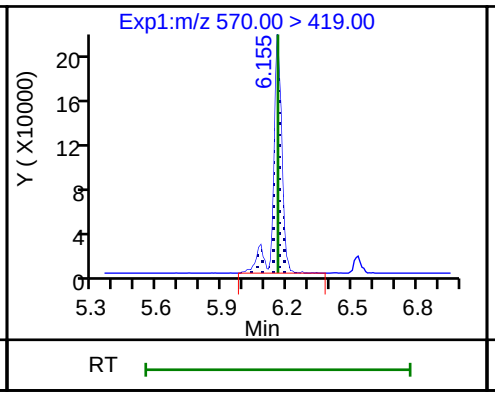
D 35 13C8 FOSA



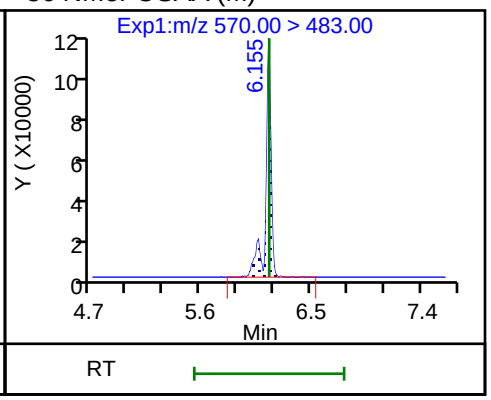
D 37 d3-NMeFOSAA



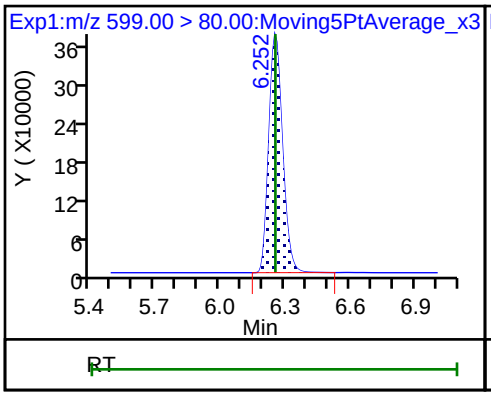
36 NMeFOSAA



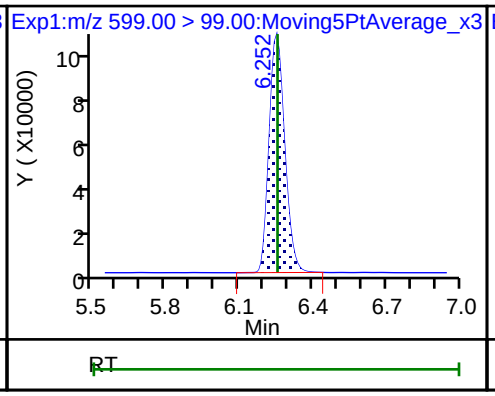
36 NMeFOSAA (M)



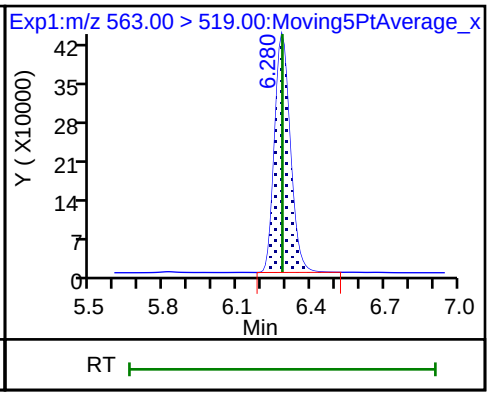
38 Perfluorodecanesulfonic acid



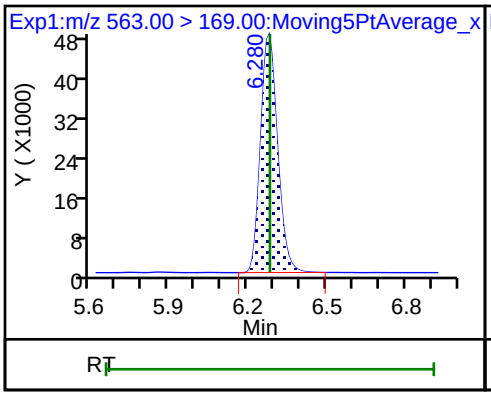
38 Perfluorodecanesulfonic acid



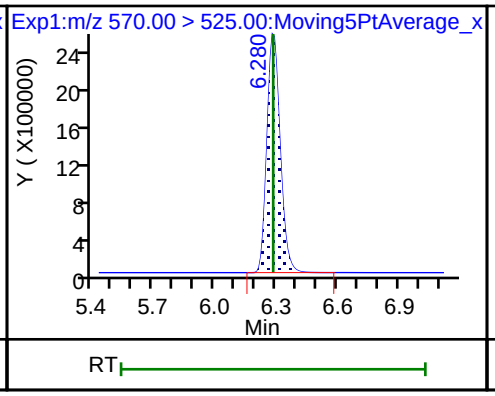
39 Perfluoroundecanoic acid



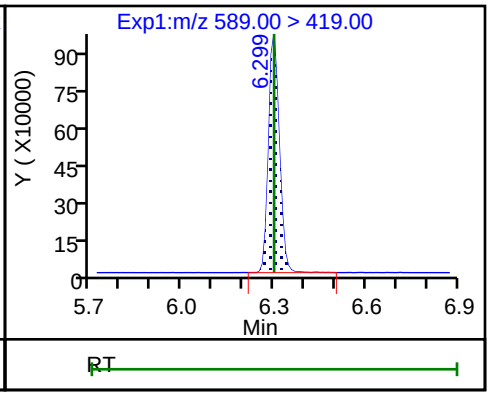
39 Perfluoroundecanoic acid



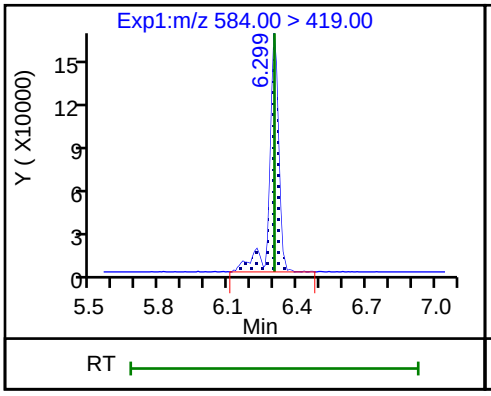
D 40 13C7 PFUnA



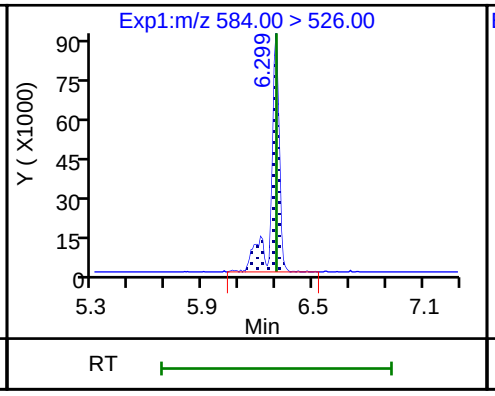
D 41 d5-NEtFOSAA



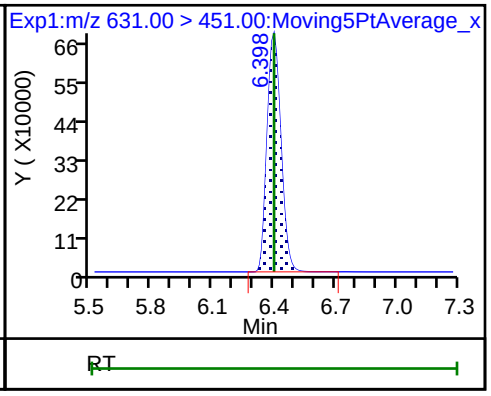
42 NEtFOSAA



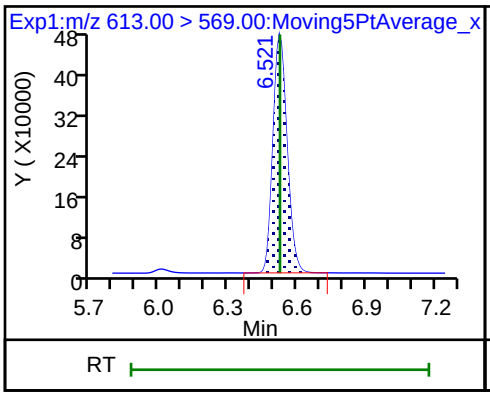
42 NEtFOSAA



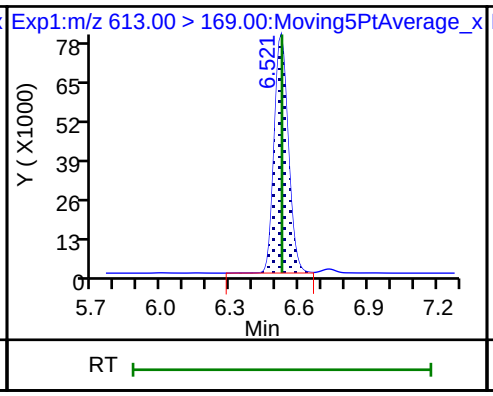
43 11ClFOS



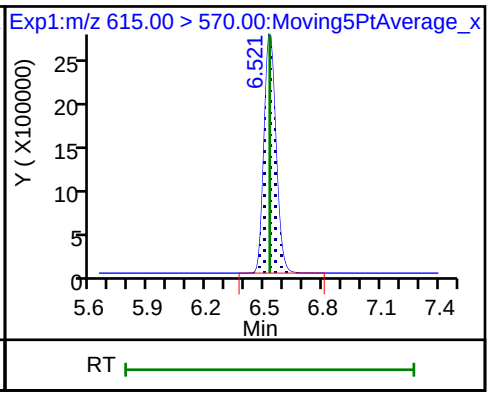
46 Perfluorododecanoic acid



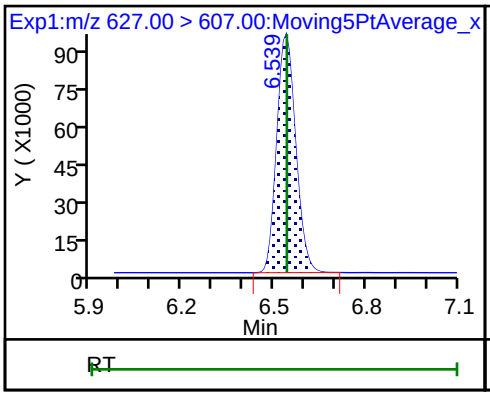
46 Perfluorododecanoic acid



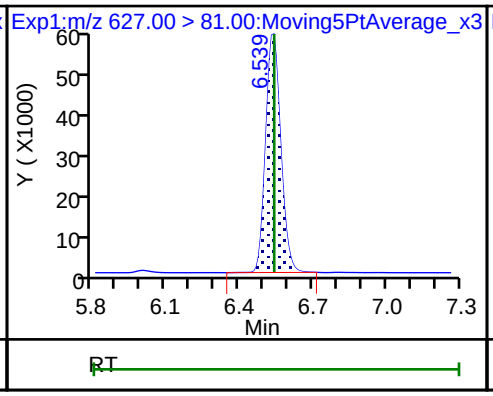
D 45 13C2-PFDoDA



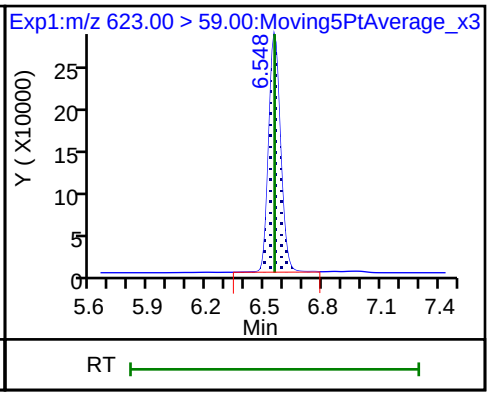
48 10:2 FTS



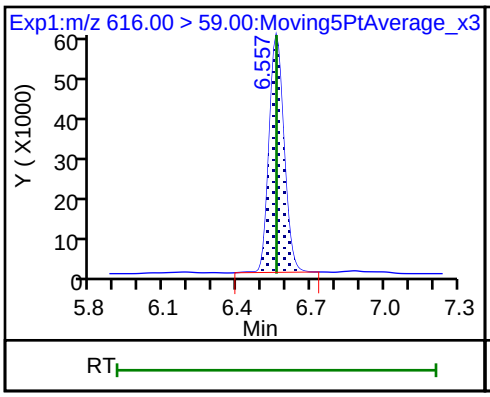
48 10:2 FTS



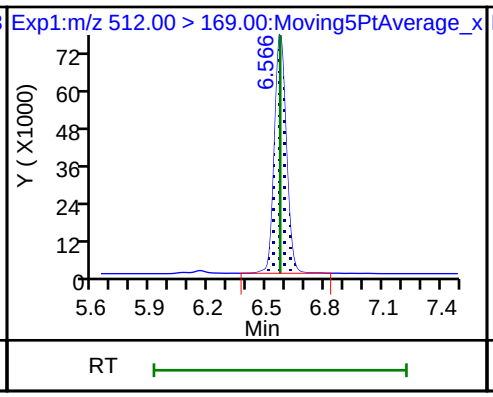
D 44 d7-N-MeFOSE-M



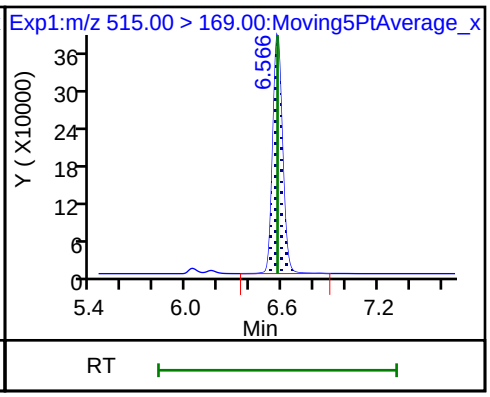
47 N-MeFOSE-M



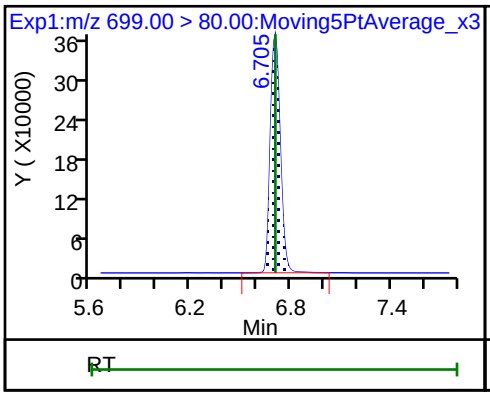
50 NMeFOSA



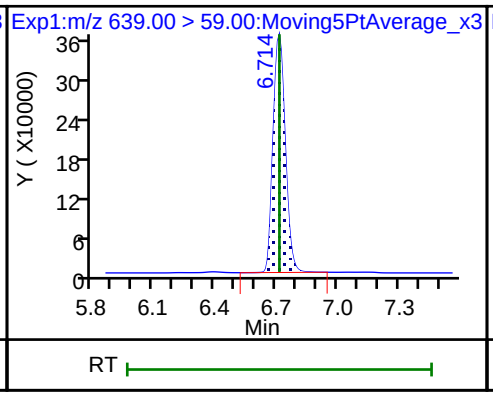
D 49 d3-NMePFOSA



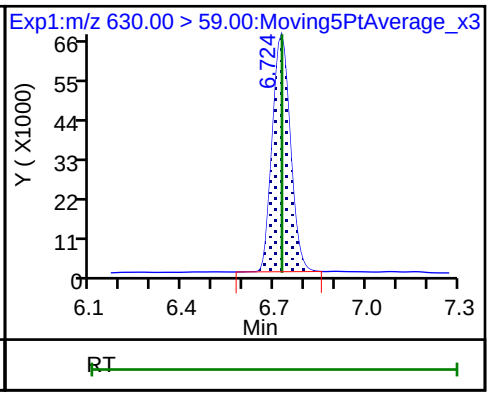
53 PFDoS



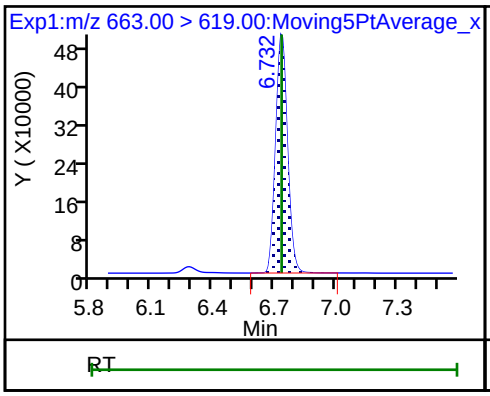
D 51 d9-N-EtFOSE-M



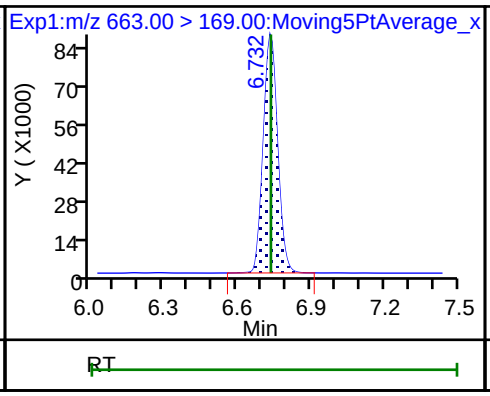
52 N-EtFOSE-M



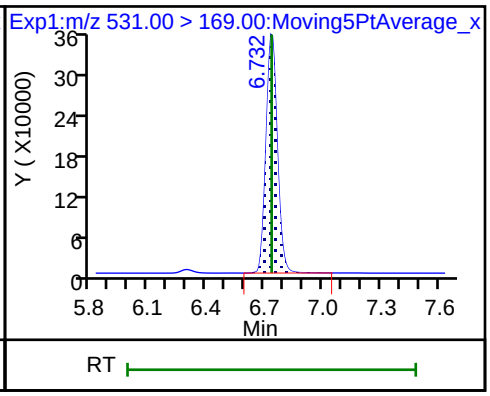
56 Perfluorotridecanoic acid



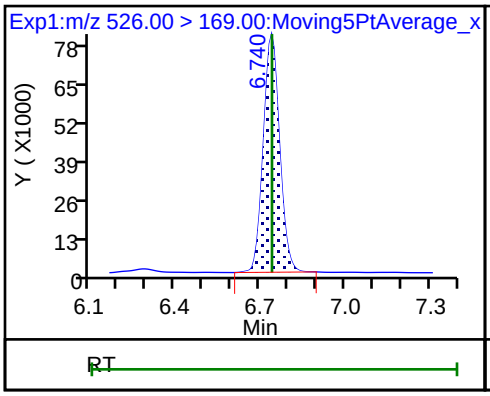
56 Perfluorotridecanoic acid



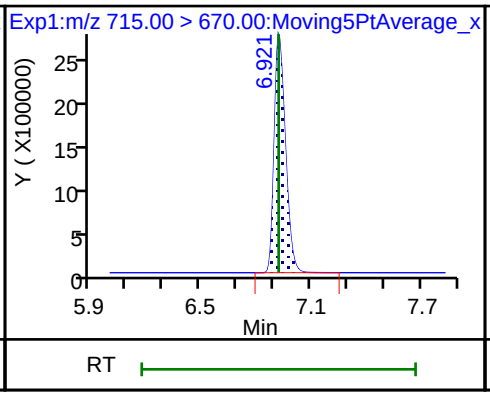
D 54 d5-NEtPFOSA



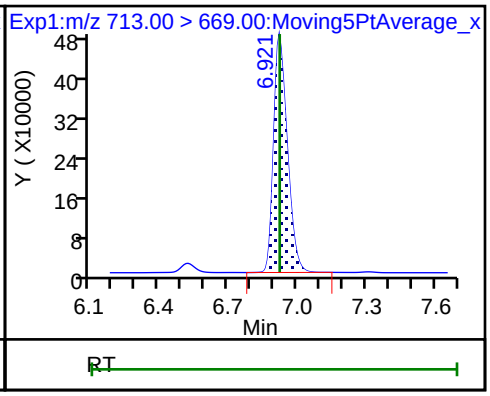
55 N-EtFOSA-M



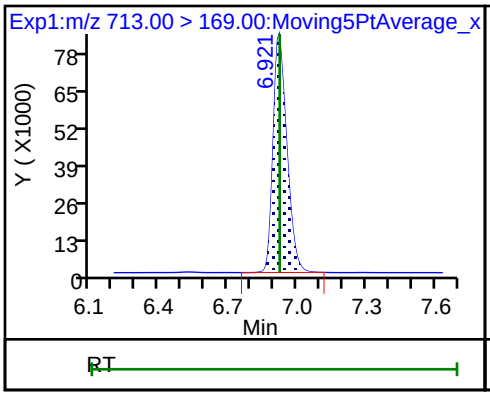
D 58 13C2 PFTeDA



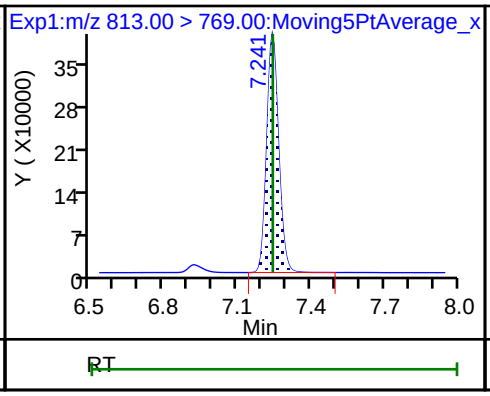
57 Perfluorotetradecanoic acid



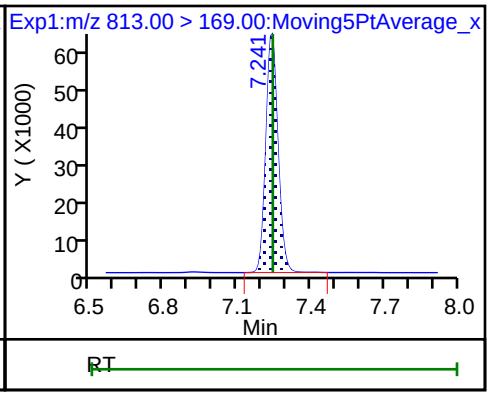
57 Perfluorotetradecanoic acid



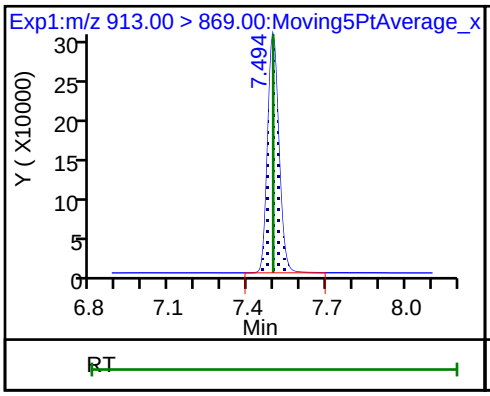
59 Perfluorohexadecanoic acid



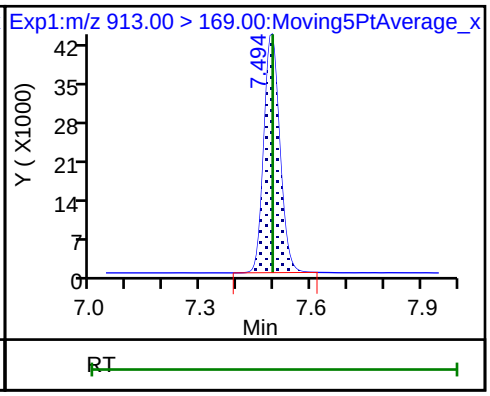
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

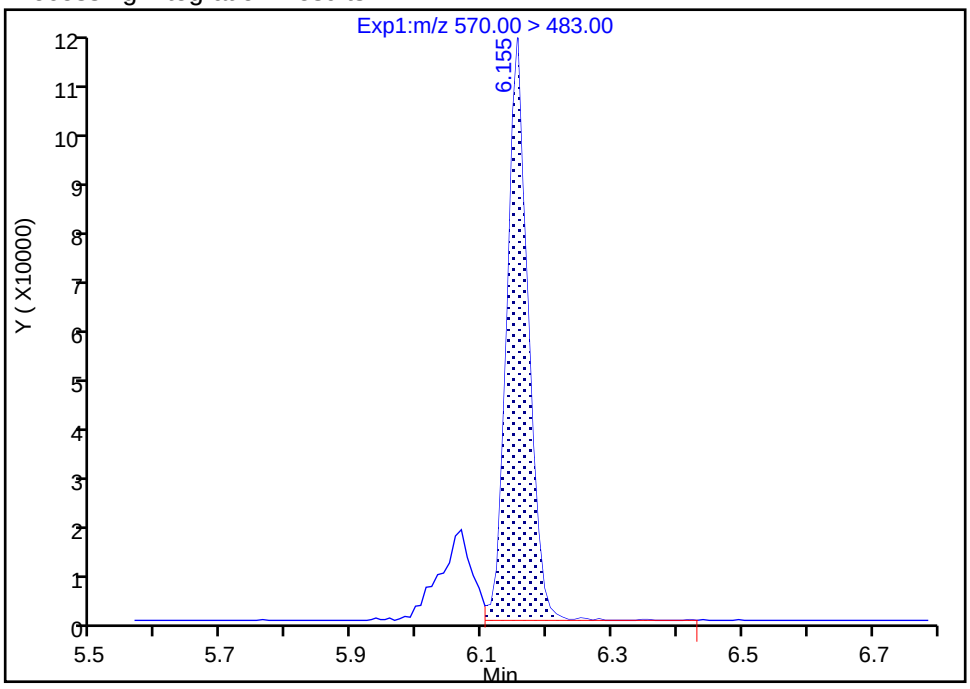
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-21.d				
Injection Date:	07-Apr-2022 10:13:08	Instrument ID:	29347		
Lims ID:	ICIS CAL 3				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20004	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

36 NMeFOSAA, CAS: 2355-31-9

Signal: 2

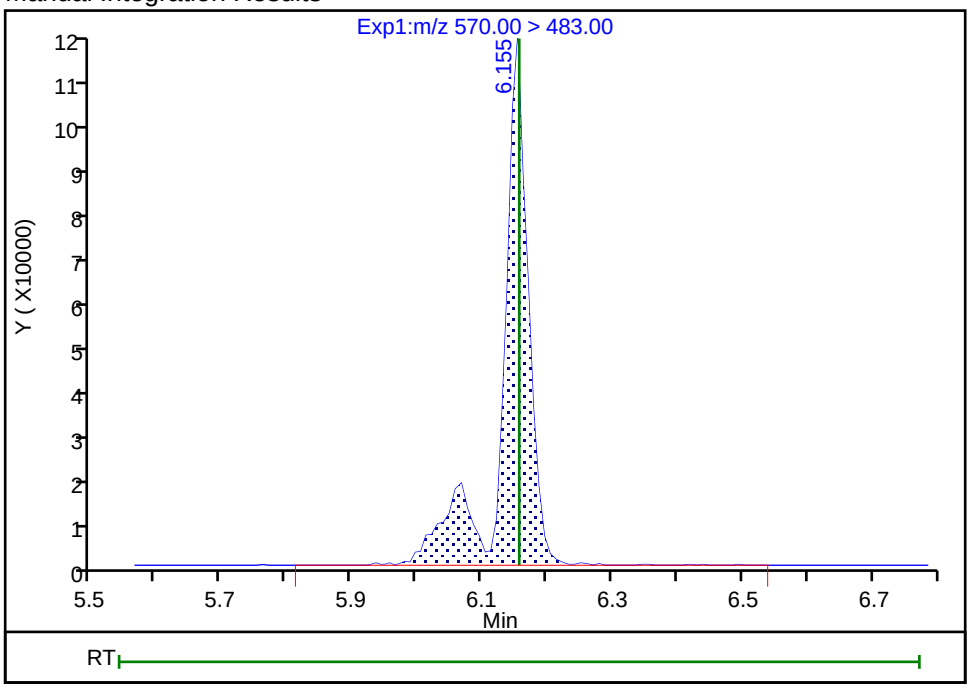
Processing Integration Results

RT: 6.15
Area: 251956
Amount: 2.119159
Amount Units: ng/ml



Manual Integration Results

RT: 6.15
Area: 312739
Amount: 2.056925
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 10:27:45

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-22.d
Lims ID: IC CAL 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 07-Apr-2022 10:23:41 ALS Bottle#: 20005 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 4
Misc. Info.: Plate: 1 Rack: 1 410-0054309-004
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:43:50 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 10:49:47
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.663	3.659	0.004	1.000	6042988	8.87		111	11203	
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.659	0.004		8284230	10.2		102	123200	
63 PFECA F										
229.00 > 85.00	3.898	3.891	0.007	0.931	4900359	8.66		108	10961	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.170	0.002	0.997	362579	8.61	Target=1.31	108	16028	
241.00 > 117.00	4.172	4.170	0.002	0.997	269219		1.35(0.66-1.97)	108	7820	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.180	4.178	0.002	0.998	6353136	8.68		109	43747	
D 4 13C5 PFPeA										
268.00 > 223.00	4.187	4.181	0.006		6991321	10.1		101	64488	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.231	0.0	0.998	6587539	7.36	Target=2.86	104	7920	
299.00 > 99.00	4.231	4.231	0.0	0.998	2275128		2.90(1.43-4.29)	104	7488	
D 6 13C3 PFBS										
302.00 > 80.00	4.239	4.235	0.004		8683554	9.41		101	568354	
64 PFECA A										
279.00 > 85.00	4.301	4.301	0.0	1.027	4725671	8.41		105	63803	
65 PES										
315.00 > 135.00	4.397	4.394	0.003	0.958	22254460	7.88	Target=14.03	111	252982	
315.00 > 83.00	4.397	4.394	0.003	0.958	1515315		14.69(7.01-21.04)	111	1982	
68 PFECA B										
295.00 > 201.00	4.520	4.514	0.006	0.985	2039890	8.57		107	55213	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.549	4.546	0.003	1.000	1376616	8.50	Target=1.58	114	60366	
327.00 > 81.00	4.549	4.546	0.003	1.000	739870		1.86(0.79-2.36)	114	14571	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.549	0.0		394237	9.04		96.7	12299	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.589	4.586	0.002	1.000	5858092	8.40	Target=13.65	105	76318	
313.00 > 119.00	4.589	4.586	0.002	1.000	417298		14.04(6.82-20.47)	105	13170	
D 9 13C5 PFHxA										
318.00 > 273.00	4.589	4.587	0.001		8171013	10.2		102	164311	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.608	4.608	0.0	1.087	6714599	8.02	Target=3.02	107	305528	
349.00 > 99.00	4.608	4.608	0.0	1.087	2228902		3.01(1.51-4.53)	107	127258	
12 HFPO-DA										
329.00 > 285.00	4.717	4.715	0.002	1.000	1779125	8.37		105	43602	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.717	4.715	0.002		867189	10.0		100	58310	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.976	4.976	0.0	0.998	6978036	8.54	Target=3.04	107	41595	
363.00 > 169.00	4.976	4.976	0.0	0.998	2232381		3.13(1.52-4.56)	107	25376	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.986	4.981	0.005	1.000	6318577	7.59	Target=2.99	104	15075	
399.00 > 99.00	4.976	4.981	-0.005	0.998	2024636		3.12(1.50-4.49)	104	4915	
D 17 13C4 PFHpA										
367.00 > 322.00	4.986	4.981	0.005		8533353	10.1		101	114048	
D 16 13C3 PFHxS										
402.00 > 80.00	4.986	4.983	0.003		8078364	9.77		103	1131758	
18 DONA										
377.00 > 251.00	5.028	5.026	0.002	1.008	11465110	8.29		110	407326	
62 5:3 FTCA										
341.00 > 237.00	5.051	5.051	0.0	1.101	1402827	8.69	Target=3.41	109	17028	
341.00 > 217.00	5.051	5.051	0.0	1.101	431545		3.25(1.70-5.11)	109	9950	
19 6:2 FTS										
427.00 > 407.00	5.335	5.330	0.005	1.000	1197557	8.07	Target=1.71	106	64952	
427.00 > 81.00	5.328	5.330	-0.002	0.999	724523		1.65(0.85-2.56)	106	28124	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.335	5.332	0.003		267903	9.22		97.0	18701	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.342	5.339	0.003	1.071	6804034	8.23	Target=3.21	108	212160	
449.00 > 99.00	5.342	5.339	0.003	1.071	2064228		3.30(1.60-4.81)	108	191181	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.348	5.348	0.0	0.999	6954477	8.18	Target=2.40	102	180746	
413.00 > 169.00	5.348	5.348	0.0	0.999	2864215		2.43(1.20-3.60)	102	287709	
D 22 13C8 PFOA										
421.00 > 376.00	5.354	5.351	0.003		9427644	10.3		103	955166	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.681	5.677	0.004	1.000	6640924	7.64	Target=3.65	103	5595	
499.00 > 99.00	5.681	5.677	0.004	1.000	1712801		3.88(1.83-5.48)	103	3570	
D 25 13C8 PFOS										
507.00 > 80.00	5.681	5.679	0.002		7470489	10.0		105	318542	
26 Perfluorononanoic acid										
463.00 > 419.00	5.697	5.694	0.003	1.000	7165314	8.49	Target=4.51	106	91114	
463.00 > 169.00	5.697	5.694	0.003	1.000	1560169		4.59(2.25-6.76)	106	54120	
D 27 13C9 PFNA										
472.00 > 427.00	5.697	5.696	0.001		9367436	10.0		100	139949	
66 7:3 FTCA										
441.00 > 317.00	5.796	5.794	0.002	1.263	685092	8.00	Target=10.25	100.0	17873	
441.00 > 337.00	5.796	5.794	0.002	1.263	70741		9.68(5.12-15.37)	100.0	2750	
28 9ClFOS										
531.00 > 351.00	5.862	5.859	0.003	1.032	14020631	7.65		103	734240	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.987	5.984	0.003	1.054	6068181	8.29	Target=3.43	108	218290	
549.00 > 99.00	5.987	5.984	0.003	1.054	1744129		3.48(1.72-5.15)	108	62390	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.011	6.007	0.004	1.000	7602872	8.72	Target=8.86	109	114133	
513.00 > 169.00	6.003	6.007	-0.004	0.999	845458		8.99(4.43-13.29)	109	17084	
33 8:2 FTS										
527.00 > 507.00	6.011	6.008	0.003	1.000	1535497	8.48	Target=1.91	111	72480	
527.00 > 81.00	6.003	6.008	-0.005	0.999	799532		1.92(0.96-2.87)	111	13458	
D 32 13C6 PFDA										
519.00 > 474.00	6.011	6.008	0.003		10067461	9.96		99.6	479340	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.011	6.008	0.003		220951	9.10		95.0	12889	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.110	6.107	0.003	1.000	11075084	8.56		107	433091	
D 35 13C8 FOSA										
506.00 > 78.00	6.110	6.109	0.001		12490941	10.1		101	366417	
36 NMeFOSAA										
570.00 > 419.00	6.160	6.157	0.003	1.001	2126799	8.57	Target=1.78	107	67855	
570.00 > 483.00	6.152	6.157	-0.005	1.000	1153169		1.84(0.89-2.67)	107	125084	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.152	6.155	-0.003		2843461	9.82		98.2	83829	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.257	6.255	0.002	1.102	6658400	8.21	Target=3.62	106	253514	
599.00 > 99.00	6.257	6.255	0.002	1.102	1841571		3.62(1.81-5.43)	106	69092	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.286	6.283	0.003	1.000	7018237	8.21	Target=8.28	103	46154	
563.00 > 169.00	6.276	6.283	-0.007	0.999	854445		8.21(4.14-12.42)	103	47133	
D 40 13C7 PFUnA										
570.00 > 525.00	6.286	6.284	0.002		10419180	10.1		101	467251	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.305	6.299	0.006		2247729	10.1		101	470504	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.305	6.300	0.005	1.000	1741331	8.24	Target=1.66	103	346992	
584.00 > 526.00	6.295	6.300	-0.005	0.999	1072695		1.62(0.83-2.49)	103	367014	
43 11ClFOS										
631.00 > 451.00	6.404	6.398	0.006	1.127	12423182	7.66		103	524037	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.527	6.524	0.003	1.000	8230955	8.72	Target=5.73	109	33867	
613.00 > 169.00	6.527	6.524	0.003	1.000	1347447		6.11(2.87-8.60)	109	22555	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.527	6.526	0.001		10722444	10.1		101	318445	
48 10:2 FTS										
627.00 > 607.00	6.544	6.541	0.003	1.089	1738267	8.47	Target=1.71	110	82448	
627.00 > 81.00	6.535	6.541	-0.006	1.087	1006119		1.73(0.85-2.56)	110	34088	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.553	6.551	0.002		1162812	10.0		100	8885	
47 N-MeFOSE-M										
616.00 > 59.00	6.562	6.559	0.003	1.001	1005855	8.24		103	10128	
50 NMeFOSA										
512.00 > 169.00	6.570	6.570	0.0	1.000	1379447	8.78		110	9434	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.570	6.570	0.0		1516940	9.67		96.7	4744	
53 PFDoS										
699.00 > 80.00	6.711	6.706	0.005	1.181	6557680	8.52		110	179055	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.720	6.715	0.005		1401476	10.0		100	6004	
52 N-EtFOSE-M										
630.00 > 59.00	6.728	6.725	0.003	1.001	1110799	8.38		105	16142	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.737	6.736	0.001	1.032	8335016	8.81	Target=5.39	110	24677	
663.00 > 169.00	6.737	6.736	0.001	1.032	1471428		5.66(2.69-8.08)	110	61892	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.737	6.736	0.001		1385253	9.84		98.4	8922	
55 N-EtFOSA-M										
526.00 > 169.00	6.745	6.741	0.004	1.001	1320174	8.52		107	9767	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.925	6.923	0.002	1.000	7711342	8.40	Target=5.85	105	14171	
713.00 > 169.00	6.918	6.923	-0.005	0.999	1302448		5.92(2.93-8.78)	105	43712	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.925	6.923	0.002		10301061	9.71		97.1	217633	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.246	7.243	0.003	1.046	5637536	8.67	Target=6.08	108	19917	
813.00 > 169.00	7.239	7.243	-0.004	1.045	898402		6.28(3.04-9.13)	108	43798	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.495	0.004	1.083	3831093	8.89	Target=7.13	111	43400	
913.00 > 169.00	7.493	7.495	-0.002	1.082	538520		7.11(3.56-10.69)	111	26028	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD4_00014 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:43:51 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-22.d

Injection Date: 07-Apr-2022 10:23:41 Instrument ID: 29347

Lims ID: IC CAL 4

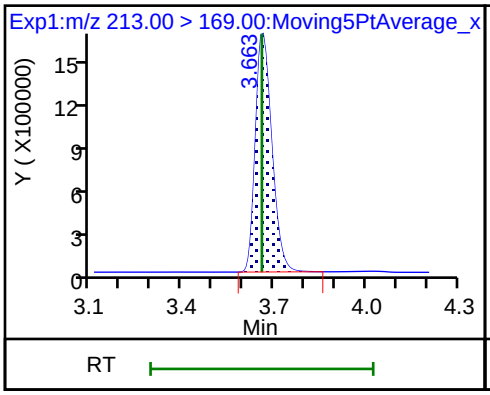
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Operator ID: US19_USR_INS75556 ALS Bottle#: 20005 Worklist Smp#: 4

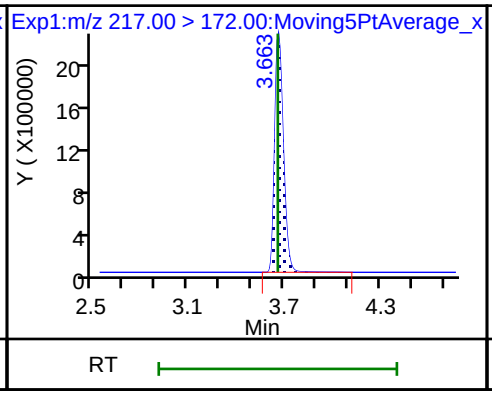
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

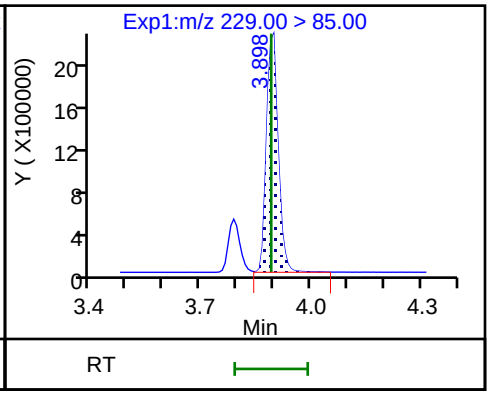
1 Perfluorobutanoic acid



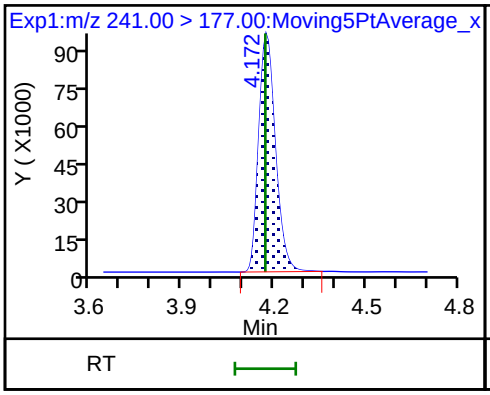
D 2 13C4 PFBA



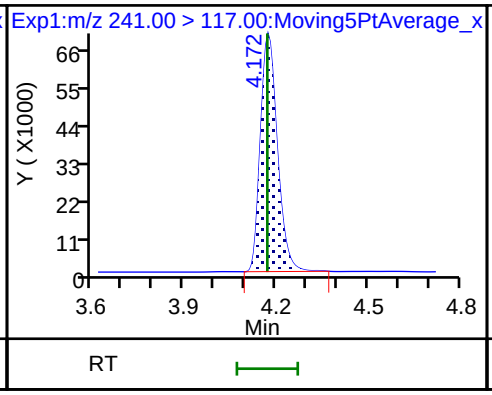
63 PFECA F



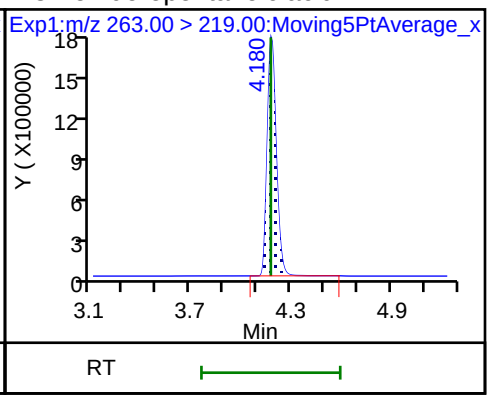
67 3:3 FTCA



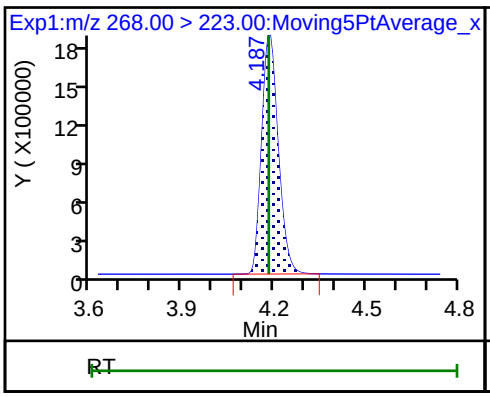
67 3:3 FTCA



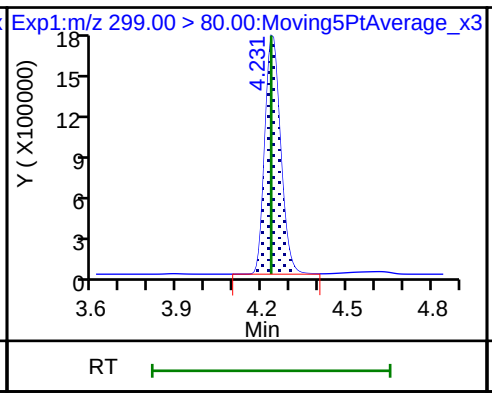
3 Perfluoropentanoic acid



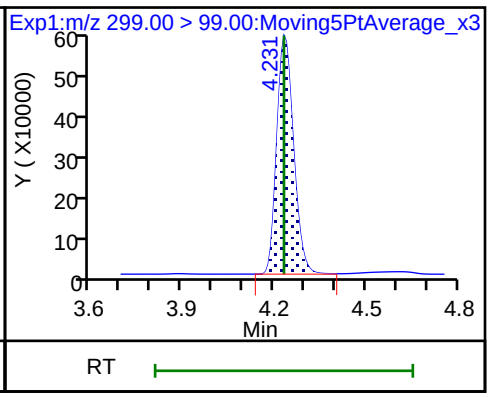
D 4 13C5 PFPeA



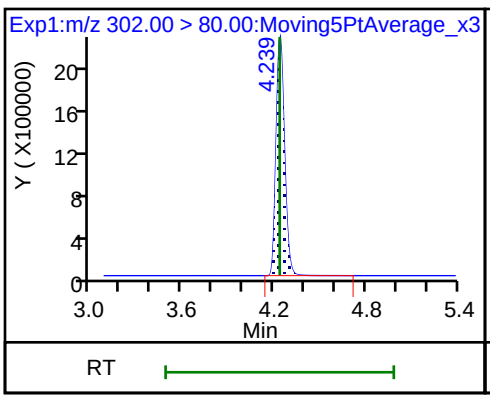
5 Perfluorobutanesulfonic acid



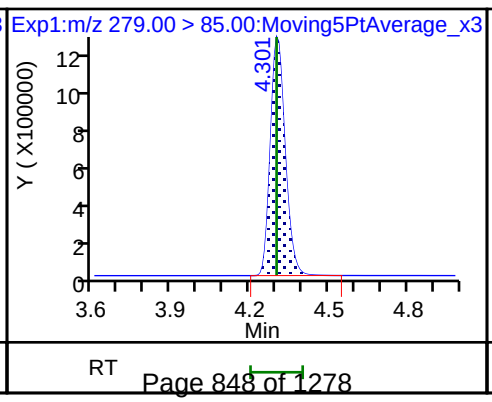
5 Perfluorobutanesulfonic acid



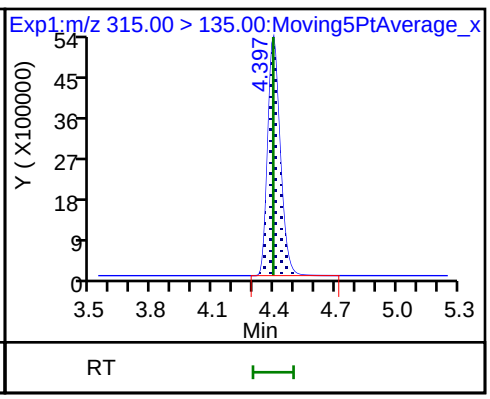
D 6 13C3 PFBS



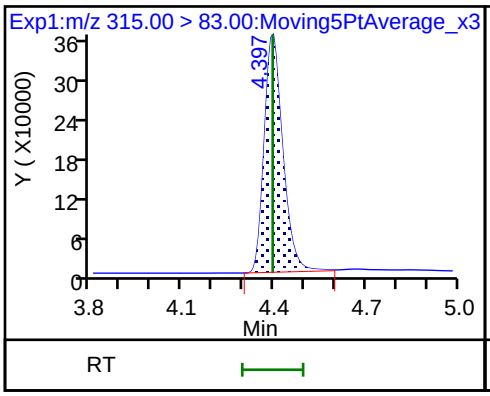
64 PFECA A



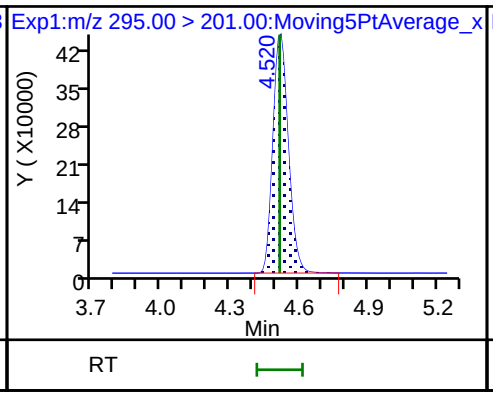
65 PES



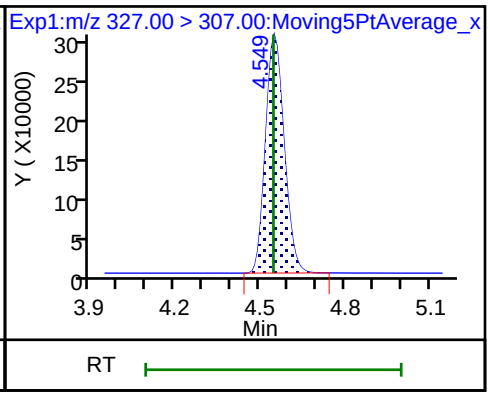
65 PES



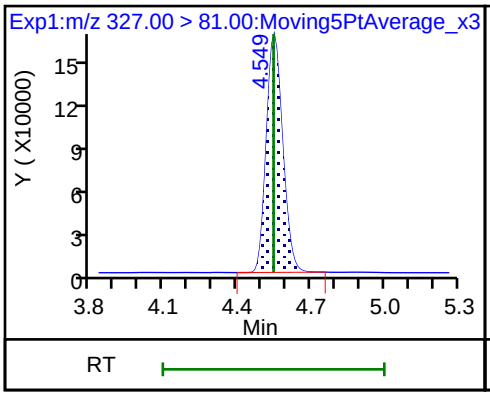
68 PFECA B



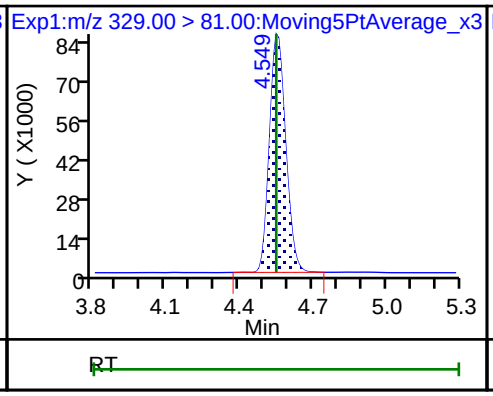
7 4:2 FTS



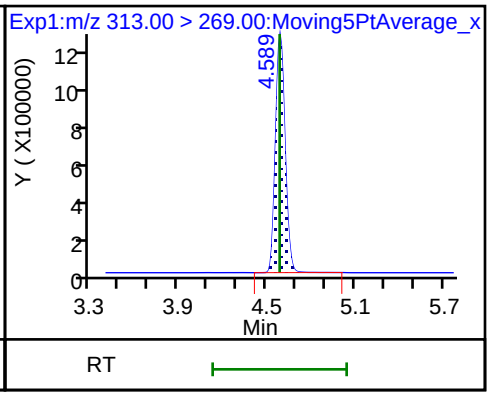
7 4:2 FTS



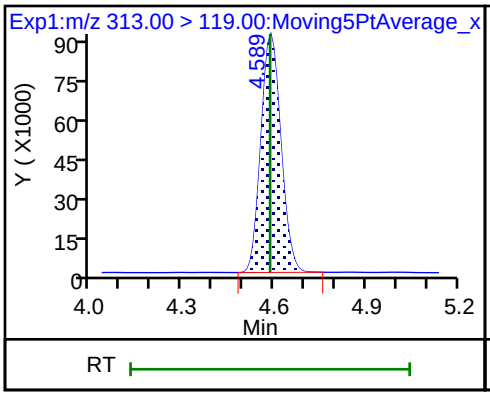
D 8 M2-4:2 FTS



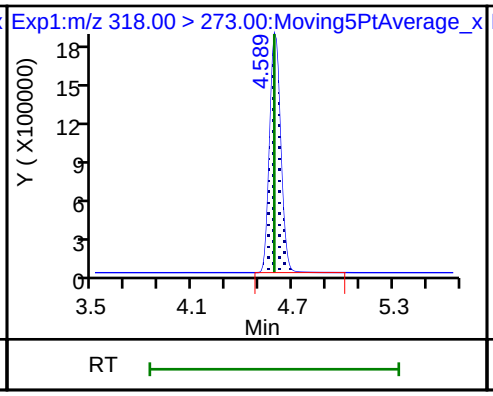
10 Perfluorohexanoic acid



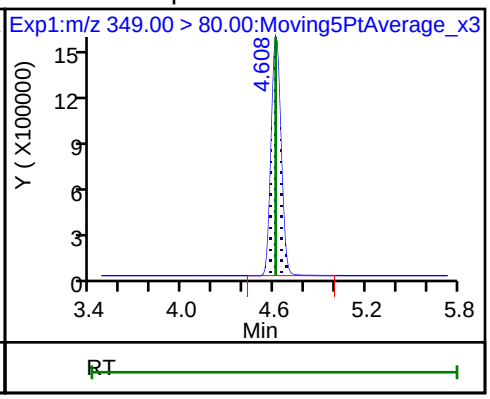
10 Perfluorohexanoic acid



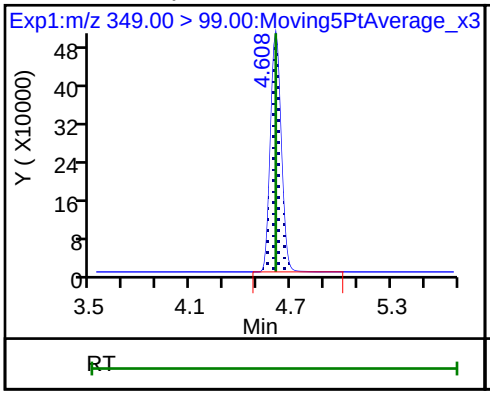
D 9 13C5 PFHxA



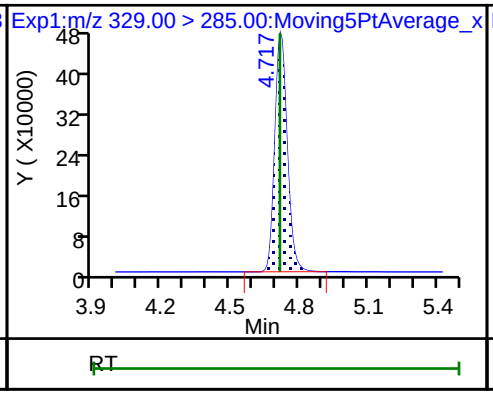
11 Perfluoropentanesulfonic acid



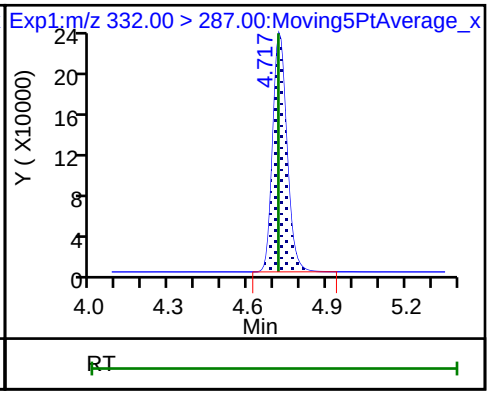
11 Perfluoropentanesulfonic acid



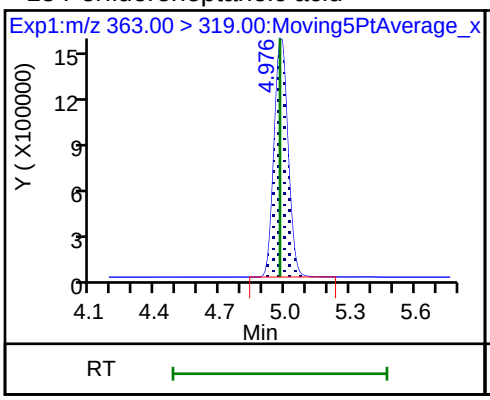
12 HFPO-DA



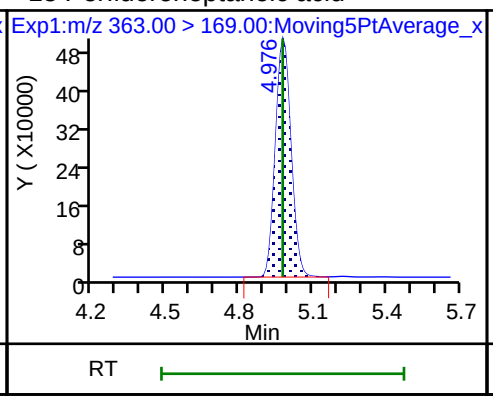
D 13 13C3 HFPO-DA



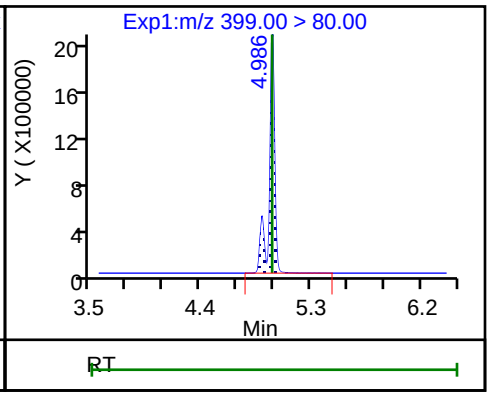
15 Perfluoroheptanoic acid



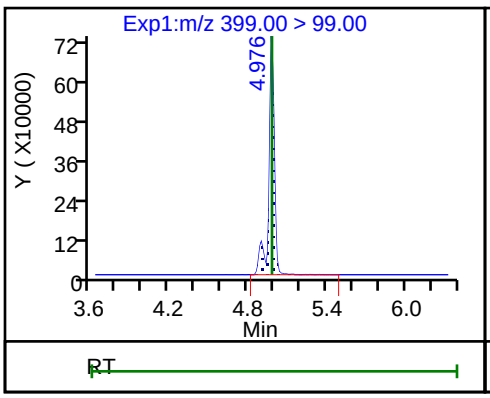
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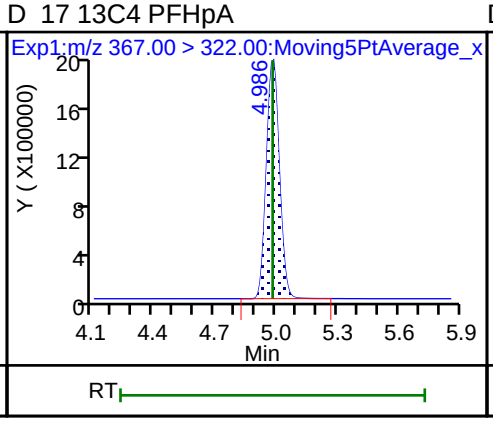
14 Perfluorohexanesulfonic acid



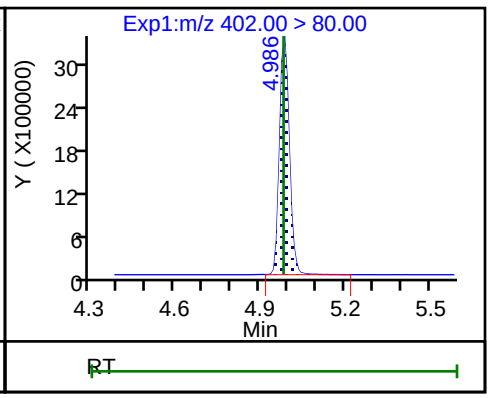
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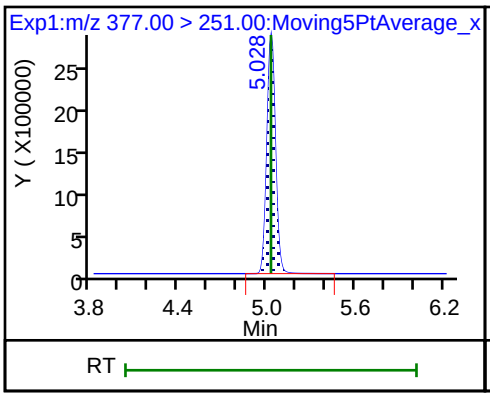
D 17 13C4 PFHpA



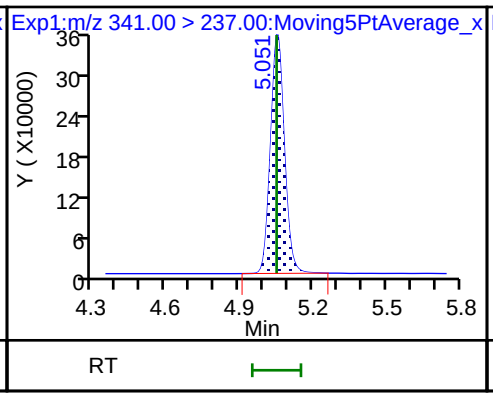
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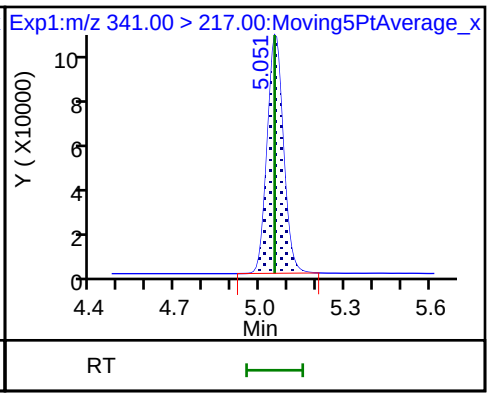
18 DONA



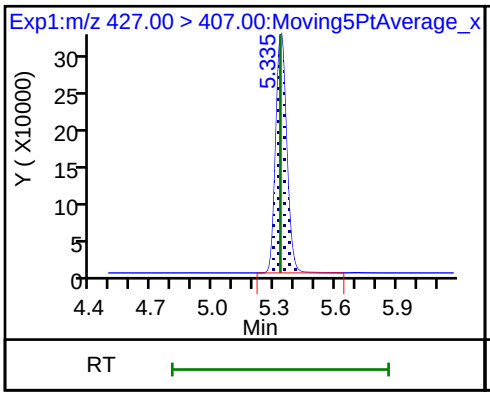
62 5:3 FTCA



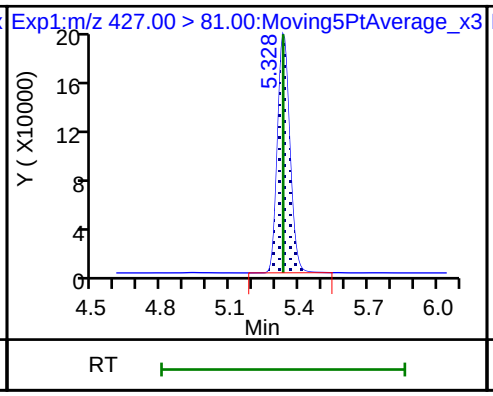
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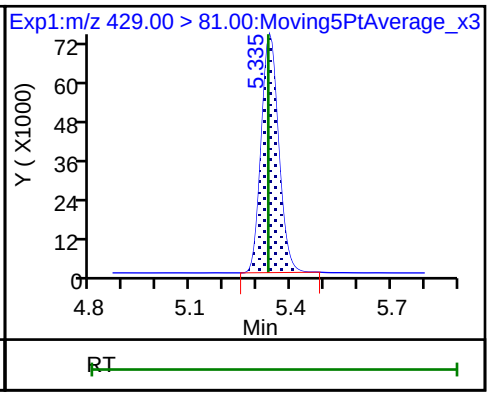
19 6:2 FTS



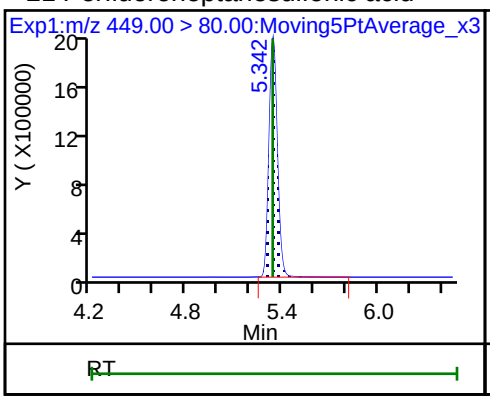
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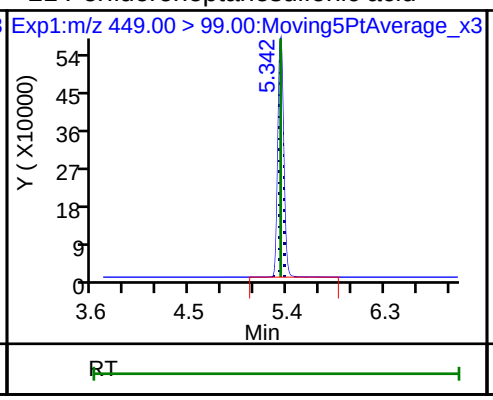
D 20 M2-6:2 FTS



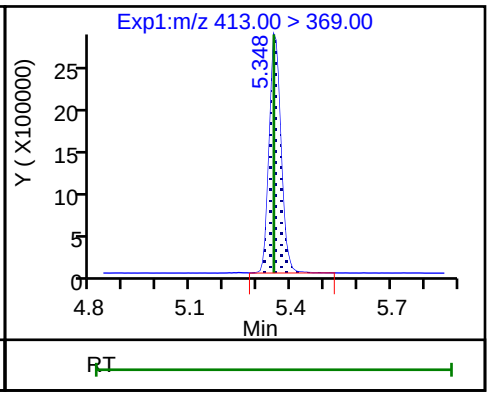
21 Perfluoroheptanesulfonic acid



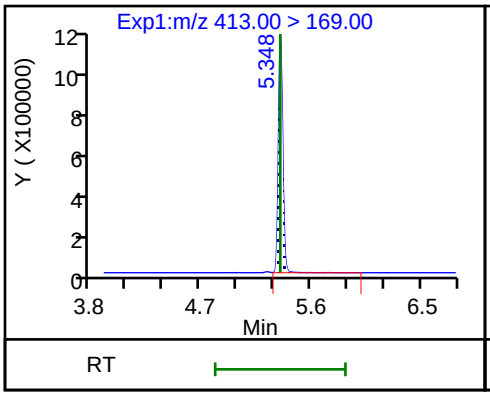
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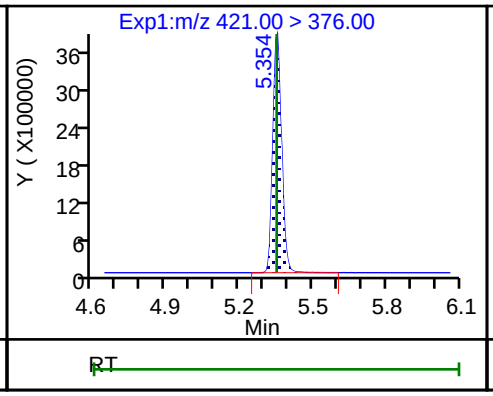
23 Perfluorooctanoic acid



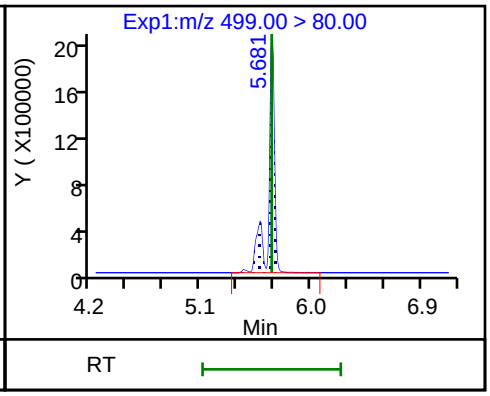
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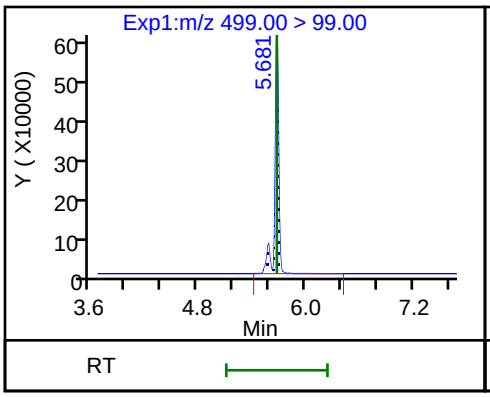
D 22 13C8 PFOA



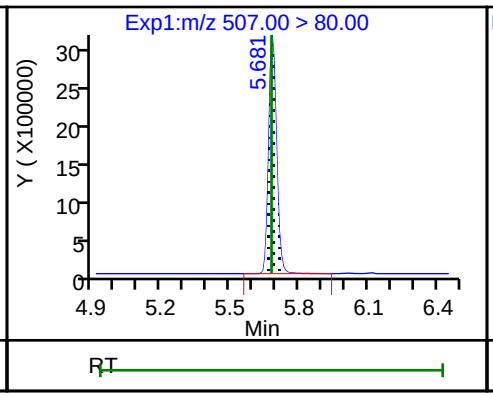
24 Perfluorooctanesulfonic acid



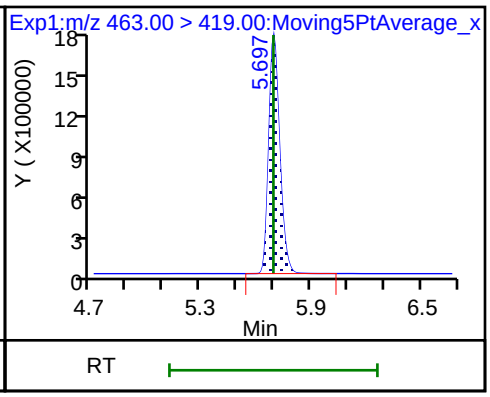
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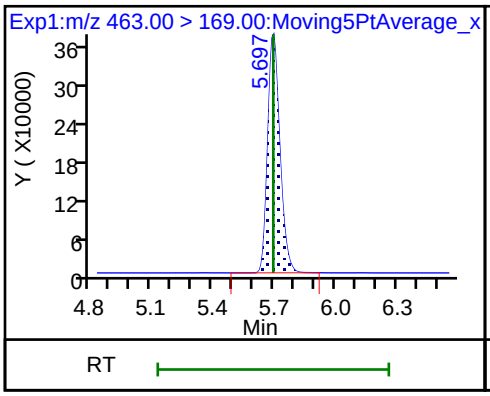
D 25 13C8 PFOS



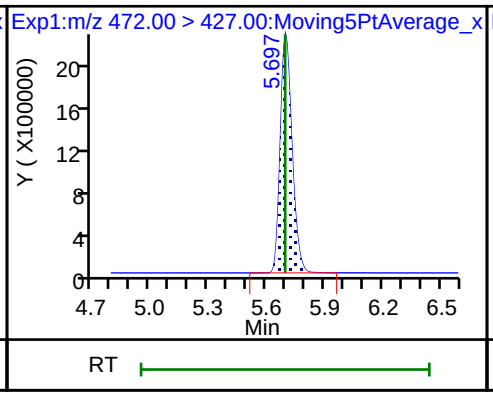
26 Perfluorononanoic acid



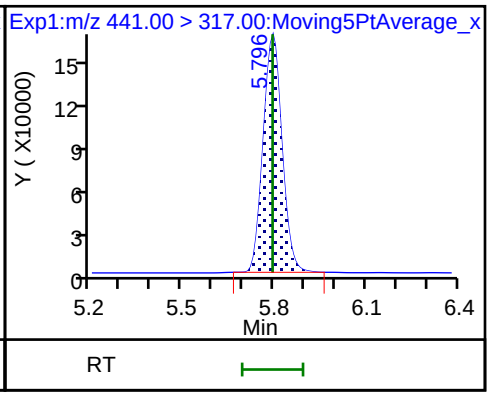
26 Perfluorononanoic acid



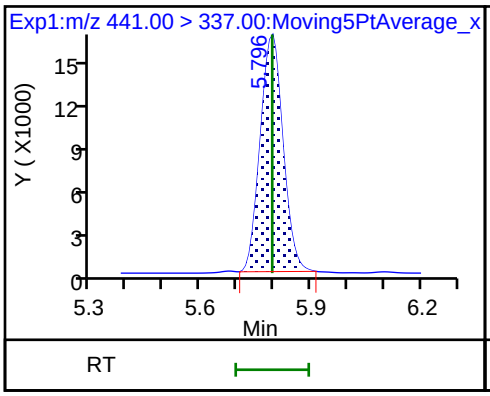
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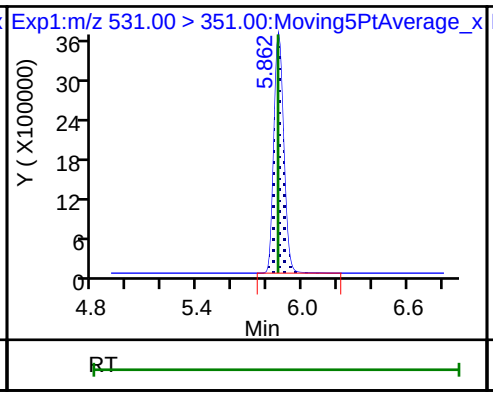
66 7:3 FTCA



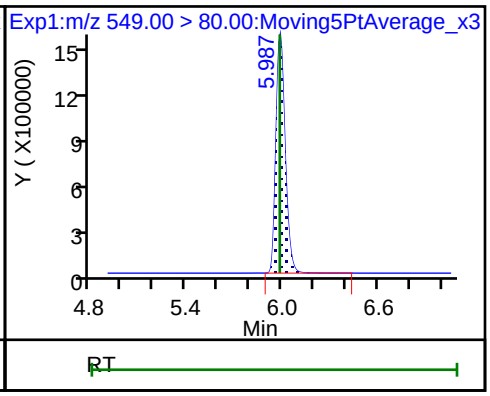
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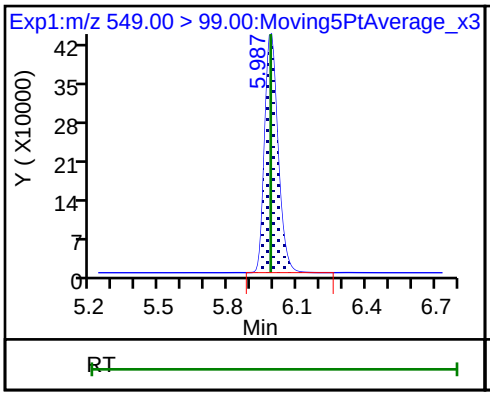
28 9ClFOS



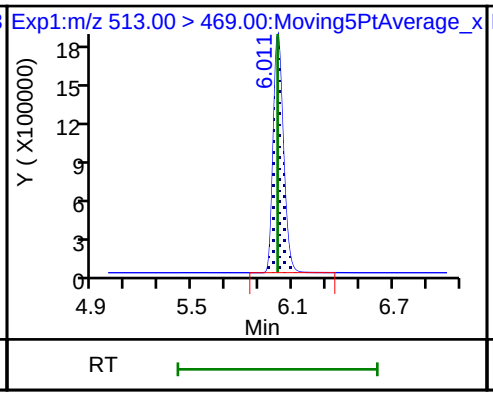
29 Perfluorononanesulfonic acid



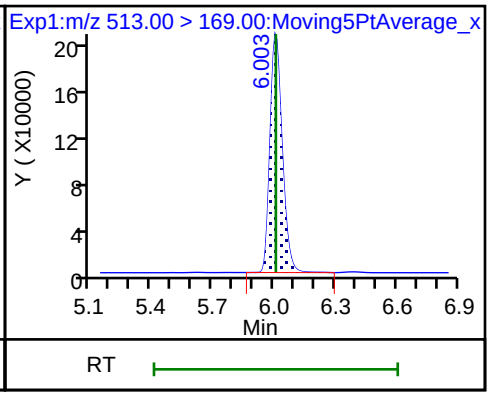
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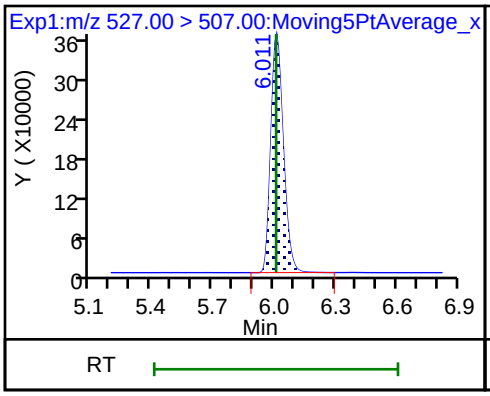
30 Perfluorodecanoic acid



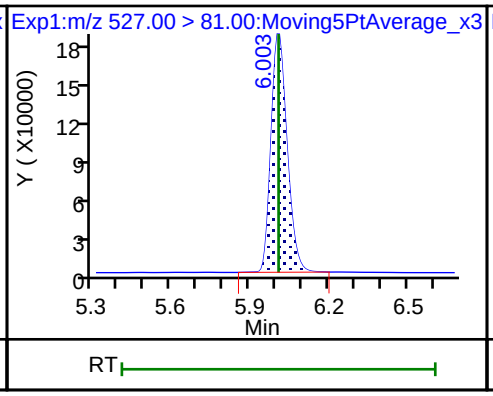
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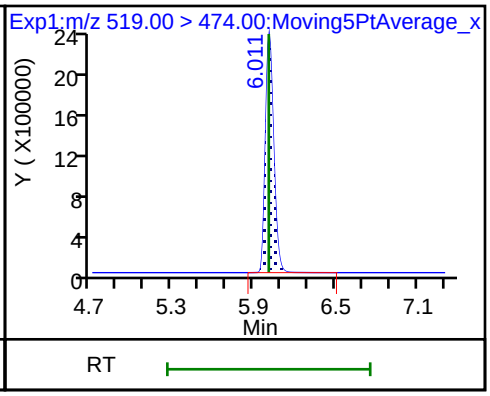
33 8:2 FTS



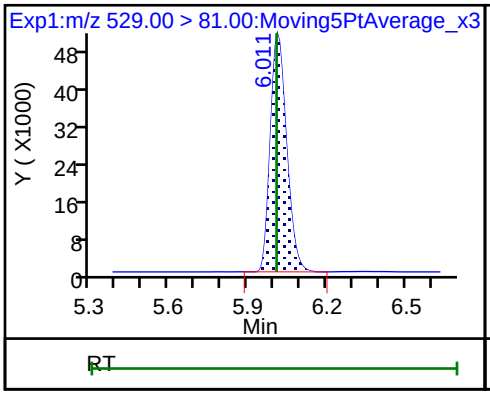
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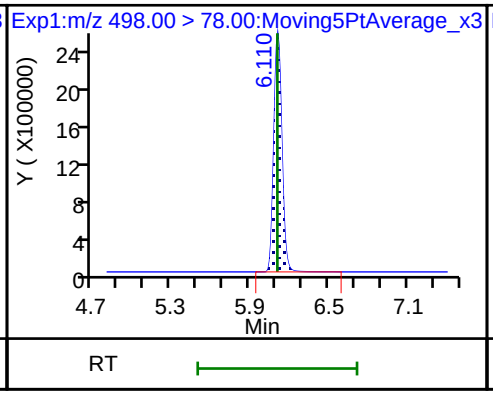
D 32 13C6 PFDA



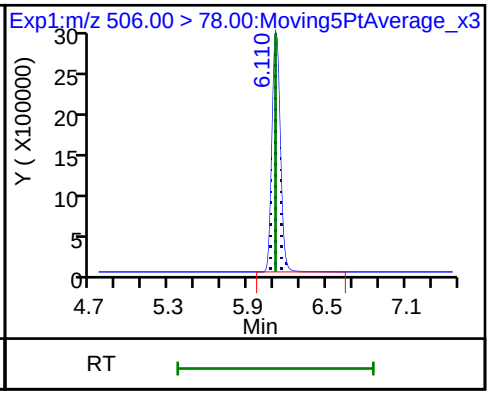
D 31 M2-8:2 FTS



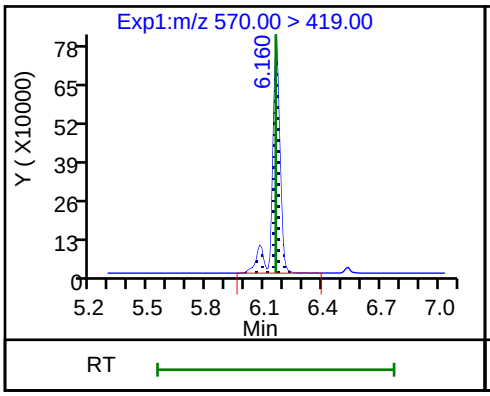
34 Perfluorooctanesulfonamide



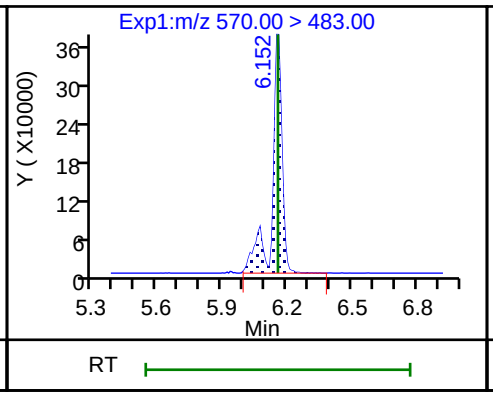
D 35 13C8 FOSA



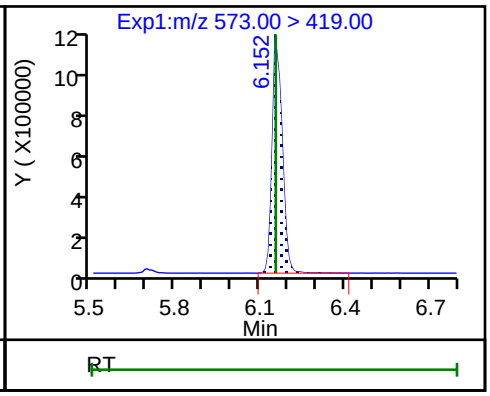
36 NMeFOSAA



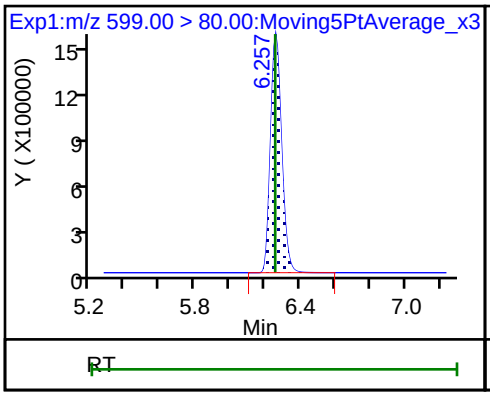
36 NMeFOSAA



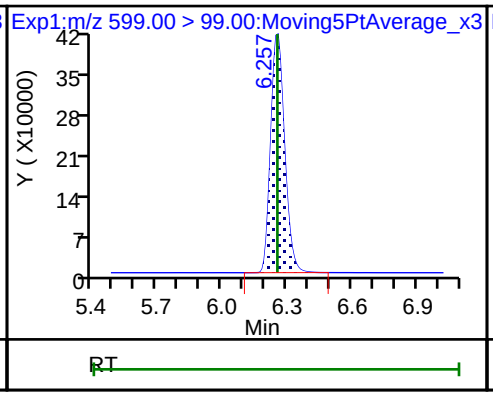
D 37 d3-NMeFOSAA



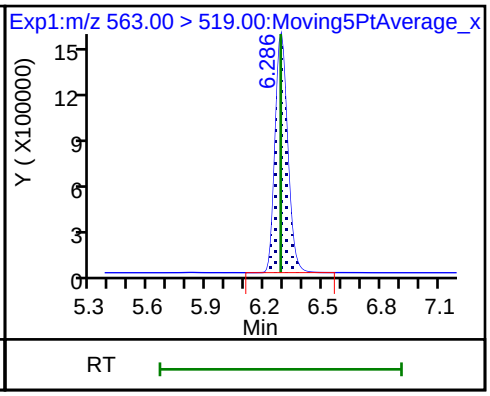
38 Perfluorodecanesulfonic acid



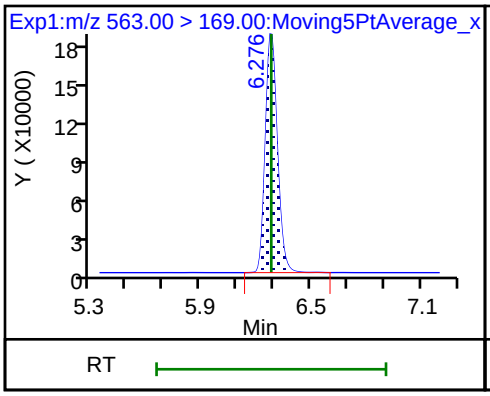
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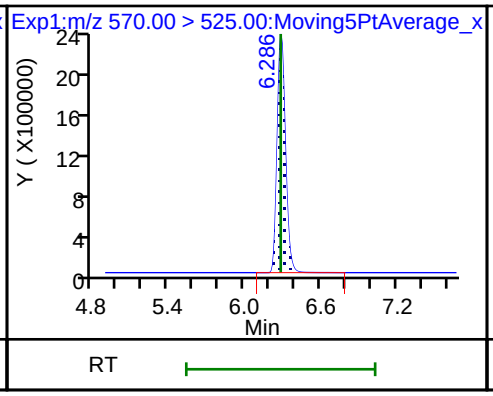
39 Perfluoroundecanoic acid



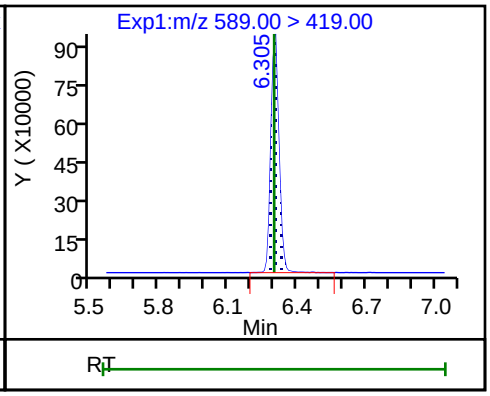
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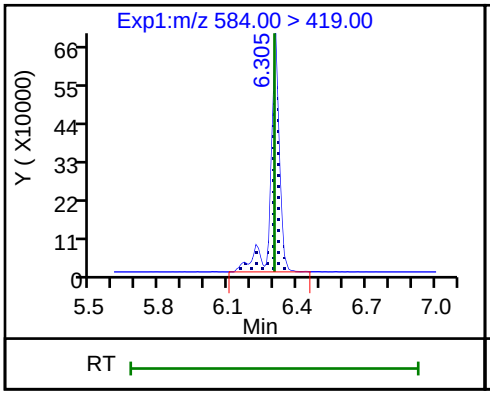
D 40 13C7 PFUnA



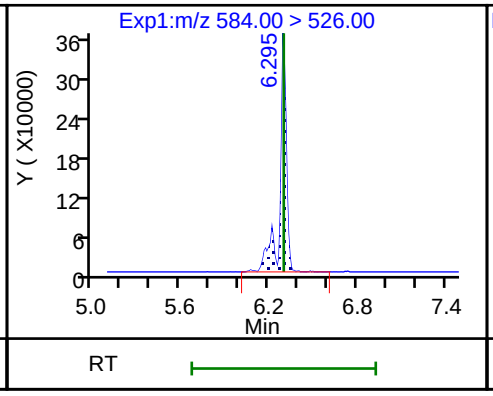
D 41 d5-NEtFOSAA



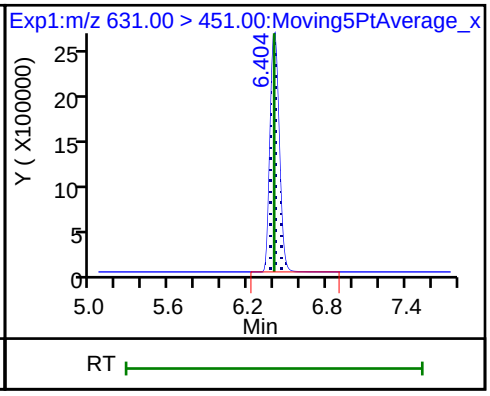
42 NEtFOSAA



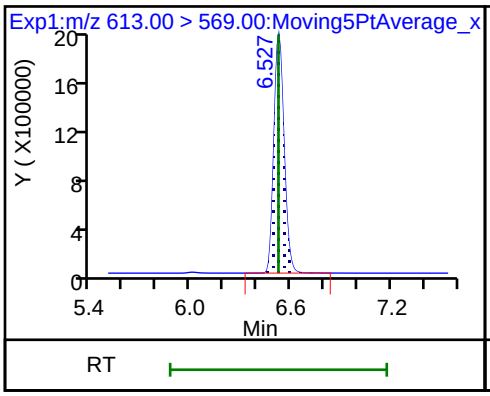
42 NEtFOSAA



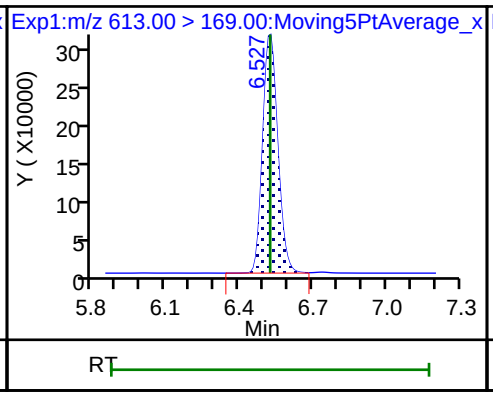
43 11ClFOS



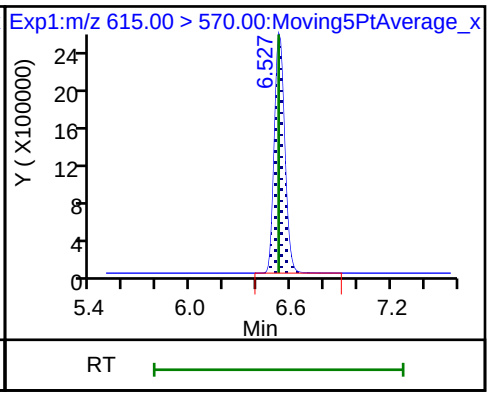
46 Perfluorododecanoic acid



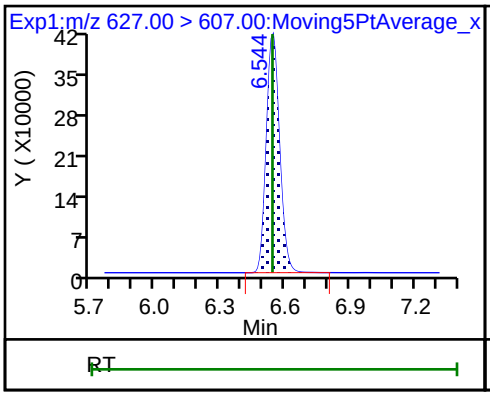
46 Perfluorododecanoic acid



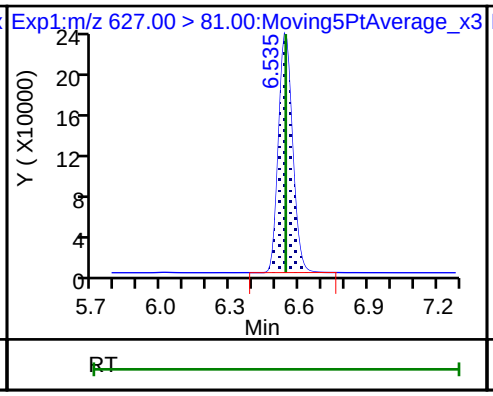
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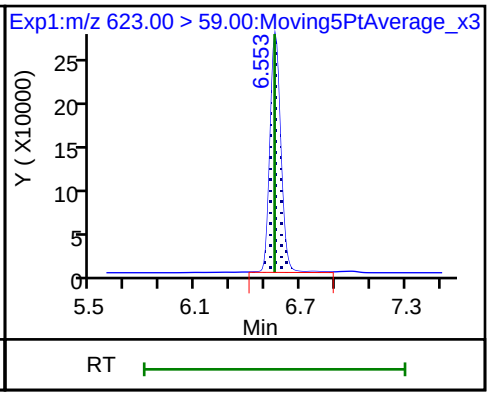
48 10:2 FTS



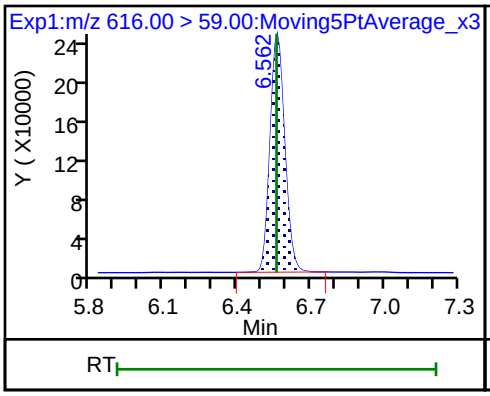
48 10:2 FTS



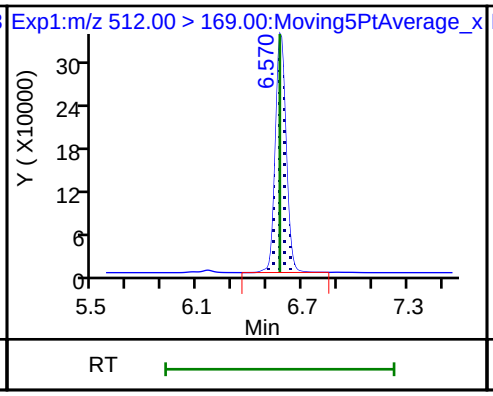
D 44 d7-N-MeFOSE-M



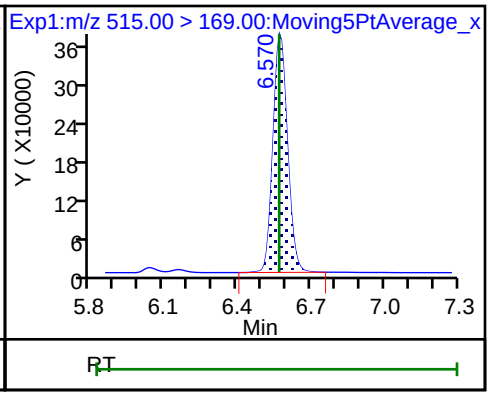
47 N-MeFOSE-M



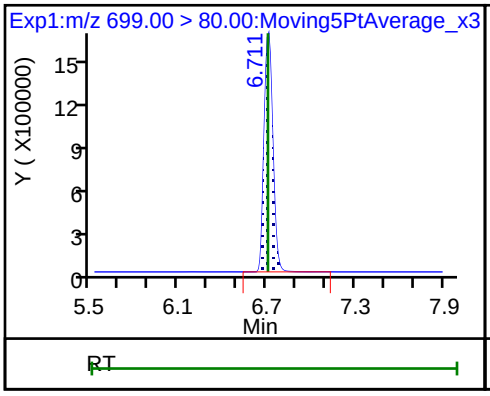
50 NMeFOSA



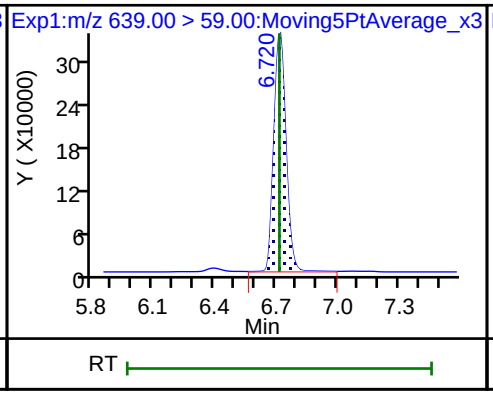
D 49 d3-NMePFOSA



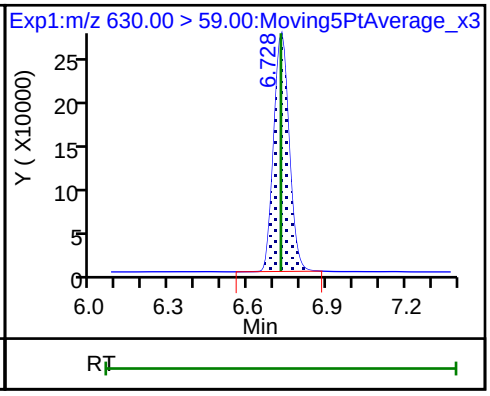
53 PFDoS



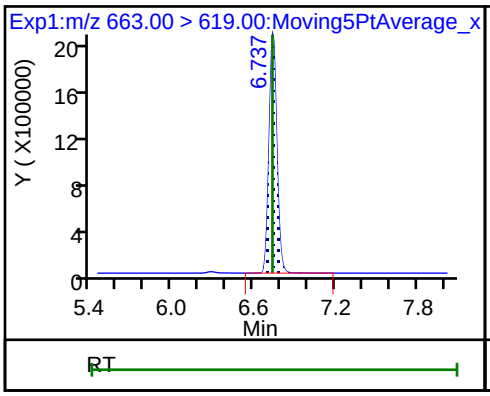
D 51 d9-N-EtFOSE-M



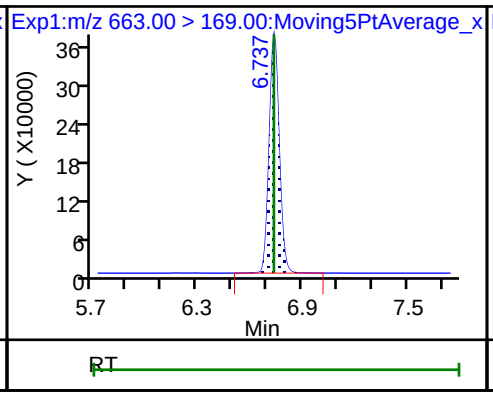
52 N-EtFOSE-M



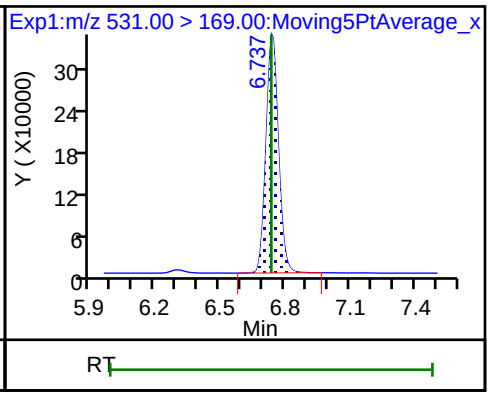
56 Perfluorotridecanoic acid



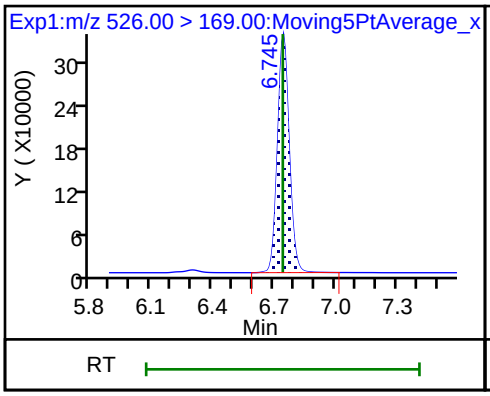
56 Perfluorotridecanoic acid



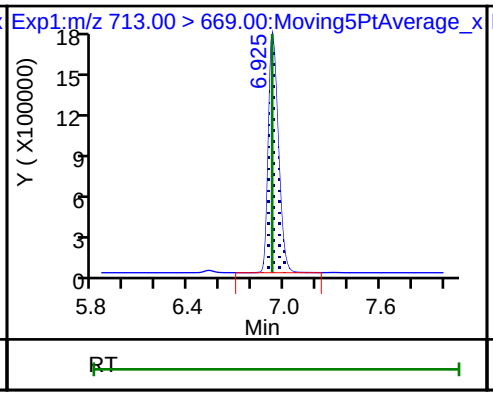
D 54 d5-NEtPFOSA



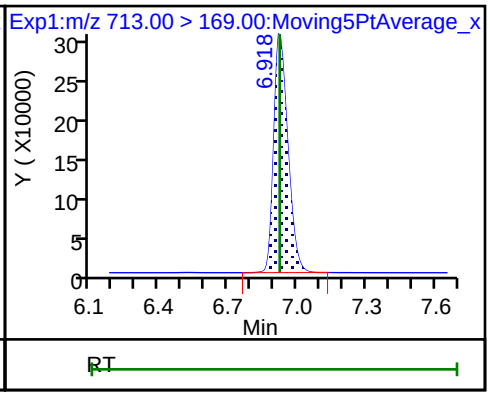
55 N-EtFOSA-M



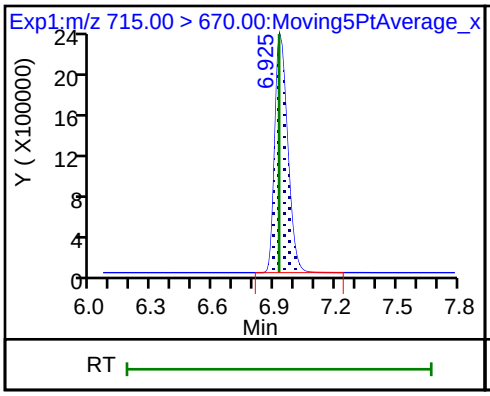
57 Perfluorotetradecanoic acid



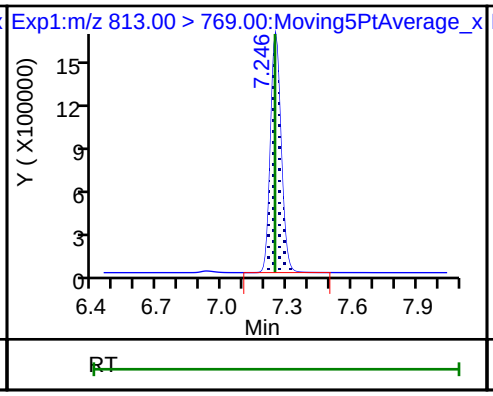
57 Perfluorotetradecanoic acid



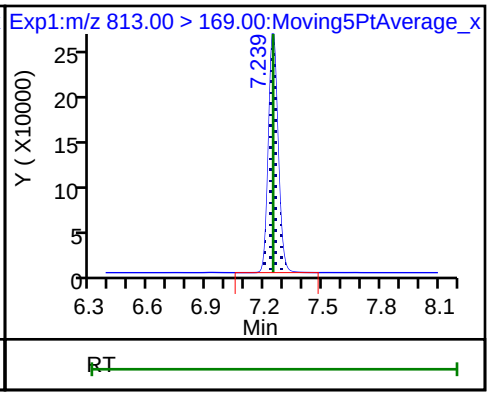
D 58 13C2 PFTeDA



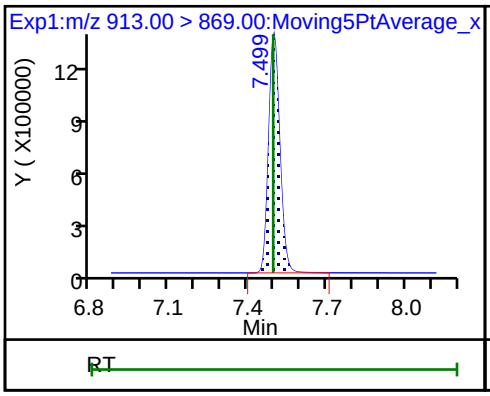
59 Perfluorohexadecanoic acid



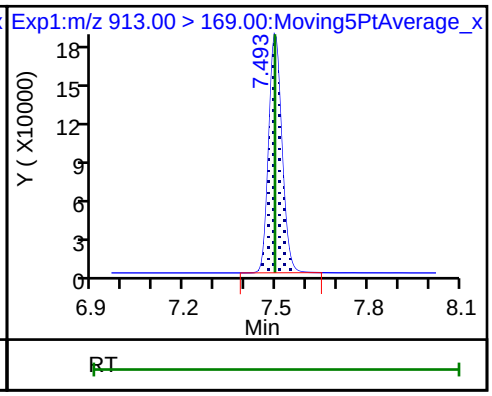
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-23.d
Lims ID: IC CAL 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 07-Apr-2022 10:34:14 ALS Bottle#: 20006 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 5
Misc. Info.: Plate: 1 Rack: 1 410-0054309-005
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:43:57 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 11:22:26
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 2 13C4 PFBA										
217.00 > 172.00	3.654	3.659	-0.005		7913417	9.77		97.7	134235	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.654	3.659	-0.005	1.000	13858233	21.3		107	25772	
63 PFECA F										
229.00 > 85.00	3.889	3.891	-0.002	0.932	11389480	21.4		107	10126	
67 3:3 FTCA										
241.00 > 177.00	4.167	4.170	-0.003	0.998	865441	21.8	Target=1.31	109	28792	
241.00 > 117.00	4.167	4.170	-0.003	0.998	628808		1.38(0.66-1.97)	109	14023	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.174	4.178	-0.004	1.000	14305553	20.8		104	108998	
D 4 13C5 PFPeA										
268.00 > 223.00	4.174	4.181	-0.007		6579770	9.48		94.8	70739	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.226	4.231	-0.005	0.998	15505744	18.4	Target=2.86	104	15273	
299.00 > 99.00	4.226	4.231	-0.005	0.998	5339856		2.90(1.43-4.29)	104	16005	
D 6 13C3 PFBS										
302.00 > 80.00	4.234	4.235	-0.001		8184149	8.87		95.4	426948	
64 PFECA A										
279.00 > 85.00	4.296	4.301	-0.005	1.029	11658532	22.1		110	102562	
65 PES										
315.00 > 135.00	4.391	4.394	-0.003	0.958	43743380	16.3	Target=14.03	91.3	242365	
315.00 > 83.00	4.391	4.394	-0.003	0.958	3547116		12.33(7.01-21.04)	91.3	5617	
68 PFECA B										
295.00 > 201.00	4.513	4.514	-0.001	0.985	4749501	20.9		105	56964	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.543	4.546	-0.003	1.000	3090514	19.3	Target=1.58	103	224848	
327.00 > 81.00	4.543	4.546	-0.003	1.000	1696215		1.82(0.79-2.36)	103	37084	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.543	4.549	-0.006		389441	8.93		95.6	12226	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.582	4.586	-0.004	1.000	14287038	21.5	Target=13.65	107	130975	
313.00 > 119.00	4.582	4.586	-0.004	1.000	987723		14.46(6.82-20.47)	107	36391	
D 9 13C5 PFHxA										
318.00 > 273.00	4.582	4.587	-0.005		7785655	9.75		97.5	114254	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.602	4.608	-0.006	1.087	15559762	19.7	Target=3.02	105	1175863	
349.00 > 99.00	4.602	4.608	-0.006	1.087	5033071		3.09(1.51-4.53)	105	287083	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.712	4.715	-0.003		868549	10.0		100	57120	
12 HFPO-DA										
329.00 > 285.00	4.712	4.715	-0.003	1.000	4561336	21.4		107	242281	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.970	4.976	-0.006	0.998	15057127	20.5	Target=3.04	103	90670	
363.00 > 169.00	4.970	4.976	-0.006	0.998	4826450		3.12(1.52-4.56)	103	30889	
D 17 13C4 PFHpA										
367.00 > 322.00	4.979	4.981	-0.002		7663566	9.11		91.1	170880	
D 16 13C3 PFHxS										
402.00 > 80.00	4.979	4.983	-0.004		7146360	8.65		91.4	990990	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.979	4.981	-0.002	1.000	14716601	20.0	Target=2.99	110	4699909	
399.00 > 99.00	4.979	4.981	-0.002	1.000	4757785		3.09(1.50-4.49)	110	8609	
18 DONA										
377.00 > 251.00	5.023	5.026	-0.003	1.009	24232135	19.5		103	295483	
62 5:3 FTCA										
341.00 > 237.00	5.045	5.051	-0.006	1.101	3075002	20.0	Target=3.41	100	29787	
341.00 > 217.00	5.045	5.051	-0.006	1.101	945478		3.25(1.70-5.11)	100	13949	
19 6:2 FTS										
427.00 > 407.00	5.323	5.330	-0.007	0.999	2685736	19.6	Target=1.71	103	91463	
427.00 > 81.00	5.323	5.330	-0.007	0.999	1577218		1.70(0.85-2.56)	103	30596	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.330	5.332	-0.002		247220	8.51		89.5	17029	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.339	-0.002	1.072	15028816	20.6	Target=3.21	108	688724	
449.00 > 99.00	5.330	5.339	-0.009	1.070	4792012		3.14(1.60-4.81)	108	444251	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.343	5.348	-0.005	1.000	15633611	20.3	Target=2.40	101	417148	
413.00 > 169.00	5.343	5.348	-0.005	1.000	6811512		2.30(1.20-3.60)	101	554796	
D 22 13C8 PFOA										
421.00 > 376.00	5.343	5.351	-0.008		8542529	9.35		93.5	821268	
D 25 13C8 PFOS										
507.00 > 80.00	5.676	5.679	-0.003		6891515	9.24		96.6	204870	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.676	5.677	-0.001	1.000	15726775	19.6	Target=3.65	106	4711032	
499.00 > 99.00	5.668	5.677	-0.009	0.999	4240133		3.71(1.83-5.48)	106	9409	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.696	-0.004		8785240	9.40		94.0	176050	
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.694	-0.002	1.000	16651442	21.0	Target=4.51	105	308788	
463.00 > 169.00	5.684	5.694	-0.010	0.999	3717852		4.48(2.25-6.76)	105	75230	
66 7:3 FTCA										
441.00 > 317.00	5.790	5.794	-0.004	1.264	1610228	19.7	Target=10.25	98.7	26836	
441.00 > 337.00	5.790	5.794	-0.004	1.264	159368		10.10(5.12-15.37)	98.7	9170	
28 9ClFOS										
531.00 > 351.00	5.856	5.859	-0.003	1.032	31251015	18.5		99.3	1616383	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.984	-0.003	1.054	13405831	19.9	Target=3.43	103	279067	
549.00 > 99.00	5.972	5.984	-0.012	1.052	4026245		3.33(1.72-5.15)	103	253182	
D 32 13C6 PFDA										
519.00 > 474.00	6.005	6.008	-0.003		9394311	9.29		92.9	321151	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	6.008	-0.003		211221	8.70		90.8	12302	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	6.007	-0.002	1.000	17104871	21.0	Target=8.86	105	340201	
513.00 > 169.00	5.997	6.007	-0.010	0.999	1932775		8.85(4.43-13.29)	105	42276	
33 8:2 FTS										
527.00 > 507.00	6.005	6.008	-0.003	1.000	3419089	19.7	Target=1.91	103	161791	
527.00 > 81.00	6.005	6.008	-0.003	1.000	1605098		2.13(0.96-2.87)	103	28933	
D 35 13C8 FOSA										
506.00 > 78.00	6.104	6.109	-0.005		12253898	9.87		98.7	409568	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.104	6.107	-0.003	1.000	24577583	19.4		96.8	811756	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.154	6.155	-0.001		2887000	9.97		99.7	51587	
36 NMeFOSAA										
570.00 > 419.00	6.154	6.157	-0.003	1.000	5128259	20.3	Target=1.78	102	206754	
570.00 > 483.00	6.146	6.157	-0.011	0.999	2775478		1.85(0.89-2.67)	102	316710	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.255	-0.004	1.101	15053228	20.1	Target=3.62	104	310158	
599.00 > 99.00	6.251	6.255	-0.004	1.101	4236589		3.55(1.81-5.43)	104	136539	
D 40 13C7 PFUnA										
570.00 > 525.00	6.279	6.284	-0.005		9447621	9.19		91.9	529839	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.279	6.283	-0.004	1.000	16530761	21.3	Target=8.28	107	127259	
563.00 > 169.00	6.270	6.283	-0.013	0.999	2003192		8.25(4.14-12.42)	107	88373	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.299	-0.001		2104869	9.49		94.9	277933	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.298	6.300	-0.002	1.000	4216831	21.3	Target=1.66	107	749613	
584.00 > 526.00	6.298	6.300	-0.002	1.000	2477080		1.70(0.83-2.49)	107	845	
43 11ClFOS										
631.00 > 451.00	6.398	6.398	0.0	1.127	27566823	18.4		99.1	476959	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.526	-0.004		10030562	9.42		94.2	198285	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.522	6.524	-0.002	1.000	17729611	20.1	Target=5.73	100	65745	
613.00 > 169.00	6.513	6.524	-0.011	0.999	3239301		5.47(2.87-8.60)	100	125986	
48 10:2 FTS										
627.00 > 607.00	6.539	6.541	-0.002	1.089	3845774	19.6	Target=1.71	102	128320	
627.00 > 81.00	6.531	6.541	-0.010	1.088	2281456		1.69(0.85-2.56)	102	67522	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.551	-0.003		1134021	9.76		97.6	6105	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.559	-0.002	1.001	2378007	20.0		99.9	23740	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.566	6.570	-0.004		1537314	9.80		98.0	5658	
50 NMeFOSA										
512.00 > 169.00	6.566	6.570	-0.004	1.000	3303907	20.7		104	10470	
53 PFDoS										
699.00 > 80.00	6.705	6.706	-0.001	1.181	14315532	20.2		104	386231	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.715	-0.001		1318315	9.44		94.4	3292	
52 N-EtFOSE-M										
630.00 > 59.00	6.723	6.725	-0.002	1.001	2560051	20.5		103	27056	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.731	6.736	-0.005		1397043	9.93		99.3	9685	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.731	6.736	-0.005	1.032	18525956	20.9	Target=5.39	105	54524	
663.00 > 169.00	6.731	6.736	-0.005	1.032	3347447		5.53(2.69-8.08)	105	82887	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.741	-0.001	1.001	3109840	19.9		99.6	10010	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.920	6.923	-0.003		10133924	9.55		95.5	304575	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.920	6.923	-0.003	1.000	17984504	19.9	Target=5.85	99.6	35300	
713.00 > 169.00	6.913	6.923	-0.010	0.999	3169241		5.67(2.93-8.78)	99.6	109417	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.243	-0.002	1.046	12953976	20.2	Target=6.08	101	42562	
813.00 > 169.00	7.234	7.243	-0.009	1.045	2100391		6.17(3.04-9.13)	101	101922	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.493	7.495	-0.002	1.083	9163837	21.6	Target=7.13	108	57007	
913.00 > 169.00	7.488	7.495	-0.007	1.082	1273401		7.20(3.56-10.69)	108	39273	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD5_00014 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:43:58 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-23.d

Injection Date: 07-Apr-2022 10:34:14 Instrument ID: 29347

Lims ID: IC CAL 5

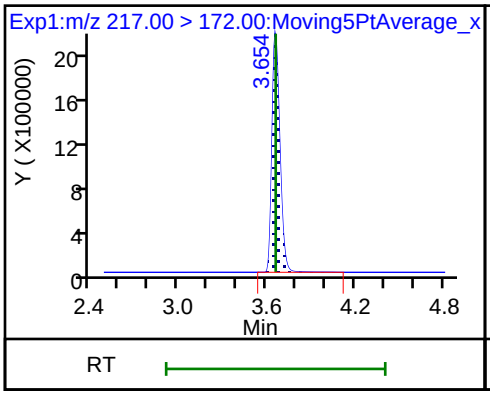
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Operator ID: US19_USR_INS75556 ALS Bottle#: 20006 Worklist Smp#: 5

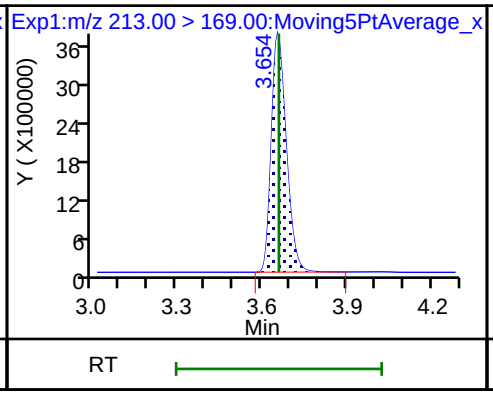
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

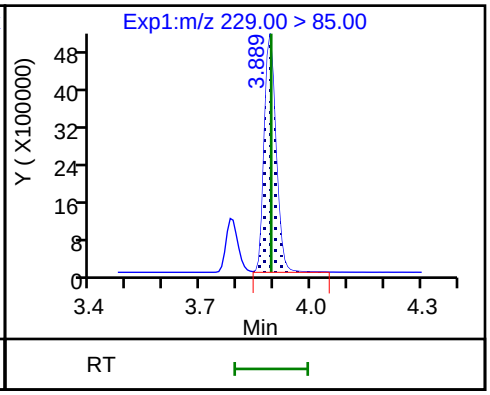
D 2 13C4 PFBA



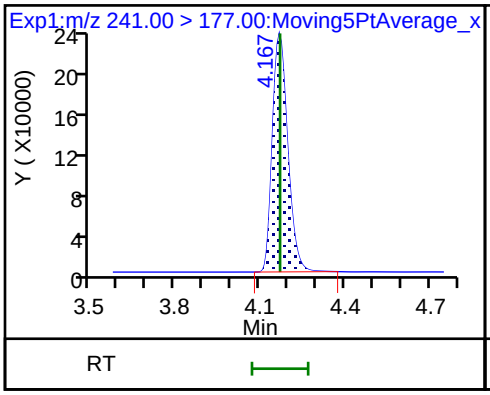
1 Perfluorobutanoic acid



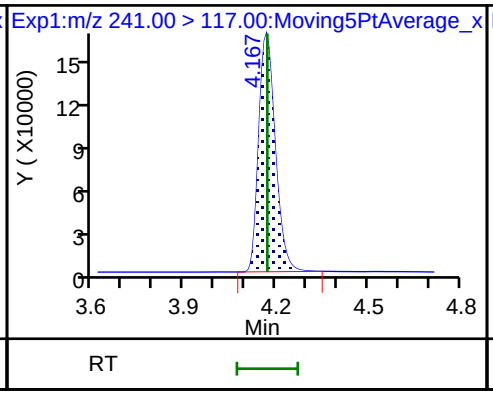
63 PFECA F



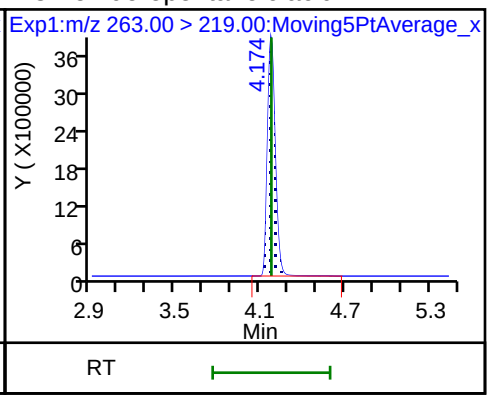
67 3:3 FTCA



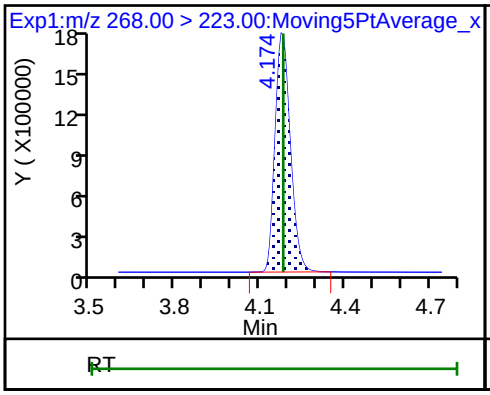
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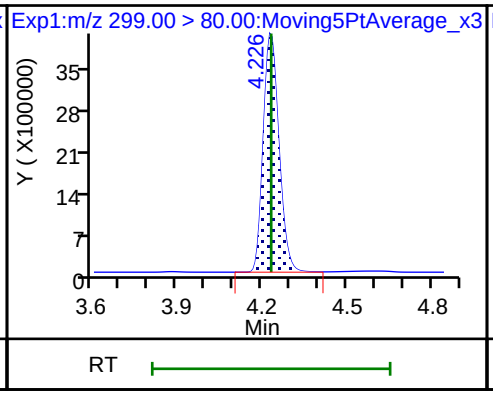
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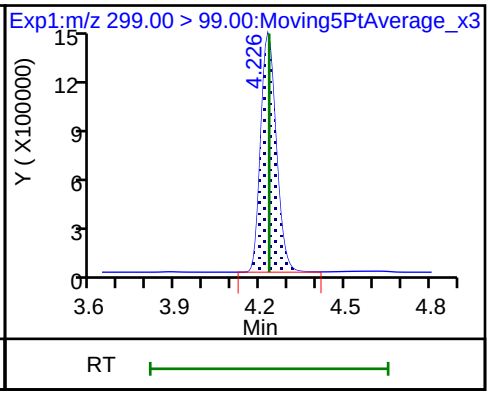
D 4 13C5 PFPeA



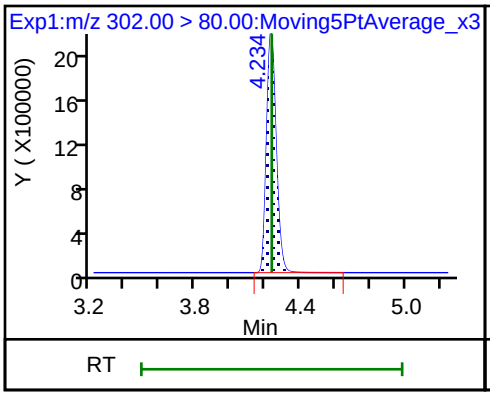
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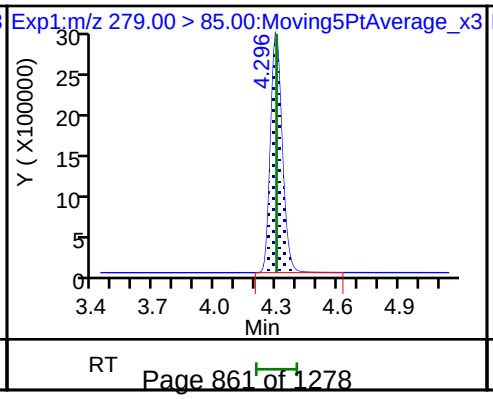
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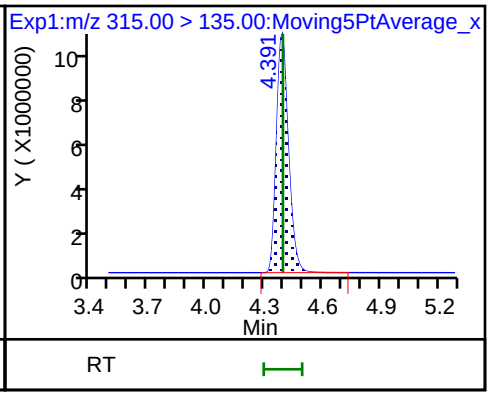
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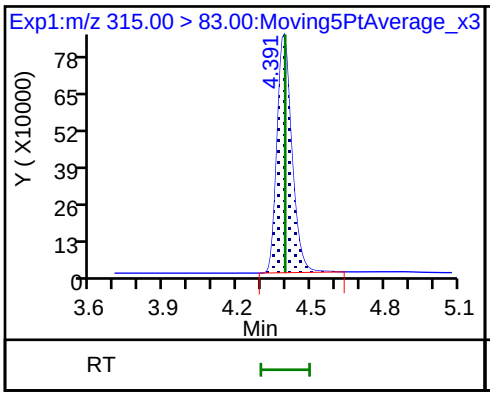
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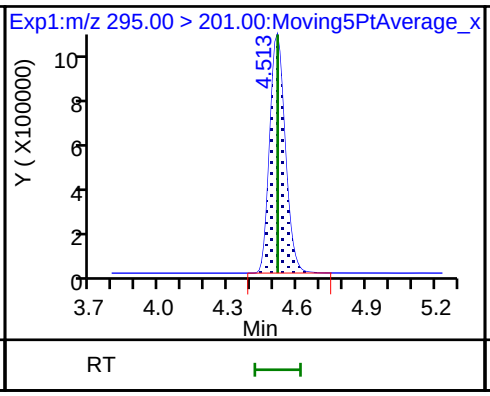
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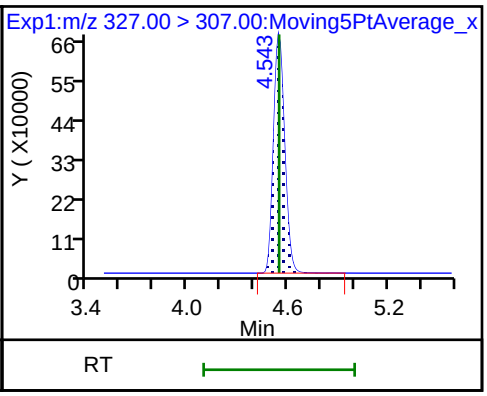
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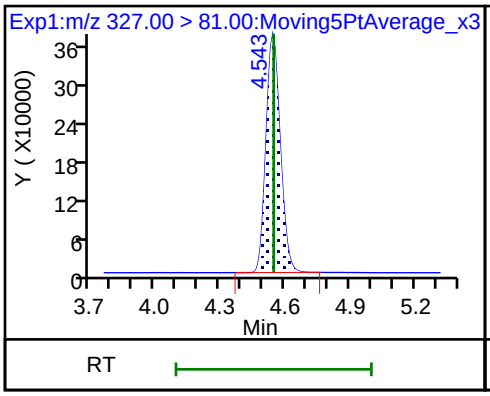
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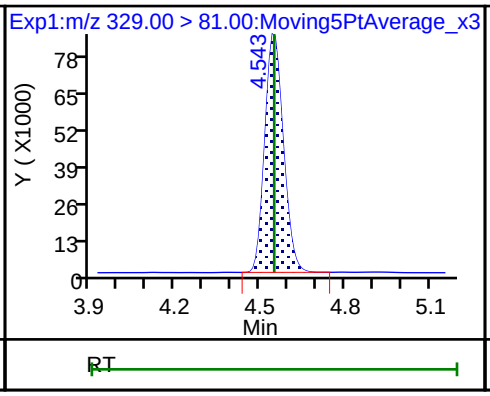
7 4:2 FTS



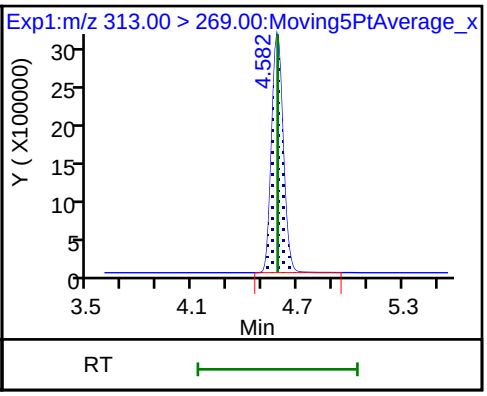
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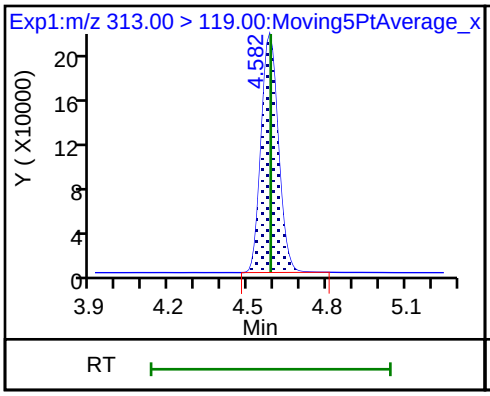
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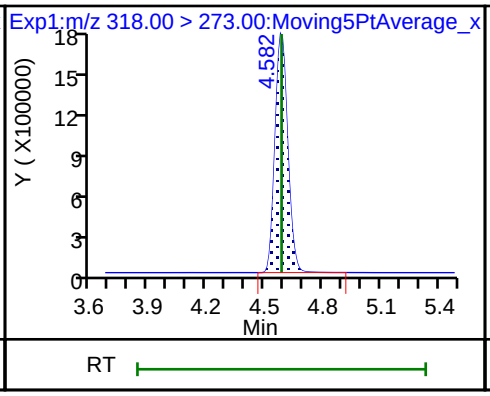
10 Perfluorohexanoic acid



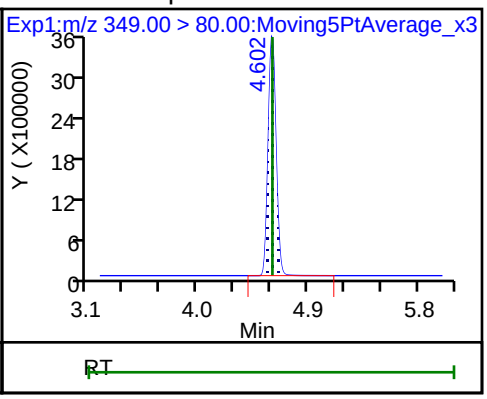
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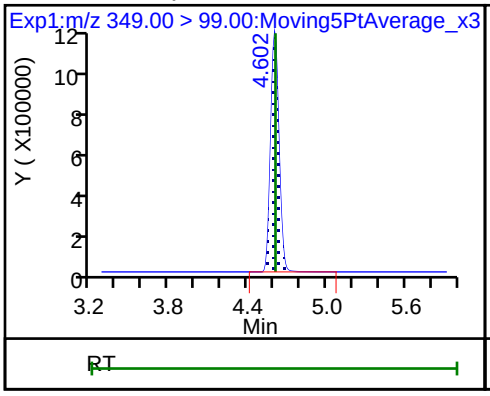
D 9 13C5 PFHxA



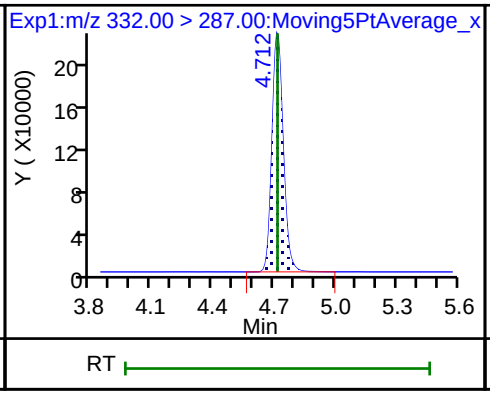
11 Perfluoropentanesulfonic acid



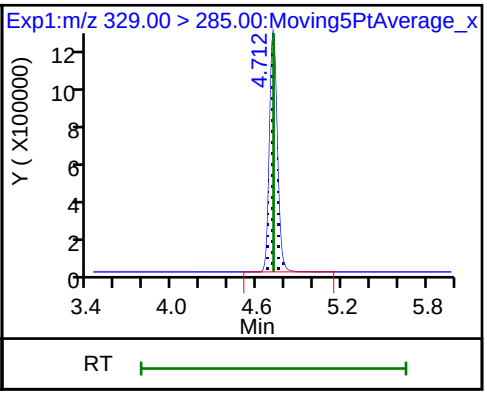
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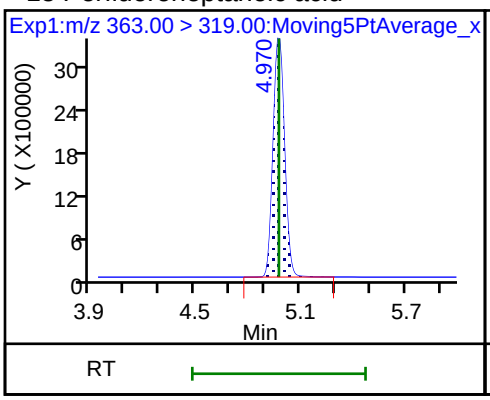
D 13 13C3 HFPO-DA



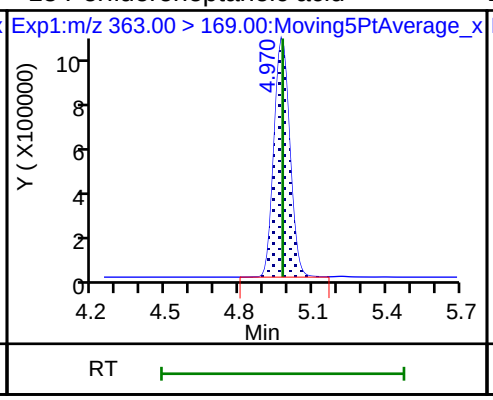
12 HFPO-DA



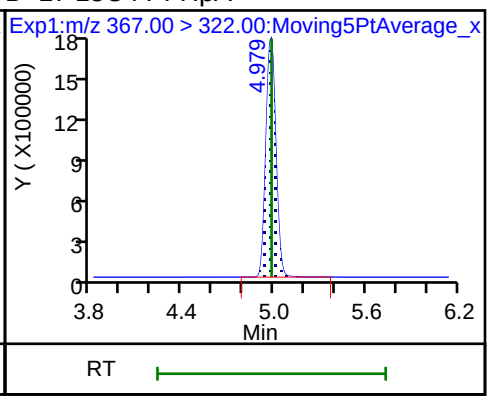
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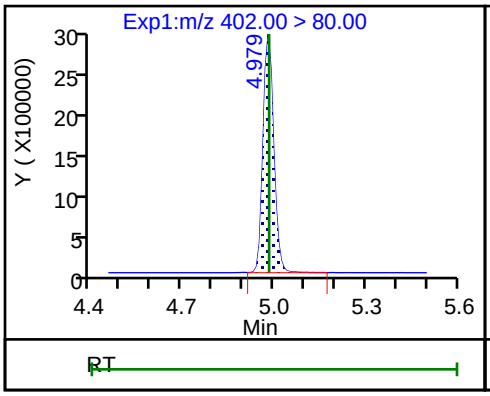
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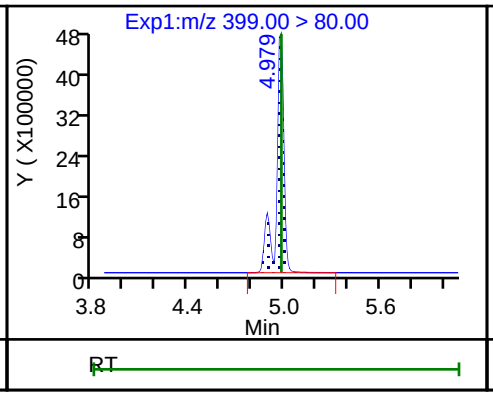
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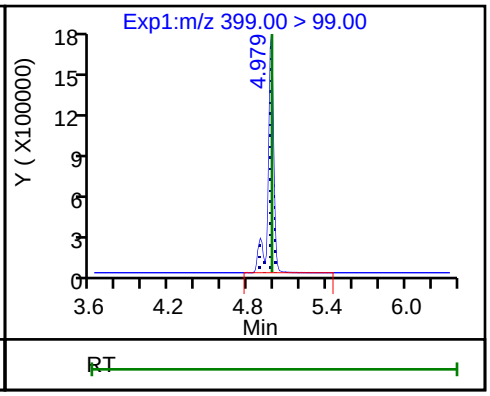
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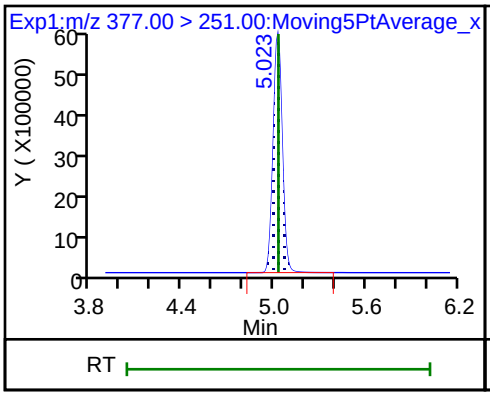
14 Perfluorohexanesulfonic acid



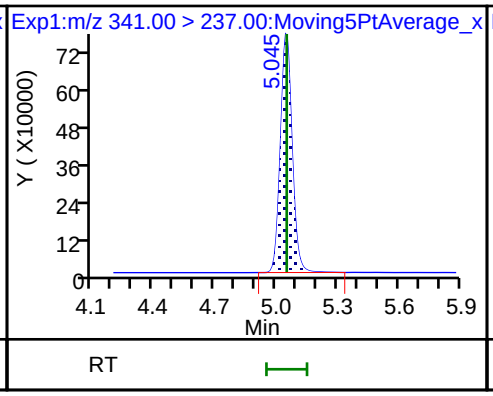
14 Perfluorohexanesulfonic acid



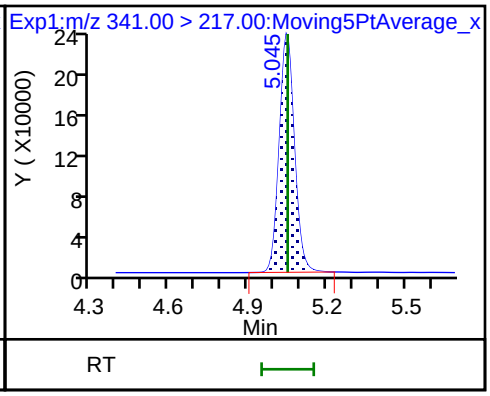
18 DONA



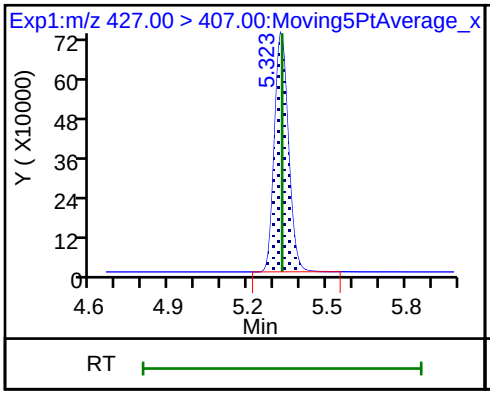
62 5:3 FTCA



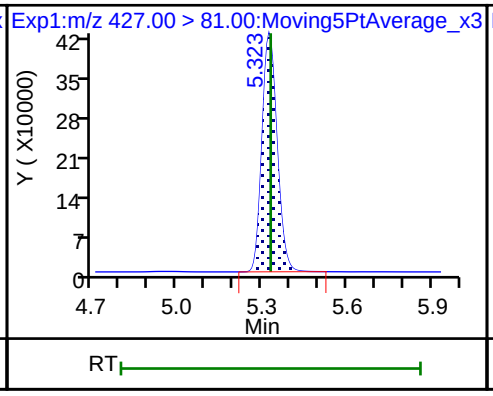
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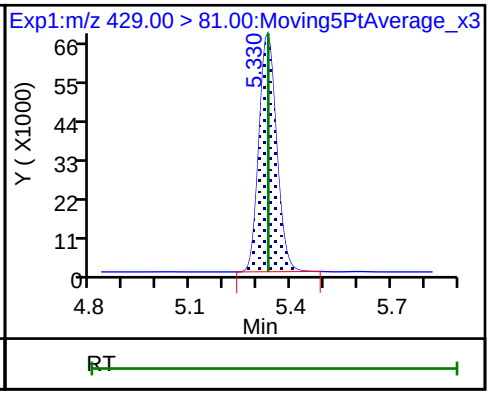
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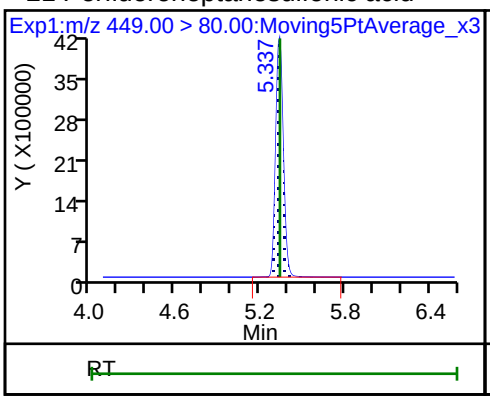
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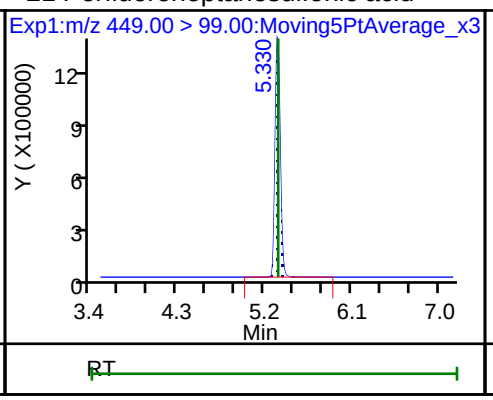
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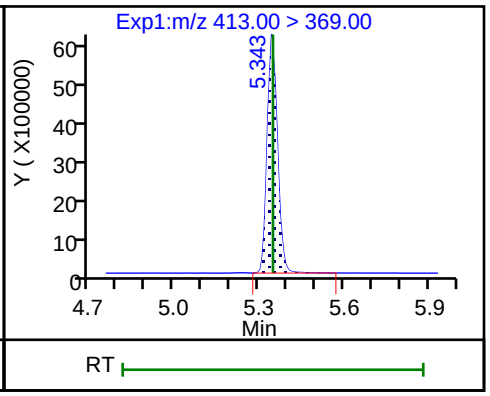
21 Perfluoroheptanesulfonic acid



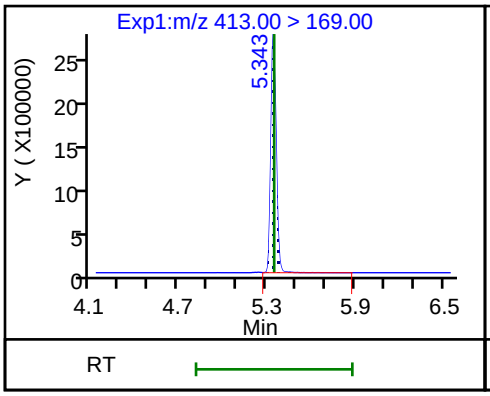
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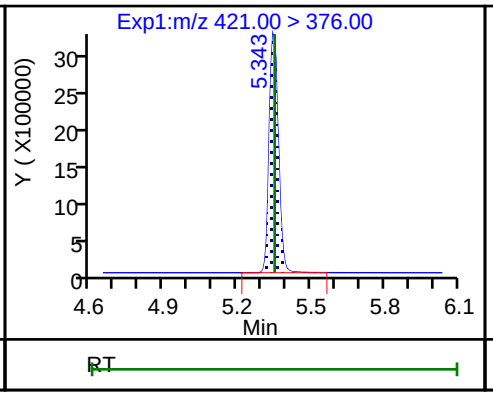
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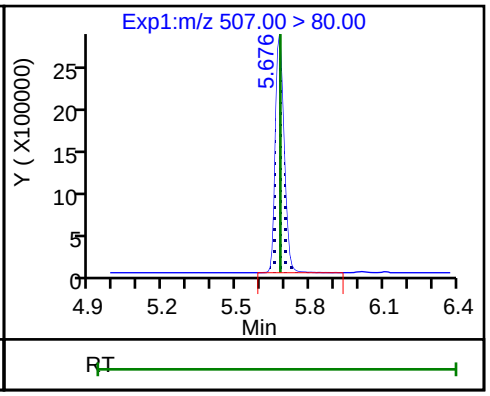
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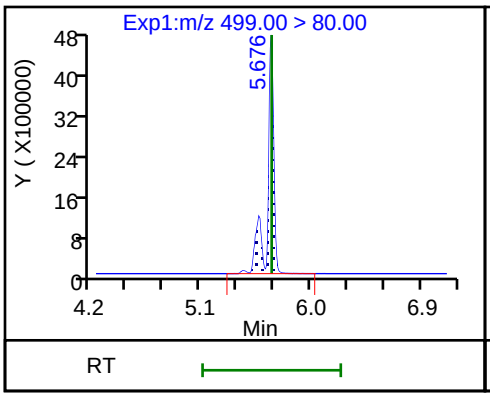
D 22 13C8 PFOA



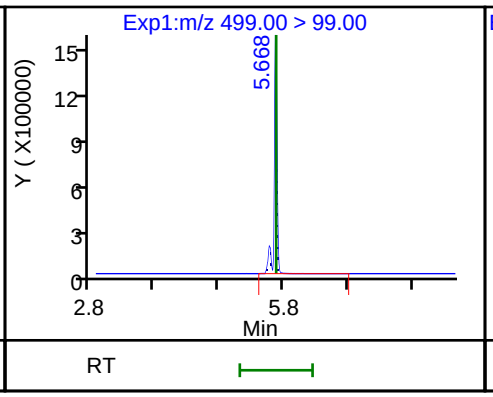
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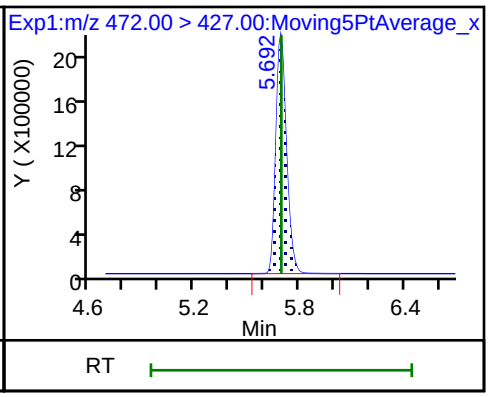
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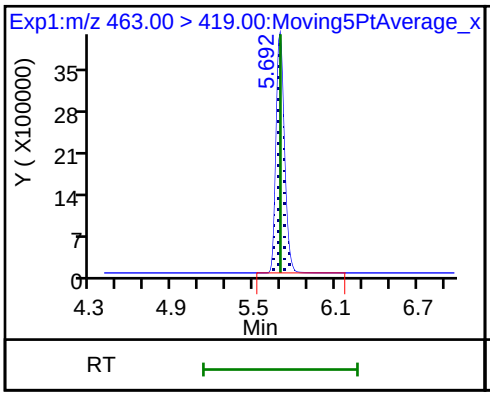
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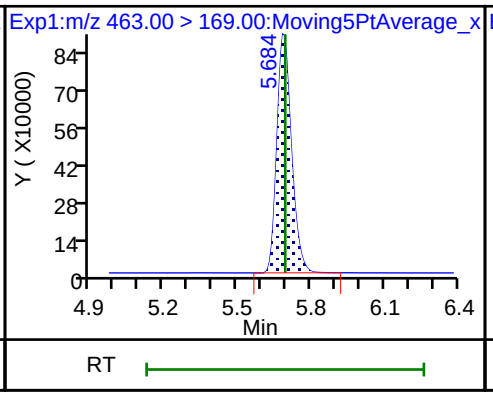
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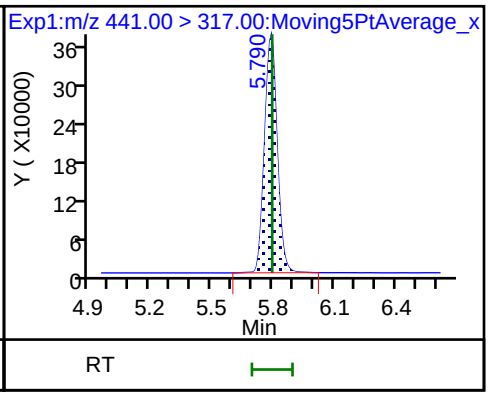
26 Perfluorononanoic acid



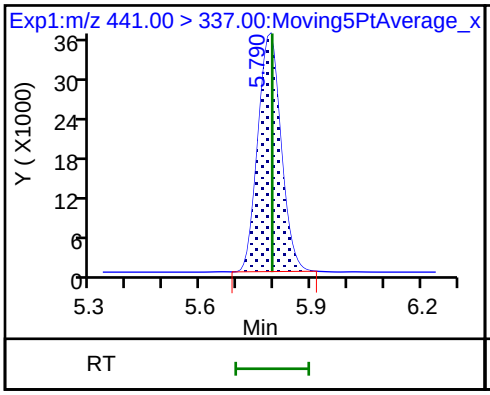
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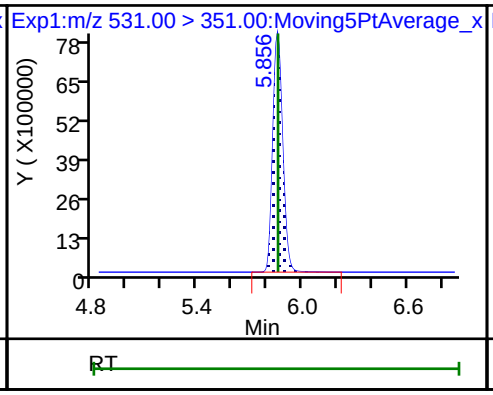
66 7:3 FTCA



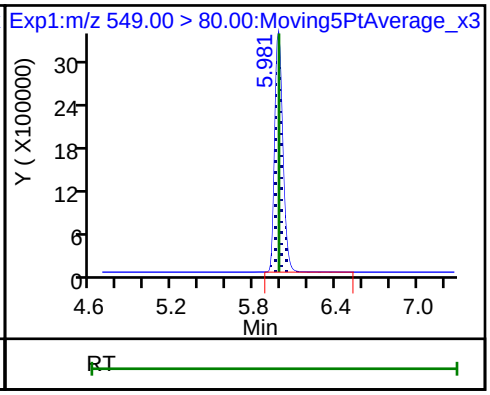
66 7:3 FTCA



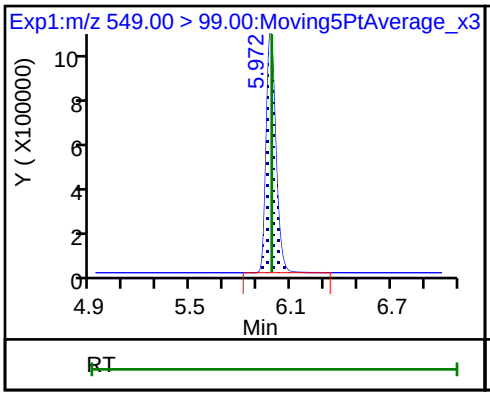
28 9ClFOS



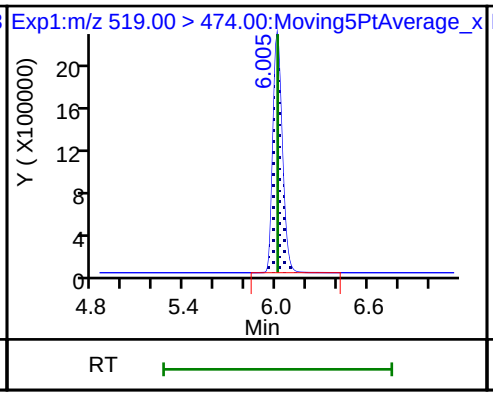
29 Perfluorononanesulfonic acid



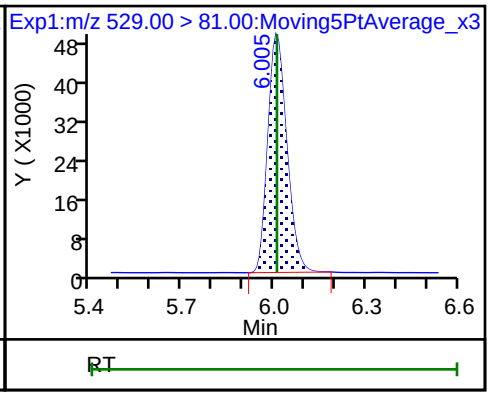
29 Perfluorononanesulfonic acid



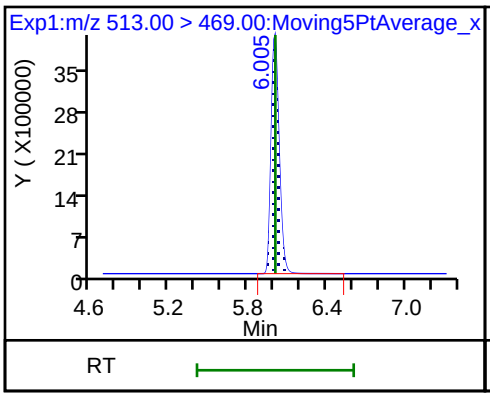
D 32 13C6 PFDA



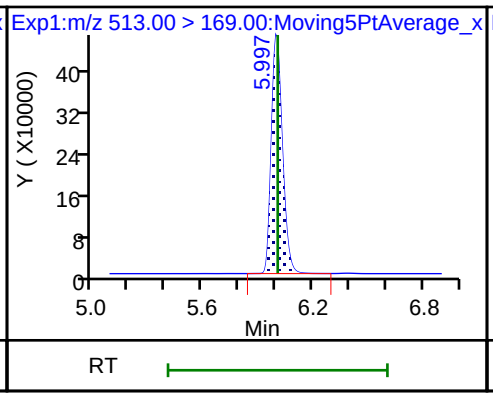
D 31 M2-8:2 FTS



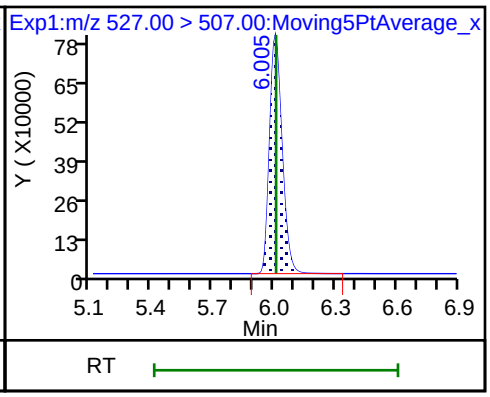
30 Perfluorodecanoic acid



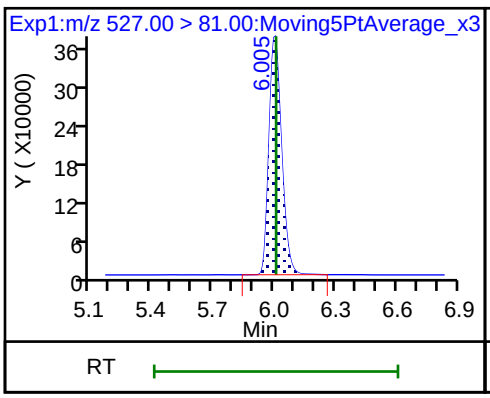
30 Perfluorodecanoic acid



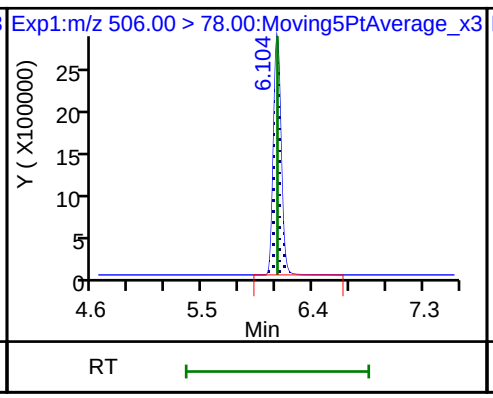
33 8:2 FTS



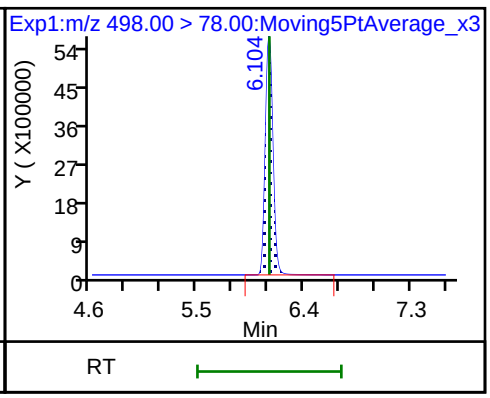
33 8:2 FTS



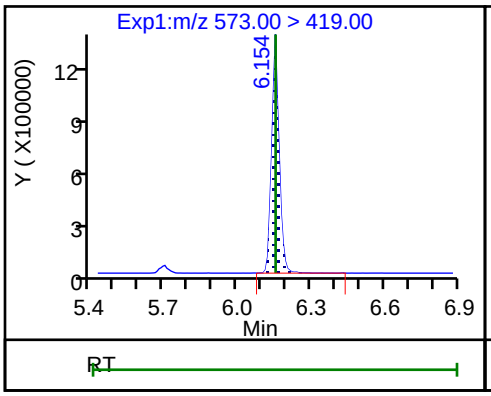
D 35 13C8 FOSA



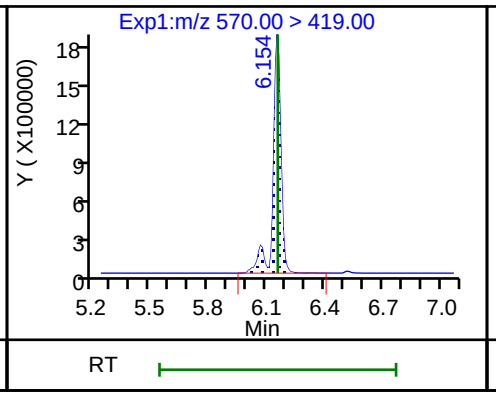
34 Perfluorooctanesulfonamide



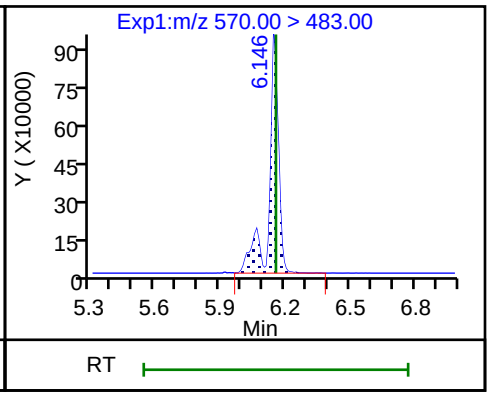
D 37 d3-NMeFOSAA



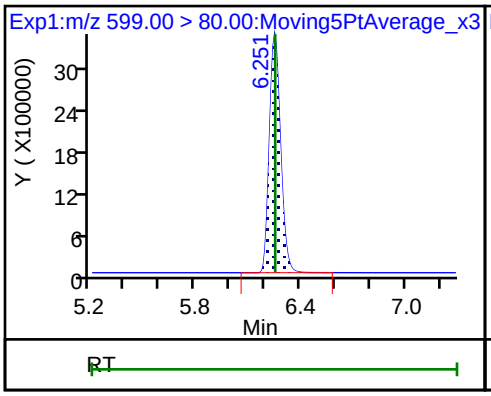
36 NMeFOSAA



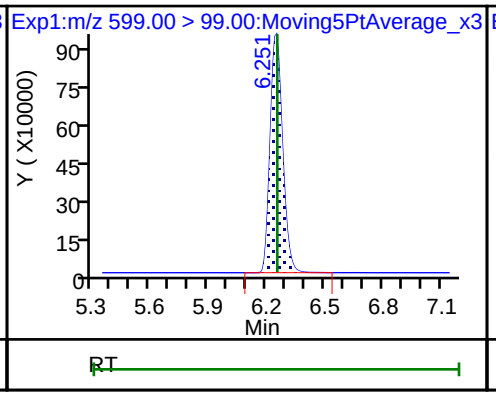
36 NMeFOSAA



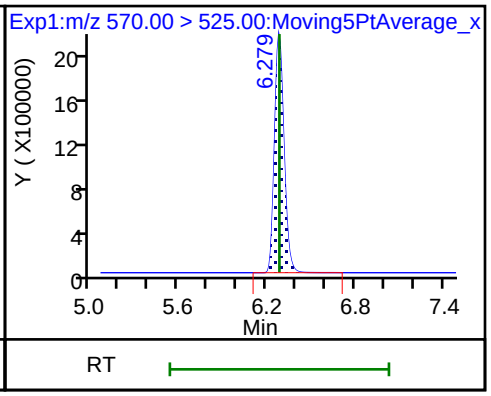
38 Perfluorodecanesulfonic acid



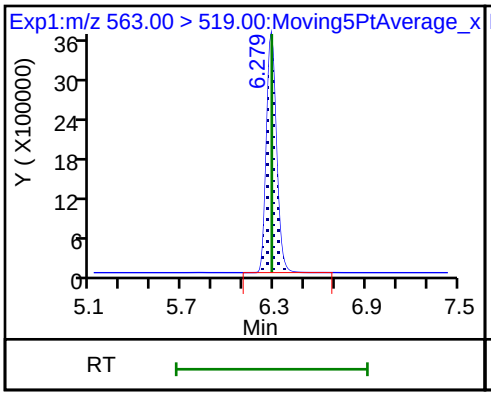
38 Perfluorodecanesulfonic acid



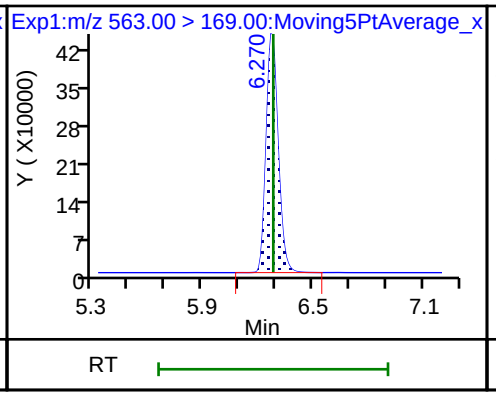
D 40 13C7 PFUnA



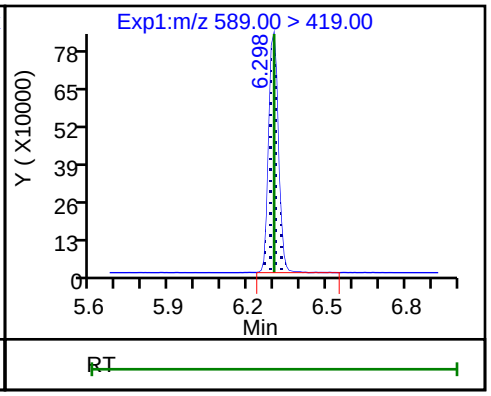
39 Perfluoroundecanoic acid



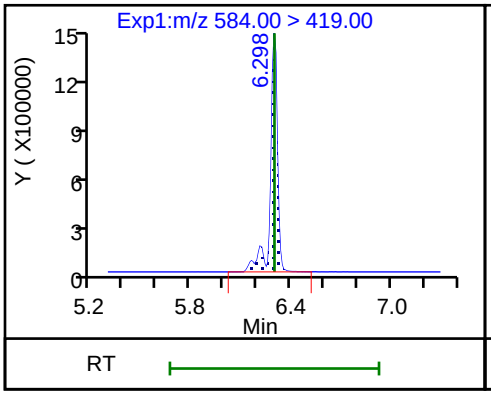
39 Perfluoroundecanoic acid



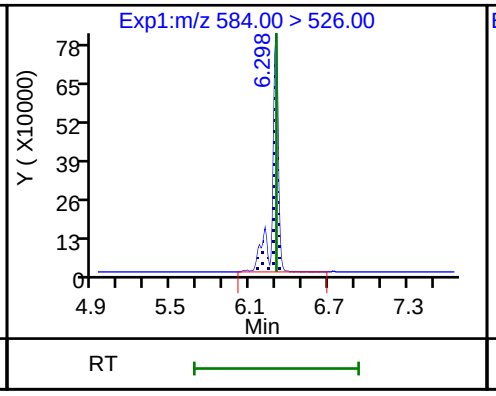
D 41 d5-NEtFOSAA



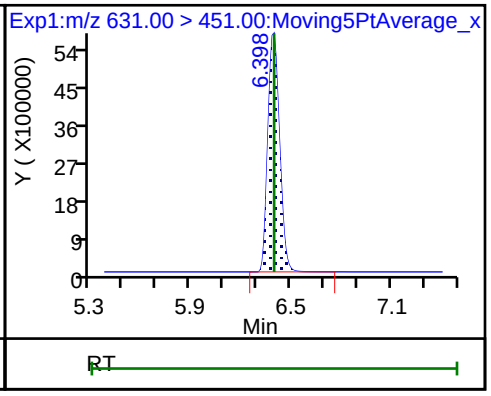
42 NEtFOSAA



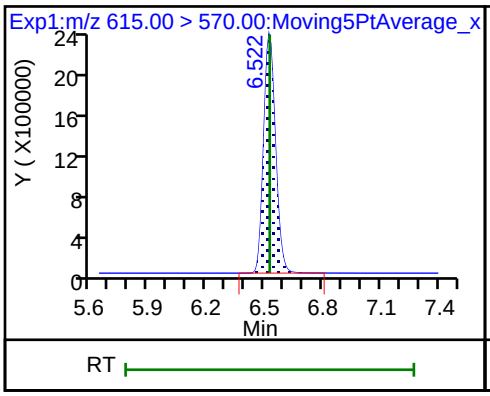
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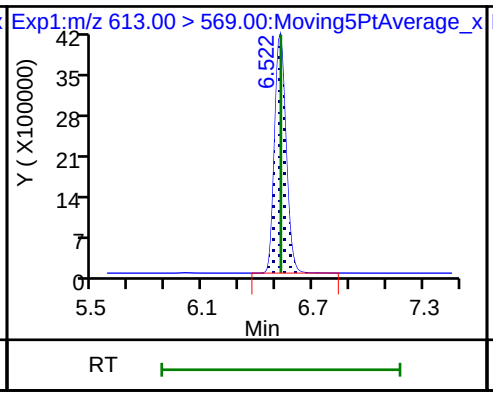
43 11ClFOS



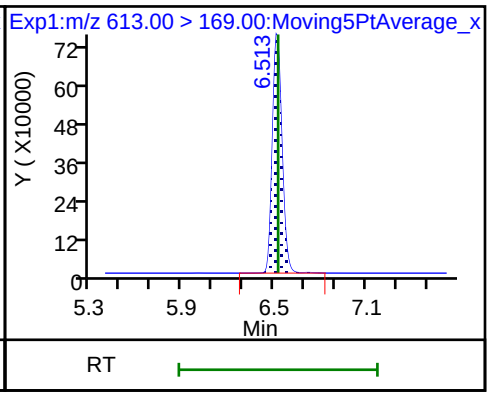
D 45 13C2-PFDoDA



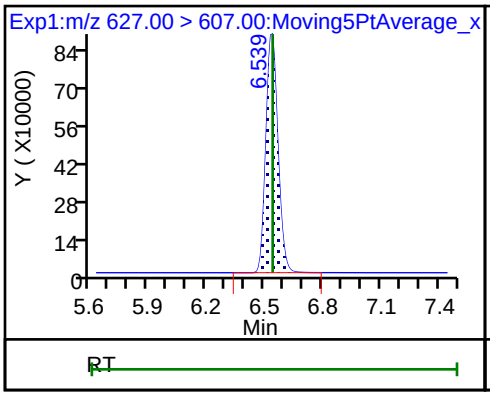
46 Perfluorododecanoic acid



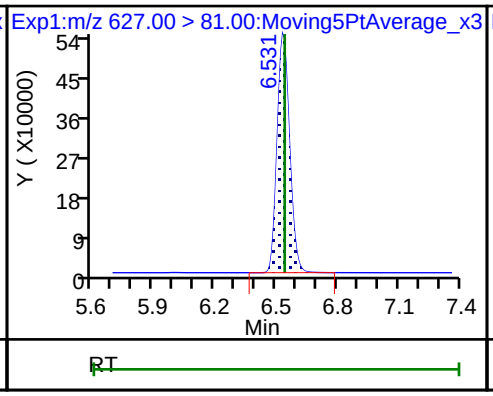
46 Perfluorododecanoic acid



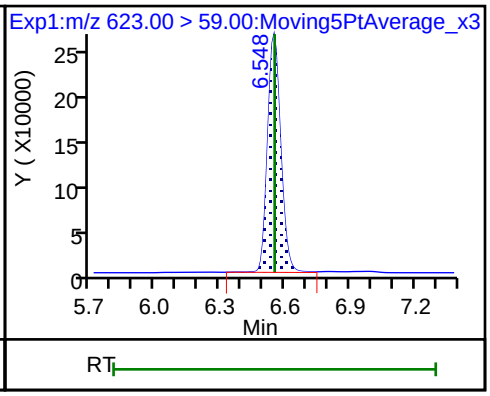
48 10:2 FTS



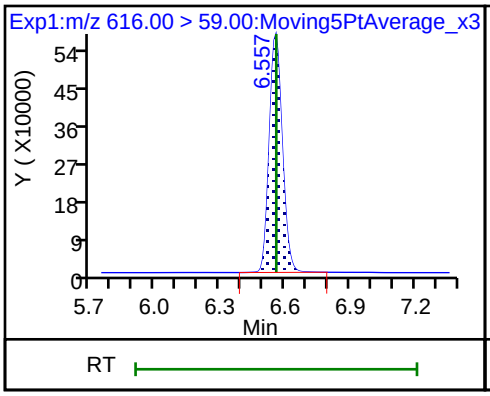
48 10:2 FTS



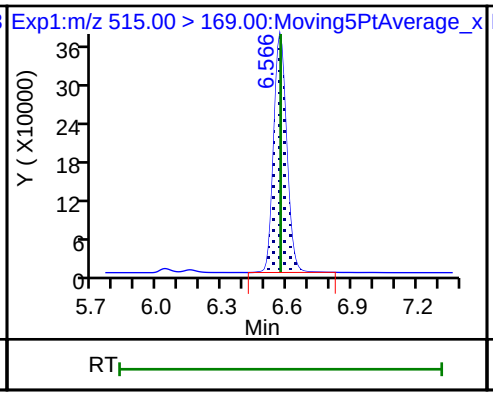
D 44 d7-N-MeFOSE-M



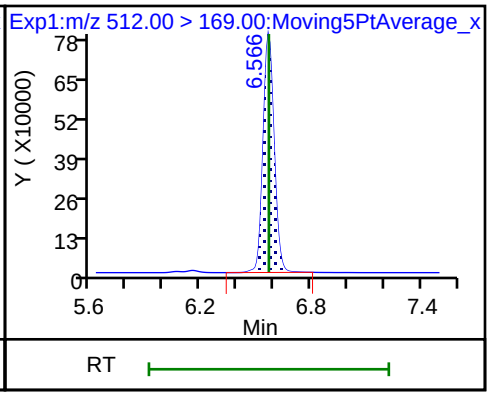
47 N-MeFOSE-M



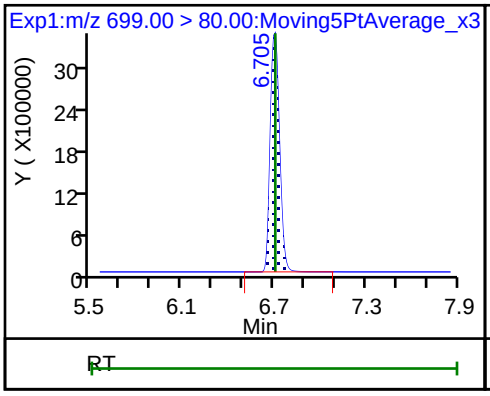
D 49 d3-NMePFOSA



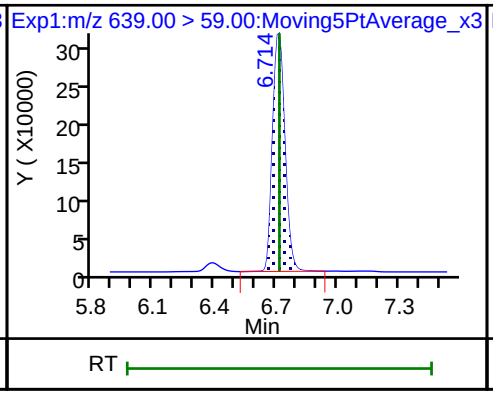
50 NMeFOSA



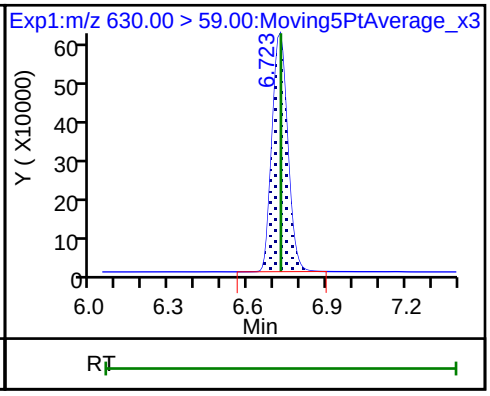
53 PFDoS



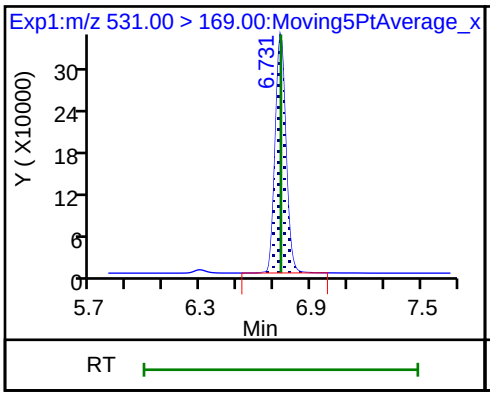
D 51 d9-N-EtFOSE-M



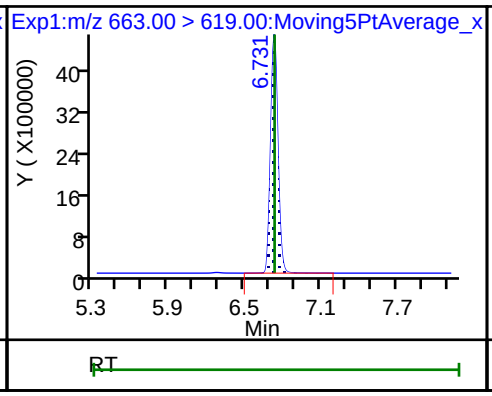
52 N-EtFOSE-M



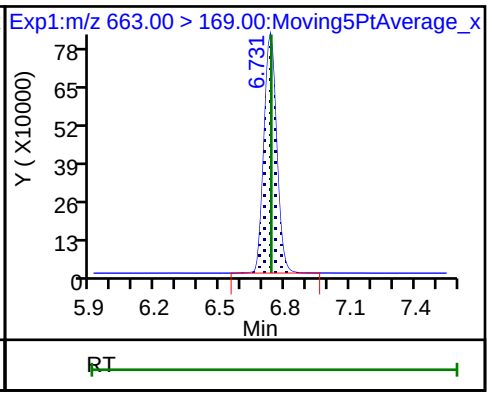
D 54 d5-NEtPFOSA



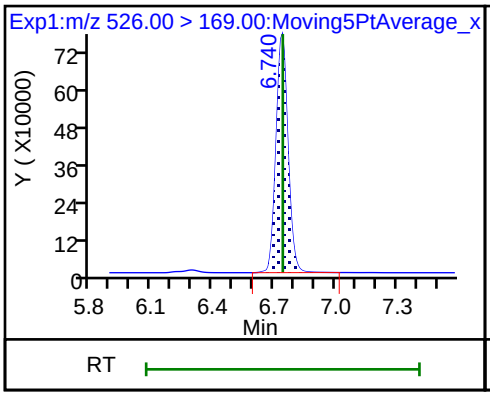
56 Perfluorotridecanoic acid



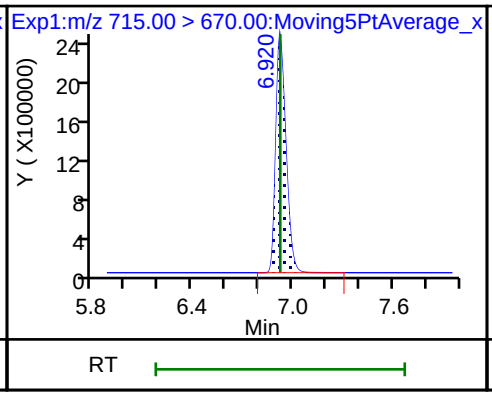
56 Perfluorotridecanoic acid



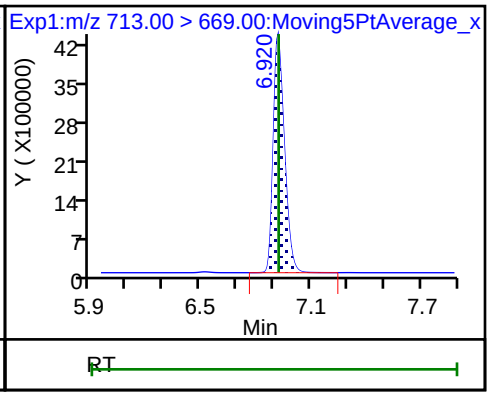
55 N-EtFOSA-M



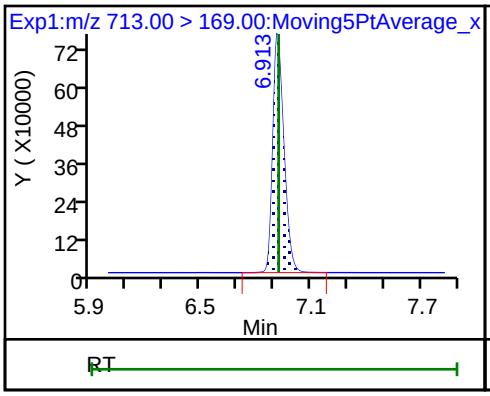
D 58 13C2 PFTeDA



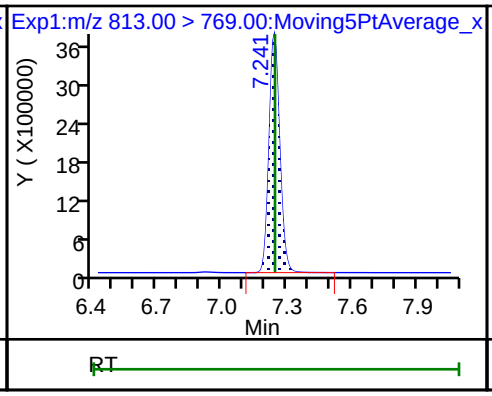
57 Perfluorotetradecanoic acid



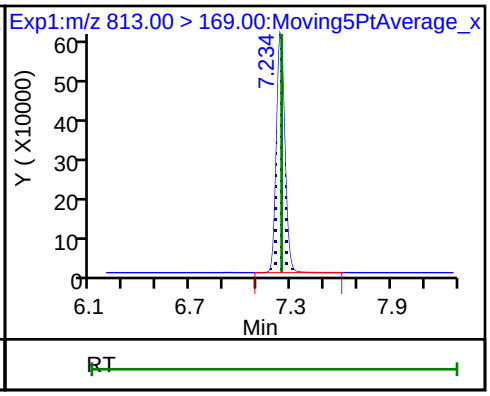
57 Perfluorotetradecanoic acid



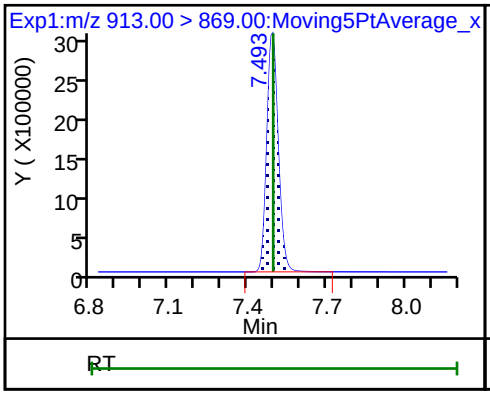
59 Perfluorohexadecanoic acid



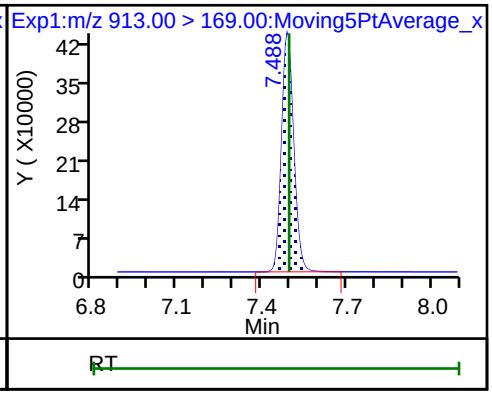
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-24.d
Lims ID: IC CAL 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 07-Apr-2022 10:44:50 ALS Bottle#: 20007 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 6
Misc. Info.: Plate: 1 Rack: 1 410-0054309-006
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:44:04 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 11:22:45
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.663	3.659	0.004	1.000	30180540	48.1		96.3	51108	
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.659	0.004		7625489	9.42		94.2	134986	
63 PFECA F										
229.00 > 85.00	3.890	3.891	-0.001	0.930	23922488	47.7		95.3	7811	
67 3:3 FTCA										
241.00 > 177.00	4.176	4.170	0.006	0.998	2032845	54.4	Target=1.31	109	40983	
241.00 > 117.00	4.176	4.170	0.006	0.998	1492484		1.36(0.66-1.97)	109	26256	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.183	4.178	0.005	1.000	30325989	46.7		93.4	213840	
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.181	0.002		6203426	8.94		89.4	65759	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.236	4.231	0.005	1.000	32399963	39.9	Target=2.86	90.1	27317	
299.00 > 99.00	4.236	4.231	0.005	1.000	12332415		2.63(1.43-4.29)	90.1	31197	
D 6 13C3 PFBS										
302.00 > 80.00	4.236	4.235	0.001		7886874	8.55		91.9	411248	
64 PFECA A										
279.00 > 85.00	4.305	4.301	0.004	1.029	23611802	47.4		94.7	117989	
65 PES										
315.00 > 135.00	4.401	4.394	0.007	0.958	60731697	24.3	Target=14.03	54.7	506692	
315.00 > 83.00	4.393	4.394	-0.001	0.956	8236645		7.37(7.01-21.04)	54.7	12843	
68 PFECA B										
295.00 > 201.00	4.515	4.514	0.001	0.983	10532634	50.0		100	70414	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.554	4.546	0.008	1.000	7048003	50.1	Target=1.58	107	221933	
327.00 > 81.00	4.554	4.546	0.008	1.000	3869715		1.82(0.79-2.36)	107	168113	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.554	4.549	0.005		342538	7.85		84.1	10767	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.594	4.586	0.008	1.000	29878709	48.5	Target=13.65	96.9	462996	
313.00 > 119.00	4.584	4.586	-0.002	0.998	2256540		13.24(6.82-20.47)	96.9	99110	
D 9 13C5 PFHxA										
318.00 > 273.00	4.594	4.587	0.007		7221982	9.04		90.4	107036	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.612	4.608	0.004	1.089	31529090	41.5	Target=3.02	88.5	2384252	
349.00 > 99.00	4.612	4.608	0.004	1.089	11295487		2.79(1.51-4.53)	88.5	642565	
12 HFPO-DA										
329.00 > 285.00	4.721	4.715	0.006	1.000	10386907	51.7		103	272484	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.721	4.715	0.006		819368	9.46		94.6	44098	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.982	4.976	0.006	1.000	29134441	46.9	Target=3.04	93.8	545059	
363.00 > 169.00	4.982	4.976	0.006	1.000	10029768		2.90(1.52-4.56)	93.8	34527	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.982	4.981	0.001	0.998	29516697	45.4	Target=2.99	99.6	1828996	
399.00 > 99.00	4.982	4.981	0.001	0.998	9974938		2.96(1.50-4.49)	99.6	24366	
D 17 13C4 PFHpA										
367.00 > 322.00	4.982	4.981	0.001		6488407	7.72		77.2	148048	
D 16 13C3 PFHxS										
402.00 > 80.00	4.991	4.983	0.008		6307380	7.63		80.7	663952	
18 DONA										
377.00 > 251.00	5.032	5.026	0.006	1.010	44757655	42.6		90.1	225676	
62 5:3 FTCA										
341.00 > 237.00	5.054	5.051	0.003	1.100	6878775	48.2	Target=3.41	96.5	38204	
341.00 > 217.00	5.054	5.051	0.003	1.100	2145141		3.21(1.70-5.11)	96.5	16638	
19 6:2 FTS										
427.00 > 407.00	5.331	5.330	0.001	0.999	6058967	50.2	Target=1.71	106	206004	
427.00 > 81.00	5.331	5.330	0.001	0.999	3447979		1.76(0.85-2.56)	106	48887	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.338	5.332	0.006		217746	7.49		78.9	12048	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.344	5.339	0.005	1.071	31052474	48.1	Target=3.21	101	598523	
449.00 > 99.00	5.344	5.339	0.005	1.071	10316722		3.01(1.60-4.81)	101	937142	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.357	5.348	0.009	1.000	31644583	45.2	Target=2.40	90.5	677991	
413.00 > 169.00	5.350	5.348	0.002	0.999	14296333		2.21(1.20-3.60)	90.5	607603	
D 22 13C8 PFOA										
421.00 > 376.00	5.357	5.351	0.006		7754903	8.49		84.9	508873	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.685	5.677	0.008	1.000	35297093	45.2	Target=3.65	97.8	68054	
499.00 > 99.00	5.677	5.677	0.0	0.999	10002853		3.53(1.83-5.48)	97.8	3664347	
D 25 13C8 PFOS										
507.00 > 80.00	5.685	5.679	0.006		6708703	8.99		94.0	181285	
26 Perfluorononanoic acid										
463.00 > 419.00	5.701	5.694	0.007	1.000	34907956	47.9	Target=4.51	95.8	221142	
463.00 > 169.00	5.693	5.694	-0.001	0.999	8248716		4.23(2.25-6.76)	95.8	104429	
D 27 13C9 PFNA										
472.00 > 427.00	5.701	5.696	0.005		8087740	8.65		86.5	137204	
66 7:3 FTCA										
441.00 > 317.00	5.798	5.794	0.004	1.262	3686014	48.7	Target=10.25	97.4	34557	
441.00 > 337.00	5.798	5.794	0.004	1.262	350906		10.50(5.12-15.37)	97.4	11607	
28 9ClFOS										
531.00 > 351.00	5.865	5.859	0.006	1.032	56191646	34.1		73.4	2758557	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.990	5.984	0.006	1.054	29785208	45.3	Target=3.43	94.4	289328	
549.00 > 99.00	5.981	5.984	-0.003	1.052	9300668		3.20(1.72-5.15)	94.4	384275	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.014	6.007	0.007	1.000	34024530	44.8	Target=8.86	89.6	657879	
513.00 > 169.00	6.006	6.007	-0.001	0.999	4224096		8.05(4.43-13.29)	89.6	59151	
33 8:2 FTS										
527.00 > 507.00	6.014	6.008	0.006	1.000	6965235	46.7	Target=1.91	97.5	231824	
527.00 > 81.00	6.006	6.008	-0.002	0.999	3606051		1.93(0.96-2.87)	97.5	59514	
D 32 13C6 PFDA										
519.00 > 474.00	6.014	6.008	0.006		8774996	8.68		86.8	414021	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.014	6.008	0.006		181994	7.50		78.2	10528	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.114	6.107	0.007	1.000	47984654	39.3		78.6	1198790	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.109	0.005		11784443	9.49		94.9	251708	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.155	0.0		2728505	9.42		94.2	22668	
36 NMeFOSAA										
570.00 > 419.00	6.163	6.157	0.006	1.001	11828054	49.7	Target=1.78	99.3	422525	
570.00 > 483.00	6.155	6.157	-0.002	1.000	6439576		1.84(0.89-2.67)	99.3	699693	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.261	6.255	0.006	1.101	32062415	44.0	Target=3.62	91.4	1021506	
599.00 > 99.00	6.252	6.255	-0.003	1.100	10069052		3.18(1.81-5.43)	91.4	252459	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.290	6.283	0.007	1.000	33808979	47.6	Target=8.28	95.2	217836	
563.00 > 169.00	6.280	6.283	-0.003	0.999	4368664		7.74(4.14-12.42)	95.2	242077	
D 40 13C7 PFUnA										
570.00 > 525.00	6.290	6.284	0.006		8658280	8.42		84.2	383705	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.309	6.300	0.009	1.001	9164921	51.5	Target=1.66	103	1026958	
584.00 > 526.00	6.309	6.300	0.009	1.001	5585432		1.64(0.83-2.49)	103	1773873	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.299	0.0		1892302	8.53		85.3	373817	
43 11ClFOS										
631.00 > 451.00	6.399	6.398	0.001	1.126	49943806	34.3		73.8	1458589	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.531	6.524	0.007	1.000	35895934	44.7	Target=5.73	89.3	130135	
613.00 > 169.00	6.522	6.524	-0.002	0.999	7106539		5.05(2.87-8.60)	89.3	152032	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.531	6.526	0.005		9124826	8.57		85.7	164881	
48 10:2 FTS										
627.00 > 607.00	6.549	6.541	0.008	1.089	8399632	49.7	Target=1.71	103	488581	
627.00 > 81.00	6.540	6.541	-0.001	1.087	4995464		1.68(0.85-2.56)	103	147869	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.558	6.551	0.007		1059542	9.12		91.2	5416	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.559	0.007	1.001	5701712	51.3		103	48554	
50 NMeFOSA										
512.00 > 169.00	6.575	6.570	0.005	1.000	7961034	48.2		96.3	11230	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.575	6.570	0.005		1595545	10.2		102	4228	
53 PFDoS										
699.00 > 80.00	6.706	6.706	0.0	1.180	30645413	44.3		91.6	1226840	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.715	6.715	0.0		1177671	8.43		84.3	1608	
52 N-EtFOSE-M										
630.00 > 59.00	6.732	6.725	0.007	1.003	5905195	53.0		106	60116	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.736	0.004	1.032	35548038	44.2	Target=5.39	88.3	123092	
663.00 > 169.00	6.740	6.736	0.004	1.032	7508003		4.73(2.69-8.08)	88.3	312589	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.736	0.004		1362206	9.68		96.8	10125	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.741	0.007	1.001	7709981	50.6		101	11701	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.928	6.923	0.005	1.000	35730326	41.8	Target=5.85	83.5	63351	
713.00 > 169.00	6.920	6.923	-0.003	0.999	7121004		5.02(2.93-8.78)	83.5	168701	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.923	0.005		9602734	9.05		90.5	448184	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.247	7.243	0.004	1.046	28172314	46.5	Target=6.08	92.9	112405	
813.00 > 169.00	7.241	7.243	-0.002	1.045	5101741		5.52(3.04-9.13)	92.9	147986	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.495	0.004	1.082	20687141	51.5	Target=7.13	103	65500	
913.00 > 169.00	7.494	7.495	-0.001	1.082	3076522		6.72(3.56-10.69)	103	57109	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD6_00014 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:44:06 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-24.d

Injection Date: 07-Apr-2022 10:44:50 Instrument ID: 29347

Lims ID: IC CAL 6

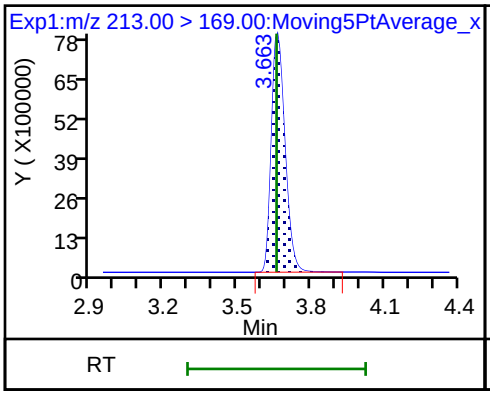
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Operator ID: US19_USR_INS75556 ALS Bottle#: 20007 Worklist Smp#: 6

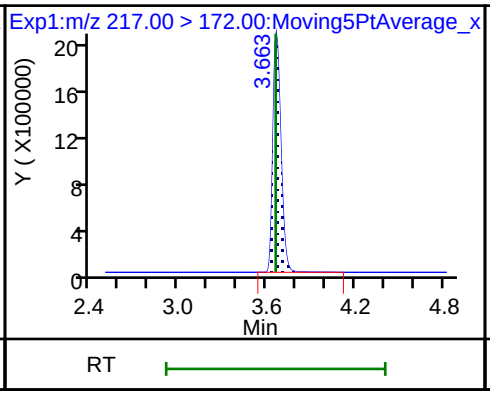
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

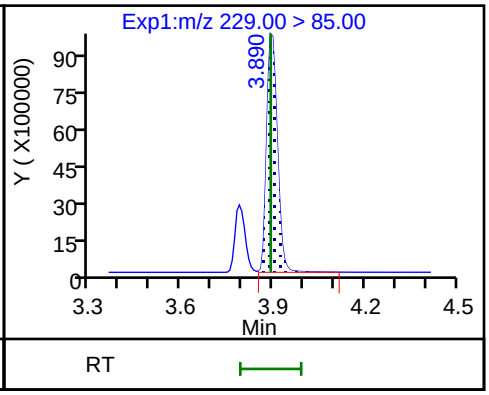
1 Perfluorobutanoic acid



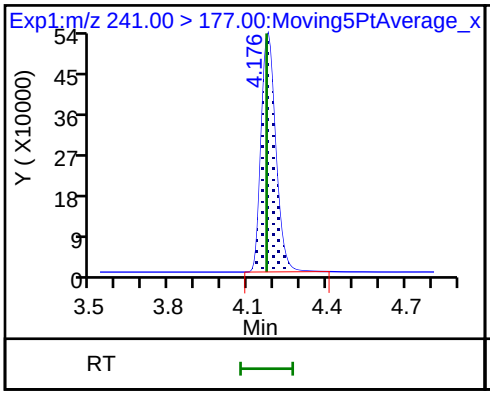
D 2 13C4 PFBA



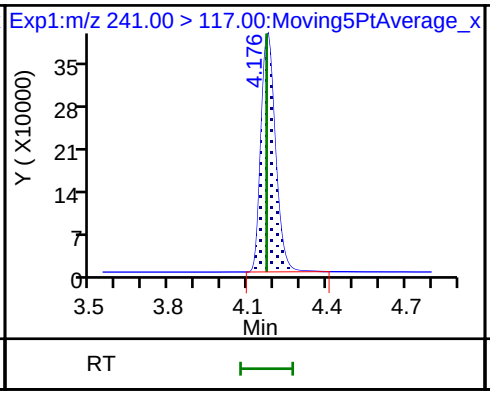
63 PFECA F



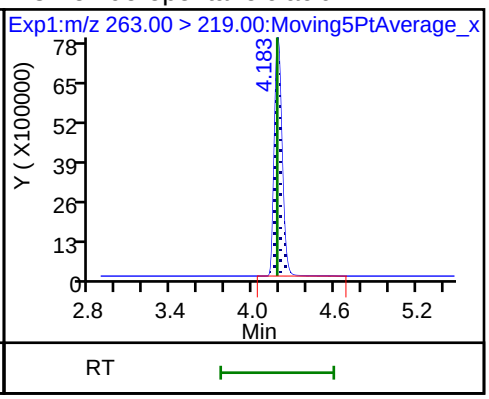
67 3:3 FTCA



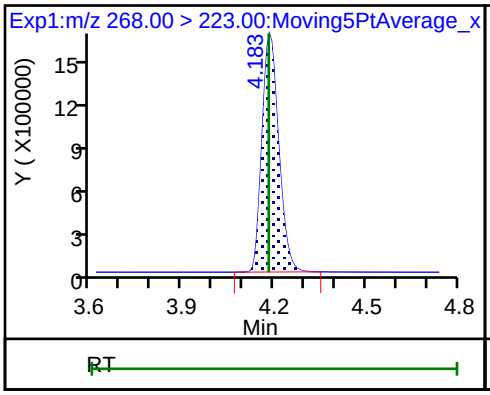
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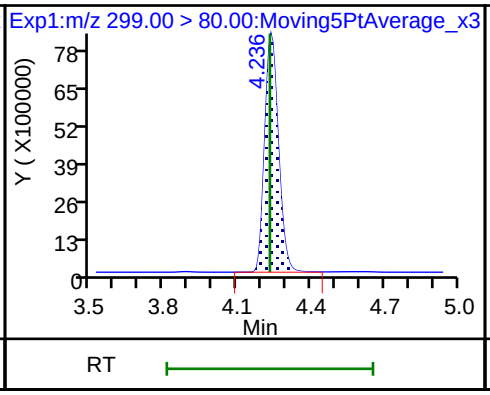
3 Perfluoropentanoic acid



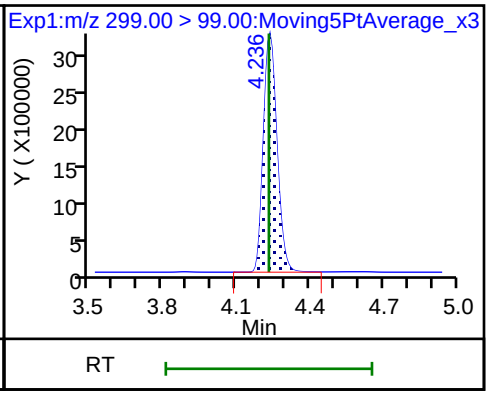
D 4 13C5 PFPeA



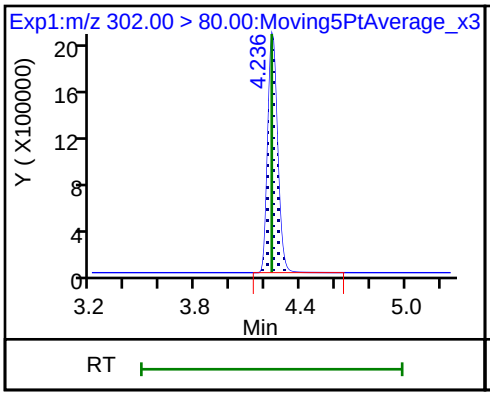
5 Perfluorobutanesulfonic acid



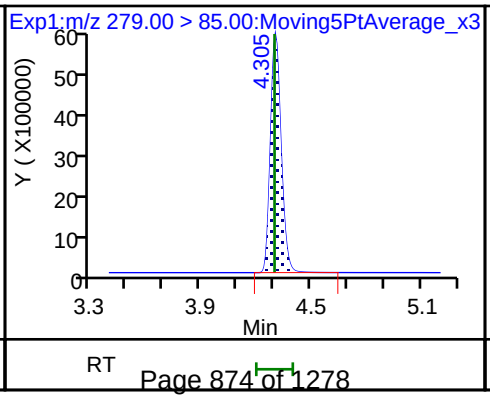
5 Perfluorobutanesulfonic acid



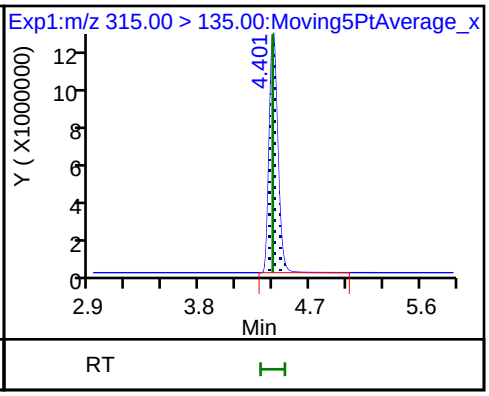
D 6 13C3 PFBS



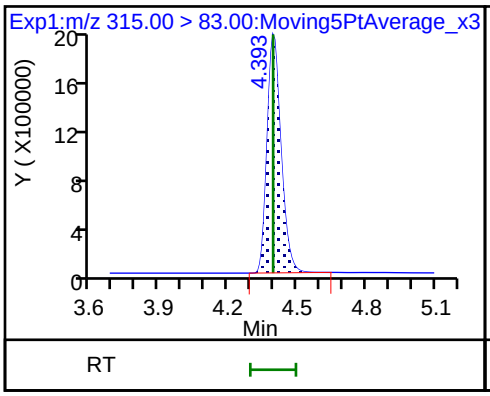
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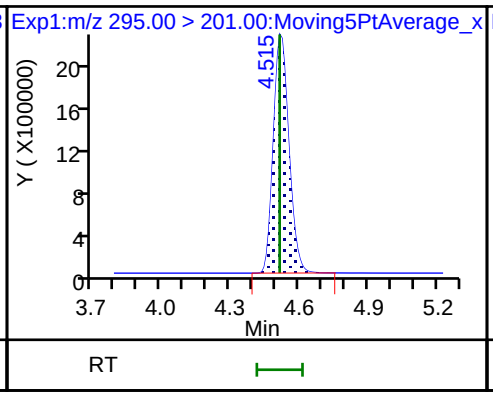
65 PES



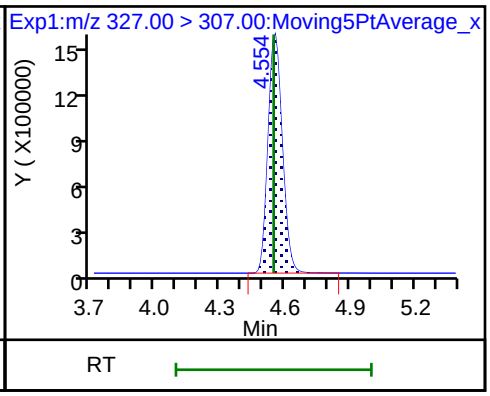
65 PES



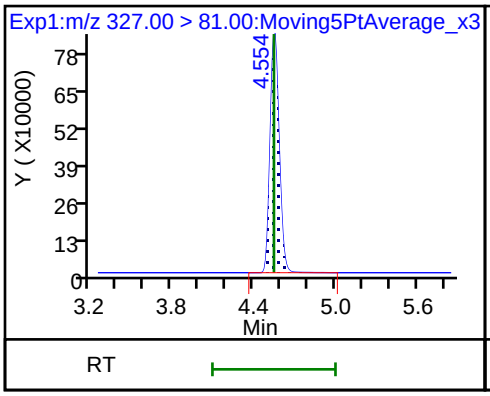
68 PFECA B



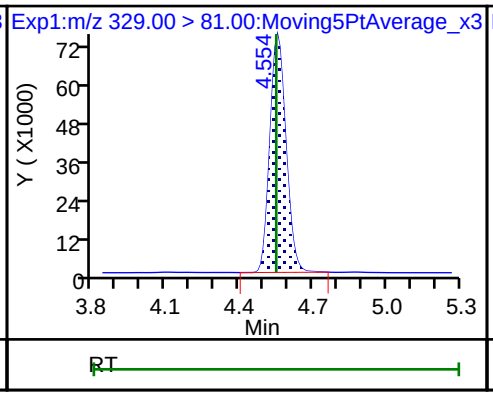
7 4:2 FTS



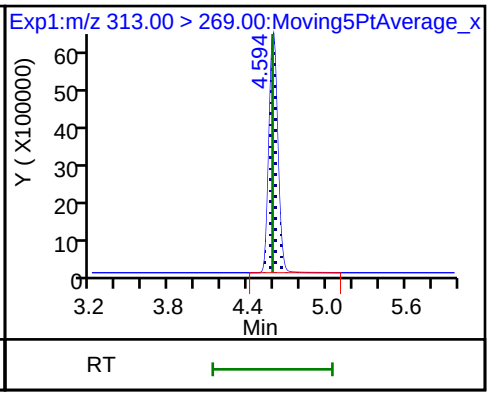
7 4:2 FTS



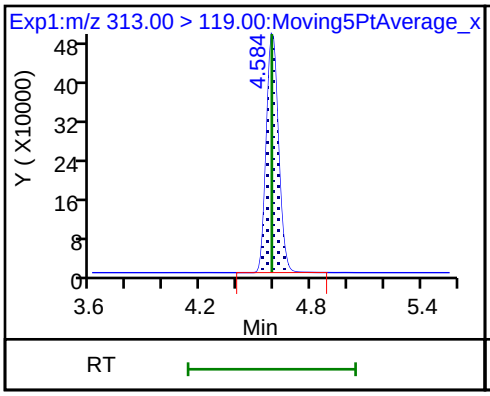
D 8 M2-4:2 FTS



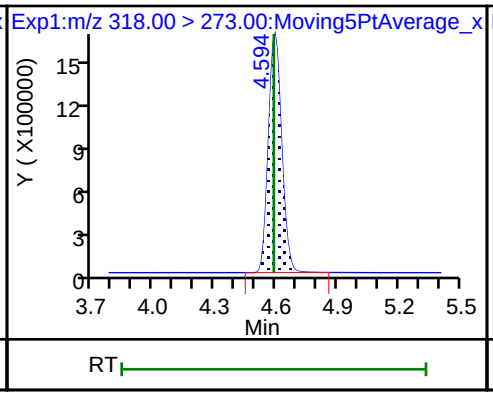
10 Perfluorohexanoic acid



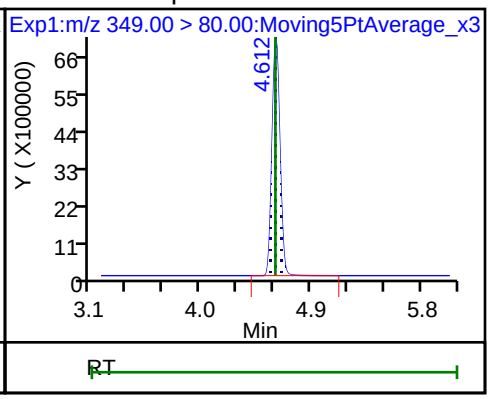
10 Perfluorohexanoic acid



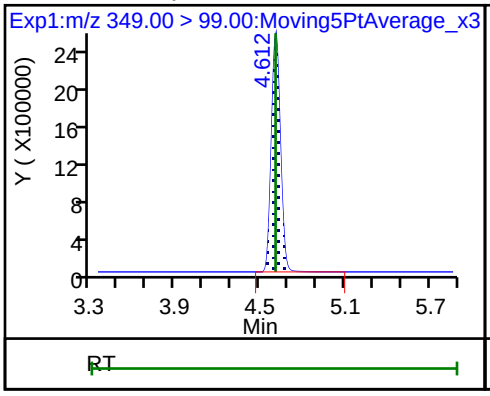
D 9 13C5 PFHxA



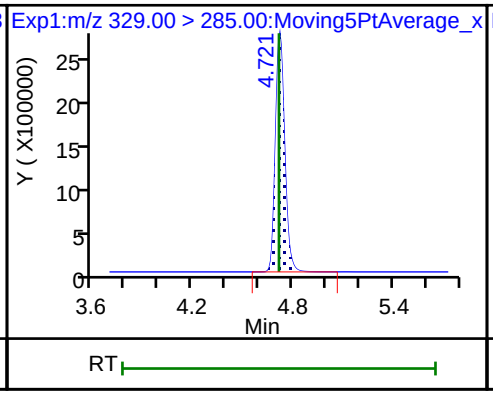
11 Perfluoropentanesulfonic acid



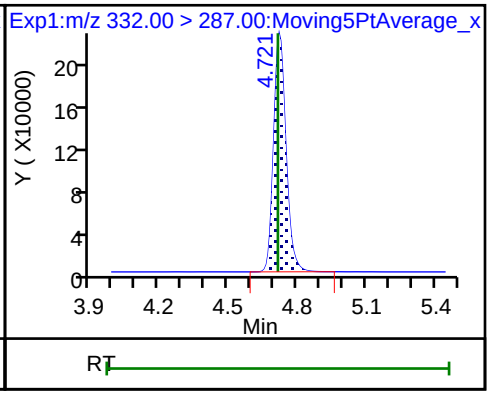
11 Perfluoropentanesulfonic acid



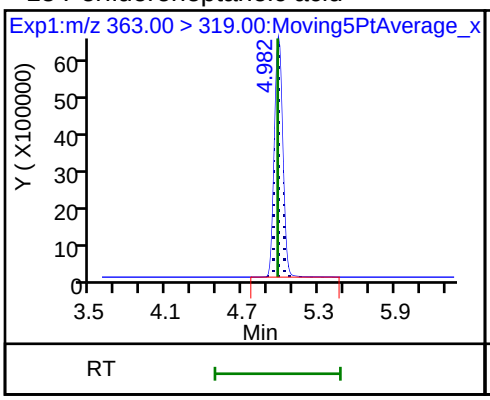
12 HFPO-DA



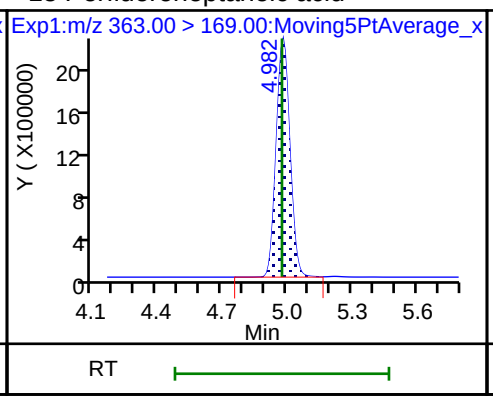
D 13 13C3 HFPO-DA



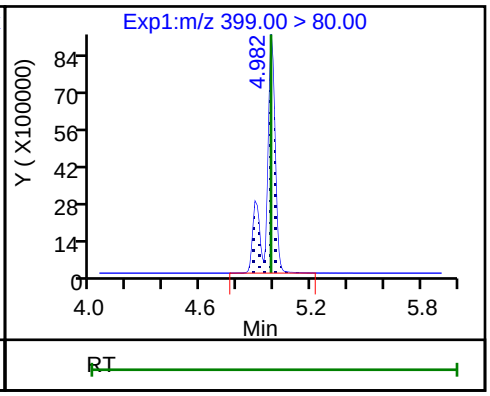
15 Perfluoroheptanoic acid



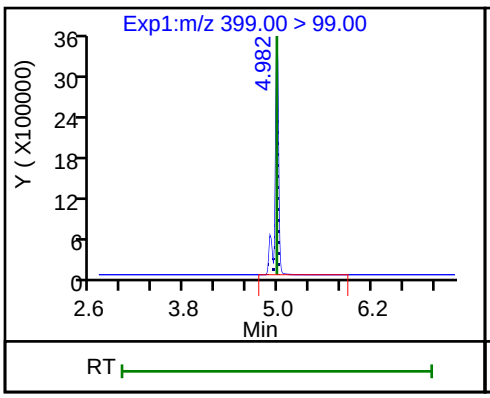
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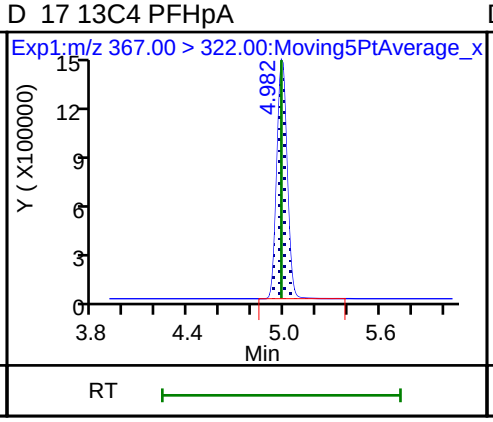
14 Perfluorohexanesulfonic acid



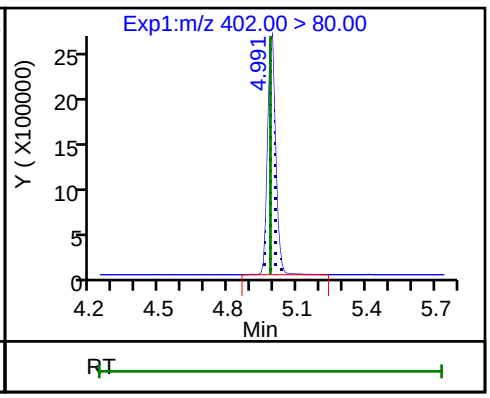
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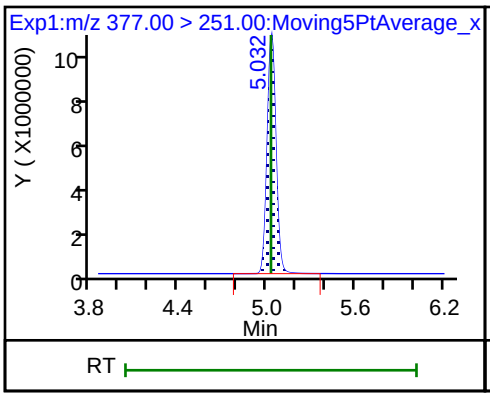
D 17 13C4 PFHpA



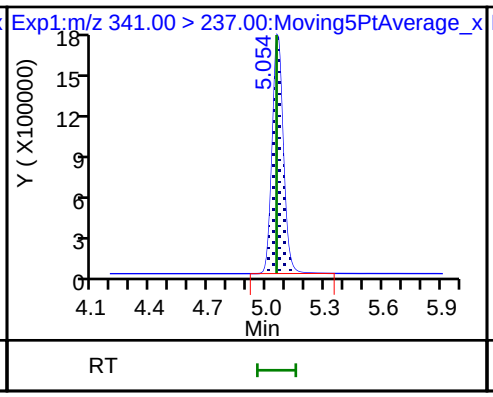
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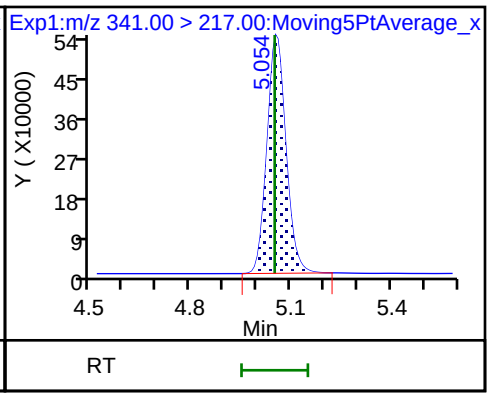
18 DONA



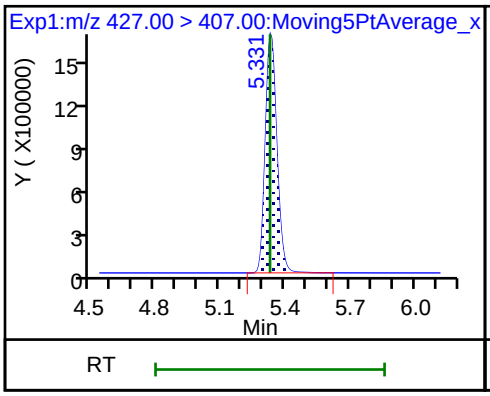
62 5:3 FTCA



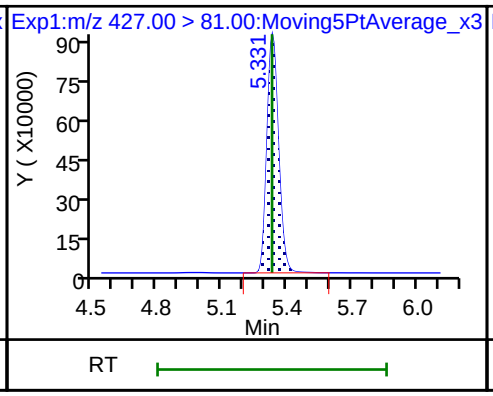
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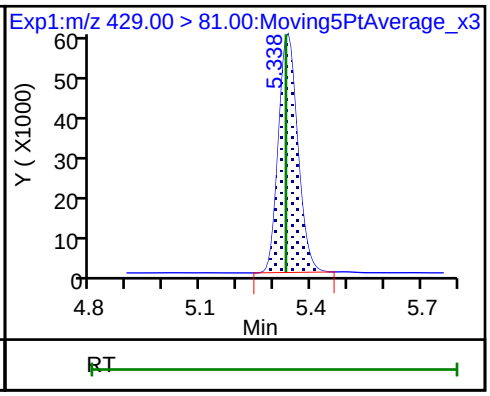
19 6:2 FTS



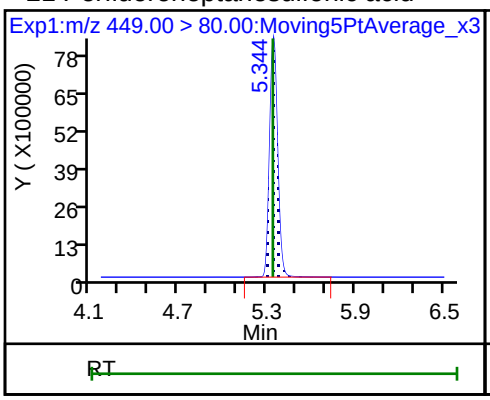
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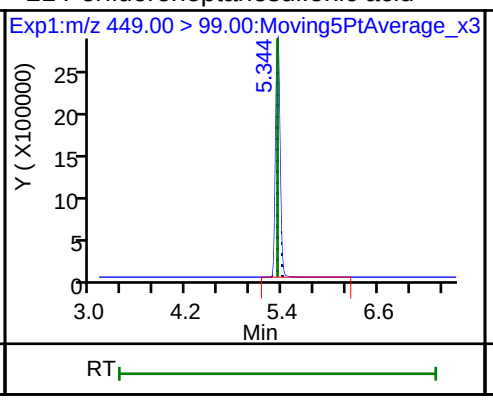
D 20 M2-6:2 FTS



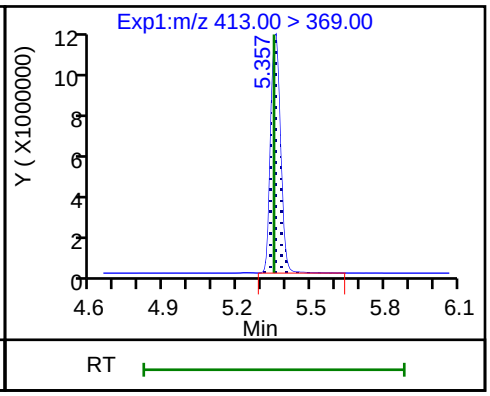
21 Perfluoroheptanesulfonic acid



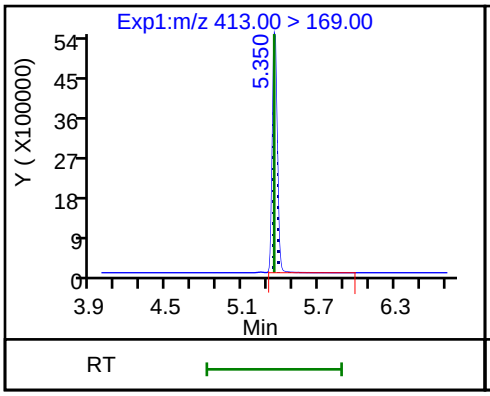
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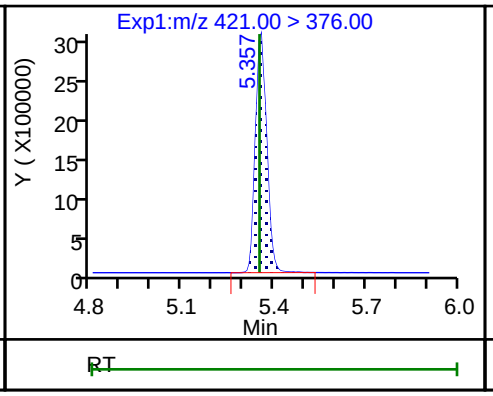
23 Perfluorooctanoic acid



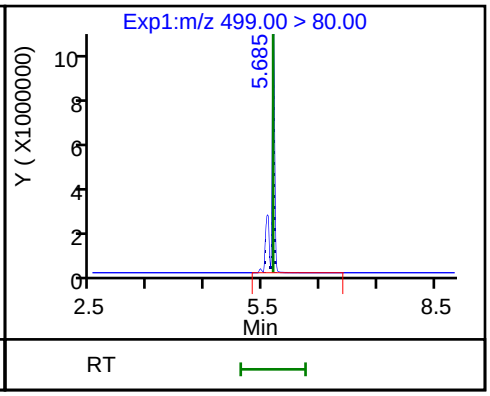
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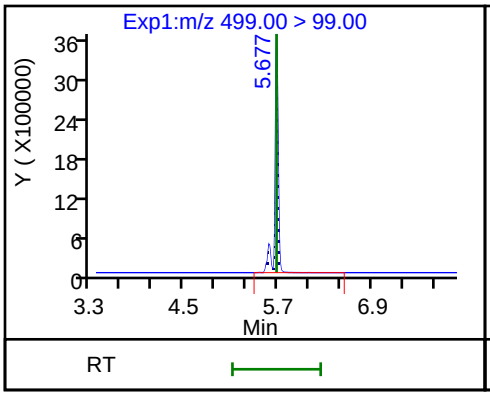
D 22 13C8 PFOA



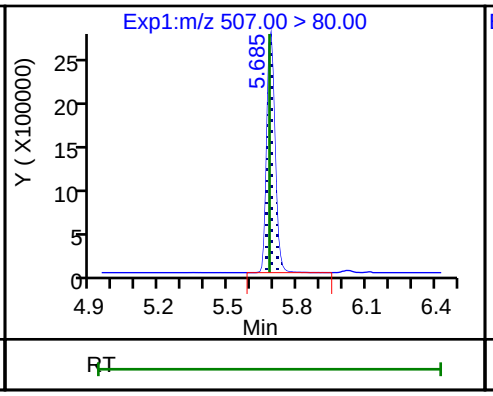
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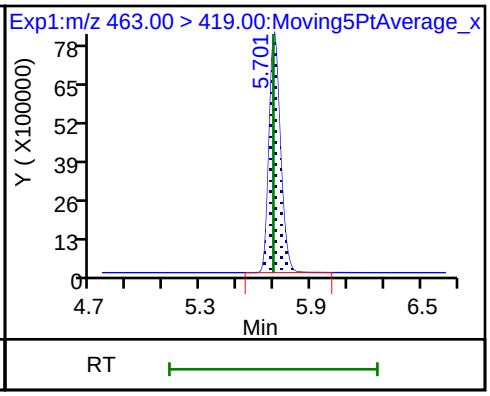
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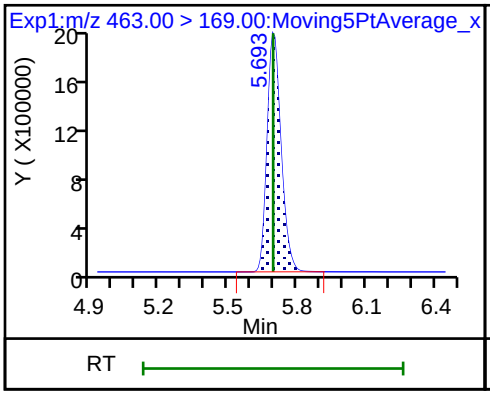
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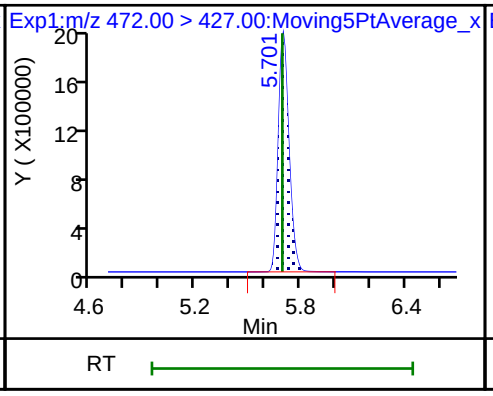
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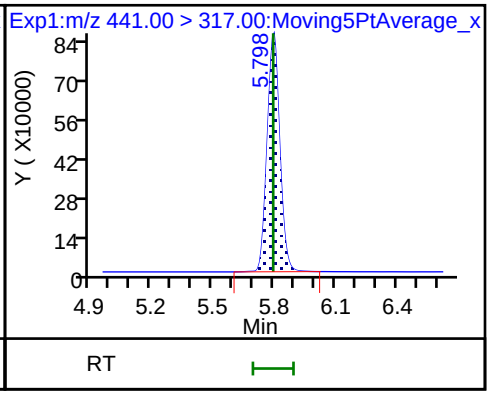
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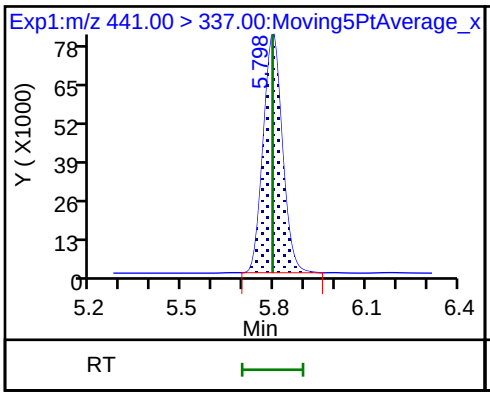
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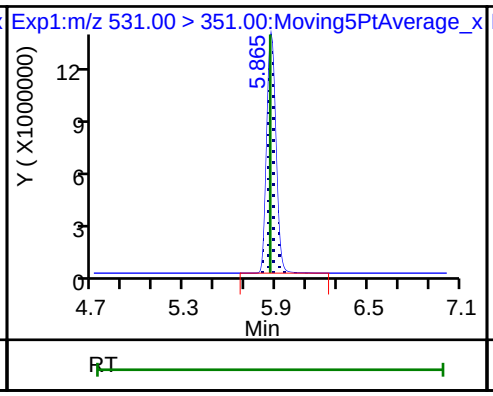
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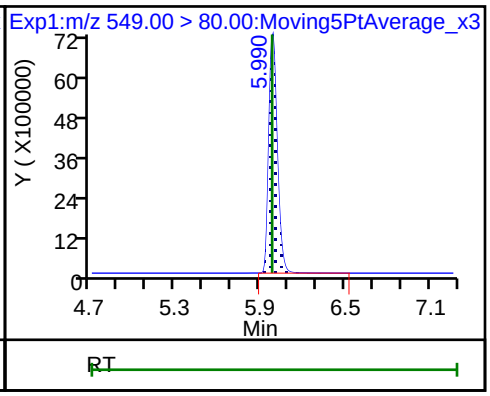
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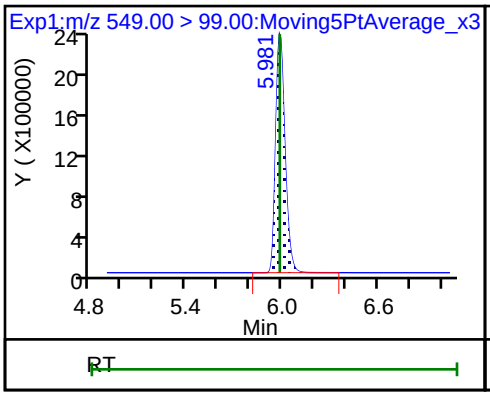
28 9ClFOS



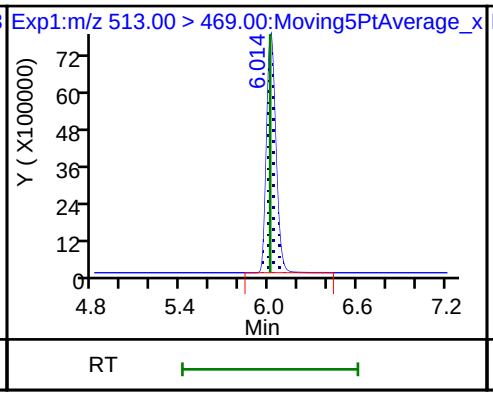
29 Perfluorononanesulfonic acid



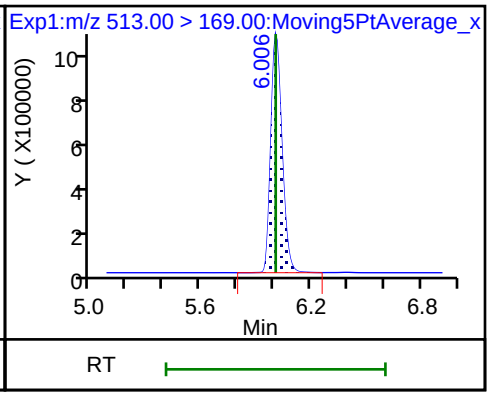
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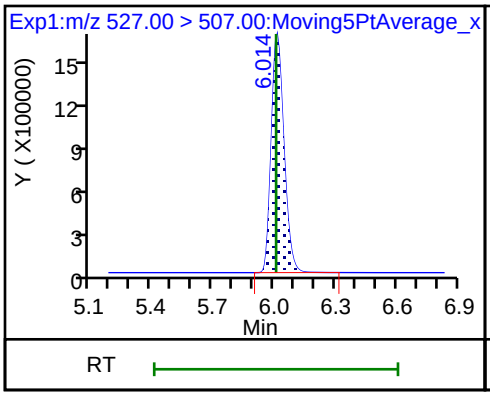
30 Perfluorodecanoic acid



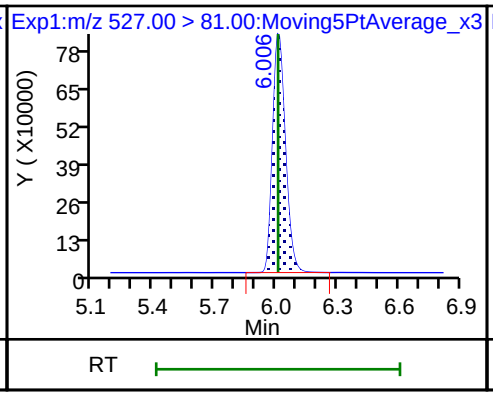
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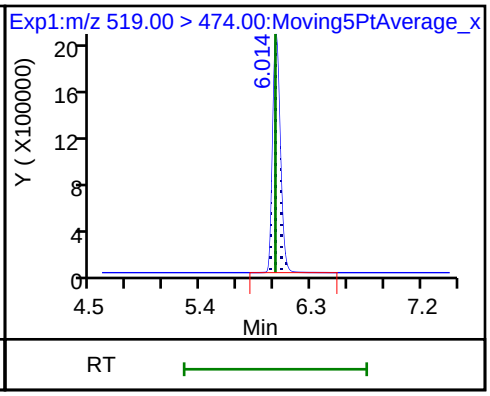
33 8:2 FTS



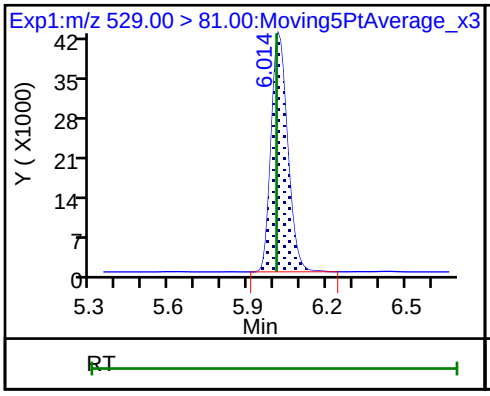
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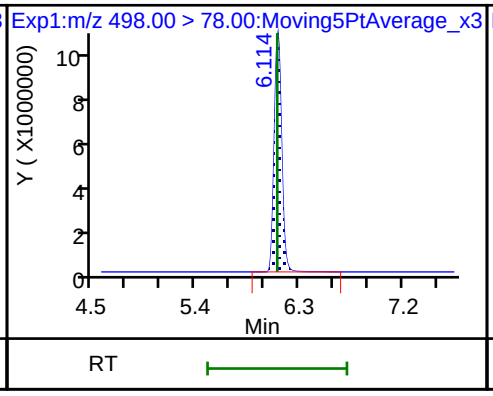
D 32 13C6 PFDA



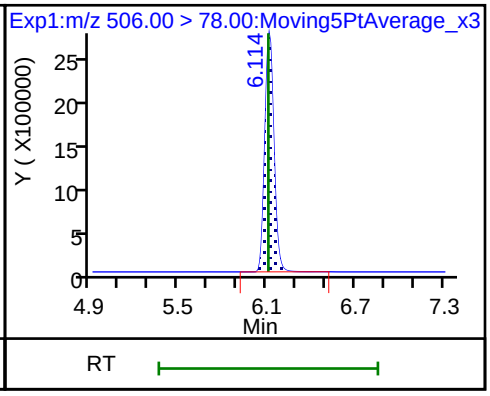
D 31 M2-8:2 FTS



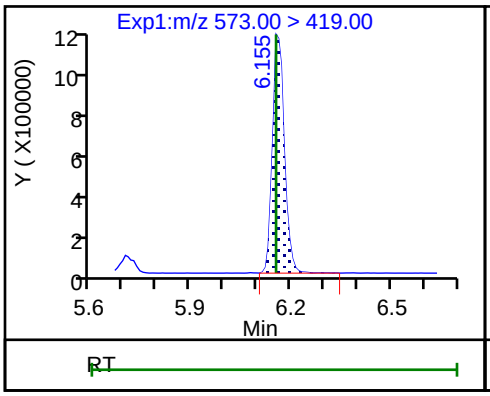
34 Perfluorooctanesulfonamide



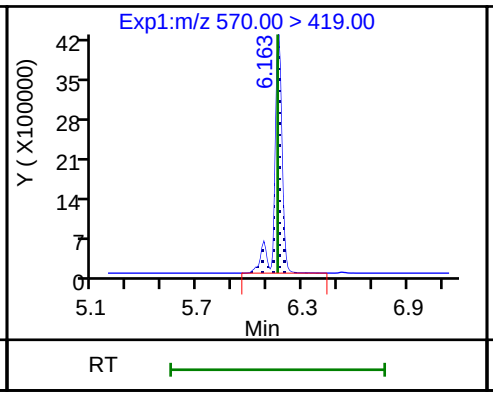
D 35 13C8 FOSA



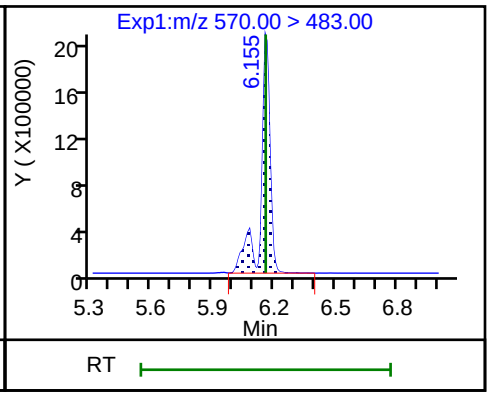
D 37 d3-NMeFOSAA



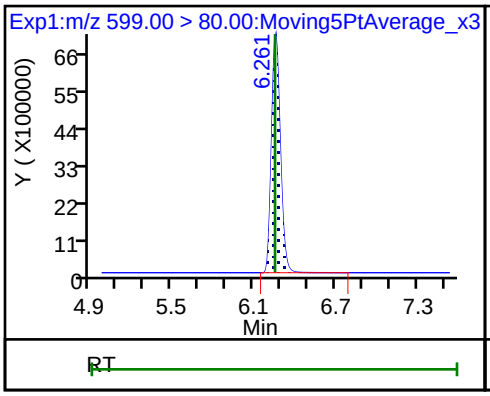
36 NMeFOSAA



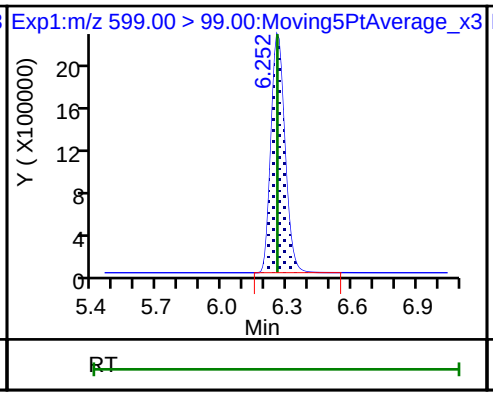
36 NMeFOSAA



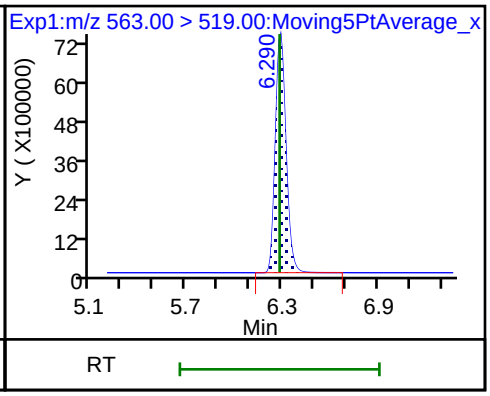
38 Perfluorodecanesulfonic acid



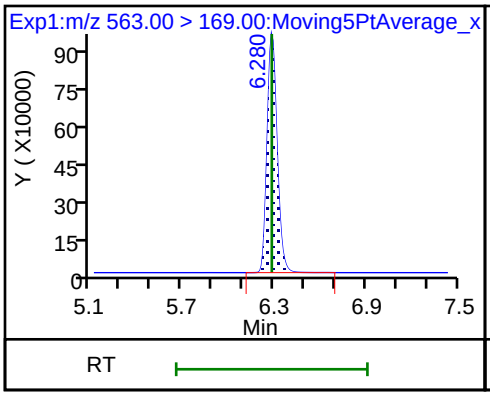
38 Perfluorodecanesulfonic acid



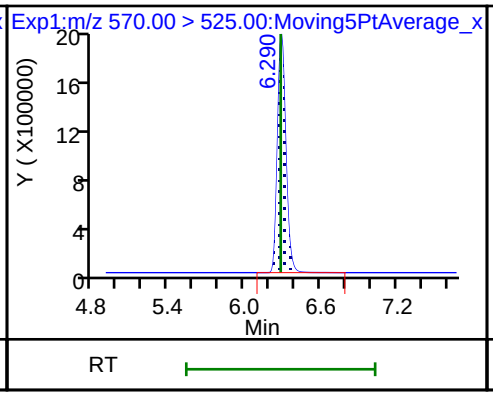
39 Perfluoroundecanoic acid



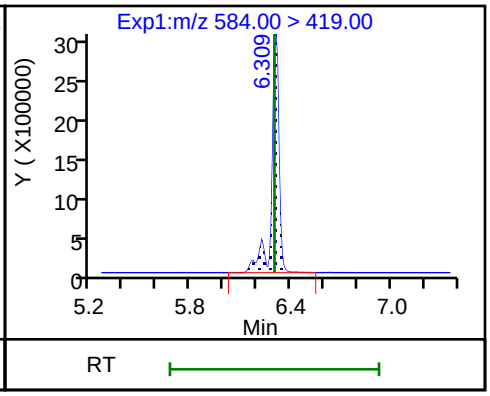
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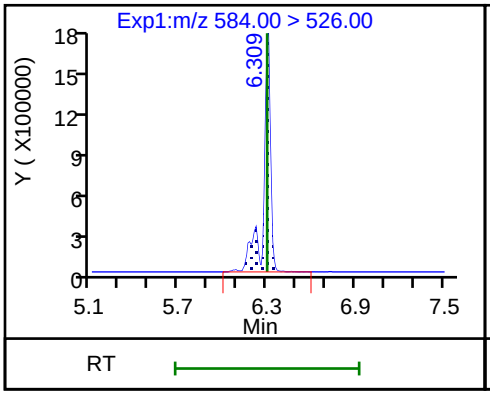
D 40 13C7 PFUnA



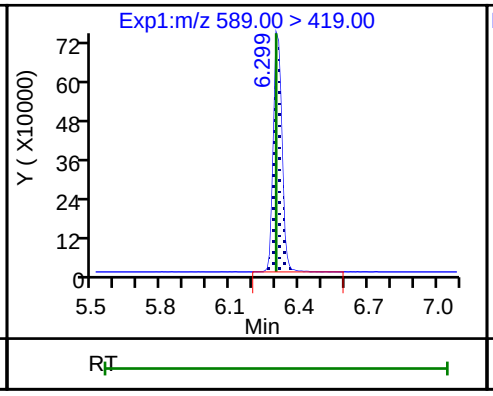
42 NEtFOSAA



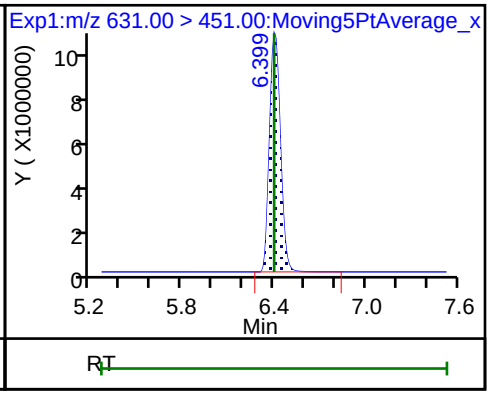
42 NEtFOSAA



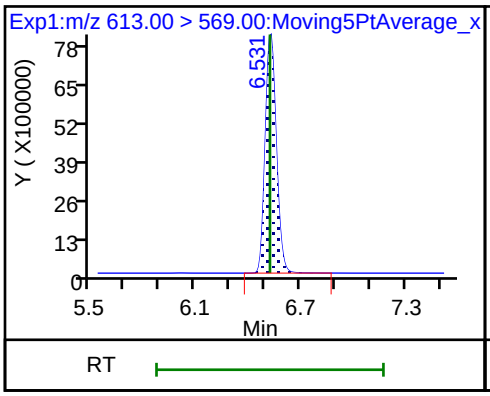
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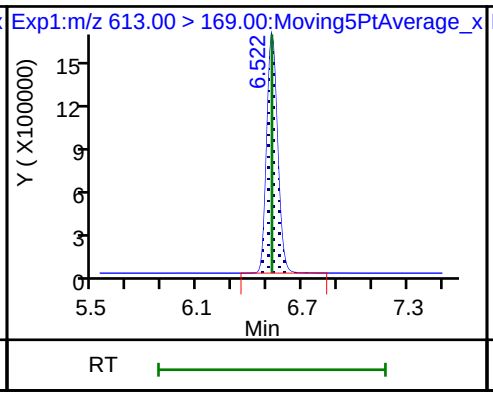
43 11ClFOS



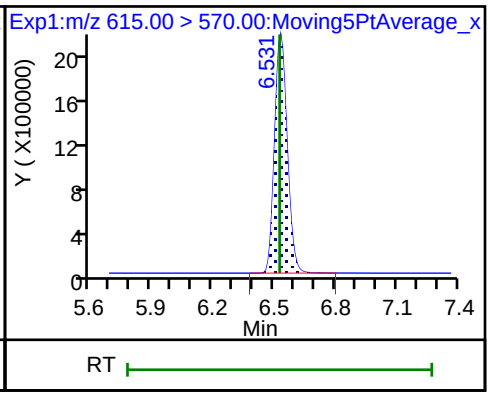
46 Perfluorododecanoic acid



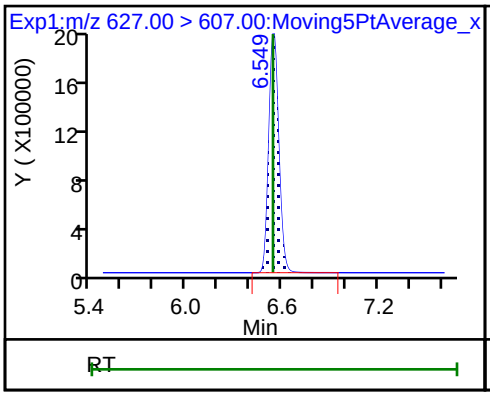
46 Perfluorododecanoic acid



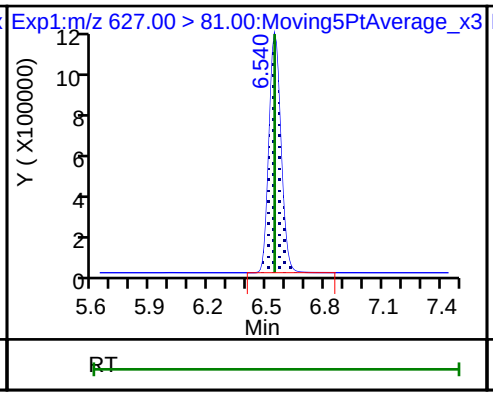
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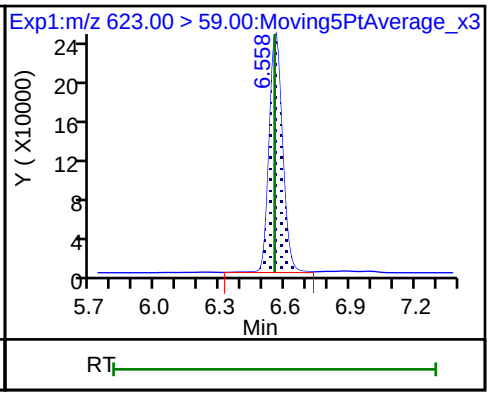
48 10:2 FTS



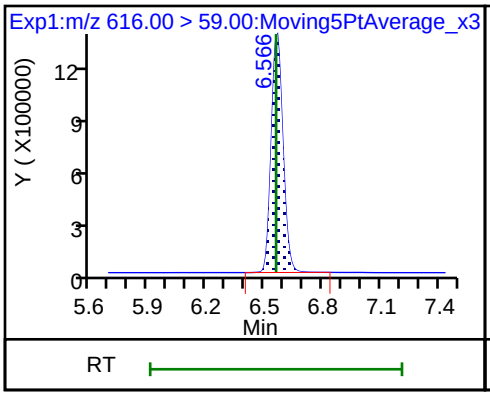
48 10:2 FTS



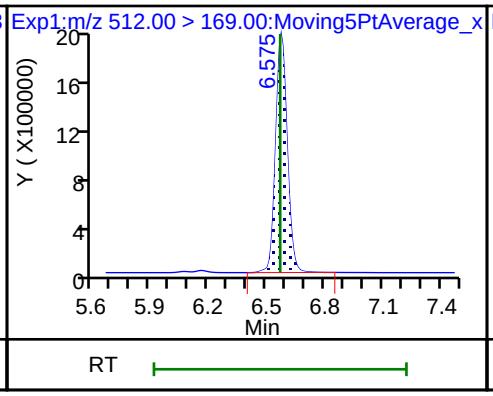
D 44 d7-N-MeFOSE-M



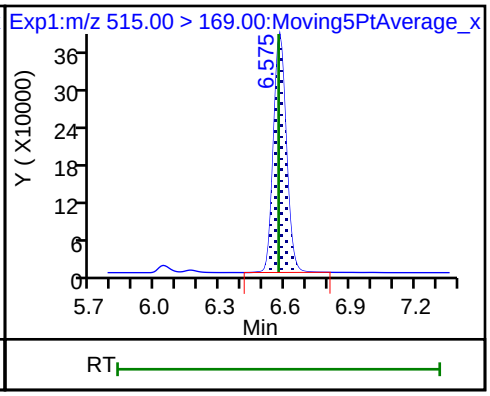
47 N-MeFOSE-M



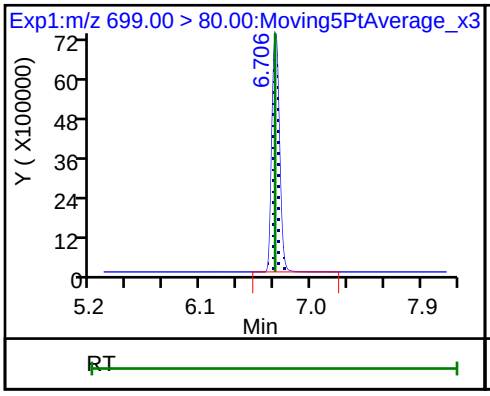
50 NMeFOSA



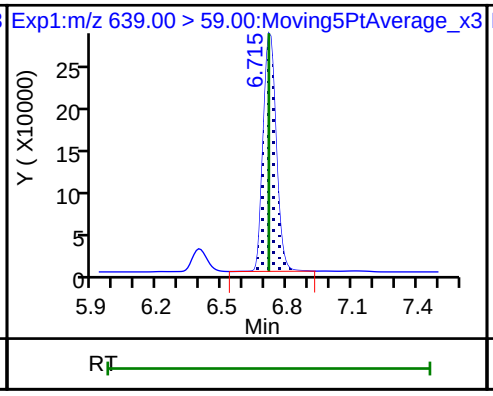
D 49 d3-NMePFOSA



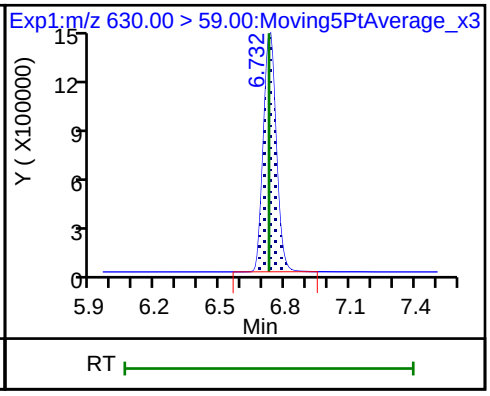
53 PFDoS



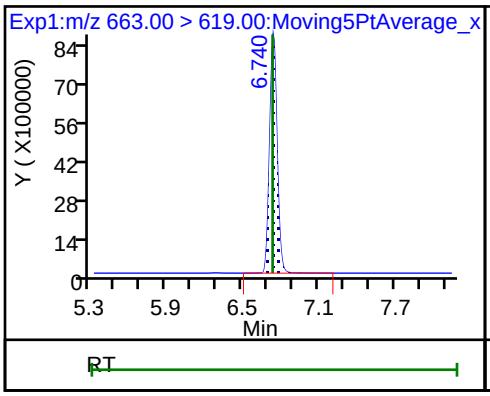
D 51 d9-N-EtFOSE-M



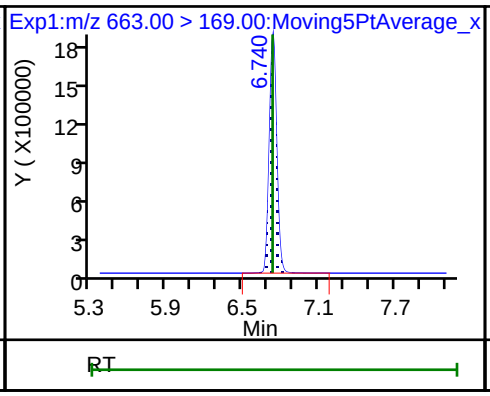
52 N-EtFOSE-M



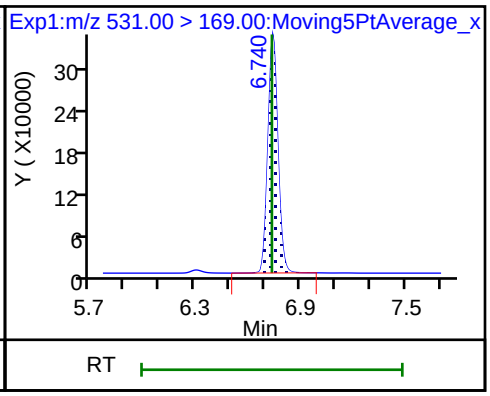
56 Perfluorotridecanoic acid



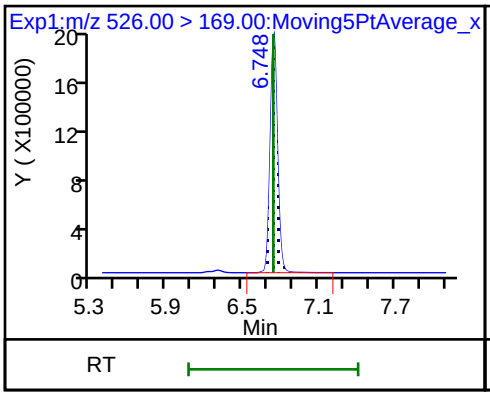
56 Perfluorotridecanoic acid



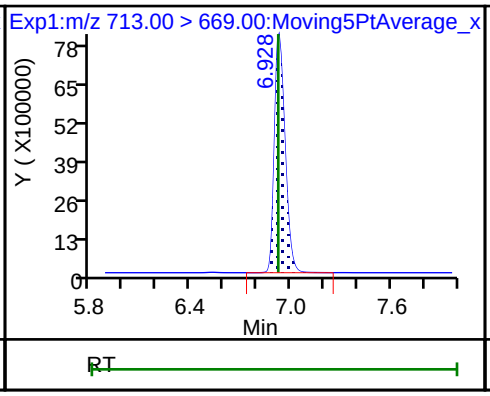
D 54 d5-NEtPFOSA



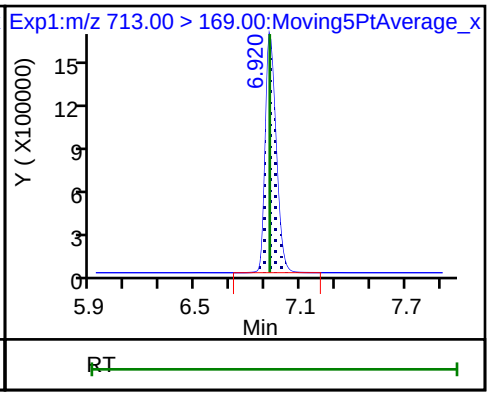
55 N-EtFOSA-M



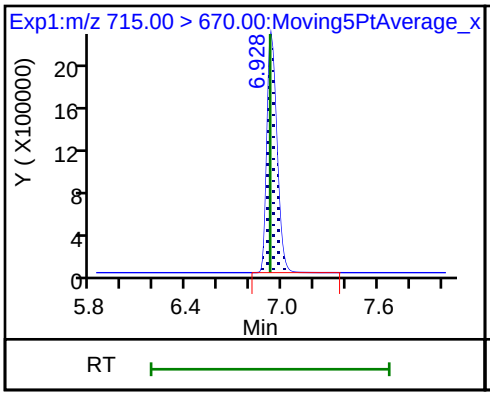
57 Perfluorotetradecanoic acid



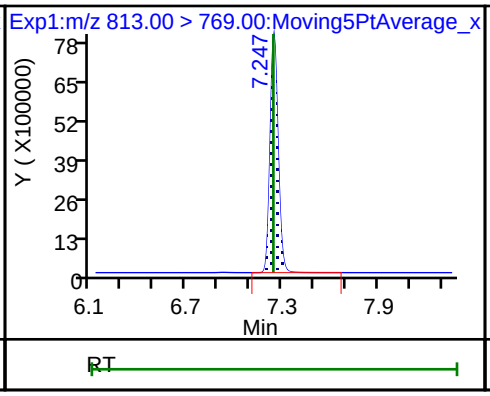
57 Perfluorotetradecanoic acid



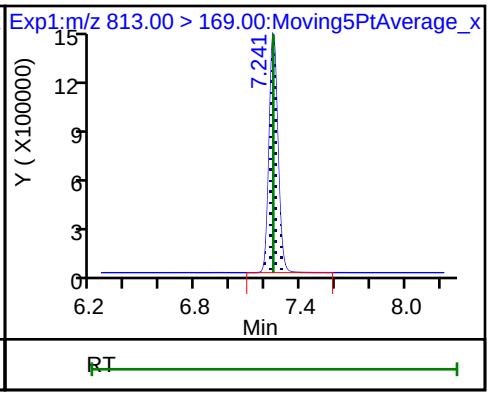
D 58 13C2 PFTeDA



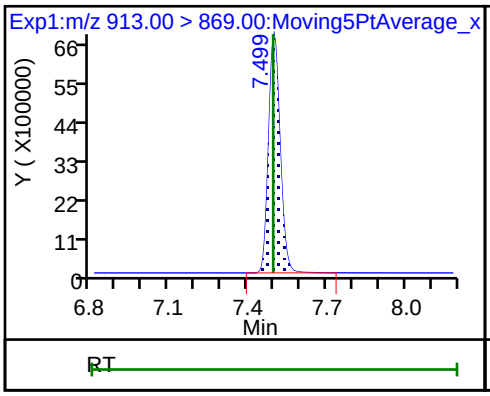
59 Perfluorohexadecanoic acid



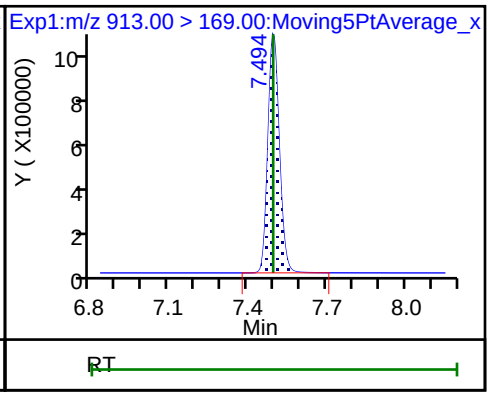
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d
Lims ID: IC CAL 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 07-Apr-2022 10:55:23 ALS Bottle#: 20008 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: IC CAL 7
Misc. Info.: Plate: 1 Rack: 1 410-0054309-007
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:44:11 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 11:33:44
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 2 13C4 PFBA										
217.00 > 172.00	3.656	3.659	-0.003		6911041	8.54		85.4	68670	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.659	-0.003	1.000	49244878	86.7		86.7	70577	
63 PFECA F										
229.00 > 85.00	3.890	3.891	-0.001	0.931	38298988	86.3		86.3	6561	
67 3:3 FTCA										
241.00 > 177.00	4.165	4.170	-0.005	0.997	3726355	112.9	Target=1.31	113	60974	
241.00 > 117.00	4.165	4.170	-0.005	0.997	2778446		1.34(0.66-1.97)	113	43177	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.181	-0.002		5481448	7.90		79.0	55822	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.172	4.178	-0.006	0.998	48617079	84.7		84.7	299485	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.231	0.0	1.000	49382938	67.8	Target=2.86	76.6	31134	
299.00 > 99.00	4.224	4.231	-0.007	0.998	22339484		2.21(1.43-4.29)	76.6	45075	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.235	-0.004		7067197	7.66		82.3	461925	
64 PFECA A										
279.00 > 85.00	4.301	4.301	0.0	1.029	38447715	87.3		87.3	141432	
65 PES										
315.00 > 135.00	4.397	4.394	0.003	0.960	64704721	29.5	Target=14.03	33.1	231627	
315.00 > 83.00	4.389	4.394	-0.005	0.958	15173979		4.26(7.01-21.04)	33.1	23377	
68 PFECA B										
295.00 > 201.00	4.511	4.514	-0.003	0.985	16823082	91.0		91.0	161467	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.550	4.549	0.001		309830	7.10		76.0	8557	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.540	4.546	-0.006	0.998	12524029	98.4	Target=1.58	105	920580	
327.00 > 81.00	4.540	4.546	-0.006	0.998	6944127		1.80(0.79-2.36)	105	153747	
D 9 13C5 PFHxA										
318.00 > 273.00	4.579	4.587	-0.008		6346379	7.94		79.4	197644	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.579	4.586	-0.007	1.000	46420645	85.7	Target=13.65	85.7	653458	
313.00 > 119.00	4.579	4.586	-0.007	1.000	3983142		11.65(6.82-20.47)	85.7	144374	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.609	4.608	0.001	1.089	47056749	69.1	Target=3.02	73.7	3381274	
349.00 > 99.00	4.599	4.608	-0.009	1.087	18756999		2.51(1.51-4.53)	73.7	1389791	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.711	4.715	-0.004		782513	9.04		90.4	51889	
12 HFPO-DA										
329.00 > 285.00	4.711	4.715	-0.004	1.000	18767294	97.9		97.9	404455	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.970	4.976	-0.006	0.998	42131181	87.6	Target=3.04	87.6	605708	
363.00 > 169.00	4.970	4.976	-0.006	0.998	15759161		2.67(1.52-4.56)	87.6	31106	
D 17 13C4 PFHpA										
367.00 > 322.00	4.979	4.981	-0.002		5026273	5.98		59.8	66042	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.979	4.981	-0.002	1.000	48450463	95.6	Target=2.99	105	4266846	
399.00 > 99.00	4.970	4.981	-0.011	0.998	16898912		2.87(1.50-4.49)	105	25778	
D 16 13C3 PFHxS										
402.00 > 80.00	4.979	4.983	-0.004		4916948	5.95		62.9	516106	
18 DONA										
377.00 > 251.00	5.022	5.026	-0.004	1.009	60456287	74.2		78.5	1239165	
62 5:3 FTCA										
341.00 > 237.00	5.045	5.051	-0.006	1.102	11485282	91.6	Target=3.41	91.6	31994	
341.00 > 217.00	5.045	5.051	-0.006	1.102	3672624		3.13(1.70-5.11)	91.6	20022	
19 6:2 FTS										
427.00 > 407.00	5.323	5.330	-0.007	1.000	9726042	101.6	Target=1.71	107	325298	
427.00 > 81.00	5.323	5.330	-0.007	1.000	5518244		1.76(0.85-2.56)	107	66268	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.323	5.332	-0.009		172814	5.95		62.6	15189	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.339	-0.002	1.072	48107429	95.6	Target=3.21	100	1371622	
449.00 > 99.00	5.330	5.339	-0.009	1.070	16826063		2.86(1.60-4.81)	100	1488607	
D 22 13C8 PFOA										
421.00 > 376.00	5.350	5.351	-0.001		6166317	6.75		67.5	773999	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.344	5.348	-0.004	0.999	48968791	88.0	Target=2.40	88.0	1012022	
413.00 > 169.00	5.344	5.348	-0.004	0.999	23753778		2.06(1.20-3.60)	88.0	836630	
D 25 13C8 PFOS										
507.00 > 80.00	5.668	5.679	-0.011		5908038	7.92		82.8	80353	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.668	5.677	-0.009	1.000	61480520	89.5	Target=3.65	96.7	93707	
499.00 > 99.00	5.668	5.677	-0.009	1.000	17676720		3.48(1.83-5.48)	96.7	36421	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.696	-0.004		7074563	7.57		75.7	140643	
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.694	-0.002	1.000	52677777	82.7	Target=4.51	82.7	748220	
463.00 > 169.00	5.684	5.694	-0.010	0.999	14190327		3.71(2.25-6.76)	82.7	112245	
66 7:3 FTCA										
441.00 > 317.00	5.790	5.794	-0.004	1.264	6551202	98.5	Target=10.25	98.5	62428	
441.00 > 337.00	5.782	5.794	-0.012	1.263	569140		11.51(5.12-15.37)	98.5	18499	
28 9ClFOS										
531.00 > 351.00	5.856	5.859	-0.003	1.033	63380940	43.7		47.0	2263127	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.984	-0.003	1.055	47419260	81.9	Target=3.43	85.4	3780571	
549.00 > 99.00	5.972	5.984	-0.012	1.054	16404545		2.89(1.72-5.15)	85.4	679895	
D 32 13C6 PFDA										
519.00 > 474.00	6.005	6.008	-0.003		7111196	7.03		70.3	209493	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	6.008	-0.003		143900	5.93		61.9	10876	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	6.007	-0.002	1.000	52333417	85.0	Target=8.86	85.0	990841	
513.00 > 169.00	5.997	6.007	-0.010	0.999	7575414		6.91(4.43-13.29)	85.0	78328	
33 8:2 FTS										
527.00 > 507.00	6.005	6.008	-0.003	1.000	11463221	97.2	Target=1.91	101	889669	
527.00 > 81.00	6.005	6.008	-0.003	1.000	5924336		1.93(0.96-2.87)	101	153235	
D 35 13C8 FOSA										
506.00 > 78.00	6.104	6.109	-0.005		10432057	8.40		84.0	300044	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.104	6.107	-0.003	1.000	61588360	57.0		57.0	1163199	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.154	6.155	-0.001		2500008	8.63		86.3	15977	
36 NMeFOSAA										
570.00 > 419.00	6.154	6.157	-0.003	1.000	21771370	99.7	Target=1.78	99.7	702626	
570.00 > 483.00	6.146	6.157	-0.011	0.999	12706322		1.71(0.89-2.67)	99.7	2041369	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.255	-0.004	1.103	49859834	77.8	Target=3.62	80.7	2175963	
599.00 > 99.00	6.242	6.255	-0.013	1.101	17141278		2.91(1.81-5.43)	80.7	347565	
D 40 13C7 PFUnA										
570.00 > 525.00	6.279	6.284	-0.005		6867005	6.68		66.8	169020	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.279	6.283	-0.004	1.000	49682008	88.1	Target=8.28	88.1	482574	
563.00 > 169.00	6.279	6.283	-0.004	1.000	7501087		6.62(4.14-12.42)	88.1	272781	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.299	-0.001		1559788	7.03		70.3	324634	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.298	6.300	-0.002	1.000	16632555	113.5	Target=1.66	113	1856260	
584.00 > 526.00	6.298	6.300	-0.002	1.000	10343198		1.61(0.83-2.49)	113	1616086	
43 11ClFOS										
631.00 > 451.00	6.398	6.398	0.0	1.129	61266205	47.8		51.4	1067079	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.521	6.526	-0.005		7876049	7.40		74.0	458116	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.521	6.524	-0.003	1.000	54124439	78.0	Target=5.73	78.0	308560	
613.00 > 169.00	6.513	6.524	-0.011	0.999	12298180		4.40(2.87-8.60)	78.0	202318	
48 10:2 FTS										
627.00 > 607.00	6.539	6.541	-0.002	1.089	14000728	104.7	Target=1.71	109	112001	
627.00 > 81.00	6.530	6.541	-0.011	1.087	8046429		1.74(0.85-2.56)	109	116924	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.551	-0.003		910543	7.84		78.4	5145	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.559	-0.002	1.001	10230234	107.1		107	70970	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.566	6.570	-0.004		1457262	9.29		92.9	5165	
50 NMeFOSA										
512.00 > 169.00	6.566	6.570	-0.004	1.000	15249495	101.0		101	13107	
53 PFDoS										
699.00 > 80.00	6.705	6.706	-0.001	1.183	47277995	77.7		80.3	1374563	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.715	-0.001		1033702	7.40		74.0	936	
52 N-EtFOSE-M										
630.00 > 59.00	6.723	6.725	-0.002	1.001	10010196	102.4		102	59987	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.731	6.736	-0.005		1227910	8.72		87.2	11603	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.731	6.736	-0.005	1.032	50220371	72.3	Target=5.39	72.3	177706	
663.00 > 169.00	6.731	6.736	-0.005	1.032	12094561		4.15(2.69-8.08)	72.3	491226	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.741	-0.001	1.001	13926319	101.5		101	12840	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.923	-0.002		8538802	8.05		80.5	202931	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.923	-0.002	1.000	56773853	74.6	Target=5.85	74.6	142490	
713.00 > 169.00	6.913	6.923	-0.010	0.999	13094834		4.34(2.93-8.78)	74.6	448261	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.243	-0.002	1.046	44586477	82.7	Target=6.08	82.7	122426	
813.00 > 169.00	7.234	7.243	-0.009	1.045	9186459		4.85(3.04-9.13)	82.7	291221	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.488	7.495	-0.007	1.082	34118794	95.5	Target=7.13	95.5	129328	
913.00 > 169.00	7.488	7.495	-0.007	1.082	5671040		6.02(3.56-10.69)	95.5	62407	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD7_00015 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:44:13 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Injection Date: 07-Apr-2022 10:55:23 Instrument ID: 29347

Lims ID: IC CAL 7

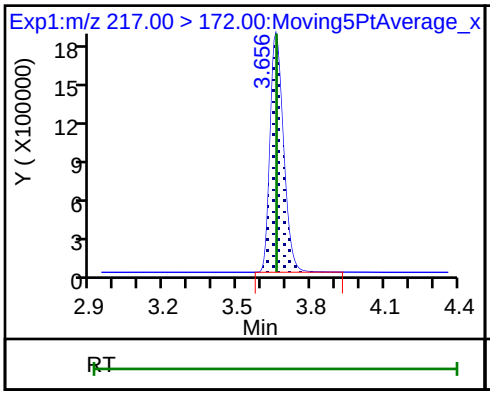
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20008 Worklist Smp#: 7

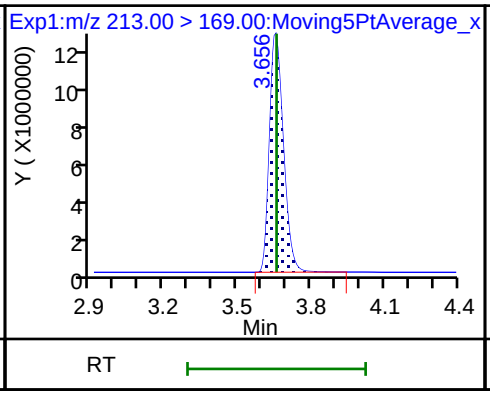
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

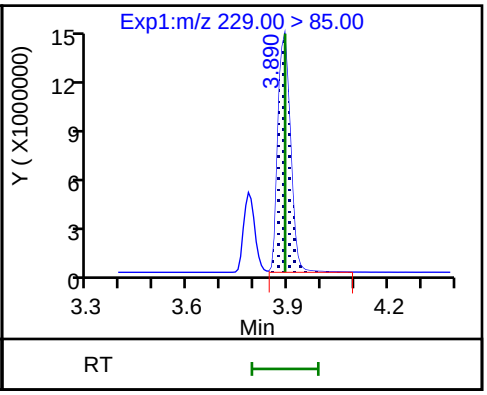
D 2 13C4 PFBA



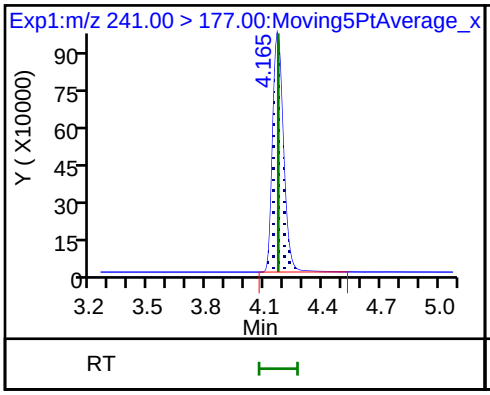
1 Perfluorobutanoic acid



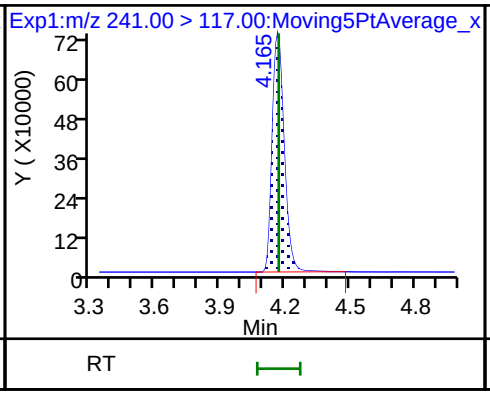
63 PFECA F



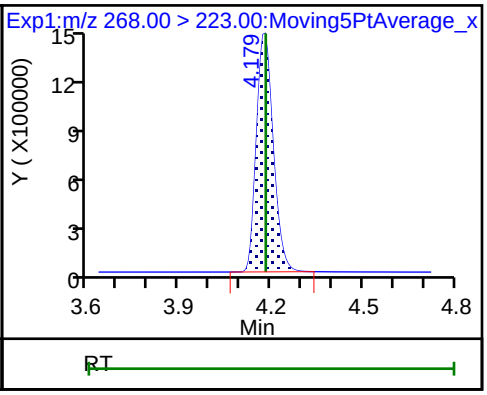
67 3:3 FTCA



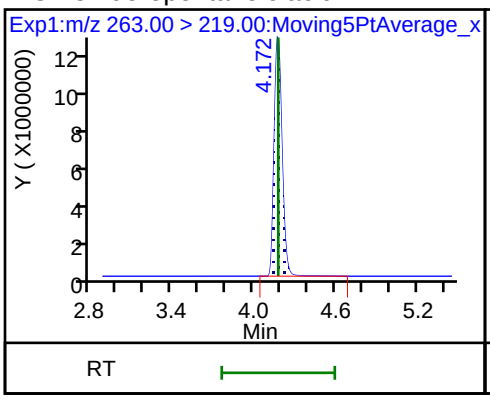
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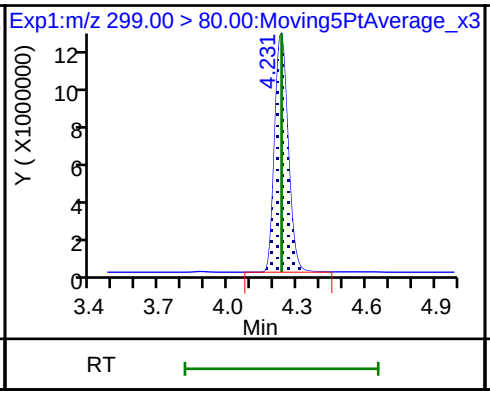
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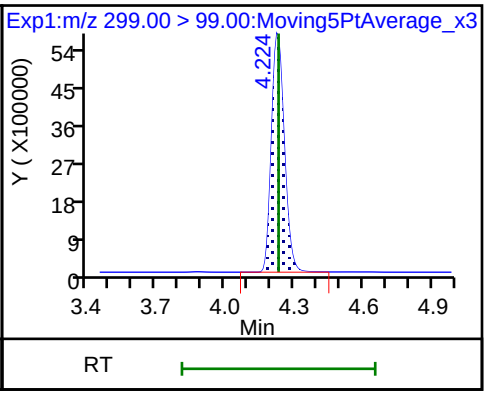
3 Perfluoropentanoic acid



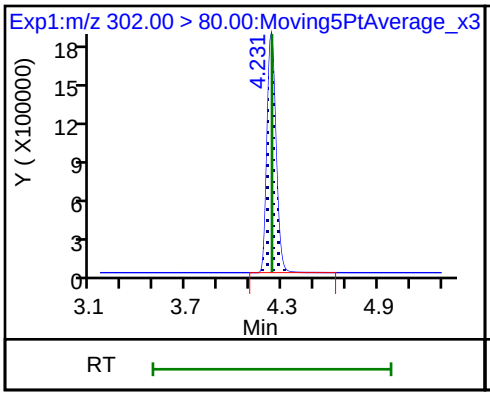
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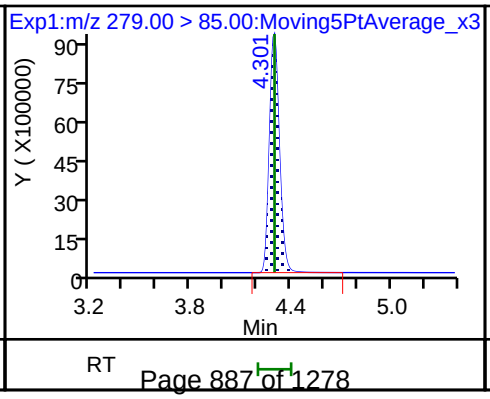
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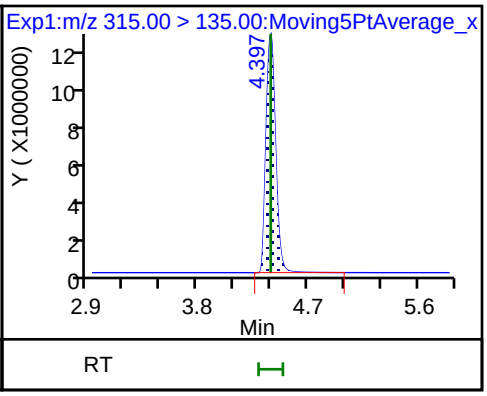
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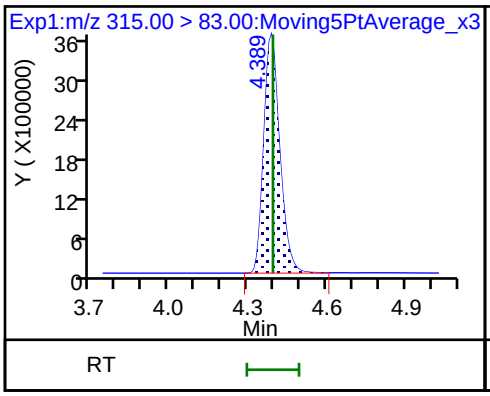
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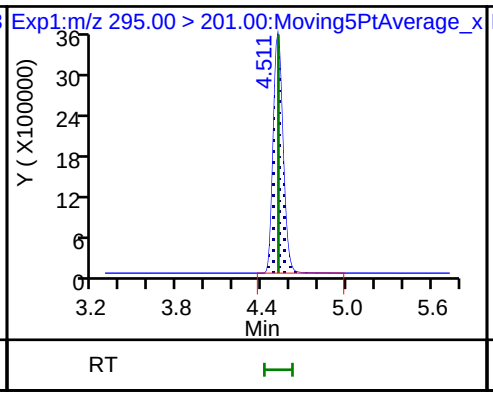
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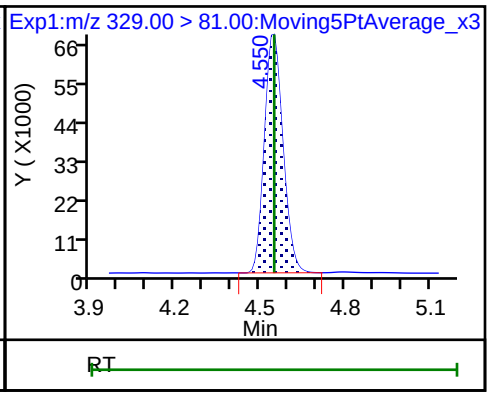
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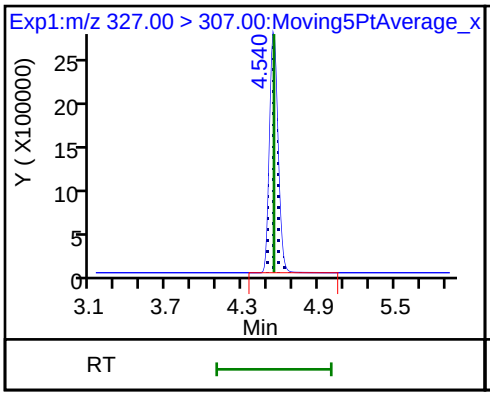
68 PFECA B



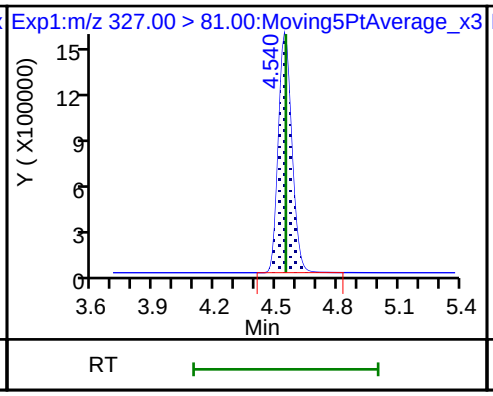
D 8 M2-4:2 FTS



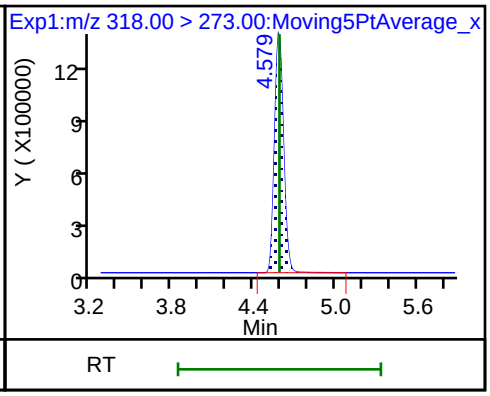
7 4:2 FTS



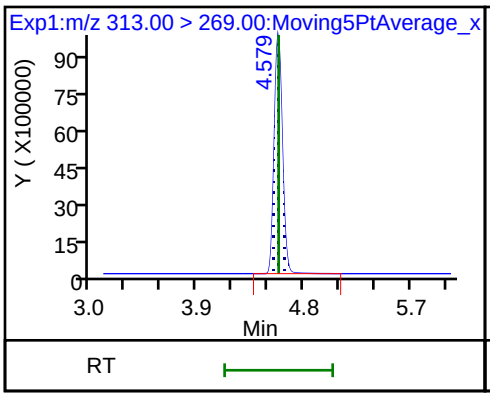
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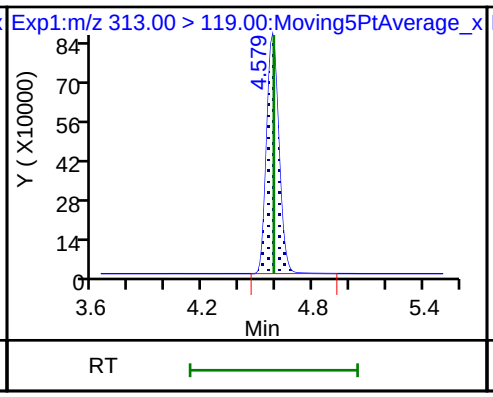
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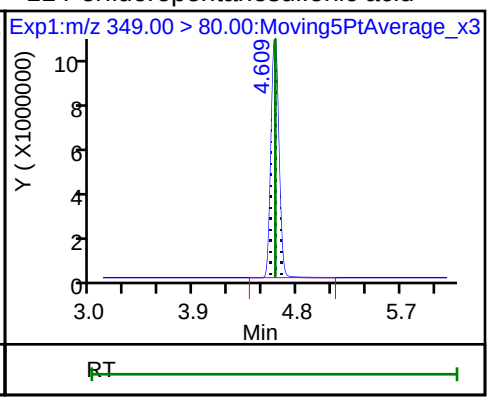
10 Perfluorohexanoic acid



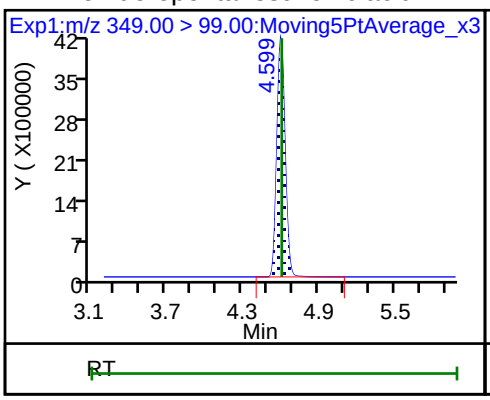
10 Perfluorohexanoic acid



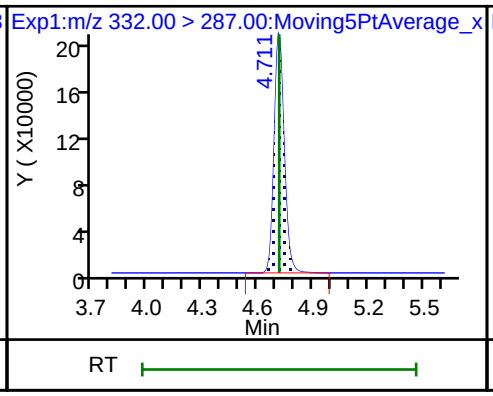
11 Perfluoropentanesulfonic acid



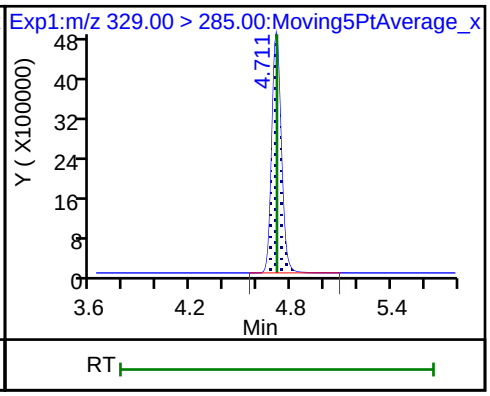
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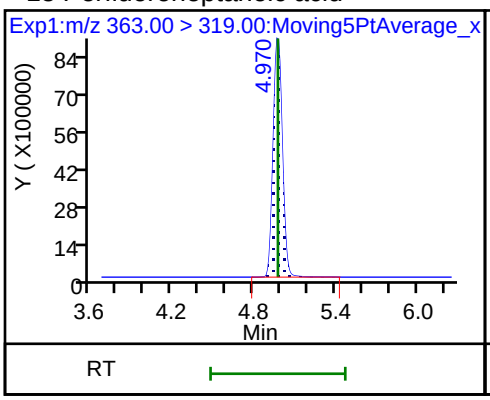
D 13 13C3 HFPO-DA



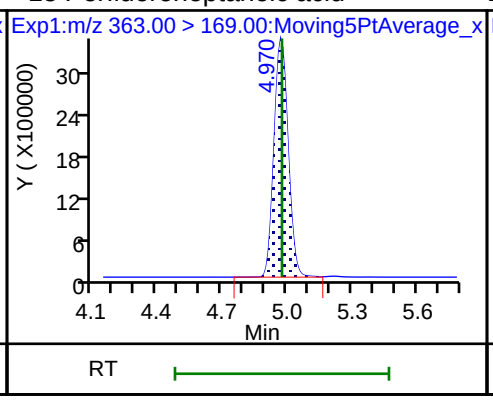
12 HFPO-DA



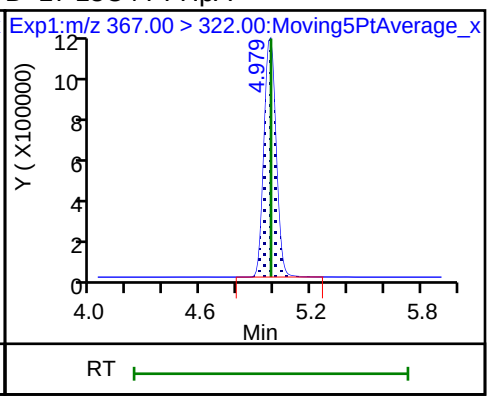
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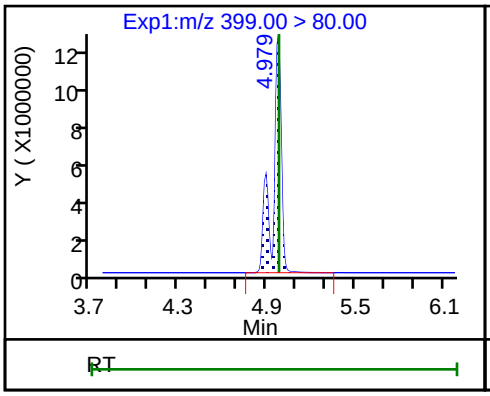
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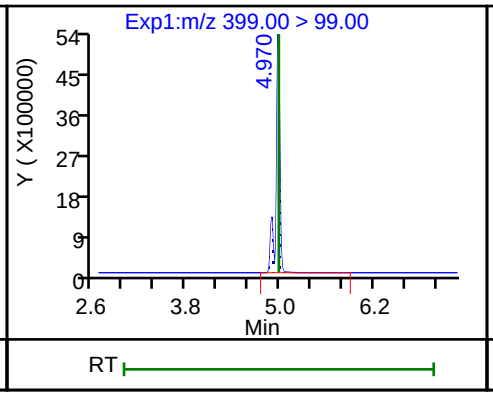
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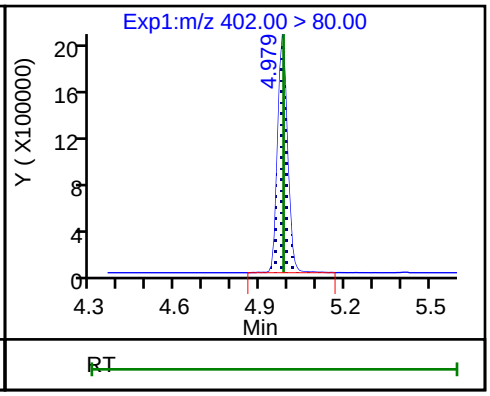
14 Perfluorohexanesulfonic acid



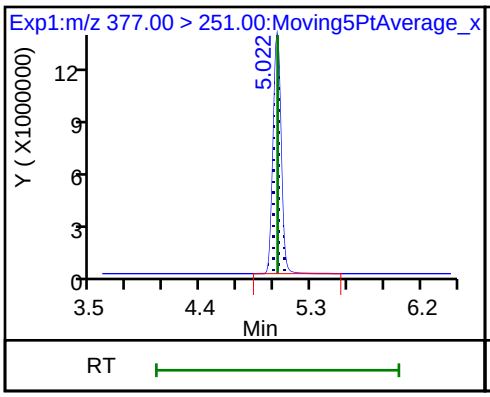
14 Perfluorohexanesulfonic acid



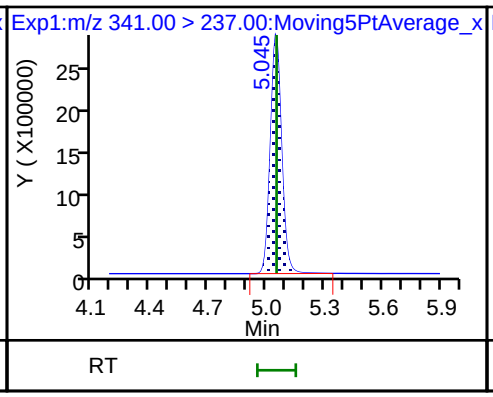
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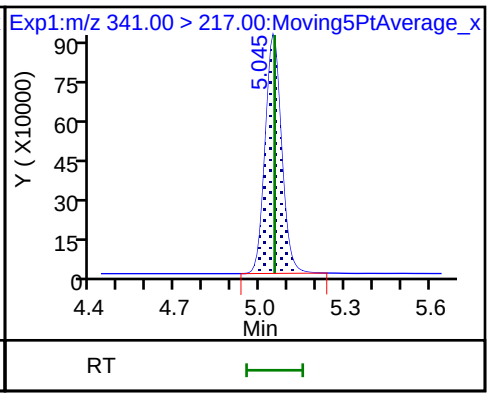
18 DONA



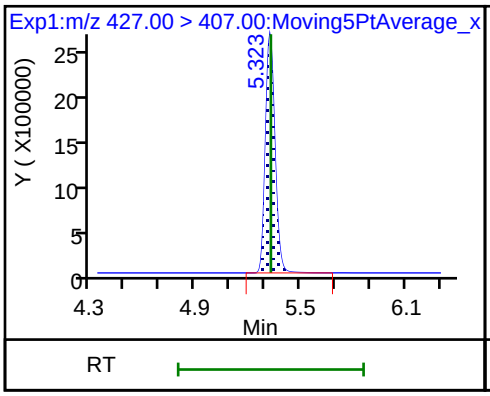
62 5:3 FTCA



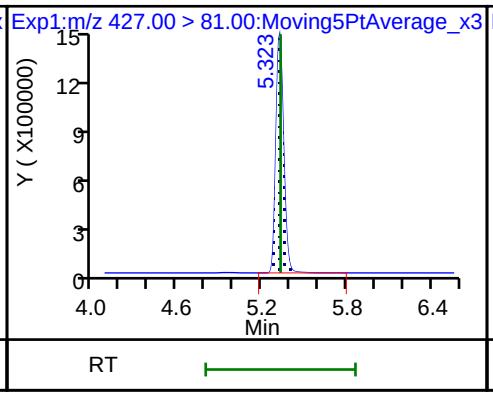
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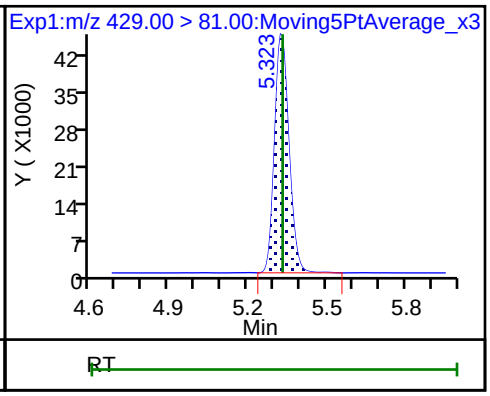
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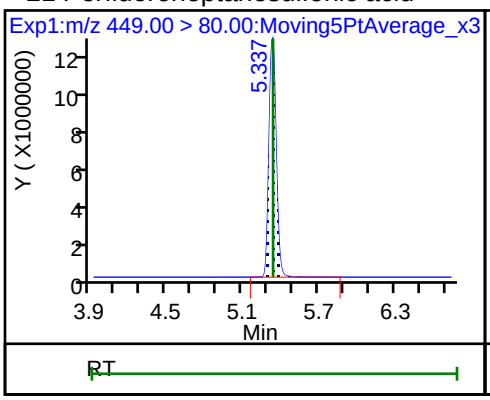
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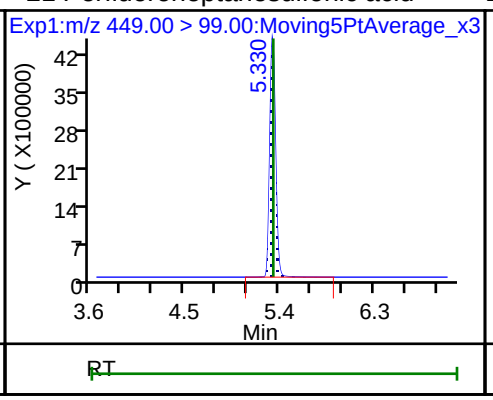
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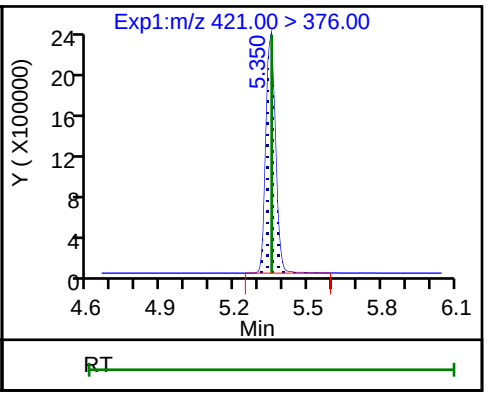
21 Perfluoroheptanesulfonic acid



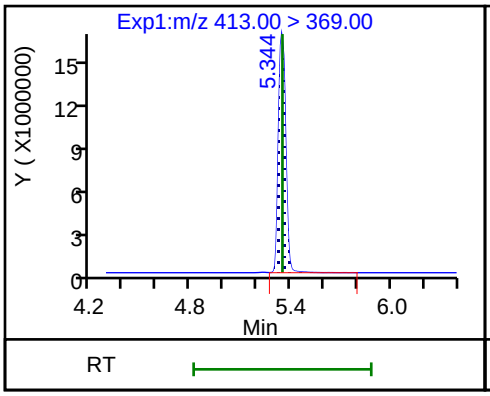
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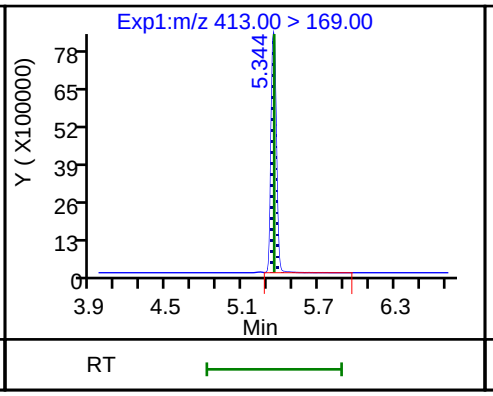
D 22 13C8 PFOA



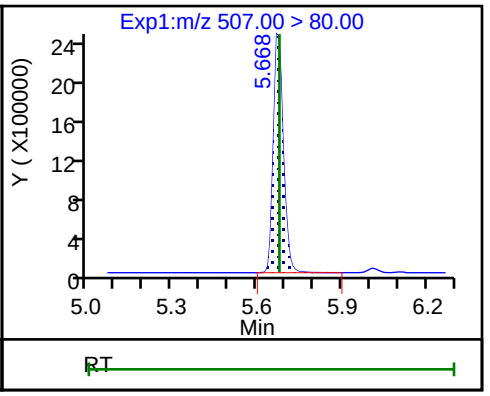
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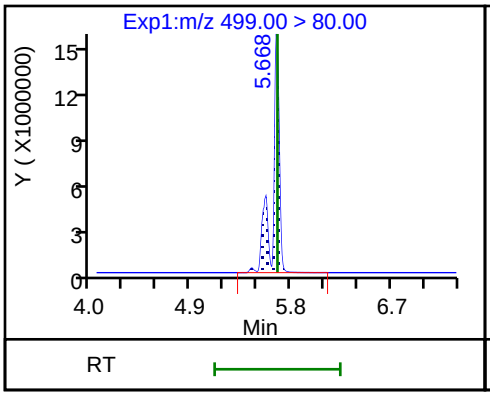
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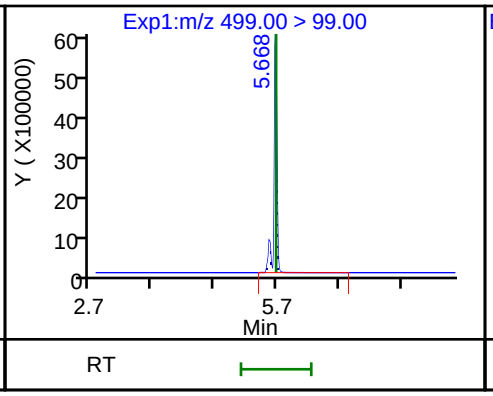
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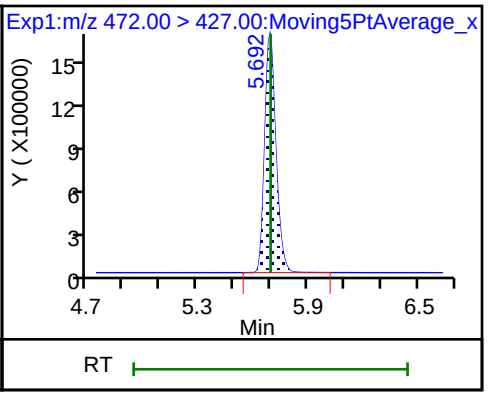
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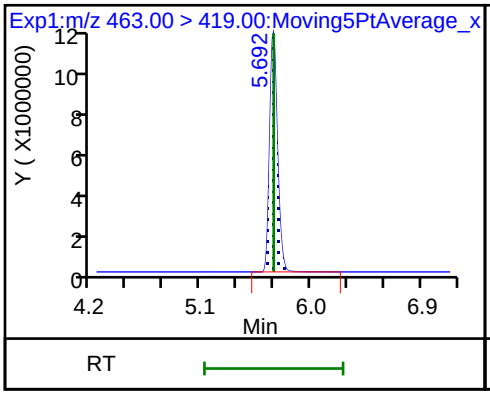
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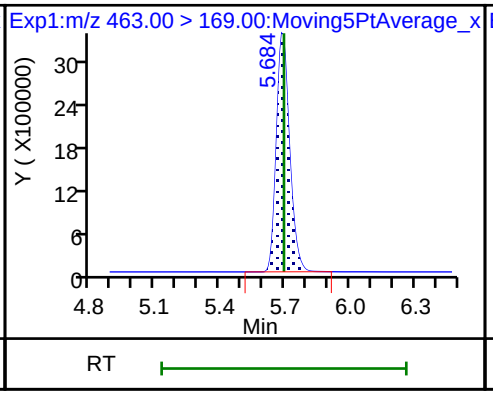
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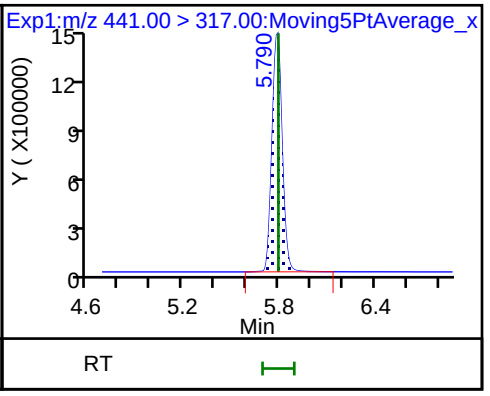
26 Perfluorononanoic acid



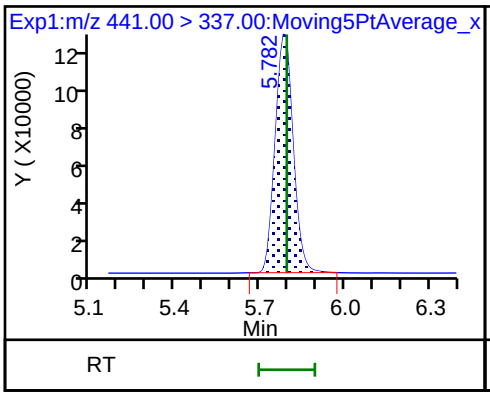
26 Perfluorononanoic acid



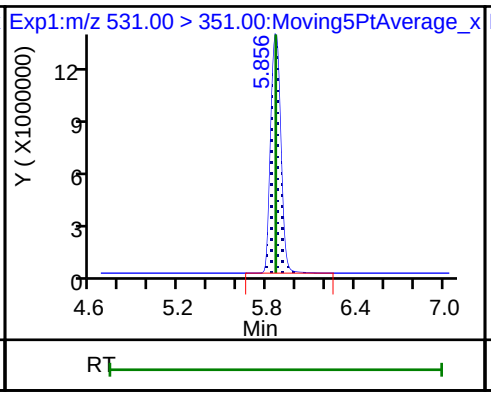
66 7:3 FTCA



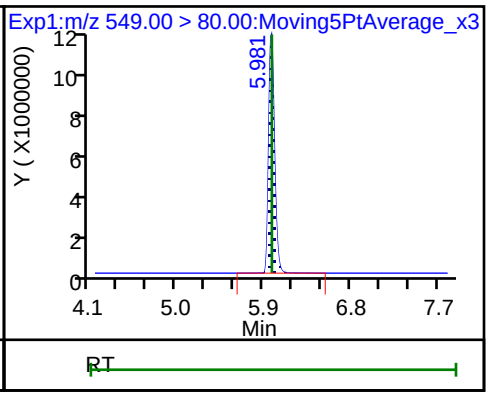
66 7:3 FTCA



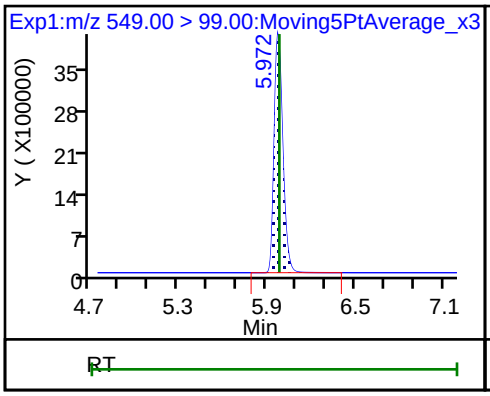
28 9ClFOS



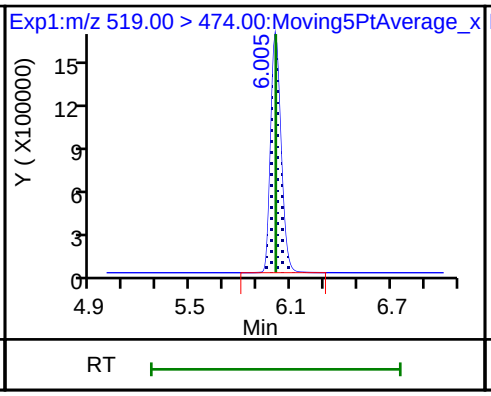
29 Perfluorononanesulfonic acid



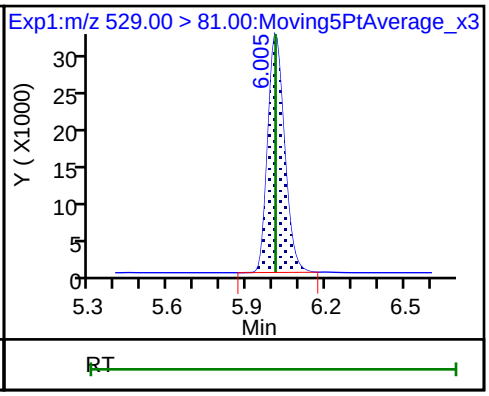
29 Perfluorononanesulfonic acid



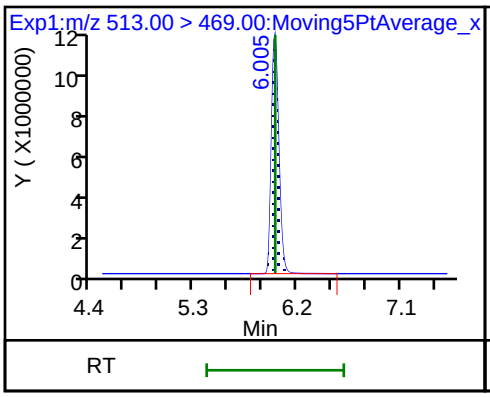
D 32 13C6 PFDA



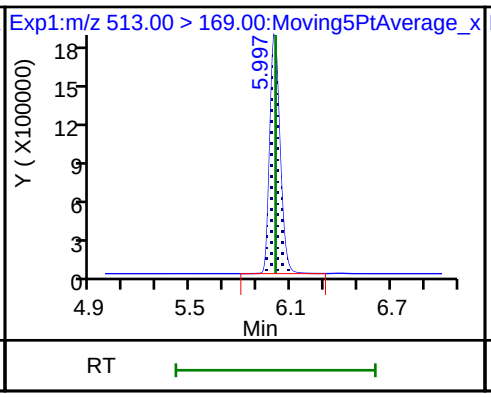
D 31 M2-8:2 FTS



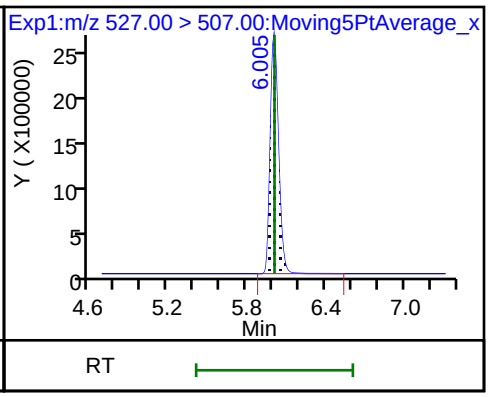
30 Perfluorodecanoic acid



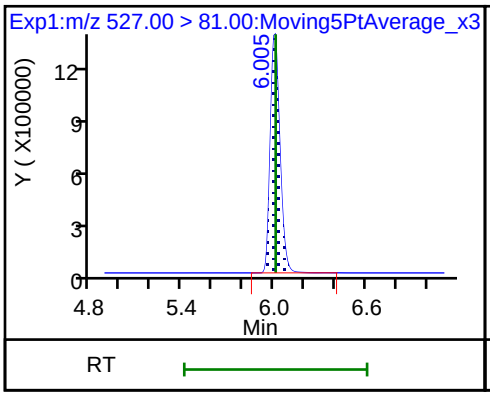
30 Perfluorodecanoic acid



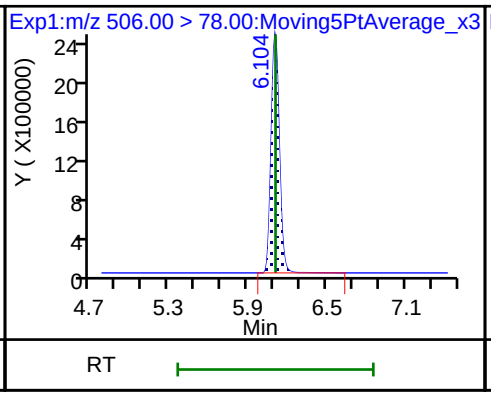
33 8:2 FTS



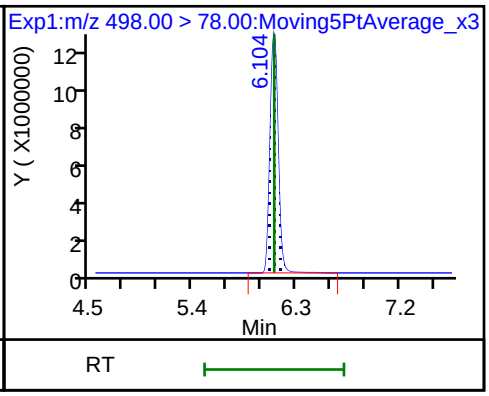
33 8:2 FTS



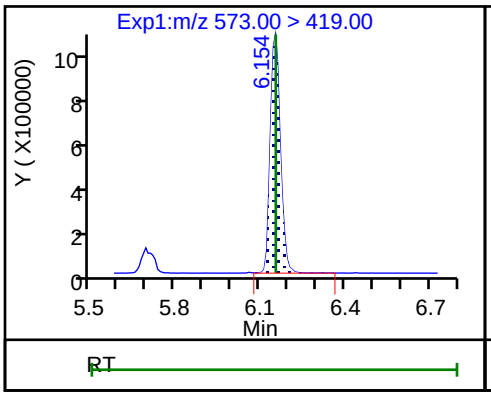
D 35 13C8 FOSA



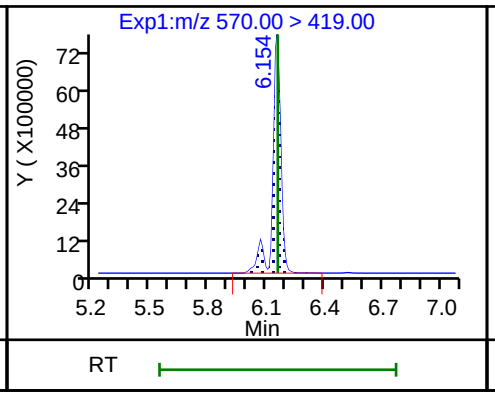
34 Perfluorooctanesulfonamide



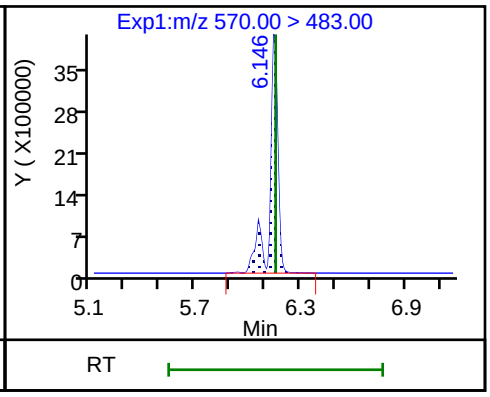
D 37 d3-NMeFOSAA



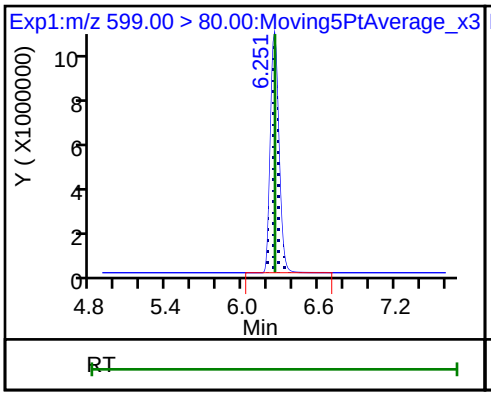
36 NMeFOSAA



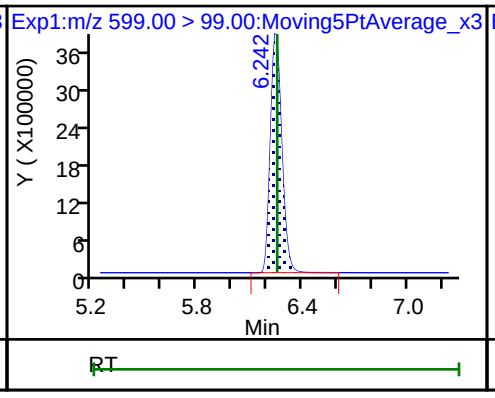
36 NMeFOSAA



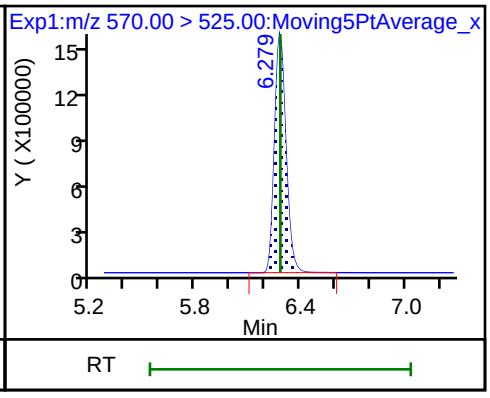
38 Perfluorodecanesulfonic acid



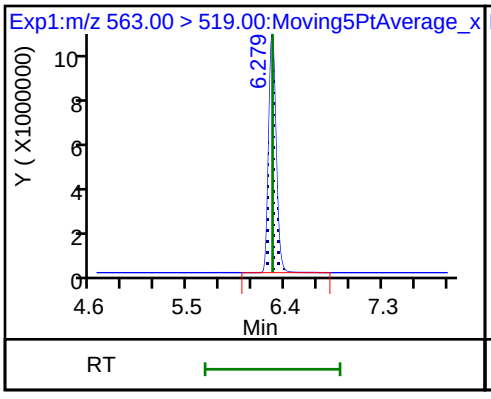
38 Perfluorodecanesulfonic acid



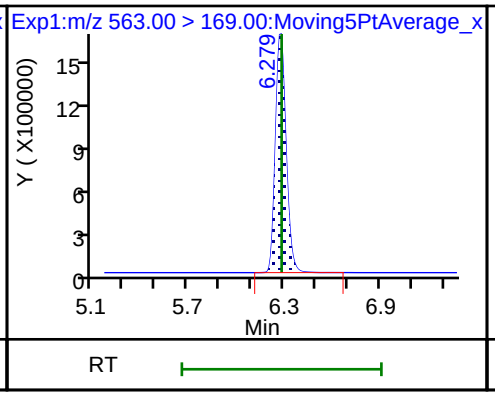
D 40 13C7 PFUnA



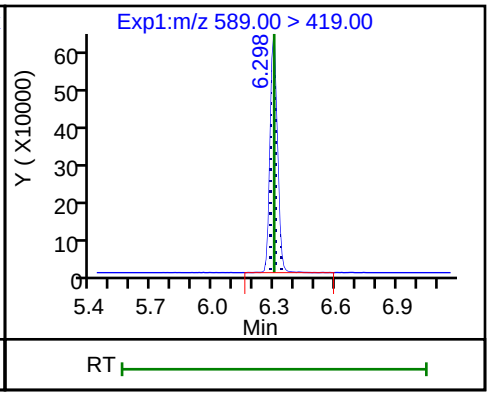
39 Perfluoroundecanoic acid



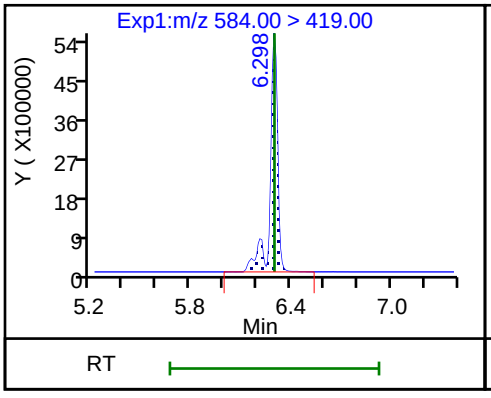
39 Perfluoroundecanoic acid



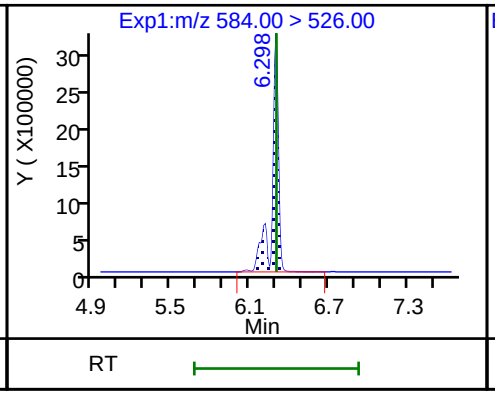
D 41 d5-NEtFOSAA



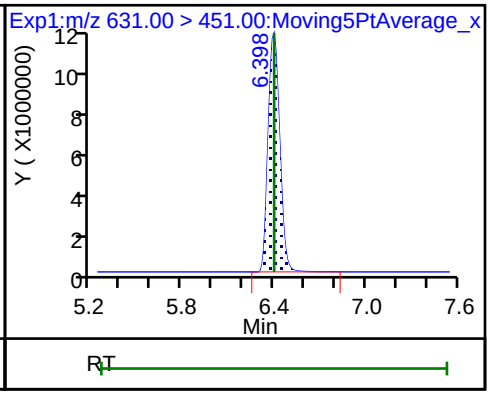
42 NEtFOSAA



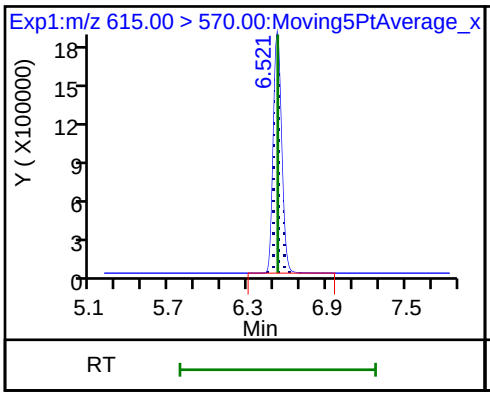
42 NEtFOSAA



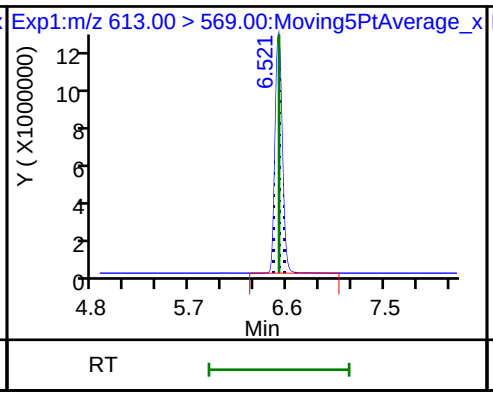
43 11ClFOS



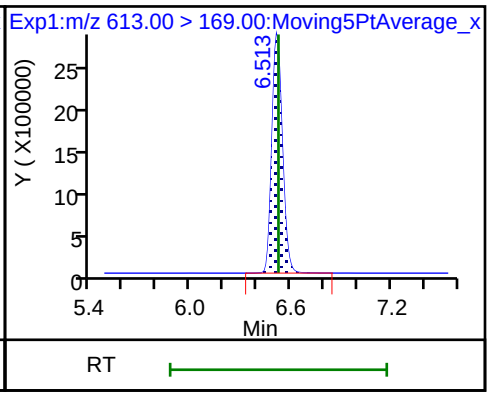
D 45 13C2-PFDoDA



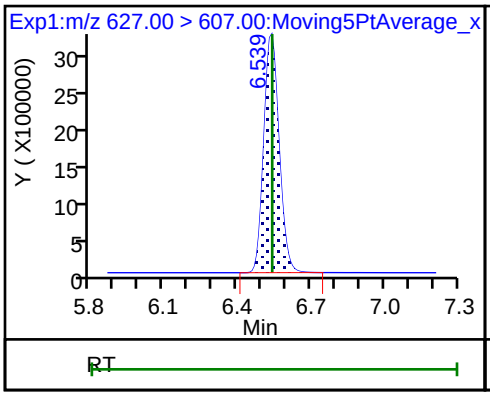
46 Perfluorododecanoic acid



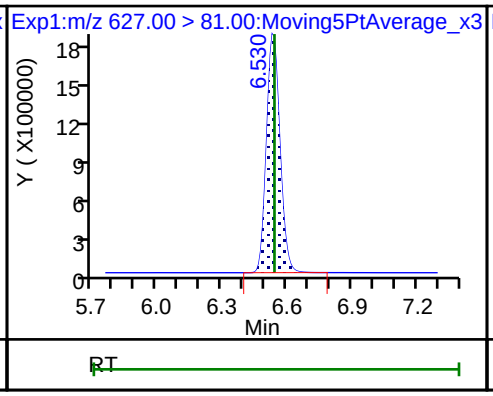
46 Perfluorododecanoic acid



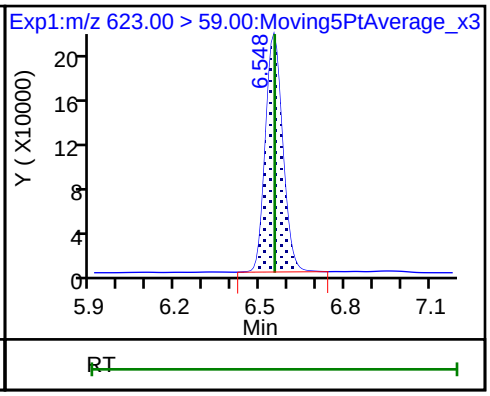
48 10:2 FTS



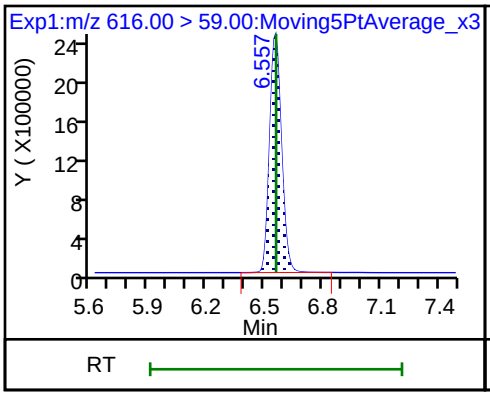
48 10:2 FTS



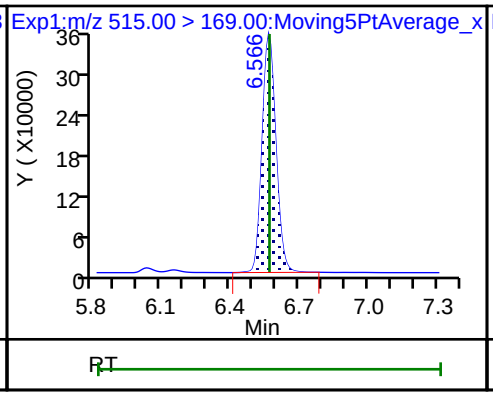
D 44 d7-N-MeFOSE-M



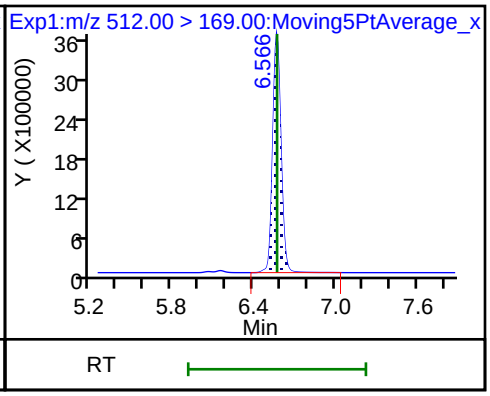
47 N-MeFOSE-M



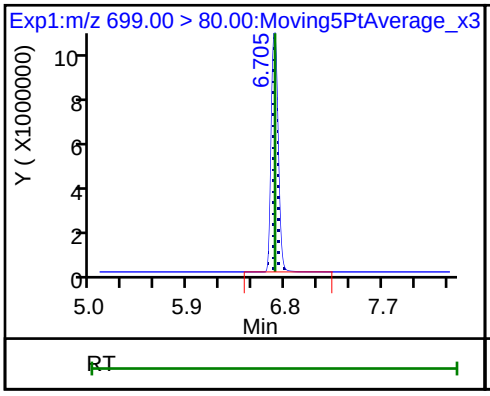
D 49 d3-NMePFOSA



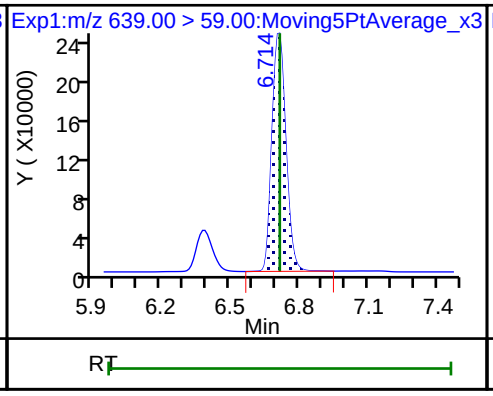
50 NMeFOSA



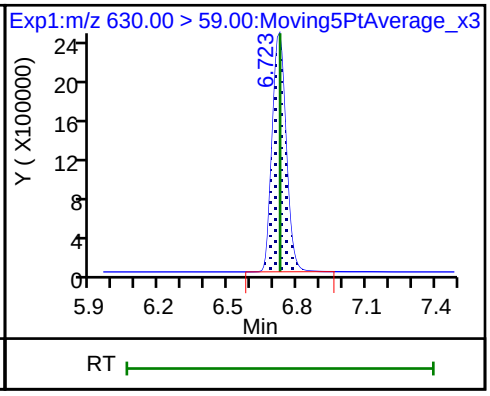
53 PFDoS



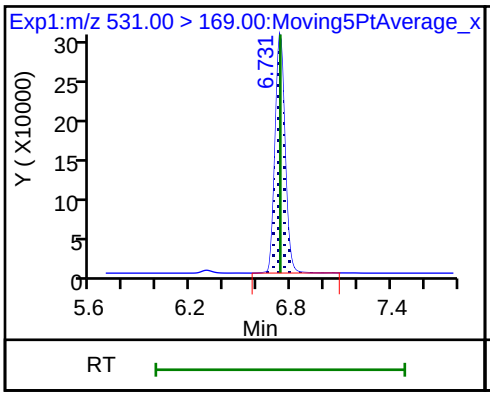
D 51 d9-N-EtFOSE-M



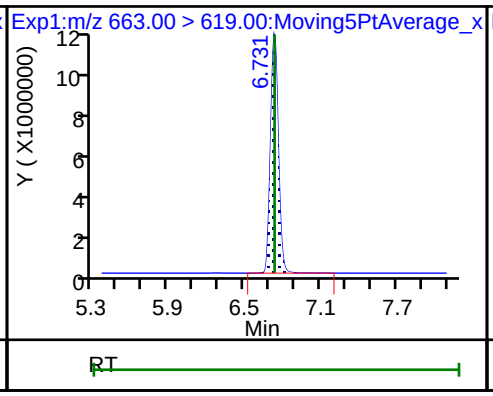
52 N-EtFOSE-M



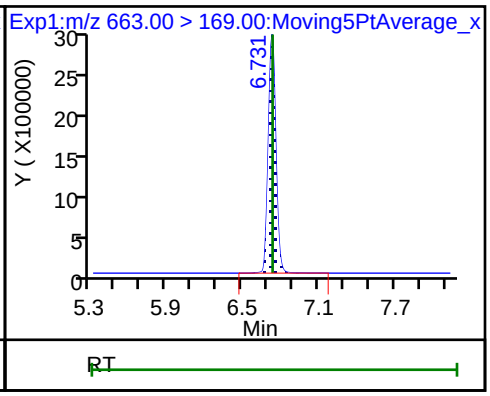
D 54 d5-NEtPFOSA



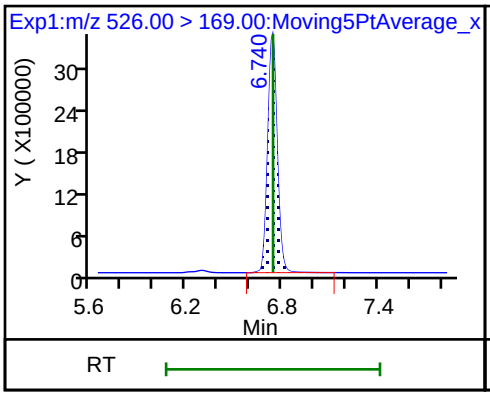
56 Perfluorotridecanoic acid



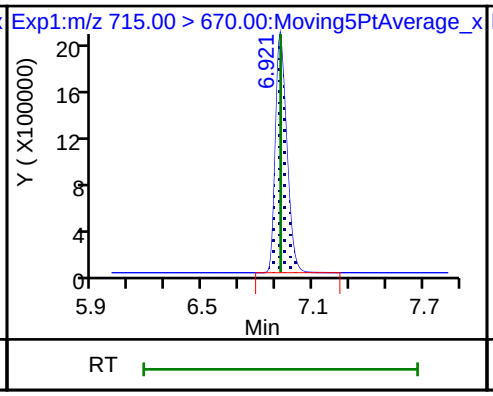
56 Perfluorotridecanoic acid



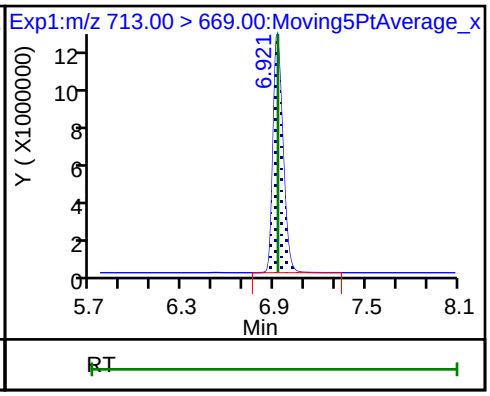
55 N-EtFOSA-M



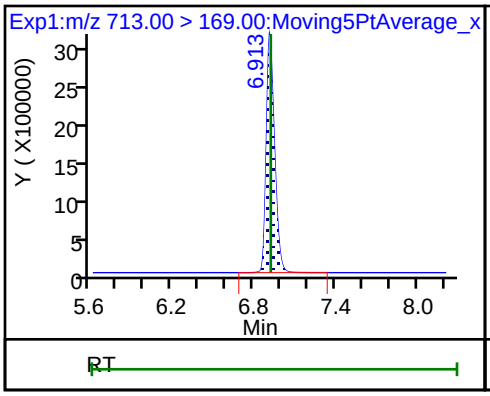
D 58 13C2 PFTeDA



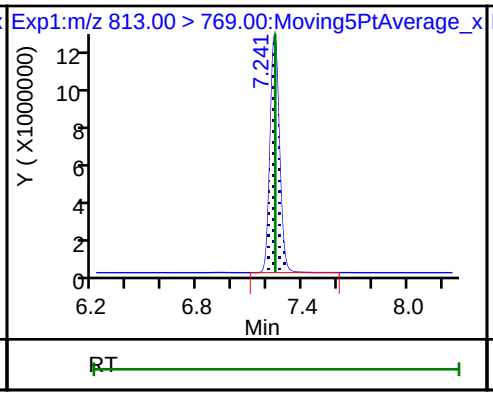
57 Perfluorotetradecanoic acid



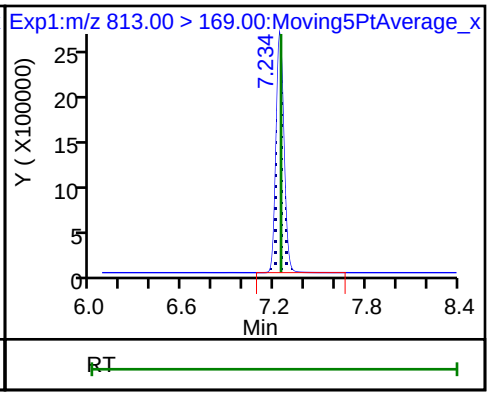
57 Perfluorotetradecanoic acid



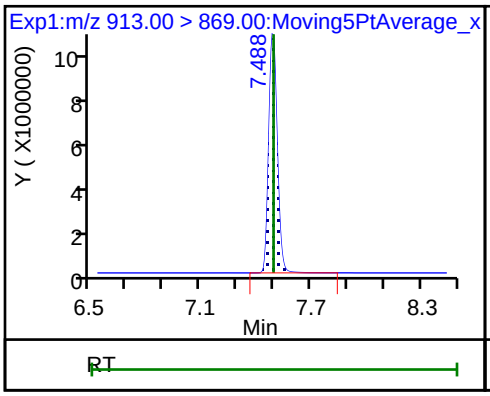
59 Perfluorohexadecanoic acid



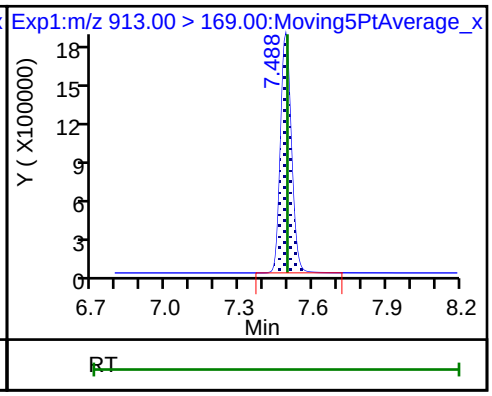
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Calibration / Perfluorobutanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

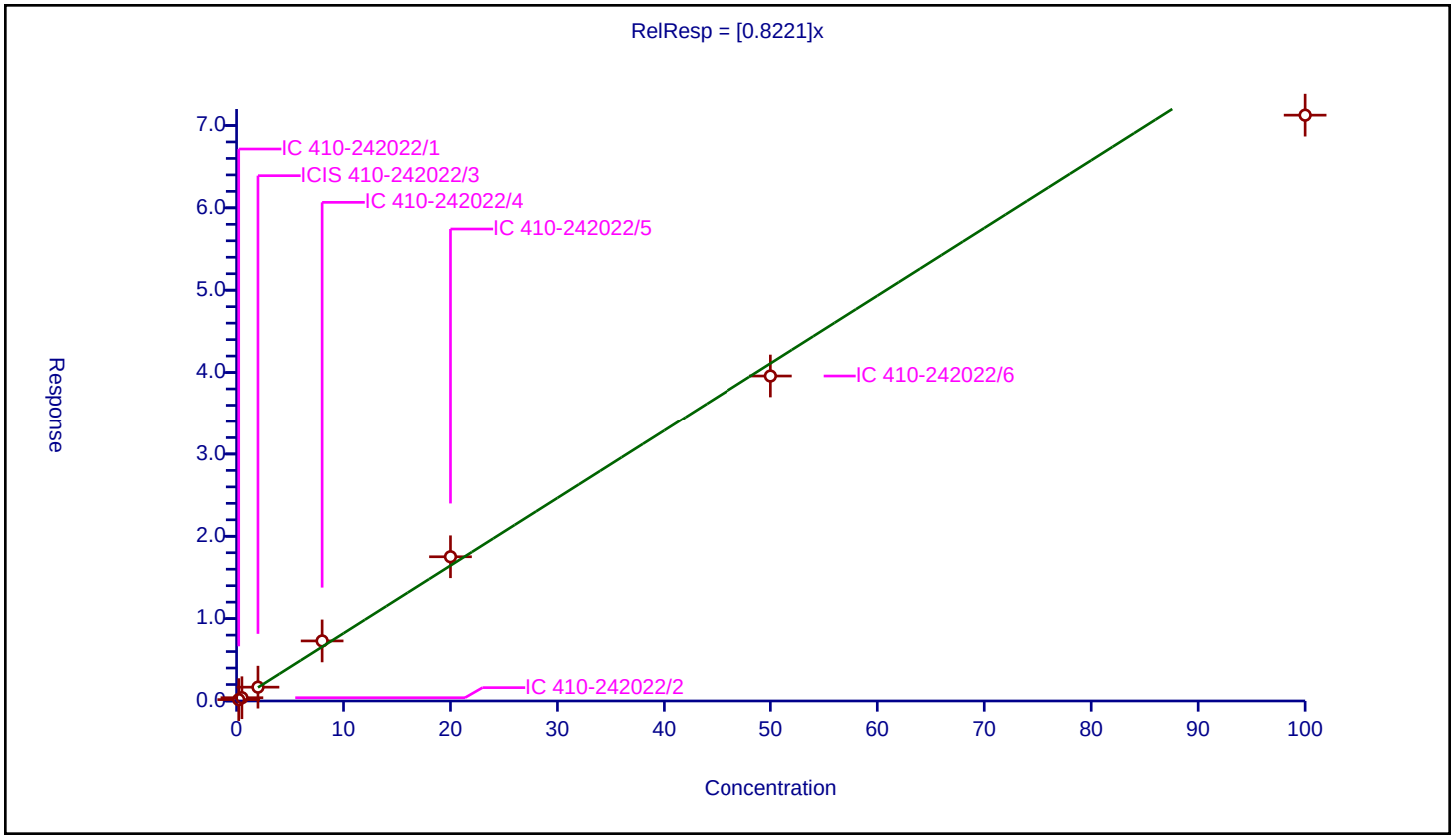
Curve Coefficients

Intercept:	0
Slope:	0.8221

Error Coefficients

Standard Error:	24400000
Relative Standard Error:	7.9
Correlation Coefficient:	0.986
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.166242	10.0	8428439.0	0.83121	Y
2	IC 410-242022/2	0.5	0.396334	10.0	8547737.0	0.792668	Y
3	ICIS 410-242022/3	2.0	1.678591	10.0	8960747.0	0.839296	Y
4	IC 410-242022/4	8.0	7.294568	10.0	8284230.0	0.911821	Y
5	IC 410-242022/5	20.0	17.512325	10.0	7913417.0	0.875616	Y
6	IC 410-242022/6	50.0	39.578498	10.0	7625489.0	0.79157	Y
7	IC 410-242022/7	100.0	71.255369	10.0	6911041.0	0.712554	Y



Calibration / PFECA F

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

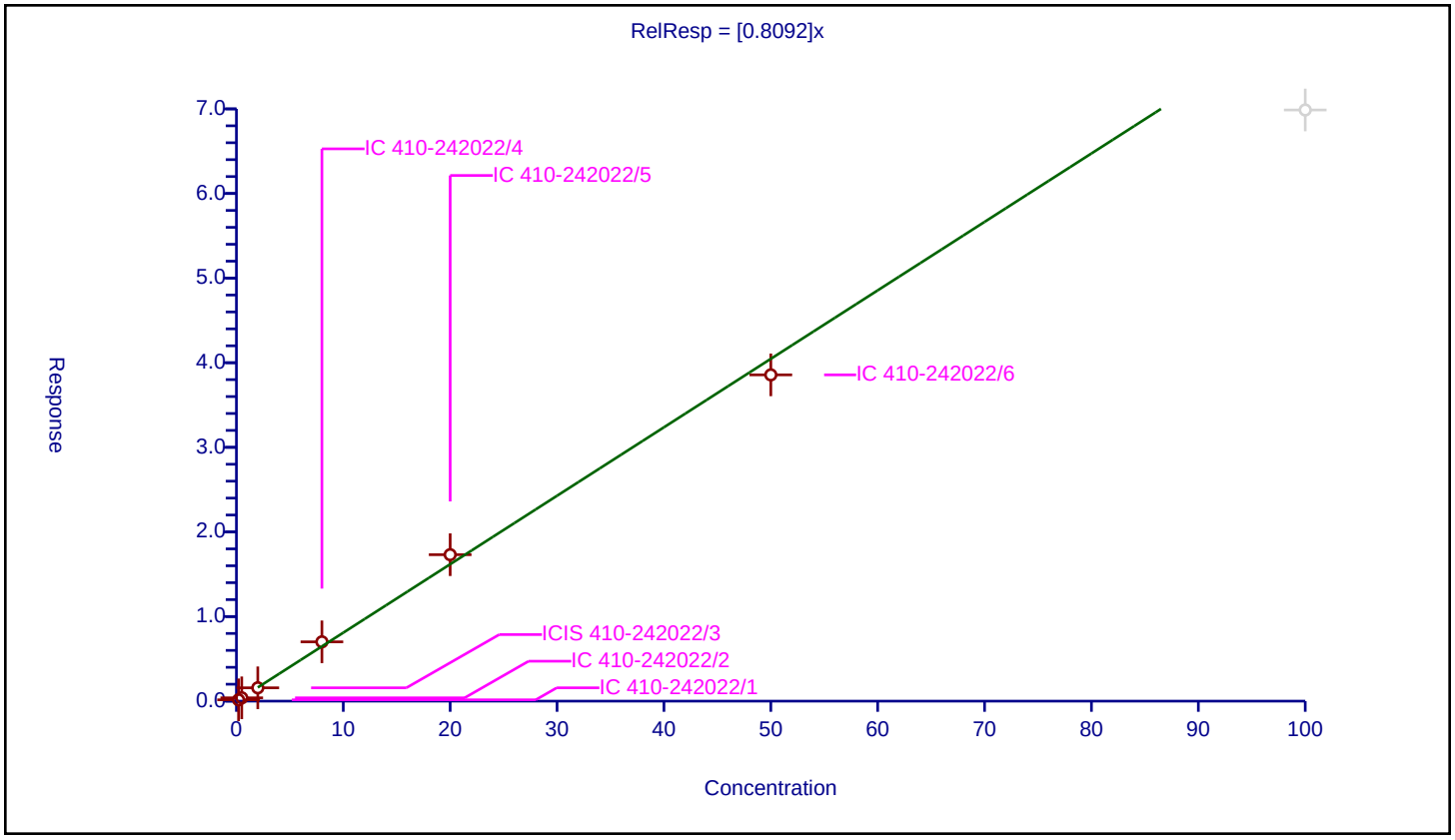
Curve Coefficients

Intercept:	0
Slope:	0.8092

Error Coefficients

Standard Error:	12100000
Relative Standard Error:	6.0
Correlation Coefficient:	0.994
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.154625	10.0	7202065.0	0.773125	Y
2	IC 410-242022/2	0.5	0.390847	10.0	7192173.0	0.781694	Y
3	ICIS 410-242022/3	2.0	1.574583	10.0	7474328.0	0.787292	Y
4	IC 410-242022/4	8.0	7.009203	10.0	6991321.0	0.87615	Y
5	IC 410-242022/5	20.0	17.309845	10.0	6579770.0	0.865492	Y
6	IC 410-242022/6	50.0	38.563349	10.0	6203426.0	0.771267	Y
7	IC 410-242022/7	100.0	69.870202	10.0	5481448.0	0.698702	N



Calibration / 3:3 FTCA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

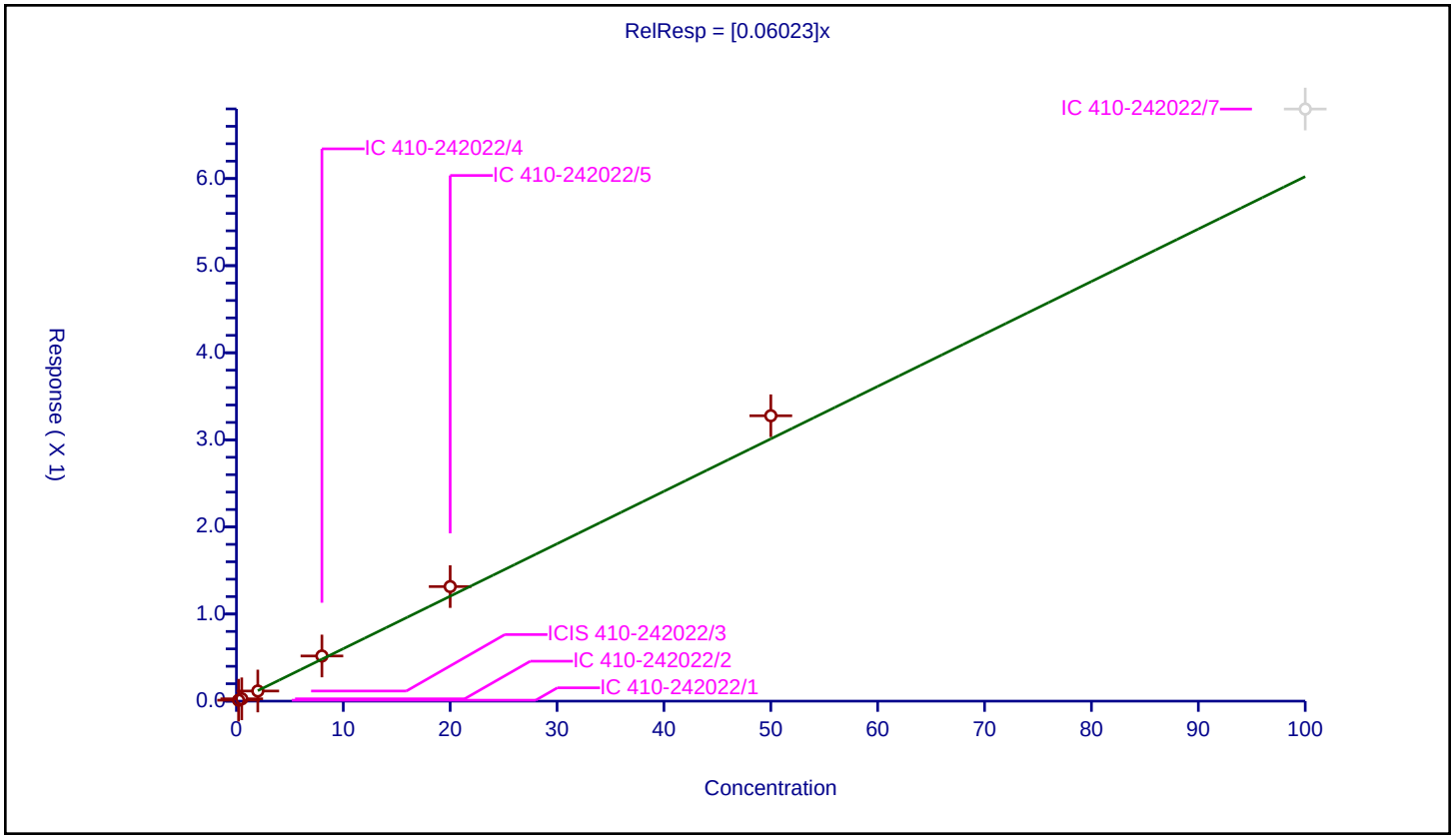
Curve Coefficients

Intercept:	0
Slope:	0.06023

Error Coefficients

Standard Error:	1000000
Relative Standard Error:	9.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.989

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.010765	10.0	7202065.0	0.053825	Y
2	IC 410-242022/2	0.5	0.026605	10.0	7192173.0	0.053211	Y
3	ICIS 410-242022/3	2.0	0.116428	10.0	7474328.0	0.058214	Y
4	IC 410-242022/4	8.0	0.518613	10.0	6991321.0	0.064827	Y
5	IC 410-242022/5	20.0	1.315306	10.0	6579770.0	0.065765	Y
6	IC 410-242022/6	50.0	3.276971	10.0	6203426.0	0.065539	Y
7	IC 410-242022/7	100.0	6.798122	10.0	5481448.0	0.067981	N



Calibration / Perfluoropentanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

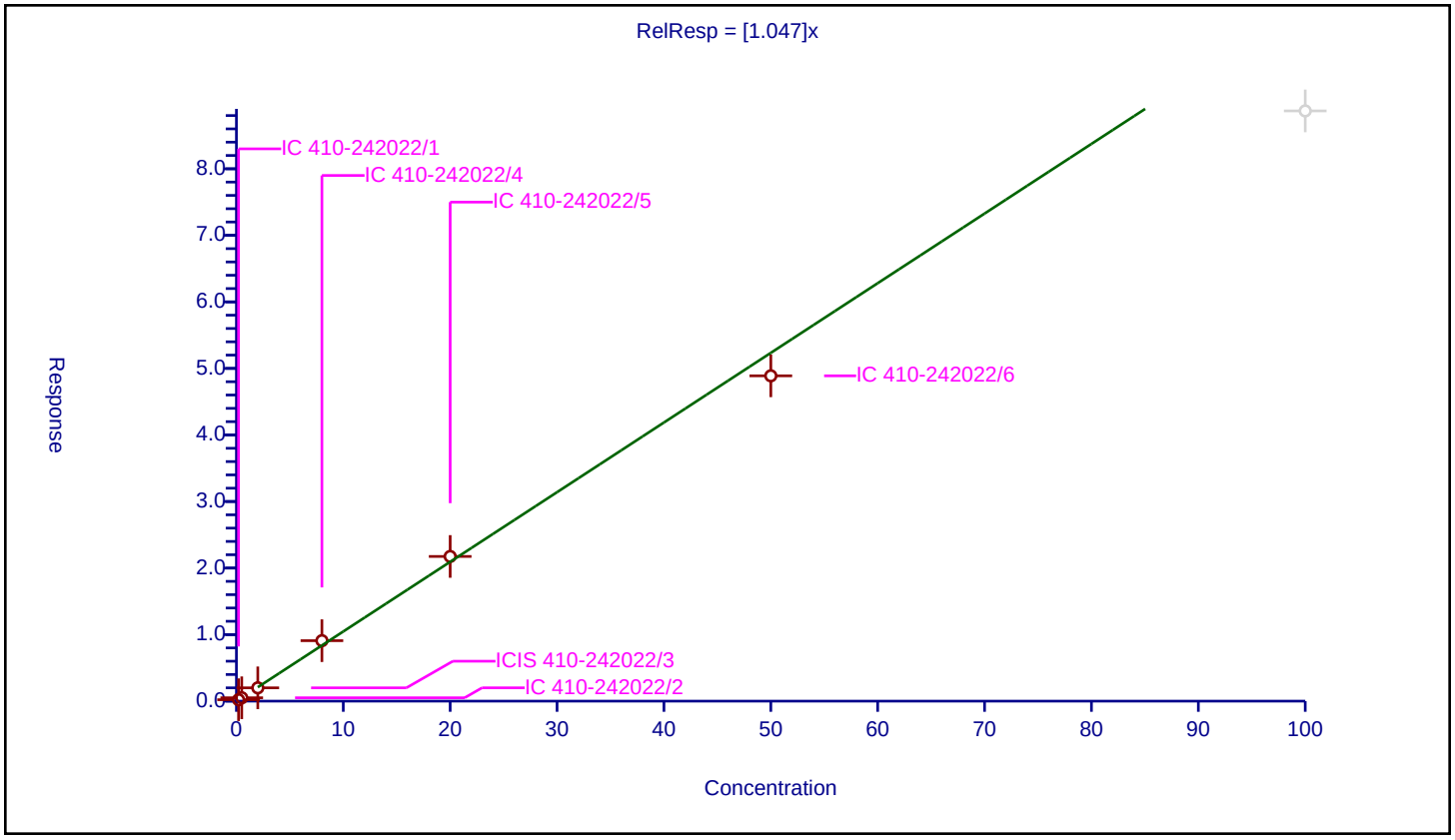
Curve Coefficients

Intercept:	0
Slope:	1.047

Error Coefficients

Standard Error:	15300000
Relative Standard Error:	5.8
Correlation Coefficient:	0.994
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.213912	10.0	7202065.0	1.069561	Y
2	IC 410-242022/2	0.5	0.504916	10.0	7192173.0	1.009831	Y
3	ICIS 410-242022/3	2.0	2.000758	10.0	7474328.0	1.000379	Y
4	IC 410-242022/4	8.0	9.087175	10.0	6991321.0	1.135897	Y
5	IC 410-242022/5	20.0	21.741722	10.0	6579770.0	1.087086	Y
6	IC 410-242022/6	50.0	48.885872	10.0	6203426.0	0.977717	Y
7	IC 410-242022/7	100.0	88.693862	10.0	5481448.0	0.886939	N



Calibration / Perfluorobutanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

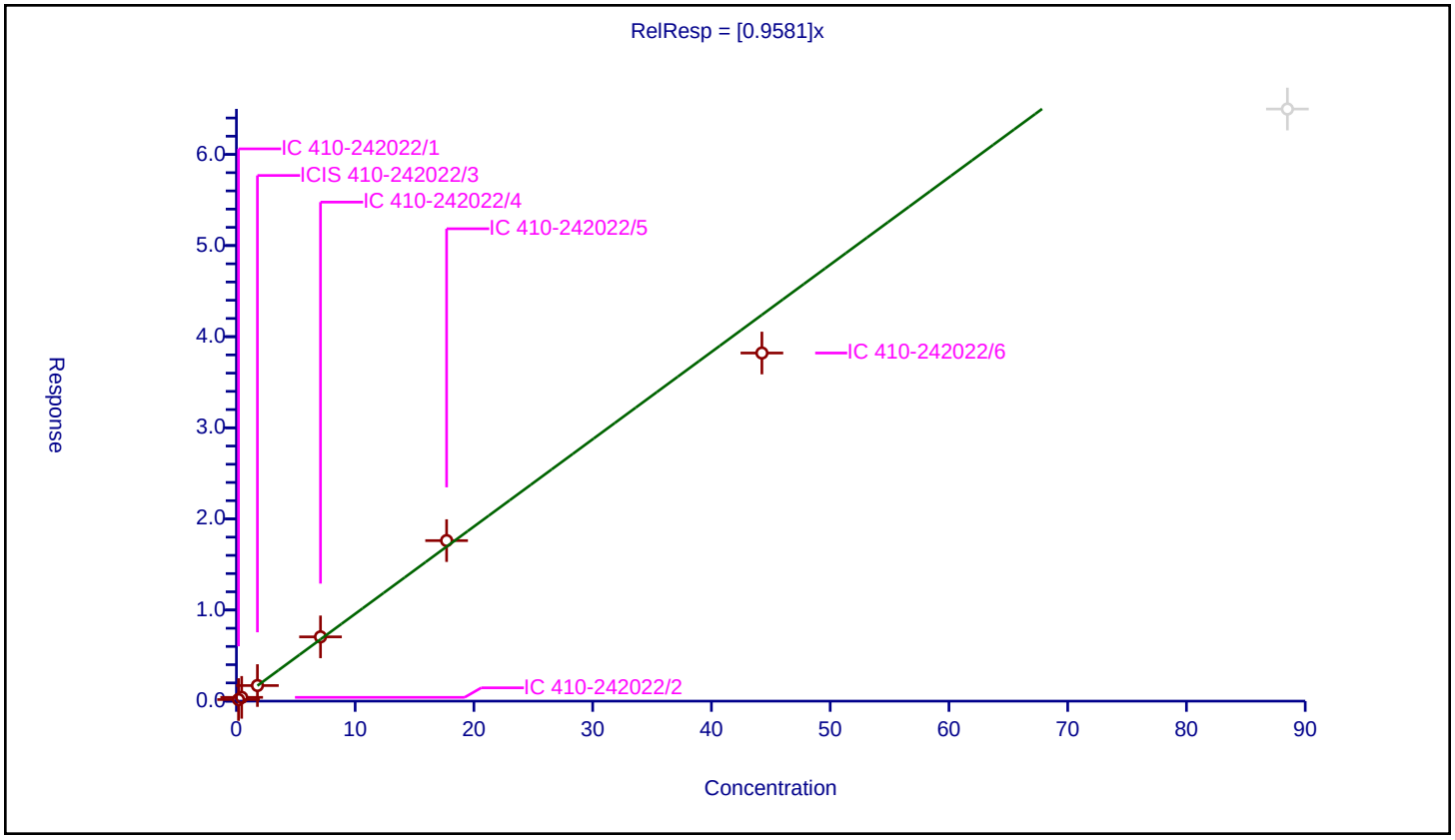
Curve Coefficients

Intercept:	0
Slope:	0.9581

Error Coefficients

Standard Error:	16300000
Relative Standard Error:	5.4
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.177	0.174945	9.3	8758635.0	0.988388	Y
2	IC 410-242022/2	0.4425	0.414828	9.3	8876954.0	0.937464	Y
3	ICIS 410-242022/3	1.77	1.711848	9.3	9104139.0	0.967146	Y
4	IC 410-242022/4	7.08	7.055189	9.3	8683554.0	0.996496	Y
5	IC 410-242022/5	17.7	17.619843	9.3	8184149.0	0.995471	Y
6	IC 410-242022/6	44.25	38.205207	9.3	7886874.0	0.863395	Y
7	IC 410-242022/7	88.5	64.984933	9.3	7067197.0	0.734293	N



Calibration / PFECA A

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

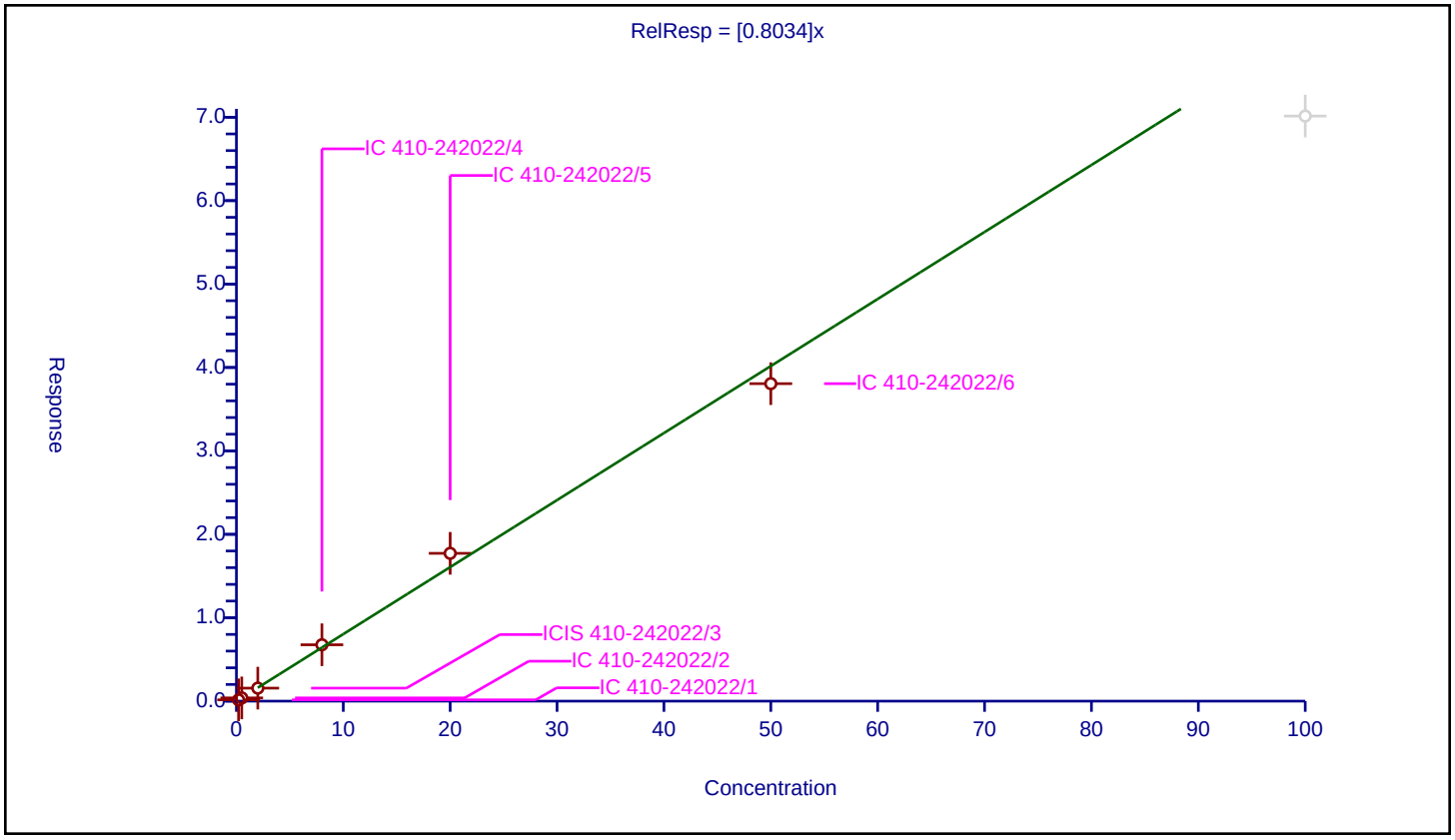
Curve Coefficients

Intercept:	0
Slope:	0.8034

Error Coefficients

Standard Error:	12000000
Relative Standard Error:	6.2
Correlation Coefficient:	0.991
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.15491	10.0	7202065.0	0.774549	Y
2	IC 410-242022/2	0.5	0.386743	10.0	7192173.0	0.773485	Y
3	ICIS 410-242022/3	2.0	1.561118	10.0	7474328.0	0.780559	Y
4	IC 410-242022/4	8.0	6.759339	10.0	6991321.0	0.844917	Y
5	IC 410-242022/5	20.0	17.718753	10.0	6579770.0	0.885938	Y
6	IC 410-242022/6	50.0	38.062519	10.0	6203426.0	0.76125	Y
7	IC 410-242022/7	100.0	70.14153	10.0	5481448.0	0.701415	N



Calibration / PES

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

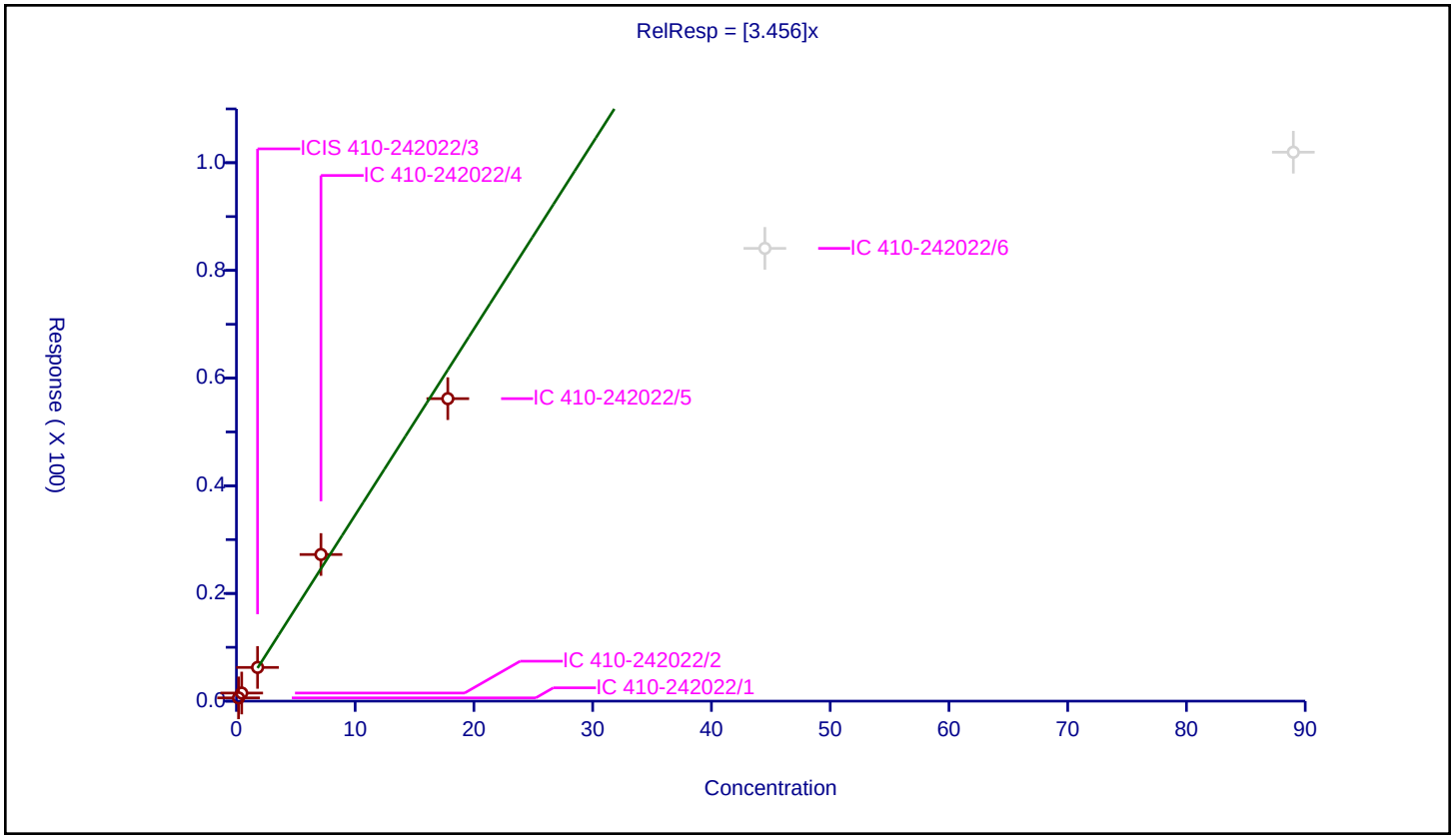
Curve Coefficients

Intercept:	0
Slope:	3.456

Error Coefficients

Standard Error:	24700000
Relative Standard Error:	7.1
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.178	0.604118	10.0	8690838.0	3.39392	Y
2	IC 410-242022/2	0.445	1.508265	10.0	8698782.0	3.38936	Y
3	ICIS 410-242022/3	1.78	6.260203	10.0	9010958.0	3.516968	Y
4	IC 410-242022/4	7.12	27.235864	10.0	8171013.0	3.825262	Y
5	IC 410-242022/5	17.8	56.184586	10.0	7785655.0	3.156437	Y
6	IC 410-242022/6	44.5	84.092839	10.0	7221982.0	1.889727	N
7	IC 410-242022/7	89.0	101.955337	10.0	6346379.0	1.145566	N



Calibration / PFECA B

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

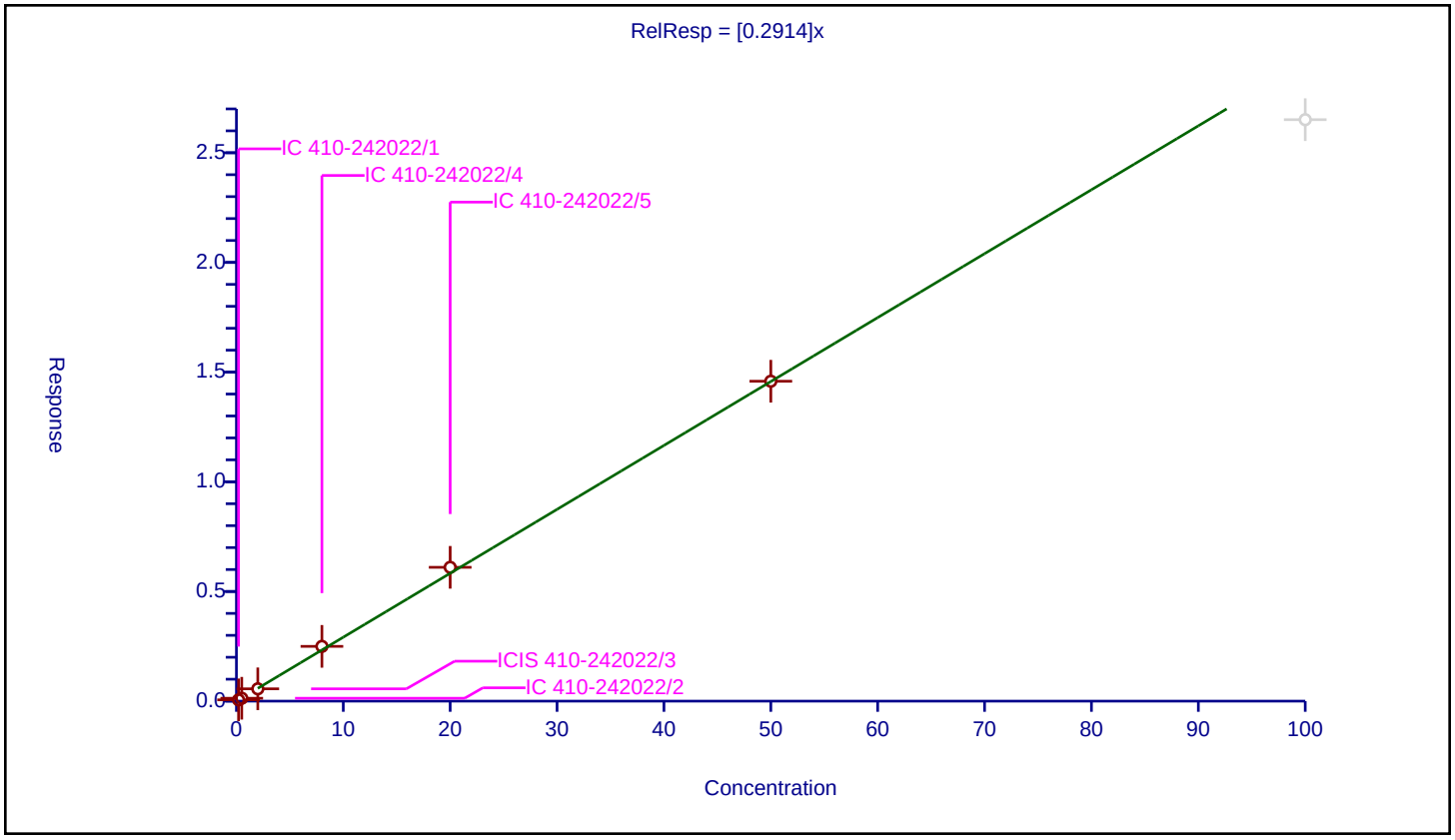
Curve Coefficients

Intercept:	0
Slope:	0.2914

Error Coefficients

Standard Error:	5250000
Relative Standard Error:	6.0
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.059121	10.0	8690838.0	0.295604	Y
2	IC 410-242022/2	0.5	0.131716	10.0	8698782.0	0.263432	Y
3	ICIS 410-242022/3	2.0	0.561439	10.0	9010958.0	0.280719	Y
4	IC 410-242022/4	8.0	2.496496	10.0	8171013.0	0.312062	Y
5	IC 410-242022/5	20.0	6.100323	10.0	7785655.0	0.305016	Y
6	IC 410-242022/6	50.0	14.584132	10.0	7221982.0	0.291683	Y
7	IC 410-242022/7	100.0	26.508158	10.0	6346379.0	0.265082	N



Calibration / 1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

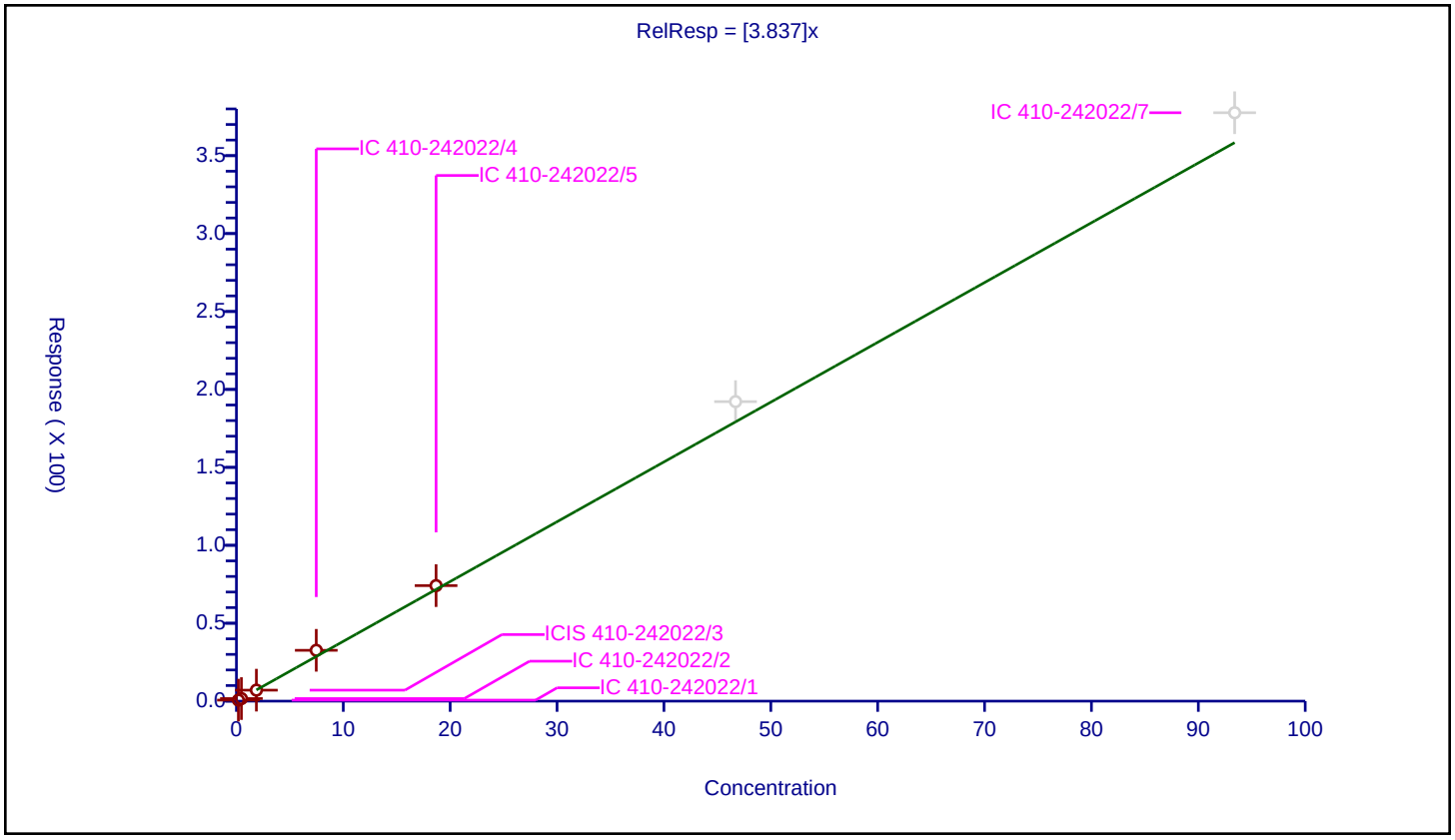
Curve Coefficients

Intercept:	0
Slope:	3.837

Error Coefficients

Standard Error:	1700000
Relative Standard Error:	9.0
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1868	0.665113	9.34	456543.0	3.560563	Y
2	IC 410-242022/2	0.467	1.640572	9.34	425226.0	3.513002	Y
3	ICIS 410-242022/3	1.868	7.057363	9.34	437049.0	3.778032	Y
4	IC 410-242022/4	7.472	32.613868	9.34	394237.0	4.364811	Y
5	IC 410-242022/5	18.68	74.120087	9.34	389441.0	3.967885	Y
6	IC 410-242022/6	46.7	192.178234	9.34	342538.0	4.115166	N
7	IC 410-242022/7	93.4	377.543914	9.34	309830.0	4.042226	N



Calibration / Perfluorohexanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

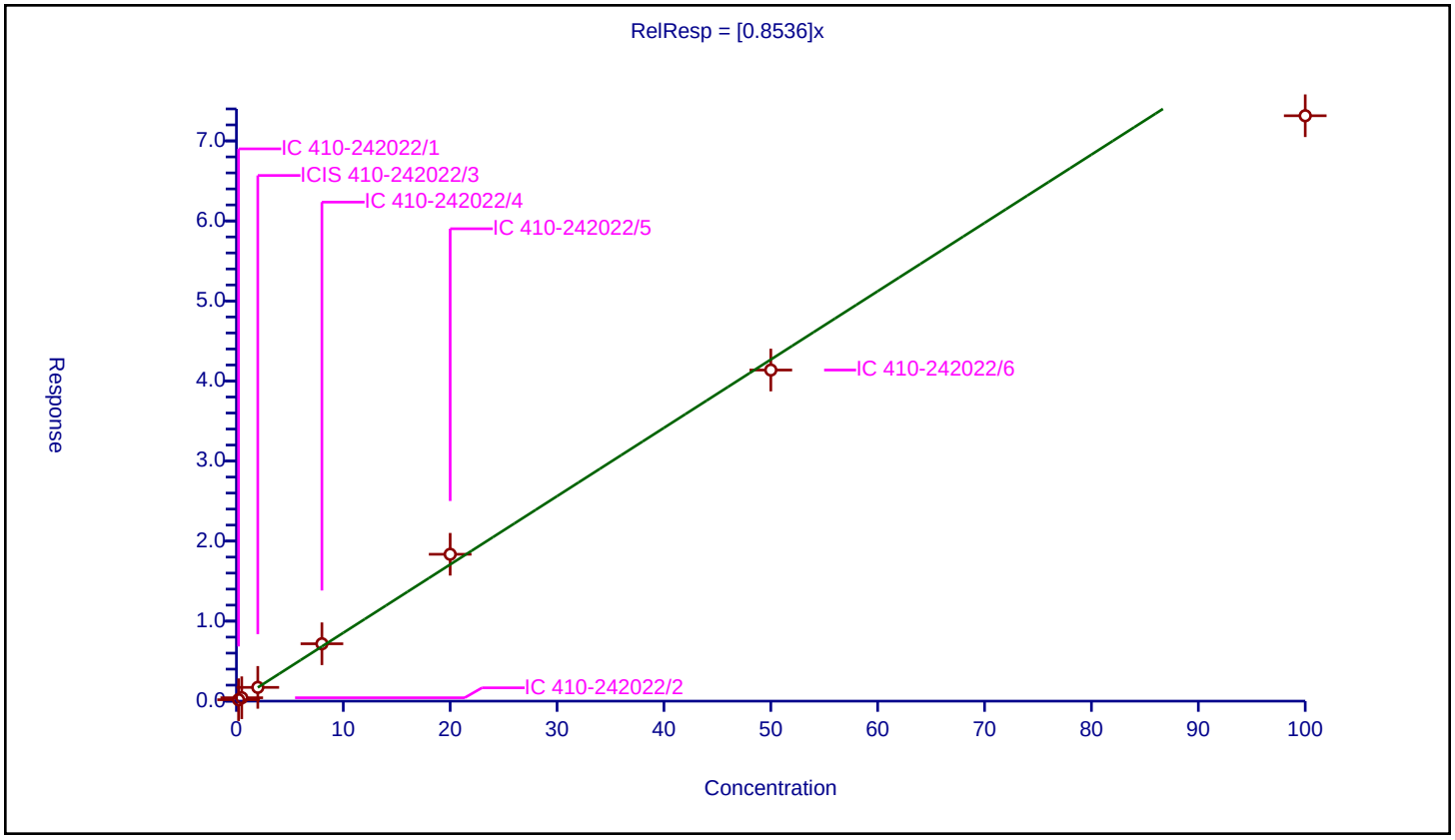
Curve Coefficients

Intercept:	0
Slope:	0.8536

Error Coefficients

Standard Error:	23400000
Relative Standard Error:	7.3
Correlation Coefficient:	0.977
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.179326	10.0	8690838.0	0.896628	Y
2	IC 410-242022/2	0.5	0.423742	10.0	8698782.0	0.847484	Y
3	ICIS 410-242022/3	2.0	1.717338	10.0	9010958.0	0.858669	Y
4	IC 410-242022/4	8.0	7.169358	10.0	8171013.0	0.89617	Y
5	IC 410-242022/5	20.0	18.350464	10.0	7785655.0	0.917523	Y
6	IC 410-242022/6	50.0	41.371896	10.0	7221982.0	0.827438	Y
7	IC 410-242022/7	100.0	73.145088	10.0	6346379.0	0.731451	Y



Calibration / Perfluoropentanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

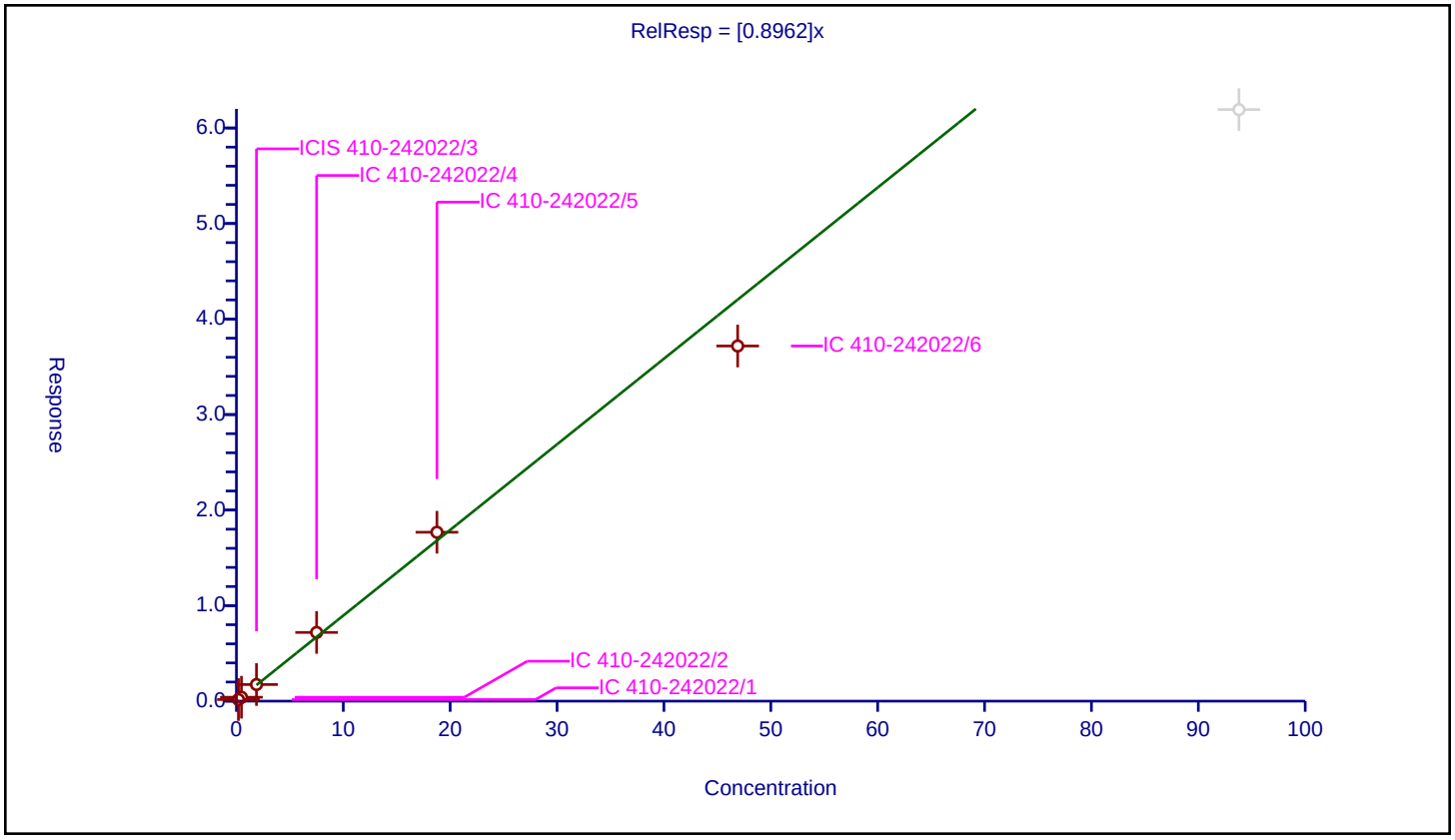
Curve Coefficients

Intercept:	0
Slope:	0.8962

Error Coefficients

Standard Error:	16000000
Relative Standard Error:	6.8
Correlation Coefficient:	0.990
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1876	0.166673	9.3	8758635.0	0.88845	Y
2	IC 410-242022/2	0.469	0.407407	9.3	8876954.0	0.868673	Y
3	ICIS 410-242022/3	1.876	1.737663	9.3	9104139.0	0.926259	Y
4	IC 410-242022/4	7.504	7.191269	9.3	8683554.0	0.958325	Y
5	IC 410-242022/5	18.76	17.681226	9.3	8184149.0	0.942496	Y
6	IC 410-242022/6	46.9	37.178296	9.3	7886874.0	0.792714	Y
7	IC 410-242022/7	93.8	61.92381	9.3	7067197.0	0.660169	N



Calibration / Perfluoro(2-propoxypropanoic) acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

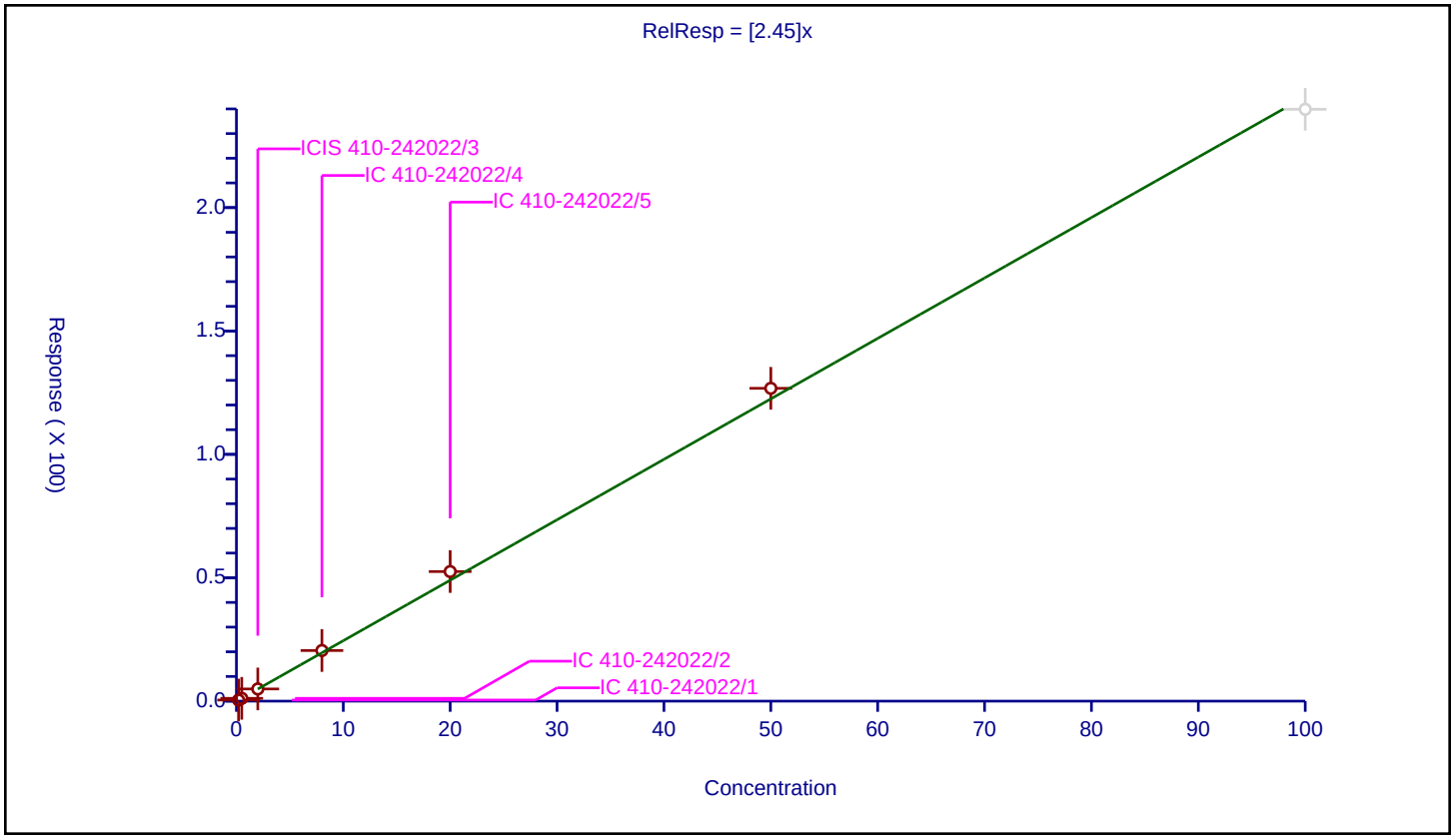
Curve Coefficients

Intercept:	0
Slope:	2.45

Error Coefficients

Standard Error:	5140000
Relative Standard Error:	6.6
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.443836	10.0	923877.0	2.219181	Y
2	IC 410-242022/2	0.5	1.14271	10.0	927418.0	2.28542	Y
3	ICIS 410-242022/3	2.0	4.935601	10.0	872757.0	2.4678	Y
4	IC 410-242022/4	8.0	20.516001	10.0	867189.0	2.5645	Y
5	IC 410-242022/5	20.0	52.516738	10.0	868549.0	2.625837	Y
6	IC 410-242022/6	50.0	126.767301	10.0	819368.0	2.535346	Y
7	IC 410-242022/7	100.0	239.833639	10.0	782513.0	2.398336	N



Calibration / Perfluoroheptanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

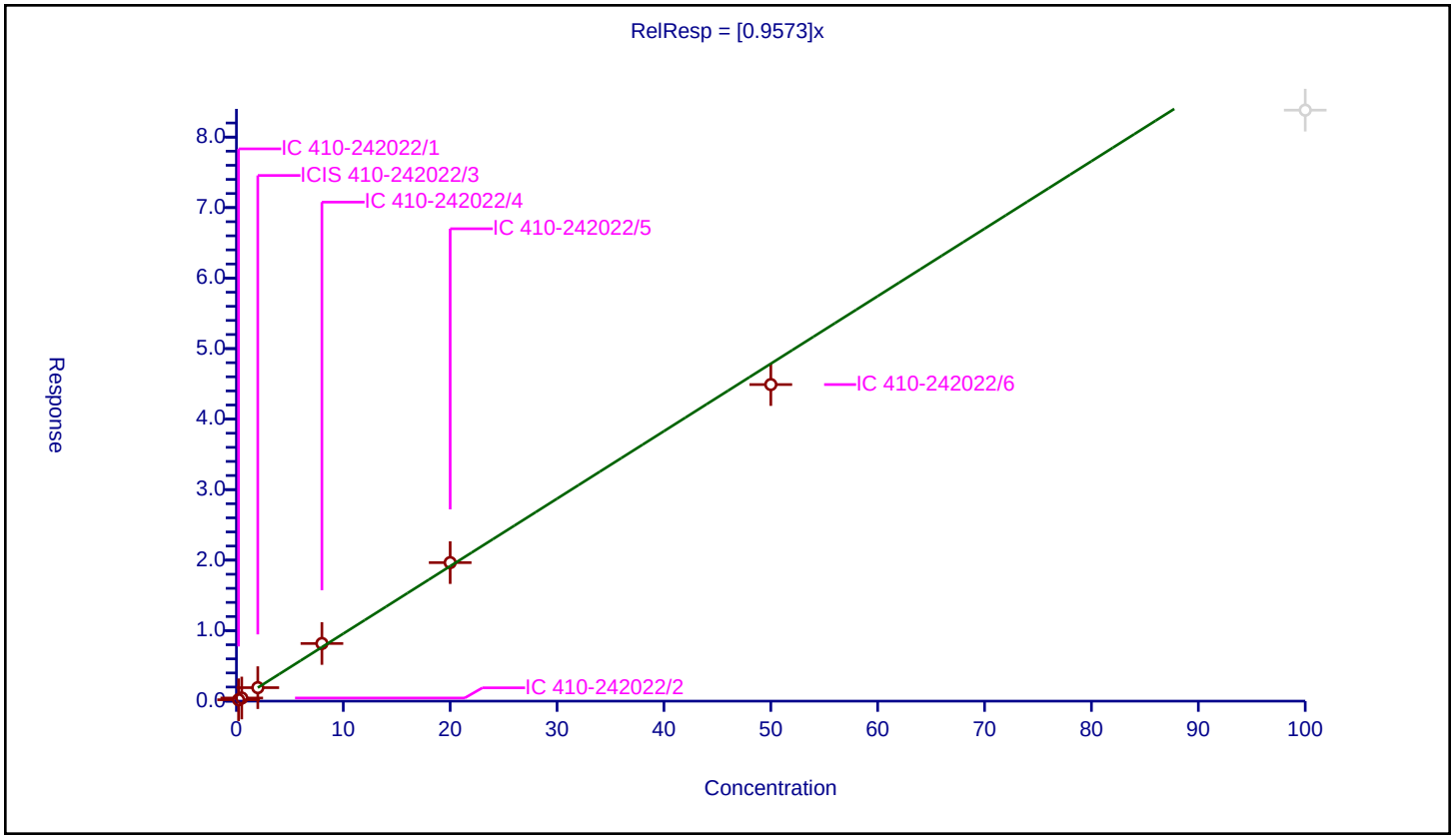
Curve Coefficients

Intercept:	0
Slope:	0.9573

Error Coefficients

Standard Error:	15000000
Relative Standard Error:	5.7
Correlation Coefficient:	0.984
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.199147	10.0	9226450.0	0.995735	Y
2	IC 410-242022/2	0.5	0.443884	10.0	9294003.0	0.887768	Y
3	ICIS 410-242022/3	2.0	1.91518	10.0	9244334.0	0.95759	Y
4	IC 410-242022/4	8.0	8.177367	10.0	8533353.0	1.022171	Y
5	IC 410-242022/5	20.0	19.647677	10.0	7663566.0	0.982384	Y
6	IC 410-242022/6	50.0	44.902302	10.0	6488407.0	0.898046	Y
7	IC 410-242022/7	100.0	83.821911	10.0	5026273.0	0.838219	N



Calibration / Perfluorohexanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

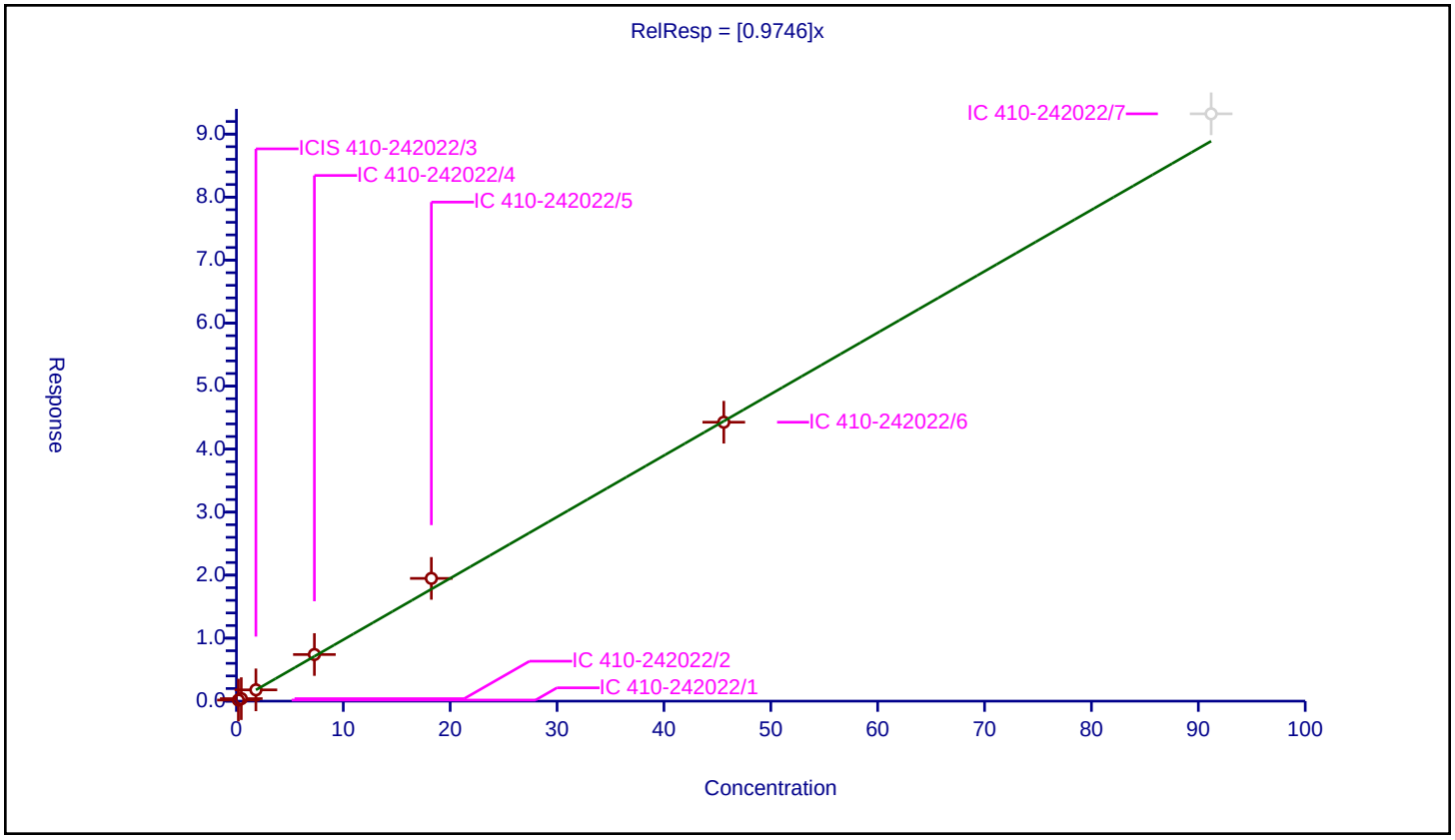
Curve Coefficients

Intercept:	0
Slope:	0.9746

Error Coefficients

Standard Error:	15000000
Relative Standard Error:	6.8
Correlation Coefficient:	0.990
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1824	0.171983	9.46	8334602.0	0.942888	Y
2	IC 410-242022/2	0.456	0.39713	9.46	8536362.0	0.8709	Y
3	ICIS 410-242022/3	1.824	1.788846	9.46	8516938.0	0.980727	Y
4	IC 410-242022/4	7.296	7.399238	9.46	8078364.0	1.01415	Y
5	IC 410-242022/5	18.24	19.481113	9.46	7146360.0	1.068043	Y
6	IC 410-242022/6	45.6	44.270038	9.46	6307380.0	0.970834	Y
7	IC 410-242022/7	91.2	93.216642	9.46	4916948.0	1.022112	N



Calibration / DONA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

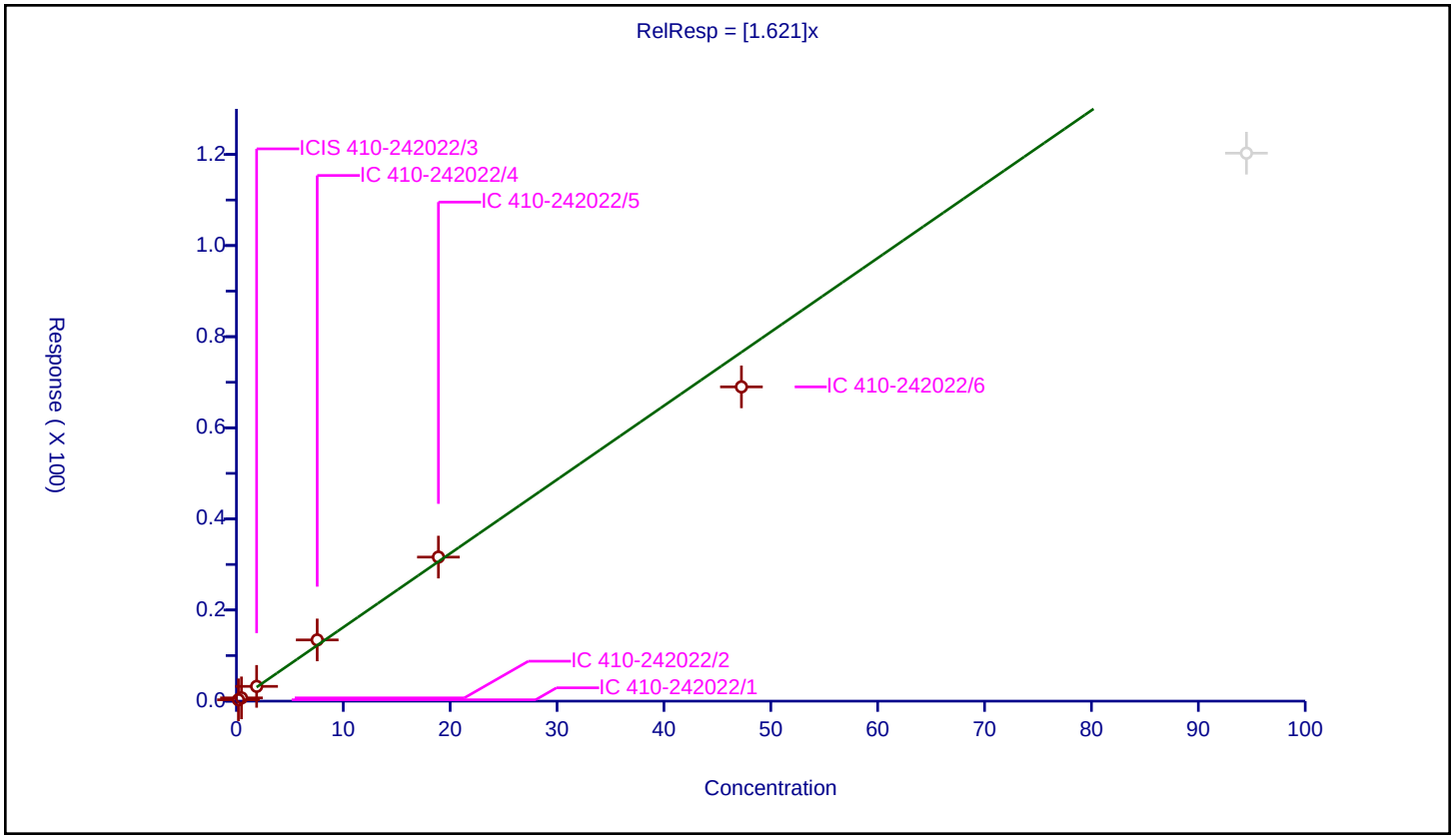
Curve Coefficients

Intercept:	0
Slope:	1.621

Error Coefficients

Standard Error:	23400000
Relative Standard Error:	7.5
Correlation Coefficient:	0.977
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.189	0.298642	10.0	9226450.0	1.580119	Y
2	IC 410-242022/2	0.4725	0.718474	10.0	9294003.0	1.52058	Y
3	ICIS 410-242022/3	1.89	3.241099	10.0	9244334.0	1.714867	Y
4	IC 410-242022/4	7.56	13.435645	10.0	8533353.0	1.777202	Y
5	IC 410-242022/5	18.9	31.619921	10.0	7663566.0	1.673012	Y
6	IC 410-242022/6	47.25	68.980961	10.0	6488407.0	1.459915	Y
7	IC 410-242022/7	94.5	120.280548	10.0	5026273.0	1.27281	N



Calibration / 5:3 FTCA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

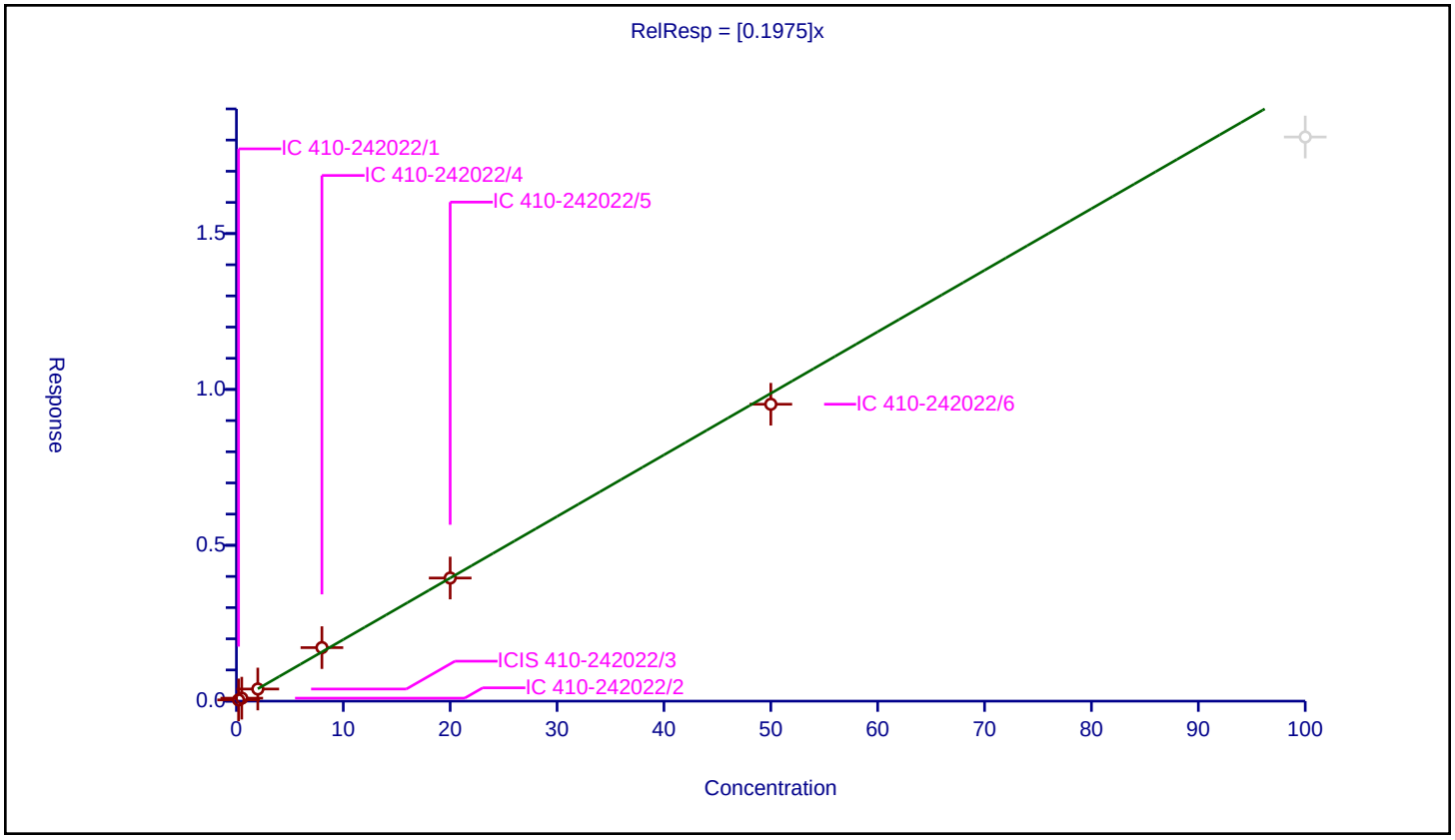
Curve Coefficients

Intercept:	0
Slope:	0.1975

Error Coefficients

Standard Error:	3430000
Relative Standard Error:	4.6
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.039529	10.0	8690838.0	0.197645	Y
2	IC 410-242022/2	0.5	0.094948	10.0	8698782.0	0.189896	Y
3	ICIS 410-242022/3	2.0	0.389498	10.0	9010958.0	0.194749	Y
4	IC 410-242022/4	8.0	1.716834	10.0	8171013.0	0.214604	Y
5	IC 410-242022/5	20.0	3.949574	10.0	7785655.0	0.197479	Y
6	IC 410-242022/6	50.0	9.524775	10.0	7221982.0	0.190495	Y
7	IC 410-242022/7	100.0	18.097378	10.0	6346379.0	0.180974	N



Calibration / 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

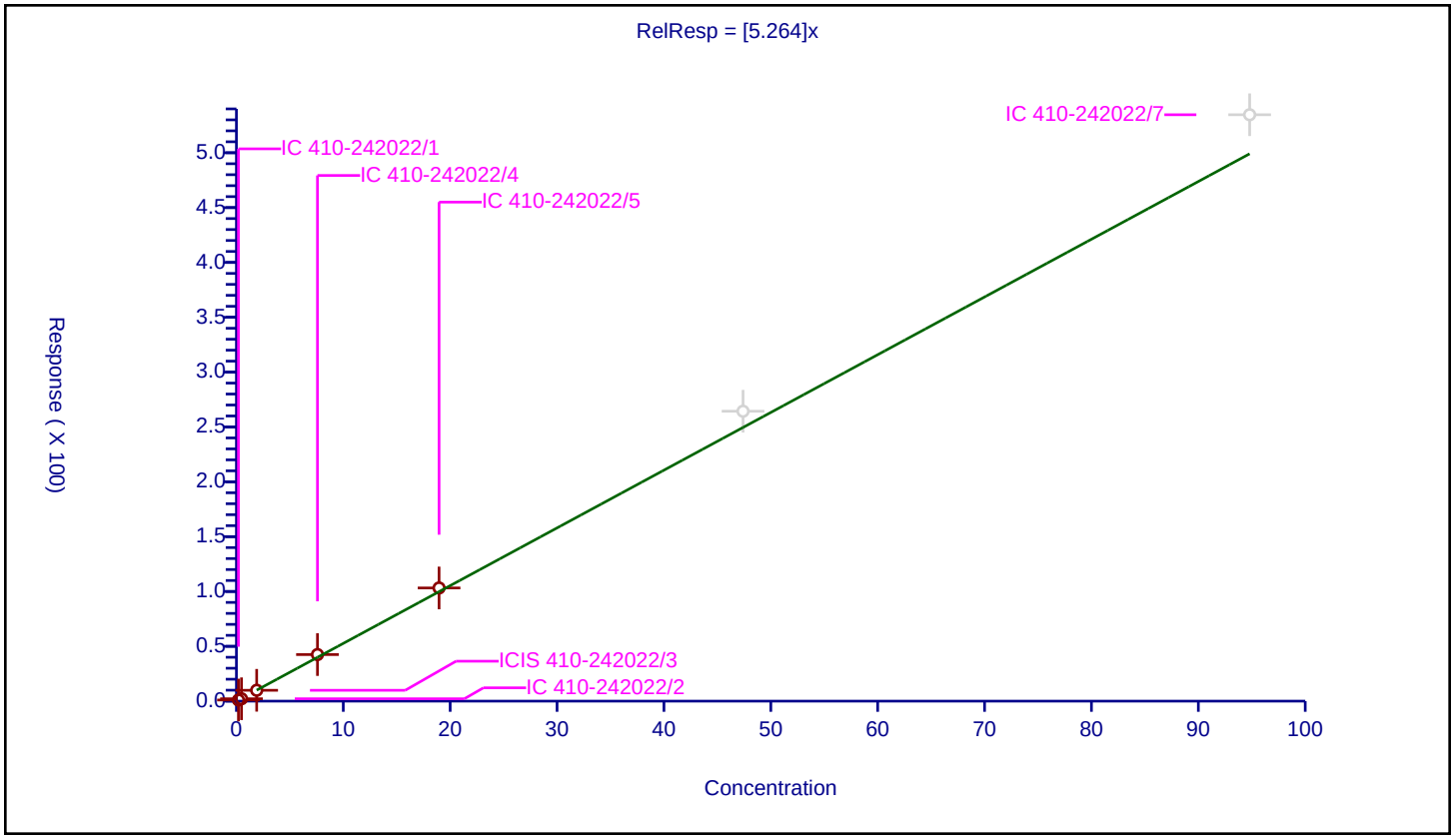
Curve Coefficients

Intercept:	0
Slope:	5.264

Error Coefficients

Standard Error:	1480000
Relative Standard Error:	7.7
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.992

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1896	1.037914	9.5	279367.0	5.474231	Y
2	IC 410-242022/2	0.474	2.17293	9.5	301697.0	4.584241	Y
3	ICIS 410-242022/3	1.896	9.89764	9.5	284350.0	5.220274	Y
4	IC 410-242022/4	7.584	42.466085	9.5	267903.0	5.599431	Y
5	IC 410-242022/5	18.96	103.205614	9.5	247220.0	5.443334	Y
6	IC 410-242022/6	47.4	264.345552	9.5	217746.0	5.57691	N
7	IC 410-242022/7	94.8	534.663852	9.5	172814.0	5.639914	N



Calibration / Perfluoroheptanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

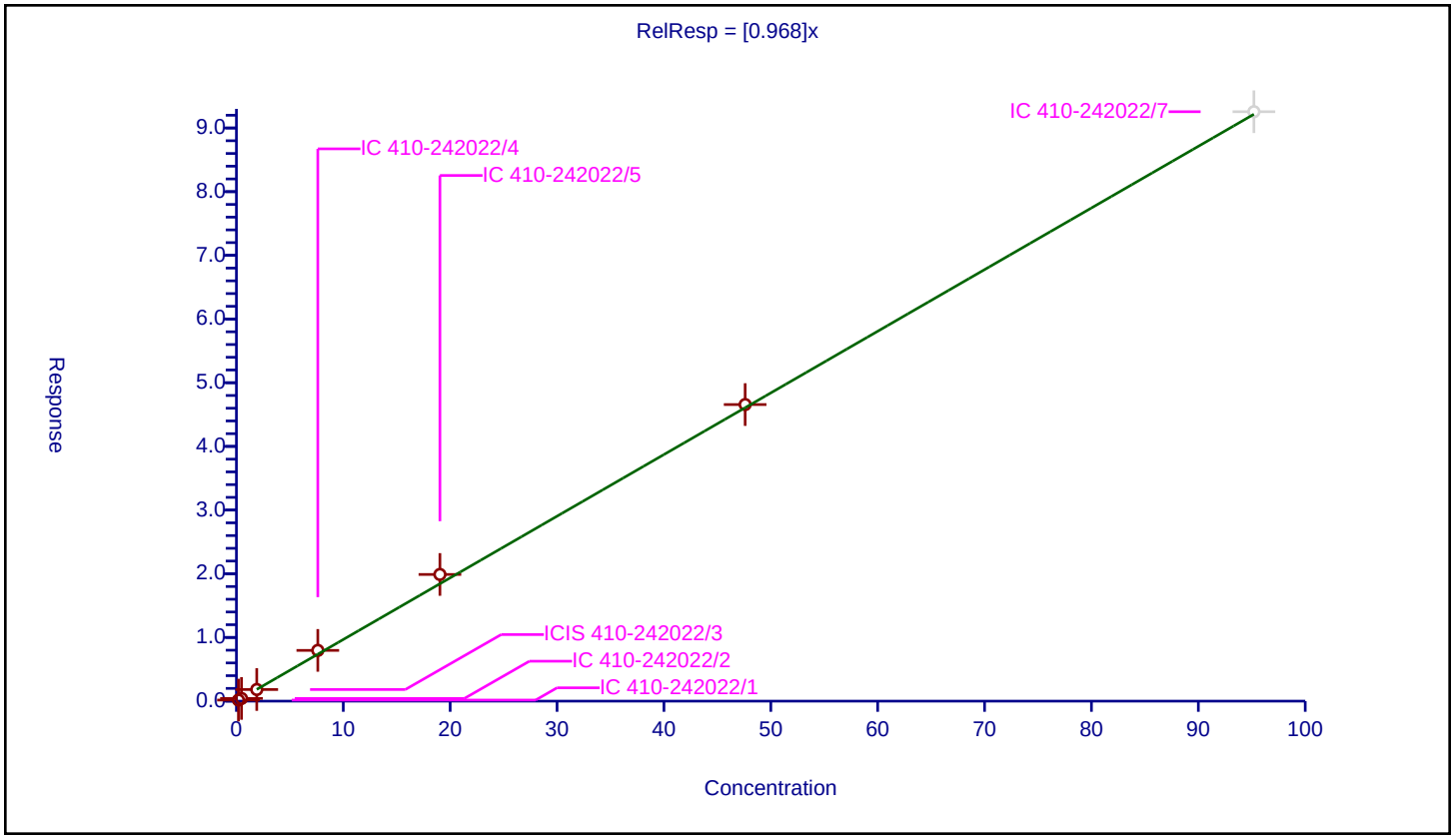
Curve Coefficients

Intercept:	0
Slope:	0.968

Error Coefficients

Standard Error:	15700000
Relative Standard Error:	7.2
Correlation Coefficient:	0.991
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1904	0.169794	9.46	8334602.0	0.891777	Y
2	IC 410-242022/2	0.476	0.422894	9.46	8536362.0	0.888432	Y
3	ICIS 410-242022/3	1.904	1.825071	9.46	8516938.0	0.958546	Y
4	IC 410-242022/4	7.616	7.967722	9.46	8078364.0	1.046182	Y
5	IC 410-242022/5	19.04	19.894408	9.46	7146360.0	1.044874	Y
6	IC 410-242022/6	47.6	46.573443	9.46	6307380.0	0.978434	Y
7	IC 410-242022/7	95.2	92.556659	9.46	4916948.0	0.972234	N



Calibration / Perfluorooctanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

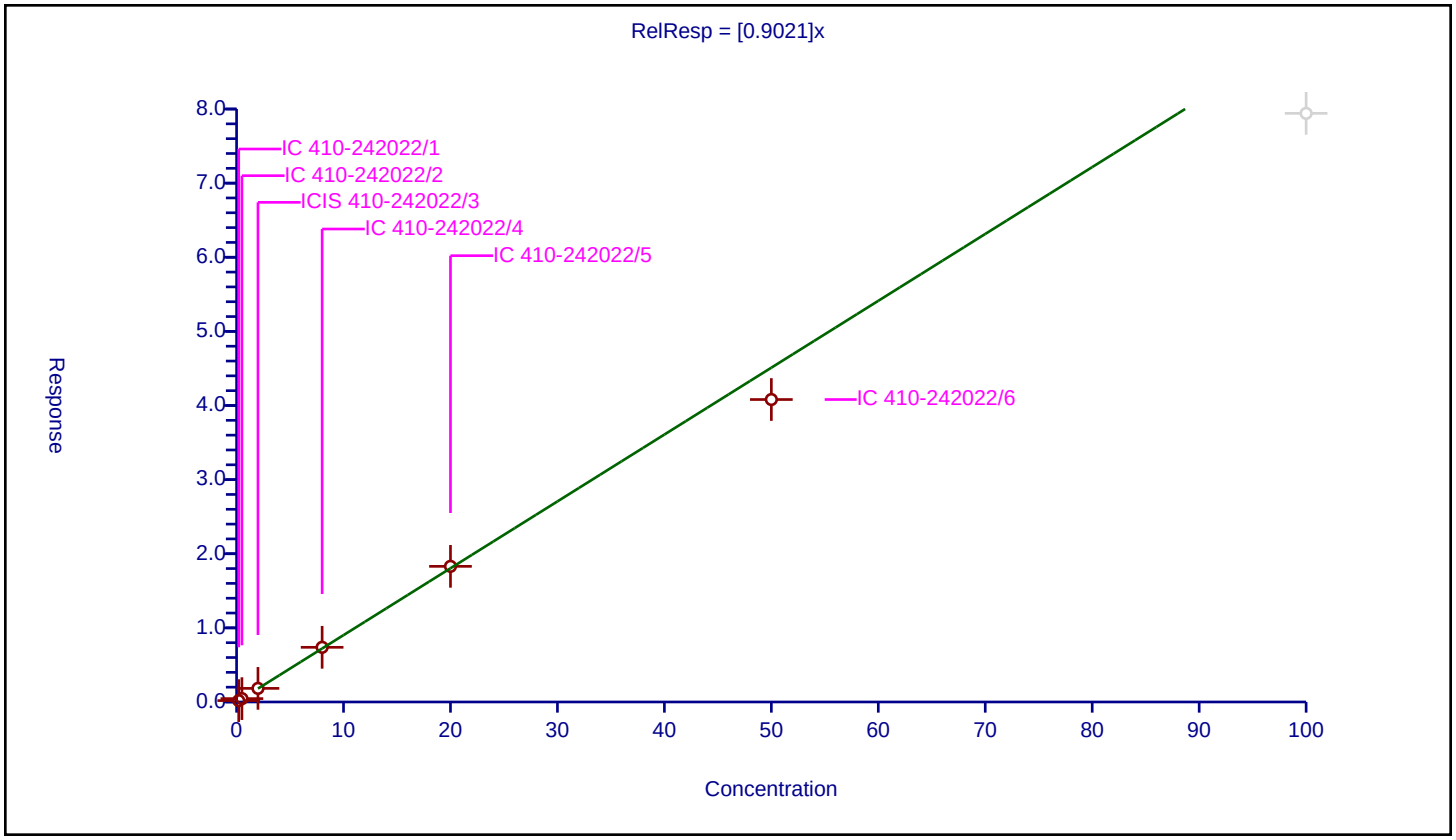
Curve Coefficients

Intercept:	0
Slope:	0.9021

Error Coefficients

Standard Error:	16100000
Relative Standard Error:	4.8
Correlation Coefficient:	0.990
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.186704	10.0	9728197.0	0.933518	Y
2	IC 410-242022/2	0.5	0.453681	10.0	9578267.0	0.907362	Y
3	ICIS 410-242022/3	2.0	1.836371	10.0	9763718.0	0.918186	Y
4	IC 410-242022/4	8.0	7.376686	10.0	9427644.0	0.922086	Y
5	IC 410-242022/5	20.0	18.300917	10.0	8542529.0	0.915046	Y
6	IC 410-242022/6	50.0	40.805904	10.0	7754903.0	0.816118	Y
7	IC 410-242022/7	100.0	79.413353	10.0	6166317.0	0.794134	N



Calibration / Perfluorooctanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

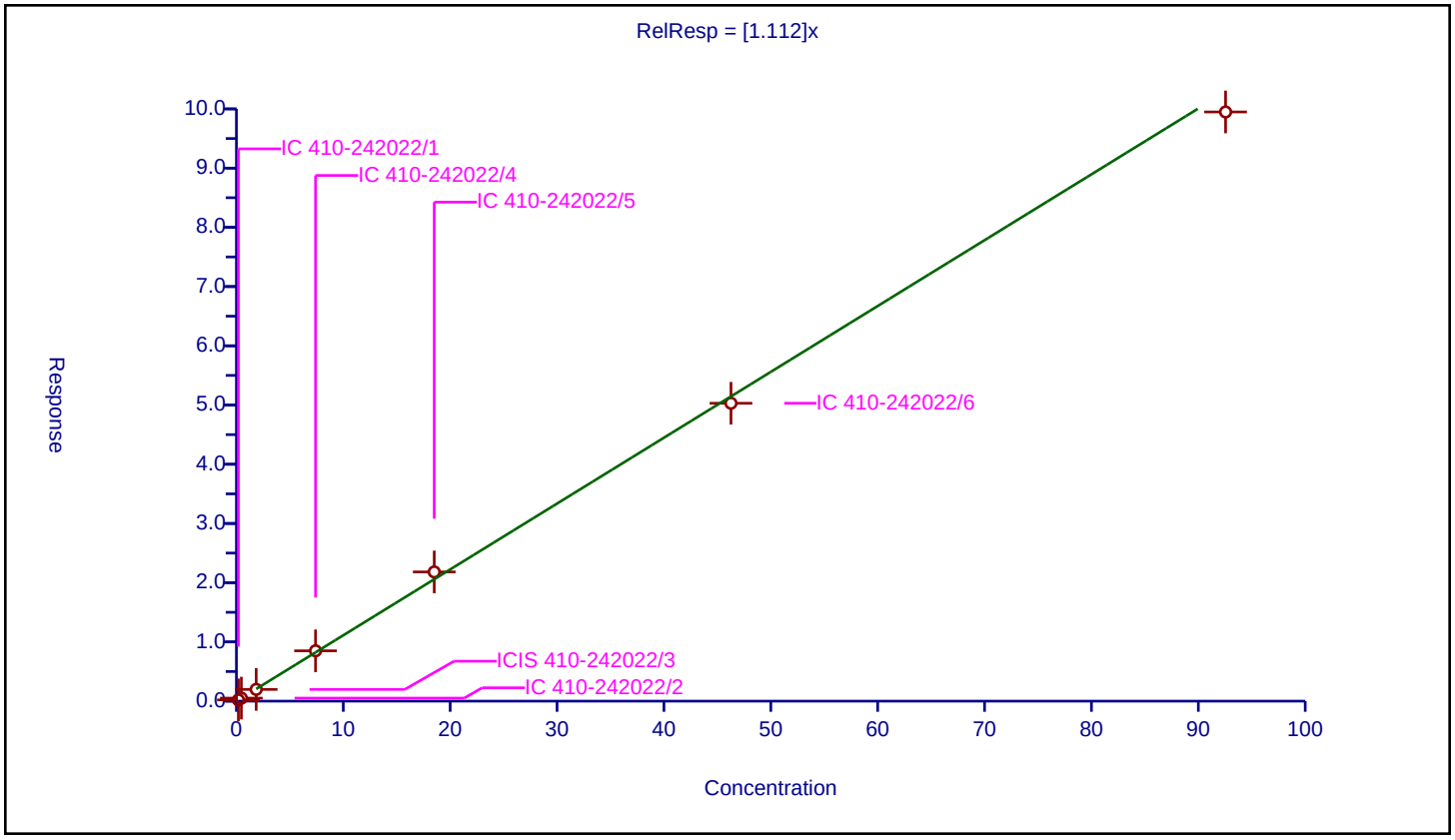
Curve Coefficients

Intercept:	0
Slope:	1.112

Error Coefficients

Standard Error:	29800000
Relative Standard Error:	3.6
Correlation Coefficient:	0.994
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1851	0.208	9.56	7470848.0	1.123719	Y
2	IC 410-242022/2	0.46275	0.50907	9.56	7535715.0	1.100098	Y
3	ICIS 410-242022/3	1.851	1.982488	9.56	7947303.0	1.071036	Y
4	IC 410-242022/4	7.404	8.498404	9.56	7470489.0	1.147813	Y
5	IC 410-242022/5	18.51	21.816389	9.56	6891515.0	1.178627	Y
6	IC 410-242022/6	46.275	50.298874	9.56	6708703.0	1.086956	Y
7	IC 410-242022/7	92.55	99.483749	9.56	5908038.0	1.074919	Y



Calibration / Perfluorononanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

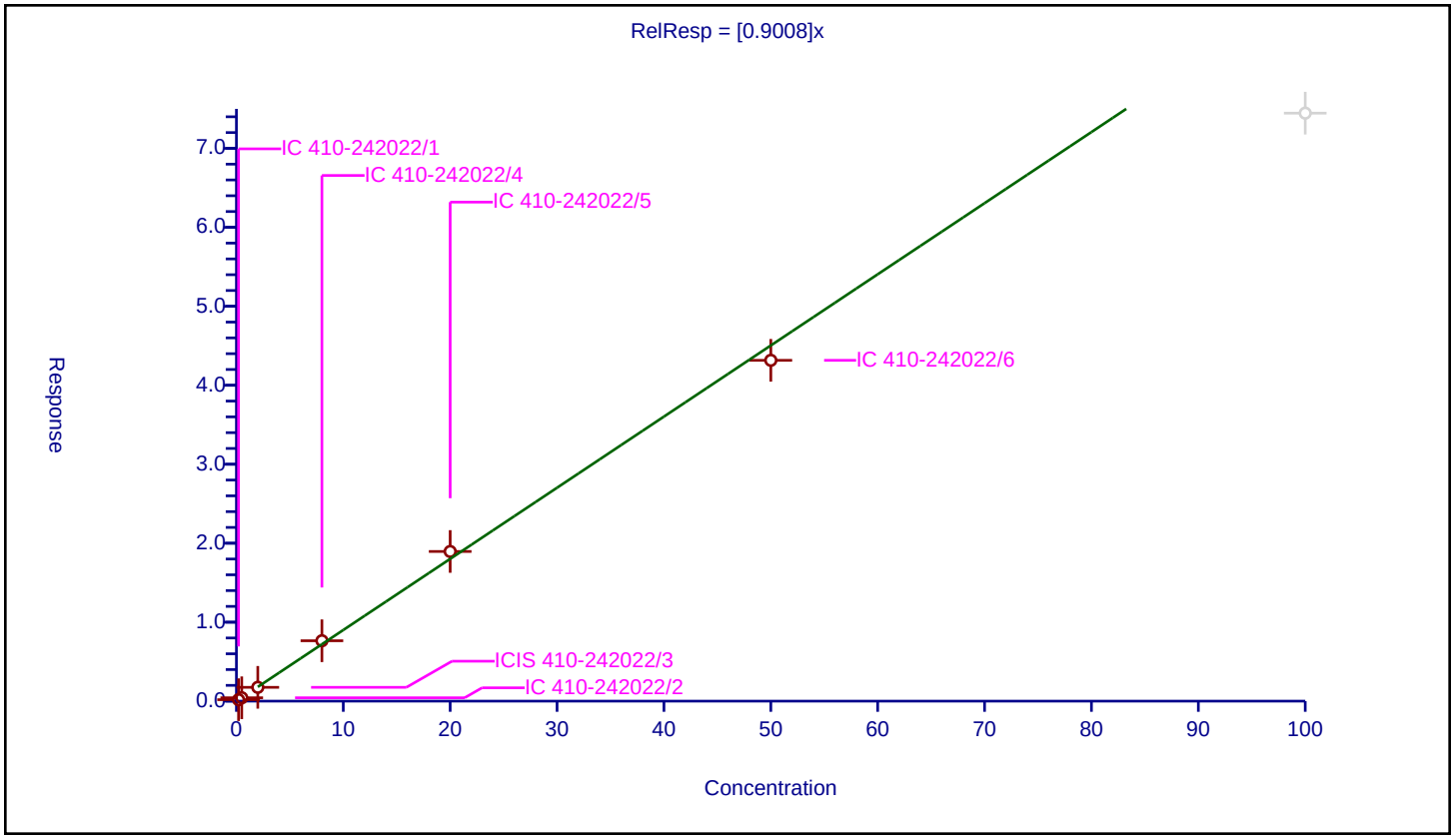
Curve Coefficients

Intercept:	0
Slope:	0.9008

Error Coefficients

Standard Error:	17600000
Relative Standard Error:	5.0
Correlation Coefficient:	0.993
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.182574	10.0	9882842.0	0.91287	Y
2	IC 410-242022/2	0.5	0.42513	10.0	9785752.0	0.850261	Y
3	ICIS 410-242022/3	2.0	1.749659	10.0	10193604.0	0.874829	Y
4	IC 410-242022/4	8.0	7.649173	10.0	9367436.0	0.956147	Y
5	IC 410-242022/5	20.0	18.953884	10.0	8785240.0	0.947694	Y
6	IC 410-242022/6	50.0	43.16157	10.0	8087740.0	0.863231	Y
7	IC 410-242022/7	100.0	74.460821	10.0	7074563.0	0.744608	N



Calibration / 7:3 FTCA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

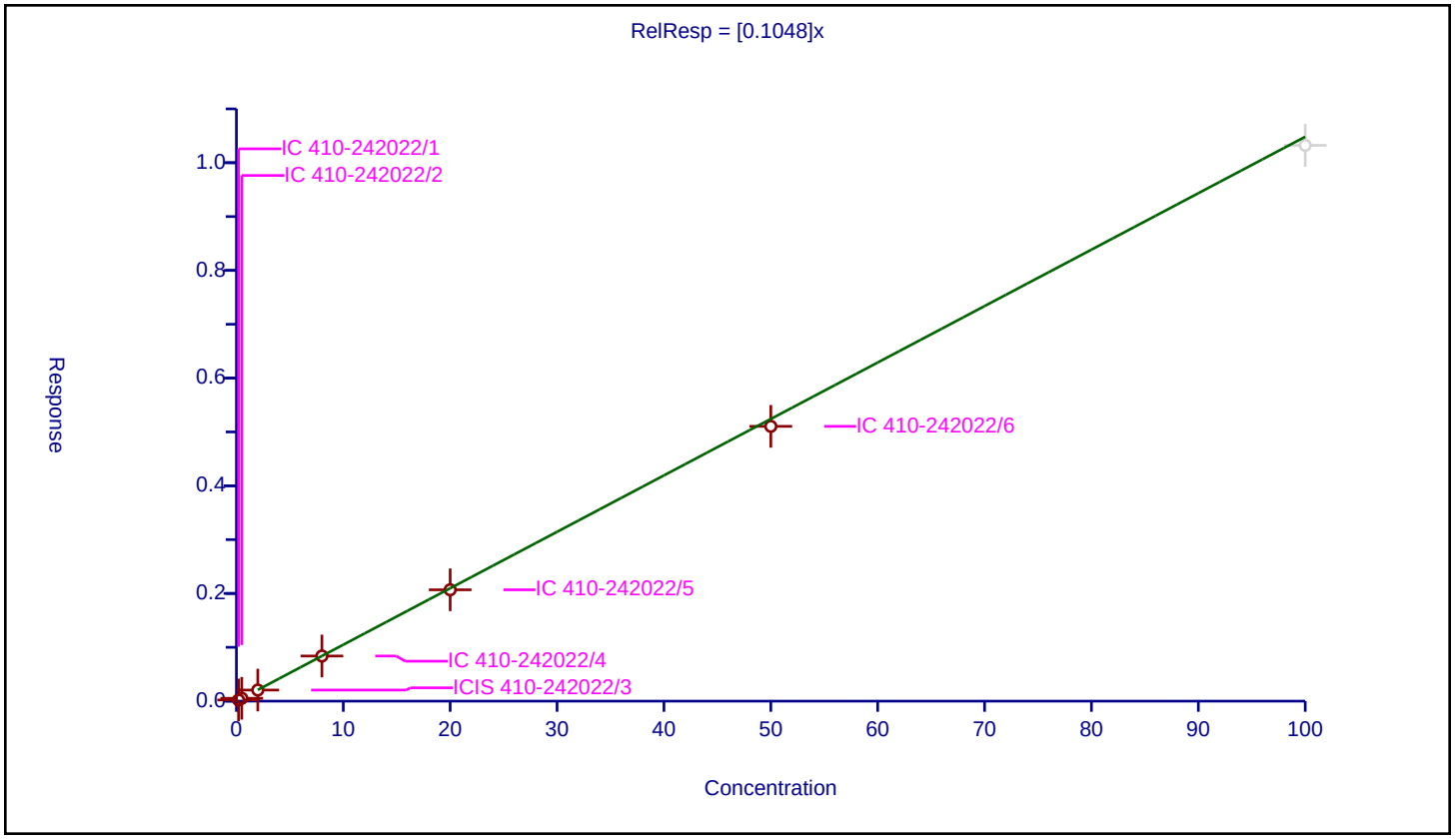
Curve Coefficients

Intercept:	0
Slope:	0.1048

Error Coefficients

Standard Error:	1830000
Relative Standard Error:	2.5
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.021798	10.0	8690838.0	0.108988	Y
2	IC 410-242022/2	0.5	0.053305	10.0	8698782.0	0.10661	Y
3	ICIS 410-242022/3	2.0	0.206051	10.0	9010958.0	0.103026	Y
4	IC 410-242022/4	8.0	0.838442	10.0	8171013.0	0.104805	Y
5	IC 410-242022/5	20.0	2.068199	10.0	7785655.0	0.10341	Y
6	IC 410-242022/6	50.0	5.103881	10.0	7221982.0	0.102078	Y
7	IC 410-242022/7	100.0	10.32274	10.0	6346379.0	0.103227	N



Calibration / 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

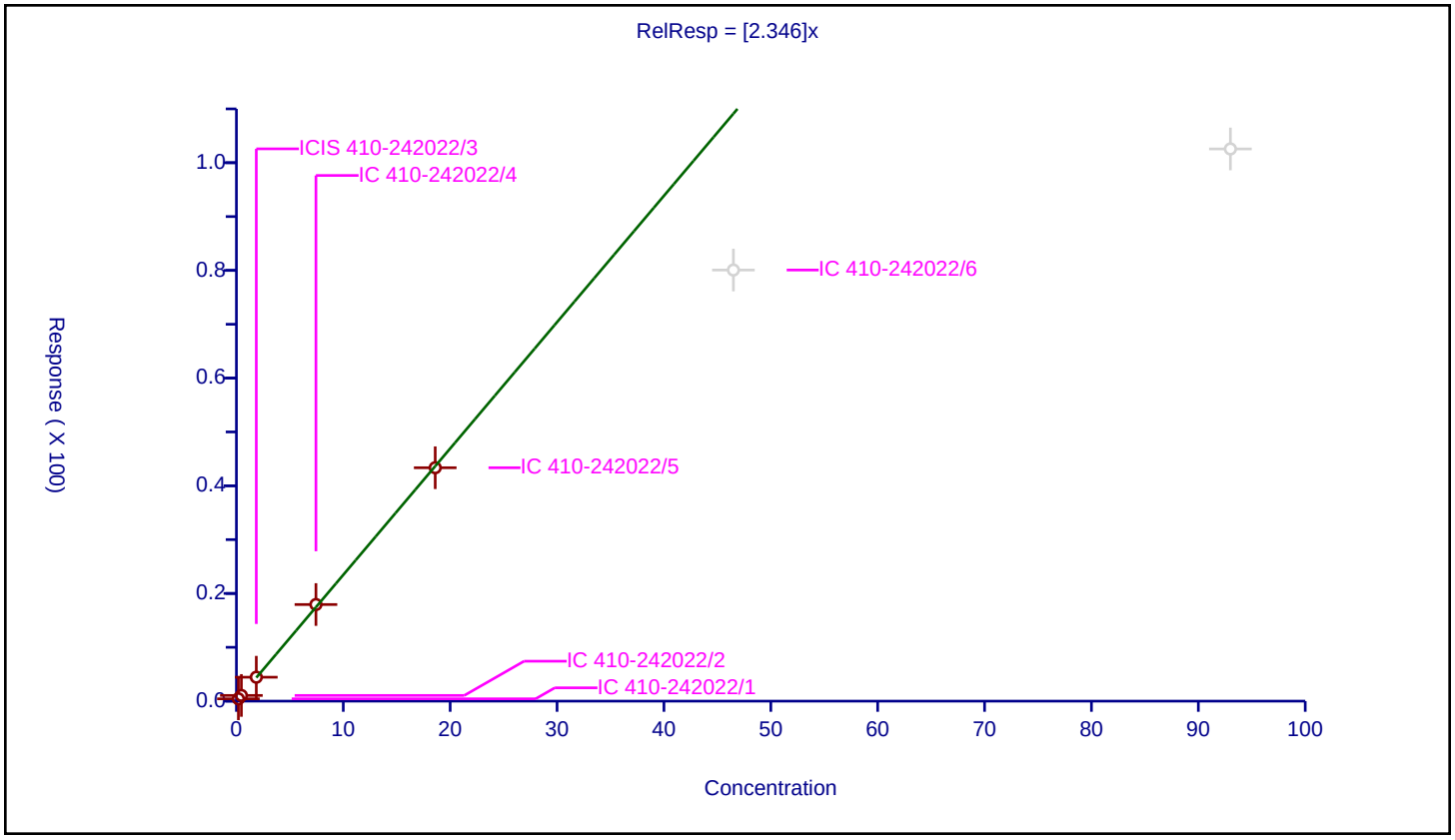
Curve Coefficients

Intercept:	0
Slope:	2.346

Error Coefficients

Standard Error:	17200000
Relative Standard Error:	2.3
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.186	0.432181	9.56	7470848.0	2.323552	Y
2	IC 410-242022/2	0.465	1.058053	9.56	7535715.0	2.275382	Y
3	ICIS 410-242022/3	1.86	4.447049	9.56	7947303.0	2.390887	Y
4	IC 410-242022/4	7.44	17.94223	9.56	7470489.0	2.41159	Y
5	IC 410-242022/5	18.6	43.351818	9.56	6891515.0	2.330743	Y
6	IC 410-242022/6	46.5	80.073918	9.56	6708703.0	1.72202	N
7	IC 410-242022/7	93.0	102.558884	9.56	5908038.0	1.102784	N



Calibration / Perfluorononanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

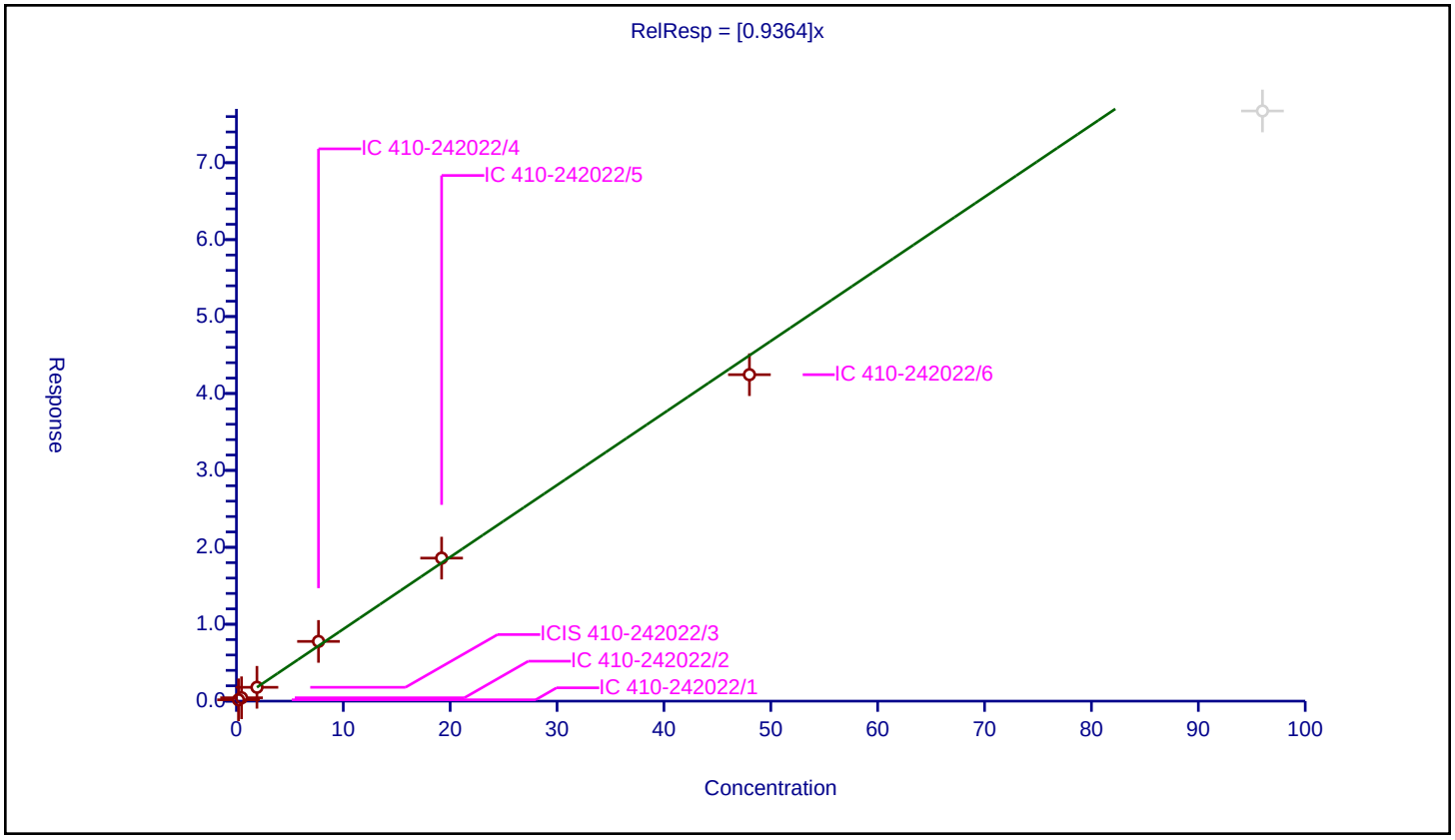
Curve Coefficients

Intercept:	0
Slope:	0.9364

Error Coefficients

Standard Error:	14900000
Relative Standard Error:	5.0
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.192	0.173904	9.56	7470848.0	0.905752	Y
2	IC 410-242022/2	0.48	0.437872	9.56	7535715.0	0.912234	Y
3	ICIS 410-242022/3	1.92	1.797416	9.56	7947303.0	0.936154	Y
4	IC 410-242022/4	7.68	7.765464	9.56	7470489.0	1.011128	Y
5	IC 410-242022/5	19.2	18.596745	9.56	6891515.0	0.96858	Y
6	IC 410-242022/6	48.0	42.444357	9.56	6708703.0	0.884257	Y
7	IC 410-242022/7	96.0	76.73074	9.56	5908038.0	0.799279	N



Calibration / 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

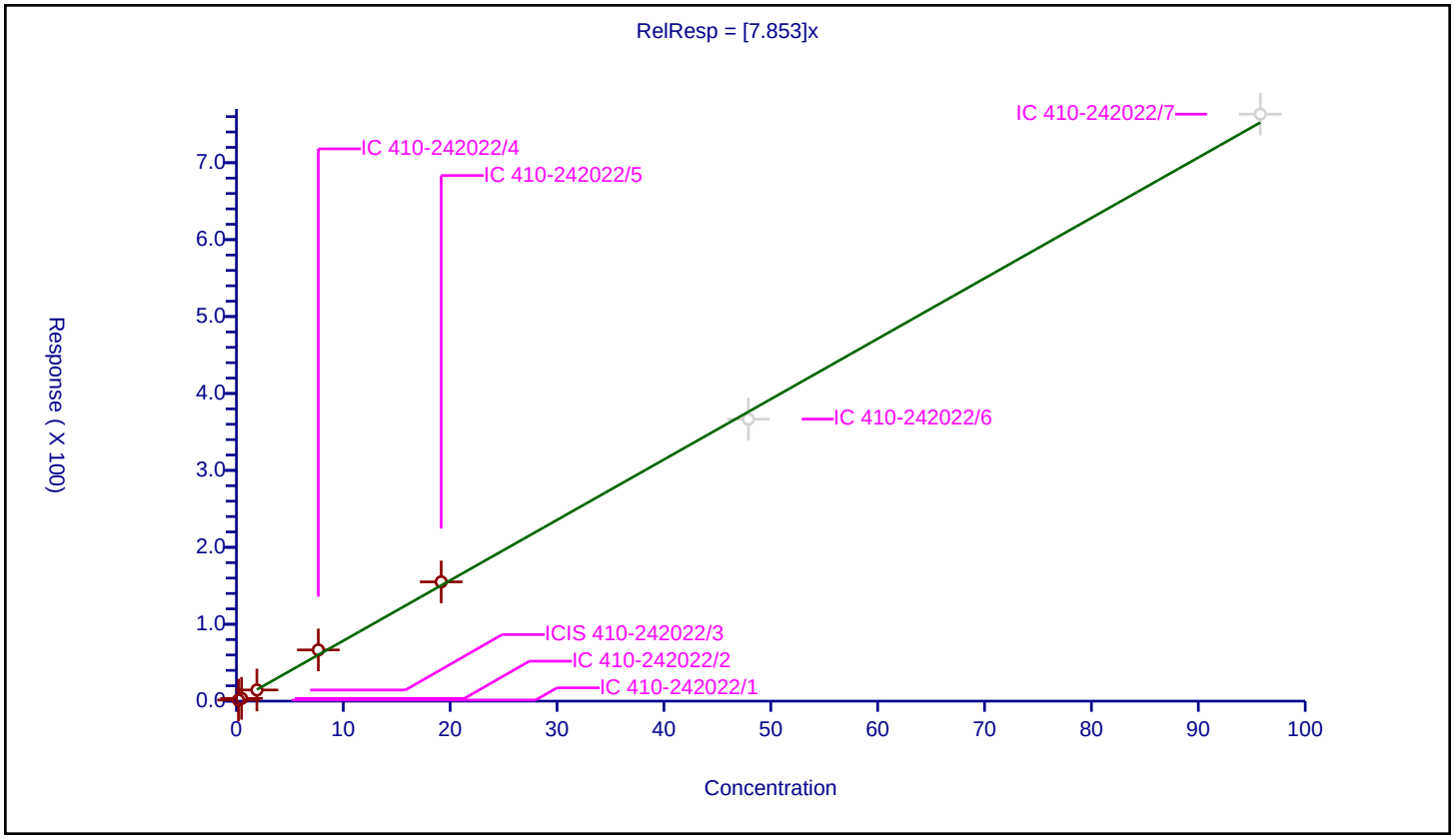
Curve Coefficients

Intercept:	0
Slope:	7.853

Error Coefficients

Standard Error:	1880000
Relative Standard Error:	6.8
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1916	1.424441	9.58	242338.0	7.434451	Y
2	IC 410-242022/2	0.479	3.580155	9.58	236696.0	7.474229	Y
3	ICIS 410-242022/3	1.916	14.514486	9.58	251855.0	7.57541	Y
4	IC 410-242022/4	7.664	66.576124	9.58	220951.0	8.686864	Y
5	IC 410-242022/5	19.16	155.07394	9.58	211221.0	8.093629	Y
6	IC 410-242022/6	47.9	366.643688	9.58	181994.0	7.654357	N
7	IC 410-242022/7	95.8	763.152586	9.58	143900.0	7.966102	N



Calibration / Perfluorodecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

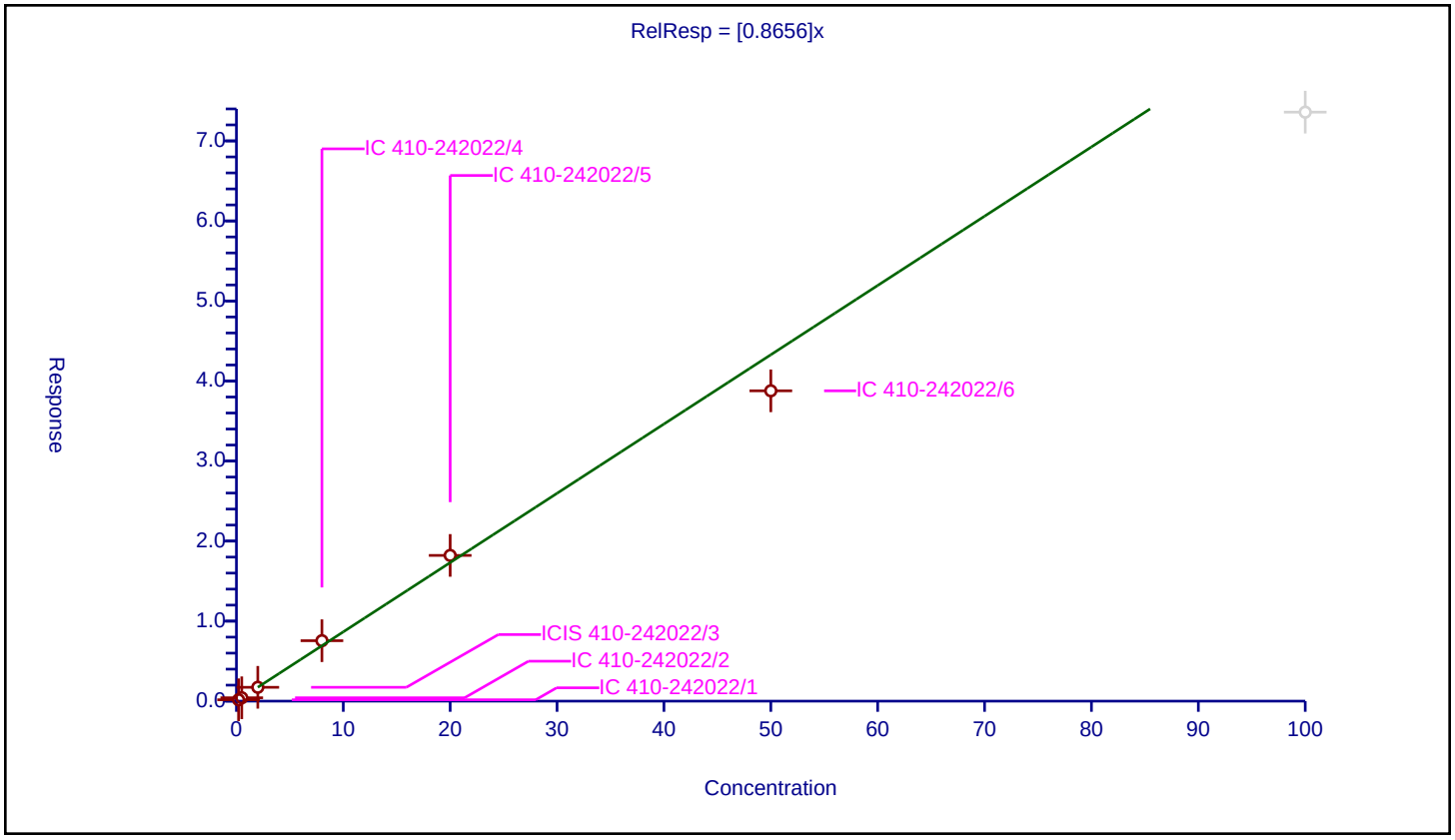
Curve Coefficients

Intercept:	0
Slope:	0.8656

Error Coefficients

Standard Error:	17400000
Relative Standard Error:	6.7
Correlation Coefficient:	0.988
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.171383	10.0	10793001.0	0.856916	Y
2	IC 410-242022/2	0.5	0.420837	10.0	10723375.0	0.841673	Y
3	ICIS 410-242022/3	2.0	1.730284	10.0	10920508.0	0.865142	Y
4	IC 410-242022/4	8.0	7.551926	10.0	10067461.0	0.943991	Y
5	IC 410-242022/5	20.0	18.207691	10.0	9394311.0	0.910385	Y
6	IC 410-242022/6	50.0	38.774411	10.0	8774996.0	0.775488	Y
7	IC 410-242022/7	100.0	73.592989	10.0	7111196.0	0.73593	N



Calibration / Perfluorooctanesulfonamide

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

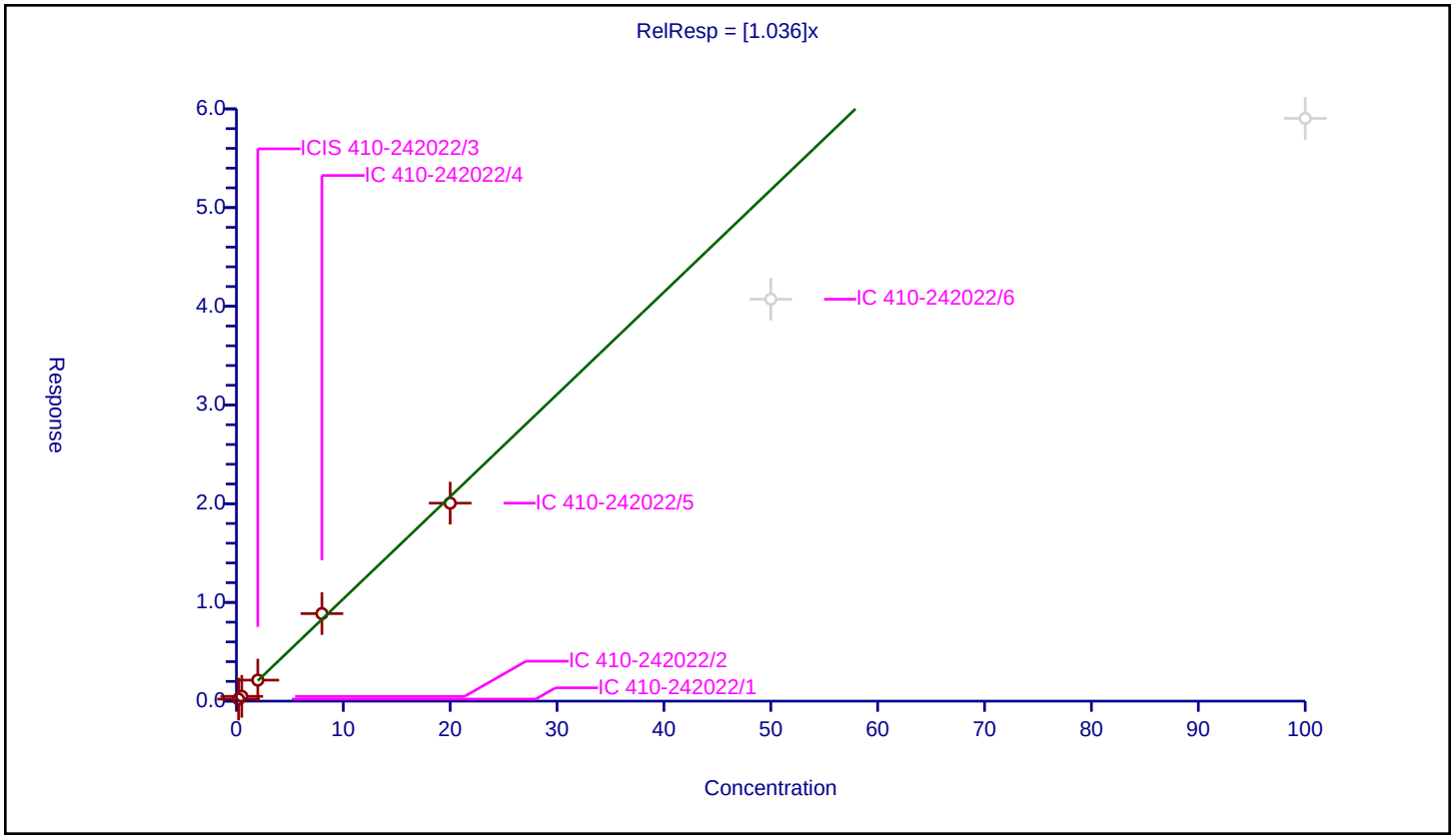
Curve Coefficients

Intercept:	0
Slope:	1.036

Error Coefficients

Standard Error:	13600000
Relative Standard Error:	5.2
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.206726	10.0	12408720.0	1.033628	Y
2	IC 410-242022/2	0.5	0.484593	10.0	12804238.0	0.969185	Y
3	ICIS 410-242022/3	2.0	2.131318	10.0	12775409.0	1.065659	Y
4	IC 410-242022/4	8.0	8.866493	10.0	12490941.0	1.108312	Y
5	IC 410-242022/5	20.0	20.056951	10.0	12253898.0	1.002848	Y
6	IC 410-242022/6	50.0	40.718644	10.0	11784443.0	0.814373	N
7	IC 410-242022/7	100.0	59.037599	10.0	10432057.0	0.590376	N



Calibration / N-methylperfluorooctanesulfonamidoacetic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

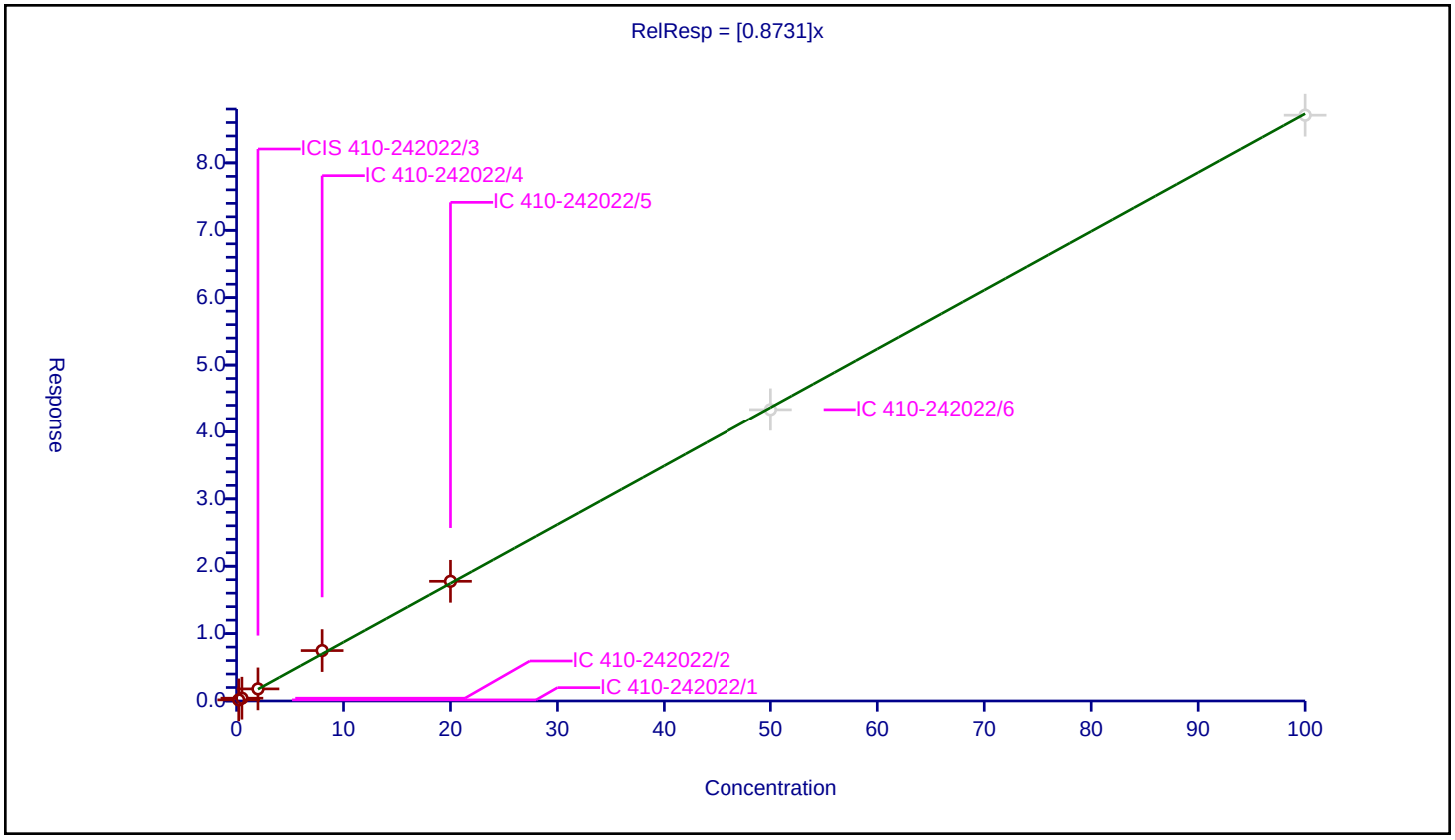
Curve Coefficients

Intercept:	0
Slope:	0.8731

Error Coefficients

Standard Error:	2790000
Relative Standard Error:	5.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.162953	10.0	2831867.0	0.814763	Y
2	IC 410-242022/2	0.5	0.414829	10.0	3016976.0	0.829659	Y
3	ICIS 410-242022/3	2.0	1.795894	10.0	3074251.0	0.897947	Y
4	IC 410-242022/4	8.0	7.479614	10.0	2843461.0	0.934952	Y
5	IC 410-242022/5	20.0	17.76328	10.0	2887000.0	0.888164	Y
6	IC 410-242022/6	50.0	43.349944	10.0	2728505.0	0.866999	N
7	IC 410-242022/7	100.0	87.085201	10.0	2500008.0	0.870852	N



Calibration / Perfluorodecanesulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

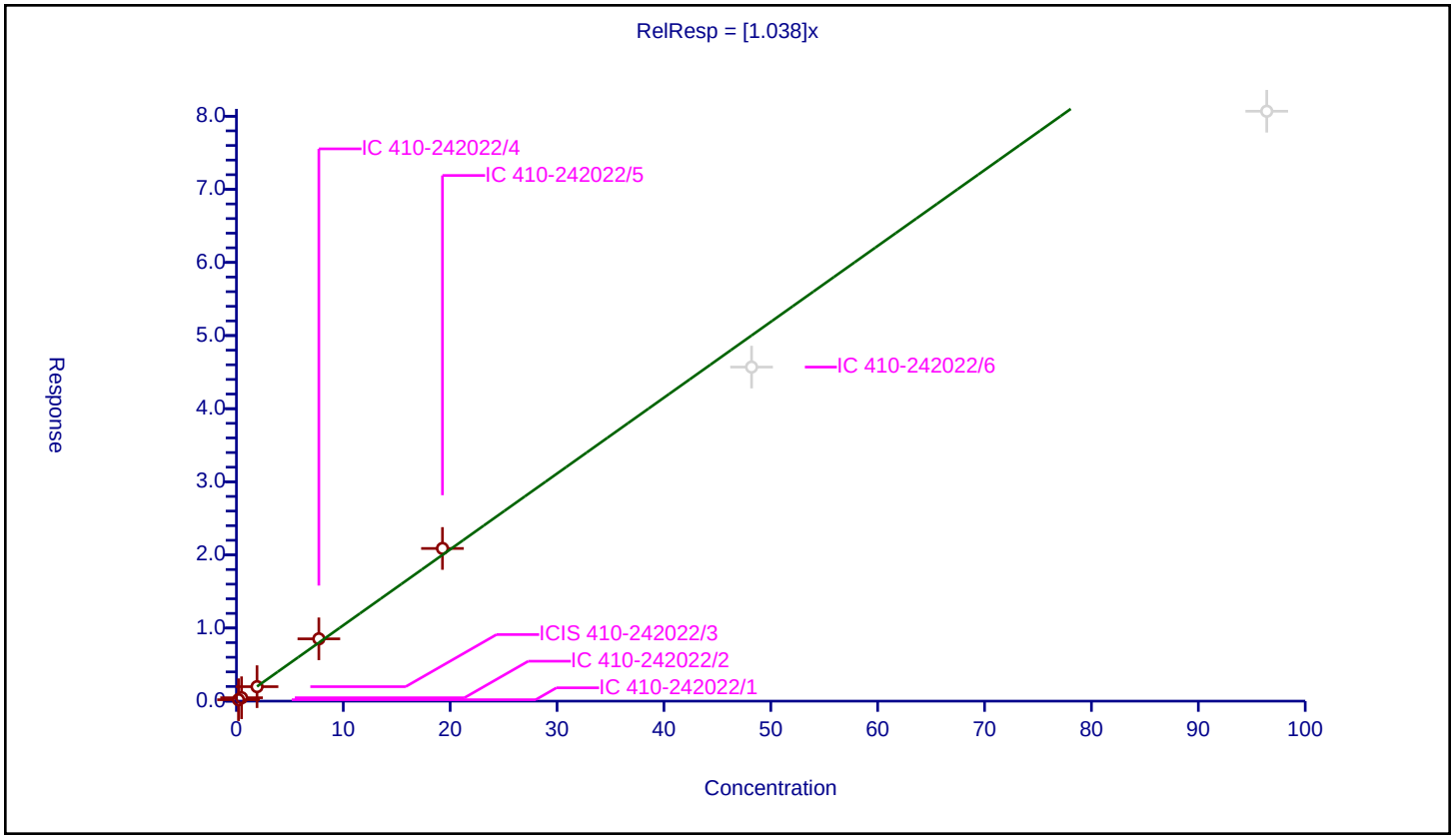
Curve Coefficients

Intercept:	0
Slope:	1.038

Error Coefficients

Standard Error:	8270000
Relative Standard Error:	5.5
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1928	0.194929	9.56	7470848.0	1.011042	Y
2	IC 410-242022/2	0.482	0.464042	9.56	7535715.0	0.962742	Y
3	ICIS 410-242022/3	1.928	1.978401	9.56	7947303.0	1.026141	Y
4	IC 410-242022/4	7.712	8.520768	9.56	7470489.0	1.104871	Y
5	IC 410-242022/5	19.28	20.882035	9.56	6891515.0	1.083093	Y
6	IC 410-242022/6	48.2	45.689411	9.56	6708703.0	0.947913	N
7	IC 410-242022/7	96.4	80.679917	9.56	5908038.0	0.836929	N



Calibration / Perfluoroundecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

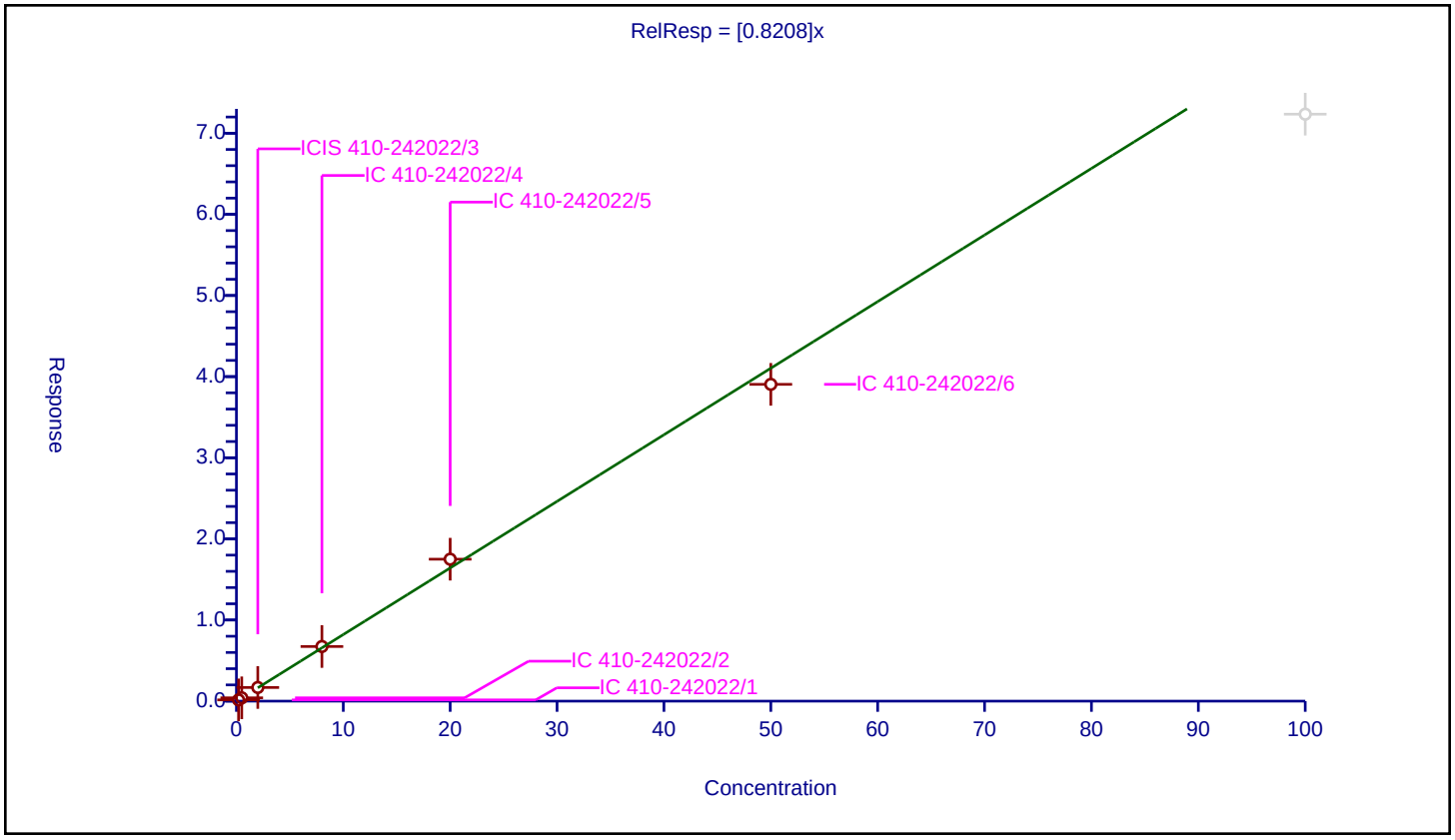
Curve Coefficients

Intercept:	0
Slope:	0.8208

Error Coefficients

Standard Error:	17100000
Relative Standard Error:	4.9
Correlation Coefficient:	0.992
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.153693	10.0	11162826.0	0.768466	Y
2	IC 410-242022/2	0.5	0.408398	10.0	10650634.0	0.816796	Y
3	ICIS 410-242022/3	2.0	1.682968	10.0	11343158.0	0.841484	Y
4	IC 410-242022/4	8.0	6.735882	10.0	10419180.0	0.841985	Y
5	IC 410-242022/5	20.0	17.497274	10.0	9447621.0	0.874864	Y
6	IC 410-242022/6	50.0	39.048147	10.0	8658280.0	0.780963	Y
7	IC 410-242022/7	100.0	72.348874	10.0	6867005.0	0.723489	N



Calibration / N-ethylperfluorooctanesulfonamidoacetic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

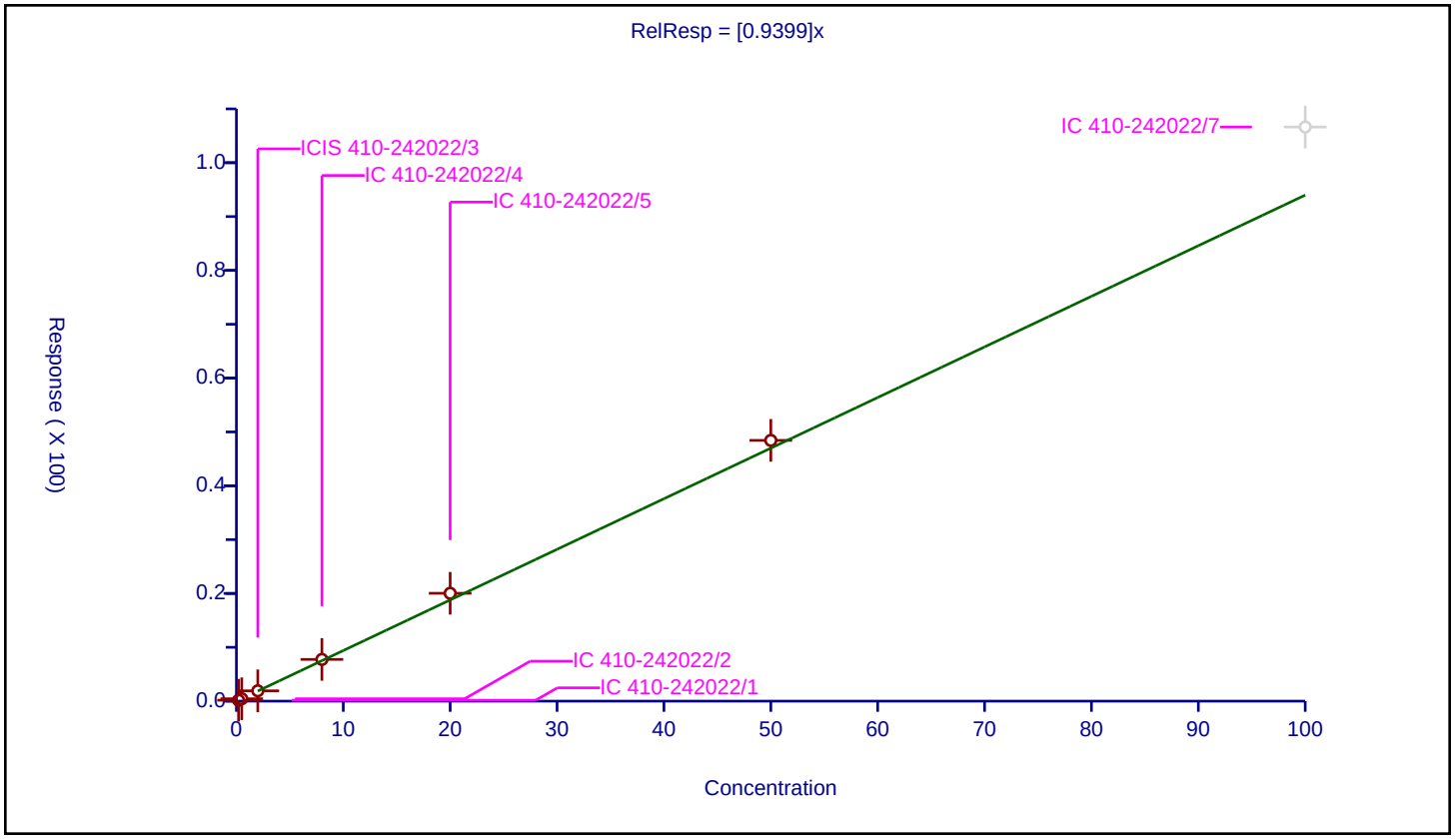
Curve Coefficients

Intercept:	0
Slope:	0.9399

Error Coefficients

Standard Error:	4580000
Relative Standard Error:	6.0
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.171741	10.0	2338350.0	0.858704	Y
2	IC 410-242022/2	0.5	0.441141	10.0	2362059.0	0.882281	Y
3	ICIS 410-242022/3	2.0	1.919114	10.0	2364784.0	0.959557	Y
4	IC 410-242022/4	8.0	7.747068	10.0	2247729.0	0.968384	Y
5	IC 410-242022/5	20.0	20.033698	10.0	2104869.0	1.001685	Y
6	IC 410-242022/6	50.0	48.432655	10.0	1892302.0	0.968653	Y
7	IC 410-242022/7	100.0	106.633434	10.0	1559788.0	1.066334	N



Calibration / 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

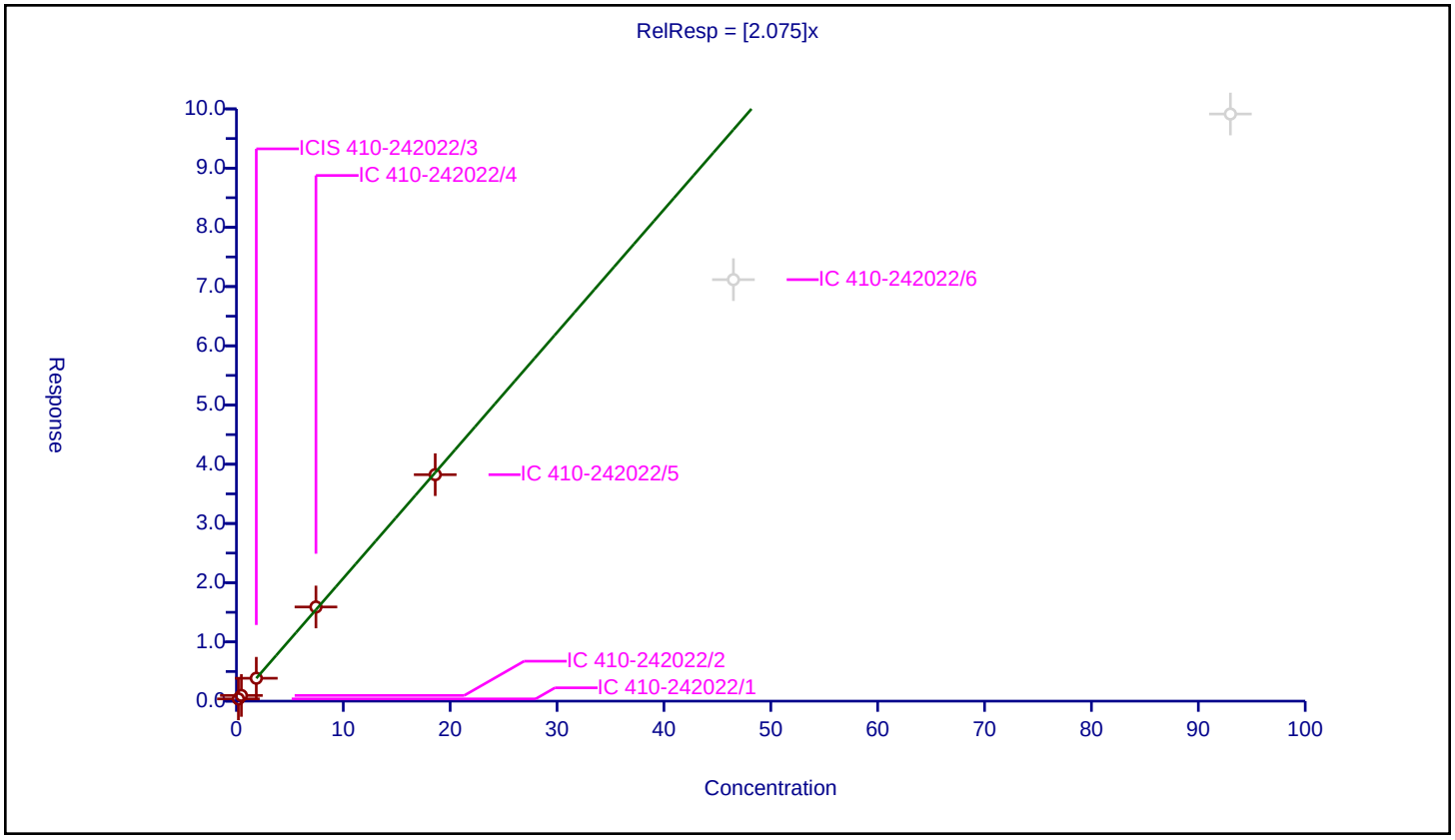
Curve Coefficients

Intercept:	0
Slope:	2.075

Error Coefficients

Standard Error:	15200000
Relative Standard Error:	1.8
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.186	0.379439	9.56	7470848.0	2.039995	Y
2	IC 410-242022/2	0.465	0.959595	9.56	7535715.0	2.063644	Y
3	ICIS 410-242022/3	1.86	3.866433	9.56	7947303.0	2.078727	Y
4	IC 410-242022/4	7.44	15.897971	9.56	7470489.0	2.136824	Y
5	IC 410-242022/5	18.6	38.241058	9.56	6891515.0	2.055971	Y
6	IC 410-242022/6	46.5	71.170655	9.56	6708703.0	1.530552	N
7	IC 410-242022/7	93.0	99.136959	9.56	5908038.0	1.065989	N



Calibration / Perfluorododecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

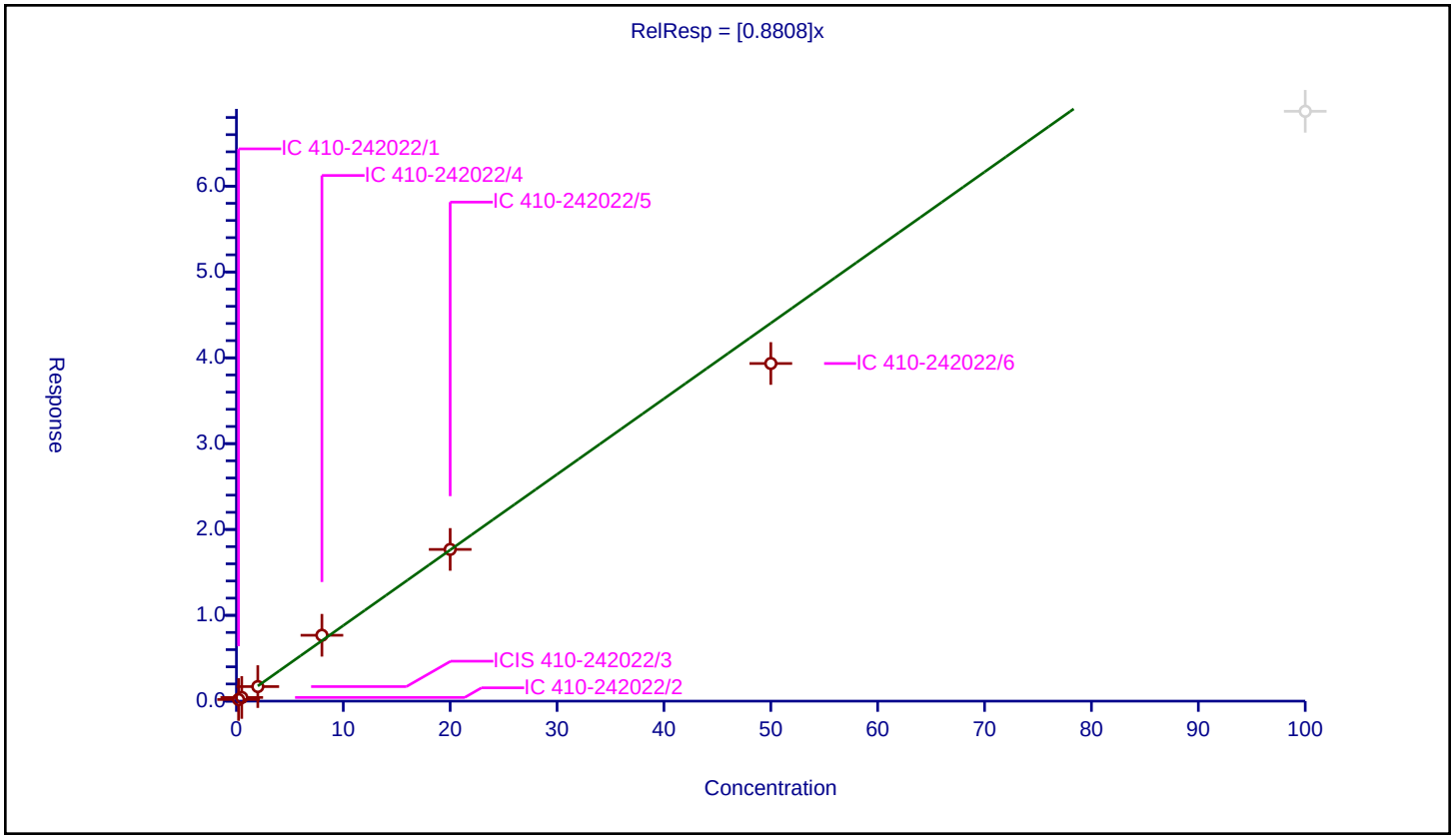
Curve Coefficients

Intercept:	0
Slope:	0.8808

Error Coefficients

Standard Error:	18300000
Relative Standard Error:	7.5
Correlation Coefficient:	0.989
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.190499	10.0	11112703.0	0.952496	Y
2	IC 410-242022/2	0.5	0.426811	10.0	11109736.0	0.853622	Y
3	ICIS 410-242022/3	2.0	1.696753	10.0	11787445.0	0.848376	Y
4	IC 410-242022/4	8.0	7.67638	10.0	10722444.0	0.959547	Y
5	IC 410-242022/5	20.0	17.675591	10.0	10030562.0	0.88378	Y
6	IC 410-242022/6	50.0	39.33876	10.0	9124826.0	0.786775	Y
7	IC 410-242022/7	100.0	68.720292	10.0	7876049.0	0.687203	N



Calibration / 1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

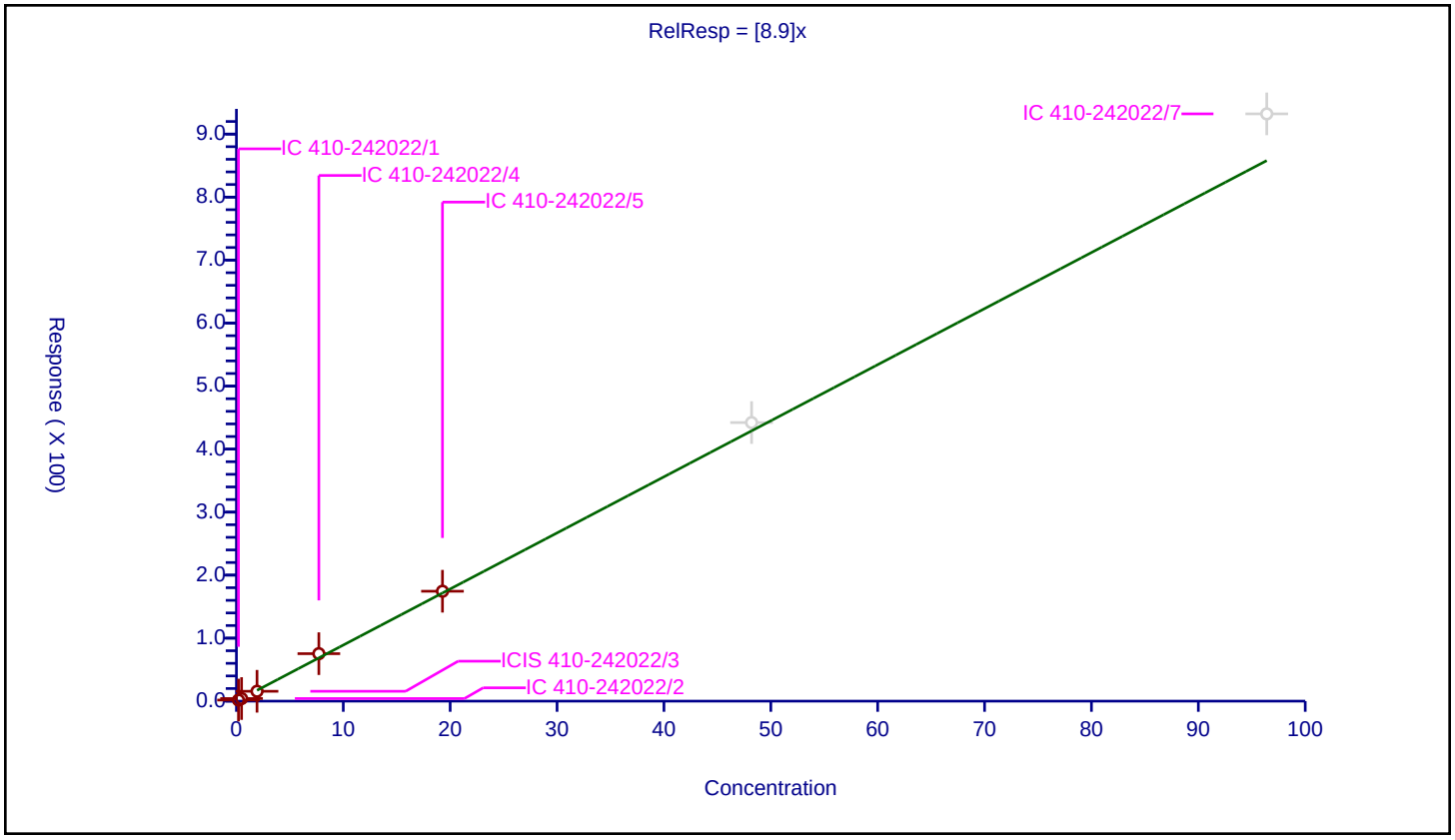
Curve Coefficients

Intercept:	0
Slope:	8.9

Error Coefficients

Standard Error:	2120000
Relative Standard Error:	6.9
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1928	1.73255	9.58	242338.0	8.986254	Y
2	IC 410-242022/2	0.482	4.128495	9.58	236696.0	8.565343	Y
3	ICIS 410-242022/3	1.928	15.671785	9.58	251855.0	8.128519	Y
4	IC 410-242022/4	7.712	75.367832	9.58	220951.0	9.7728	Y
5	IC 410-242022/5	19.28	174.426382	9.58	211221.0	9.047012	Y
6	IC 410-242022/6	48.2	442.149052	9.58	181994.0	9.173217	N
7	IC 410-242022/7	96.4	932.084602	9.58	143900.0	9.668927	N



Calibration / 2-(N-methylperfluoro-1-octanesulfonamido) ethanol

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

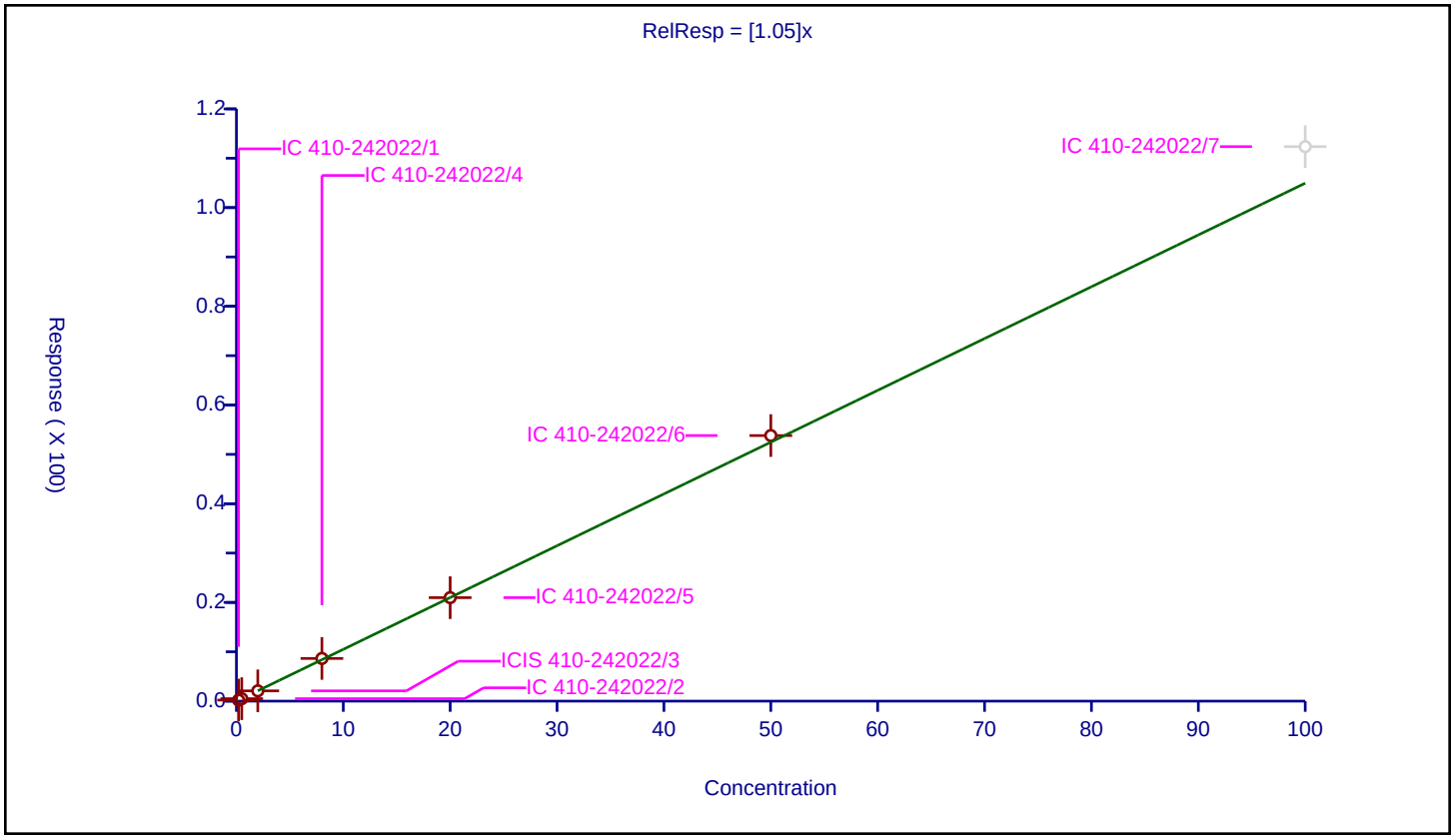
Curve Coefficients

Intercept:	0
Slope:	1.05

Error Coefficients

Standard Error:	2800000
Relative Standard Error:	2.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.210624	10.0	1196209.0	1.053119	Y
2	IC 410-242022/2	0.5	0.49872	10.0	1194357.0	0.99744	Y
3	ICIS 410-242022/3	2.0	2.080955	10.0	1221723.0	1.040477	Y
4	IC 410-242022/4	8.0	8.650195	10.0	1162812.0	1.081274	Y
5	IC 410-242022/5	20.0	20.969691	10.0	1134021.0	1.048485	Y
6	IC 410-242022/6	50.0	53.812987	10.0	1059542.0	1.07626	Y
7	IC 410-242022/7	100.0	112.353112	10.0	910543.0	1.123531	N



Calibration / NMeFOSA

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

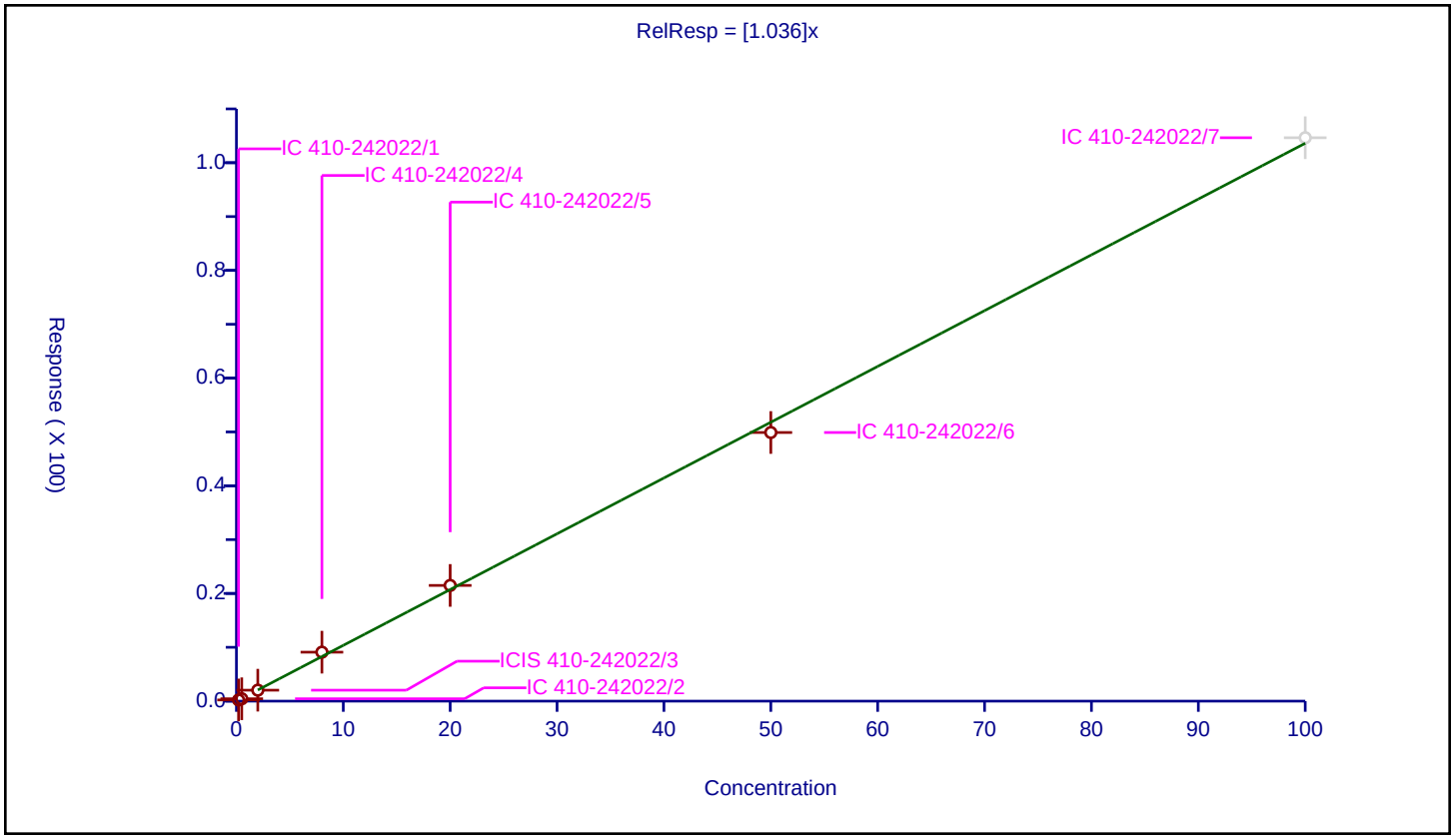
Curve Coefficients

Intercept:	0
Slope:	1.036

Error Coefficients

Standard Error:	3910000
Relative Standard Error:	8.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.990

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.221245	10.0	1539739.0	1.106226	Y
2	IC 410-242022/2	0.5	0.441619	10.0	1610348.0	0.883238	Y
3	ICIS 410-242022/3	2.0	2.036225	10.0	1610387.0	1.018112	Y
4	IC 410-242022/4	8.0	9.093616	10.0	1516940.0	1.136702	Y
5	IC 410-242022/5	20.0	21.491426	10.0	1537314.0	1.074571	Y
6	IC 410-242022/6	50.0	49.89539	10.0	1595545.0	0.997908	Y
7	IC 410-242022/7	100.0	104.644841	10.0	1457262.0	1.046448	N



Calibration / Perfluorododecanesulfonic acid (PFDoS)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

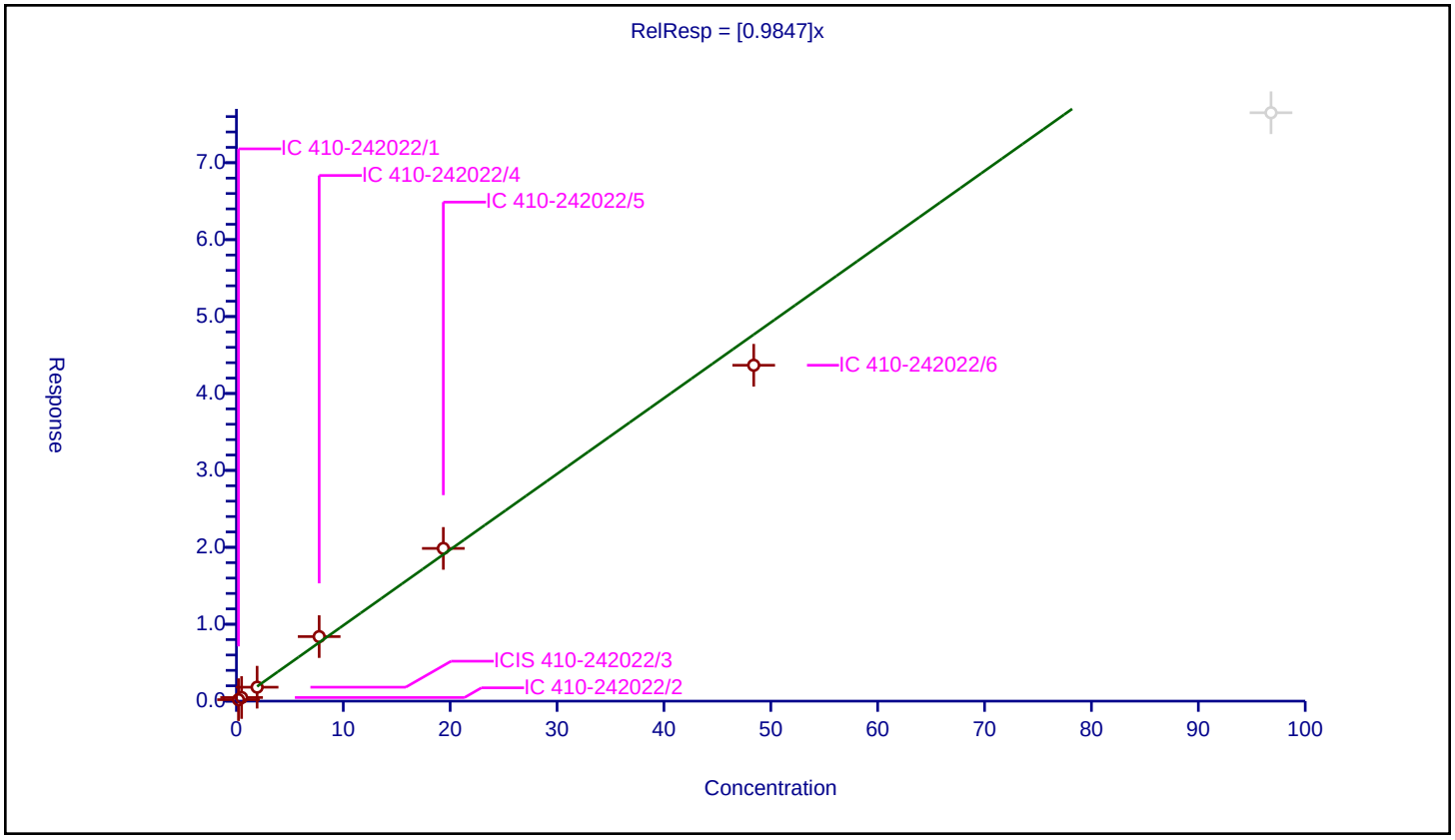
Curve Coefficients

Intercept:	0
Slope:	0.9847

Error Coefficients

Standard Error:	15400000
Relative Standard Error:	6.5
Correlation Coefficient:	0.994
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.1936	0.191017	9.56	7470848.0	0.986658	Y
2	IC 410-242022/2	0.484	0.470773	9.56	7535715.0	0.972671	Y
3	ICIS 410-242022/3	1.936	1.814269	9.56	7947303.0	0.937122	Y
4	IC 410-242022/4	7.744	8.391876	9.56	7470489.0	1.083662	Y
5	IC 410-242022/5	19.36	19.858694	9.56	6891515.0	1.025759	Y
6	IC 410-242022/6	48.4	43.670162	9.56	6708703.0	0.902276	Y
7	IC 410-242022/7	96.8	76.502154	9.56	5908038.0	0.790312	N



Calibration / 2-(N-ethylperfluoro-1-octanesulfonamido) ethanol

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

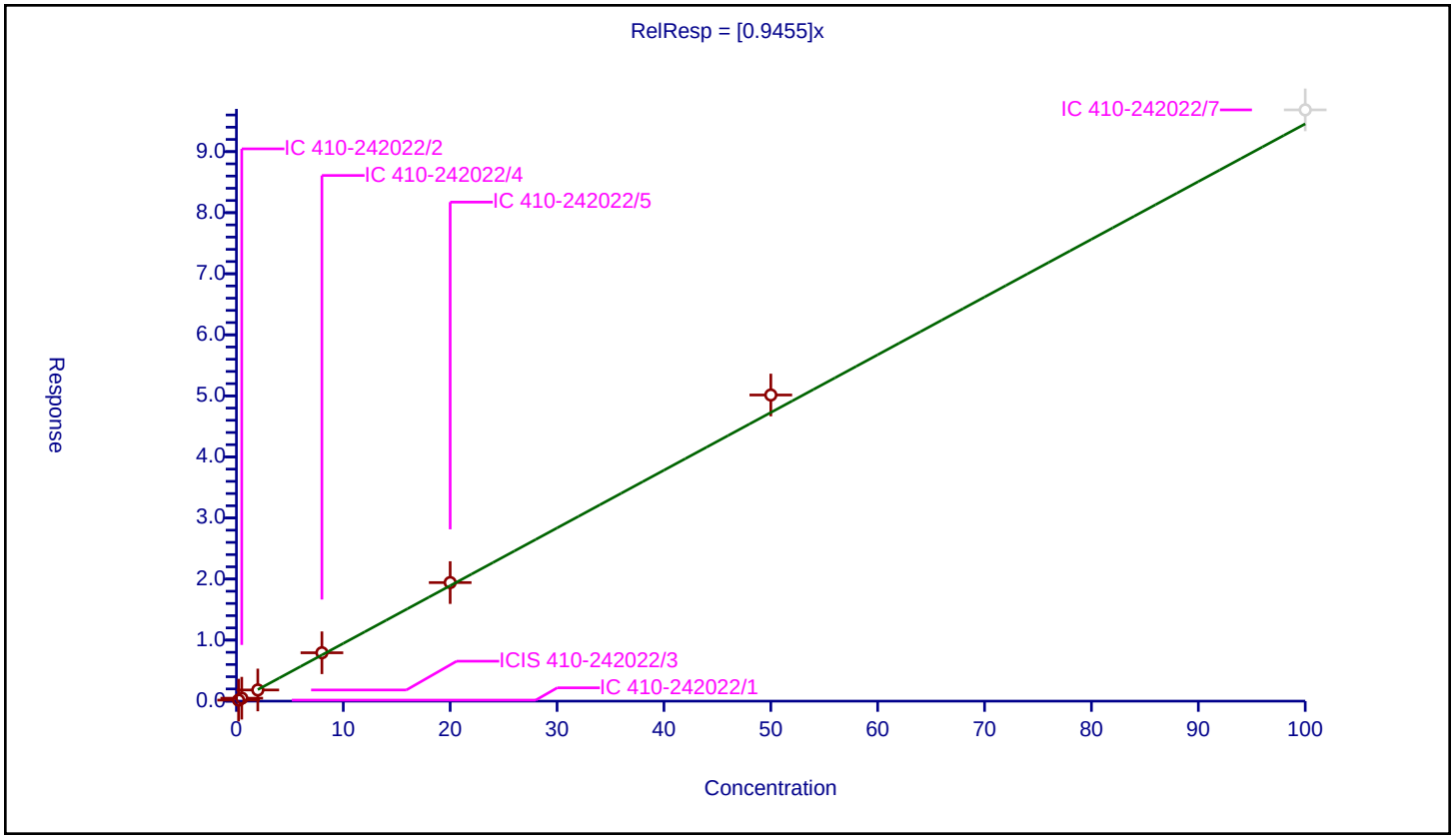
Curve Coefficients

Intercept:	0
Slope:	0.9455

Error Coefficients

Standard Error:	2920000
Relative Standard Error:	6.7
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.166513	10.0	1477840.0	0.832566	Y
2	IC 410-242022/2	0.5	0.480565	10.0	1515675.0	0.96113	Y
3	ICIS 410-242022/3	2.0	1.82942	10.0	1486996.0	0.91471	Y
4	IC 410-242022/4	8.0	7.925922	10.0	1401476.0	0.99074	Y
5	IC 410-242022/5	20.0	19.419115	10.0	1318315.0	0.970956	Y
6	IC 410-242022/6	50.0	50.142994	10.0	1177671.0	1.00286	Y
7	IC 410-242022/7	100.0	96.838315	10.0	1033702.0	0.968383	N



Calibration / Perfluorotridecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

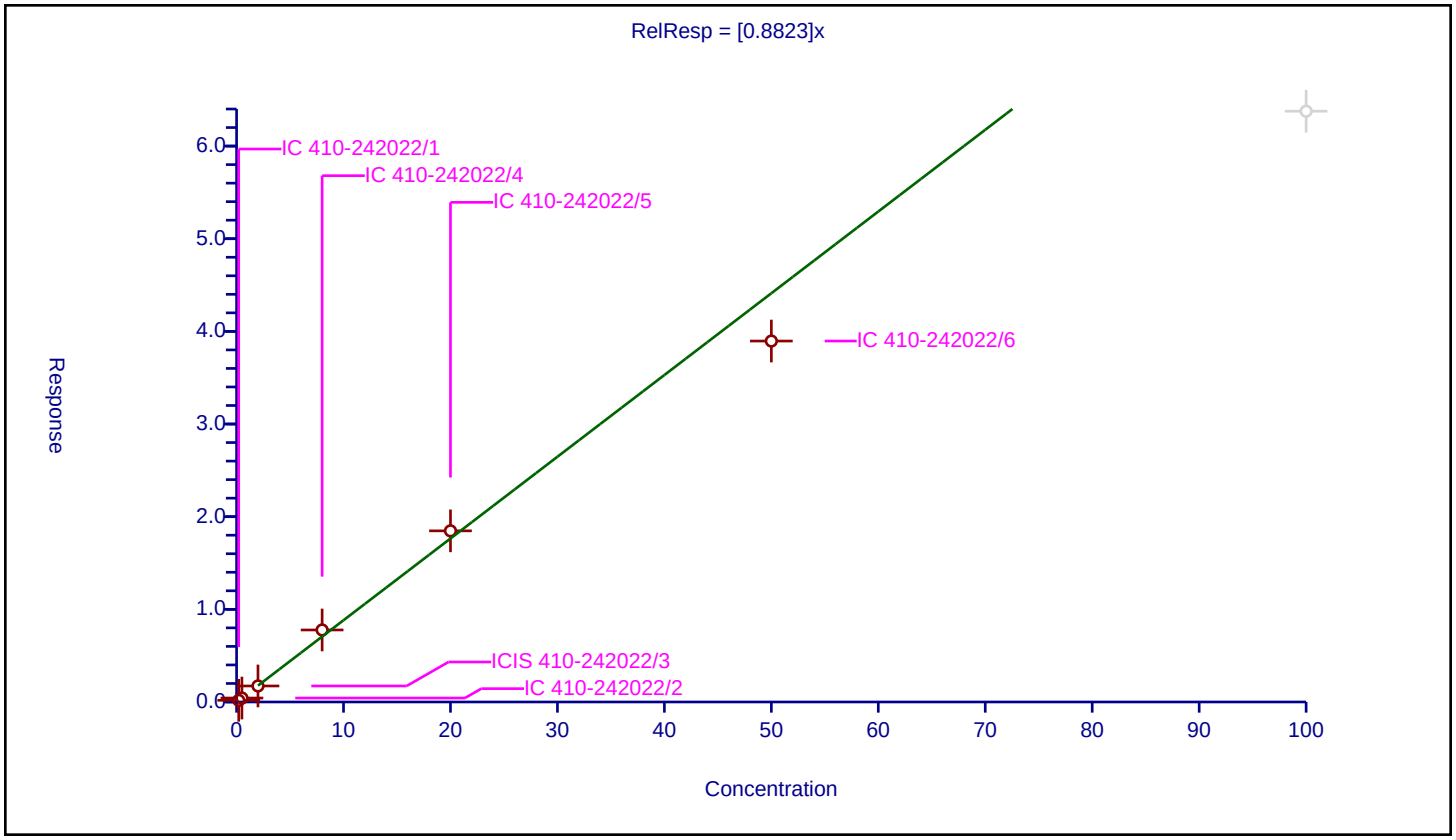
Curve Coefficients

Intercept:	0
Slope:	0.8823

Error Coefficients

Standard Error:	18300000
Relative Standard Error:	7.5
Correlation Coefficient:	0.984
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.179904	10.0	11112703.0	0.89952	Y
2	IC 410-242022/2	0.5	0.427636	10.0	11109736.0	0.855271	Y
3	ICIS 410-242022/3	2.0	1.729029	10.0	11787445.0	0.864514	Y
4	IC 410-242022/4	8.0	7.773429	10.0	10722444.0	0.971679	Y
5	IC 410-242022/5	20.0	18.469509	10.0	10030562.0	0.923475	Y
6	IC 410-242022/6	50.0	38.957497	10.0	9124826.0	0.77915	Y
7	IC 410-242022/7	100.0	63.763406	10.0	7876049.0	0.637634	N



Calibration / N-ethylperfluoro-1-octanesulfonamide

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

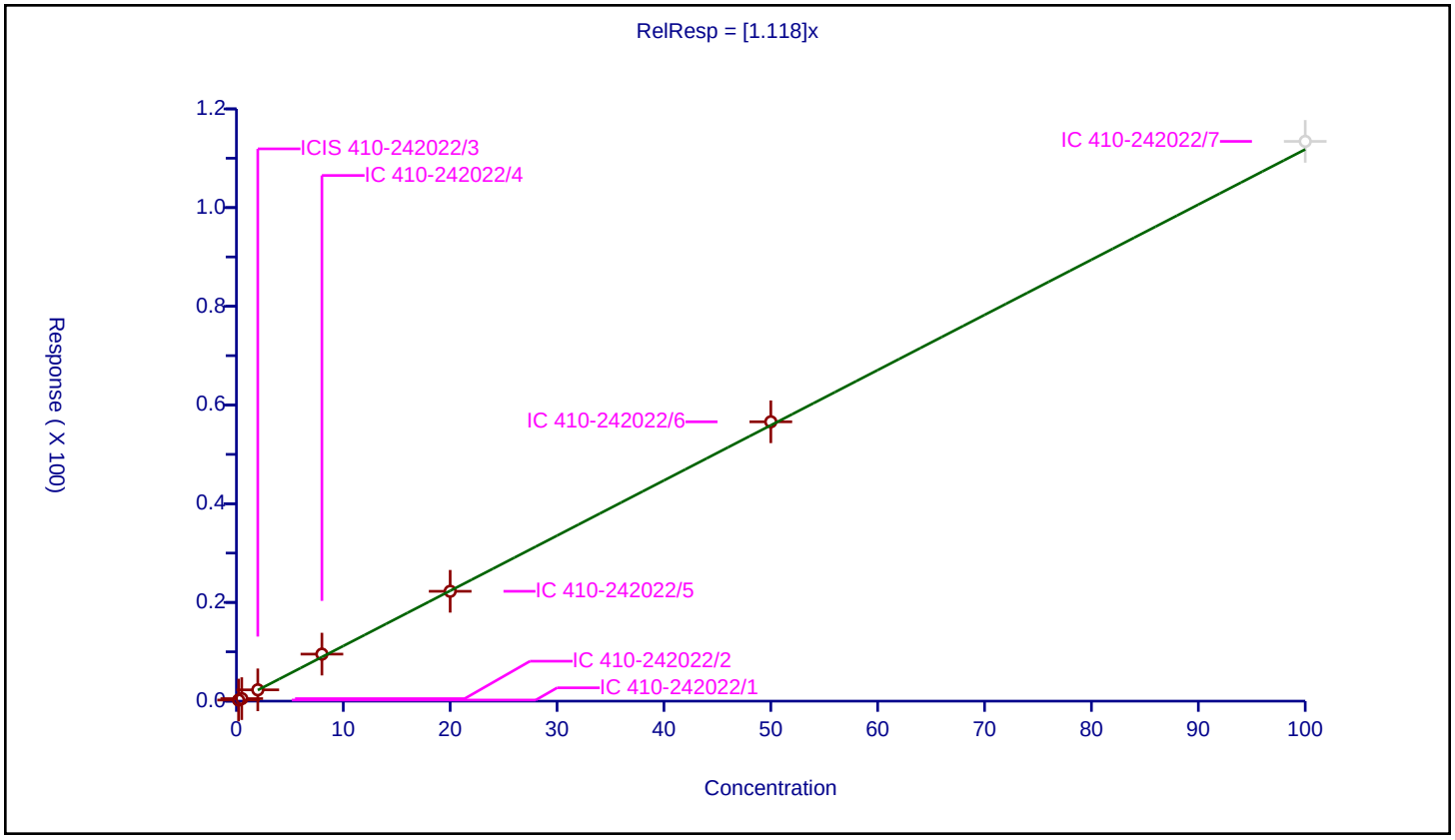
Curve Coefficients

Intercept:	0
Slope:	1.118

Error Coefficients

Standard Error:	3770000
Relative Standard Error:	5.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.221232	10.0	1437270.0	1.10616	Y
2	IC 410-242022/2	0.5	0.510317	10.0	1446865.0	1.020634	Y
3	ICIS 410-242022/3	2.0	2.289095	10.0	1415957.0	1.144547	Y
4	IC 410-242022/4	8.0	9.530201	10.0	1385253.0	1.191275	Y
5	IC 410-242022/5	20.0	22.260159	10.0	1397043.0	1.113008	Y
6	IC 410-242022/6	50.0	56.599229	10.0	1362206.0	1.131985	Y
7	IC 410-242022/7	100.0	113.414819	10.0	1227910.0	1.134148	N



Calibration / Perfluorotetradecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

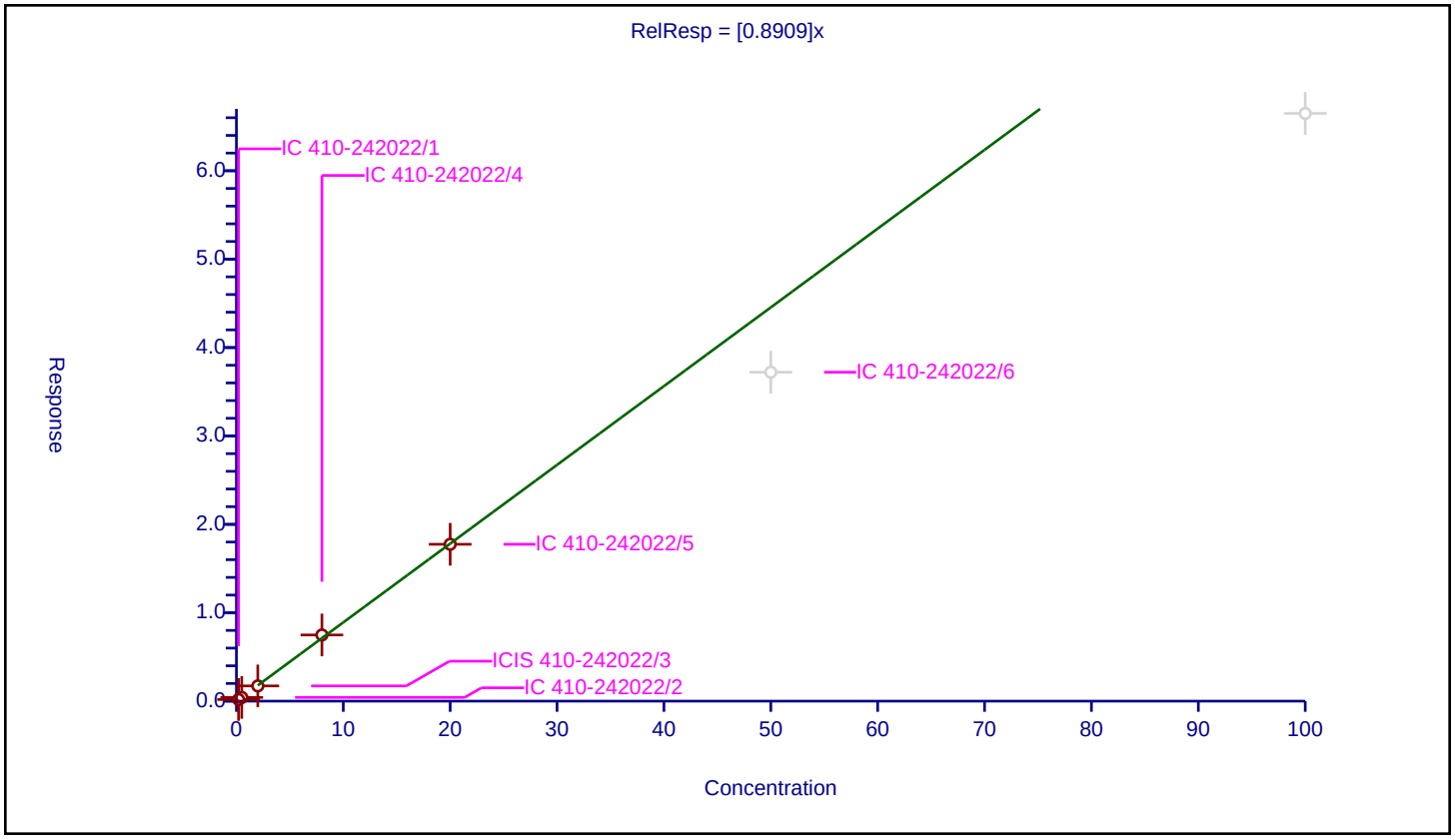
Curve Coefficients

Intercept:	0
Slope:	0.8909

Error Coefficients

Standard Error:	9840000
Relative Standard Error:	4.8
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.186202	10.0	11106423.0	0.931011	Y
2	IC 410-242022/2	0.5	0.419629	10.0	11041097.0	0.839259	Y
3	ICIS 410-242022/3	2.0	1.722749	10.0	11488242.0	0.861375	Y
4	IC 410-242022/4	8.0	7.485969	10.0	10301061.0	0.935746	Y
5	IC 410-242022/5	20.0	17.746831	10.0	10133924.0	0.887342	Y
6	IC 410-242022/6	50.0	37.208493	10.0	9602734.0	0.74417	N
7	IC 410-242022/7	100.0	66.489249	10.0	8538802.0	0.664892	N



Calibration / Perfluorohexadecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

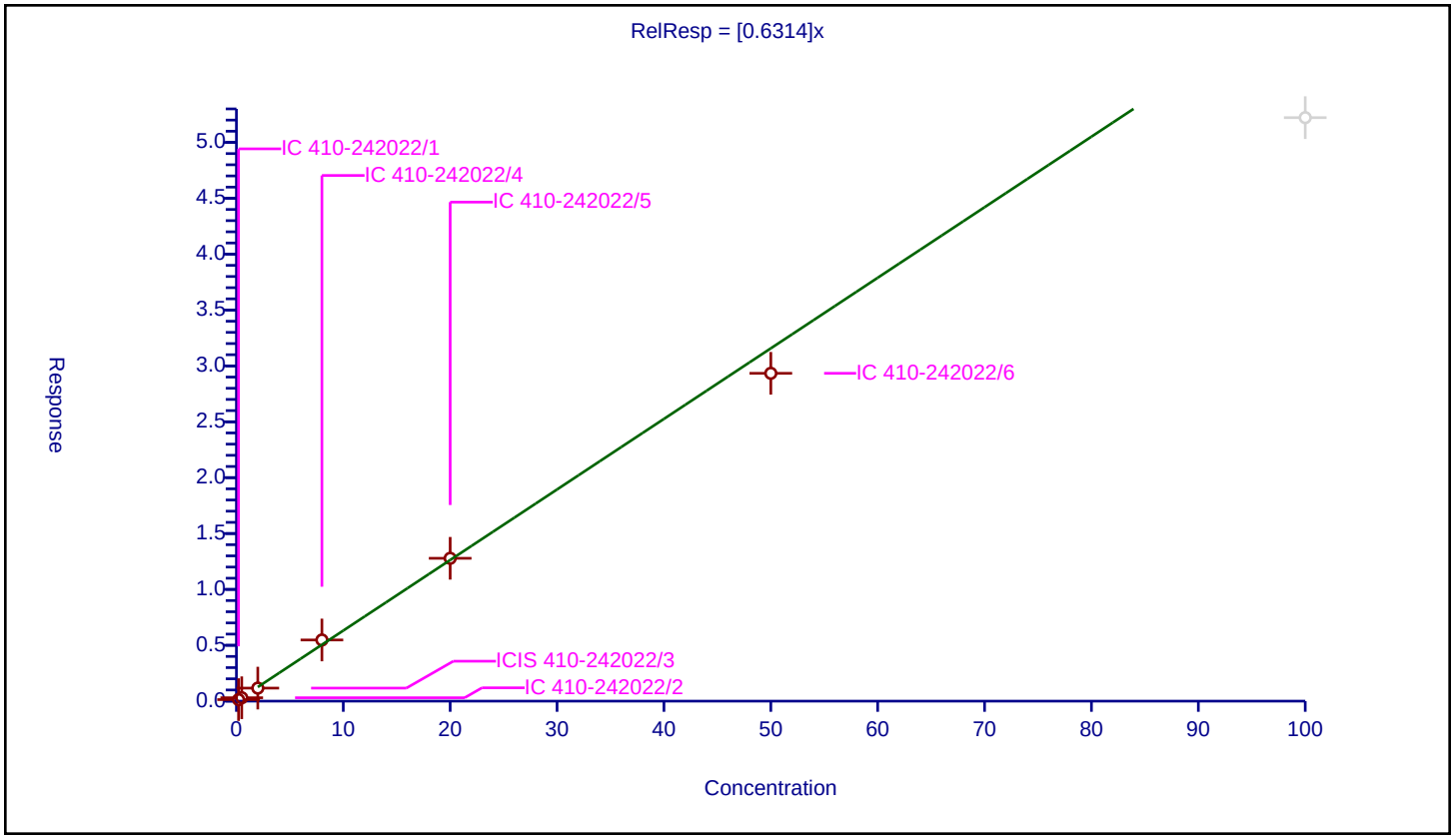
Curve Coefficients

Intercept:	0
Slope:	0.6314

Error Coefficients

Standard Error:	14100000
Relative Standard Error:	7.4
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.137782	10.0	11106423.0	0.688908	Y
2	IC 410-242022/2	0.5	0.302923	10.0	11041097.0	0.605846	Y
3	ICIS 410-242022/3	2.0	1.167701	10.0	11488242.0	0.58385	Y
4	IC 410-242022/4	8.0	5.472772	10.0	10301061.0	0.684097	Y
5	IC 410-242022/5	20.0	12.782784	10.0	10133924.0	0.639139	Y
6	IC 410-242022/6	50.0	29.337805	10.0	9602734.0	0.586756	Y
7	IC 410-242022/7	100.0	52.216314	10.0	8538802.0	0.522163	N



Calibration / Perfluorooctadecanoic acid

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	IsoDil
Response Base:	AREA
RF Rounding:	0

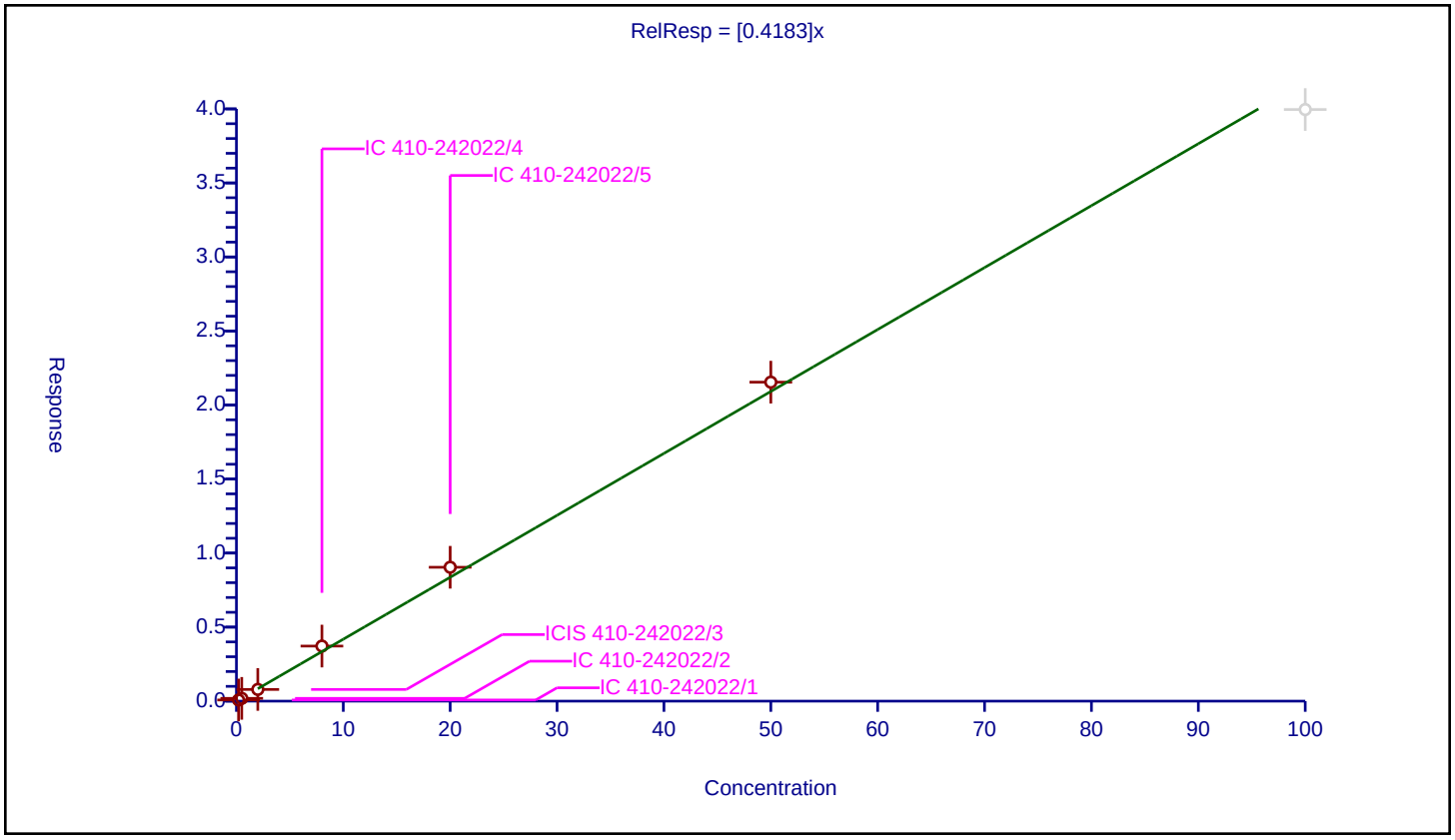
Curve Coefficients

Intercept:	0
Slope:	0.4183

Error Coefficients

Standard Error:	10300000
Relative Standard Error:	8.7
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.991

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-242022/1	0.2	0.078267	10.0	11106423.0	0.391337	Y
2	IC 410-242022/2	0.5	0.187834	10.0	11041097.0	0.375667	Y
3	ICIS 410-242022/3	2.0	0.78994	10.0	11488242.0	0.39497	Y
4	IC 410-242022/4	8.0	3.719125	10.0	10301061.0	0.464891	Y
5	IC 410-242022/5	20.0	9.042733	10.0	10133924.0	0.452137	Y
6	IC 410-242022/6	50.0	21.54297	10.0	9602734.0	0.430859	Y
7	IC 410-242022/7	100.0	39.957355	10.0	8538802.0	0.399574	N



FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: ICV 410-240108/9 Calibration Date: 04/03/2022 18:37

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR03DCAL-49.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8343	0.8155		1.96	2.00	-2.2	30.0
PFMPA	AveID	0.8139	0.8090		1.99	2.00	-0.6	30.0
3:3 FTCA	AveID	0.0595	0.0585		1.97	2.00	-1.6	30.0
Perfluoropentanoic acid	AveID	1.030	1.033		2.01	2.00	0.4	30.0
Perfluorobutanesulfonic acid	AveID	0.9609	0.9834		1.81	1.77	2.3	30.0
PFMBA	AveID	0.8283	0.8509		2.05	2.00	2.7	30.0
PFEESA	AveID	3.411	3.656		1.91	1.78	7.2	30.0
NFDHA	AveID	0.2829	0.2830		2.00	2.00	0.0	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.779	3.641		1.80	1.87	-3.7	30.0
Perfluorohexanoic acid	AveID	0.8748	0.8510		1.95	2.00	-2.7	30.0
Perfluoropentanesulfonic acid	AveID	0.8840	0.9238		1.96	1.88	4.5	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.119	2.092		1.97	2.00	-1.3	30.0
Perfluoroheptanoic acid	AveID	0.9550	0.9563		2.00	2.00	0.1	30.0
Perfluorohexanesulfonic acid	AveID	0.9729	0.9755		1.83	1.82	0.3	30.0
DONA	AveID	1.642	1.744		2.01	1.89	6.2	30.0
5:3 FTCA	AveID	0.1923	0.1961		2.04	2.00	2.0	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.213	5.317		1.93	1.90	2.0	30.0
Perfluoroheptanesulfonic acid	AveID	0.9728	0.9851		1.93	1.90	1.3	30.0
Perfluorooctanoic acid	AveID	0.8951	0.9217		2.06	2.00	3.0	30.0
Perfluorooctanesulfonic acid	AveID	1.074	1.060		1.83	1.85	-1.3	30.0
Perfluorononanoic acid	AveID	0.8515	0.8966		2.11	2.00	5.3	30.0
7:3 FTCA	AveID	0.1001	0.1073		2.14	2.00	7.1	30.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	AveID	2.388	2.393		1.86	1.86	0.2	30.0
Perfluorononanesulfonic acid	AveID	0.9378	0.9674		1.98	1.92	3.2	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.492	6.949		1.78	1.92	-7.2	30.0
Perfluorodecanoic acid	AveID	0.8690	0.8824		2.03	2.00	1.5	30.0
Perfluorooctanesulfonamide	AveID	1.005	0.9598		1.91	2.00	-4.5	30.0
NMeFOSAA	AveID	0.8805	0.8218		1.86	2.00	-6.7	30.0
Perfluorodecanesulfonic acid	AveID	1.057	1.048		1.91	1.93	-0.8	30.0
Perfluoroundecanoic acid	AveID	0.8224	0.8640		2.10	2.00	5.1	30.0
NEtFOSAA	AveID	0.9486	0.9208		1.94	2.00	-2.9	30.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	AveID	2.017	2.157		1.99	1.86	7.0	30.0
Perfluorododecanoic acid	AveID	0.8799	0.9113		2.07	2.00	3.6	30.0
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	AveID	9.352	8.525		1.76	1.93	-8.8	30.0
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9930	0.9313		1.88	2.00	-6.2	30.0
NMeFOSA	AveID	1.012	0.9762		1.93	2.00	-3.6	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: ICV 410-240108/9 Calibration Date: 04/03/2022 18:37

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR03DCAL-49.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	1.031	1.017		1.91	1.94	-1.4	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9193	0.9139		1.99	2.00	-0.6	30.0
Perfluorotridecanoic acid	AveID	0.8786	0.9472		2.16	2.00	7.8	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.093	1.069		1.96	2.00	-2.2	30.0
Perfluorotetradecanoic acid	AveID	0.8671	0.8708		2.01	2.00	0.4	30.0
Perfluorohexadecanoic acid	AveID	0.6471	0.6221		1.92	2.00	-3.9	30.0
Perfluorooctadecanoic acid	AveID	0.4397	0.4425		2.01	2.00	0.6	30.0
13C4 PFBA	Ave	869605	931405		10.7	10.0	7.1	30.0
13C5 PFPeA	Ave	726568	767563		10.6	10.0	5.6	30.0
13C3 PFBS	Ave	939925	988556		9.78	9.30	5.2	30.0
M2-4:2 FTS	Ave	40589	45611		10.5	9.34	12.4	30.0
13C5 PFHxA	Ave	886590	945977		10.7	10.0	6.7	30.0
13C3 HFPO-DA	Ave	110442	115710		10.5	10.0	4.8	30.0
13C3 PFHxS	Ave	838000	928940		10.5	9.46	10.9	30.0
13C4 PFHpA	Ave	888220	977669		11.0	10.0	10.1	30.0
M2-6:2 FTS	Ave	25548	28360		10.5	9.50	11.0	30.0
13C8 PFOA	Ave	975918	1058413		10.8	10.0	8.5	30.0
13C8 PFOS	Ave	810201	863336		10.2	9.56	6.6	30.0
13C9 PFNA	Ave	1017403	1081012		10.6	10.0	6.3	30.0
13C6 PFDA	Ave	1080461	1194523		11.1	10.0	10.6	30.0
M2-8:2 FTS	Ave	22380	26854		11.5	9.58	20.0	30.0
13C8 FOSA	Ave	1294000	1446898		11.2	10.0	11.8	30.0
d3-NMeFOSAA	Ave	281493	311144		11.1	10.0	10.5	30.0
13C7 PFUnA	Ave	1127314	1224755		10.9	10.0	8.6	30.0
d5-NEtFOSAA	Ave	218834	241526		11.0	10.0	10.4	30.0
13C2-PFDoDA	Ave	1193672	1273129		10.7	10.0	6.7	30.0
d7-N-MeFOSE-M	Ave	136038	150913		11.1	10.0	10.9	30.0
d3-NMePFOSA	Ave	172223	187765		10.9	10.0	9.0	30.0
d9-N-EtFOSE-M	Ave	164086	181026		11.0	10.0	10.3	30.0
d5-NEtPFOSA	Ave	157541	170362		10.8	10.0	8.1	30.0
13C2 PFTeDA	Ave	1206116	1275737		10.6	10.0	5.8	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-49.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Apr-2022 18:37:22 ALS Bottle#: 20009 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1 410-0053897-009
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist:

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:27:33 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:14:13
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	3.662	3.662	0.0		9314054	10.7		107	138765	
1 Perfluorobutanoic acid										
213.00 > 169.00	3.662	3.662	0.0	1.000	1519193	1.96			2978	
63 PFECA F										
229.00 > 85.00	3.889	3.897	-0.008	0.930	1241917	1.99			9445	
67 3:3 FTCA										
241.00 > 177.00	4.168	4.175	-0.007	0.997	89802	1.97	Target=1.29		5999	
241.00 > 117.00	4.168	4.175	-0.007	0.997	71069		1.26(0.64-1.93)		2421	
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.182	0.001		7675633	10.6		106	71507	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.183	4.182	0.001	1.000	1586545	2.01			6953	
D 6 13C3 PFBS										
302.00 > 80.00	4.235	4.235	0.0		9193575	9.78		105	482314	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.235	4.235	0.0	1.000	1720704	1.81	Target=2.85		2110	
299.00 > 99.00	4.227	4.235	-0.008	0.998	589704		2.92(1.42-4.27)		2049	
64 PFECA A										
279.00 > 85.00	4.297	4.304	-0.007	1.027	1306181	2.05			18424	
65 PES										
315.00 > 135.00	4.392	4.400	-0.008	0.958	6156890	1.91	Target=11.66		93431	
315.00 > 83.00	4.392	4.400	-0.008	0.958	416517		14.78(5.83-17.49)		588	
68 PFECA B										
295.00 > 201.00	4.514	4.514	0.0	0.985	535346	2.00			12894	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.544	4.553	-0.009	1.000	310262	1.80	Target=1.85		22496	
327.00 > 81.00	4.544	4.553	-0.009	1.000	176339		1.76(0.93-2.78)		4663	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.544	4.553	-0.009		426009	10.5		112	15366	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.583	4.593	-0.010	1.000	1609966	1.95	Target=13.79		9047	
313.00 > 119.00	4.583	4.593	-0.010	1.000	122720		13.12(6.90-20.69)		4536	
D 9 13C5 PFHxA										
318.00 > 273.00	4.583	4.593	-0.010		9459769	10.7		107	229706	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.603	4.611	-0.008	1.087	1713144	1.96	Target=3.00		78123	
349.00 > 99.00	4.603	4.611	-0.008	1.087	565576		3.03(1.50-4.50)		21408	
12 HFPO-DA										
329.00 > 285.00	4.713	4.720	-0.007	1.000	484154	1.97			14373	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.713	4.720	-0.007		1157097	10.5		105	77174	
D 17 13C4 PFHpA										
367.00 > 322.00	4.981	4.981	0.0		9776688	11.0		110	158069	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.981	4.981	0.0	1.000	1869969	2.00	Target=3.13		12704	
363.00 > 169.00	4.971	4.981	-0.010	0.998	611680		3.06(1.57-4.70)		9790	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.981	4.981	0.0	1.000	1652877	1.83	Target=3.05		542996	
399.00 > 99.00	4.971	4.981	-0.010	0.998	552113		2.99(1.52-4.57)		1433	
D 16 13C3 PFHxS										
402.00 > 80.00	4.981	4.981	0.0		8787771	10.5		111	1181981	
18 DONA										
377.00 > 251.00	5.023	5.032	-0.009	1.009	3223184	2.01			29778	
62 5:3 FTCA										
341.00 > 237.00	5.046	5.053	-0.007	1.101	371036	2.04	Target=3.13		5264	
341.00 > 217.00	5.046	5.053	-0.007	1.101	117942		3.15(1.56-4.69)		3772	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.331	0.0		269422	10.5		111	18421	
19 6:2 FTS										
427.00 > 407.00	5.324	5.331	-0.007	0.999	285887	1.93	Target=1.69		15423	
427.00 > 81.00	5.324	5.331	-0.007	0.999	165020		1.73(0.85-2.54)		7522	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.338	5.338	0.0	1.072	1742331	1.93	Target=3.19		69446	
449.00 > 99.00	5.338	5.338	0.0	1.072	518370		3.36(1.59-4.78)		47773	
D 22 13C8 PFOA										
421.00 > 376.00	5.351	5.344	0.007		10584130	10.8		108	852293	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.351	5.350	0.001	1.000	1951083	2.06	Target=2.38		75759	
413.00 > 169.00	5.344	5.350	-0.006	0.999	799074		2.44(1.19-3.57)		79257	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.677	5.677	0.0	1.000	1693817	1.83	Target=3.70		1728	
499.00 > 99.00	5.669	5.677	-0.008	0.999	456896		3.71(1.85-5.54)		976	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.677	0.0		8253491	10.2		107	1630	
26 Perfluorononanoic acid										
463.00 > 419.00	5.693	5.693	0.0	1.000	1938501	2.11	Target=4.37		21322	
463.00 > 169.00	5.693	5.693	0.0	1.000	405088		4.79(2.19-6.56)		10861	
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.701	-0.008		10810124	10.6		106	199897	
66 7:3 FTCA										
441.00 > 317.00	5.791	5.791	0.0	1.264	203004	2.14	Target=11.37		5413	
441.00 > 337.00	5.791	5.791	0.0	1.264	18082		11.23(5.69-17.06)		699	
28 9ClFOS										
531.00 > 351.00	5.857	5.864	-0.007	1.032	3842242	1.86			202883	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.981	0.0	1.054	1603620	1.98	Target=3.34		81079	
549.00 > 99.00	5.981	5.981	0.0	1.054	449379		3.57(1.67-5.02)		18982	
33 8:2 FTS										
527.00 > 507.00	6.006	6.006	0.0	1.000	357531	1.78	Target=2.06		21096	
527.00 > 81.00	6.006	6.006	0.0	1.000	172577		2.07(1.03-3.09)		3105	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.006	6.006	0.0	1.000	2108139	2.03	Target=9.22		25445	
513.00 > 169.00	5.998	6.006	-0.008	0.999	218360		9.65(4.61-13.82)		4384	
D 32 13C6 PFDA										
519.00 > 474.00	6.006	6.014	-0.008		11945227	11.1		111	204222	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.014	-0.008		257258	11.5		120	20379	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.114	6.123	-0.009	1.000	2777551	1.91			24336	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.123	-0.009		14468977	11.2		112	571250	
36 NMeFOSAA										
570.00 > 419.00	6.155	6.162	-0.007	1.000	511368	1.86	Target=1.84		14462	
570.00 > 483.00	6.155	6.162	-0.007	1.000	289426		1.77(0.92-2.77)		530	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.162	-0.007		3111444	11.1		111	210591	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.252	6.252	0.0	1.101	1745167	1.91	Target=3.50		99453	
599.00 > 99.00	6.252	6.252	0.0	1.101	502391		3.47(1.75-5.26)		28380	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.280	6.289	-0.009	1.000	2116384	2.10	Target=8.26		14048	
563.00 > 169.00	6.280	6.289	-0.009	1.000	252296		8.39(4.13-12.39)		9287	
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.289	-0.009		12247554	10.9		109	160372	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.299	0.0		2415264	11.0		110	332087	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.299	6.308	-0.009	1.000	444815	1.94	Target=1.65		76219	
584.00 > 526.00	6.299	6.308	-0.009	1.000	269752		1.65(0.82-2.47)		283	
43 11ClFOS										
631.00 > 451.00	6.398	6.398	0.0	1.127	3464107	1.99			82010	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.522	6.521	0.001	1.000	2320375	2.07	Target=5.80		11178	
613.00 > 169.00	6.522	6.521	0.001	1.000	409129		5.67(2.90-8.70)		6031	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.530	-0.008		12731286	10.7		107	498613	
48 10:2 FTS										
627.00 > 607.00	6.539	6.539	0.0	1.089	441373	1.76	Target=1.80		34786	
627.00 > 81.00	6.531	6.539	-0.008	1.087	251329		1.76(0.90-2.69)		7335	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.566	-0.009		1509132	11.1		111	6176	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.566	0.0	1.001	281102	1.88			3246	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.583	-0.009		1877645	10.9		109	5714	
50 NMeFOSA										
512.00 > 169.00	6.583	6.583	0.0	1.001	366590	1.93			6797	
53 PFDoS										
699.00 > 80.00	6.705	6.705	0.0	1.181	1700260	1.91			46134	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.723	0.0		1810258	11.0		110	15097	
52 N-EtFOSE-M										
630.00 > 59.00	6.731	6.731	0.0	1.001	330896	1.99			4101	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.731	6.739	-0.008	1.032	2411831	2.16	Target=5.49		7534	
663.00 > 169.00	6.731	6.739	-0.008	1.032	391510		6.16(2.75-8.24)		19556	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.748	6.748	0.0		1703621	10.8		108	10804	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.755	-0.007	1.000	364181	1.96			5783	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.926	-0.005	1.000	2221707	2.01	Target=5.81		4422	
713.00 > 169.00	6.921	6.926	-0.005	1.000	373909		5.94(2.91-8.72)		18133	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.926	-0.005		12757371	10.6		106	249516	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.246	-0.005	1.046	1587160	1.92	Target=5.99		5963	
813.00 > 169.00	7.241	7.246	-0.005	1.046	256929		6.18(2.99-8.98)		10752	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.499	-0.005	1.083	1129078	2.01	Target=7.27		15211	
913.00 > 169.00	7.494	7.499	-0.005	1.083	149318		7.56(3.63-10.90)		7244	

QC Flag Legend

Processing Flags

Reagents:

PFC_ICV_MOD_00040 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:27:34 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-49.d

Injection Date: 03-Apr-2022 18:37:22 Instrument ID: 29347

Lims ID: ICV

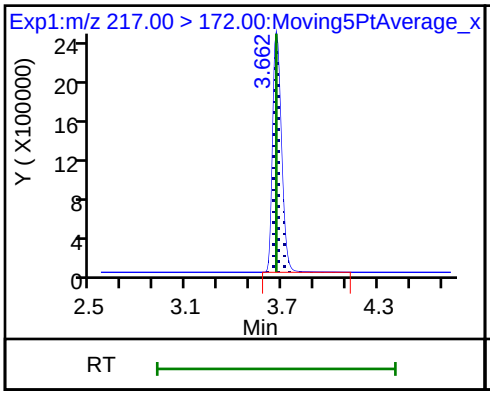
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20009 Worklist Smp#: 9

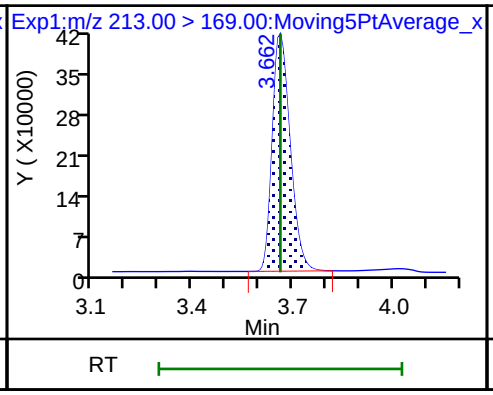
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

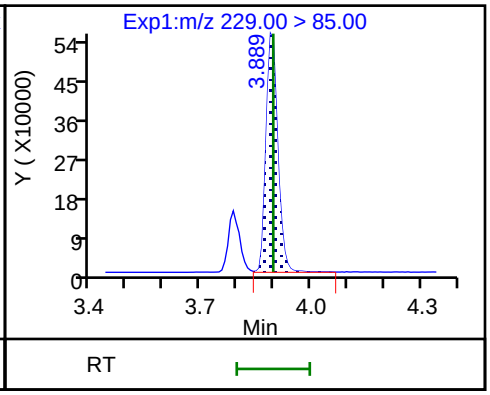
D 2 13C4 PFBA



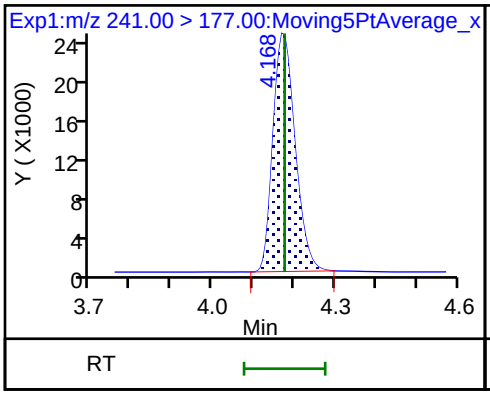
1 Perfluorobutanoic acid



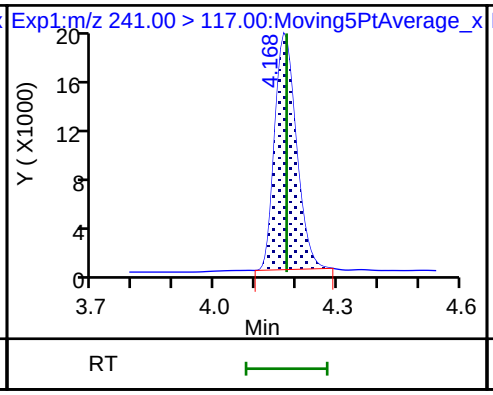
63 PFECA F



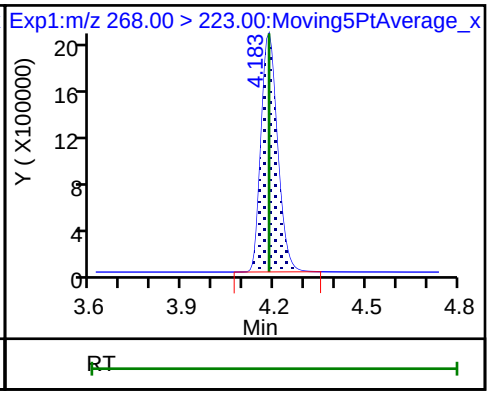
67 3:3 FTCA



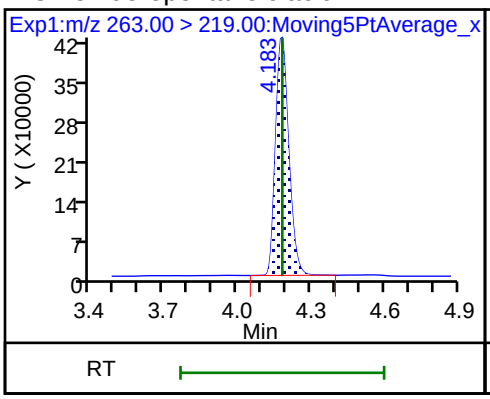
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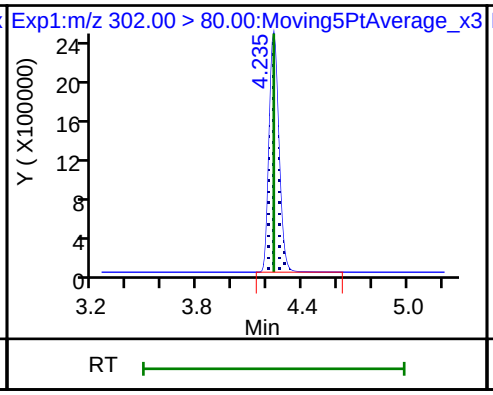
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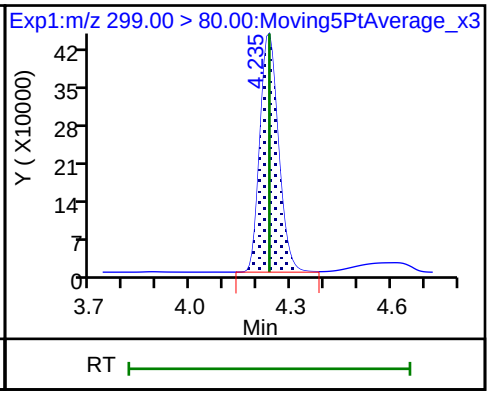
3 Perfluoropentanoic acid



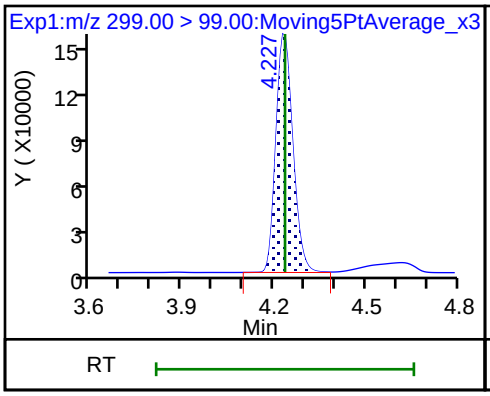
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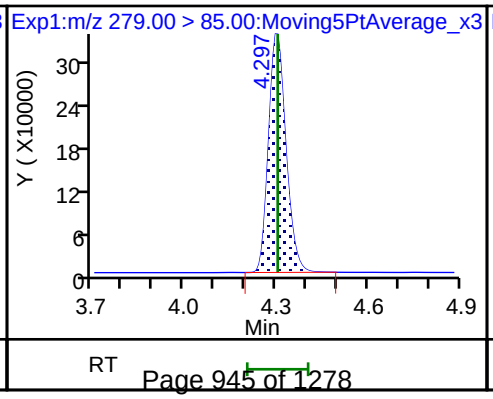
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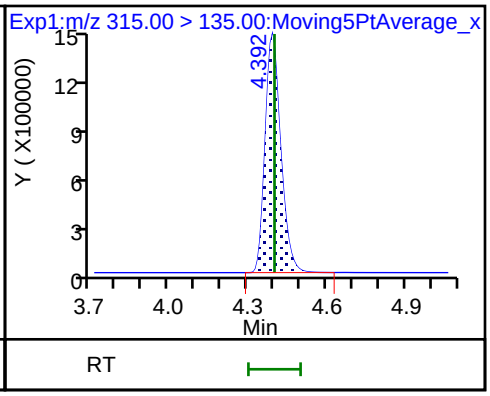
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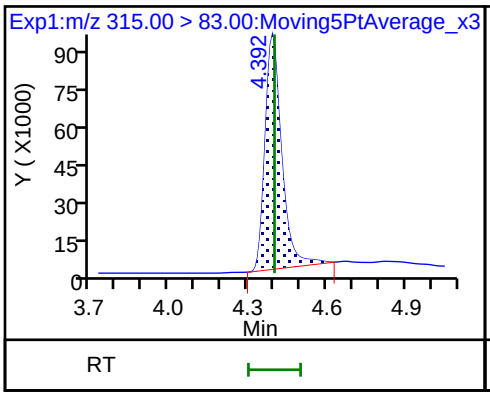
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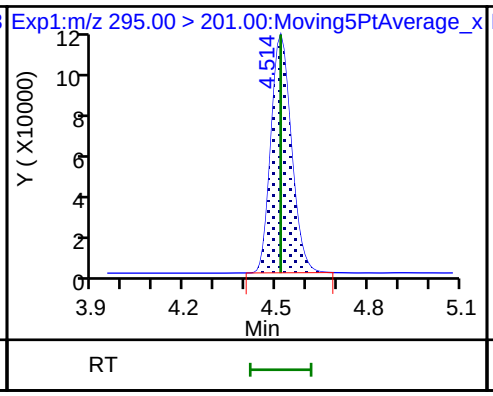
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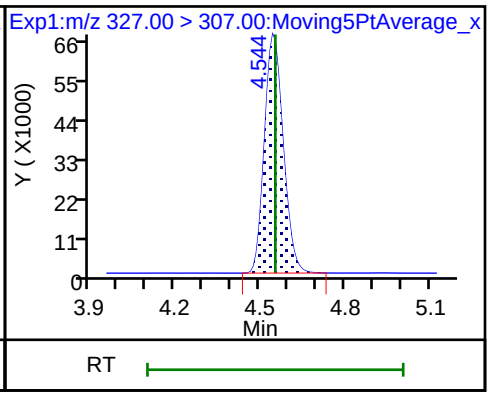
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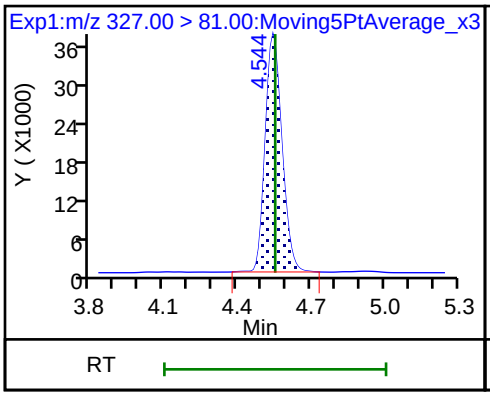
68 PFECA B



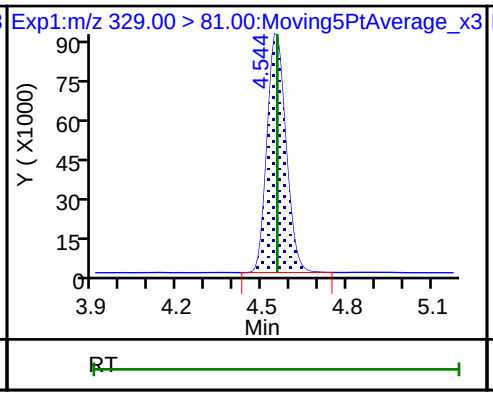
7 4:2 FTS



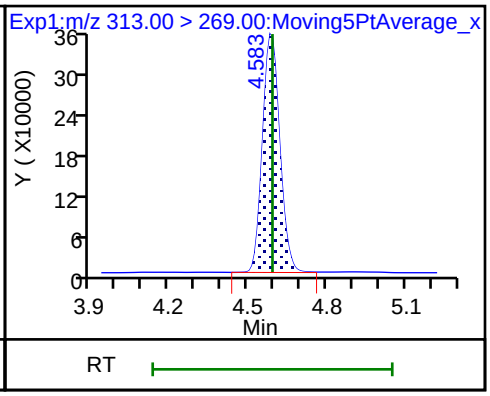
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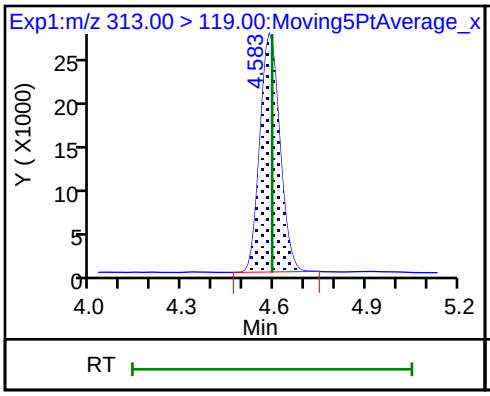
D 8 M2-4:2 FTS



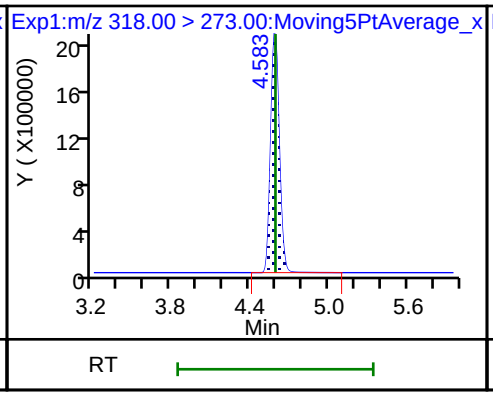
10 Perfluorohexanoic acid



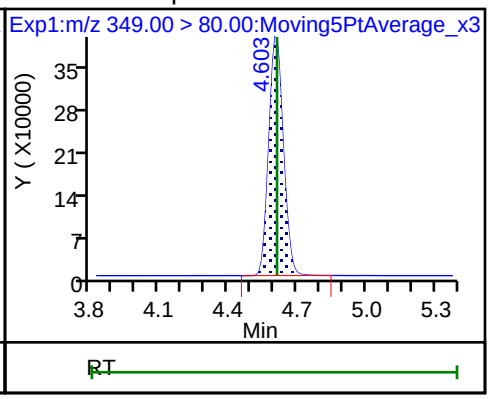
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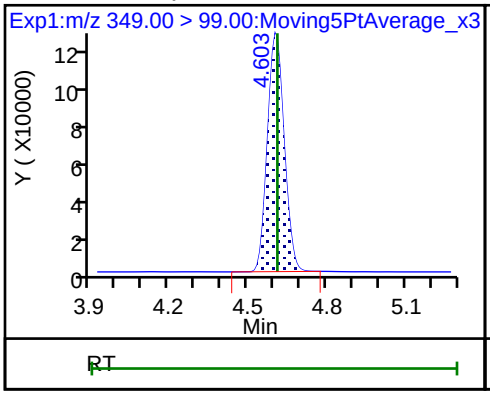
D 9 13C5 PFHxA



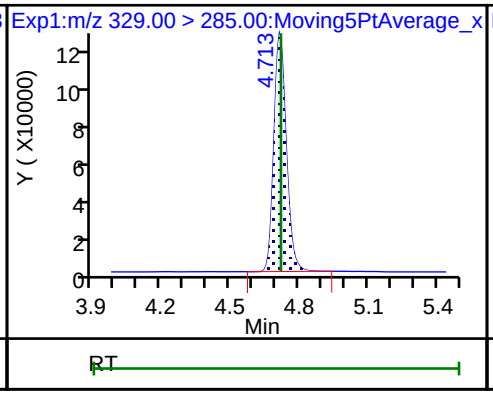
11 Perfluoropentanesulfonic acid



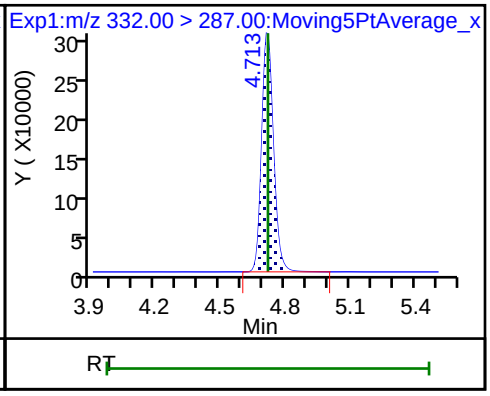
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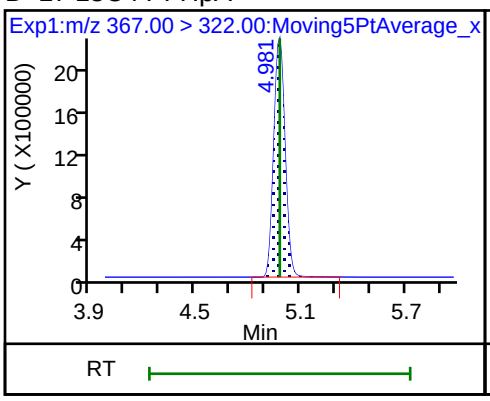
12 HFPO-DA



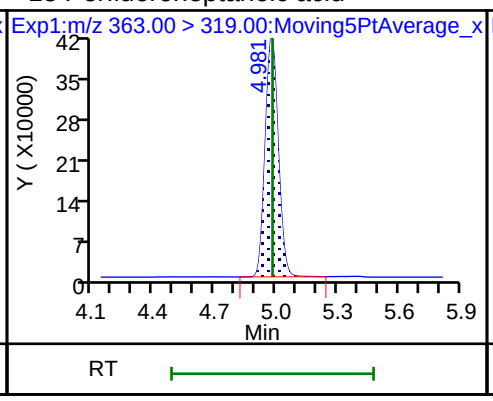
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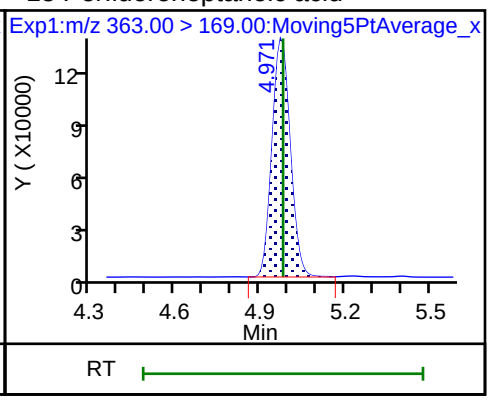
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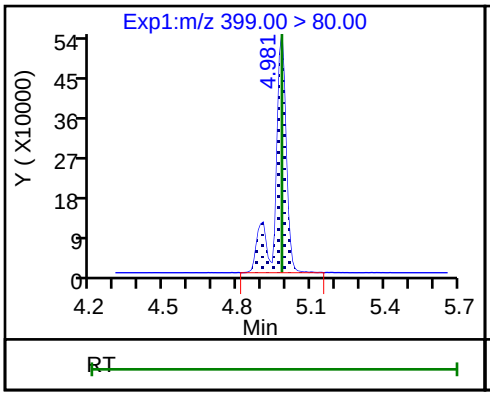
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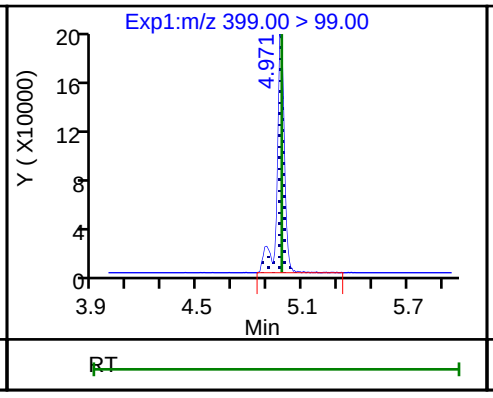
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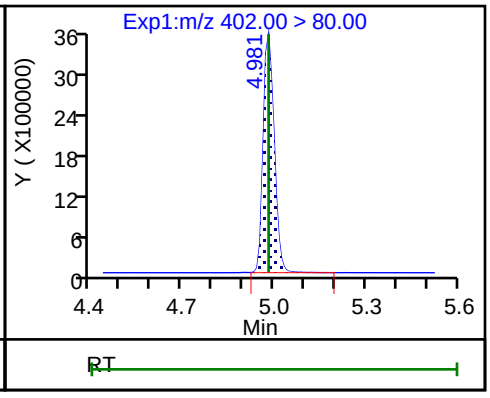
14 Perfluorohexanesulfonic acid



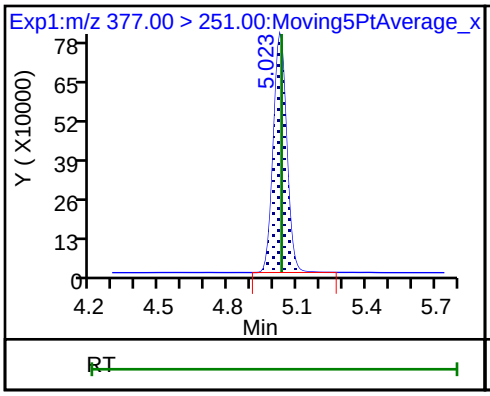
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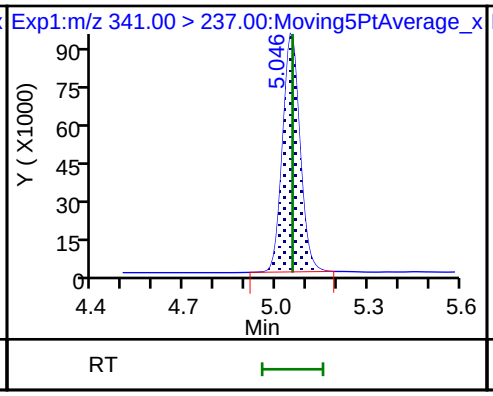
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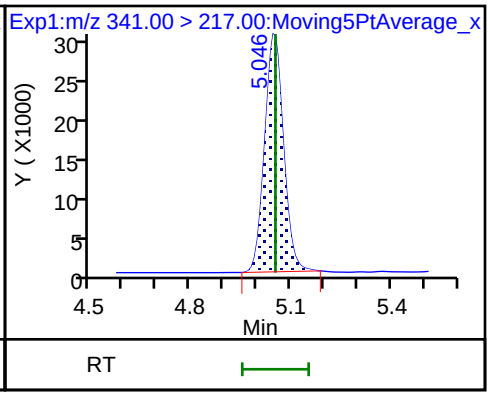
18 DONA



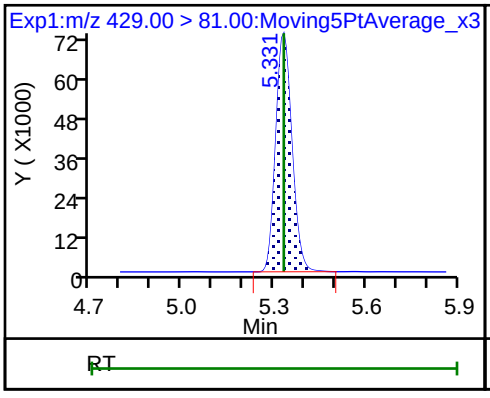
62 5:3 FTCA



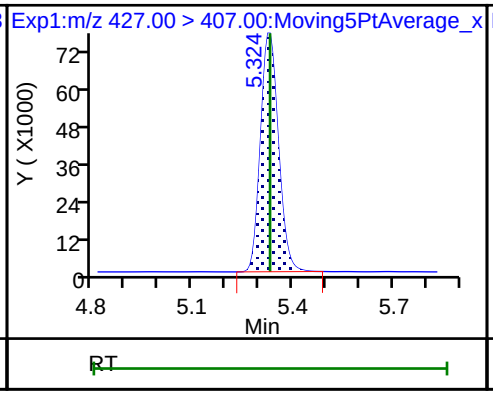
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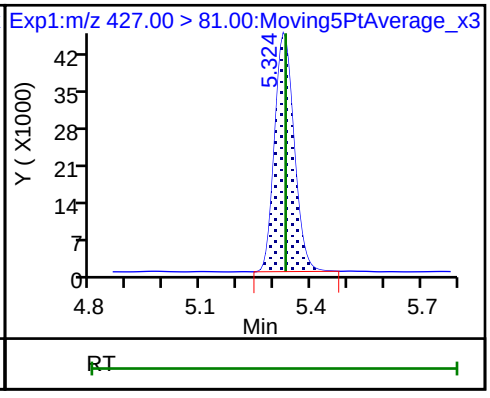
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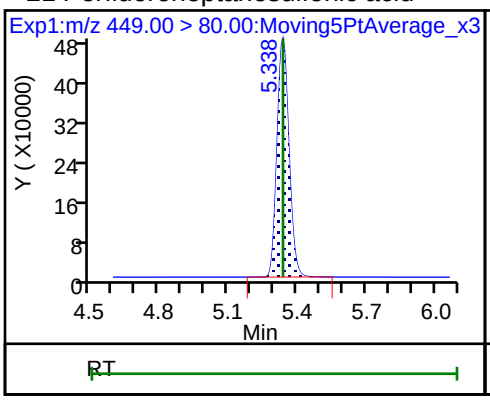
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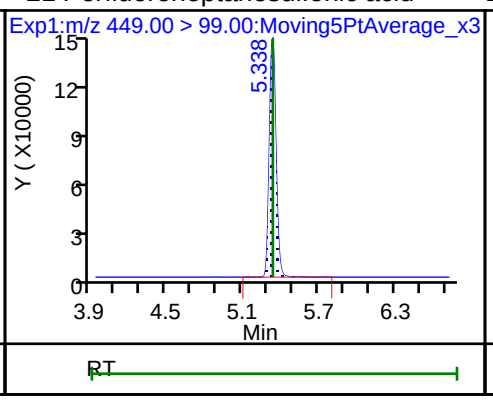
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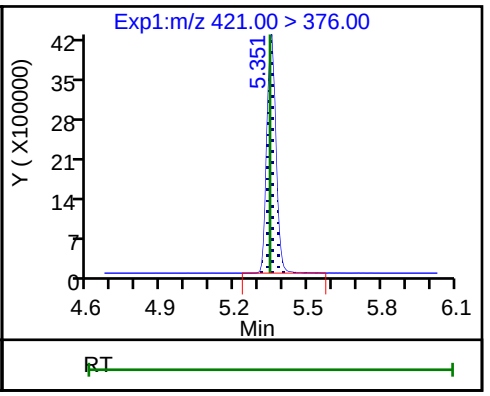
21 Perfluoroheptanesulfonic acid



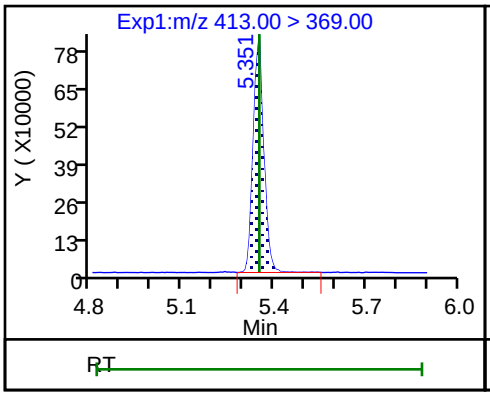
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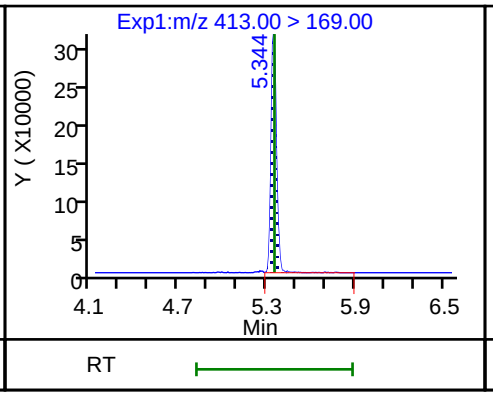
D 22 13C8 PFOA



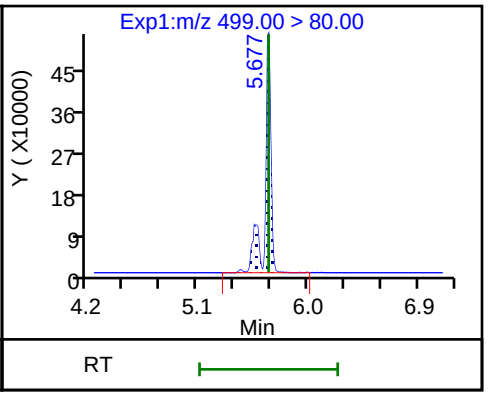
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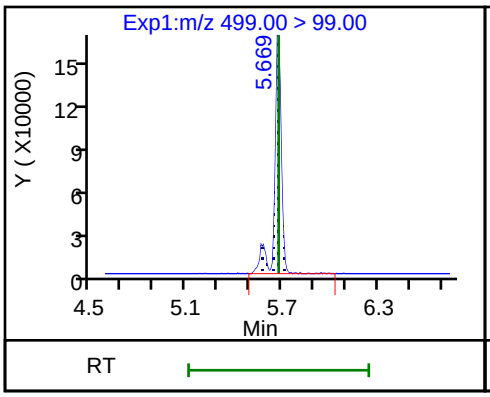
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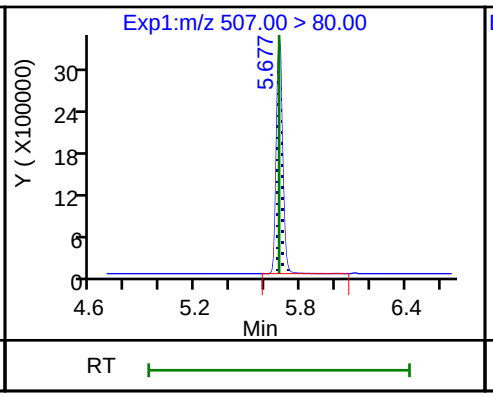
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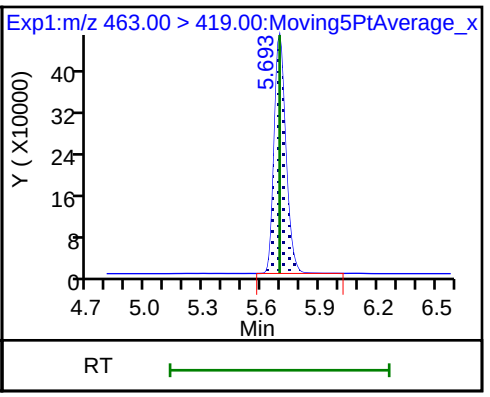
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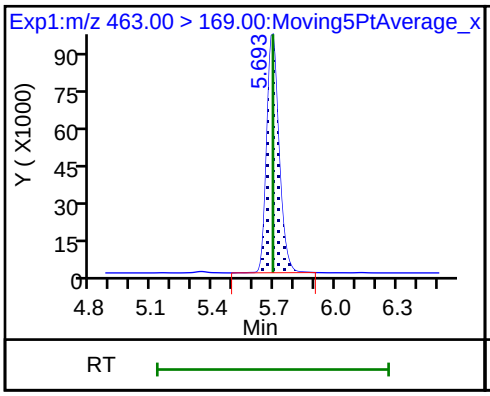
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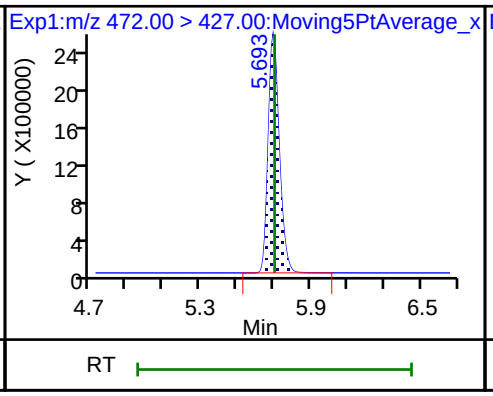
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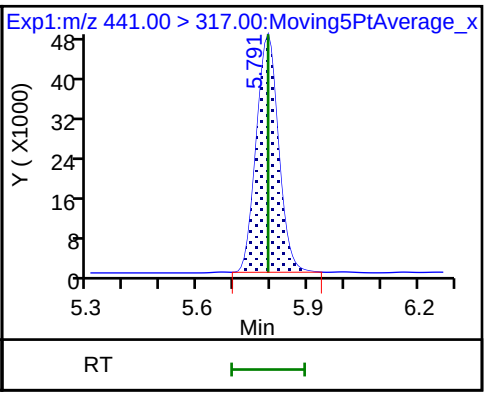
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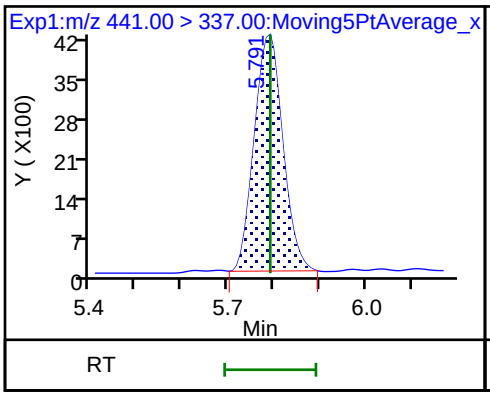
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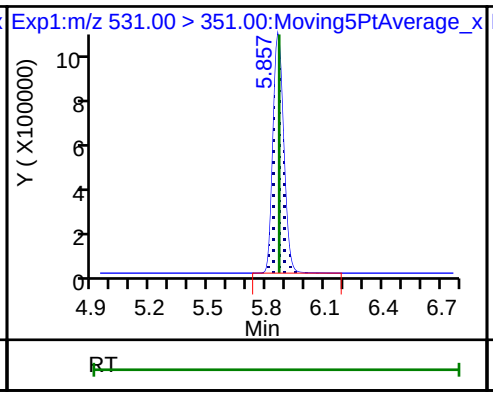
66 7:3 FTCA



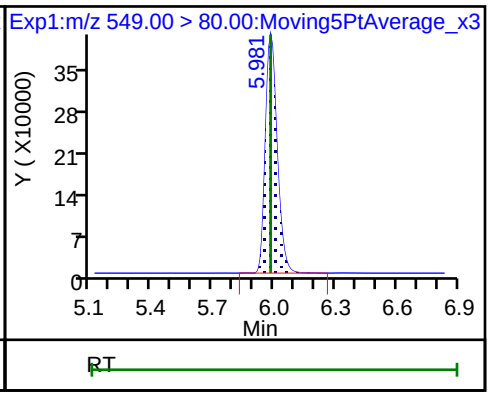
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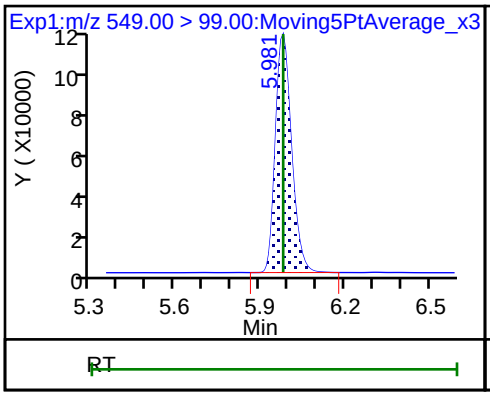
28 9ClFOS



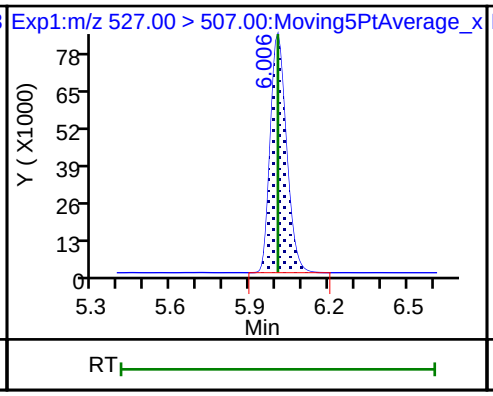
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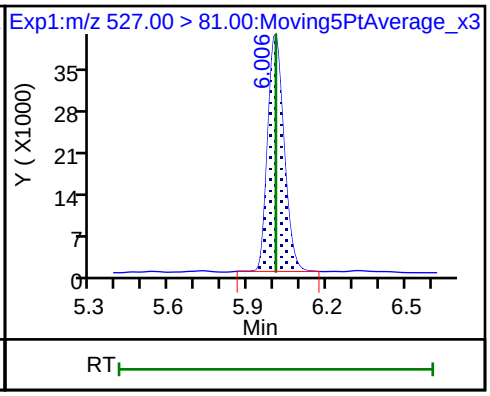
29 Perfluorononanesulfonic acid



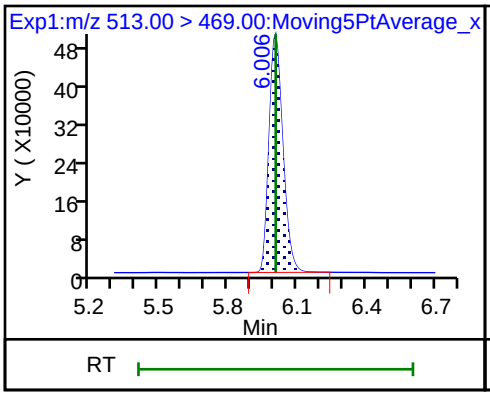
33 8:2 FTS



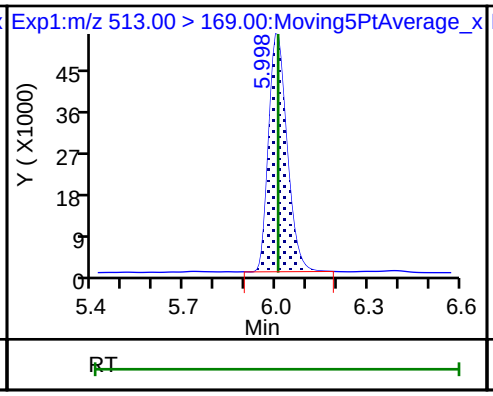
33 8:2 FTS



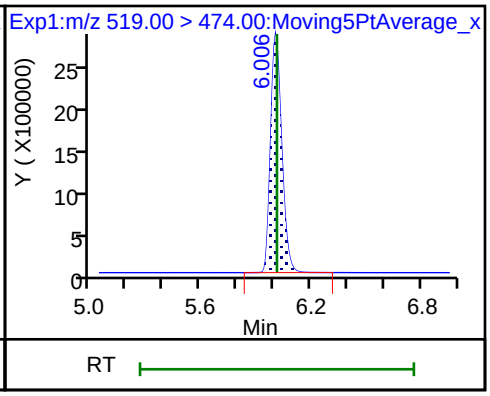
30 Perfluorodecanoic acid



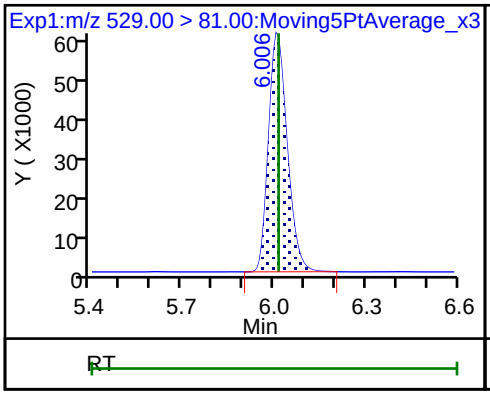
30 Perfluorodecanoic acid



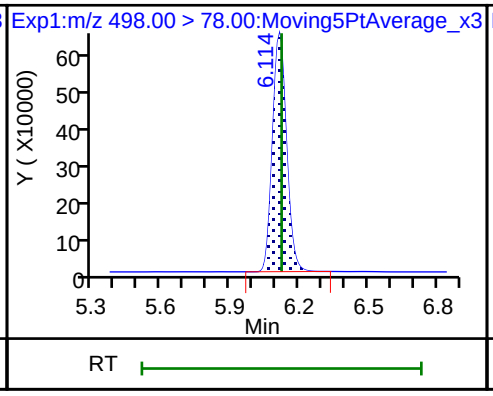
D 32 13C6 PFDA



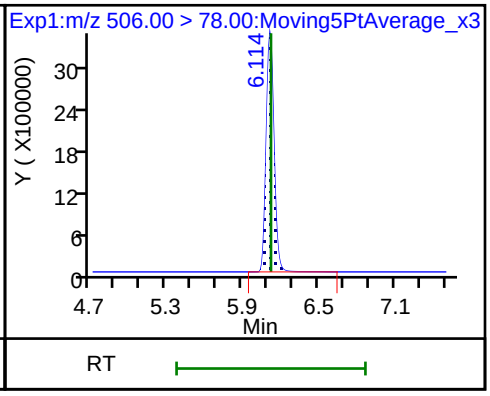
D 31 M2-8:2 FTS



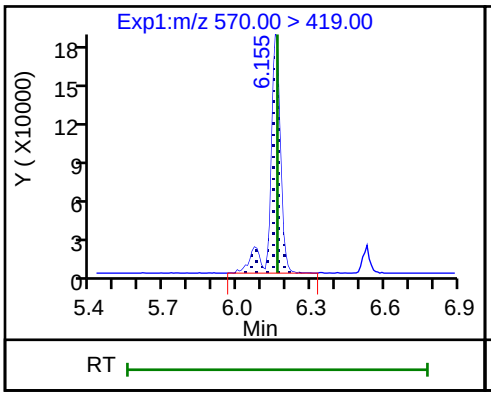
34 Perfluorooctanesulfonamide



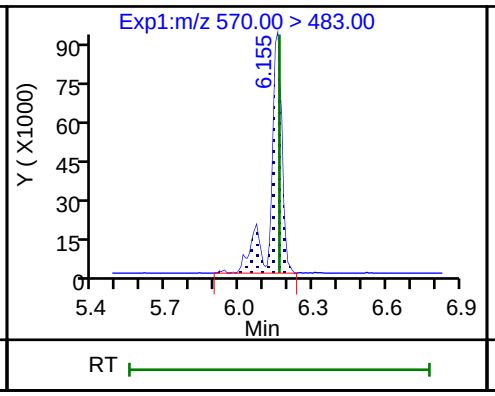
D 35 13C8 FOSA



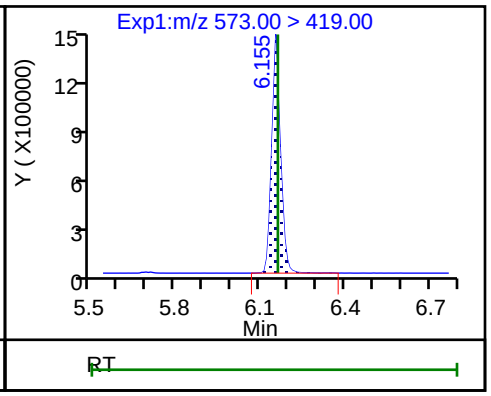
36 NMeFOSAA



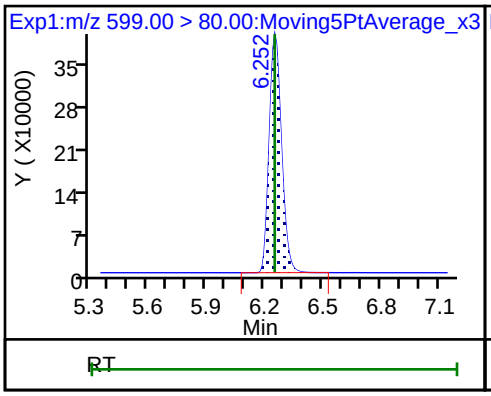
36 NMeFOSAA



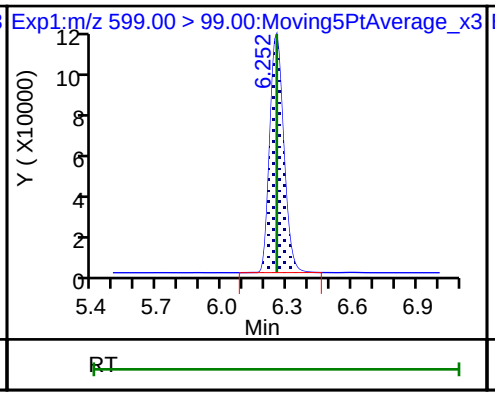
D 37 d3-NMeFOSAA



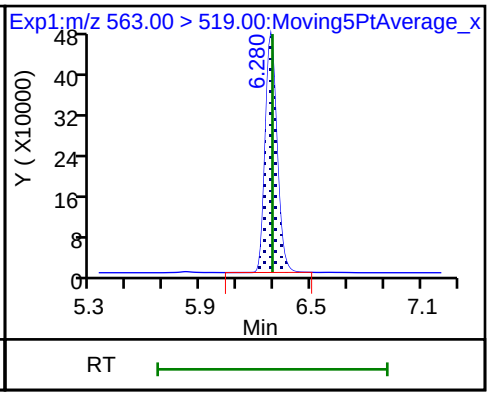
38 Perfluorodecanesulfonic acid



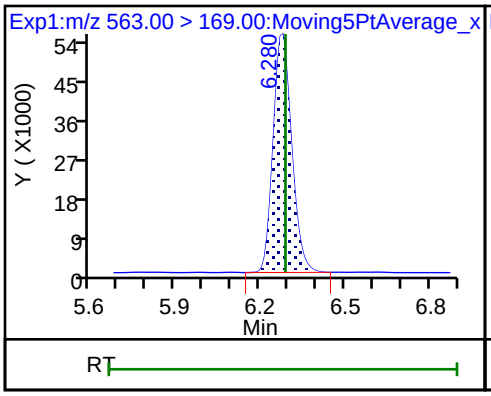
38 Perfluorodecanesulfonic acid



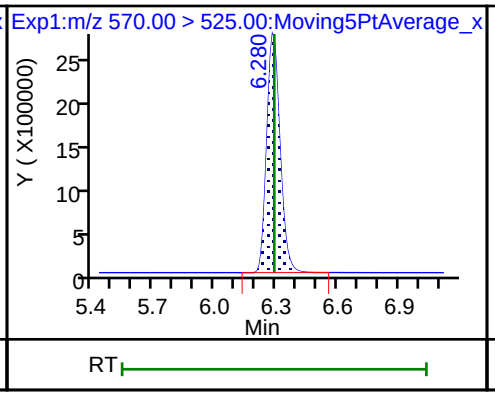
39 Perfluoroundecanoic acid



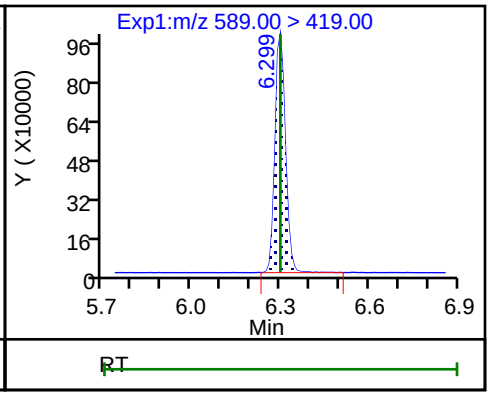
39 Perfluoroundecanoic acid



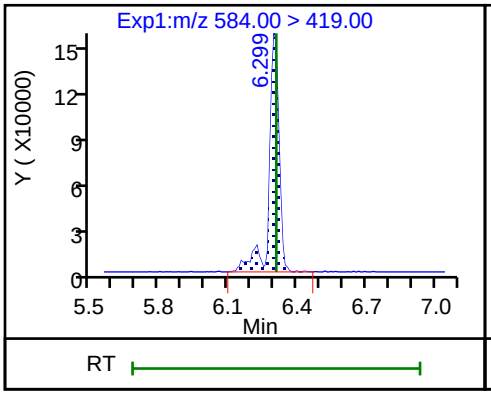
D 40 13C7 PFUnA



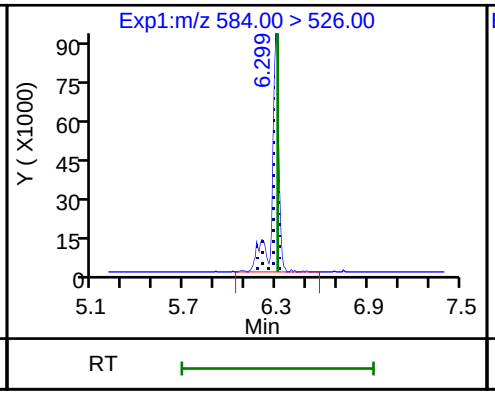
D 41 d5-NEtFOSAA



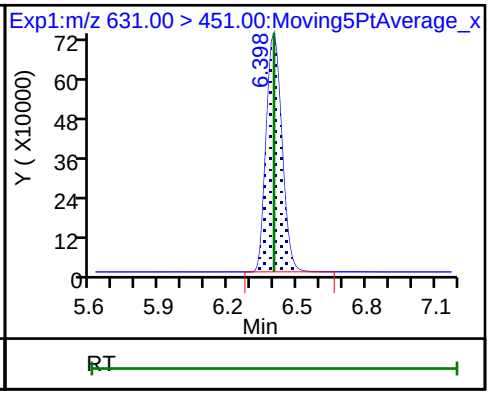
42 NEtFOSAA



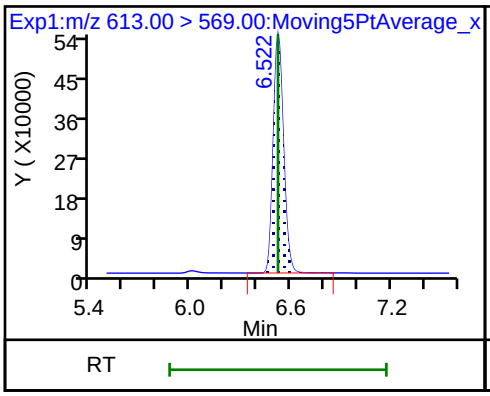
42 NEtFOSAA



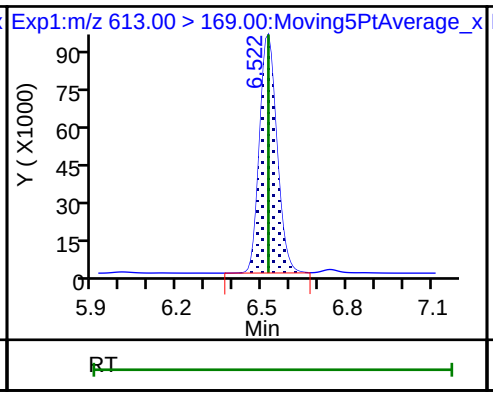
43 11ClFOS



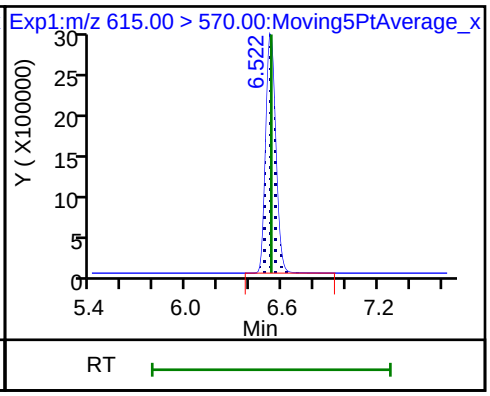
46 Perfluorododecanoic acid



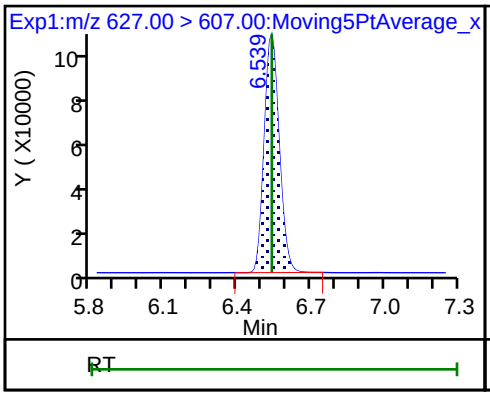
46 Perfluorododecanoic acid



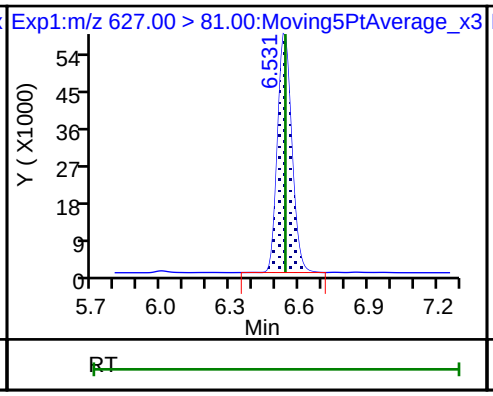
D 45 13C2-PFDoDA



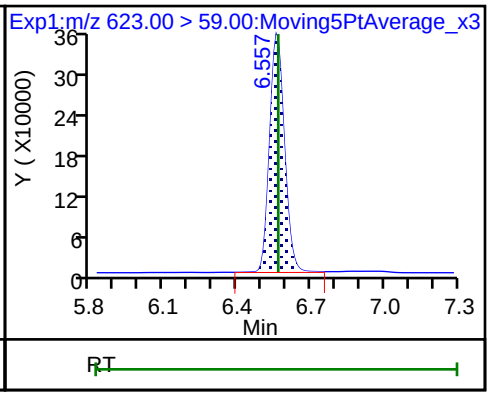
48 10:2 FTS



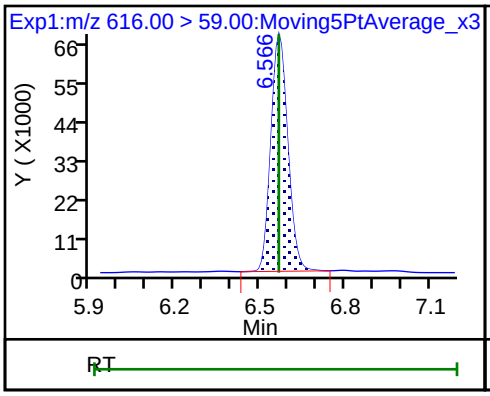
48 10:2 FTS



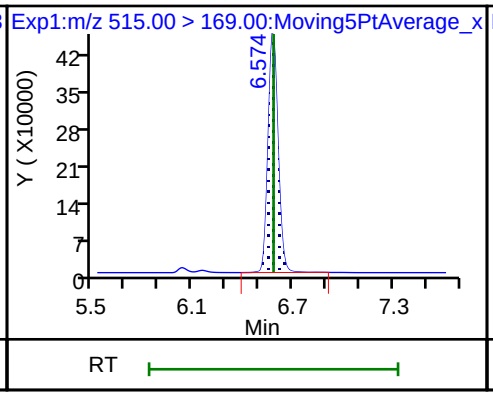
D 44 d7-N-MeFOSE-M



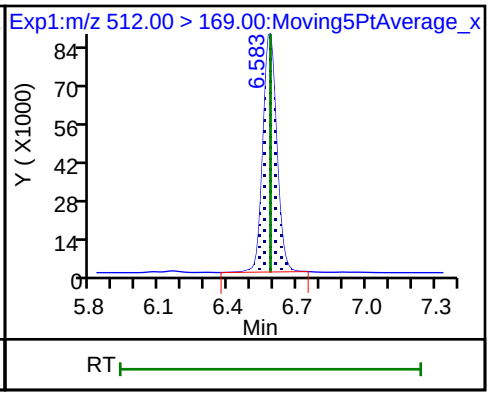
47 N-MeFOSE-M



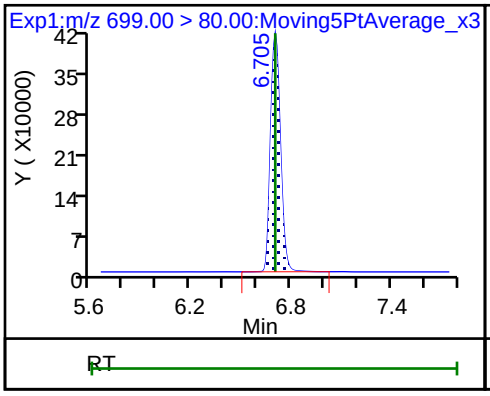
D 49 d3-NMePFOSA



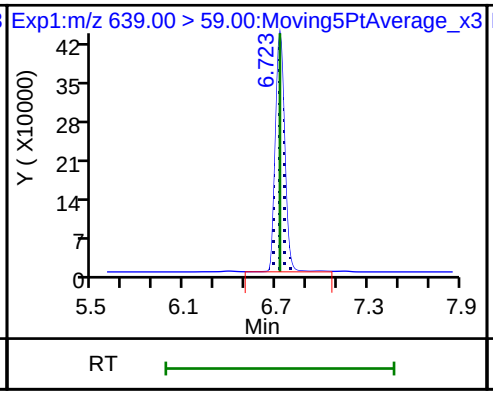
50 NMeFOSA



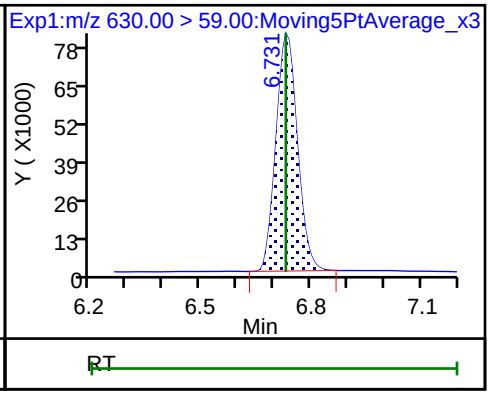
53 PFDoS



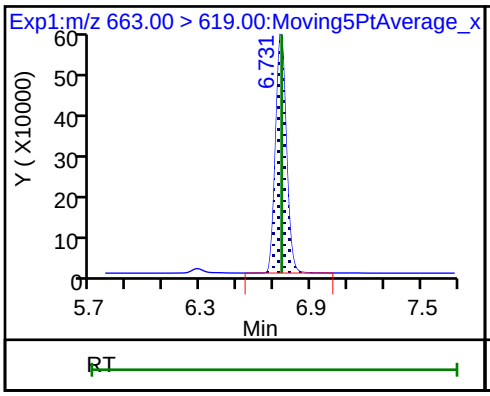
D 51 d9-N-EtFOSE-M



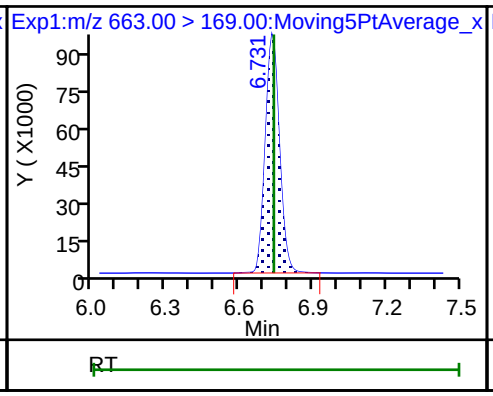
52 N-EtFOSE-M



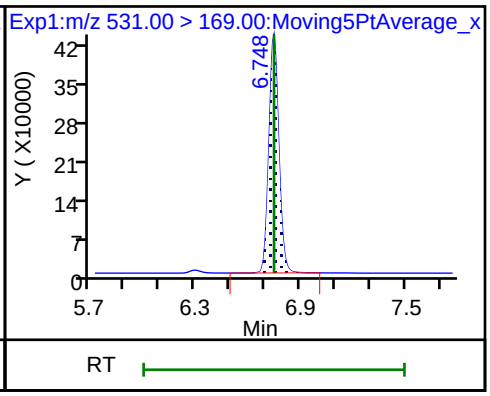
56 Perfluorotridecanoic acid



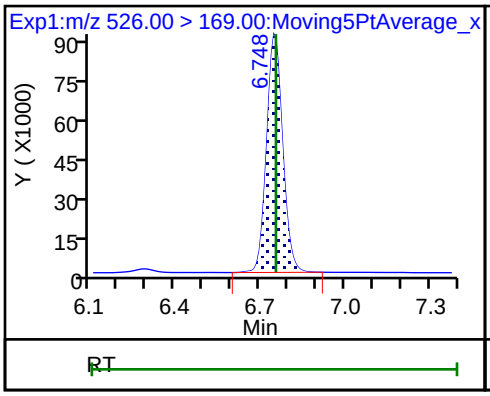
56 Perfluorotridecanoic acid



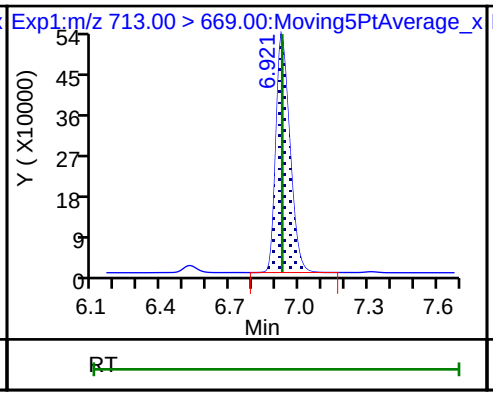
D 54 d5-NEtPFOSA



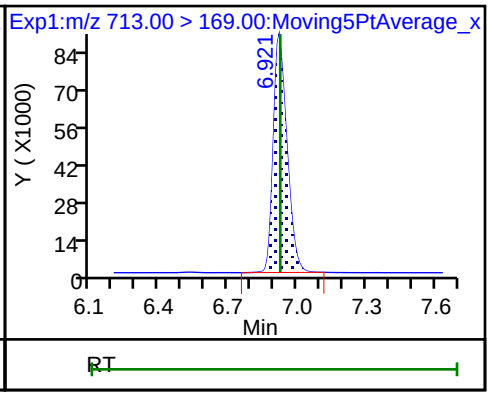
55 N-EtFOSA-M



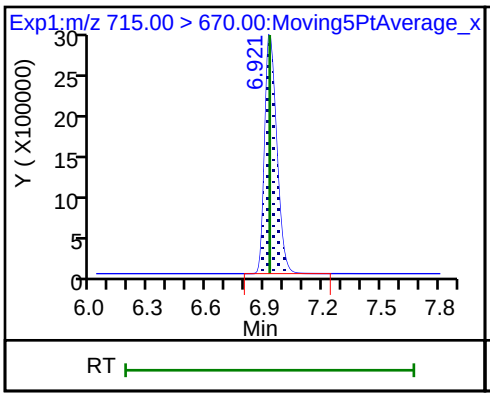
57 Perfluorotetradecanoic acid



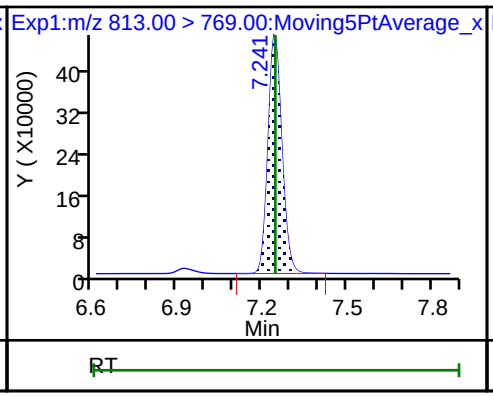
57 Perfluorotetradecanoic acid



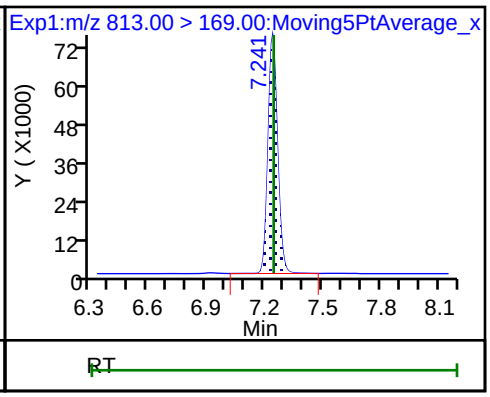
D 58 13C2 PFTeDA



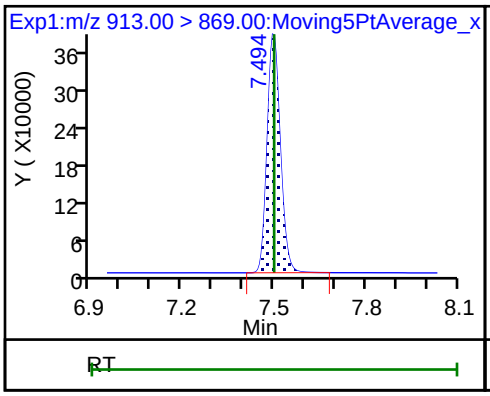
59 Perfluorohexadecanoic acid



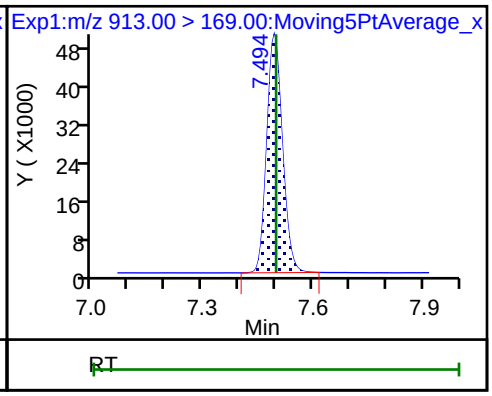
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCVIS 410-240466/1 Calibration Date: 04/04/2022 07:32

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR04-01.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8343	0.8092		0.485	0.500	-3.0	30.0
PFMPA	AveID	0.8139	0.7638		0.469	0.500	-6.2	30.0
3:3 FTCA	AveID	0.0595	0.0514		0.432	0.500	-13.6	30.0
Perfluoropentanoic acid	AveID	1.030	0.9781		0.475	0.500	-5.0	30.0
Perfluorobutanesulfonic acid	AveID	0.9609	0.9357		0.431	0.443	-2.6	30.0
PFMBA	AveID	0.8283	0.7953		0.480	0.500	-4.0	30.0
PFEESA	AveID	3.411	3.248		0.424	0.445	-4.8	30.0
NFDHA	AveID	0.2829	0.2645		0.468	0.500	-6.5	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.779	3.489		0.431	0.467	-7.7	30.0
Perfluorohexanoic acid	AveID	0.8748	0.8170		0.467	0.500	-6.6	30.0
Perfluoropentanesulfonic acid	AveID	0.8840	0.8623		0.458	0.469	-2.4	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.119	2.018		0.476	0.500	-4.8	30.0
Perfluoroheptanoic acid	AveID	0.9550	0.9223		0.483	0.500	-3.4	30.0
Perfluorohexanesulfonic acid	AveID	0.9729	0.9869		0.463	0.456	1.4	30.0
DONA	AveID	1.642	1.522		0.438	0.473	-7.3	30.0
5:3 FTCA	AveID	0.1923	0.1828		0.475	0.500	-5.0	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.213	4.704		0.428	0.474	-9.8	30.0
Perfluoroheptanesulfonic acid	AveID	0.9728	0.9342		0.457	0.476	-4.0	30.0
Perfluorooctanoic acid	AveID	0.8951	0.8899		0.497	0.500	-0.6	30.0
Perfluorooctanesulfonic acid	AveID	1.074	1.068		0.460	0.463	-0.5	30.0
Perfluorononanoic acid	AveID	0.8515	0.8945		0.525	0.500	5.0	30.0
7:3 FTCA	AveID	0.1001	0.1081		0.539	0.500	7.9	30.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.388	2.292		0.446	0.465	-4.0	30.0
Perfluorononanesulfonic acid	AveID	0.9378	0.8514		0.436	0.480	-9.2	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.492	6.869		0.439	0.479	-8.3	30.0
Perfluorodecanoic acid	AveID	0.8690	0.8436		0.485	0.500	-2.9	30.0
Perfluorooctanesulfonamide	AveID	1.005	0.9811		0.488	0.500	-2.4	30.0
NMeFOSAA	AveID	0.8805	0.8115		0.460	0.500	-7.8	30.0
Perfluorodecanesulfonic acid	AveID	1.057	1.066		0.486	0.482	0.9	30.0
Perfluoroundecanoic acid	AveID	0.8224	0.8216		0.500	0.500	-0.0	30.0
NEtFOSAA	AveID	0.9486	0.8493		0.448	0.500	-10.5	30.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonic acid	AveID	2.017	2.067		0.477	0.465	2.5	30.0
Perfluorododecanoic acid	AveID	0.8799	0.8881		0.505	0.500	0.9	30.0
1H,1H,2H,2H-perfluorododecan esulfonic acid (10:2)	AveID	9.352	8.341		0.430	0.482	-10.8	30.0
2-(N-methylperfluoro-1-octanes ulfonamido) ethanol	AveID	0.9930	0.9271		0.467	0.500	-6.6	30.0
NMeFOSA	AveID	1.012	0.9336		0.461	0.500	-7.8	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCVIS 410-240466/1 Calibration Date: 04/04/2022 07:32

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR04-01.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	1.031	0.9876		0.464	0.484	-4.2	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9193	0.8242		0.448	0.500	-10.3	30.0
Perfluorotridecanoic acid	AveID	0.8786	0.8592		0.489	0.500	-2.2	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.093	0.9596		0.439	0.500	-12.2	30.0
Perfluorotetradecanoic acid	AveID	0.8671	0.8638		0.498	0.500	-0.4	30.0
Perfluorohexadecanoic acid	AveID	0.6471	0.6512		0.503	0.500	0.6	30.0
Perfluorooctadecanoic acid	AveID	0.4397	0.4138		0.471	0.500	-5.9	30.0
13C4 PFBA	Ave	869605	854980		9.83	10.0	-1.7	30.0
13C5 PFPeA	Ave	726568	745667		10.3	10.0	2.6	30.0
13C3 PFBS	Ave	939925	964783		9.55	9.30	2.6	30.0
M2-4:2 FTS	Ave	40589	44276		10.2	9.34	9.1	30.0
13C5 PFHxA	Ave	886590	927507		10.5	10.0	4.6	30.0
13C3 HFPO-DA	Ave	110442	115254		10.4	10.0	4.4	30.0
13C3 PFHxS	Ave	838000	878503		9.92	9.46	4.8	30.0
13C4 PFHpA	Ave	888220	992366		11.2	10.0	11.7	30.0
M2-6:2 FTS	Ave	25548	29421		10.9	9.50	15.2	30.0
13C8 PFOA	Ave	975918	1020004		10.5	10.0	4.5	30.0
13C8 PFOS	Ave	810201	822212		9.70	9.56	1.5	30.0
13C9 PFNA	Ave	1017403	1053027		10.4	10.0	3.5	30.0
13C6 PFDA	Ave	1080461	1138073		10.5	10.0	5.3	30.0
M2-8:2 FTS	Ave	22380	26431		11.3	9.58	18.1	30.0
13C8 FOSA	Ave	1294000	1328216		10.3	10.0	2.6	30.0
d3-NMeFOSAA	Ave	281493	293725		10.4	10.0	4.3	30.0
13C7 PFUnA	Ave	1127314	1157723		10.3	10.0	2.7	30.0
d5-NEtFOSAA	Ave	218834	235800		10.8	10.0	7.8	30.0
13C2-PFDoDA	Ave	1193672	1216687		10.2	10.0	1.9	30.0
d7-N-MeFOSE-M	Ave	136038	140913		10.4	10.0	3.6	30.0
d3-NMePFOSA	Ave	172223	171956		9.98	10.0	-0.2	30.0
d9-N-EtFOSE-M	Ave	164086	167916		10.2	10.0	2.3	30.0
d5-NEtPFOSA	Ave	157541	157812		10.0	10.0	0.2	30.0
13C2 PFTeDA	Ave	1206116	1143207		9.48	10.0	-5.2	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-01.d
Lims ID: CCVIS 1_CAL2
Client ID:
Sample Type: CCVIS
Inject. Date: 04-Apr-2022 07:32:50 ALS Bottle#: 20003 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVIS 1_CAL2
Misc. Info.: Plate: 1 Rack: 1 410-0053975-001
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 05-Apr-2022 06:28:36 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1645

First Level Reviewer: carpenterr Date: 04-Apr-2022 08:10:53
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.671	3.671	0.0	1.000	345930	0.4850		97.0	774	
D 2 13C4 PFBA										
217.00 > 172.00	3.671	3.671	0.0		8549798	9.83		98.3	117894	
63 PFECA F										
229.00 > 85.00	3.898	3.898	0.0	0.931	284775	0.4692		93.8	7371	
67 3:3 FTCA										
241.00 > 177.00	4.180	4.180	0.0	0.998	19164	0.4322	Target=1.29	86.4	1317	
241.00 > 117.00	4.180	4.180	0.0	0.998	14744		1.30(0.64-1.93)		502	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.187	4.187	0.0	1.000	364656	0.4750		95.0	1403	
D 4 13C5 PFPeA										
268.00 > 223.00	4.187	4.187	0.0		7456670	10.3		103	68701	
D 6 13C3 PFBS										
302.00 > 80.00	4.239	4.239	0.0		8972483	9.55		103	581930	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.239	4.239	0.0	1.000	399447	0.4309	Target=2.85	97.4	522	
299.00 > 99.00	4.239	4.239	0.0	1.000	136949		2.92(1.42-4.27)		495	
64 PFECA A										
279.00 > 85.00	4.309	4.309	0.0	1.029	296532	0.4801		96.0	10796	
65 PES										
315.00 > 135.00	4.397	4.397	0.0	0.956	1340633	0.4237	Target=11.66	95.2	45818	
315.00 > 83.00	4.397	4.397	0.0	0.956	120538		11.12(5.83-17.49)		130	
68 PFECA B										
295.00 > 201.00	4.521	4.521	0.0	0.983	122669	0.4676		93.5	5362	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.551	4.551	0.0	0.998	72132	0.4310	Target=1.85	92.3	5283	
327.00 > 81.00	4.560	4.551	0.009	1.000	46378		1.56(0.93-2.78)		1026	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.560	4.560	0.0		413540	10.2		109	14961	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.590	4.590	0.0	0.998	378903	0.4670	Target=13.79	93.4	3427	
313.00 > 119.00	4.590	4.590	0.0	0.998	27102		13.98(6.90-20.69)		1505	
D 9 13C5 PFHxA										
318.00 > 273.00	4.600	4.600	0.0		9275071	10.5		105	136538	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.618	4.618	0.0	1.089	390188	0.4575	Target=3.00	97.6	22292	
349.00 > 99.00	4.610	4.618	-0.008	1.087	126196		3.09(1.50-4.50)		4859	
12 HFPO-DA										
329.00 > 285.00	4.726	4.726	0.0	1.000	116300	0.4761		95.2	3060	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.726	4.726	0.0		1152539	10.4		104	62304	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.989	4.989	0.0	1.000	457635	0.4829	Target=3.13	96.6	3880	
363.00 > 169.00	4.980	4.989	-0.009	0.998	141109		3.24(1.57-4.70)		3511	
D 17 13C4 PFHpA										
367.00 > 322.00	4.989	4.989	0.0		9923659	11.2		112	108450	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.989	4.989	0.0	1.000	395345	0.4626	Target=3.05	101	131582	
399.00 > 99.00	4.989	4.989	0.0	1.000	122069		3.24(1.52-4.57)		39300	
D 16 13C3 PFHxS										
402.00 > 80.00	4.989	4.989	0.0		8310634	9.92		105	1669300	
18 DONA										
377.00 > 251.00	5.031	5.031	0.0	1.008	713845	0.4380		92.7	11956	
62 5:3 FTCA										
341.00 > 237.00	5.053	5.053	0.0	1.099	84752	0.4751	Target=3.13	95.0	1469	
341.00 > 217.00	5.053	5.053	0.0	1.099	24816		3.42(1.56-4.69)		913	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.338	5.338	0.0		279495	10.9		115	19105	
19 6:2 FTS										
427.00 > 407.00	5.338	5.338	0.0	1.000	65605	0.4277	Target=1.69	90.2	3635	
427.00 > 81.00	5.338	5.338	0.0	1.000	41411		1.58(0.85-2.54)		2172	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.344	5.344	0.0	1.071	390670	0.4571	Target=3.19	96.0	27014	
449.00 > 99.00	5.344	5.344	0.0	1.071	126920		3.08(1.59-4.78)		11827	
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.357	5.357	0.0	1.000	453876	0.4971	Target=2.38	99.4	20097	
413.00 > 169.00	5.351	5.357	-0.006	0.999	188471		2.41(1.19-3.57)		20373	M
D 22 13C8 PFOA										
421.00 > 376.00	5.357	5.357	0.0		10200043	10.5		105	613505	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.685	5.685	0.0	1.000	406417	0.4602	Target=3.70	99.5	728	
499.00 > 99.00	5.685	5.685	0.0	1.000	107025		3.80(1.85-5.54)		224	
D 25 13C8 PFOS										
507.00 > 80.00	5.685	5.685	0.0		7860342	9.70		101	327985	
26 Perfluorononanoic acid										
463.00 > 419.00	5.701	5.701	0.0	1.000	470988	0.5252	Target=4.37	105	5361	
463.00 > 169.00	5.701	5.701	0.0	1.000	97287		4.84(2.19-6.56)		3328	
D 27 13C9 PFNA										
472.00 > 427.00	5.701	5.701	0.0		10530267	10.4		104	357989	
66 7:3 FTCA										
441.00 > 317.00	5.799	5.799	0.0	1.261	50112	0.5395	Target=11.37	108	3024	
441.00 > 337.00	5.806	5.799	0.007	1.262	3879		12.92(5.69-17.06)		250	
28 9ClFOS										
531.00 > 351.00	5.865	5.865	0.0	1.032	876267	0.4463		96.0	38339	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.990	5.990	0.0	1.054	336016	0.4358	Target=3.34	90.8	16395	
549.00 > 99.00	5.990	5.990	0.0	1.054	102418		3.28(1.67-5.02)		6288	
33 8:2 FTS										
527.00 > 507.00	6.014	6.014	0.0	1.000	86958	0.4392	Target=2.06	91.7	5125	
527.00 > 81.00	6.014	6.014	0.0	1.000	42339		2.05(1.03-3.09)		671	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.014	6.014	0.0	1.000	480063	0.4854	Target=9.22	97.1	6719	
513.00 > 169.00	6.014	6.014	0.0	1.000	56012		8.57(4.61-13.82)		1103	
D 32 13C6 PFDA										
519.00 > 474.00	6.014	6.014	0.0		11380730	10.5		105	535595	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.014	6.014	0.0		253208	11.3		118	14734	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.115	6.115	0.0	1.000	651576	0.4880		97.6	17133	
D 35 13C8 FOSA										
506.00 > 78.00	6.115	6.115	0.0		13282158	10.3		103	392659	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.163	6.163	0.0		2937246	10.4		104	420371	
36 NMeFOSAA										
570.00 > 419.00	6.171	6.171	0.0	1.001	119183	0.4599	Target=1.84	92.0	4218	
570.00 > 483.00	6.156	6.171	-0.015	0.999	66598		1.79(0.92-2.77)		153	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.262	6.262	0.0	1.101	422567	0.4863	Target=3.50	101	15979	
599.00 > 99.00	6.262	6.262	0.0	1.101	115200		3.67(1.75-5.26)		6548	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.290	6.290	0.0	1.000	475612	0.4995	Target=8.26	99.9	3567	
563.00 > 169.00	6.290	6.290	0.0	1.000	60510		7.86(4.13-12.39)		4414	
D 40 13C7 PFUnA										
570.00 > 525.00	6.290	6.290	0.0		11577229	10.3		103	256949	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.309	6.309	0.0		2358002	10.8		108	506162	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.309	6.309	0.0	1.000	100132	0.4476	Target=1.65	89.5	158	
584.00 > 526.00	6.309	6.309	0.0	1.000	63180		1.58(0.82-2.47)		73.4	
43 11ClFOS										
631.00 > 451.00	6.410	6.410	0.0	1.127	790115	0.4765		102	27833	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.531	6.531	0.0	1.000	540283	0.5047	Target=5.80	101	2500	
613.00 > 169.00	6.531	6.531	0.0	1.000	88350		6.12(2.90-8.70)		1323	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.531	6.531	0.0		12166873	10.2		102	480055	
48 10:2 FTS										
627.00 > 607.00	6.549	6.549	0.0	1.089	106258	0.4299	Target=1.80	89.2	8477	
627.00 > 81.00	6.540	6.549	-0.009	1.087	62995		1.69(0.90-2.69)		2435	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.558	6.558	0.0		1409125	10.4		104	7636	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.566	0.0	1.001	65323	0.4668		93.4	751	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.575	6.575	0.0		1719564	9.98		99.8	3368	
50 NMeFOSA										
512.00 > 169.00	6.575	6.575	0.0	1.000	80271	0.4611		92.2	2716	
53 PFDoS										
699.00 > 80.00	6.715	6.715	0.0	1.181	393027	0.4635		95.8	8721	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.724	6.724	0.0		1679162	10.2		102	9311	
52 N-EtFOSE-M										
630.00 > 59.00	6.732	6.732	0.0	1.001	69201	0.4483		89.7	1014	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.740	0.0	1.032	522703	0.4890	Target=5.49	97.8	1522	
663.00 > 169.00	6.740	6.740	0.0	1.032	90569		5.77(2.75-8.24)		3807	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.740	0.0		1578124	10.0		100	10210	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.748	0.0	1.001	75720	0.4388		87.8	1749	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.928	6.928	0.0	1.000	493741	0.4981	Target=5.81	99.6	1033	
713.00 > 169.00	6.928	6.928	0.0	1.000	82251		6.00(2.91-8.72)		3928	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.928	0.0		11432072	9.48		94.8	378017	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.248	7.248	0.0	1.046	372230	0.5032	Target=5.99	101	1544	
813.00 > 169.00	7.248	7.248	0.0	1.046	62552		5.95(2.99-8.98)		3704	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.505	7.505	0.0	1.083	236551	0.4706	Target=7.27	94.1	6188	
913.00 > 169.00	7.499	7.505	-0.006	1.082	31827		7.43(3.63-10.90)		2684	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD2_00013 Amount Added: 200.00 Units: uL

Report Date: 05-Apr-2022 06:28:38 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-01.d

Injection Date: 04-Apr-2022 07:32:50 Instrument ID: 29347

Lims ID: CCVIS 1_CAL2

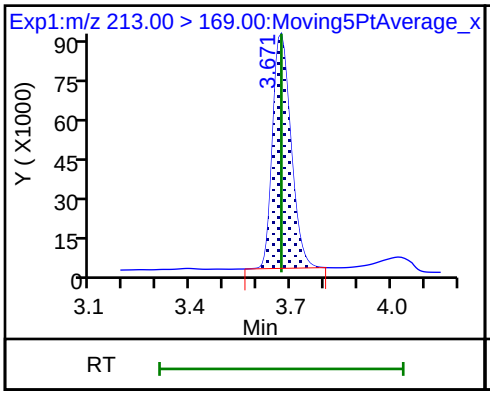
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20003 Worklist Smp#: 1

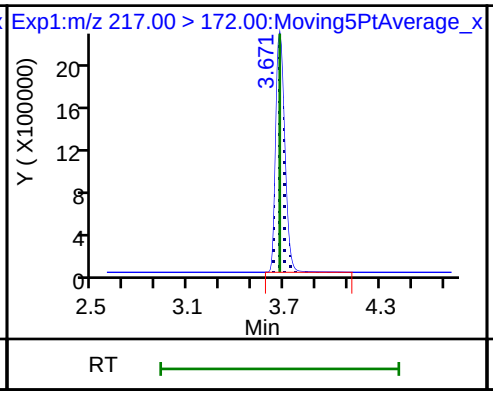
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

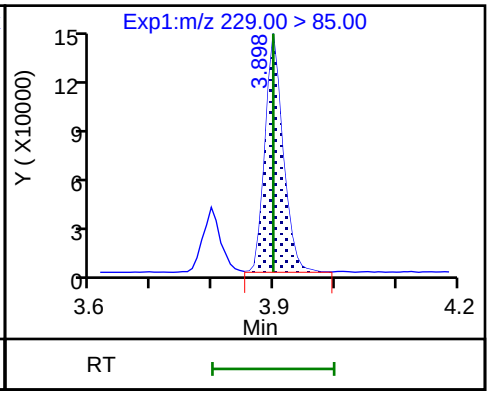
1 Perfluorobutanoic acid



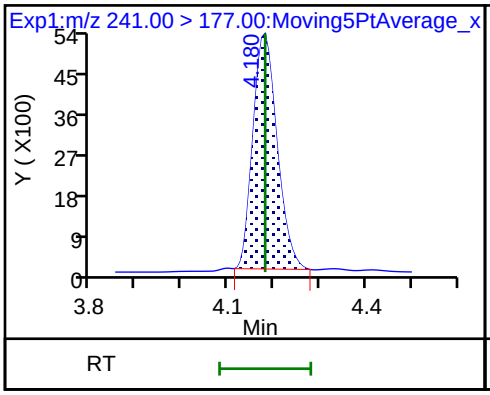
D 2 13C4 PFBA



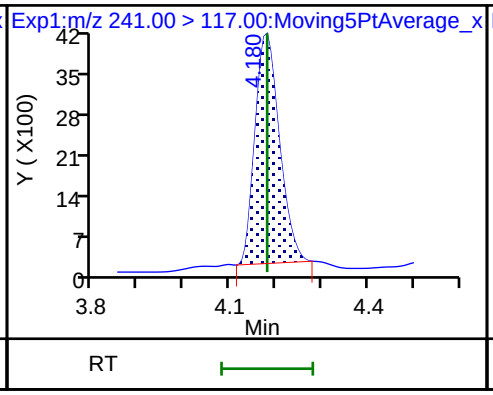
63 PFECA F



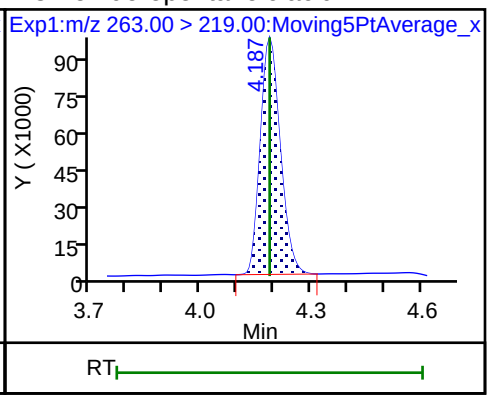
67 3:3 FTCA



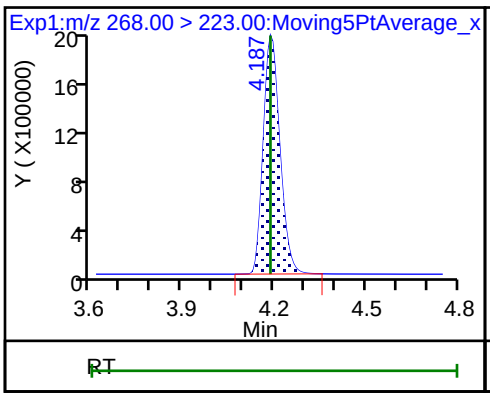
67 3:3 FTCA



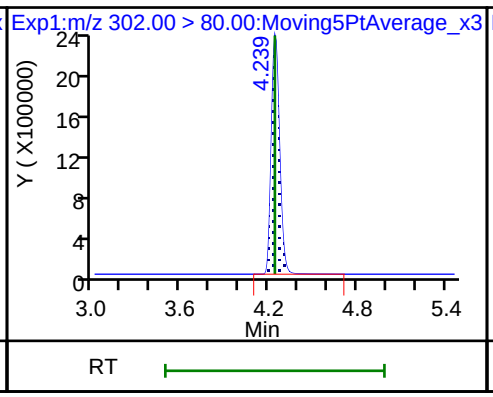
3 Perfluoropentanoic acid



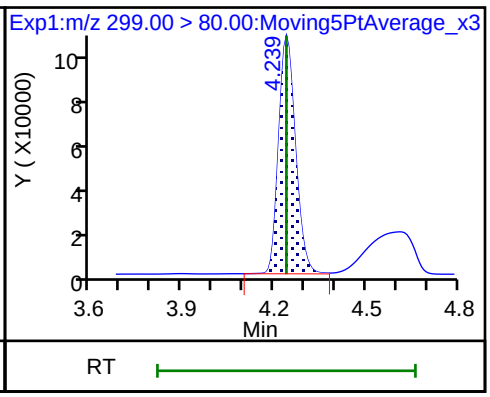
D 4 13C5 PFPeA



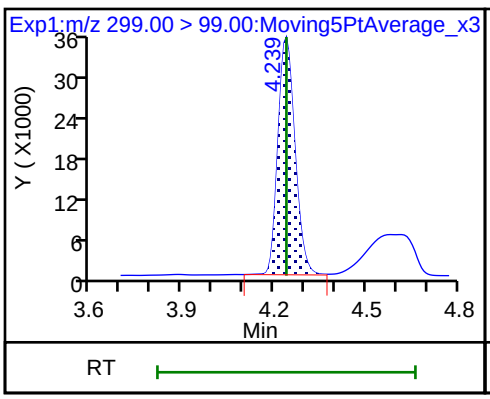
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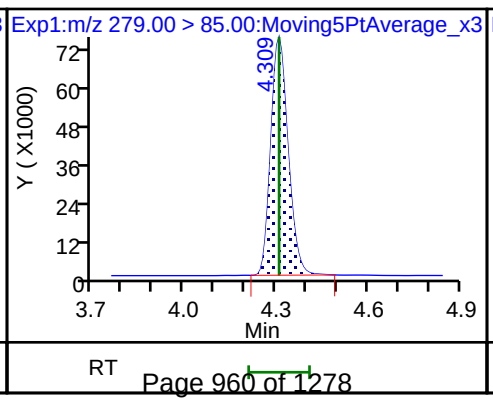
5 Perfluorobutanesulfonic acid



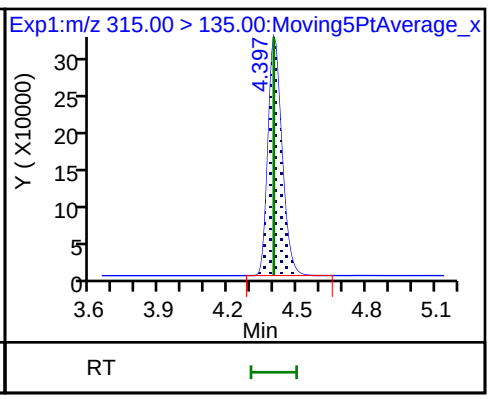
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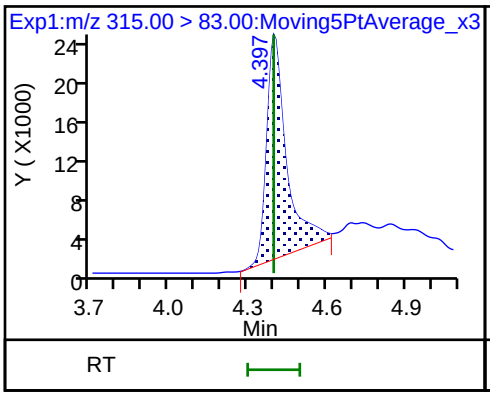
64 PFECA A



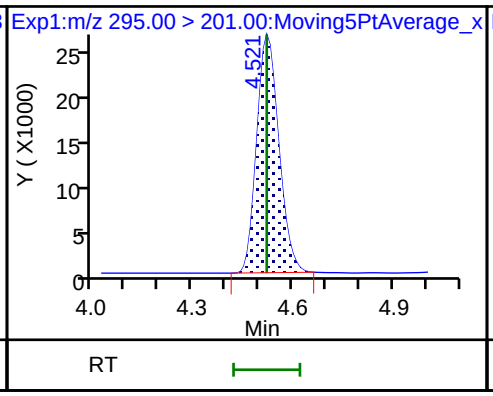
65 PES



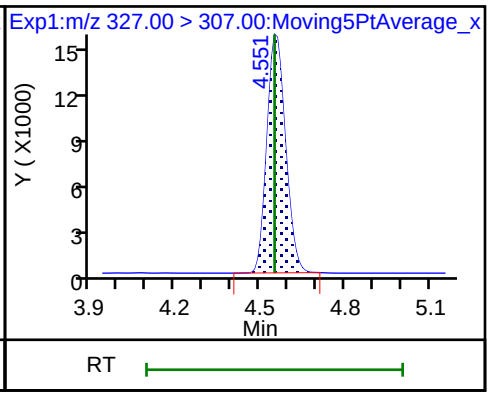
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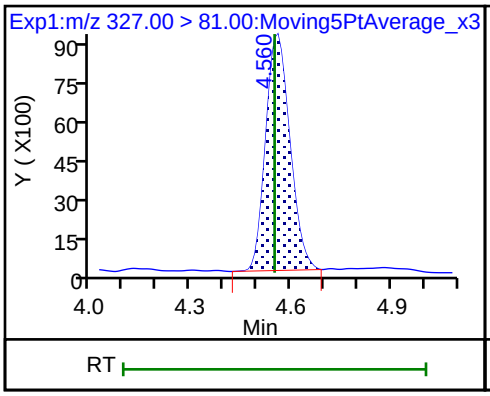
68 PFECA B



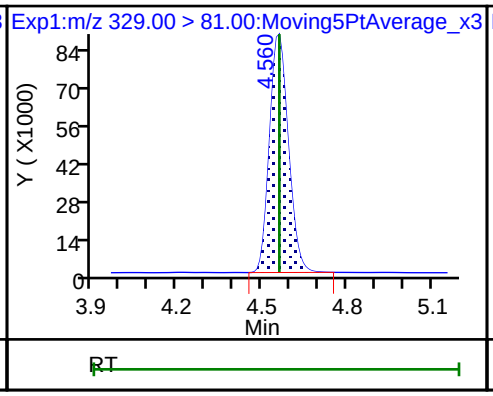
7 4:2 FTS



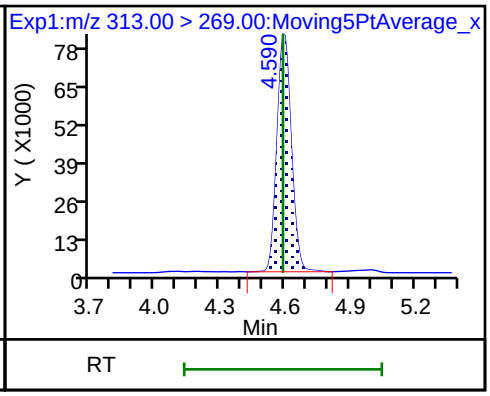
7 4:2 FTS



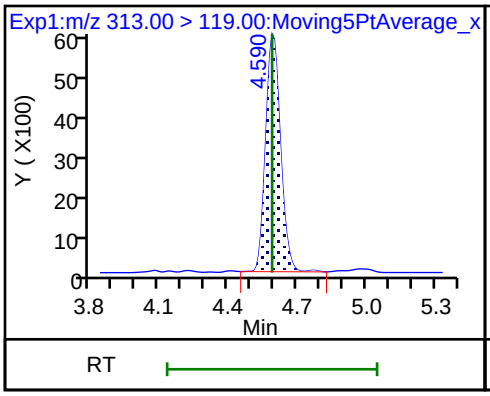
D 8 M2-4:2 FTS



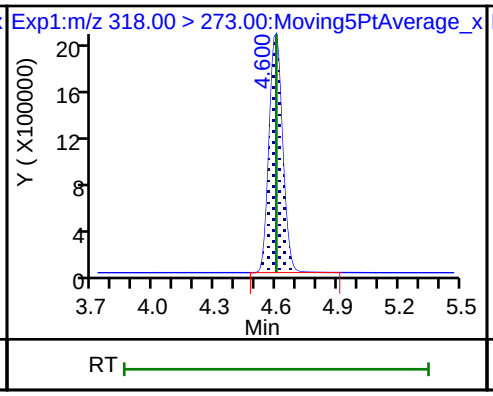
10 Perfluorohexanoic acid



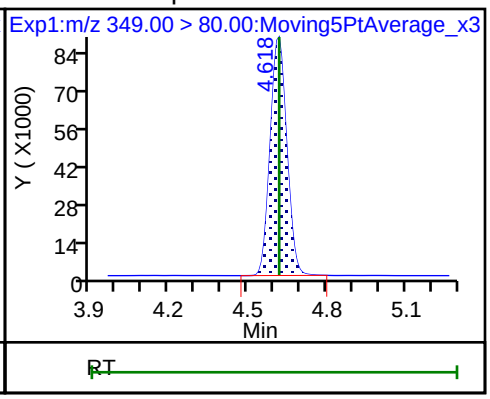
10 Perfluorohexanoic acid



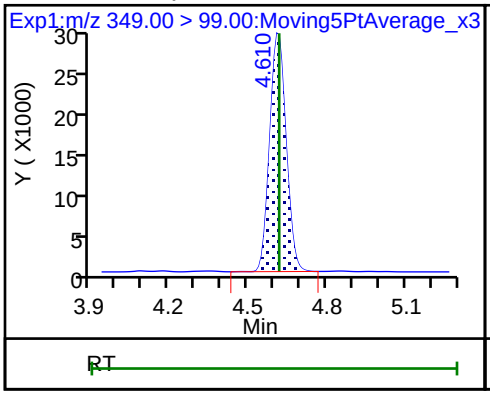
D 9 13C5 PFHxA



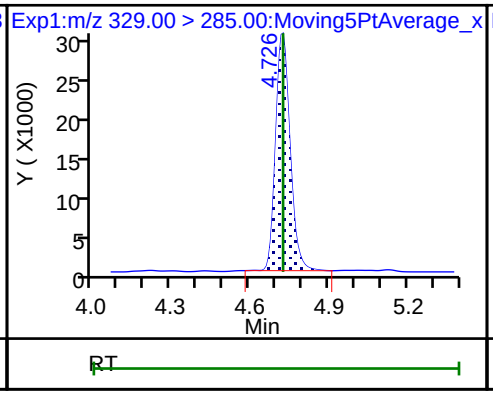
11 Perfluoropentanesulfonic acid



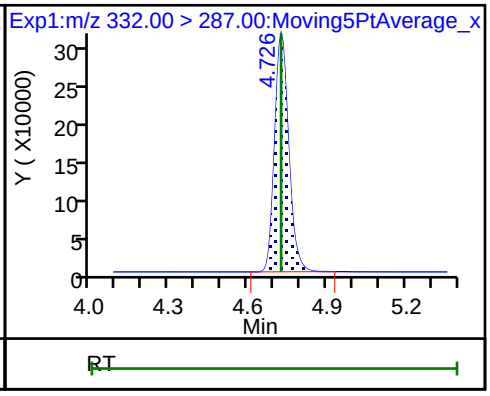
11 Perfluoropentanesulfonic acid



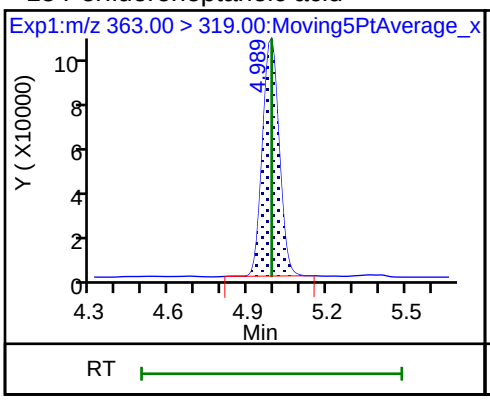
12 HFPO-DA



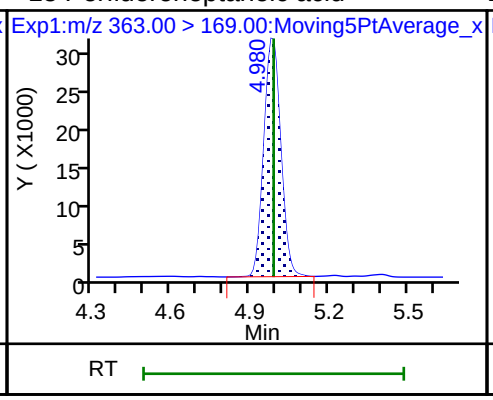
D 13 13C3 HFPO-DA



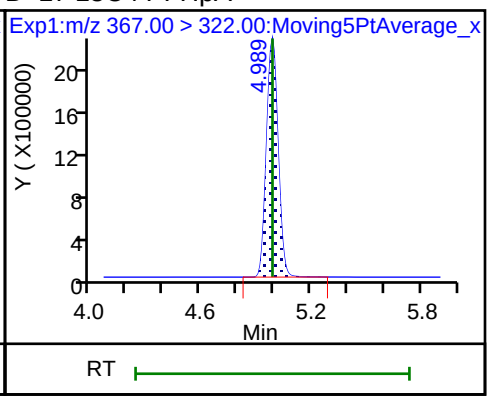
15 Perfluoroheptanoic acid



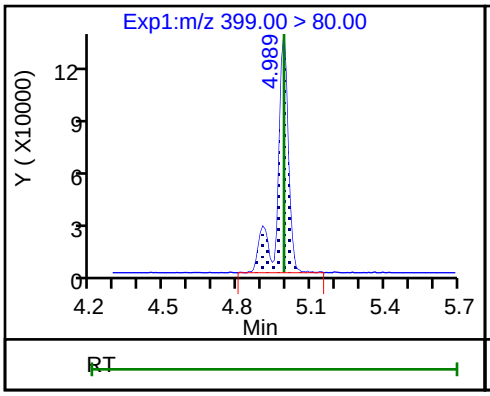
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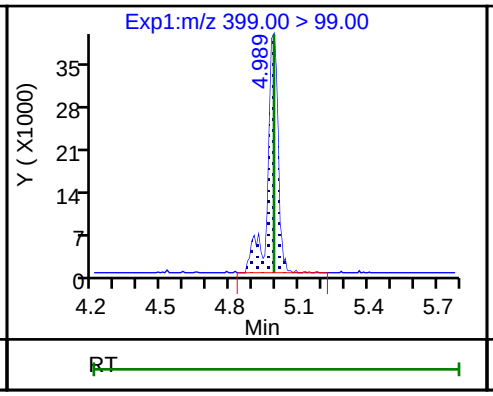
D 17 13C4 PFHpA



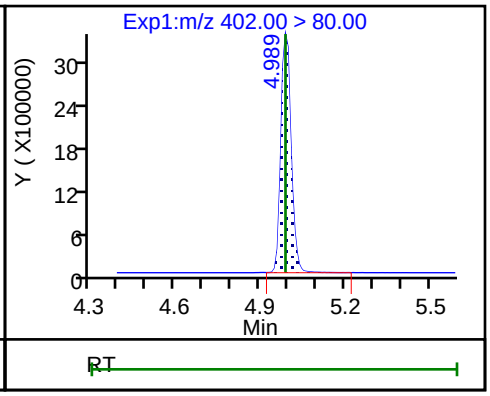
14 Perfluorohexanesulfonic acid



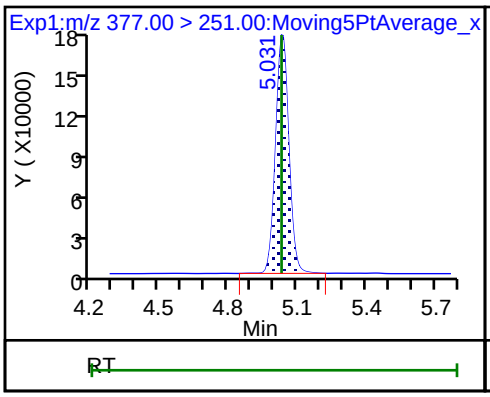
14 Perfluorohexanesulfonic acid



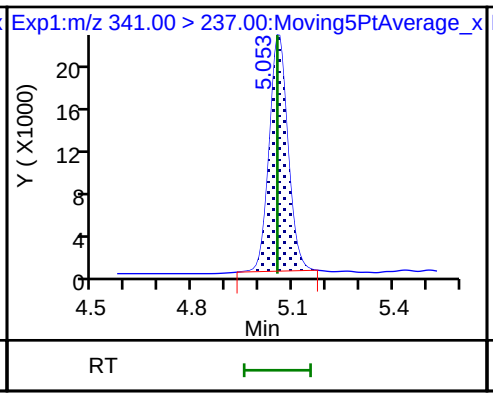
D 16 13C3 PFHxS



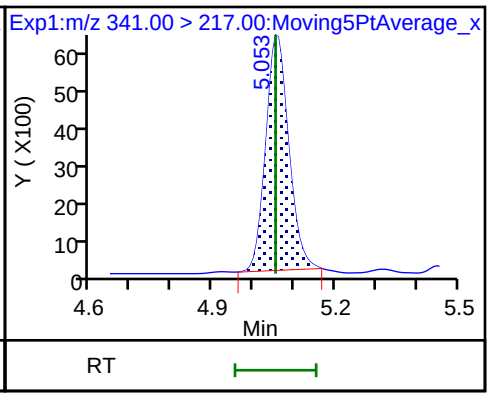
18 DONA



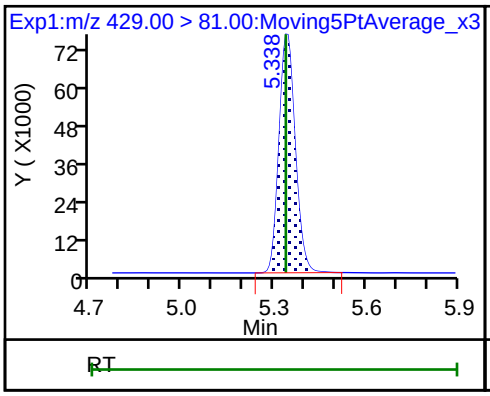
62 5:3 FTCA



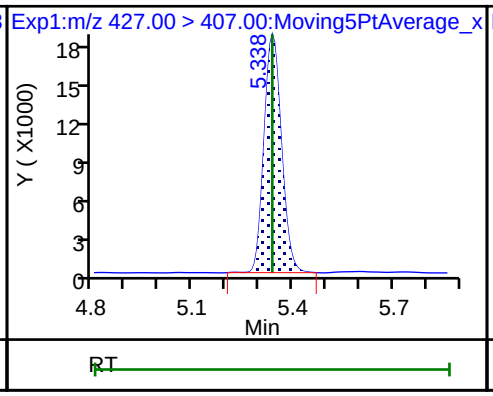
62 5:3 FTCA



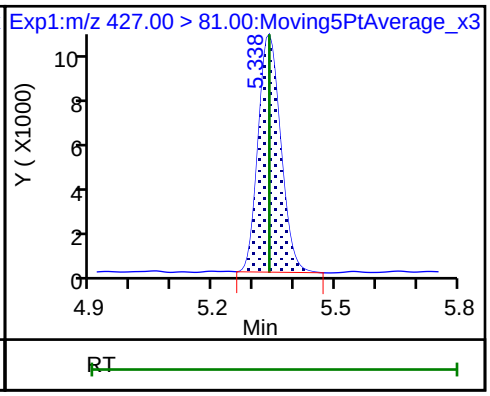
D 20 M2-6:2 FTS



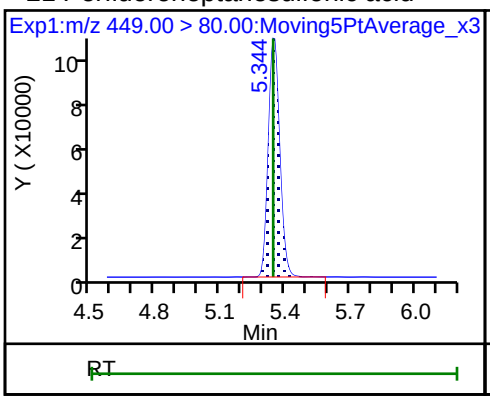
19 6:2 FTS



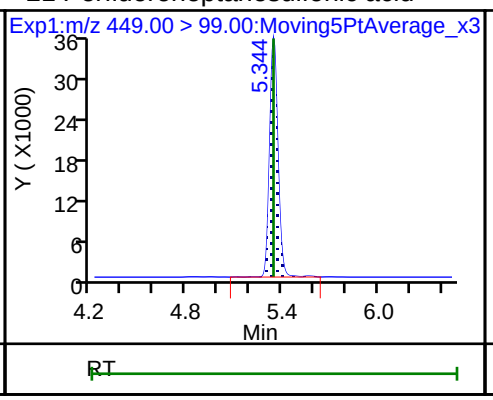
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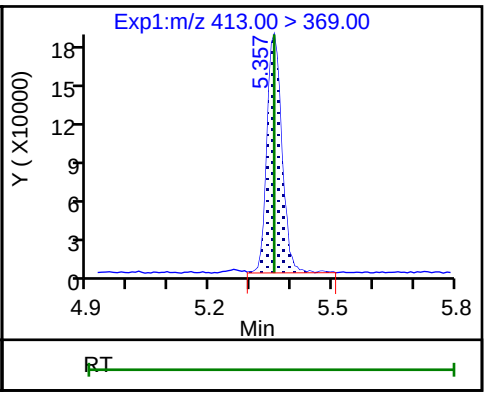
21 Perfluoroheptanesulfonic acid



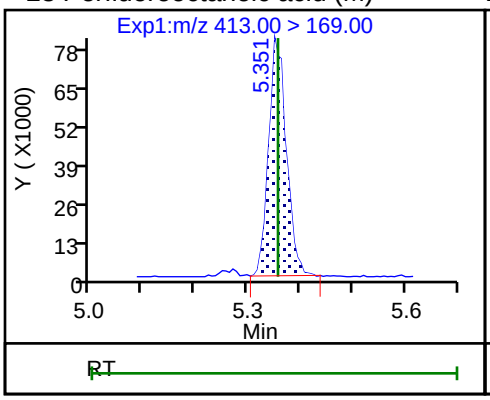
21 Perfluoroheptanesulfonic acid



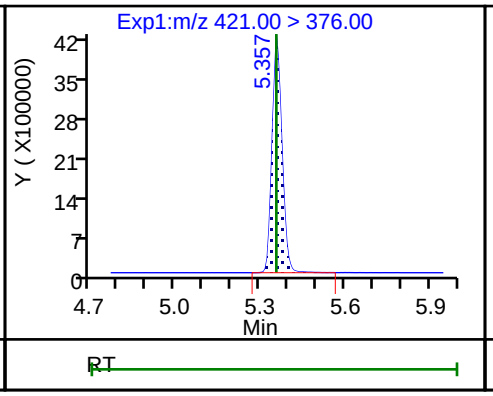
23 Perfluorooctanoic acid



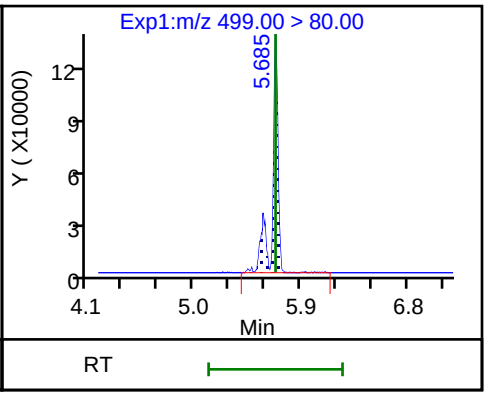
23 Perfluorooctanoic acid (M)



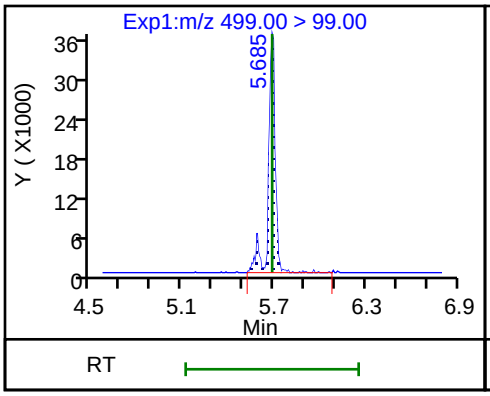
D 22 13C8 PFOA



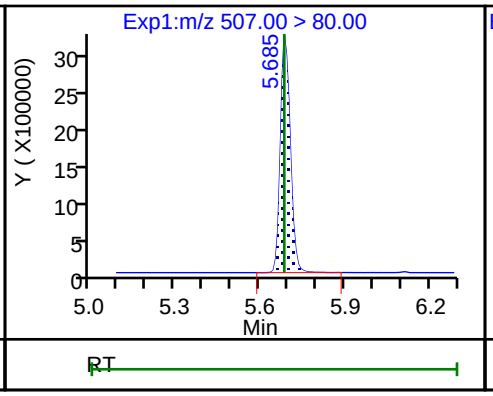
24 Perfluorooctanesulfonic acid



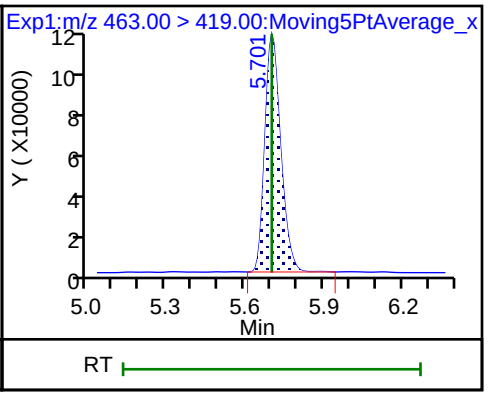
24 Perfluorooctanesulfonic acid



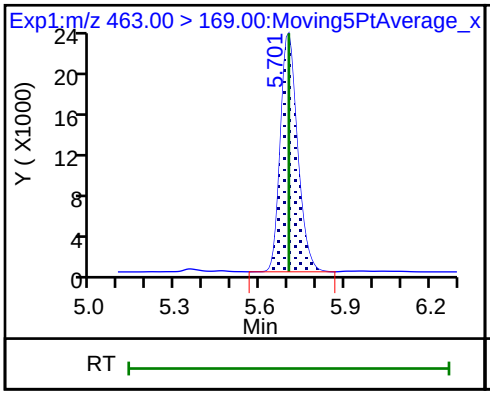
D 25 13C8 PFOS



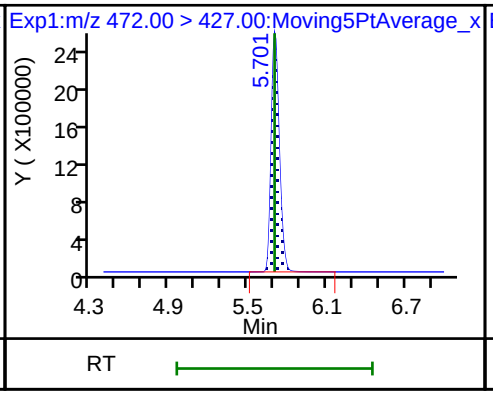
26 Perfluorononanoic acid



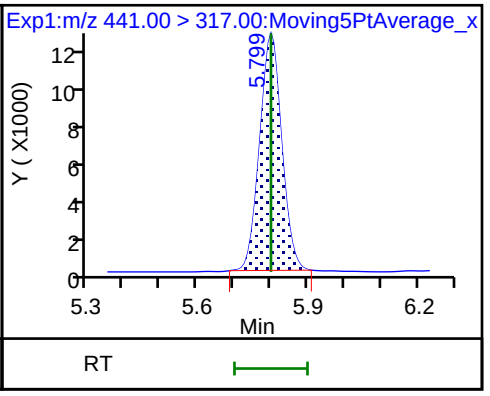
26 Perfluorononanoic acid



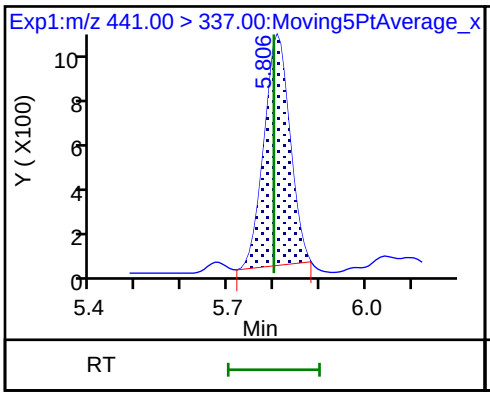
D 27 13C9 PFNA



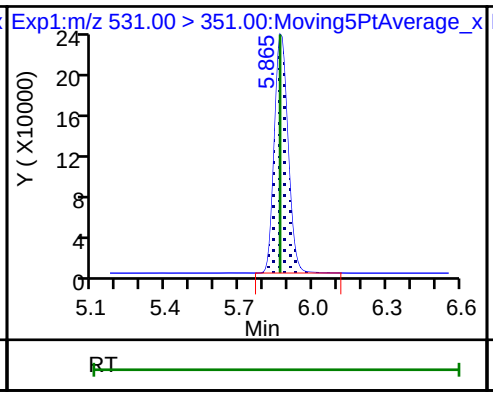
66 7:3 FTCA



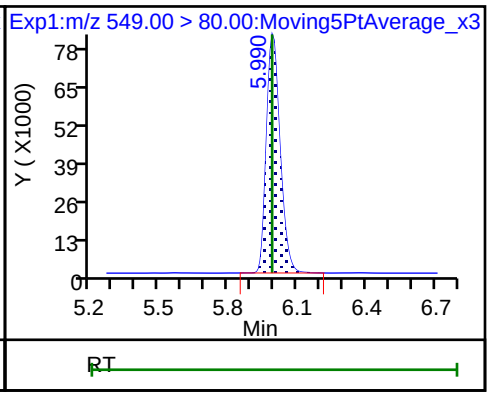
66 7:3 FTCA



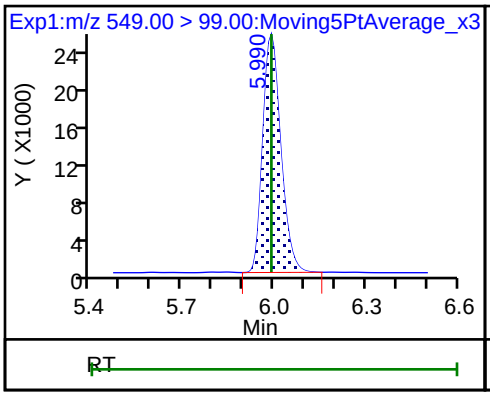
28 9ClFOS



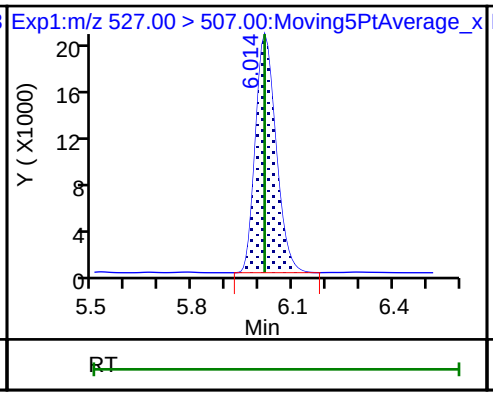
29 Perfluorononanesulfonic acid



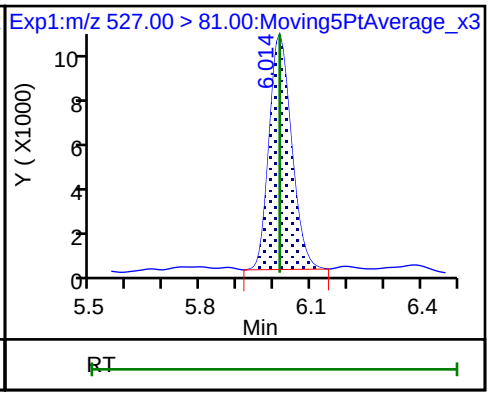
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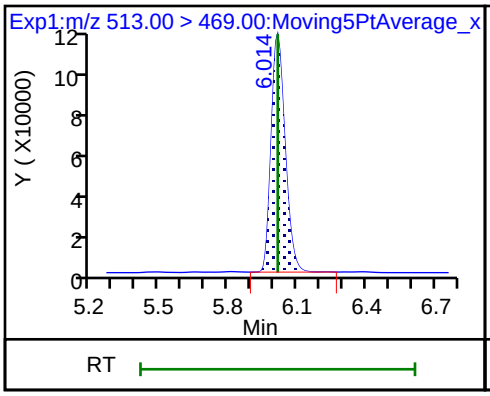
33 8:2 FTS



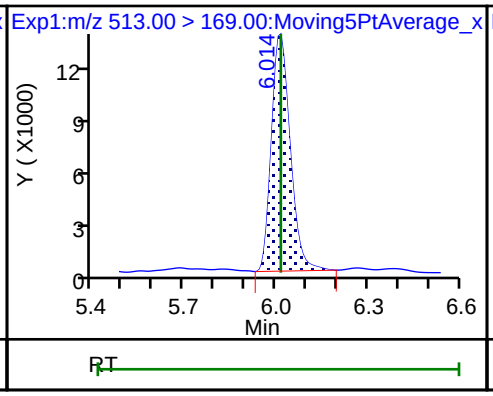
33 8:2 FTS



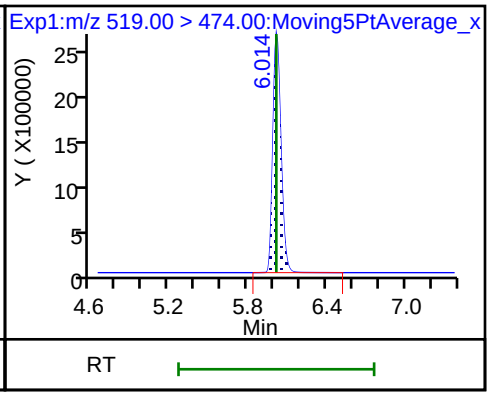
30 Perfluorodecanoic acid



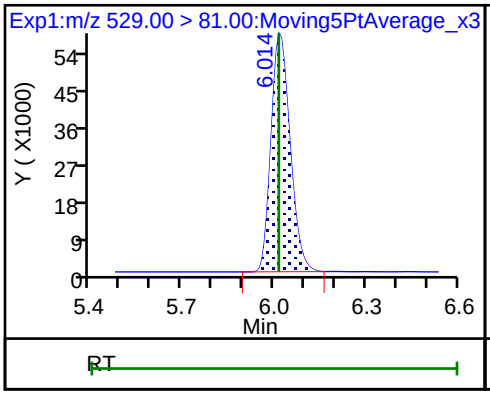
30 Perfluorodecanoic acid



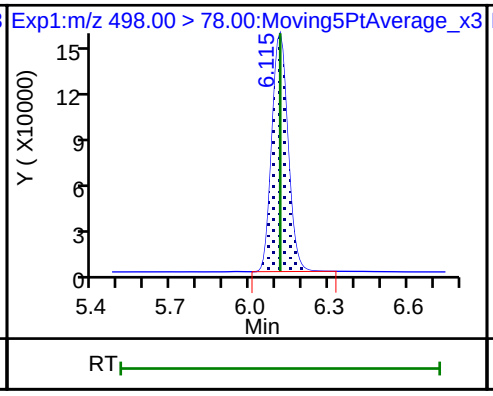
D 32 13C6 PFDA



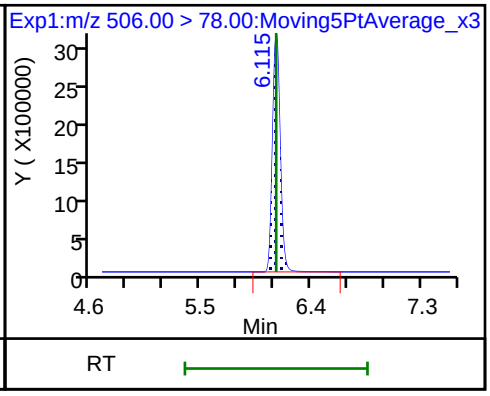
D 31 M2-8:2 FTS



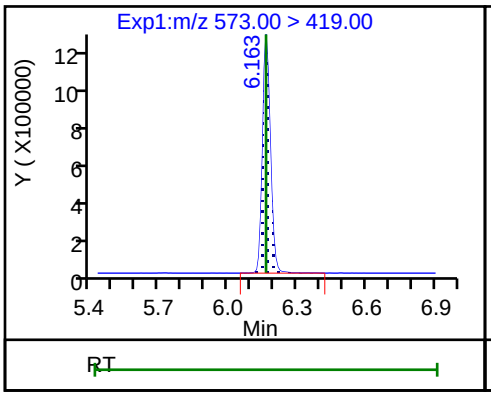
34 Perfluorooctanesulfonamide



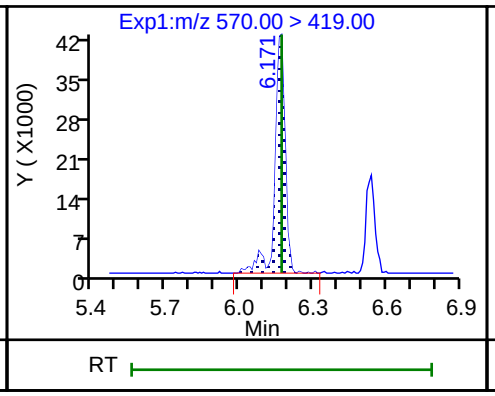
D 35 13C8 FOSA



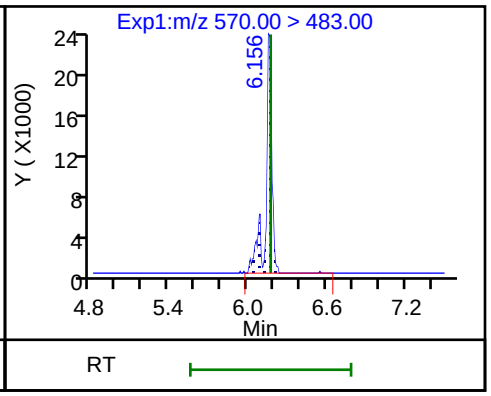
D 37 d3-NMeFOSAA



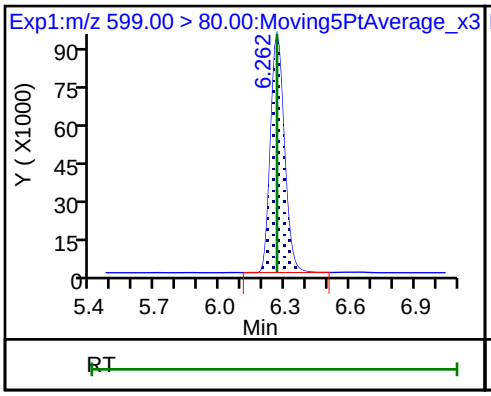
36 NMeFOSAA



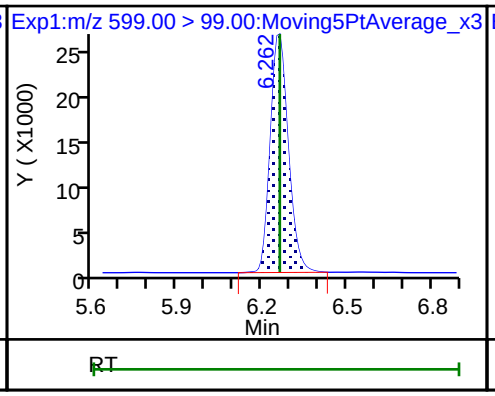
36 NMeFOSAA



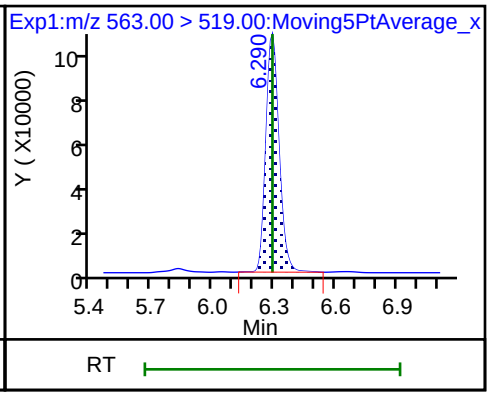
38 Perfluorodecanesulfonic acid



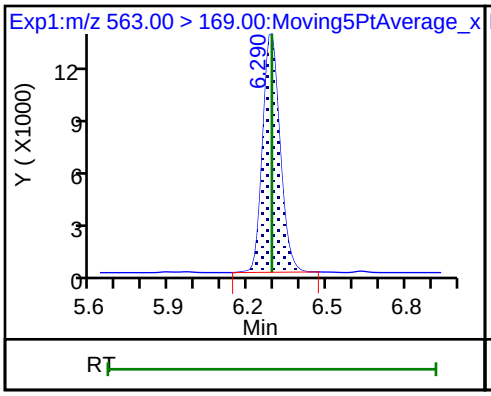
38 Perfluorodecanesulfonic acid



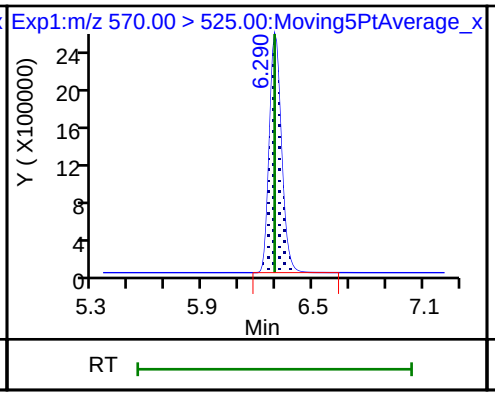
39 Perfluoroundecanoic acid



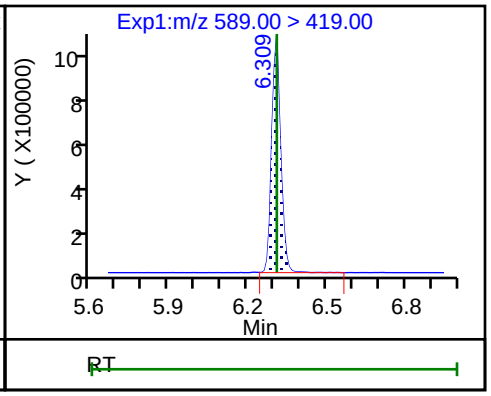
39 Perfluoroundecanoic acid



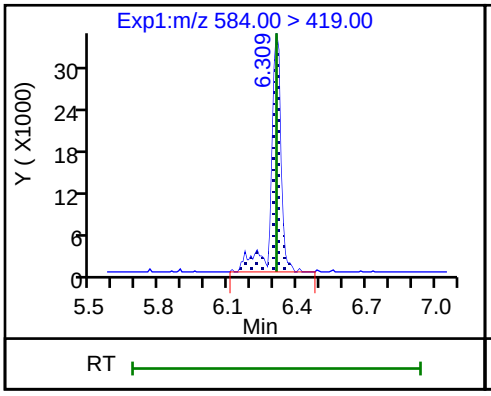
D 40 13C7 PFUnA



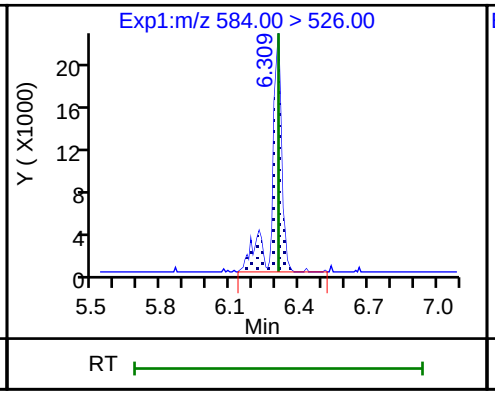
D 41 d5-NEtFOSAA



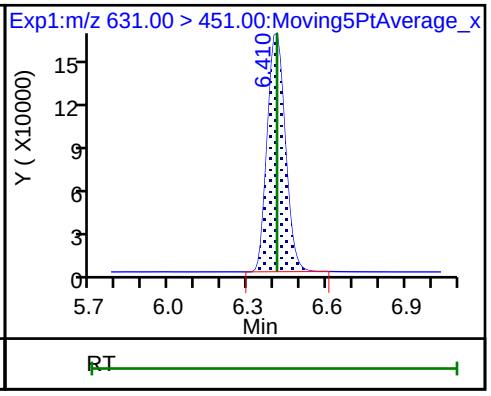
42 NEtFOSAA



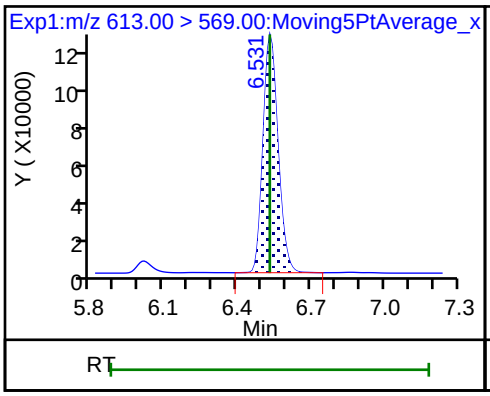
42 NEtFOSAA



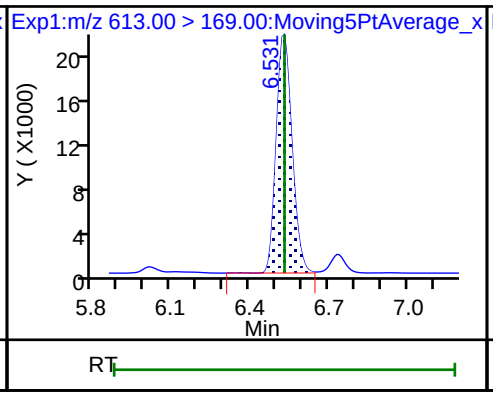
43 11ClFOS



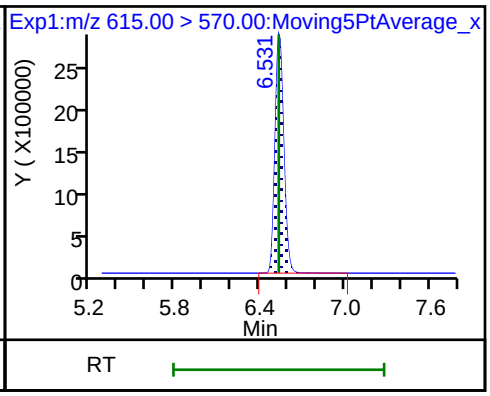
46 Perfluorododecanoic acid



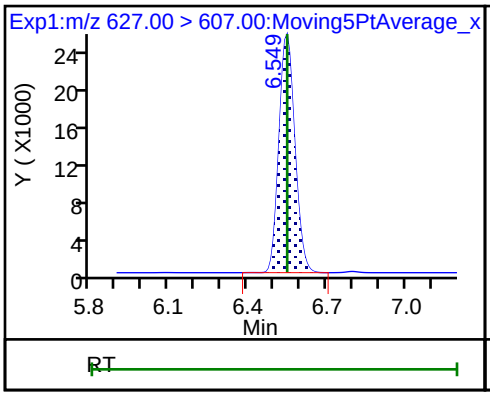
46 Perfluorododecanoic acid



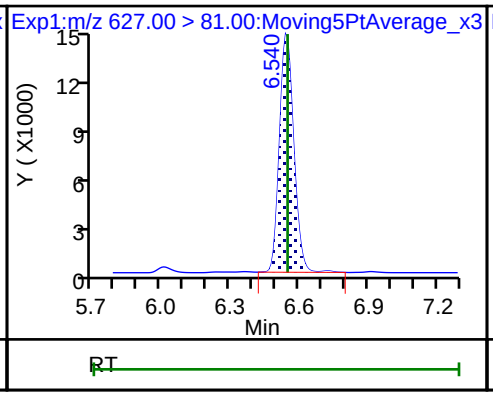
D 45 13C2-PFDoDA



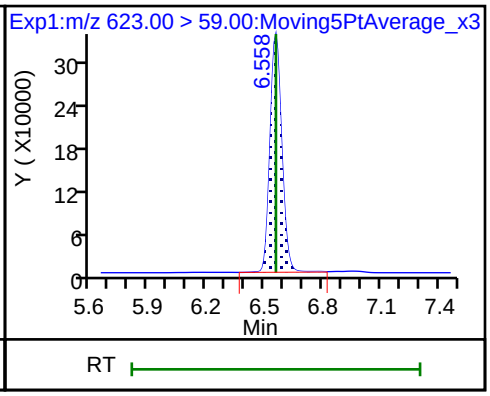
48 10:2 FTS



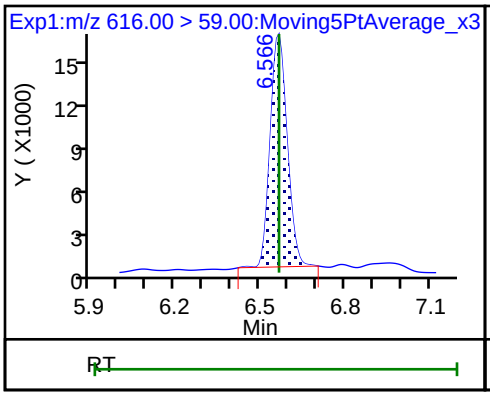
48 10:2 FTS



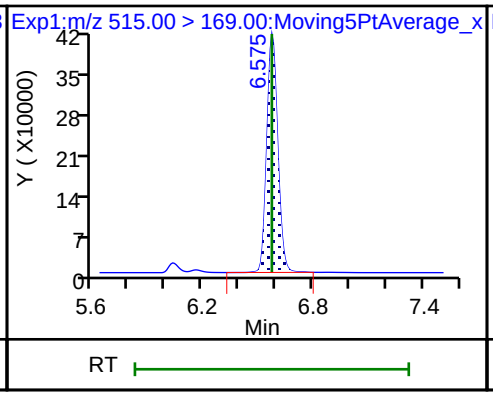
D 44 d7-N-MeFOSE-M



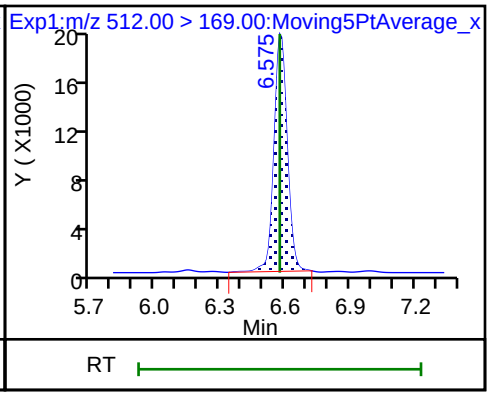
47 N-MeFOSE-M



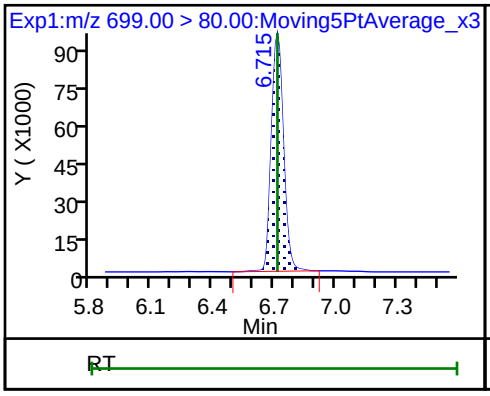
D 49 d3-NMePFOSA



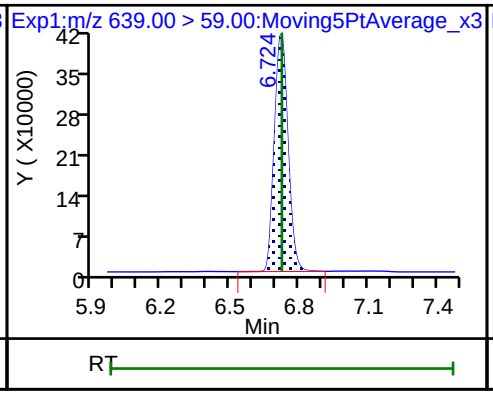
50 NMeFOSA



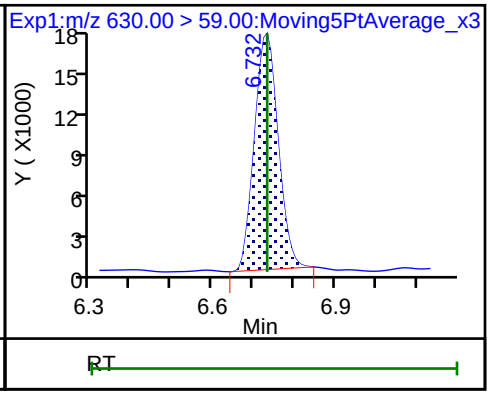
53 PFDoS



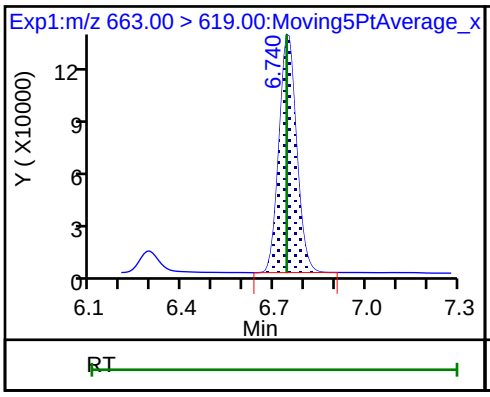
D 51 d9-N-EtFOSE-M



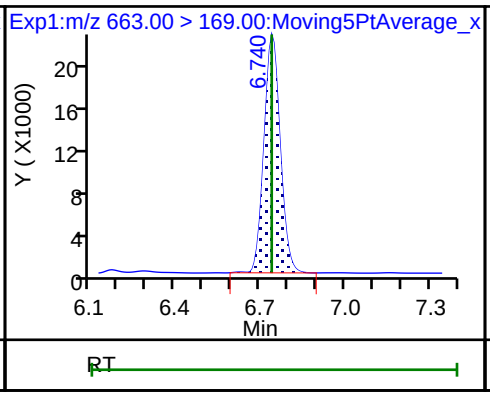
52 N-EtFOSE-M



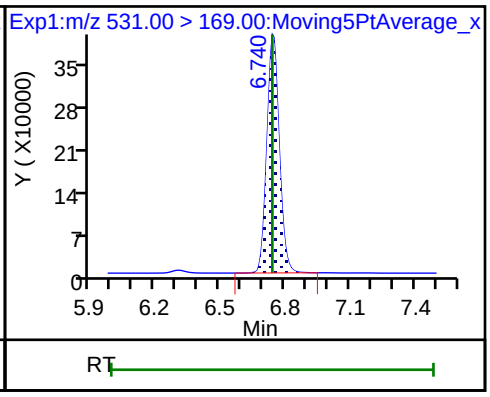
56 Perfluorotridecanoic acid



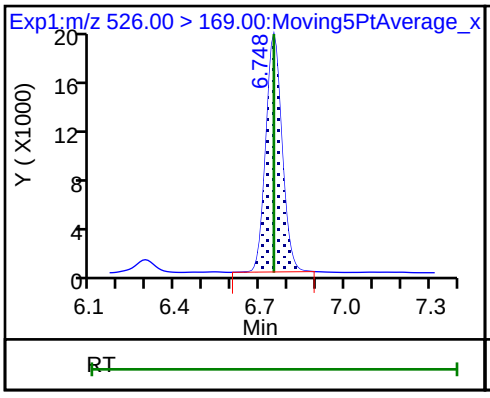
56 Perfluorotridecanoic acid



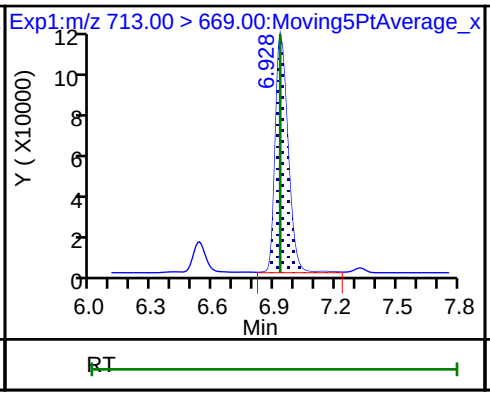
D 54 d5-NEtPFOSA



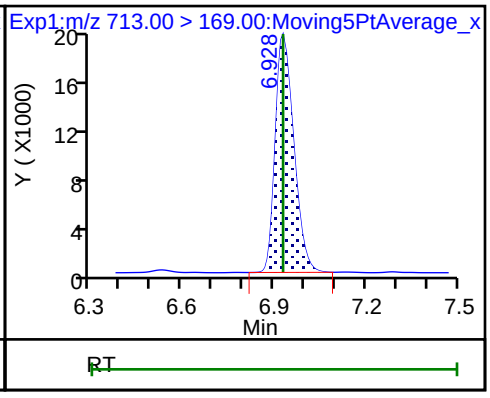
55 N-EtFOSA-M



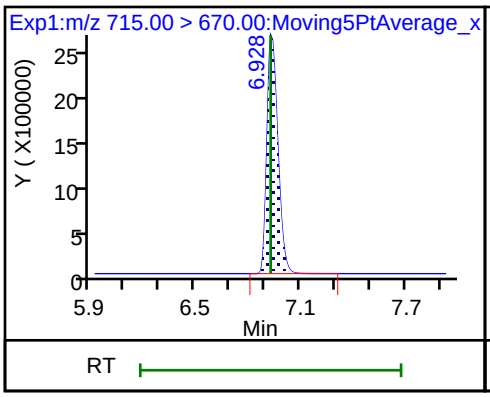
57 Perfluorotetradecanoic acid



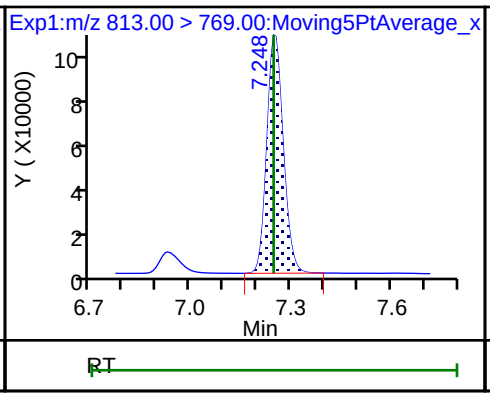
57 Perfluorotetradecanoic acid



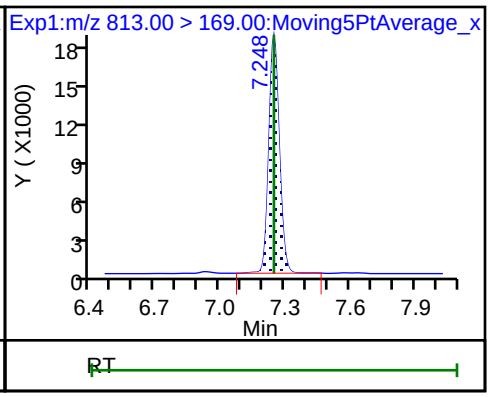
D 58 13C2 PFTeDA



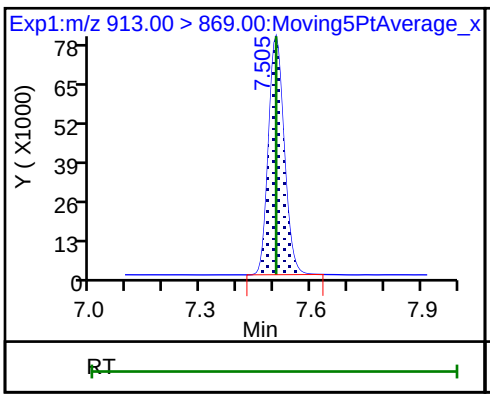
59 Perfluorohexadecanoic acid



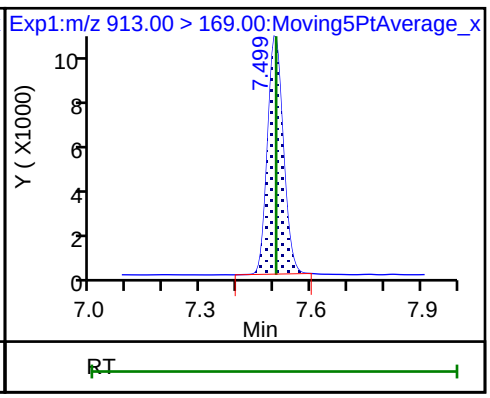
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

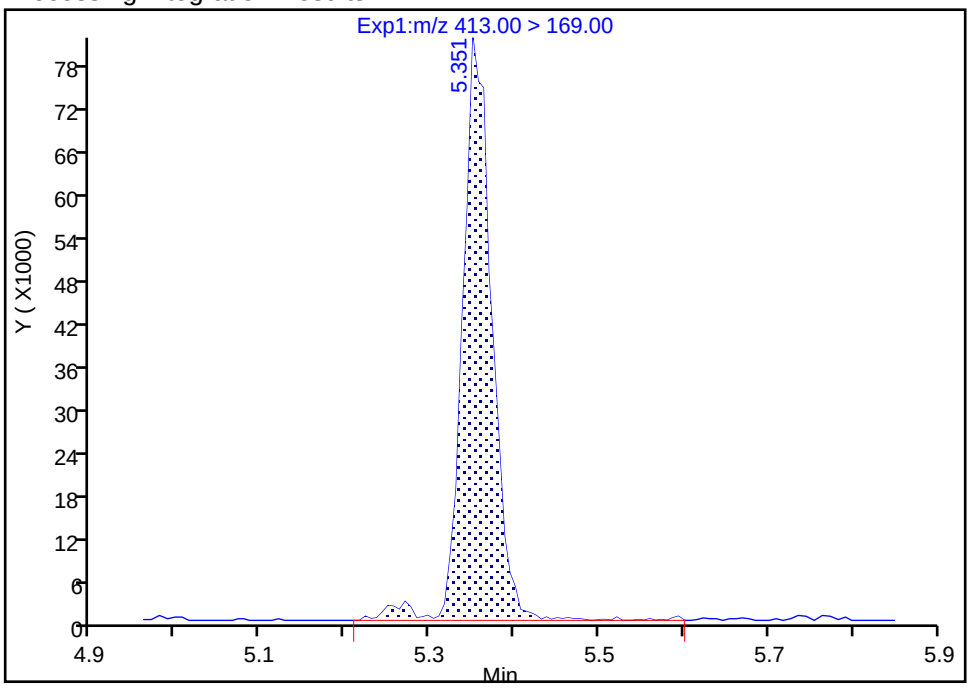
Data File:	\\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-01.d				
Injection Date:	04-Apr-2022 07:32:50	Instrument ID:	29347		
Lims ID:	CCVIS 1_CAL2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

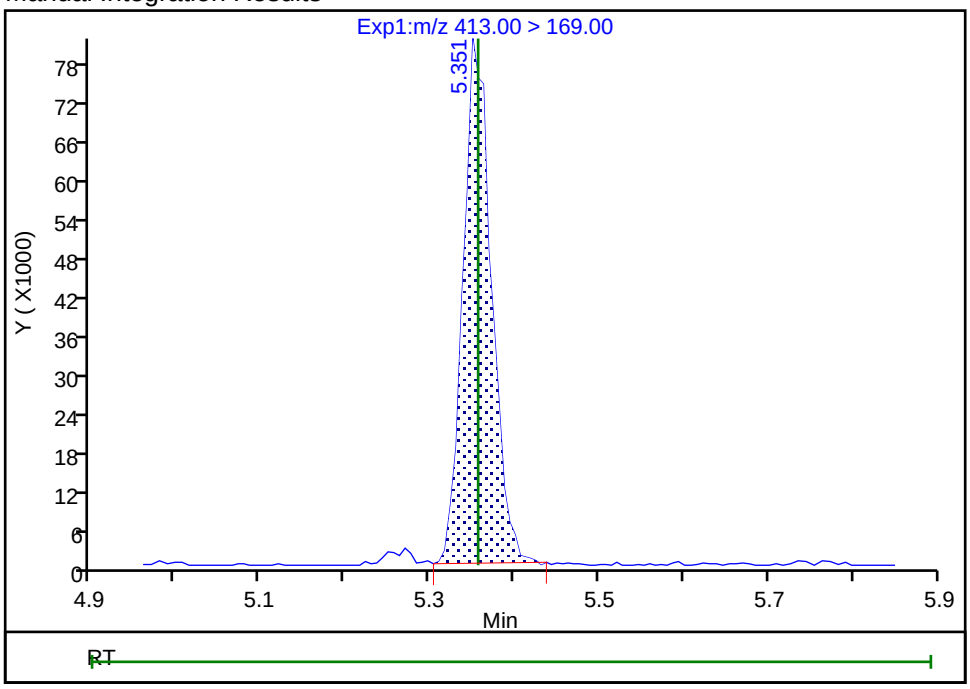
Processing Integration Results

RT: 5.35
Area: 198433
Amount: 0.497113
Amount Units: ng/ml



Manual Integration Results

RT: 5.35
Area: 188471
Amount: 0.497113
Amount Units: ng/ml



Reviewer: carpenterr, 04-Apr-2022 08:10:34

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-240466/15 Calibration Date: 04/04/2022 10:02

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR04-15.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8343	0.8274		1.98	2.00	-0.8	30.0
PFMPA	AveID	0.8139	0.8162		2.01	2.00	0.3	30.0
3:3 FTCA	AveID	0.0595	0.0591		1.99	2.00	-0.6	30.0
Perfluoropentanoic acid	AveID	1.030	1.011		1.96	2.00	-1.8	30.0
Perfluorobutanesulfonic acid	AveID	0.9609	0.9791		1.80	1.77	1.9	30.0
PFMBA	AveID	0.8283	0.8583		2.07	2.00	3.6	30.0
PFEESA	AveID	3.411	3.583		1.87	1.78	5.0	30.0
NFDHA	AveID	0.2829	0.2780		1.97	2.00	-1.7	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.779	3.923		1.94	1.87	3.8	30.0
Perfluorohexanoic acid	AveID	0.8748	0.8712		1.99	2.00	-0.4	30.0
Perfluoropentanesulfonic acid	AveID	0.8840	0.9063		1.92	1.88	2.5	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.119	2.486		2.35	2.00	17.3	30.0
Perfluoroheptanoic acid	AveID	0.9550	0.9570		2.00	2.00	0.2	30.0
Perfluorohexanesulfonic acid	AveID	0.9729	0.9549		1.79	1.82	-1.8	30.0
DONA	AveID	1.642	1.645		1.89	1.89	0.2	30.0
5:3 FTCA	AveID	0.1923	0.1958		2.04	2.00	1.8	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.213	4.954		1.80	1.90	-5.0	30.0
Perfluoroheptanesulfonic acid	AveID	0.9728	0.9331		1.83	1.90	-4.1	30.0
Perfluorooctanoic acid	AveID	0.8951	0.8765		1.96	2.00	-2.1	30.0
Perfluorooctanesulfonic acid	AveID	1.074	1.070		1.84	1.85	-0.4	30.0
Perfluorononanoic acid	AveID	0.8515	0.8722		2.05	2.00	2.4	30.0
7:3 FTCA	AveID	0.1001	0.1048		2.09	2.00	4.6	30.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	AveID	2.388	2.464		1.92	1.86	3.2	30.0
Perfluorononanesulfonic acid	AveID	0.9378	0.9387		1.92	1.92	0.1	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.492	7.149		1.83	1.92	-4.6	30.0
Perfluorodecanoic acid	AveID	0.8690	0.8634		1.99	2.00	-0.6	30.0
Perfluorooctanesulfonamide	AveID	1.005	1.042		2.07	2.00	3.7	30.0
NMeFOSAA	AveID	0.8805	0.8565		1.94	2.00	-2.7	30.0
Perfluorodecanesulfonic acid	AveID	1.057	1.043		1.90	1.93	-1.3	30.0
Perfluoroundecanoic acid	AveID	0.8224	0.8261		2.01	2.00	0.5	30.0
NEtFOSAA	AveID	0.9486	0.9663		2.04	2.00	1.9	30.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	AveID	2.017	2.200		2.03	1.86	9.1	30.0
Perfluorododecanoic acid	AveID	0.8799	0.8627		1.96	2.00	-2.0	30.0
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	AveID	9.352	7.998		1.65	1.93	-14.5	30.0
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9930	1.043		2.10	2.00	5.0	30.0
NMeFOSA	AveID	1.012	1.013		2.00	2.00	0.1	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-240466/15 Calibration Date: 04/04/2022 10:02

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR04-15.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	1.031	1.044		1.96	1.94	1.2	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9193	0.9841		2.14	2.00	7.0	30.0
Perfluorotridecanoic acid	AveID	0.8786	0.9016		2.05	2.00	2.6	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.093	1.118		2.04	2.00	2.2	30.0
Perfluorotetradecanoic acid	AveID	0.8671	0.9022		2.08	2.00	4.0	30.0
Perfluorohexadecanoic acid	AveID	0.6471	0.6198		1.92	2.00	-4.2	30.0
Perfluorooctadecanoic acid	AveID	0.4397	0.4285		1.95	2.00	-2.6	30.0
13C4 PFBA	Ave	869605	900924		10.4	10.0	3.6	30.0
13C5 PFPeA	Ave	726568	749880		10.3	10.0	3.2	30.0
13C3 PFBS	Ave	939925	961045		9.51	9.30	2.2	30.0
M2-4:2 FTS	Ave	40589	45262		10.4	9.34	11.5	30.0
13C5 PFHxA	Ave	886590	942651		10.6	10.0	6.3	30.0
13C3 HFPO-DA	Ave	110442	104405		9.45	10.0	-5.5	30.0
13C3 PFHxS	Ave	838000	946492		10.7	9.46	12.9	30.0
13C4 PFHpA	Ave	888220	994408		11.2	10.0	12.0	30.0
M2-6:2 FTS	Ave	25548	29160		10.8	9.50	14.1	30.0
13C8 PFOA	Ave	975918	1044389		10.7	10.0	7.0	30.0
13C8 PFOS	Ave	810201	844103		9.96	9.56	4.2	30.0
13C9 PFNA	Ave	1017403	1064466		10.5	10.0	4.6	30.0
13C6 PFDA	Ave	1080461	1160507		10.7	10.0	7.4	30.0
M2-8:2 FTS	Ave	22380	27758		11.9	9.58	24.0	30.0
13C8 FOSA	Ave	1294000	1377198		10.6	10.0	6.4	30.0
d3-NMeFOSAA	Ave	281493	309501		11.0	10.0	10.0	30.0
13C7 PFUnA	Ave	1127314	1219681		10.8	10.0	8.2	30.0
d5-NEtFOSAA	Ave	218834	232201		10.6	10.0	6.1	30.0
13C2-PFDoDA	Ave	1193672	1267080		10.6	10.0	6.1	30.0
d7-N-MeFOSE-M	Ave	136038	139359		10.2	10.0	2.4	30.0
d3-NMePFOSA	Ave	172223	176696		10.3	10.0	2.6	30.0
d9-N-EtFOSE-M	Ave	164086	163475		9.96	10.0	-0.4	30.0
d5-NEtPFOSA	Ave	157541	155519		9.87	10.0	-1.3	30.0
13C2 PFTeDA	Ave	1206116	1236485		10.3	10.0	2.5	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-15.d
Lims ID: CCV 2_CAL3
Client ID:
Sample Type: CCV
Inject. Date: 04-Apr-2022 10:02:26 ALS Bottle#: 20004 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 2_CAL3
Misc. Info.: Plate: 1 Rack: 1 410-0053975-015
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 04-Apr-2022 15:45:55 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1662

First Level Reviewer: carpenterr Date: 04-Apr-2022 13:34:04
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.671	-0.015	1.000	1490837	1.98		99.2	2970	
D 2 13C4 PFBA										
217.00 > 172.00	3.656	3.671	-0.015		9009236	10.4		104	186731	
63 PFECA F										
229.00 > 85.00	3.890	3.898	-0.008	0.931	1224096	2.01		100	9195	
67 3:3 FTCA										
241.00 > 177.00	4.165	4.180	-0.015	0.997	88614	1.99	Target=1.29	99.4	3464	
241.00 > 117.00	4.165	4.180	-0.015	0.997	72643		1.22(0.64-1.93)		1984	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.172	4.187	-0.015	0.998	1515976	1.96		98.2	6462	
D 4 13C5 PFPeA										
268.00 > 223.00	4.180	4.187	-0.007		7498798	10.3		103	77920	
D 6 13C3 PFBS										
302.00 > 80.00	4.232	4.239	-0.007		8937715	9.51		102	582068	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.232	4.239	-0.007	1.000	1665559	1.80	Target=2.85	102	1999	
299.00 > 99.00	4.224	4.239	-0.015	0.998	581744		2.86(1.42-4.27)		1995	
64 PFECA A										
279.00 > 85.00	4.301	4.309	-0.008	1.029	1287271	2.07		104	32976	
65 PES										
315.00 > 135.00	4.389	4.397	-0.008	0.956	6011300	1.87	Target=11.66	105	132589	
315.00 > 83.00	4.389	4.397	-0.008	0.956	394808		15.23(5.83-17.49)		520	
68 PFECA B										
295.00 > 201.00	4.511	4.521	-0.010	0.983	524132	1.97		98.3	18977	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.540	4.551	-0.011	0.998	331699	1.94	Target=1.85	104	24014	
327.00 > 81.00	4.540	4.551	-0.011	0.998	189373		1.75(0.93-2.78)		3988	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.550	4.560	-0.010		422751	10.4		112	11397	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.580	4.590	-0.010	0.998	1642410	1.99	Target=13.79	99.6	10540	
313.00 > 119.00	4.580	4.590	-0.010	0.998	113110		14.52(6.90-20.69)		4090	
D 9 13C5 PFHxA										
318.00 > 273.00	4.590	4.600	-0.010		9426510	10.6		106	146873	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.609	4.618	-0.009	1.089	1633965	1.92	Target=3.00	103	73352	
349.00 > 99.00	4.599	4.618	-0.019	1.087	535713		3.05(1.50-4.50)		23918	
12 HFPO-DA										
329.00 > 285.00	4.711	4.726	-0.015	0.999	519127	2.35		117	15372	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.718	4.726	-0.008		1044052	9.45		94.5	54300	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.970	4.989	-0.019	0.998	1903210	2.00	Target=3.13	100	13150	
363.00 > 169.00	4.970	4.989	-0.019	0.998	582242		3.27(1.57-4.70)		10844	
D 17 13C4 PFHpA										
367.00 > 322.00	4.979	4.989	-0.010		9944080	11.2		112	372151	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.979	4.989	-0.010	1.000	1648548	1.79	Target=3.05	98.2	517575	
399.00 > 99.00	4.970	4.989	-0.019	0.998	541602		3.04(1.52-4.57)		195950	
D 16 13C3 PFHxS										
402.00 > 80.00	4.979	4.989	-0.010		8953812	10.7		113	1828016	
18 DONA										
377.00 > 251.00	5.023	5.031	-0.008	1.009	3092320	1.89		100	47966	
62 5:3 FTCA										
341.00 > 237.00	5.045	5.053	-0.008	1.099	369159	2.04	Target=3.13	102	6299	
341.00 > 217.00	5.045	5.053	-0.008	1.099	119605		3.09(1.56-4.69)		3841	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.330	5.338	-0.008		277019	10.8		114	19262	
19 6:2 FTS										
427.00 > 407.00	5.324	5.338	-0.014	0.999	273877	1.80	Target=1.69	95.0	14993	
427.00 > 81.00	5.324	5.338	-0.014	0.999	164072		1.67(0.85-2.54)		7479	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.344	-0.007	1.072	1681500	1.83	Target=3.19	95.9	66754	
449.00 > 99.00	5.330	5.344	-0.014	1.070	502511		3.35(1.59-4.78)		46256	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.344	5.357	-0.013	1.000	1830739	1.96	Target=2.38	97.9	61980	
413.00 > 169.00	5.344	5.357	-0.013	1.000	783272		2.34(1.19-3.57)		165100	
D 22 13C8 PFOA										
421.00 > 376.00	5.344	5.357	-0.013		10443894	10.7		107	872439	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.676	5.685	-0.009	1.000	1671094	1.84	Target=3.70	99.6	3202	
499.00 > 99.00	5.676	5.685	-0.009	1.000	463367		3.61(1.85-5.54)		175236	
D 25 13C8 PFOS										
507.00 > 80.00	5.676	5.685	-0.009		8069625	9.96		104	333457	
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.701	-0.009	1.000	1856792	2.05	Target=4.37	102	24981	
463.00 > 169.00	5.684	5.701	-0.017	0.999	417501		4.45(2.19-6.56)		12700	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.701	-0.009		10644658	10.5		105	170576	
66 7:3 FTCA										
441.00 > 317.00	5.790	5.799	-0.009	1.262	197577	2.09	Target=11.37	105	7719	
441.00 > 337.00	5.790	5.799	-0.009	1.262	17352		11.39(5.69-17.06)		716	
28 9ClFOS										
531.00 > 351.00	5.856	5.865	-0.009	1.032	3869012	1.92		103	256562	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.990	-0.009	1.054	1521410	1.92	Target=3.34	100	63720	
549.00 > 99.00	5.981	5.990	-0.009	1.054	438553		3.47(1.67-5.02)		21946	
33 8:2 FTS										
527.00 > 507.00	6.005	6.014	-0.009	1.000	380199	1.83	Target=2.06	95.4	22645	
527.00 > 81.00	5.997	6.014	-0.017	0.999	190710		1.99(1.03-3.09)		2383	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	6.014	-0.009	1.000	2004036	1.99	Target=9.22	99.4	26562	
513.00 > 169.00	5.997	6.014	-0.017	0.999	216884		9.24(4.61-13.82)		5177	
D 32 13C6 PFDA										
519.00 > 474.00	6.005	6.014	-0.009		11605071	10.7		107	692873	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	6.014	-0.009		265918	11.9		124	15710	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.104	6.115	-0.011	0.999	2870633	2.07		104	33611	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.115	-0.002		13771977	10.6		106	402970	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.154	6.163	-0.009		3095014	11.0		110	189694	
36 NMeFOSAA										
570.00 > 419.00	6.154	6.171	-0.017	1.000	530203	1.94	Target=1.84	97.1	15629	
570.00 > 483.00	6.154	6.171	-0.017	1.000	292244		1.81(0.92-2.77)		626	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.262	-0.011	1.101	1696953	1.90	Target=3.50	98.7	77396	
599.00 > 99.00	6.251	6.262	-0.011	1.101	484075		3.51(1.75-5.26)		27616	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.279	6.290	-0.011	1.000	2015228	2.01	Target=8.26	100	16027	
563.00 > 169.00	6.270	6.290	-0.020	0.998	235575		8.55(4.13-12.39)		17501	
D 40 13C7 PFUnA										
570.00 > 525.00	6.279	6.290	-0.011		12196807	10.8		108	543725	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.309	-0.011		2322008	10.6		106	331393	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.298	6.309	-0.011	1.000	448772	2.04	Target=1.65	102	152721	
584.00 > 526.00	6.298	6.309	-0.011	1.000	279322		1.61(0.82-2.47)		384	
43 11ClFOS										
631.00 > 451.00	6.398	6.410	-0.012	1.127	3454344	2.03		109	121929	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.522	6.531	-0.009	1.000	2186206	1.96	Target=5.80	98.0	9070	
613.00 > 169.00	6.522	6.531	-0.009	1.000	364290		6.00(2.90-8.70)		6090	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.531	-0.009		12670798	10.6		106	375225	
48 10:2 FTS										
627.00 > 607.00	6.539	6.549	-0.010	1.089	428027	1.65	Target=1.80	85.5	33336	
627.00 > 81.00	6.531	6.549	-0.018	1.087	255803		1.67(0.90-2.69)		10051	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.558	-0.010		1393590	10.2		102	6719	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.566	-0.009	1.001	290613	2.10		105	3195	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.575	-0.001		1766961	10.3		103	5137	
50 NMeFOSA										
512.00 > 169.00	6.574	6.575	-0.001	1.000	358157	2.00		100	6588	
53 PFDoS										
699.00 > 80.00	6.705	6.715	-0.010	1.181	1705421	1.96		101	52037	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.724	-0.010		1634752	9.96		99.6	9972	
52 N-EtFOSE-M										
630.00 > 59.00	6.723	6.732	-0.009	1.001	321736	2.14		107	4385	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.731	6.740	-0.009	1.032	2284694	2.05	Target=5.49	103	6482	
663.00 > 169.00	6.731	6.740	-0.009	1.032	409892		5.57(2.75-8.24)		17096	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.740	0.0		1555190	9.87		98.7	10502	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.748	-0.008	1.000	347669	2.04		102	4827	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.928	-0.007	1.000	2231011	2.08	Target=5.81	104	4320	
713.00 > 169.00	6.921	6.928	-0.007	1.000	361102		6.18(2.91-8.72)		14599	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.928	-0.007		12364849	10.3		103	269825	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.248	-0.007	1.046	1532642	1.92	Target=5.99	95.8	5365	
813.00 > 169.00	7.241	7.248	-0.007	1.046	246800		6.21(2.99-8.98)		10284	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.505	-0.011	1.083	1059626	1.95	Target=7.27	97.4	20979	
913.00 > 169.00	7.494	7.505	-0.011	1.083	145417		7.29(3.63-10.90)		9816	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD3_00015 Amount Added: 200.00 Units: uL

Report Date: 04-Apr-2022 15:45:57 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-15.d

Injection Date: 04-Apr-2022 10:02:26 Instrument ID: 29347

Lims ID: CCV 2_CAL3

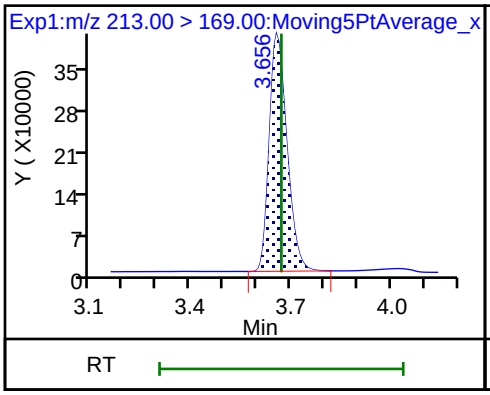
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20004 Worklist Smp#: 15

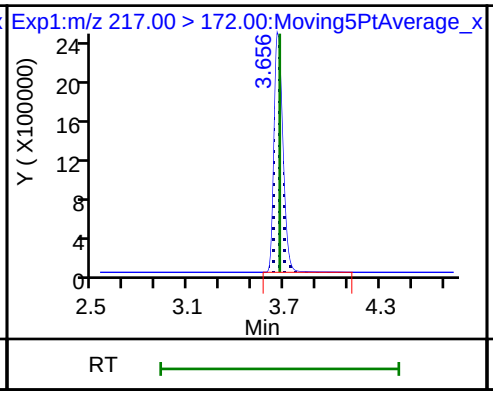
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

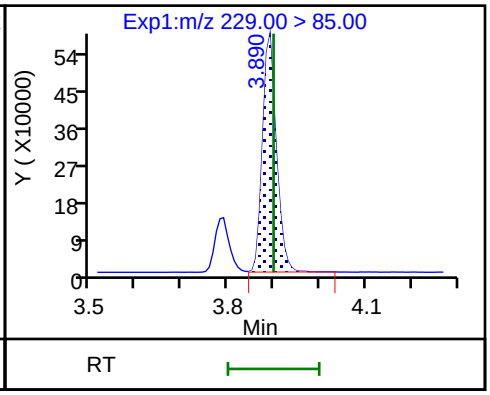
1 Perfluorobutanoic acid



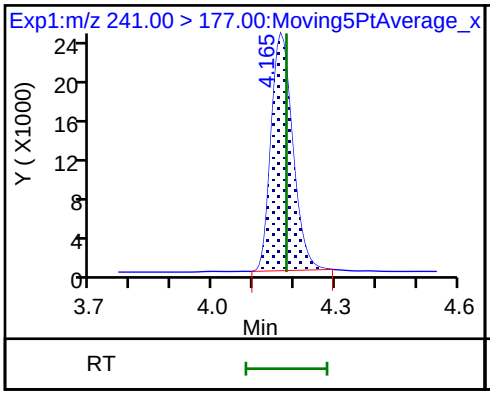
D 2 13C4 PFBA



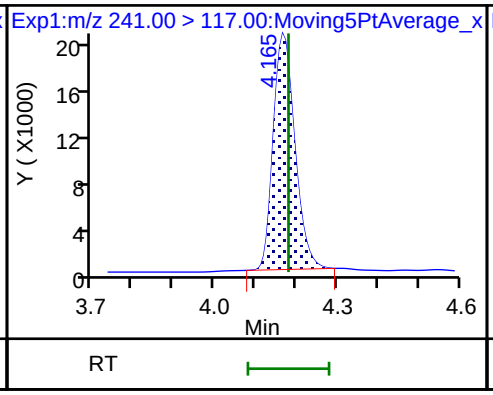
63 PFECA F



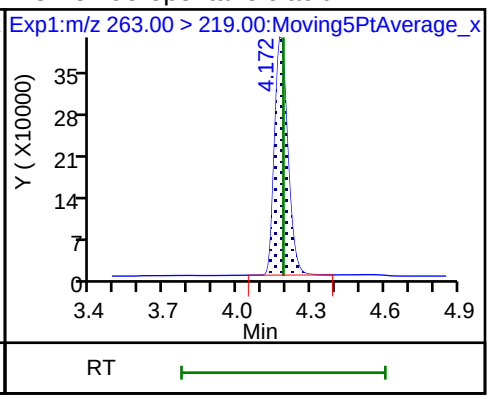
67 3:3 FTCA



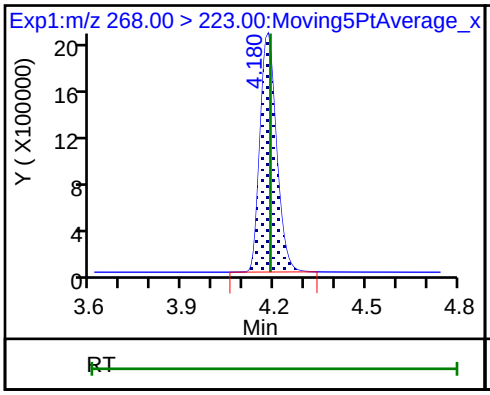
67 3:3 FTCA



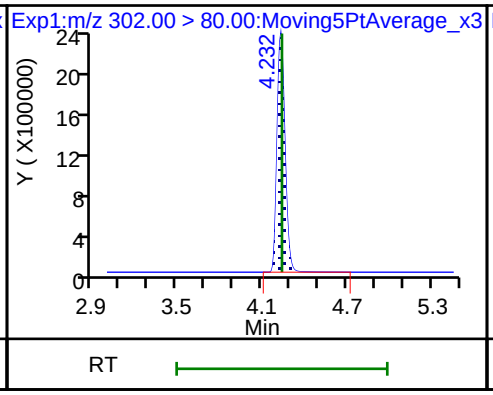
3 Perfluoropentanoic acid



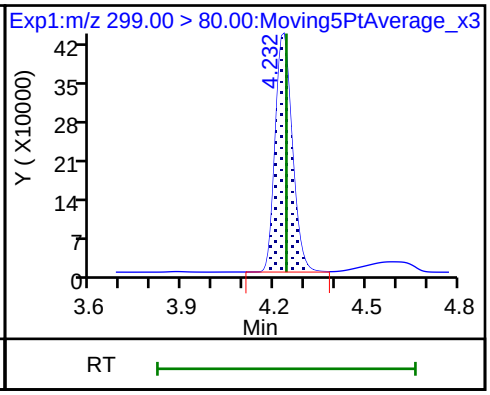
D 4 13C5 PFPeA



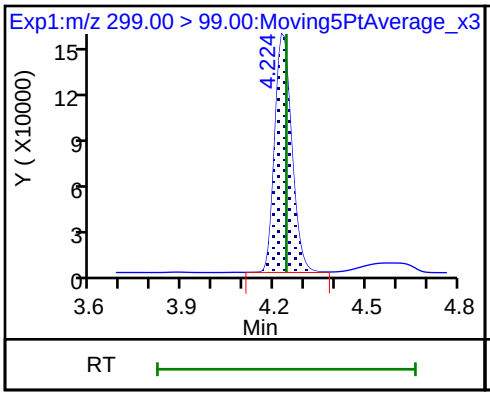
D 6 13C3 PFBS



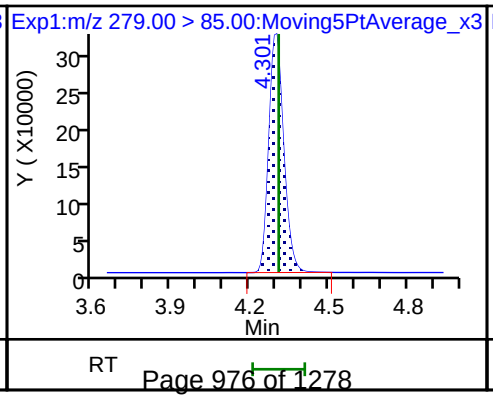
5 Perfluorobutanesulfonic acid



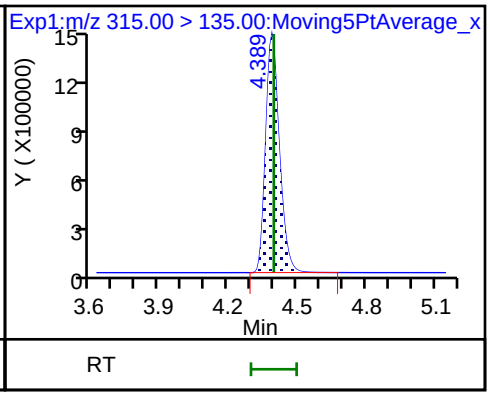
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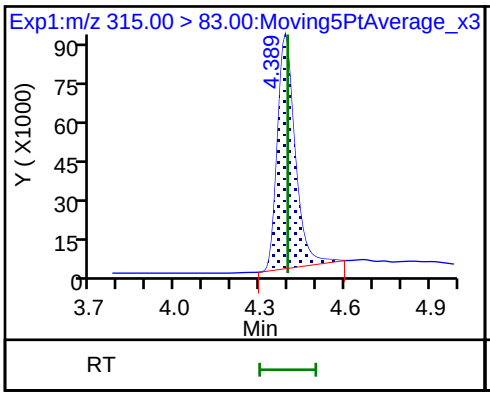
64 PFECA A



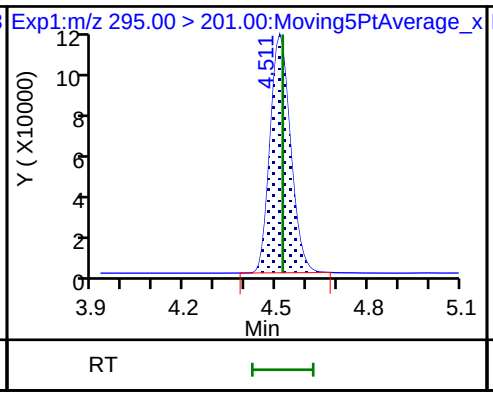
65 PES



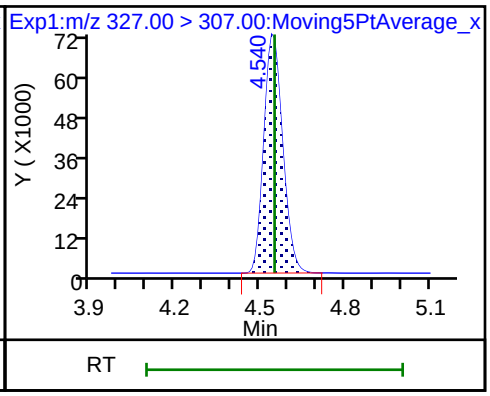
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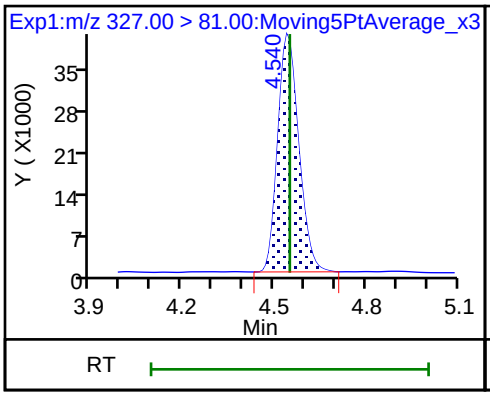
68 PFECA B



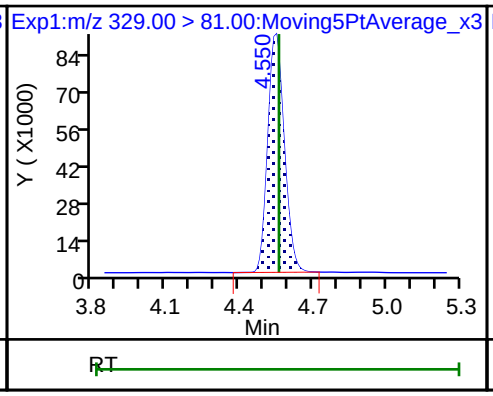
7 4:2 FTS



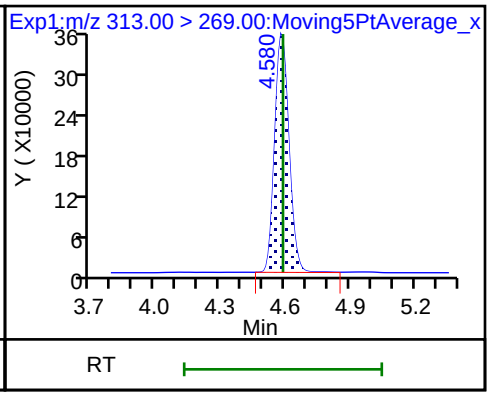
7 4:2 FTS



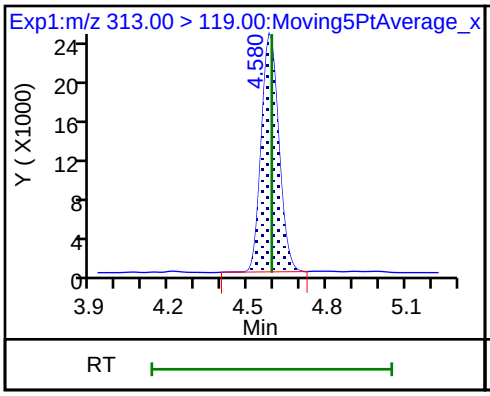
D 8 M2-4:2 FTS



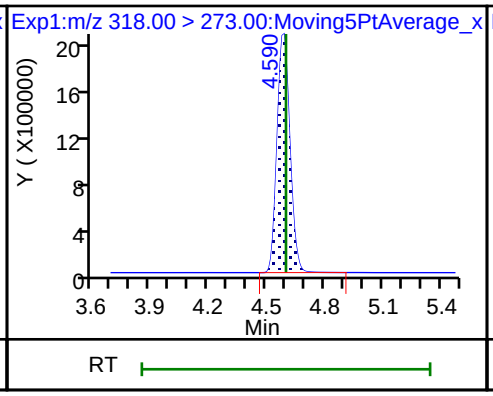
10 Perfluorohexanoic acid



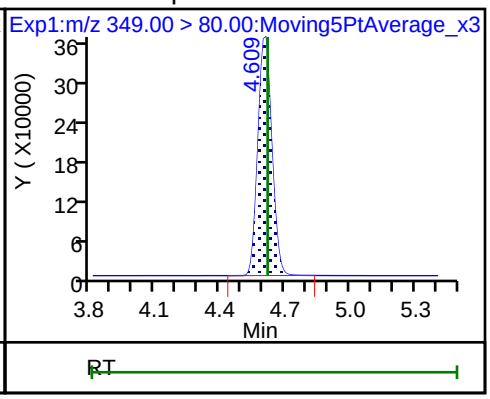
10 Perfluorohexanoic acid



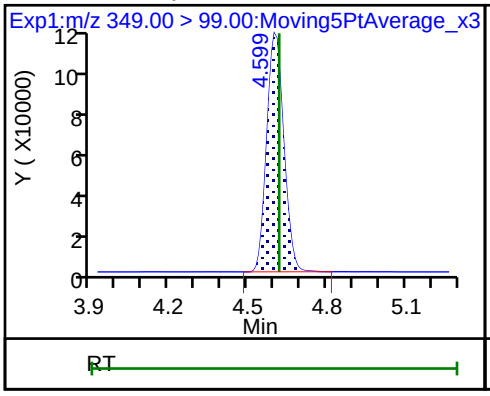
D 9 13C5 PFHxA



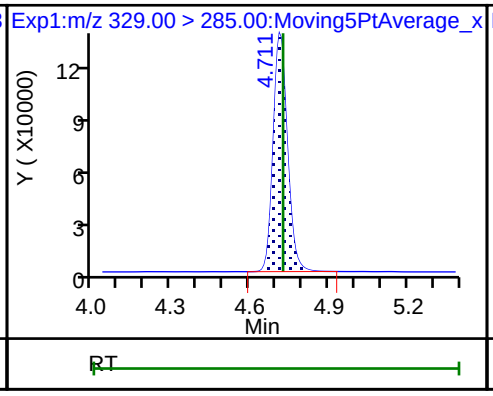
11 Perfluoropentanesulfonic acid



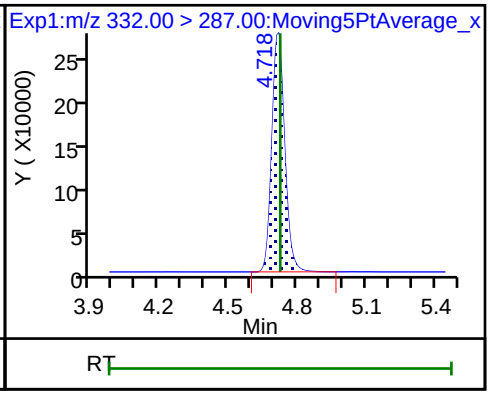
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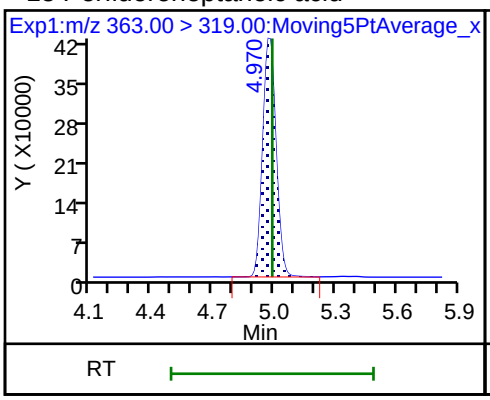
12 HFPO-DA



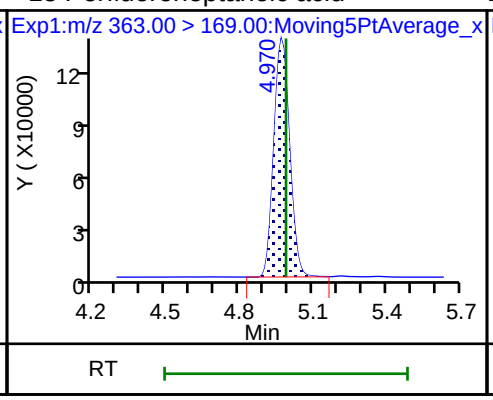
D 13 13C3 HFPO-DA



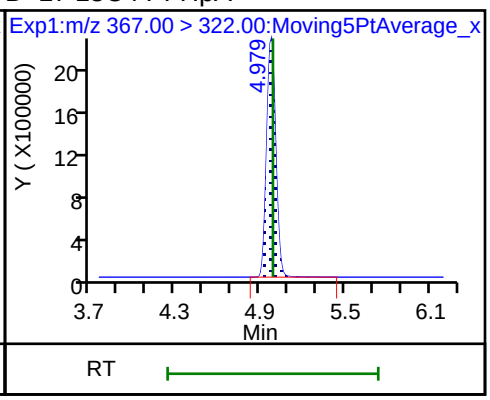
15 Perfluoroheptanoic acid



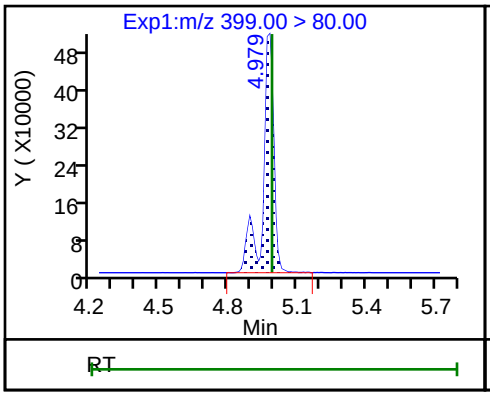
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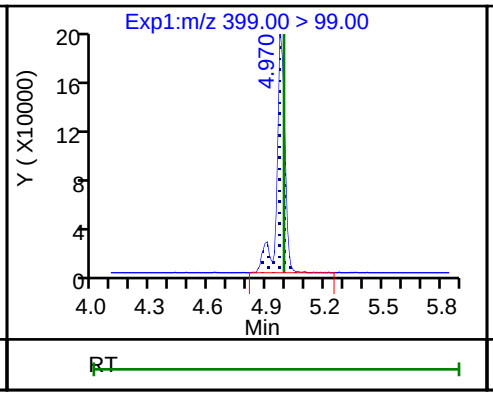
D 17 13C4 PFHpA



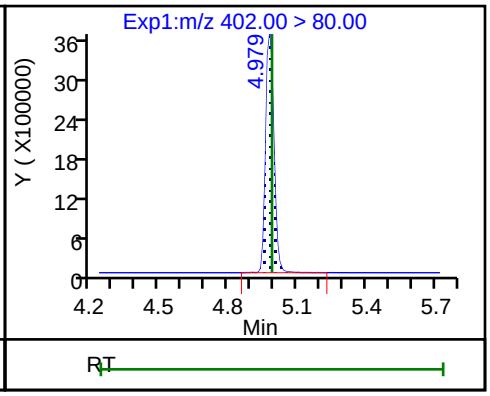
14 Perfluorohexanesulfonic acid



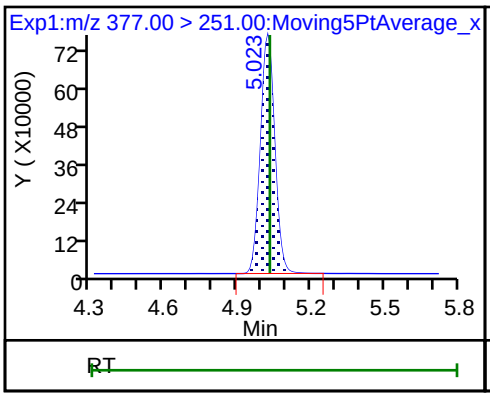
14 Perfluorohexanesulfonic acid



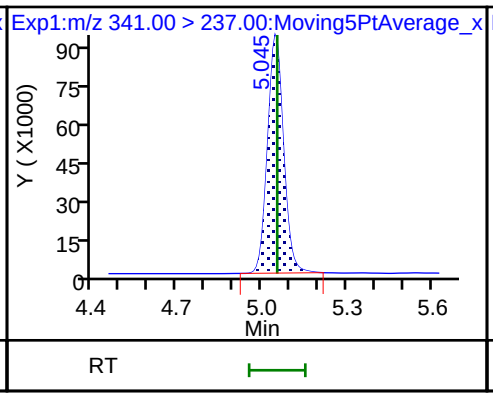
D 16 13C3 PFHxS



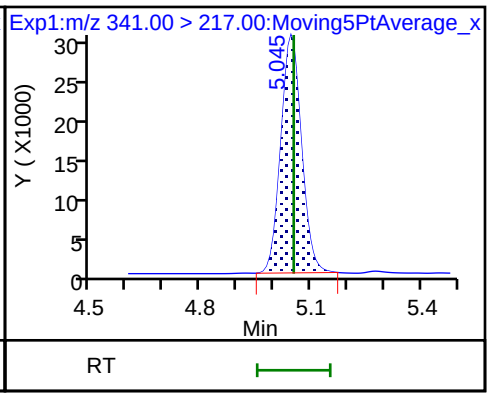
18 DONA



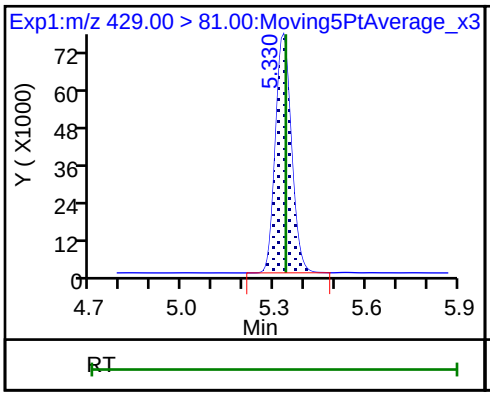
62 5:3 FTCA



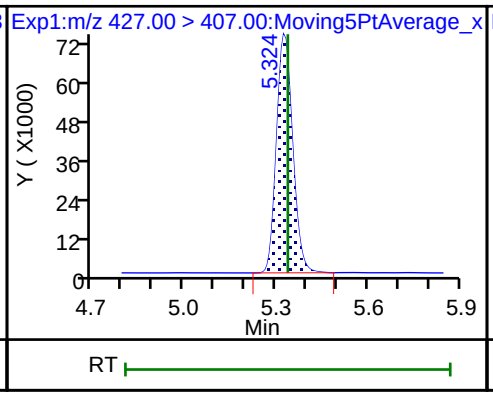
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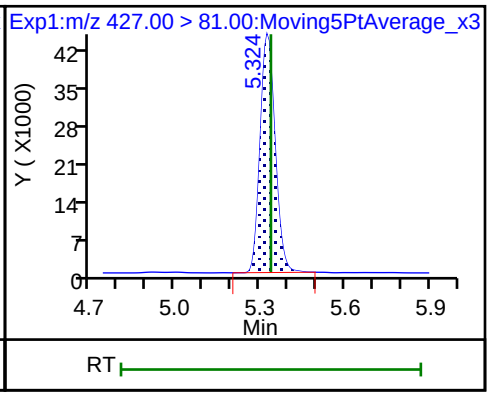
D 20 M2-6:2 FTS



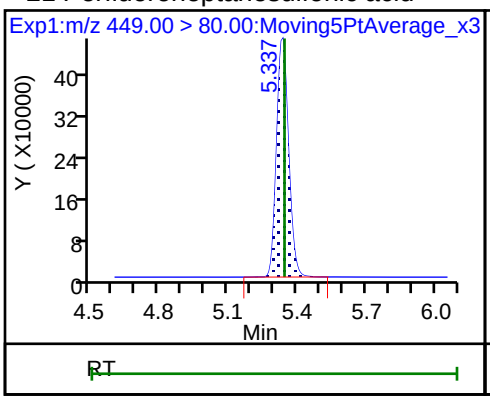
19 6:2 FTS



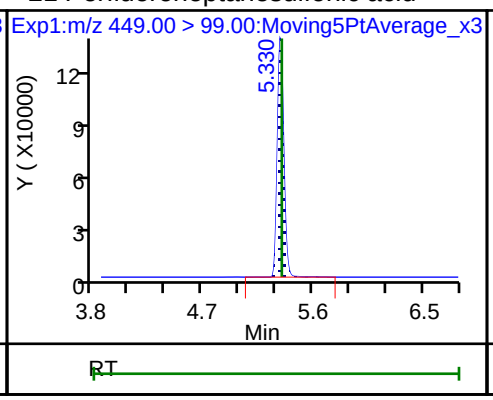
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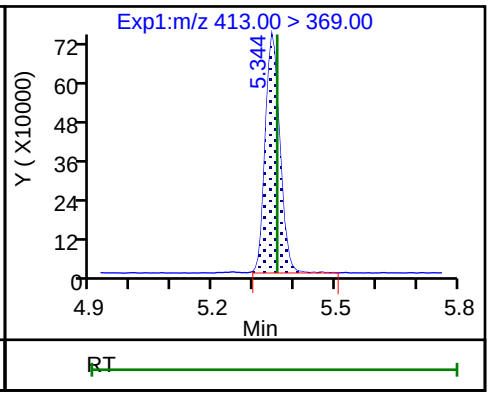
21 Perfluoroheptanesulfonic acid



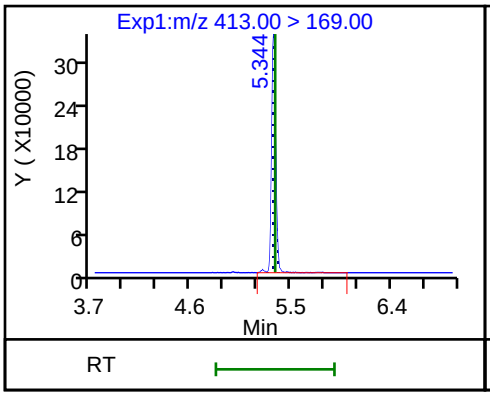
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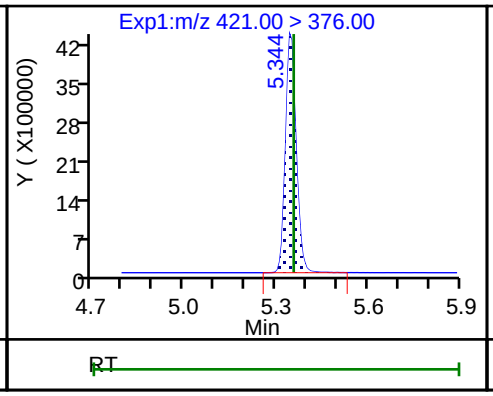
23 Perfluorooctanoic acid



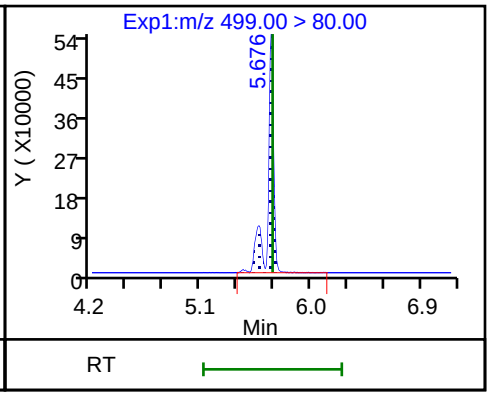
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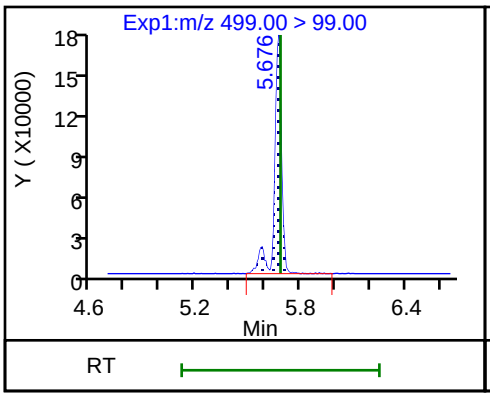
D 22 13C8 PFOA



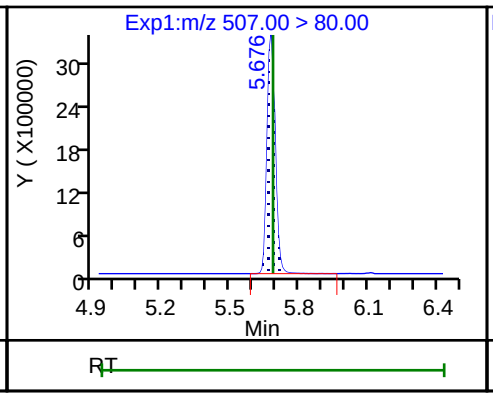
24 Perfluorooctanesulfonic acid



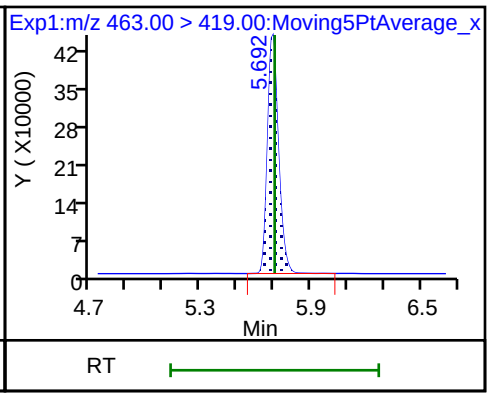
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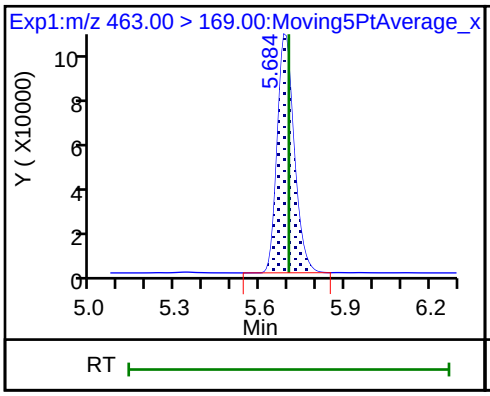
D 25 13C8 PFOS



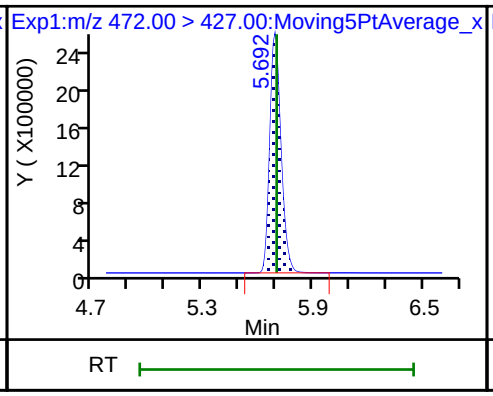
26 Perfluorononanoic acid



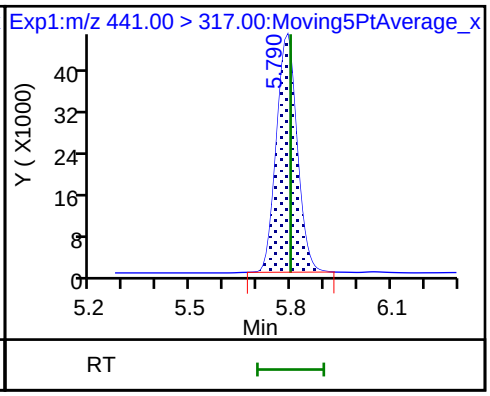
26 Perfluorononanoic acid



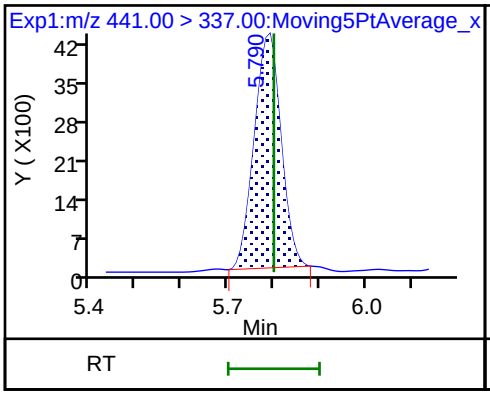
D 27 13C9 PFNA



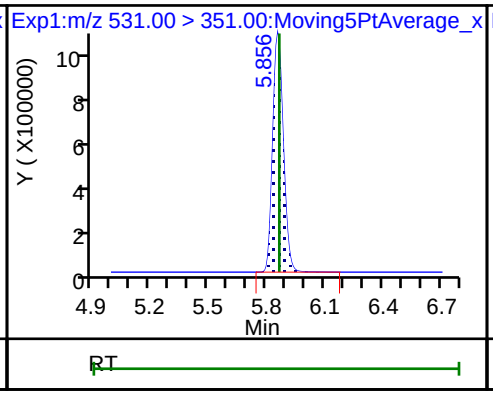
66 7:3 FTCA



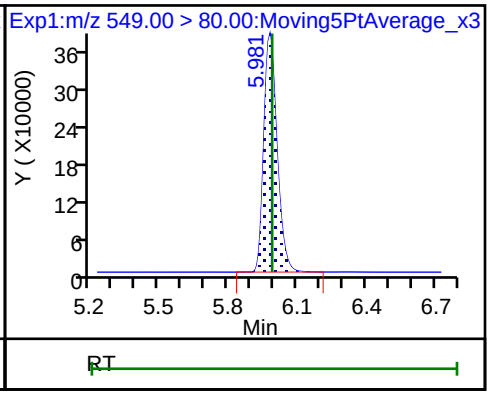
66 7:3 FTCA



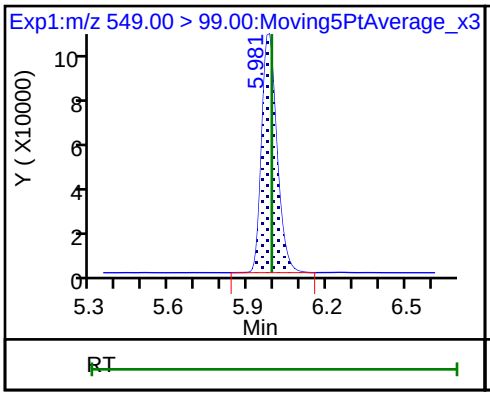
28 9ClFOS



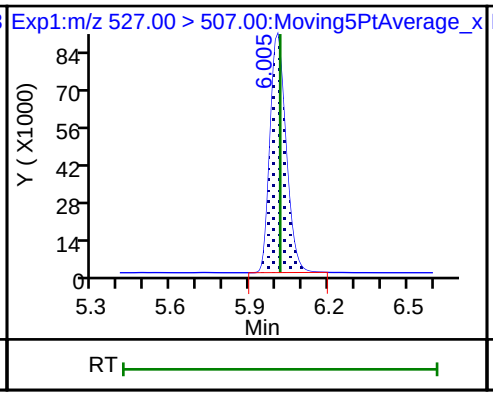
29 Perfluorononanesulfonic acid



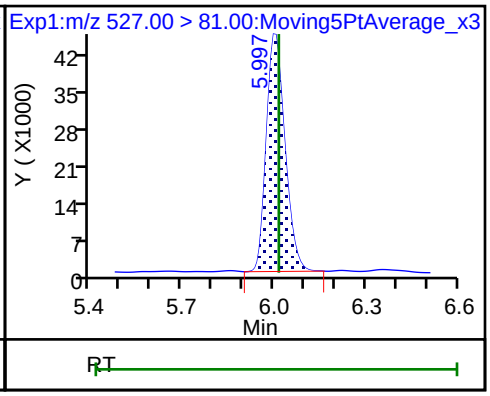
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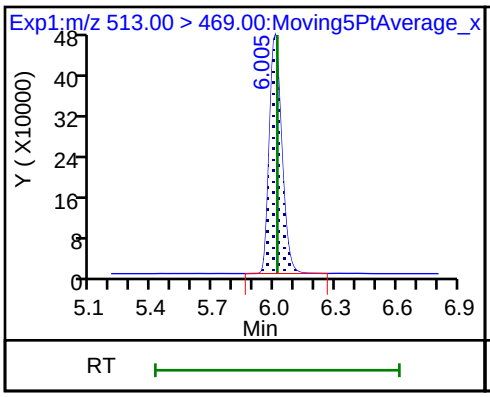
33 8:2 FTS



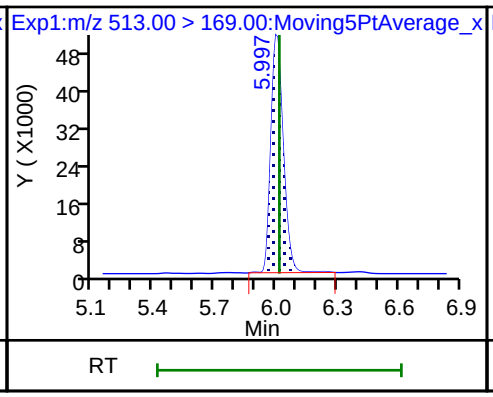
33 8:2 FTS



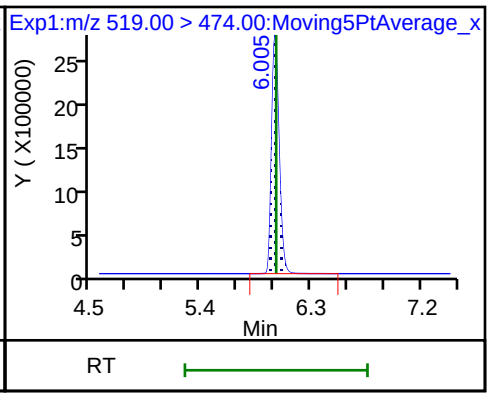
30 Perfluorodecanoic acid



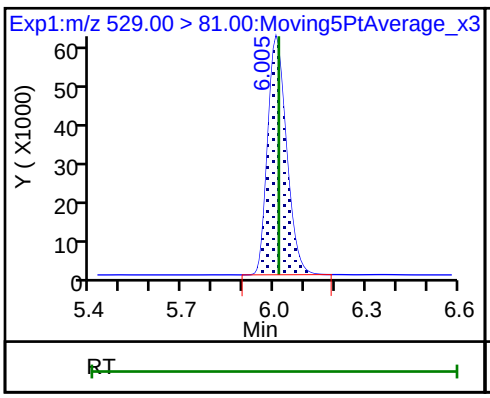
30 Perfluorodecanoic acid



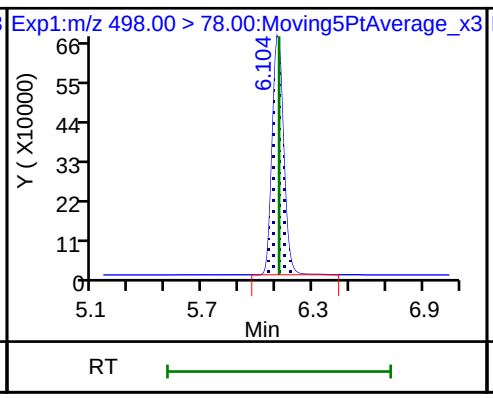
D 32 13C6 PFDA



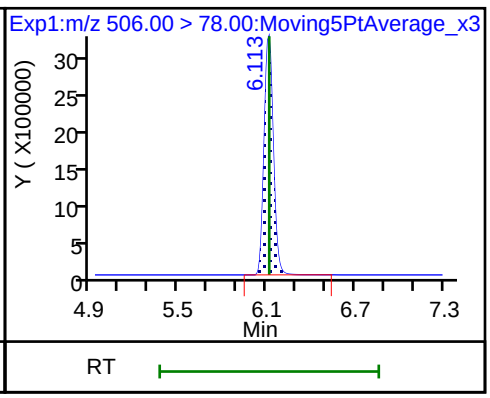
D 31 M2-8:2 FTS



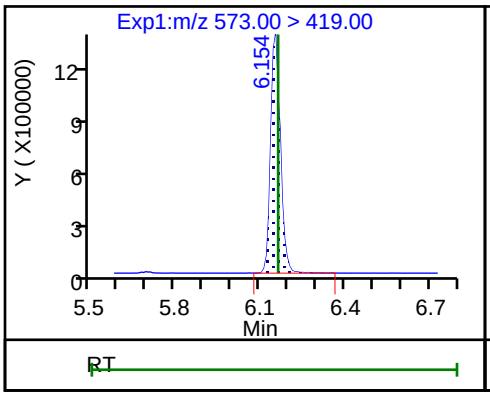
34 Perfluorooctanesulfonamide



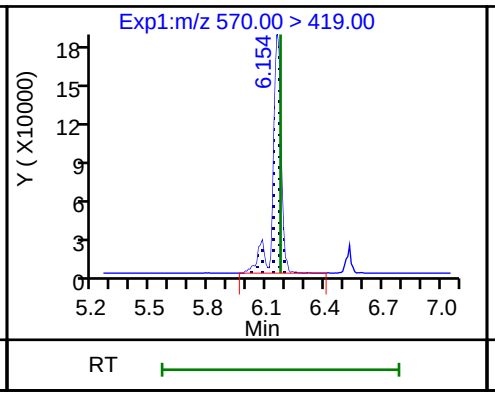
D 35 13C8 FOSA



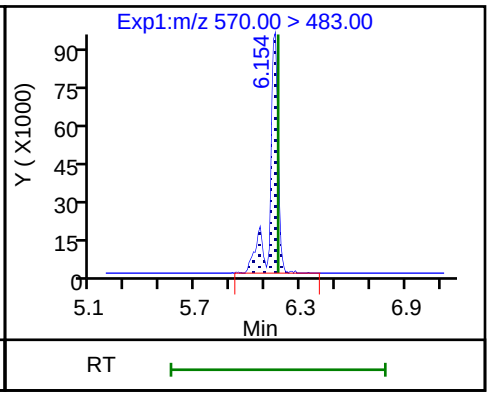
D 37 d3-NMeFOSAA



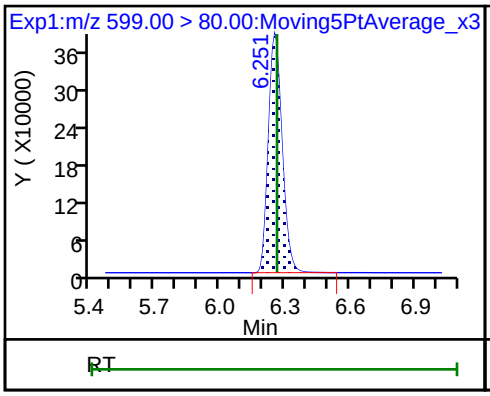
36 NMeFOSAA



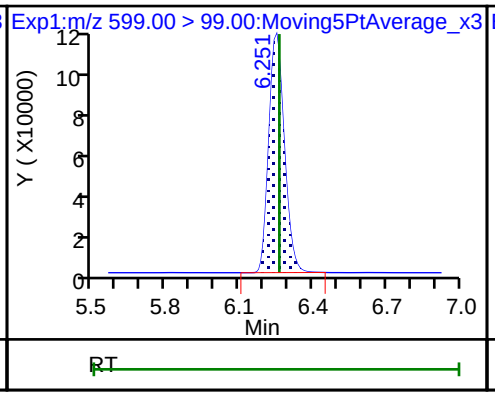
36 NMeFOSAA



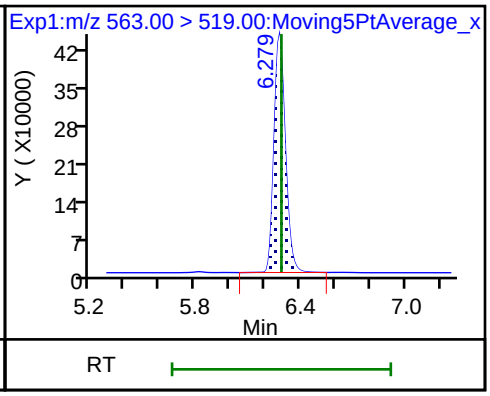
38 Perfluorodecanesulfonic acid



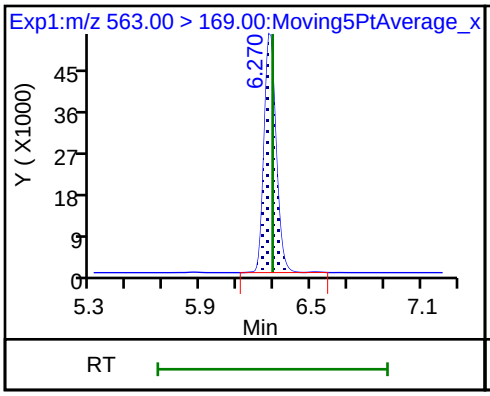
38 Perfluorodecanesulfonic acid



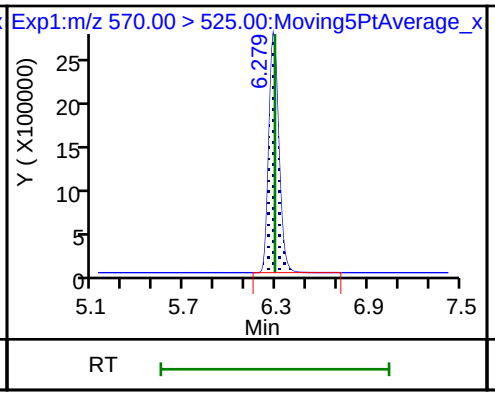
39 Perfluoroundecanoic acid



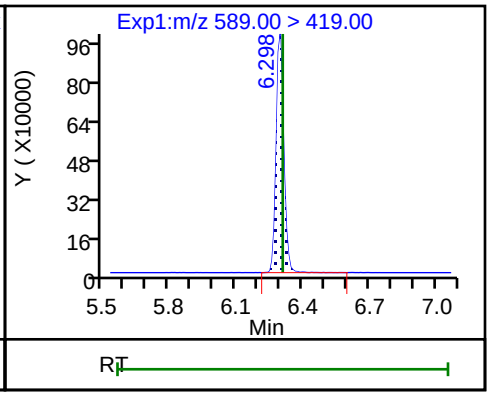
39 Perfluoroundecanoic acid



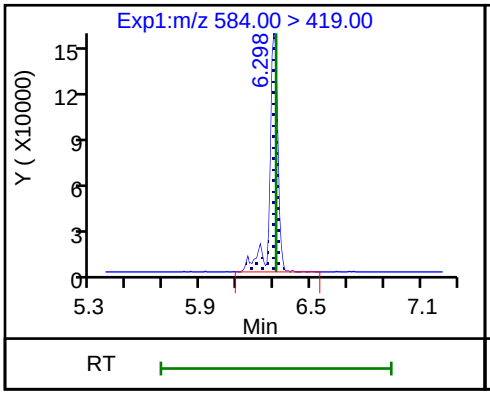
D 40 13C7 PFUnA



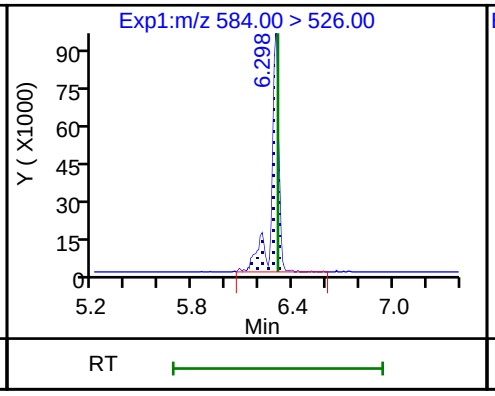
D 41 d5-NEtFOSAA



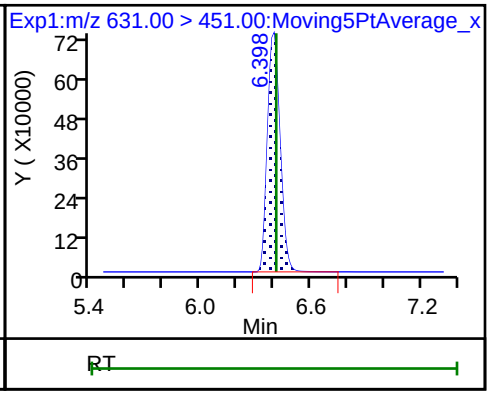
42 NEtFOSAA



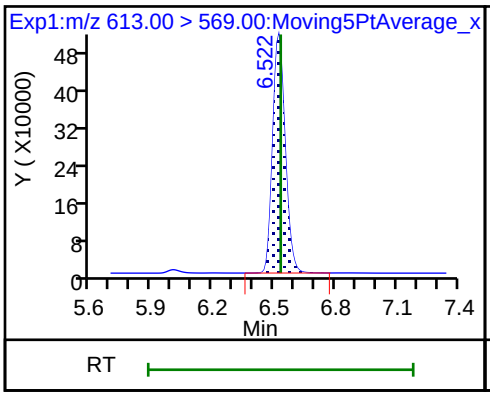
42 NEtFOSAA



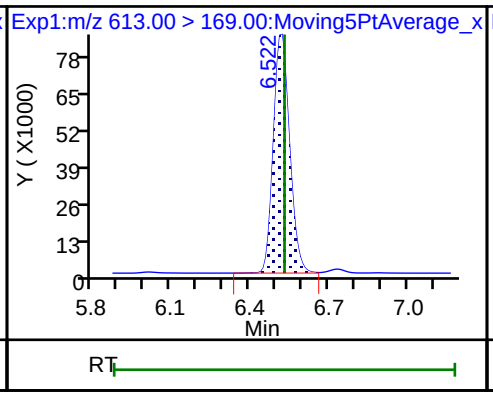
43 11ClFOS



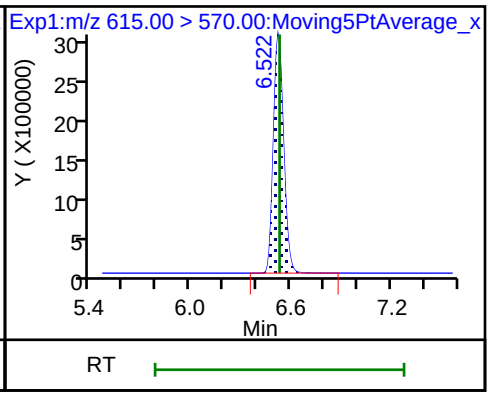
46 Perfluorododecanoic acid



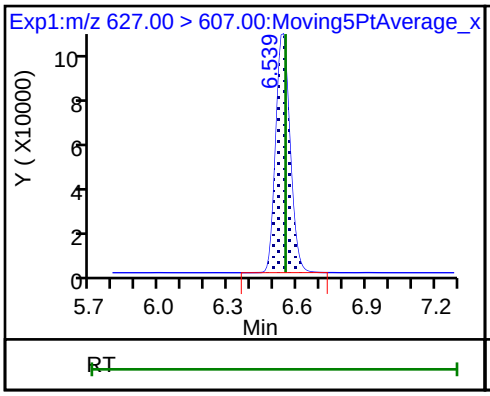
46 Perfluorododecanoic acid



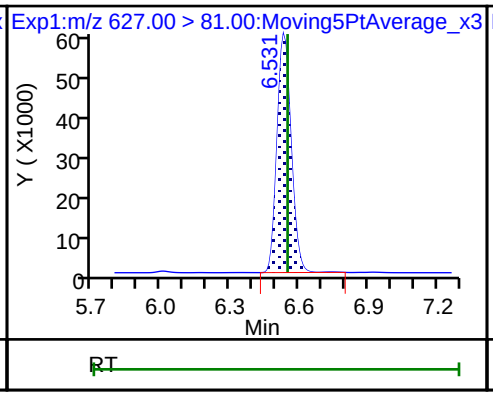
D 45 13C2-PFDoDA



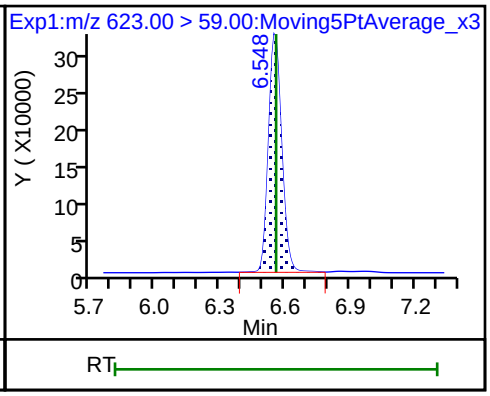
48 10:2 FTS



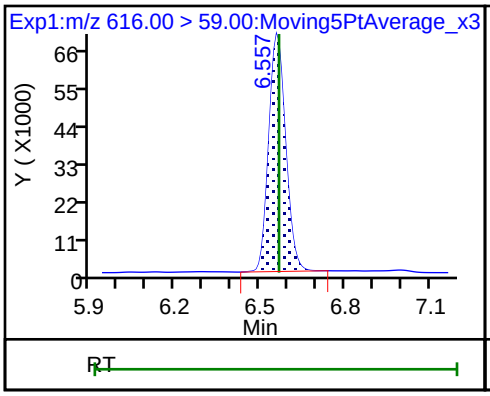
48 10:2 FTS



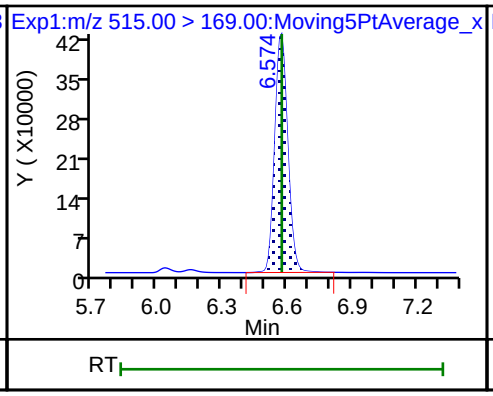
D 44 d7-N-MeFOSE-M



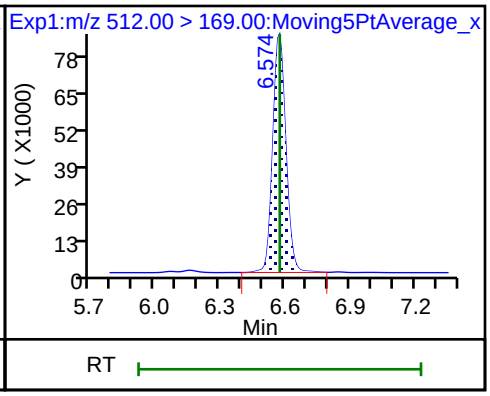
47 N-MeFOSE-M



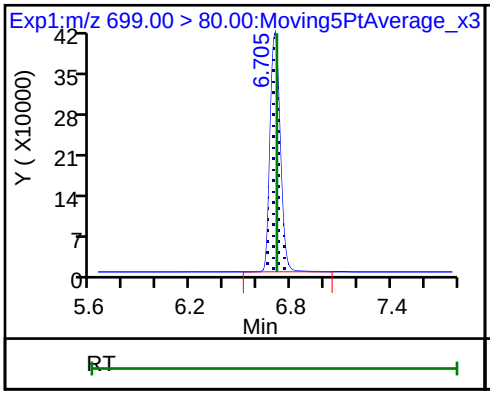
D 49 d3-NMePFOSA



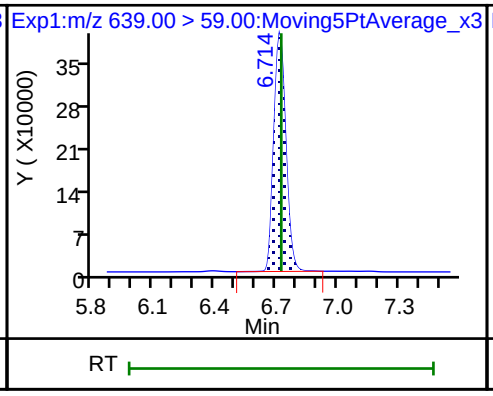
50 NMeFOSA



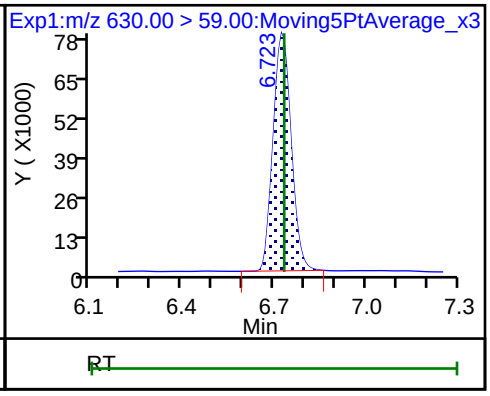
53 PFDoS



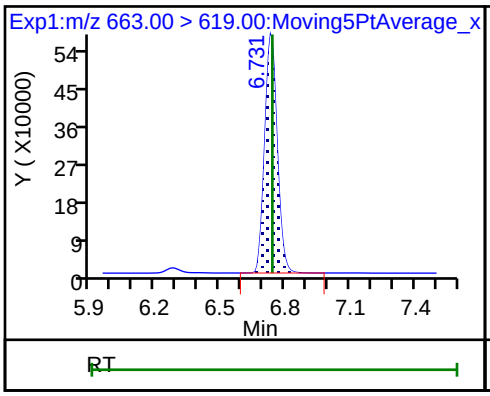
D 51 d9-N-EtFOSE-M



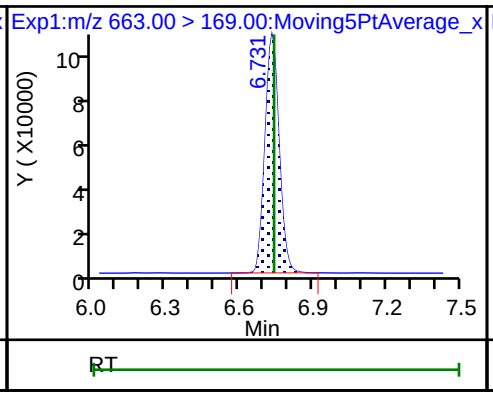
52 N-EtFOSE-M



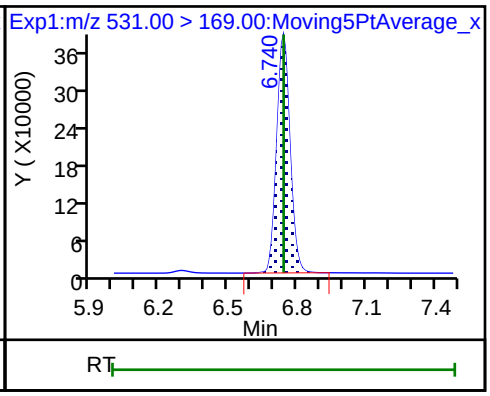
56 Perfluorotridecanoic acid



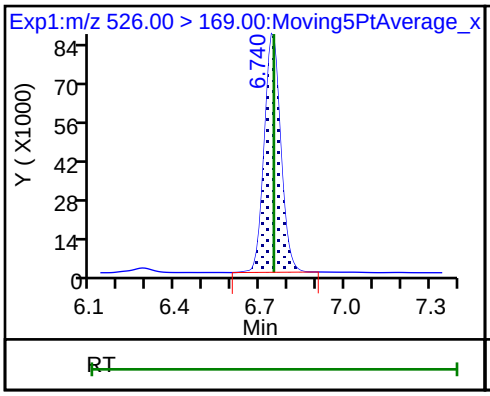
56 Perfluorotridecanoic acid



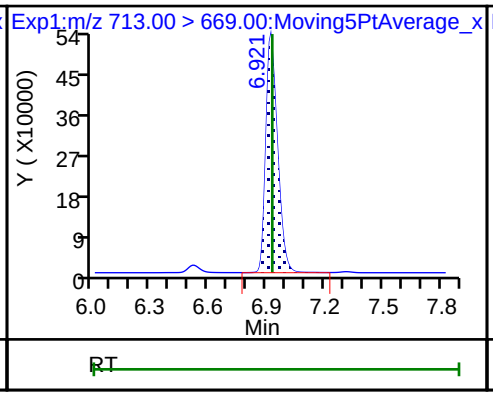
D 54 d5-NEtPFOSA



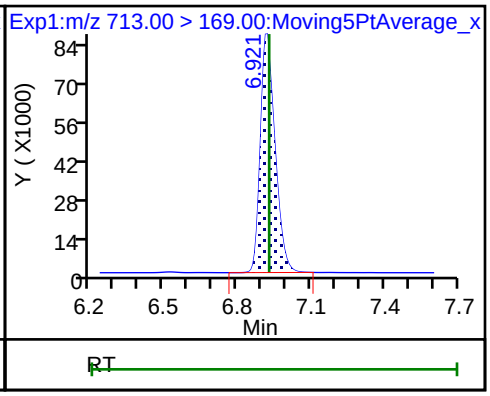
55 N-EtFOSA-M



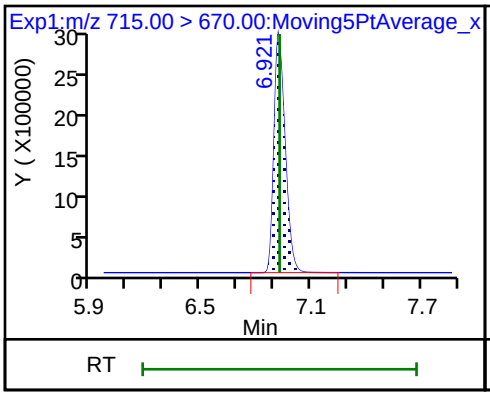
57 Perfluorotetradecanoic acid



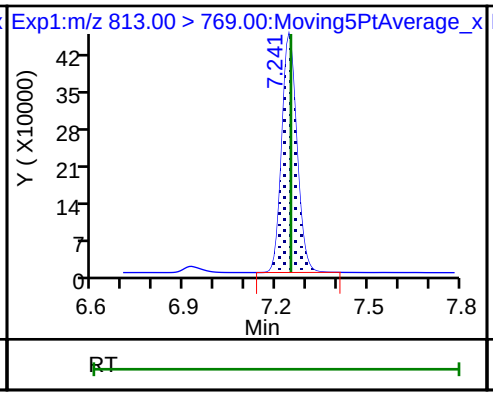
57 Perfluorotetradecanoic acid



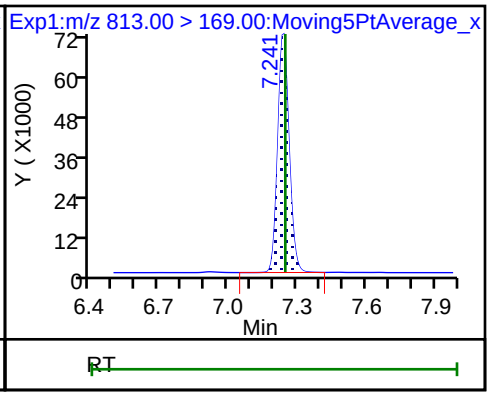
D 58 13C2 PFTeDA



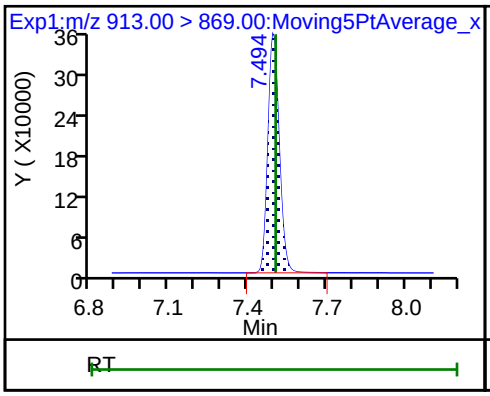
59 Perfluorohexadecanoic acid



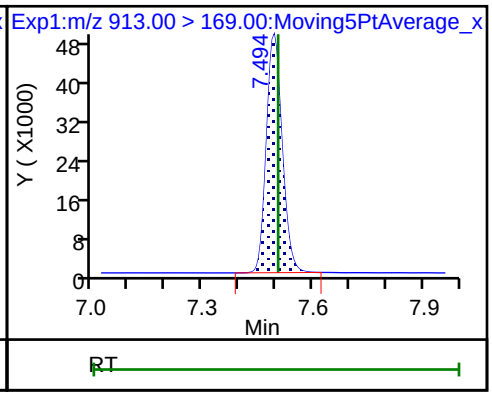
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-240466/26 Calibration Date: 04/04/2022 11:59

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR04-26.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8343	0.9183		8.81	8.00	10.1	30.0
PFMPA	AveID	0.8139	0.8861		8.71	8.00	8.9	30.0
3:3 FTCA	AveID	0.0595	0.0640		8.61	8.00	7.7	30.0
Perfluoropentanoic acid	AveID	1.030	1.103		8.57	8.00	7.1	30.0
Perfluorobutanesulfonic acid	AveID	0.9609	1.010		7.44	7.08	5.1	30.0
PFMBA	AveID	0.8283	0.9009		8.70	8.00	8.8	30.0
PFEESA	AveID	3.411	3.633		7.58	7.12	6.5	30.0
NFDHA	AveID	0.2829	0.3080		8.71	8.00	8.9	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.779	4.277		8.46	7.47	13.2	30.0
Perfluorohexanoic acid	AveID	0.8748	0.9047		8.27	8.00	3.4	30.0
Perfluoropentanesulfonic acid	AveID	0.8840	0.9823		8.34	7.50	11.1	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.119	2.423		9.15	8.00	14.3	30.0
Perfluoroheptanoic acid	AveID	0.9550	0.9677		8.11	8.00	1.3	30.0
Perfluorohexanesulfonic acid	AveID	0.9729	1.038		7.78	7.30	6.7	30.0
DONA	AveID	1.642	1.751		8.06	7.56	6.6	30.0
5:3 FTCA	AveID	0.1923	0.2049		8.52	8.00	6.5	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.213	5.659		8.23	7.58	8.5	30.0
Perfluoroheptanesulfonic acid	AveID	0.9728	1.058		8.28	7.62	8.8	30.0
Perfluorooctanoic acid	AveID	0.8951	0.9349		8.36	8.00	4.4	30.0
Perfluorooctanesulfonic acid	AveID	1.074	1.138		7.84	7.40	5.9	30.0
Perfluorononanoic acid	AveID	0.8515	0.9610		9.03	8.00	12.9	30.0
7:3 FTCA	AveID	0.1001	0.1059		8.46	8.00	5.7	30.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	AveID	2.388	2.542		7.92	7.44	6.4	30.0
Perfluorononanesulfonic acid	AveID	0.9378	1.014		8.30	7.68	8.1	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.492	8.498		8.69	7.66	13.4	30.0
Perfluorodecanoic acid	AveID	0.8690	0.9090		8.37	8.00	4.6	30.0
Perfluorooctanesulfonamide	AveID	1.005	1.150		9.15	8.00	14.4	30.0
NMeFOSAA	AveID	0.8805	0.8765		7.95	8.00	-0.5	30.0
Perfluorodecanesulfonic acid	AveID	1.057	1.160		8.47	7.71	9.8	30.0
Perfluoroundecanoic acid	AveID	0.8224	0.8978		8.73	8.00	9.2	30.0
NEtFOSAA	AveID	0.9486	1.012		8.53	8.00	6.7	30.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	AveID	2.017	2.306		8.51	7.44	14.3	30.0
Perfluorododecanoic acid	AveID	0.8799	0.9252		8.41	8.00	5.2	30.0
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	AveID	9.352	10.39		8.57	7.71	11.1	30.0
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9930	1.126		9.07	8.00	13.4	30.0
NMeFOSA	AveID	1.012	1.127		8.90	8.00	11.3	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-240466/26 Calibration Date: 04/04/2022 11:59

Instrument ID: 29347 Calib Start Date: 04/03/2022 17:12

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/03/2022 18:16

Lab File ID: 22APR04-26.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	1.031	1.115		8.38	7.74	8.1	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9193	0.9849		8.57	8.00	7.1	30.0
Perfluorotridecanoic acid	AveID	0.8786	0.9296		8.46	8.00	5.8	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.093	1.230		9.00	8.00	12.5	30.0
Perfluorotetradecanoic acid	AveID	0.8671	0.9188		8.48	8.00	6.0	30.0
Perfluorohexadecanoic acid	AveID	0.6471	0.6776		8.38	8.00	4.7	30.0
Perfluorooctadecanoic acid	AveID	0.4397	0.4695		8.54	8.00	6.8	30.0
13C4 PFBA	Ave	869605	888716		10.2	10.0	2.2	30.0
13C5 PFPeA	Ave	726568	741765		10.2	10.0	2.1	30.0
13C3 PFBS	Ave	939925	969266		9.59	9.30	3.1	30.0
M2-4:2 FTS	Ave	40589	42458		9.77	9.34	4.6	30.0
13C5 PFHxA	Ave	886590	914249		10.3	10.0	3.1	30.0
13C3 HFPO-DA	Ave	110442	108087		9.79	10.0	-2.1	30.0
13C4 PFHpA	Ave	888220	942607		10.6	10.0	6.1	30.0
13C3 PFHxS	Ave	838000	870042		9.82	9.46	3.8	30.0
M2-6:2 FTS	Ave	25548	27273		10.1	9.50	6.7	30.0
13C8 PFOA	Ave	975918	976901		10.0	10.0	0.1	30.0
13C8 PFOS	Ave	810201	809173		9.55	9.56	-0.1	30.0
13C9 PFNA	Ave	1017403	1016175		9.99	10.0	-0.1	30.0
13C6 PFDA	Ave	1080461	1105162		10.2	10.0	2.3	30.0
M2-8:2 FTS	Ave	22380	24492		10.5	9.58	9.4	30.0
13C8 FOSA	Ave	1294000	1288364		9.96	10.0	-0.4	30.0
d3-NMeFOSAA	Ave	281493	303726		10.8	10.0	7.9	30.0
13C7 PFUnA	Ave	1127314	1136291		10.1	10.0	0.8	30.0
d5-NEtFOSAA	Ave	218834	233946		10.7	10.0	6.9	30.0
13C2-PFDoDA	Ave	1193672	1194660		10.0	10.0	0.0	30.0
d7-N-MeFOSE-M	Ave	136038	132374		9.73	10.0	-2.7	30.0
d3-NMePFOSA	Ave	172223	170065		9.87	10.0	-1.3	30.0
d9-N-EtFOSE-M	Ave	164086	162111		9.88	10.0	-1.2	30.0
d5-NEtPFOSA	Ave	157541	154161		9.79	10.0	-2.1	30.0
13C2 PFTeDA	Ave	1206116	1216313		10.1	10.0	0.8	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-26.d
Lims ID: CCV 3_CAL4
Client ID:
Sample Type: CCV
Inject. Date: 04-Apr-2022 11:59:00 ALS Bottle#: 20005 Worklist Smp#: 26
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 3_CAL4
Misc. Info.: Plate: 1 Rack: 1 410-0053975-026
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 04-Apr-2022 15:46:57 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1662

First Level Reviewer: carpenterr Date: 04-Apr-2022 13:51:13
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.671	-0.015	0.998	6528707	8.81		110	12068	
D 2 13C4 PFBA										
217.00 > 172.00	3.664	3.671	-0.007		8887158	10.2		102	139828	
63 PFECA F										
229.00 > 85.00	3.891	3.898	-0.007	0.931	5258405	8.71		109	10152	
67 3:3 FTCA										
241.00 > 177.00	4.173	4.180	-0.007	0.998	379906	8.61	Target=1.29	108	16822	
241.00 > 117.00	4.173	4.180	-0.007	0.998	292538		1.30(0.64-1.93)		7812	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.180	4.187	-0.007	1.000	6546713	8.57		107	47272	
D 4 13C5 PFPeA										
268.00 > 223.00	4.180	4.187	-0.007		7417654	10.2		102	69107	
D 6 13C3 PFBS										
302.00 > 80.00	4.232	4.239	-0.007		9014176	9.59		103	589152	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.232	4.239	-0.007	1.000	6931288	7.44	Target=2.85	105	7666	
299.00 > 99.00	4.232	4.239	-0.007	1.000	2405912		2.88(1.42-4.27)		7386	
64 PFECA A										
279.00 > 85.00	4.301	4.309	-0.008	1.029	5346094	8.70		109	68419	
65 PES										
315.00 > 135.00	4.389	4.397	-0.008	0.956	23646363	7.58	Target=11.66	106	269124	
315.00 > 83.00	4.389	4.397	-0.008	0.956	1652157		14.31(5.83-17.49)		2930	
68 PFECA B										
295.00 > 201.00	4.511	4.521	-0.010	0.983	2252705	8.71		109	48823	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.550	4.551	-0.001	1.000	1356802	8.46	Target=1.85	113	98341	
327.00 > 81.00	4.540	4.551	-0.011	0.998	717058		1.89(0.93-2.78)		17093	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.550	4.560	-0.010		396557	9.77		105	12473	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.590	4.590	0.0	1.000	6616843	8.27	Target=13.79	103	84772	
313.00 > 119.00	4.590	4.590	0.0	1.000	455577		14.52(6.90-20.69)		16473	
D 9 13C5 PFHxA										
318.00 > 273.00	4.590	4.600	-0.010		9142494	10.3		103	155021	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.609	4.618	-0.009	1.089	7144869	8.34	Target=3.00	111	232874	
349.00 > 99.00	4.609	4.618	-0.009	1.089	2378969		3.00(1.50-4.50)		134894	
12 HFPO-DA										
329.00 > 285.00	4.718	4.726	-0.008	1.000	2095561	9.15		114	51036	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.718	4.726	-0.008		1080870	9.79		97.9	72563	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.979	4.989	-0.010	1.000	7296911	8.11	Target=3.13	101	51404	
363.00 > 169.00	4.979	4.989	-0.010	1.000	2297454		3.18(1.57-4.70)		26998	
D 17 13C4 PFHpA										
367.00 > 322.00	4.979	4.989	-0.010		9426068	10.6		106	305469	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.979	4.989	-0.010	0.998	6587743	7.78	Target=3.05	107	1032651	
399.00 > 99.00	4.979	4.989	-0.010	0.998	2191630		3.01(1.52-4.57)		5539	
D 16 13C3 PFHxS										
402.00 > 80.00	4.989	4.989	0.0		8230599	9.82		104	845223	
18 DONA										
377.00 > 251.00	5.023	5.031	-0.008	1.009	12475475	8.06		107	341526	
62 5:3 FTCA										
341.00 > 237.00	5.053	5.053	0.0	1.101	1498775	8.52	Target=3.13	107	14787	
341.00 > 217.00	5.053	5.053	0.0	1.101	488090		3.07(1.56-4.69)		10524	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.330	5.338	-0.008		259092	10.1		107	23163	
19 6:2 FTS										
427.00 > 407.00	5.330	5.338	-0.008	1.000	1170485	8.23	Target=1.69	109	53011	
427.00 > 81.00	5.330	5.338	-0.008	1.000	694942		1.68(0.85-2.54)		23376	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.344	-0.007	1.070	7011013	8.28	Target=3.19	109	241883	
449.00 > 99.00	5.337	5.344	-0.007	1.070	2194286		3.20(1.59-4.78)		204526	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.350	5.357	-0.007	0.999	7306316	8.36	Target=2.38	104	259428	
413.00 > 169.00	5.350	5.357	-0.007	0.999	3127236		2.34(1.19-3.57)		610520	
D 22 13C8 PFOA										
421.00 > 376.00	5.356	5.357	-0.001		9769011	10.0		100	759307	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.676	5.685	-0.009	0.999	6815566	7.84	Target=3.70	106	6763	
499.00 > 99.00	5.676	5.685	-0.009	0.999	1836744		3.71(1.85-5.54)		2280	
D 25 13C8 PFOS										
507.00 > 80.00	5.684	5.685	-0.001		7735698	9.55		99.9	393461	
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.701	-0.009	0.999	7812622	9.03	Target=4.37	113	111217	
463.00 > 169.00	5.692	5.701	-0.009	0.999	1664463		4.69(2.19-6.56)		45147	
D 27 13C9 PFNA										
472.00 > 427.00	5.700	5.701	-0.001		10161753	9.99		99.9	485478	
66 7:3 FTCA										
441.00 > 317.00	5.790	5.799	-0.009	1.262	774228	8.46	Target=11.37	106	18210	
441.00 > 337.00	5.790	5.799	-0.009	1.262	78639		9.85(5.69-17.06)		3692	
28 9ClFOS										
531.00 > 351.00	5.864	5.865	-0.001	1.032	15301832	7.92		106	798020	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.990	-0.009	1.052	6298458	8.30	Target=3.34	108	120261	
549.00 > 99.00	5.981	5.990	-0.009	1.052	1877994		3.35(1.67-5.02)		78775	
33 8:2 FTS										
527.00 > 507.00	6.005	6.014	-0.009	0.999	1595232	8.69	Target=2.06	113	75266	
527.00 > 81.00	6.005	6.014	-0.009	0.999	780491		2.04(1.03-3.09)		14241	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	6.014	-0.009	0.999	8036300	8.37	Target=9.22	105	147443	
513.00 > 169.00	6.005	6.014	-0.009	0.999	880150		9.13(4.61-13.82)		19299	
D 32 13C6 PFDA										
519.00 > 474.00	6.013	6.014	-0.001		11051617	10.2		102	431579	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.013	6.014	-0.001		234636	10.5		109	13803	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.113	6.115	-0.002	1.000	11853956	9.15		114	199812	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.115	-0.002		12883638	9.96		99.6	377387	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.162	6.163	-0.001		3037263	10.8		108	63336	
36 NMeFOSAA										
570.00 > 419.00	6.154	6.171	-0.017	0.999	2129789	7.95	Target=1.84	99.3	76467	
570.00 > 483.00	6.154	6.171	-0.017	0.999	1211008		1.76(0.92-2.77)		427451	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.262	-0.011	1.100	7239595	8.47	Target=3.50	110	270241	
599.00 > 99.00	6.251	6.262	-0.011	1.100	2082249		3.48(1.75-5.26)		94538	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.279	6.290	-0.011	0.999	8161087	8.73	Target=8.26	109	50327	
563.00 > 169.00	6.279	6.290	-0.011	0.999	964533		8.46(4.13-12.39)		43602	
D 40 13C7 PFUnA										
570.00 > 525.00	6.289	6.290	-0.001		11362905	10.1		101	193396	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.309	-0.011		2339455	10.7		107	237293	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.308	6.309	-0.001	1.001	1894113	8.53	Target=1.65	107	348167	
584.00 > 526.00	6.298	6.309	-0.011	1.000	1101547		1.72(0.82-2.47)		361326	
43 11ClFOS										
631.00 > 451.00	6.398	6.410	-0.012	1.126	13882277	8.51		114	490429	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.522	6.531	-0.009	0.999	8842744	8.41	Target=5.80	105	39502	
613.00 > 169.00	6.522	6.531	-0.009	0.999	1511317		5.85(2.90-8.70)		59153	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.531	6.531	-0.001		11946597	10.0		100	234153	
48 10:2 FTS										
627.00 > 607.00	6.539	6.549	-0.010	1.087	1963100	8.57	Target=1.80	111	93576	
627.00 > 81.00	6.539	6.549	-0.010	1.087	1083301		1.81(0.90-2.69)		42606	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.558	-0.001		1323738	9.73		97.3	5670	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.566	0.0	1.001	1192217	9.07		113	13038	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.575	-0.001		1700651	9.87		98.7	4306	
50 NMeFOSA										
512.00 > 169.00	6.574	6.575	-0.001	1.000	1533242	8.90		111	11543	
53 PFDoS										
699.00 > 80.00	6.705	6.715	-0.010	1.180	6988820	8.38		108	156062	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.724	-0.001		1621109	9.88		98.8	6727	
52 N-EtFOSE-M										
630.00 > 59.00	6.731	6.732	-0.001	1.001	1277244	8.57		107	14329	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.740	0.0	1.032	8883995	8.46	Target=5.49	106	24446	
663.00 > 169.00	6.731	6.740	-0.009	1.031	1568903		5.66(2.75-8.24)		55340	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.740	0.0		1541609	9.79		97.9	9827	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.748	0.0	1.001	1516874	9.00		112	10658	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.928	-0.007	0.999	8940566	8.48	Target=5.81	106	18088	
713.00 > 169.00	6.921	6.928	-0.007	0.999	1472707		6.07(2.91-8.72)		59406	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.928	0.0		12163127	10.1		101	715031	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.248	-0.007	1.045	6593106	8.38	Target=5.99	105	21714	
813.00 > 169.00	7.241	7.248	-0.007	1.045	1050413		6.28(2.99-8.98)		38635	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.505	-0.006	1.082	4568345	8.54	Target=7.27	107	47945	
913.00 > 169.00	7.494	7.505	-0.011	1.082	620091		7.37(3.63-10.90)		26196	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD4_00014 Amount Added: 200.00 Units: uL

Report Date: 04-Apr-2022 15:46:59 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-26.d

Injection Date: 04-Apr-2022 11:59:00 Instrument ID: 29347

Lims ID: CCV 3_CAL4

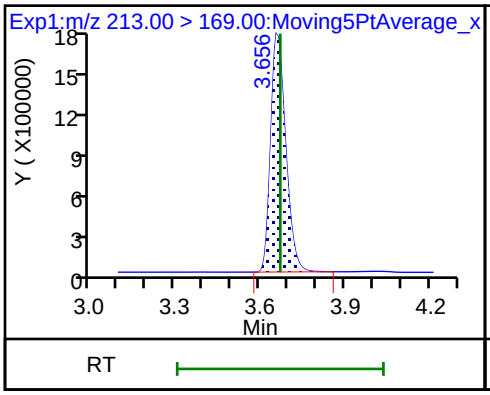
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20005 Worklist Smp#: 26

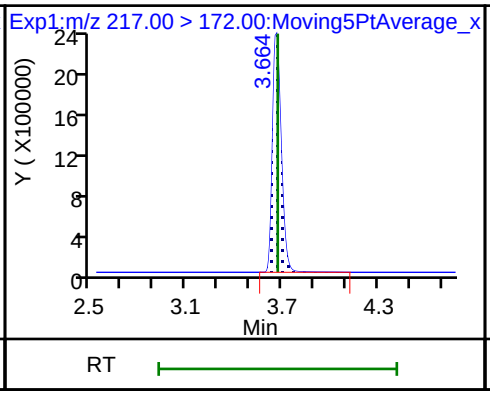
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

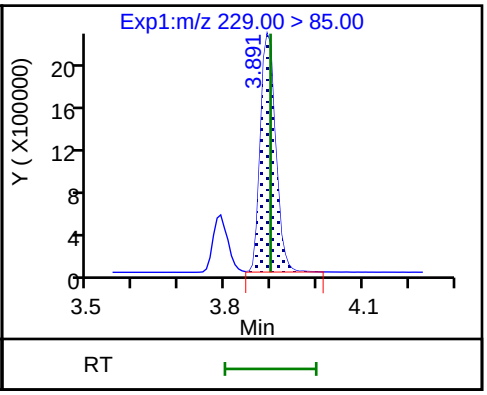
1 Perfluorobutanoic acid



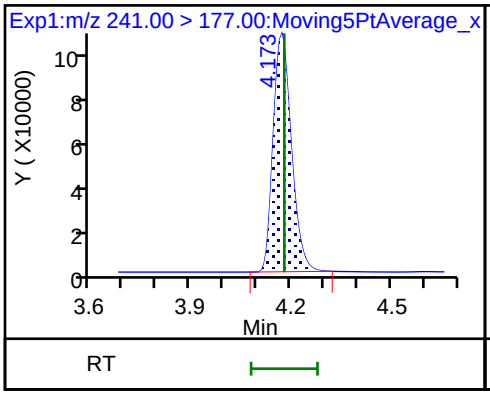
D 2 13C4 PFBA



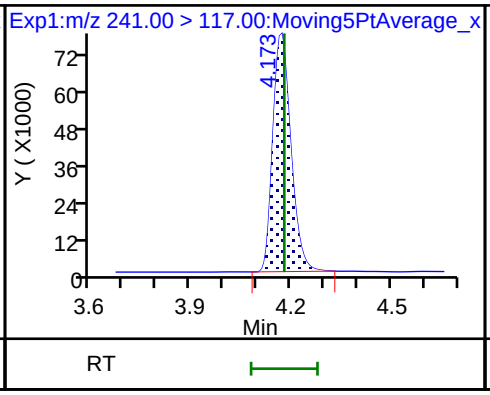
63 PFECA F



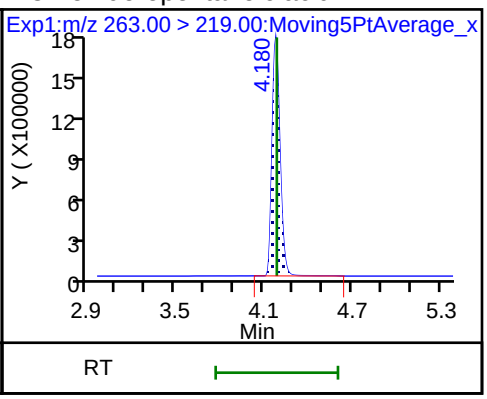
67 3:3 FTCA



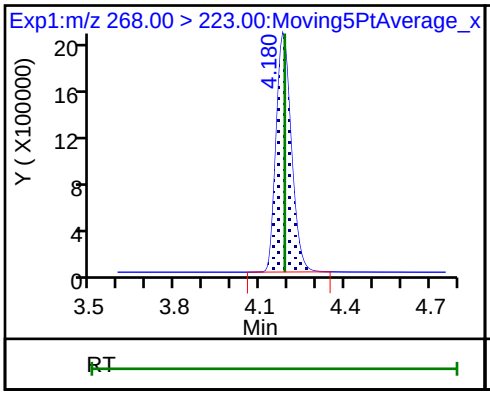
67 3:3 FTCA



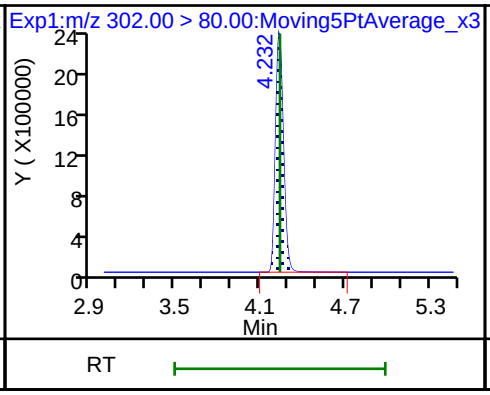
3 Perfluoropentanoic acid



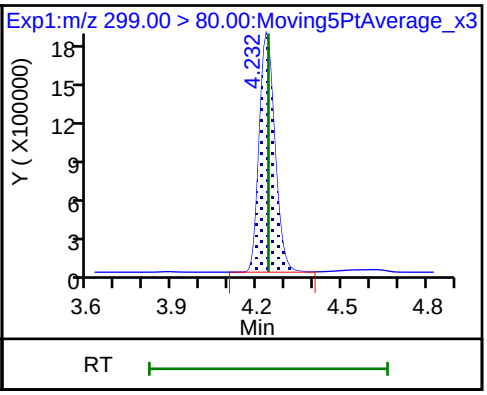
D 4 13C5 PFPeA



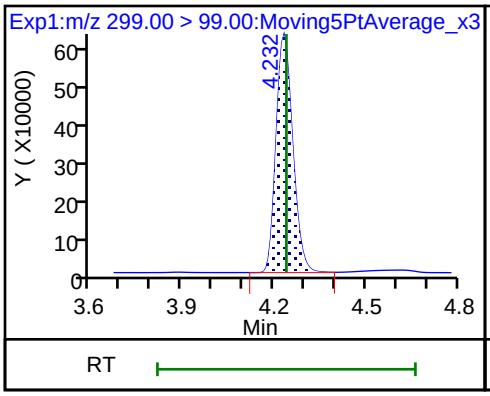
D 6 13C3 PFBS



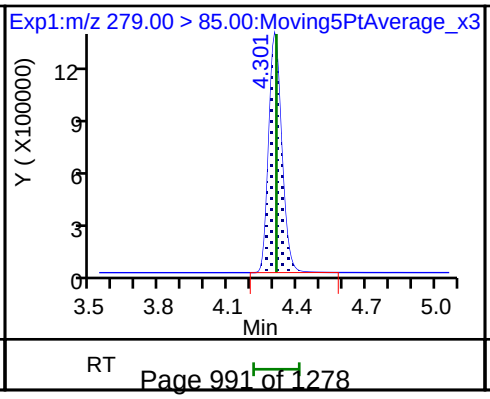
5 Perfluorobutanesulfonic acid



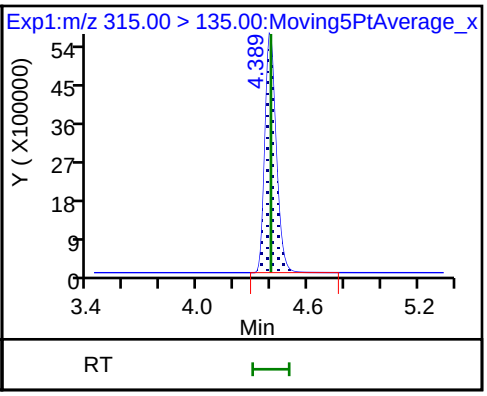
5 Perfluorobutanesulfonic acid



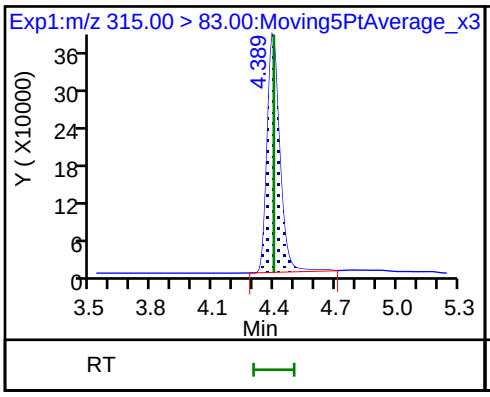
64 PFECA A



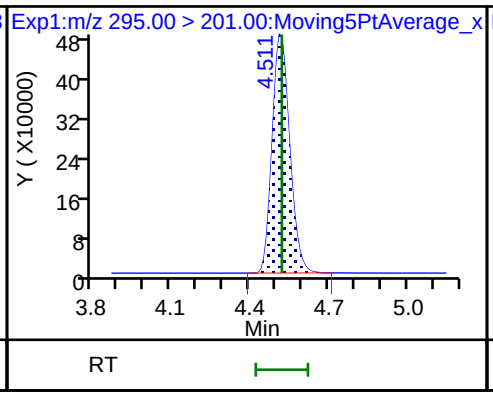
65 PES



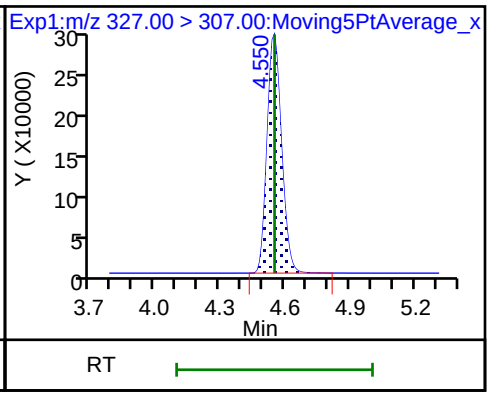
65 PES



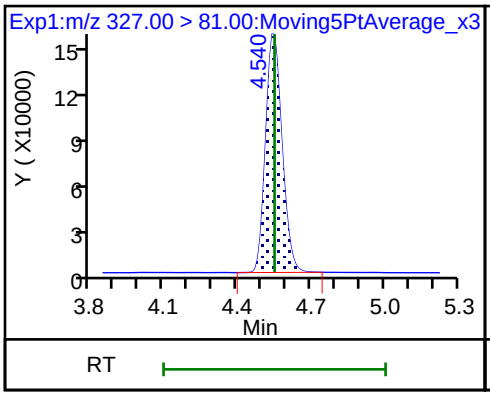
68 PFECA B



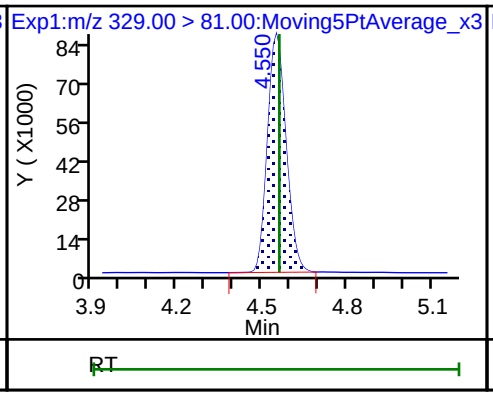
7 4:2 FTS



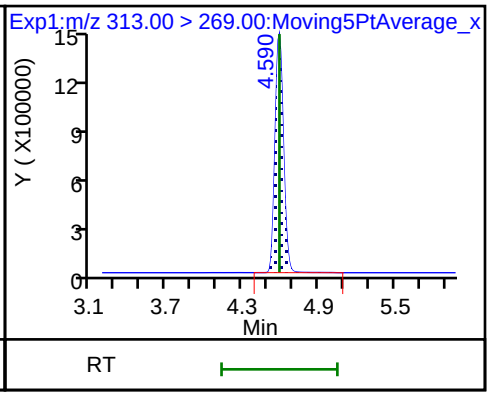
7 4:2 FTS



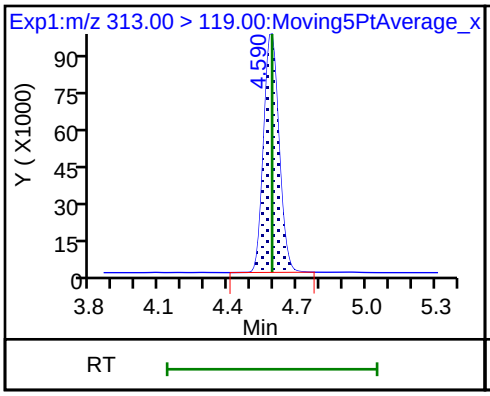
D 8 M2-4:2 FTS



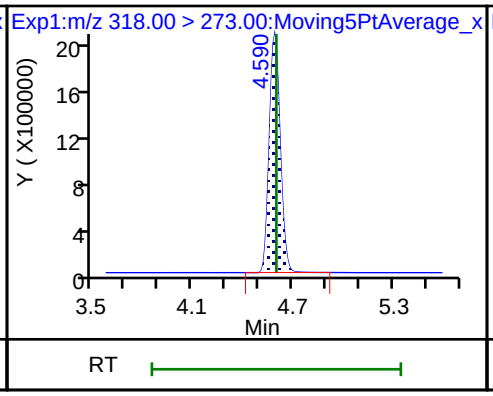
10 Perfluorohexanoic acid



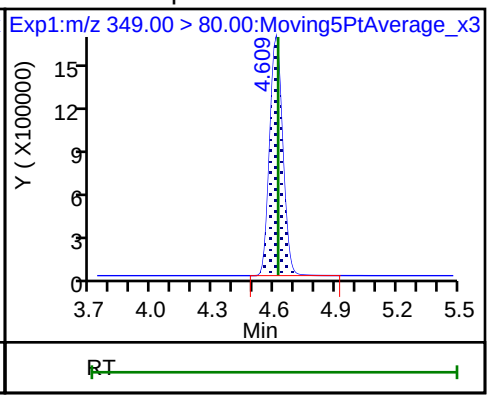
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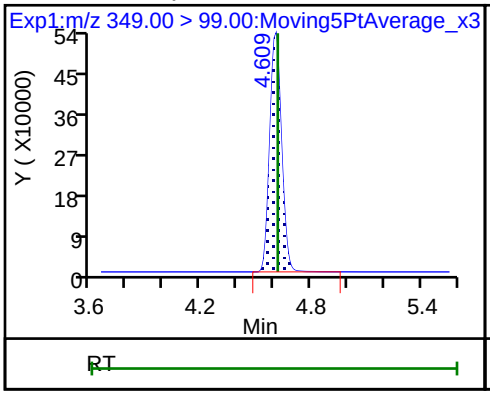
D 9 13C5 PFHxA



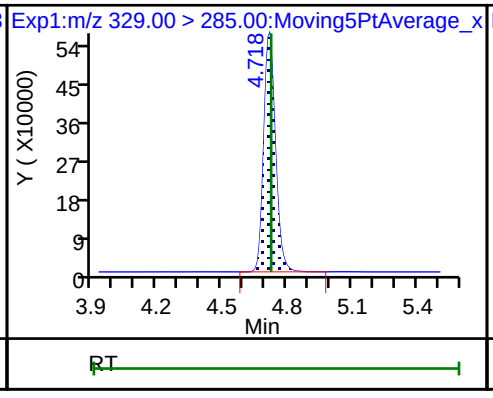
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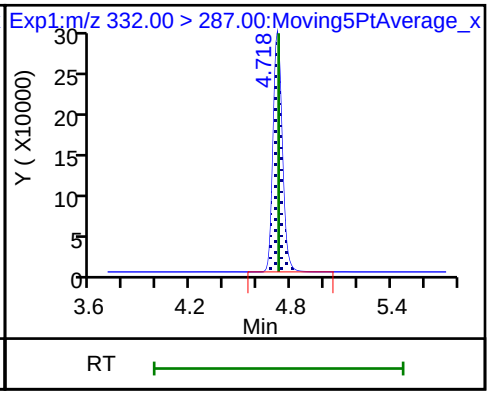
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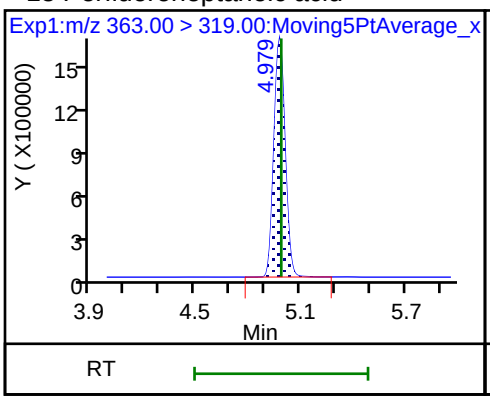
12 HFPO-DA



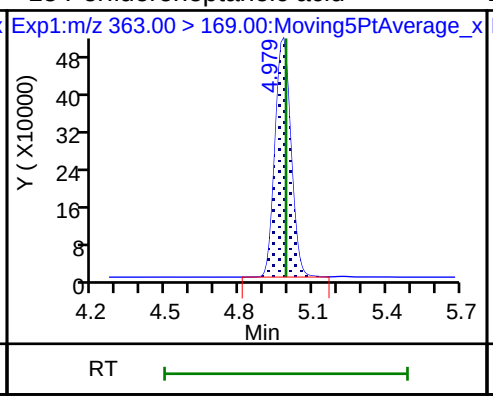
D 13 13C3 HFPO-DA



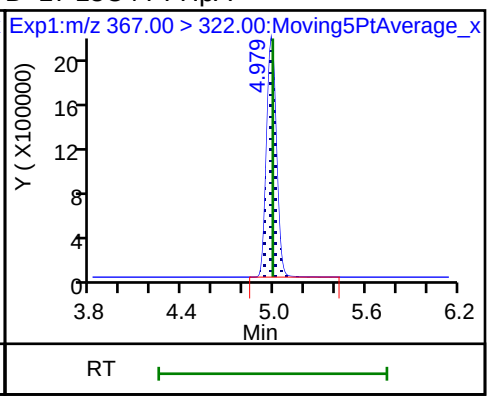
15 Perfluoroheptanoic acid



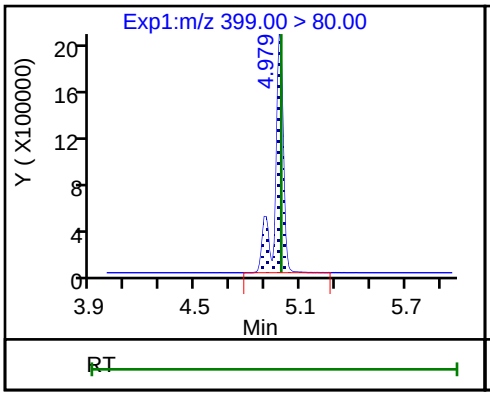
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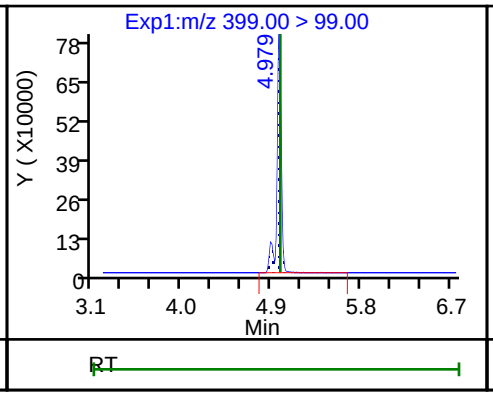
D 17 13C4 PFHpA



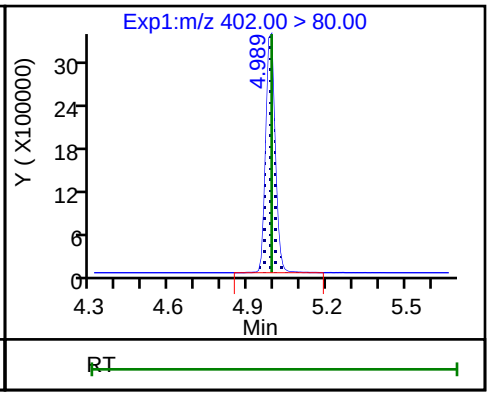
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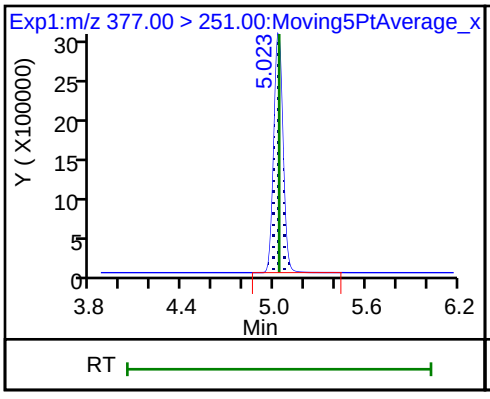
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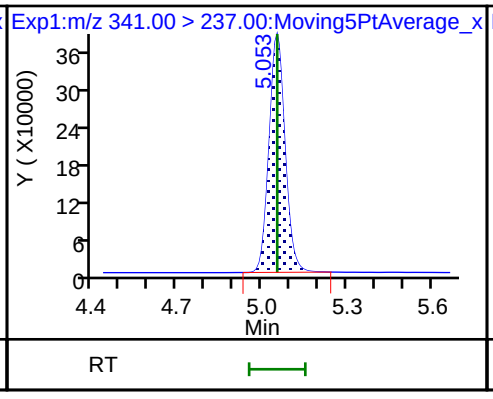
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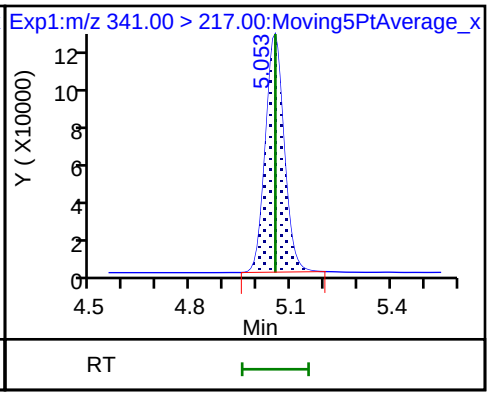
18 DONA



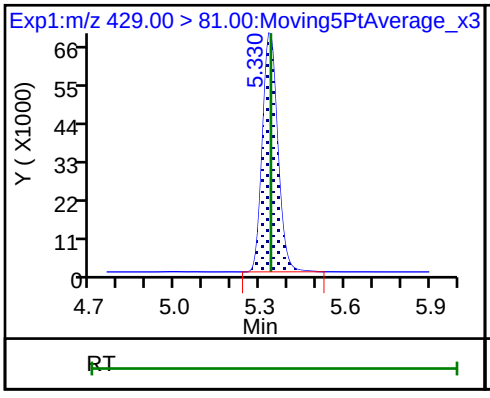
62 5:3 FTCA



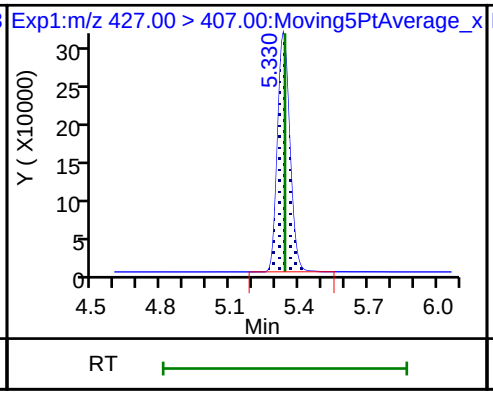
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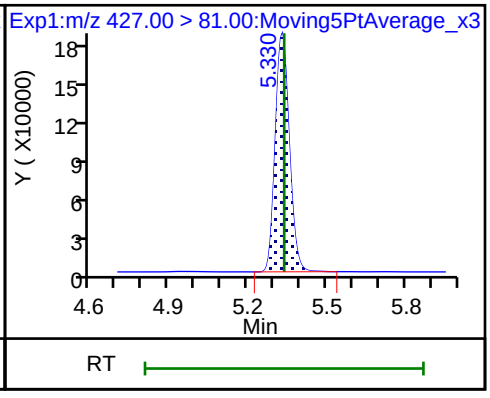
D 20 M2-6:2 FTS



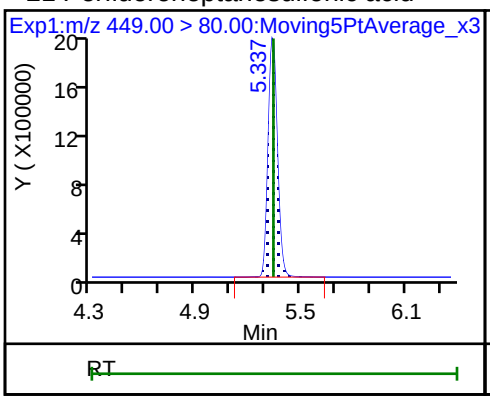
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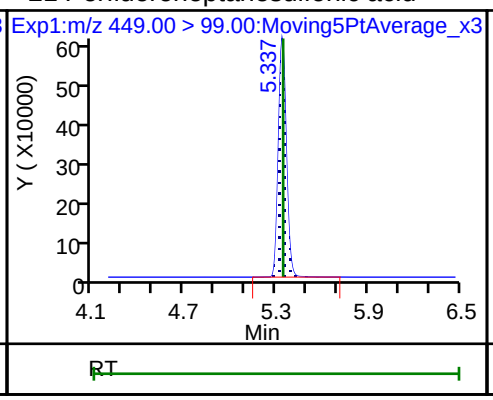
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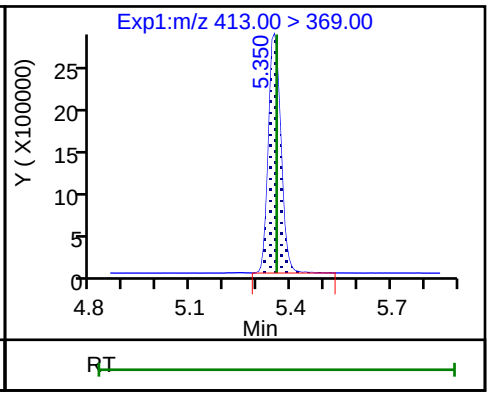
21 Perfluoroheptanesulfonic acid



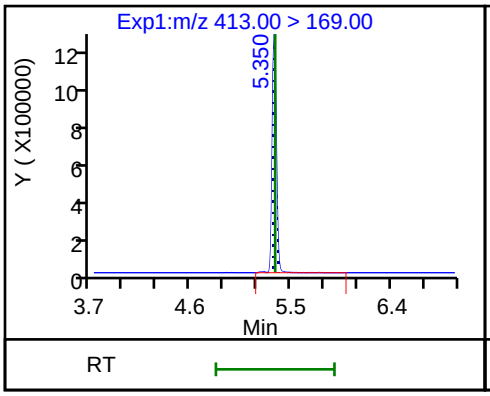
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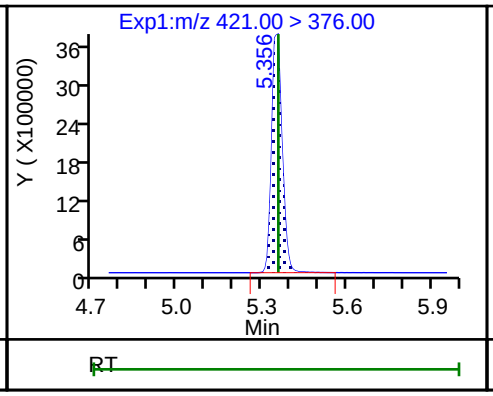
23 Perfluorooctanoic acid



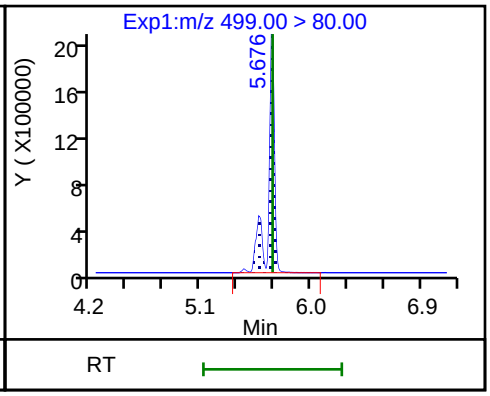
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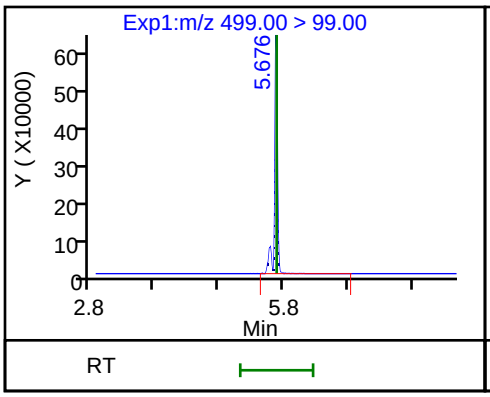
D 22 13C8 PFOA



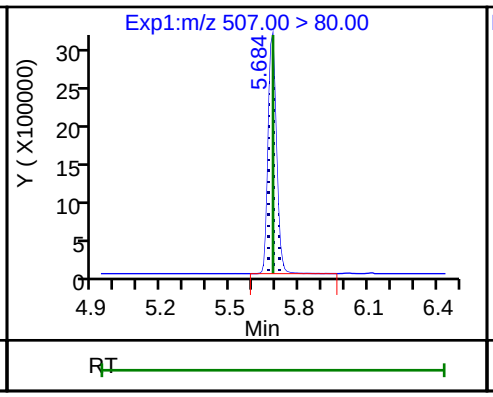
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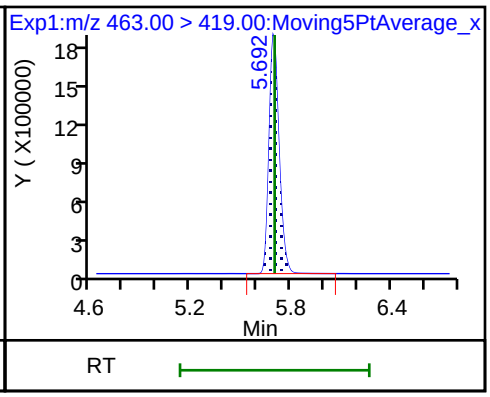
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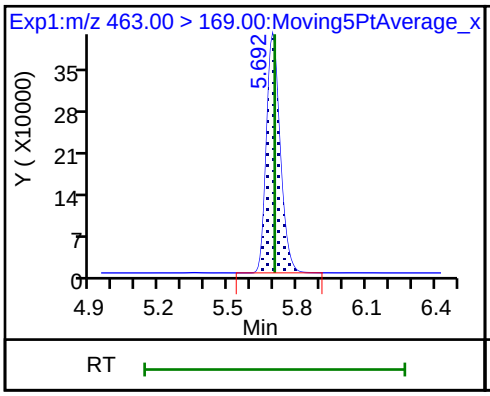
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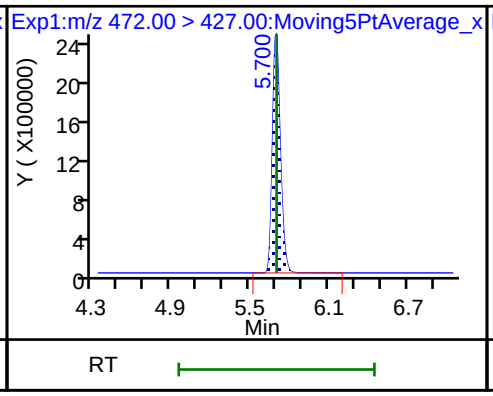
26 Perfluorononanoic acid



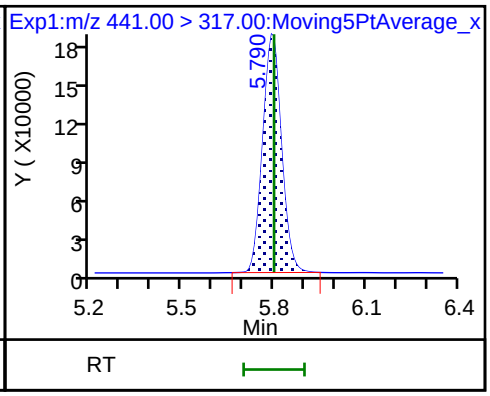
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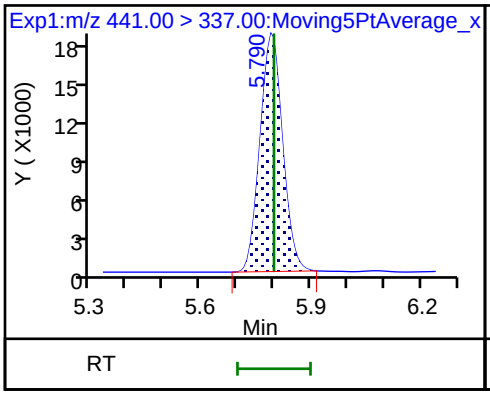
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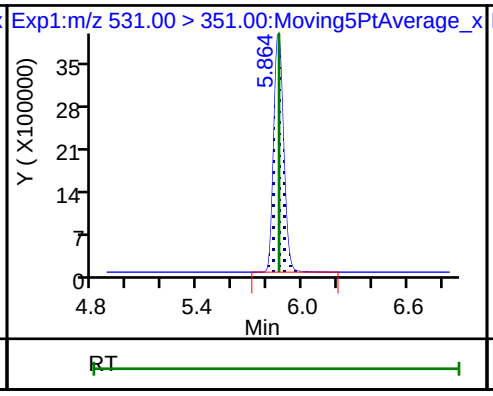
66 7:3 FTCA



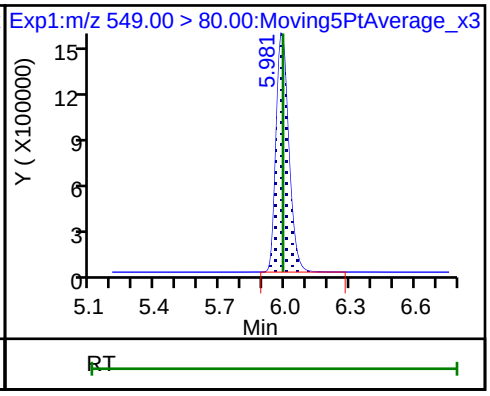
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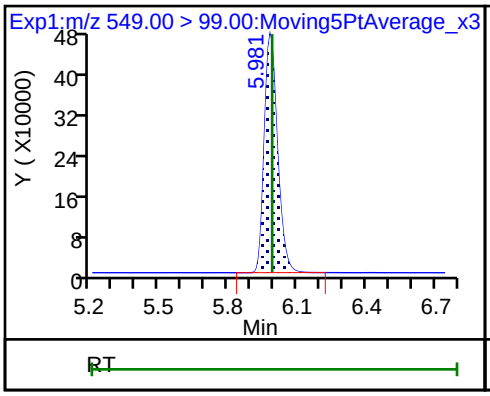
28 9ClFOS



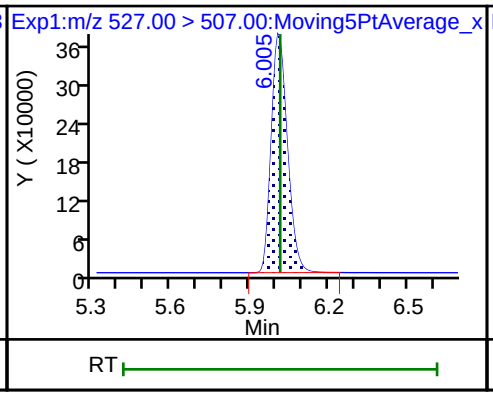
29 Perfluorononanesulfonic acid



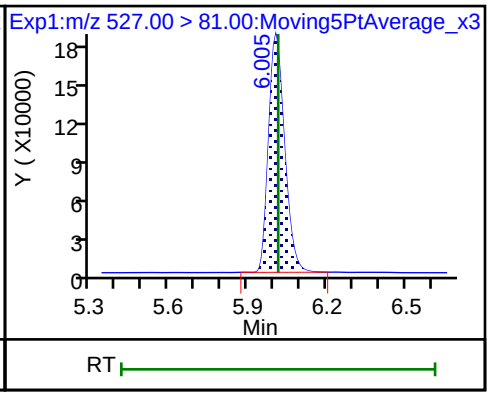
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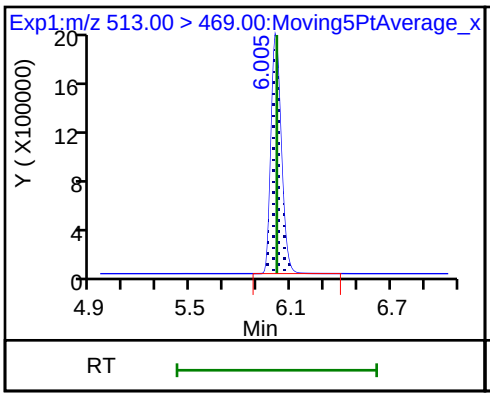
33 8:2 FTS



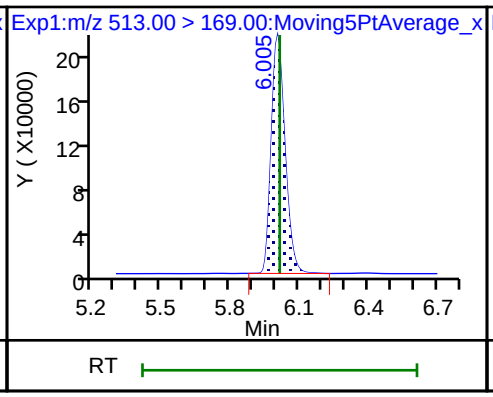
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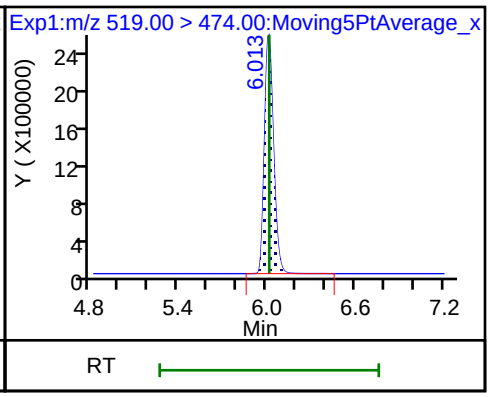
30 Perfluorodecanoic acid



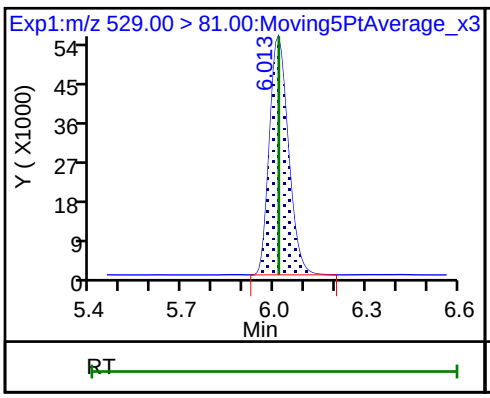
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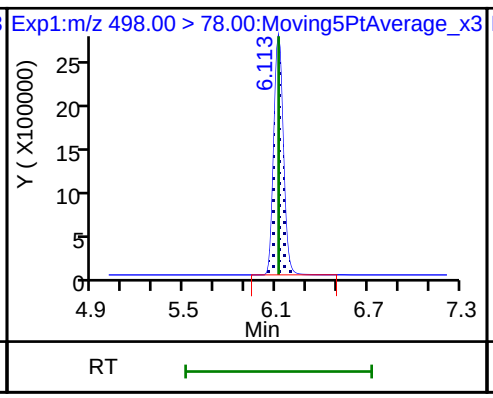
D 32 13C6 PFDA



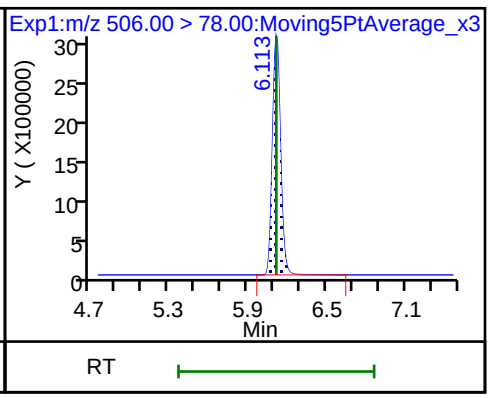
D 31 M2-8:2 FTS



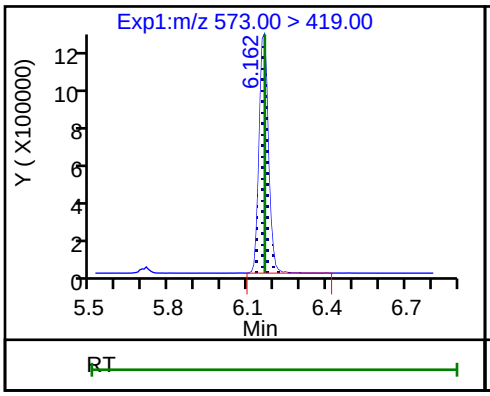
34 Perfluorooctanesulfonamide



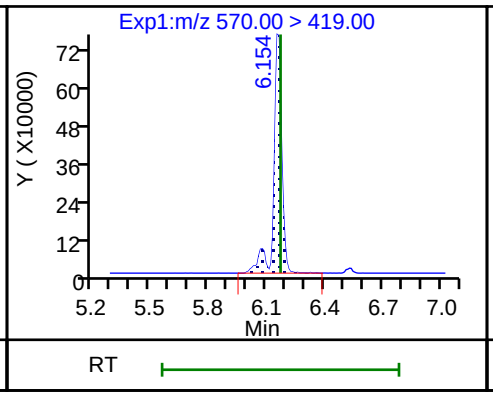
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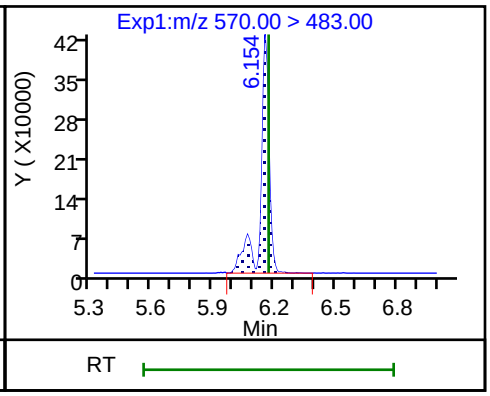
D 37 d3-NMeFOSAA



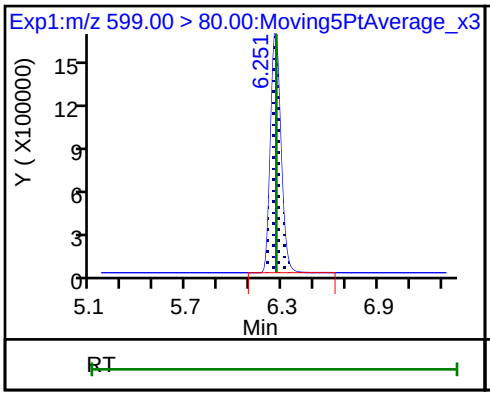
36 NMeFOSAA



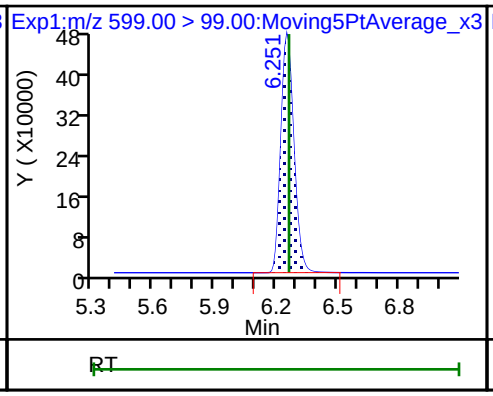
36 NMeFOSAA



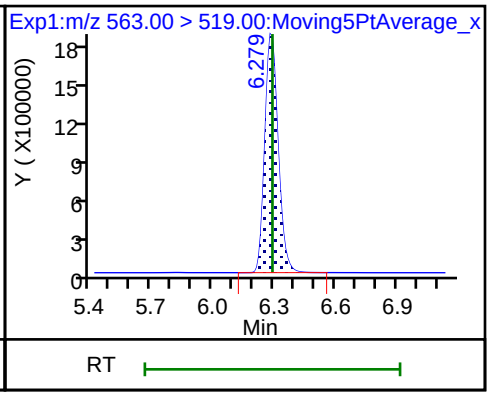
38 Perfluorodecanesulfonic acid



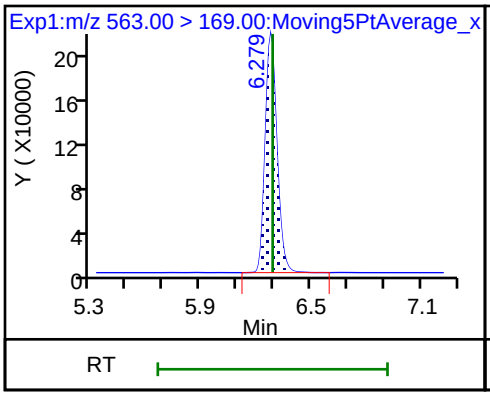
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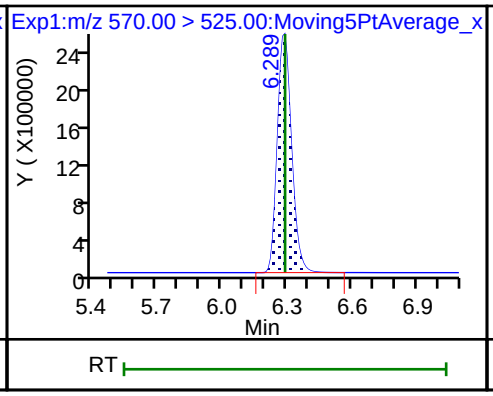
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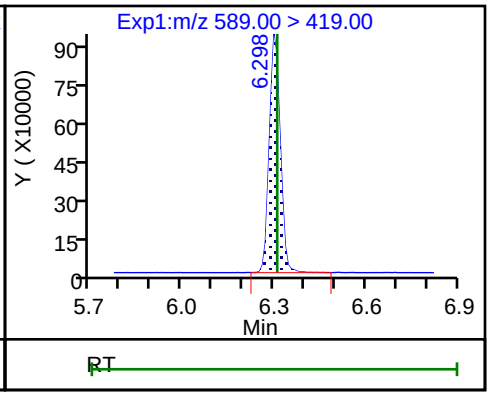
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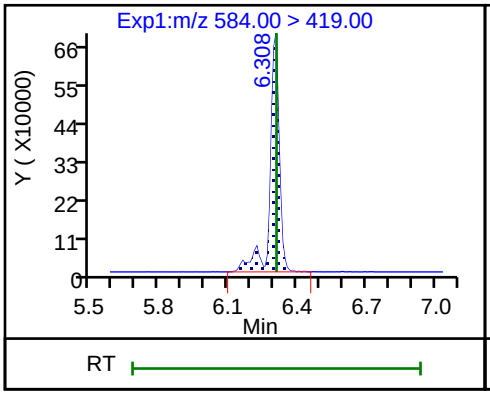
D 40 13C7 PFUnA



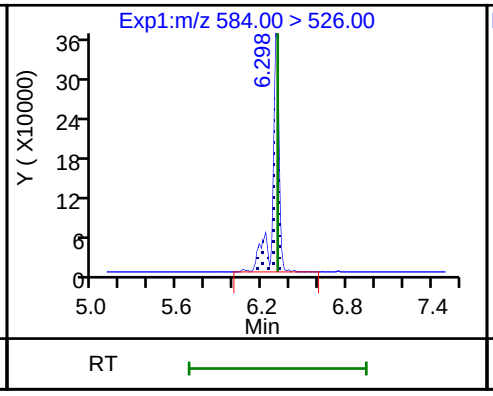
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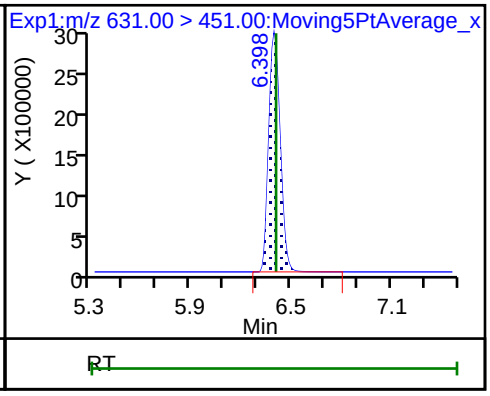
42 NEtFOSAA



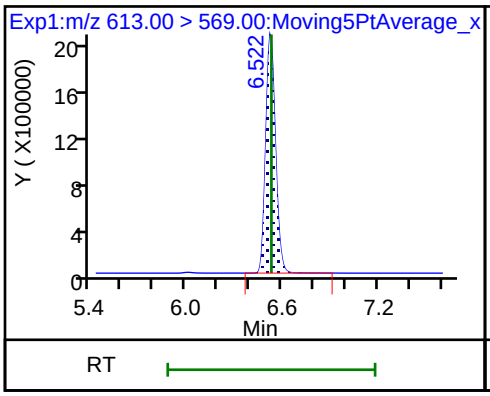
42 NEtFOSAA



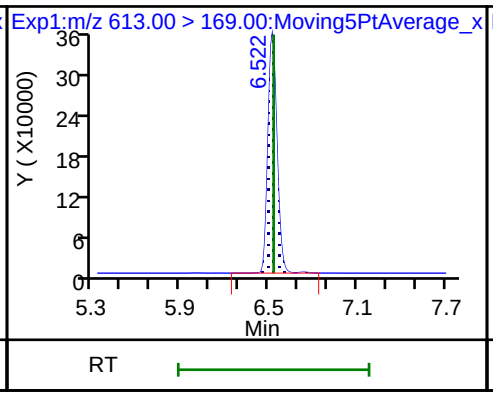
43 11ClFOS



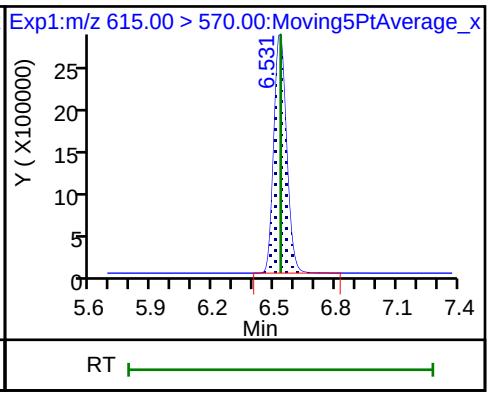
46 Perfluorododecanoic acid



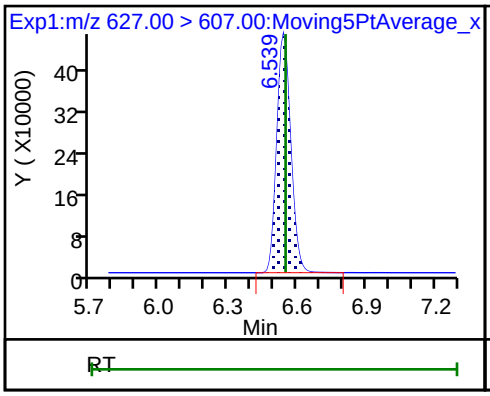
46 Perfluorododecanoic acid



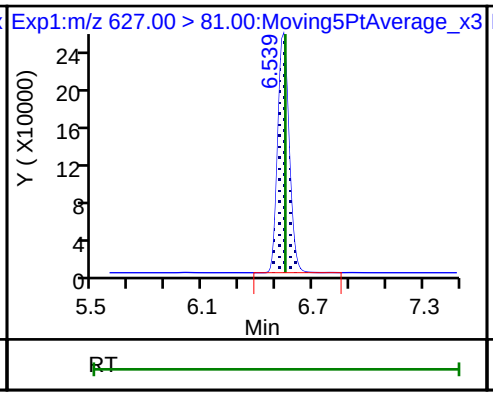
D 45 13C2-PFDoDA



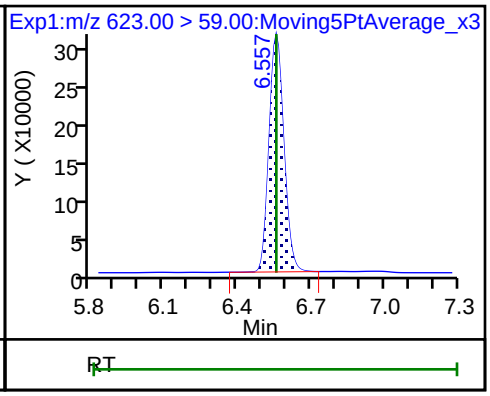
48 10:2 FTS



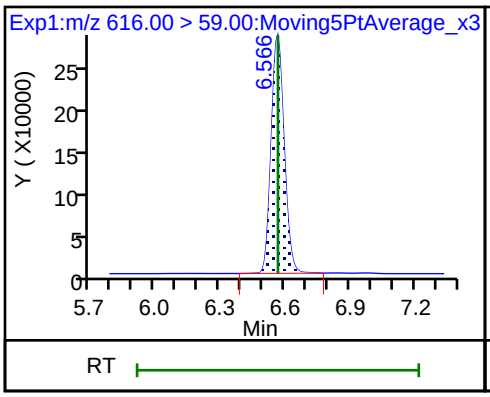
48 10:2 FTS



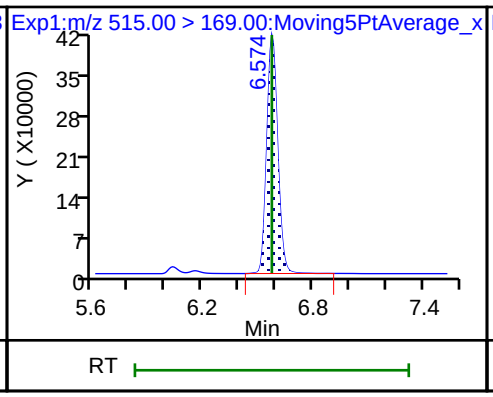
D 44 d7-N-MeFOSE-M



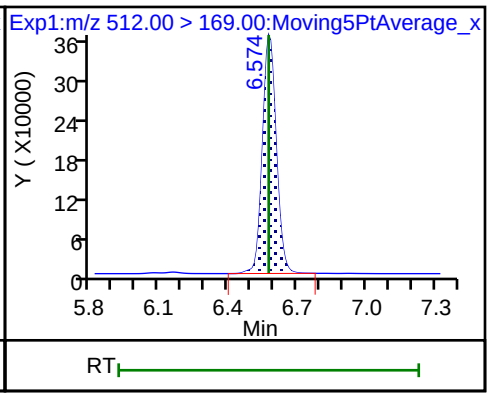
47 N-MeFOSE-M



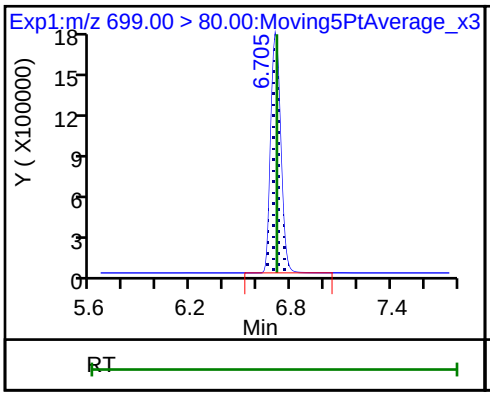
D 49 d3-NMePFOSA



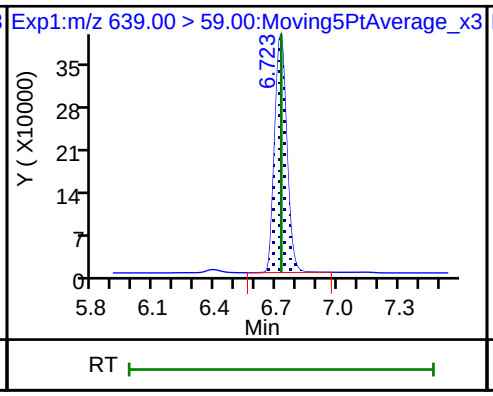
50 NMeFOSA



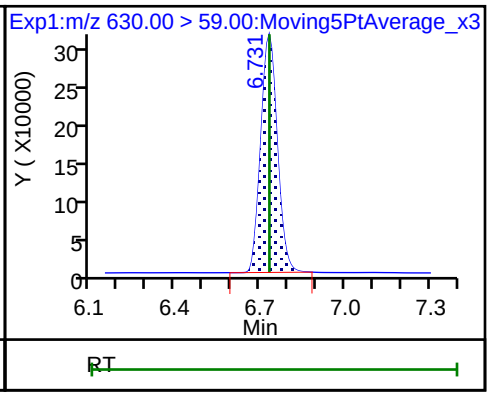
53 PFDoS



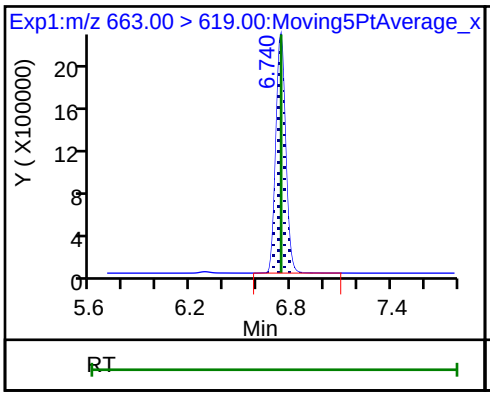
D 51 d9-N-EtFOSE-M



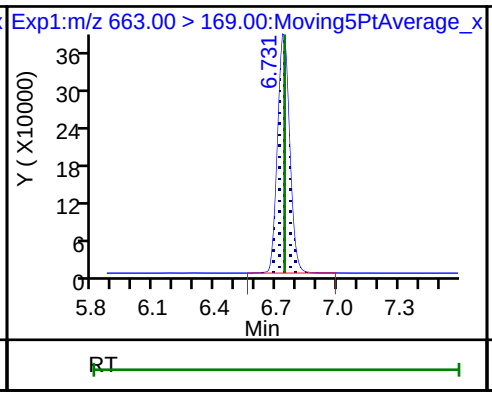
52 N-EtFOSE-M



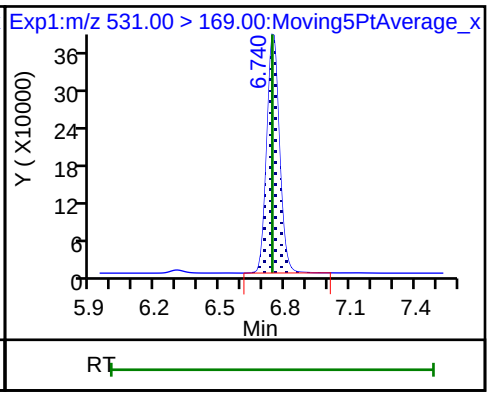
56 Perfluorotridecanoic acid



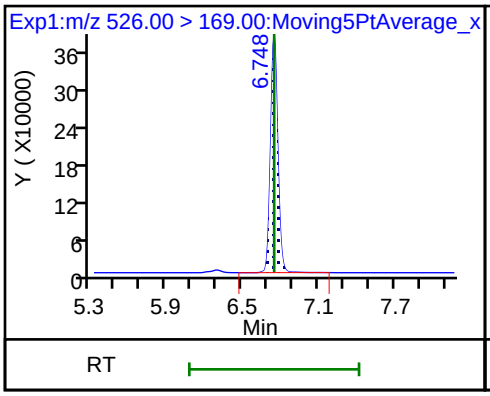
56 Perfluorotridecanoic acid



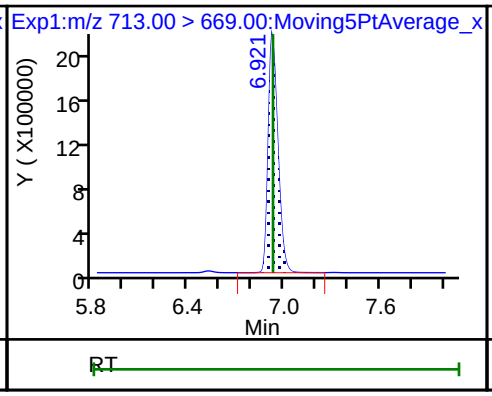
D 54 d5-NEtPFOSA



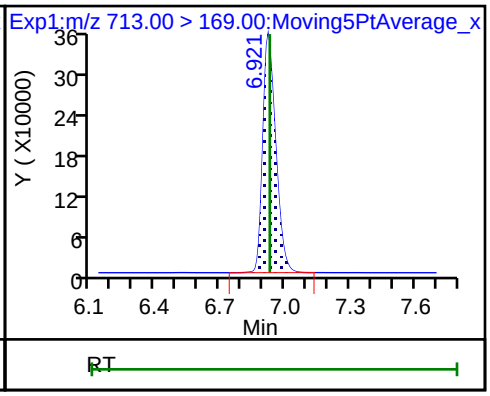
55 N-EtFOSA-M



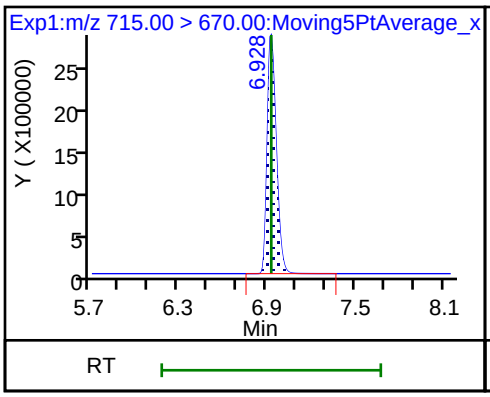
57 Perfluorotetradecanoic acid



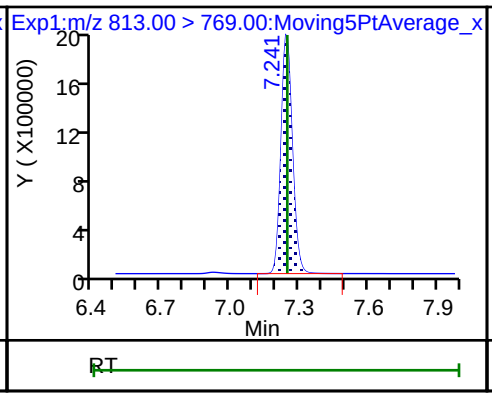
57 Perfluorotetradecanoic acid



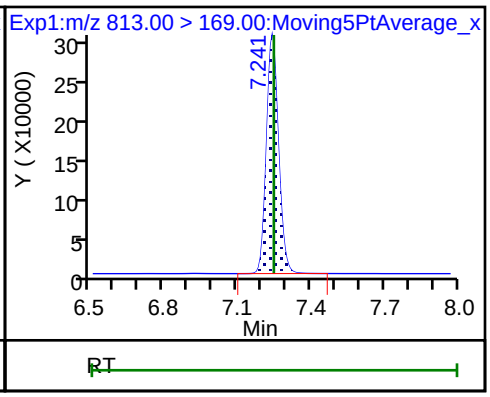
D 58 13C2 PFTeDA



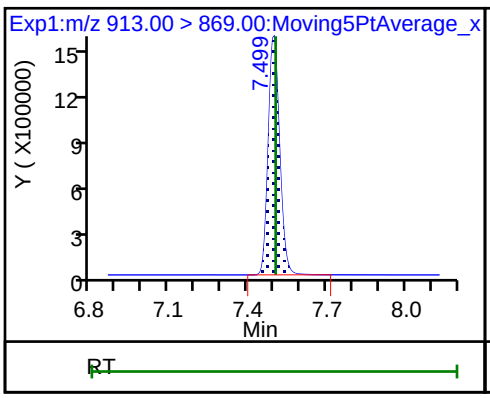
59 Perfluorohexadecanoic acid



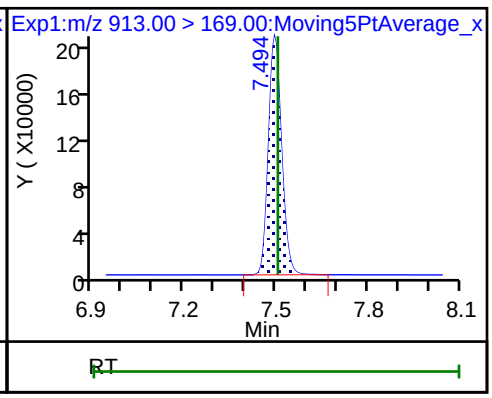
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: ICV 410-242022/9 Calibration Date: 04/07/2022 11:16

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-27.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8221	0.8372		2.04	2.00	1.8	30.0
PFMPA	AveID	0.8092	0.8306		2.05	2.00	2.6	30.0
3:3 FTCA	AveID	0.0602	0.0592		1.97	2.00	-1.7	30.0
Perfluoropentanoic acid	AveID	1.047	1.042		1.99	2.00	-0.5	30.0
Perfluorobutanesulfonic acid	AveID	0.9581	0.9902		1.83	1.77	3.4	30.0
PFMBA	AveID	0.8034	0.8243		2.05	2.00	2.6	30.0
PFEESA	AveID	3.456	3.632		1.87	1.78	5.1	30.0
NFDHA	AveID	0.2914	0.2840		1.95	2.00	-2.5	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.837	3.958		1.93	1.87	3.1	30.0
Perfluorohexanoic acid	AveID	0.8536	0.8917		2.09	2.00	4.5	30.0
Perfluoropentanesulfonic acid	AveID	0.8962	0.9530		1.99	1.88	6.3	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.450	2.554		2.09	2.00	4.3	30.0
Perfluoroheptanoic acid	AveID	0.9573	0.9754		2.04	2.00	1.9	30.0
Perfluorohexanesulfonic acid	AveID	0.9746	0.9700		1.82	1.82	-0.5	30.0
DONA	AveID	1.621	1.615		1.88	1.89	-0.4	30.0
5:3 FTCA	AveID	0.1975	0.1883		1.91	2.00	-4.7	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.264	4.982		1.79	1.90	-5.4	30.0
Perfluoroheptanesulfonic acid	AveID	0.9680	0.9322		1.83	1.90	-3.7	30.0
Perfluorooctanoic acid	AveID	0.9021	0.8854		1.96	2.00	-1.8	30.0
Perfluorooctanesulfonic acid	AveID	1.112	1.110		1.85	1.85	-0.1	30.0
Perfluorononanoic acid	AveID	0.9008	0.8965		1.99	2.00	-0.5	30.0
7:3 FTCA	AveID	0.1048	0.1078		2.06	2.00	2.9	30.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	AveID	2.346	2.382		1.89	1.86	1.5	30.0
Perfluorononanesulfonic acid	AveID	0.9364	0.9216		1.89	1.92	-1.6	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.853	7.300		1.78	1.92	-7.0	30.0
Perfluorodecanoic acid	AveID	0.8656	0.8484		1.96	2.00	-2.0	30.0
Perfluorooctanesulfonamide	AveID	1.036	1.011		1.95	2.00	-2.4	30.0
NMeFOSAA	AveID	0.8731	0.9096		2.08	2.00	4.2	30.0
Perfluorodecanesulfonic acid	AveID	1.038	1.034		1.92	1.93	-0.3	30.0
Perfluoroundecanoic acid	AveID	0.8208	0.8268		2.01	2.00	0.7	30.0
NEtFOSAA	AveID	0.9399	0.9530		2.03	2.00	1.4	30.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	AveID	2.075	2.124		1.90	1.86	2.4	30.0
Perfluorododecanoic acid	AveID	0.8808	0.8518		1.93	2.00	-3.3	30.0
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	AveID	8.900	8.232		1.78	1.93	-7.5	30.0
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	AveID	1.050	0.9722		1.85	2.00	-7.4	30.0
NMeFOSA	AveID	1.036	0.998		1.93	2.00	-3.7	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: ICV 410-242022/9 Calibration Date: 04/07/2022 11:16

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-27.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.9847	0.9897		1.95	1.94	0.5	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9455	0.9359		1.98	2.00	-1.0	30.0
Perfluorotridecanoic acid	AveID	0.8823	0.8595		1.95	2.00	-2.6	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.118	1.082		1.94	2.00	-3.2	30.0
Perfluorotetradecanoic acid	AveID	0.8909	0.8904		2.00	2.00	-0.0	30.0
Perfluorohexadecanoic acid	AveID	0.6314	0.5938		1.88	2.00	-6.0	30.0
Perfluorooctadecanoic acid	AveID	0.4183	0.4150		1.98	2.00	-0.8	30.0
13C4 PFBA	Ave	809587	852507		10.5	10.0	5.3	30.0
13C5 PFPeA	Ave	694051	703844		10.1	10.0	1.4	30.0
13C3 PFBS	Ave	922837	938026		9.45	9.30	1.6	30.0
M2-4:2 FTS	Ave	43630	44913		9.61	9.34	2.9	30.0
13C5 PFHxA	Ave	798937	866026		10.8	10.0	8.4	30.0
13C3 HFPO-DA	Ave	86595	84996		9.82	10.0	-1.8	30.0
13C3 PFHxS	Ave	826639	888664		10.2	9.46	7.5	30.0
13C4 PFHpA	Ave	840835	919126		10.9	10.0	9.3	30.0
M2-6:2 FTS	Ave	29064	30515		9.97	9.50	5.0	30.0
13C8 PFOA	Ave	913254	960936		10.5	10.0	5.2	30.0
13C8 PFOS	Ave	746154	792682		10.2	9.56	6.2	30.0
13C9 PFNA	Ave	935044	970757		10.4	10.0	3.8	30.0
13C6 PFDA	Ave	1011228	1079016		10.7	10.0	6.7	30.0
M2-8:2 FTS	Ave	24281	26366		10.4	9.58	8.6	30.0
13C8 FOSA	Ave	1241961	1319528		10.6	10.0	6.2	30.0
d3-NMeFOSAA	Ave	289701	292924		10.1	10.0	1.1	30.0
13C7 PFUnA	Ave	1028028	1063011		10.3	10.0	3.4	30.0
d5-NEtFOSAA	Ave	221835	233000		10.5	10.0	5.0	30.0
13C2-PFDoDA	Ave	1064795	1149494		10.8	10.0	8.0	30.0
d7-N-MeFOSE-M	Ave	116144	126832		10.9	10.0	9.2	30.0
d3-NMePFOSA	Ave	156838	159395		10.2	10.0	1.6	30.0
d9-N-EtFOSE-M	Ave	139633	145262		10.4	10.0	4.0	30.0
d5-NEtPFOSA	Ave	140743	145991		10.4	10.0	3.7	30.0
13C2 PFTeDA	Ave	1061225	1091466		10.3	10.0	2.8	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-27.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 07-Apr-2022 11:16:32 ALS Bottle#: 20009 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1 410-0054309-009
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist:

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:45:53 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 11:34:20
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.655	3.656	-0.001	1.000	1427404	2.04			2635	
D 2 13C4 PFBA										
217.00 > 172.00	3.655	3.663	-0.008		8525073	10.5		105	154083	
63 PFECA F										
229.00 > 85.00	3.890	3.890	0.0	0.931	1169222	2.05			9784	
67 3:3 FTCA										
241.00 > 177.00	4.169	4.165	0.004	0.998	83328	1.97	Target=1.38		5709	
241.00 > 117.00	4.169	4.165	0.004	0.998	60061		1.39(0.69-2.06)		2047	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.176	4.172	0.004	1.000	1466481	1.99			5612	
D 4 13C5 PFPeA										
268.00 > 223.00	4.176	4.183	-0.007		7038438	10.1		101	70280	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.228	4.231	-0.003	0.998	1644043	1.83	Target=2.90		2025	
299.00 > 99.00	4.228	4.231	-0.003	0.998	546318		3.01(1.45-4.36)		1792	
D 6 13C3 PFBS										
302.00 > 80.00	4.236	4.236	0.0		8723643	9.45		102	567165	
64 PFECA A										
279.00 > 85.00	4.297	4.301	-0.004	1.029	1160323	2.05			18620	
65 PES										
315.00 > 135.00	4.393	4.397	-0.004	0.958	5599397	1.87	Target=12.33		113880	
315.00 > 83.00	4.393	4.397	-0.004	0.958	381101		14.69(6.17-18.50)		483	
68 PFECA B										
295.00 > 201.00	4.515	4.511	0.004	0.985	491977	1.95			13276	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.544	4.540	0.004	1.000	332045	1.93	Target=1.82		18286	
327.00 > 81.00	4.544	4.540	0.004	1.000	200629		1.66(0.91-2.73)		4249	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.544	4.554	-0.010		419491	9.61		103	13053	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.584	4.579	0.005	1.000	1544534	2.09	Target=14.46		9533	
313.00 > 119.00	4.584	4.579	0.005	1.000	104349		14.80(7.23-21.70)		3819	
D 9 13C5 PFHxA										
318.00 > 273.00	4.584	4.594	-0.010		8660255	10.8		108	159587	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.603	4.609	-0.006	1.087	1676984	1.99	Target=3.09		76404	
349.00 > 99.00	4.603	4.609	-0.006	1.087	520859		3.22(1.55-4.64)		23786	
12 HFPO-DA										
329.00 > 285.00	4.714	4.711	0.003	1.000	434242	2.09			10631	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.714	4.721	-0.007		849961	9.82		98.2	55506	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.972	4.970	0.002	0.998	1793101	2.04	Target=3.12		13125	
363.00 > 169.00	4.972	4.970	0.002	0.998	560564		3.20(1.56-4.68)		10603	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.972	4.979	-0.007	0.998	1572253	1.82	Target=3.09		261317	
399.00 > 99.00	4.972	4.979	-0.007	0.998	515170		3.05(1.55-4.64)		1074	
D 17 13C4 PFHpA										
367.00 > 322.00	4.982	4.982	0.0		9191261	10.9		109	83461	
D 16 13C3 PFHxS										
402.00 > 80.00	4.982	4.982	0.0		8406764	10.2		108	3536407	
18 DONA										
377.00 > 251.00	5.024	5.022	0.002	1.008	2805828	1.88			40839	
62 5:3 FTCA										
341.00 > 237.00	5.046	5.045	0.001	1.101	326096	1.91	Target=3.25		5203	
341.00 > 217.00	5.046	5.045	0.001	1.101	100707		3.24(1.63-4.88)		2597	
19 6:2 FTS										
427.00 > 407.00	5.324	5.323	0.001	0.999	288237	1.79	Target=1.70		26166	
427.00 > 81.00	5.324	5.323	0.001	0.999	172460		1.67(0.85-2.55)		7886	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.331	0.0		289896	9.97		105	20200	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.338	5.337	0.001	1.072	1577304	1.83	Target=3.14		88076	
449.00 > 99.00	5.331	5.337	-0.006	1.070	472984		3.33(1.57-4.70)		26056	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.345	5.344	0.001	0.999	1701624	1.96	Target=2.30		45441	
413.00 > 169.00	5.345	5.344	0.001	0.999	738140		2.31(1.15-3.44)		291841	
D 22 13C8 PFOA										
421.00 > 376.00	5.351	5.350	0.001		9609363	10.5		105	803615	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.677	5.668	0.009	1.000	1629378	1.85	Target=3.71		2694	
499.00 > 99.00	5.677	5.668	0.009	1.000	422646		3.86(1.85-5.56)		1106	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.677	0.0		7578038	10.2		106	396228	
26 Perfluorononanoic acid										
463.00 > 419.00	5.693	5.692	0.001	1.000	1740476	1.99	Target=4.48		16842	
463.00 > 169.00	5.685	5.692	-0.007	0.999	389966		4.46(2.24-6.72)		13652	
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.693	0.0		9707568	10.4		104	391673	
66 7:3 FTCA										
441.00 > 317.00	5.792	5.790	0.002	1.264	186778	2.06	Target=10.10		7432	
441.00 > 337.00	5.792	5.790	0.002	1.264	19087		9.79(5.05-15.16)		1163	
28 9ClFOS										
531.00 > 351.00	5.858	5.856	0.002	1.032	3512041	1.89			186926	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.982	5.981	0.001	1.054	1402636	1.89	Target=3.33		58940	
549.00 > 99.00	5.982	5.981	0.001	1.054	417341		3.36(1.66-4.99)		26134	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.006	6.005	0.001	1.000	1830856	1.96	Target=8.85		24466	
513.00 > 169.00	5.998	6.005	-0.007	0.999	194360		9.42(4.42-13.27)		3642	
33 8:2 FTS										
527.00 > 507.00	6.006	6.005	0.001	1.000	368759	1.78	Target=2.13		29307	
527.00 > 81.00	5.998	6.005	-0.007	0.999	179482		2.05(1.07-3.20)		2675	
D 32 13C6 PFDA										
519.00 > 474.00	6.006	6.006	0.0		10790156	10.7		107	517572	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.006	0.0		252586	10.4		109	19731	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.105	6.104	0.001	1.000	2667125	1.95			51796	
D 35 13C8 FOSA										
506.00 > 78.00	6.105	6.114	-0.009		13195284	10.6		106	257287	
36 NMeFOSAA										
570.00 > 419.00	6.163	6.154	0.009	1.001	532867	2.08	Target=1.85		18664	
570.00 > 483.00	6.155	6.154	0.001	1.000	290330		1.84(0.92-2.77)		497	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.155	0.0		2929243	10.1		101	187927	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.252	6.251	0.001	1.101	1580859	1.92	Target=3.55		60247	
599.00 > 99.00	6.252	6.251	0.001	1.101	434538		3.64(1.78-5.33)		19587	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.281	6.279	0.002	1.000	1757774	2.01	Target=8.25		10679	
563.00 > 169.00	6.271	6.279	-0.008	0.998	214824		8.18(4.13-12.38)		11951	
D 40 13C7 PFUnA										
570.00 > 525.00	6.281	6.290	-0.009		10630114	10.3		103	198662	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.299	6.298	0.001	1.000	444101	2.03	Target=1.70		146891	
584.00 > 526.00	6.299	6.298	0.001	1.000	249840		1.78(0.85-2.55)		271	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.299	0.0		2329996	10.5		105	335458	
43 11ClFOS										
631.00 > 451.00	6.399	6.398	0.001	1.127	3131822	1.90			94695	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.522	6.521	0.001	1.000	1958328	1.93	Target=5.47		7820	
613.00 > 169.00	6.513	6.521	-0.008	0.999	333396		5.87(2.74-8.21)		5203	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.522	0.0		11494943	10.8		108	248714	
48 10:2 FTS										
627.00 > 607.00	6.539	6.539	0.0	1.089	418458	1.78	Target=1.69		24779	
627.00 > 81.00	6.530	6.539	-0.009	1.087	233683		1.79(0.84-2.53)		9236	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.548	0.0		1268319	10.9		109	5459	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.557	0.0	1.001	246615	1.85			2321	
50 NMeFOSA										
512.00 > 169.00	6.566	6.566	0.0	1.000	318072	1.93			5807	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.566	6.574	-0.008		1593954	10.2		102	5072	
53 PFDoS										
699.00 > 80.00	6.705	6.705	0.0	1.181	1518859	1.95			46330	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.714	0.0		1452617	10.4		104	7891	
52 N-EtFOSE-M										
630.00 > 59.00	6.723	6.723	0.0	1.001	271908	1.98			4441	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.731	6.731	0.0	1.032	1976065	1.95	Target=5.53		5293	
663.00 > 169.00	6.731	6.731	0.0	1.032	361739		5.46(2.77-8.30)		18113	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.740	0.0	1.001	315937	1.94			5641	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.731	6.740	-0.009		1459914	10.4		104	9460	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.921	0.0	1.000	1943690	2.00	Target=5.67		3714	
713.00 > 169.00	6.921	6.921	0.0	1.000	329350		5.90(2.84-8.51)		16026	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.921	0.0		10914662	10.3		103	525514	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.241	0.0	1.046	1296124	1.88	Target=6.17		4535	
813.00 > 169.00	7.234	7.241	-0.007	1.045	212383		6.10(3.08-9.25)		10342	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.488	0.006	1.083	905921	1.98	Target=7.20		14468	
913.00 > 169.00	7.489	7.488	0.001	1.082	127687		7.09(3.60-10.79)		7235	

QC Flag Legend

Processing Flags

Reagents:

PFC_ICV_MOD_00040 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:45:55 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-27.d

Injection Date: 07-Apr-2022 11:16:32 Instrument ID: 29347

Lims ID: ICV

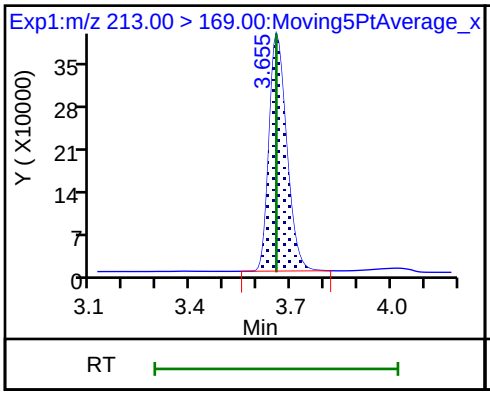
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20009 Worklist Smp#: 9

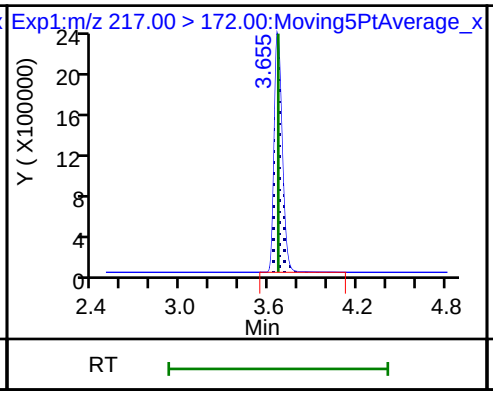
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

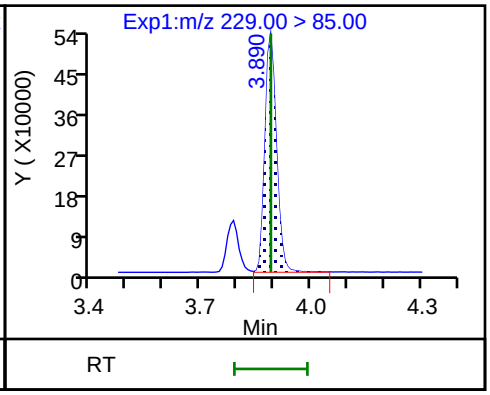
1 Perfluorobutanoic acid



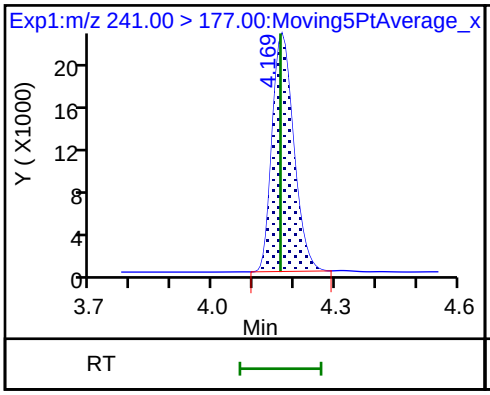
D 2 13C4 PFBA



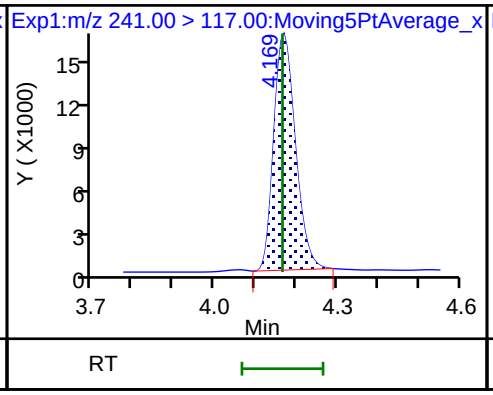
63 PFECA F



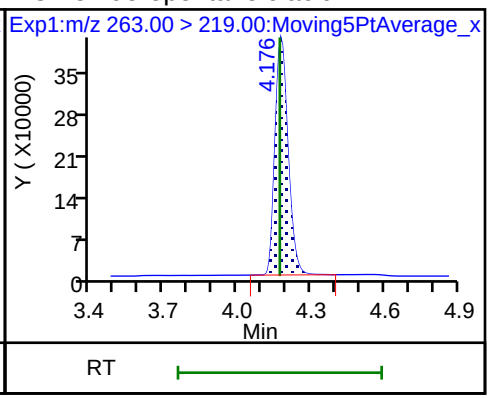
67 3:3 FTCA



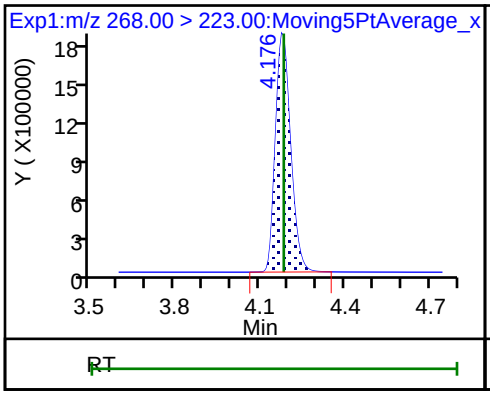
67 3:3 FTCA



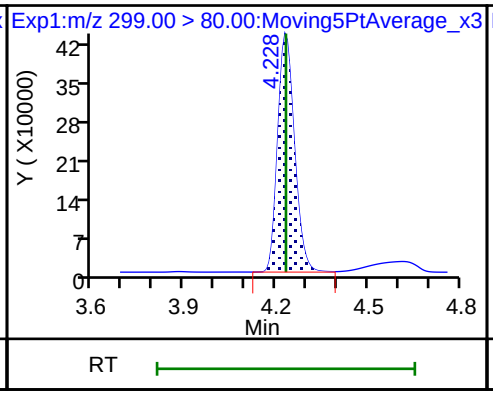
3 Perfluoropentanoic acid



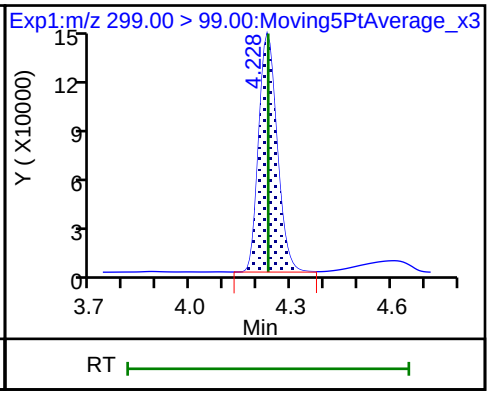
D 4 13C5 PFPeA



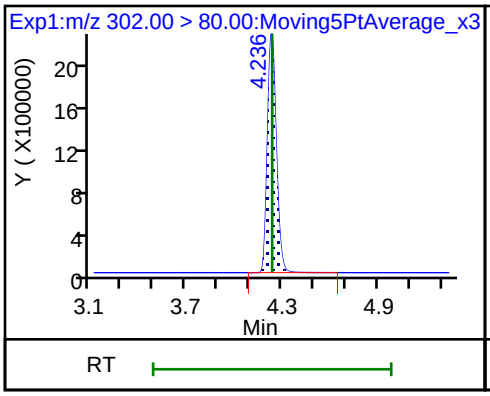
5 Perfluorobutanesulfonic acid



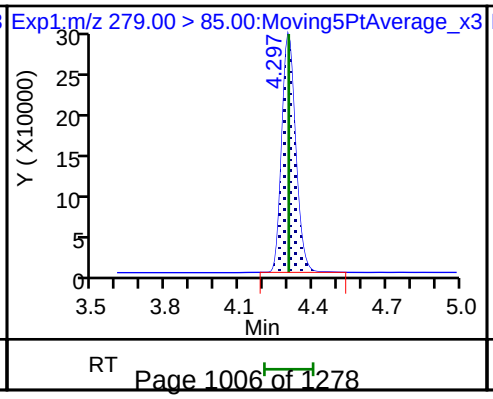
5 Perfluorobutanesulfonic acid



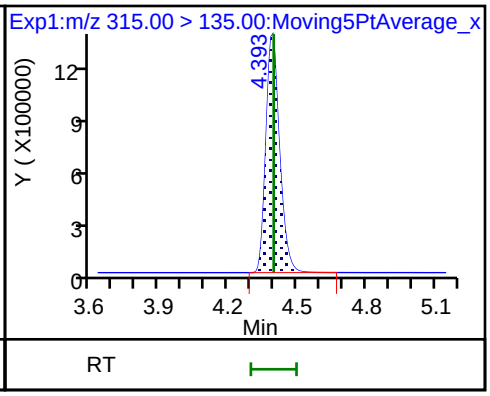
D 6 13C3 PFBS



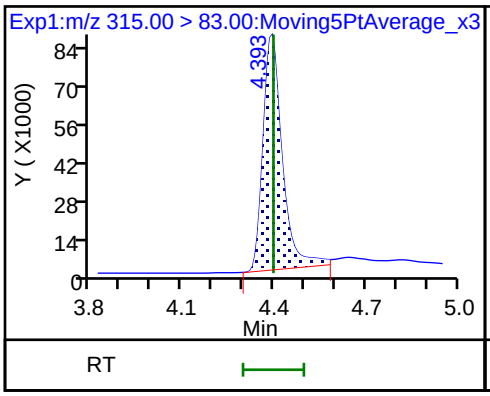
64 PFECA A



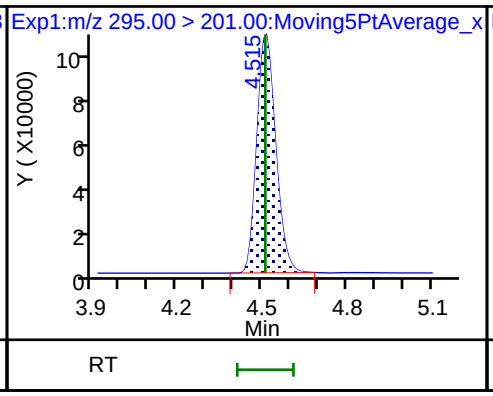
65 PES



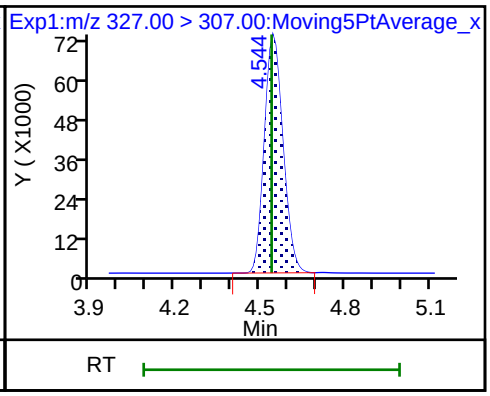
65 PES



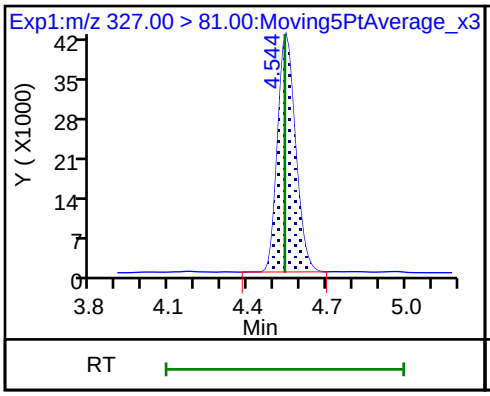
68 PFECA B



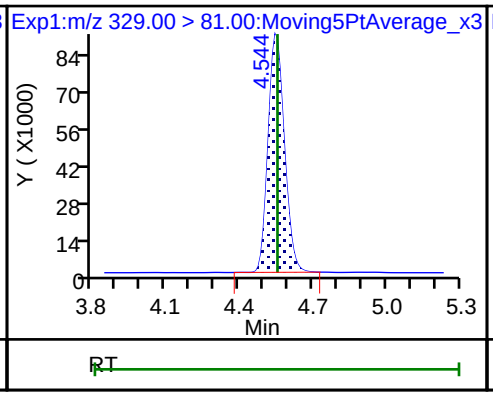
7 4:2 FTS



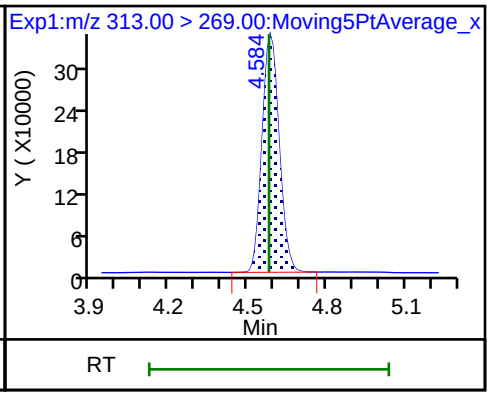
7 4:2 FTS



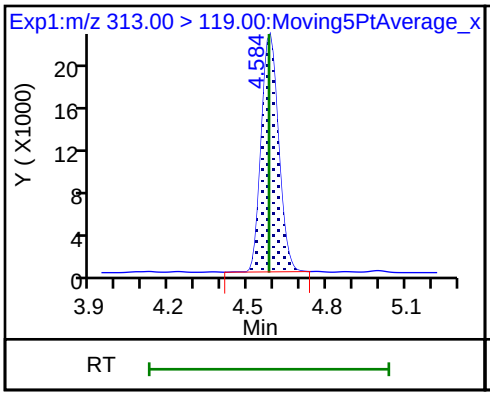
D 8 M2-4:2 FTS



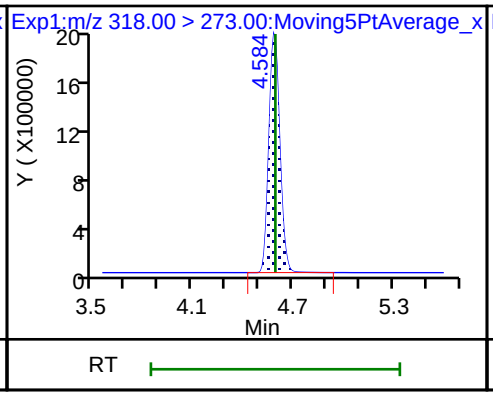
10 Perfluorohexanoic acid



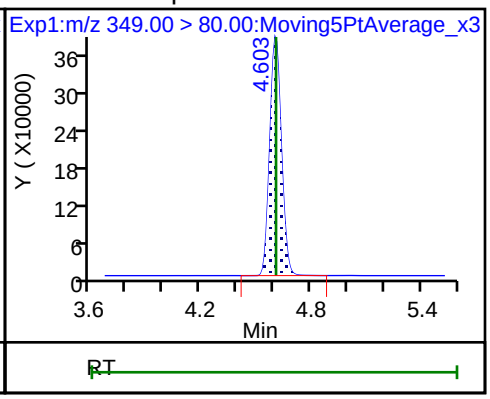
10 Perfluorohexanoic acid



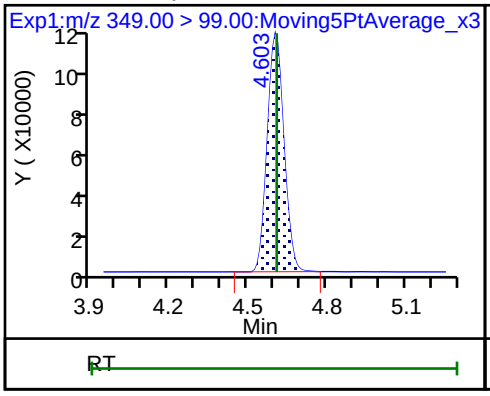
D 9 13C5 PFHxA



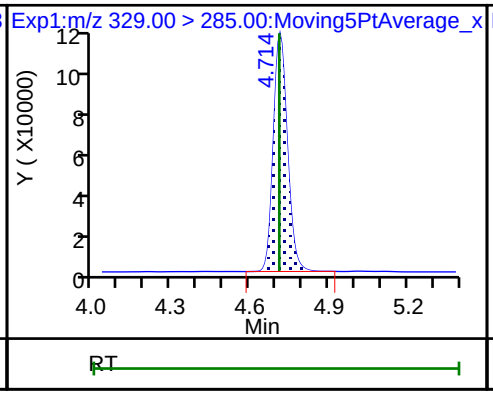
11 Perfluoropentanesulfonic acid



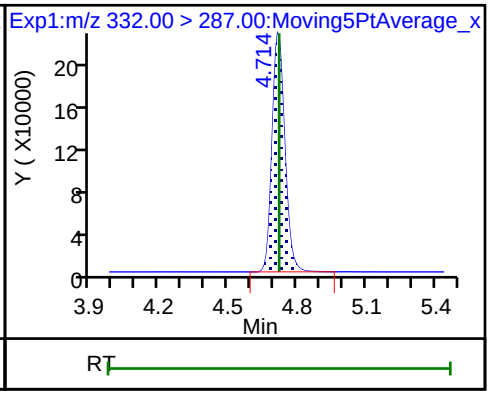
11 Perfluoropentanesulfonic acid



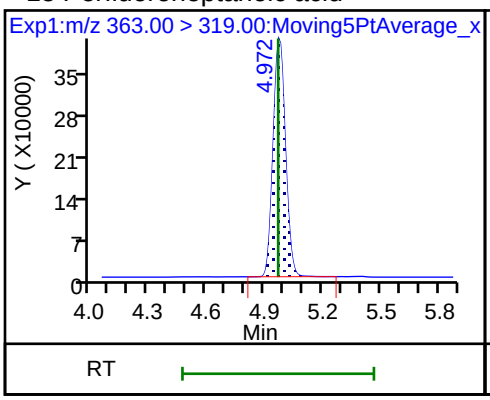
12 HFPO-DA



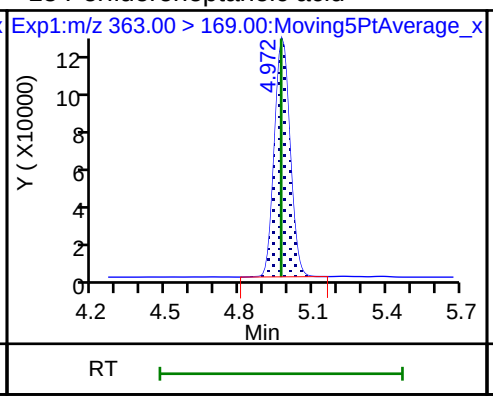
D 13 13C3 HFPO-DA



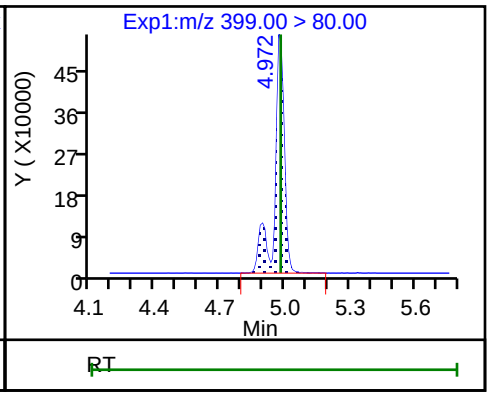
15 Perfluoroheptanoic acid



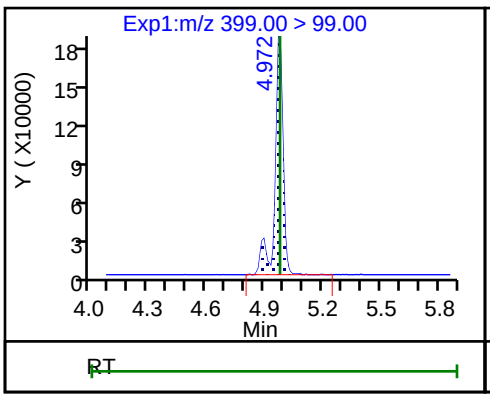
15 Perfluoroheptanoic acid



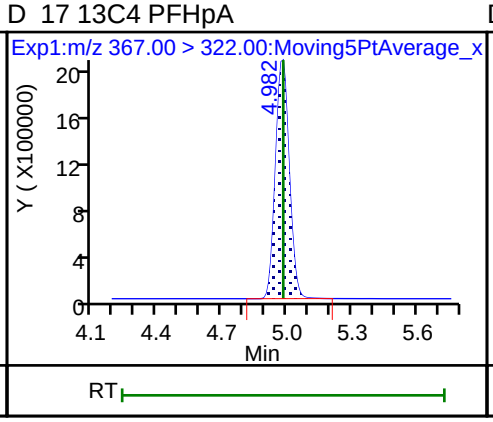
14 Perfluorohexanesulfonic acid



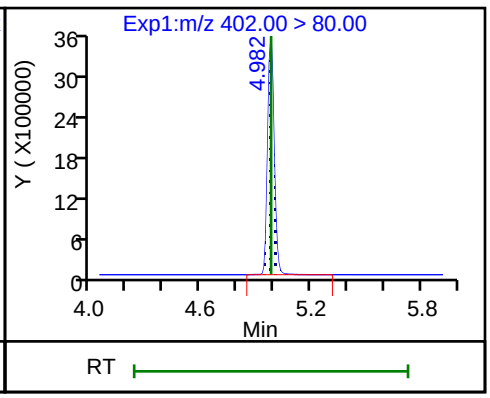
14 Perfluorohexanesulfonic acid



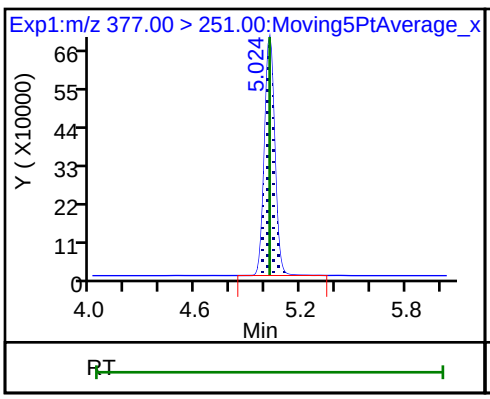
D 17 13C4 PFHpA



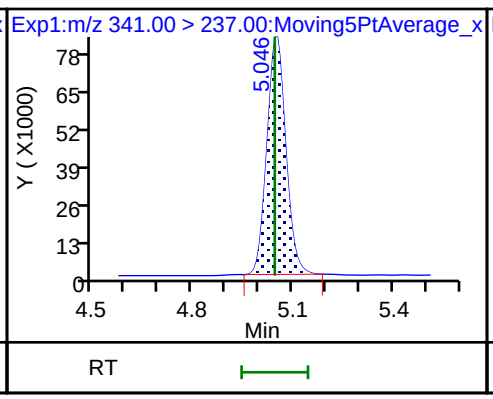
D 16 13C3 PFHxS



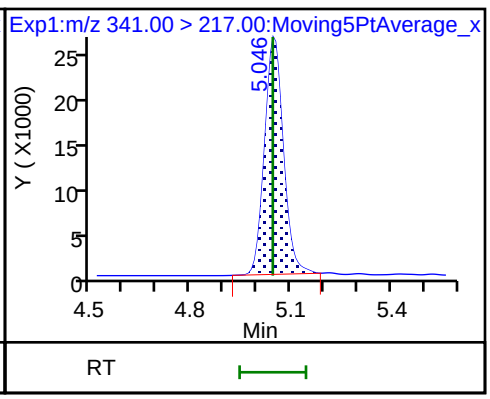
18 DONA



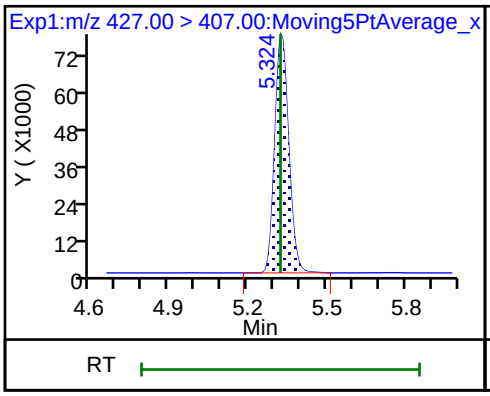
62 5:3 FTCA



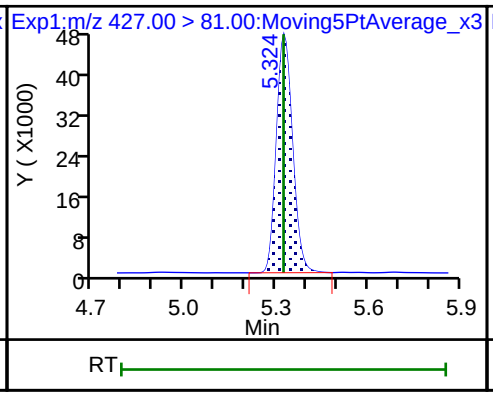
62 5:3 FTCA



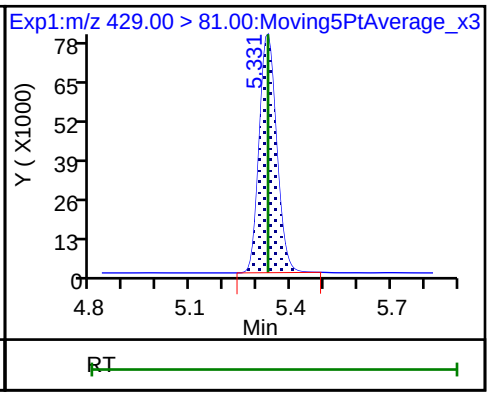
19 6:2 FTS



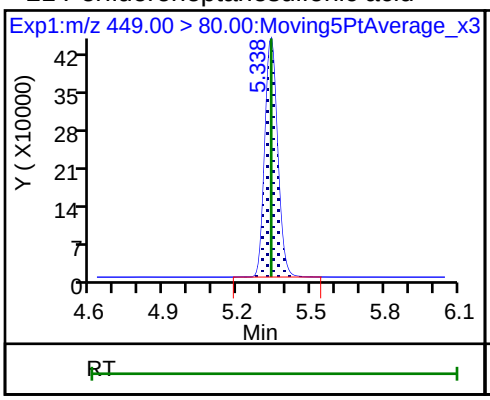
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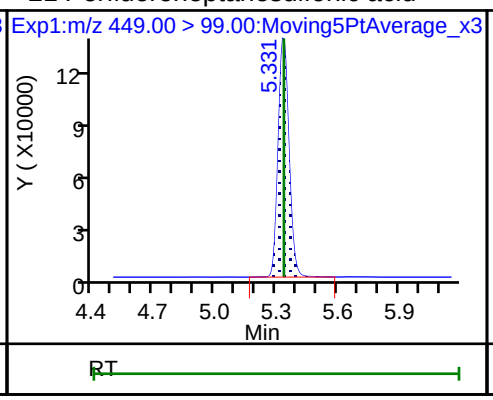
D 20 M2-6:2 FTS



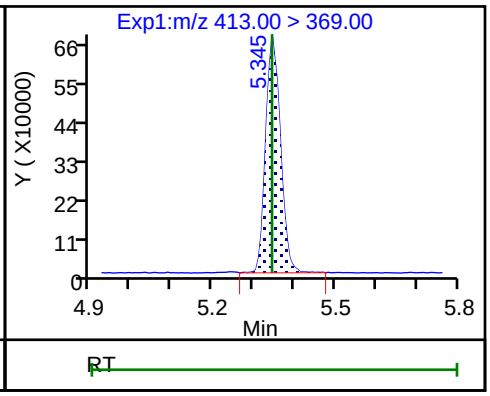
21 Perfluoroheptanesulfonic acid



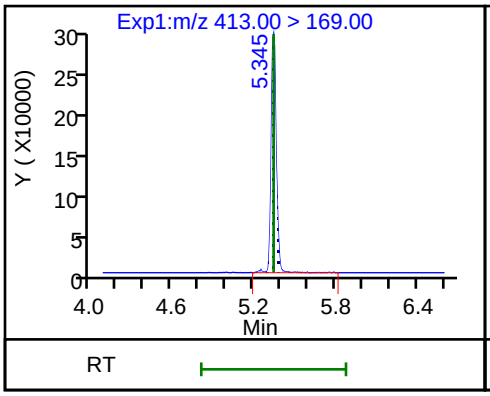
21 Perfluoroheptanesulfonic acid



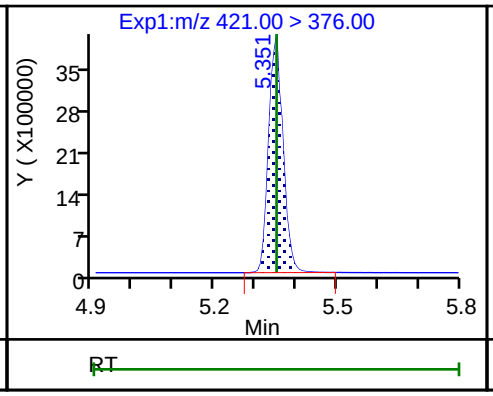
23 Perfluorooctanoic acid



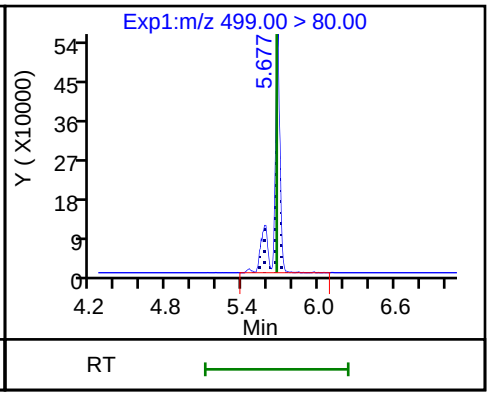
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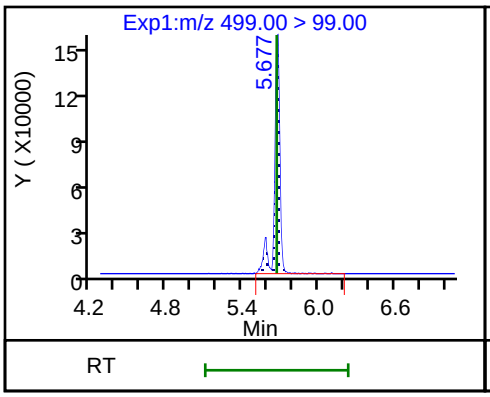
D 22 13C8 PFOA



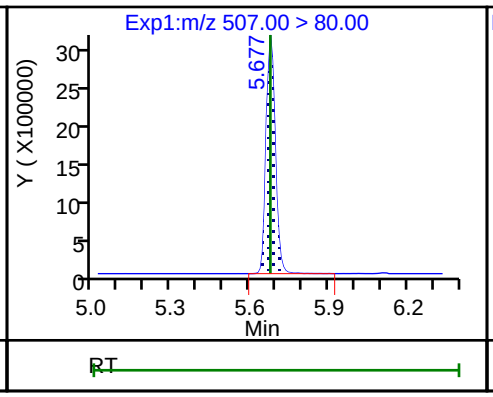
24 Perfluorooctanesulfonic acid



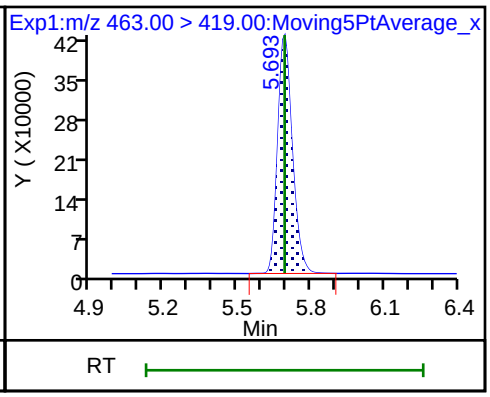
24 Perfluorooctanesulfonic acid



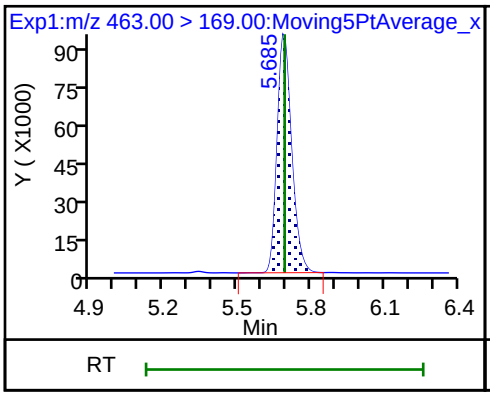
D 25 13C8 PFOS



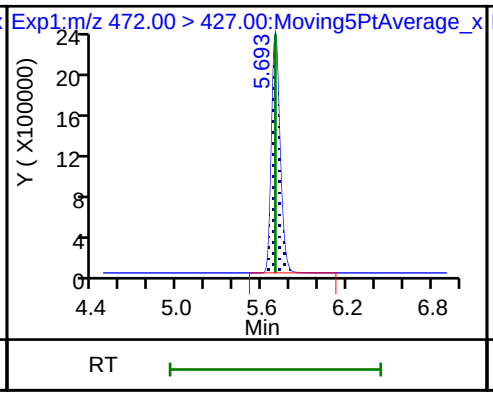
26 Perfluorononanoic acid



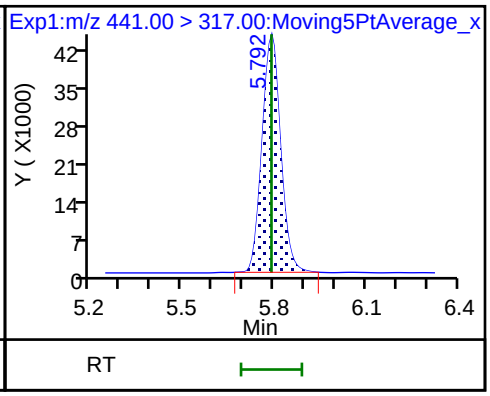
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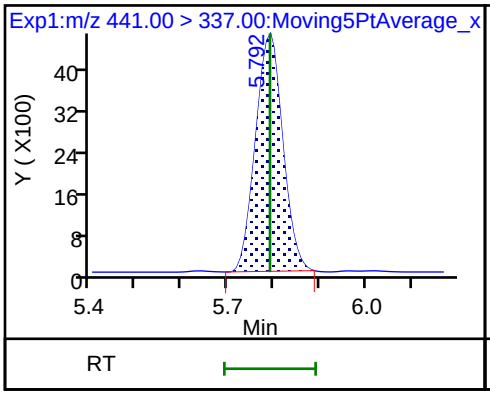
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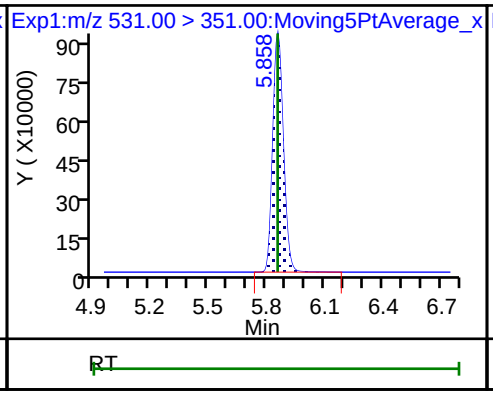
66 7:3 FTCA



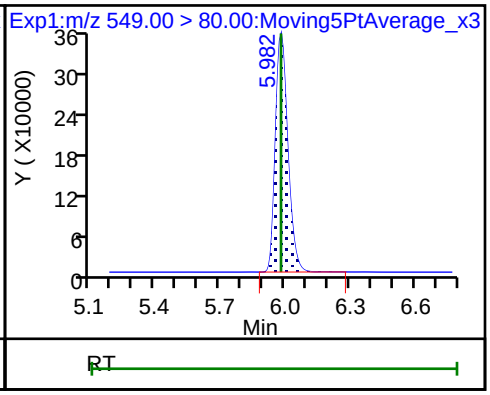
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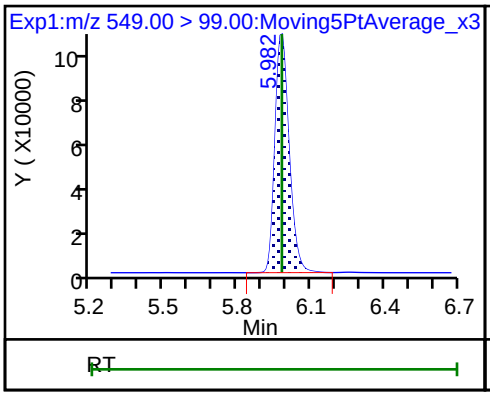
28 9ClFOS



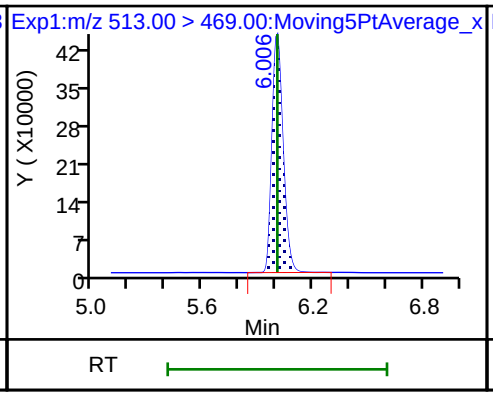
29 Perfluorononanesulfonic acid



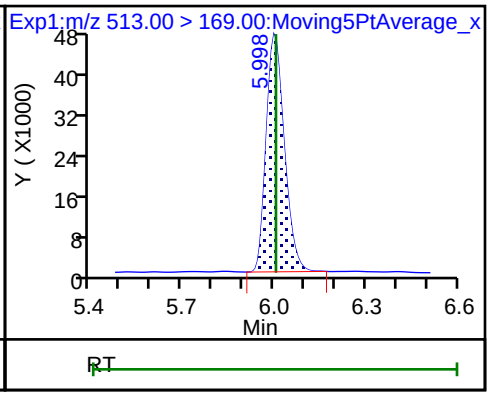
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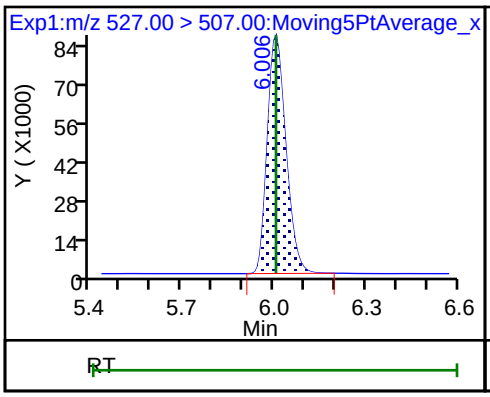
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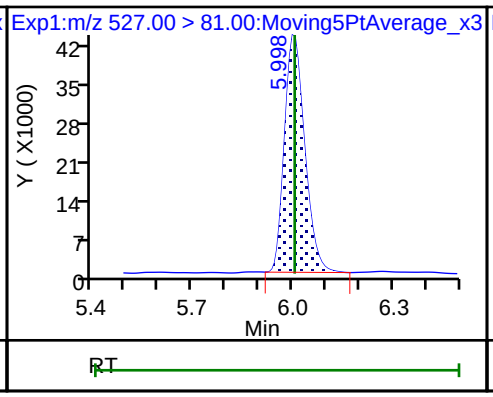
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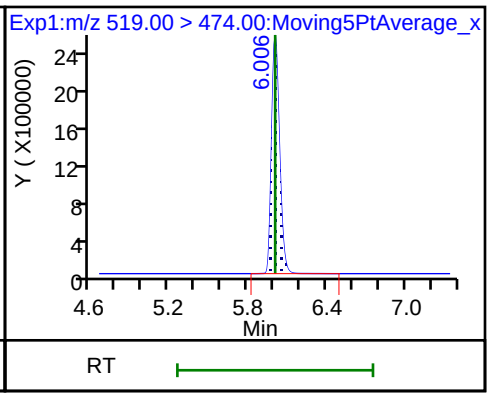
33 8:2 FTS



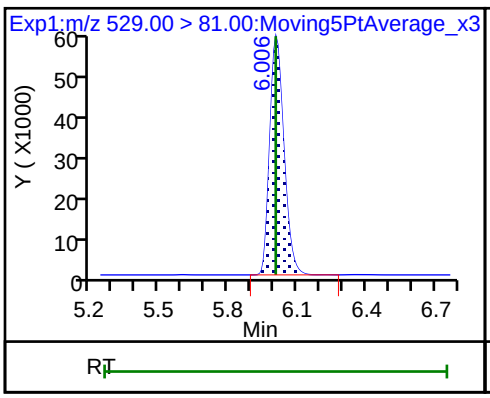
33 8:2 FTS



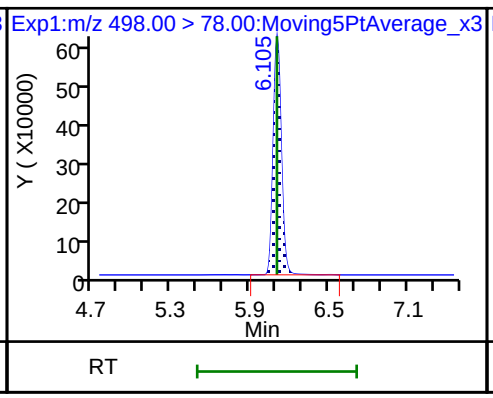
D 32 13C6 PFDA



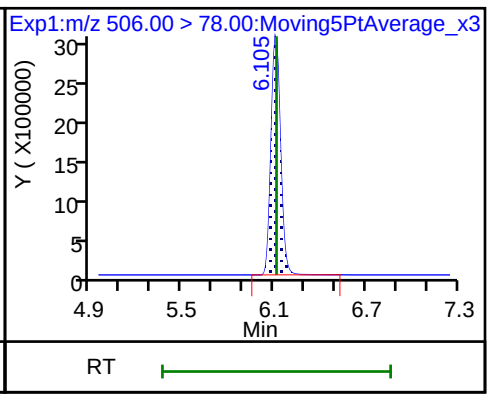
D 31 M2-8:2 FTS



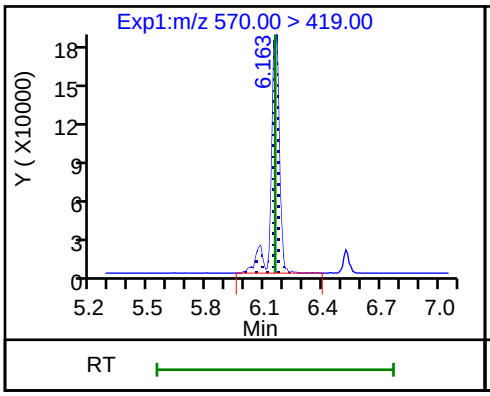
34 Perfluorooctanesulfonamide



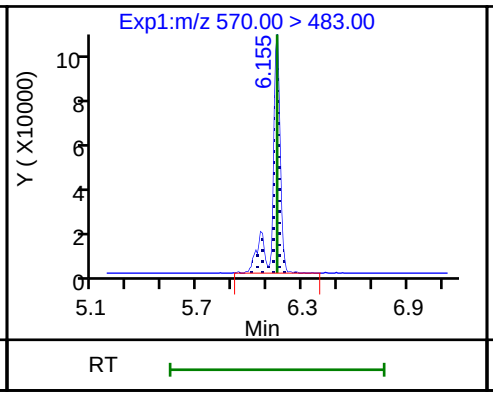
D 35 13C8 FOSA



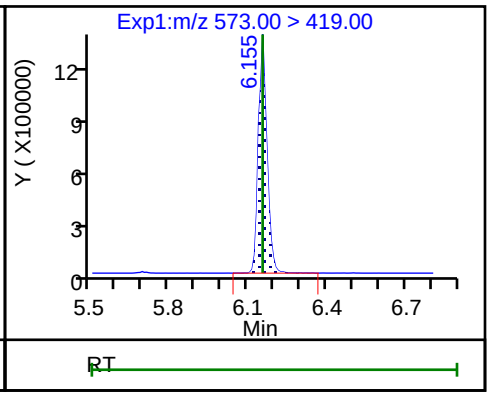
36 NMeFOSAA



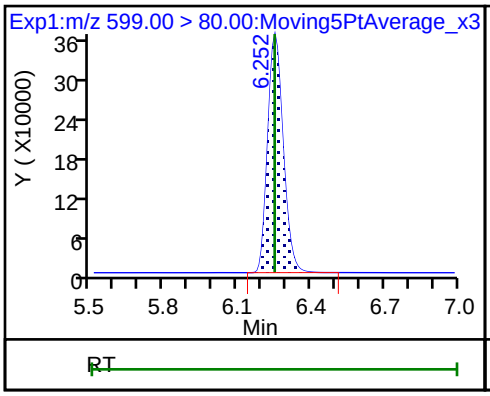
36 NMeFOSAA



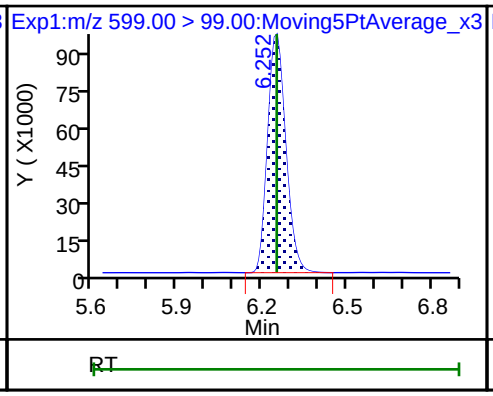
D 37 d3-NMeFOSAA



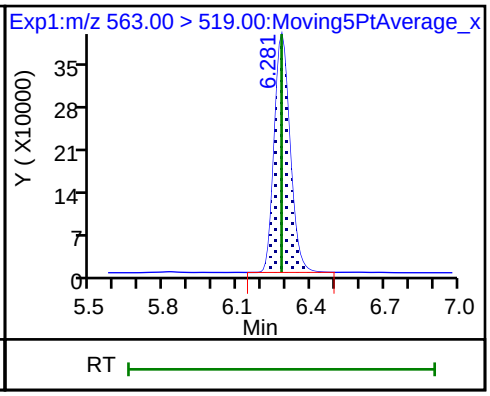
38 Perfluorodecanesulfonic acid



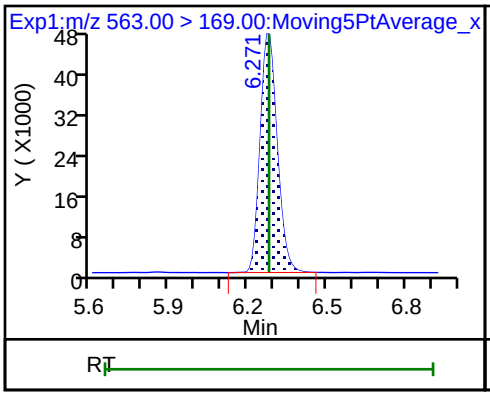
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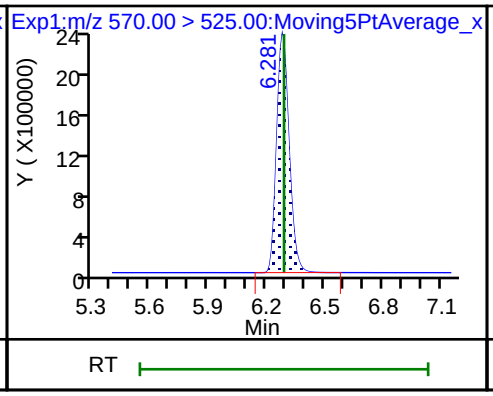
39 Perfluoroundecanoic acid



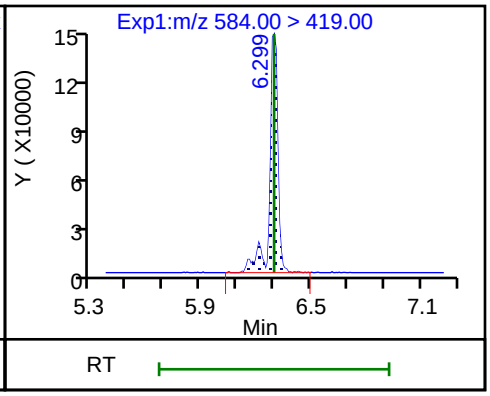
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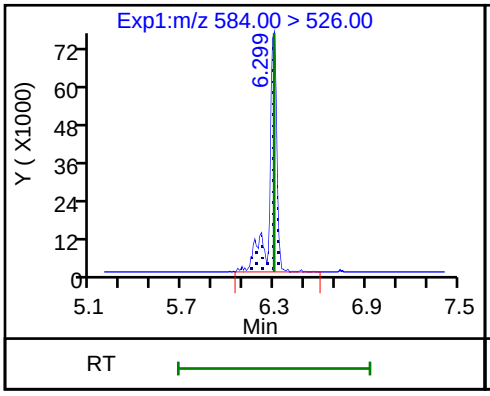
D 40 13C7 PFUnA



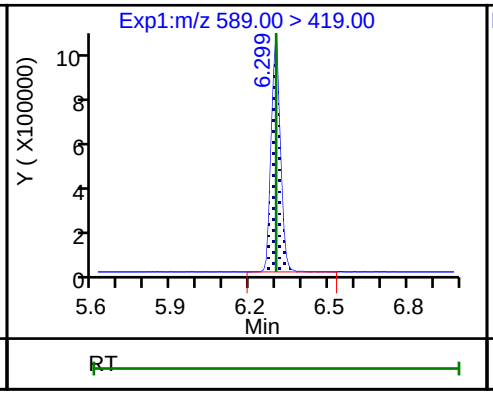
42 NEtFOSAA



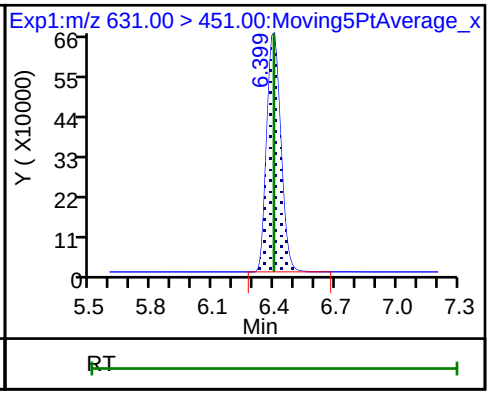
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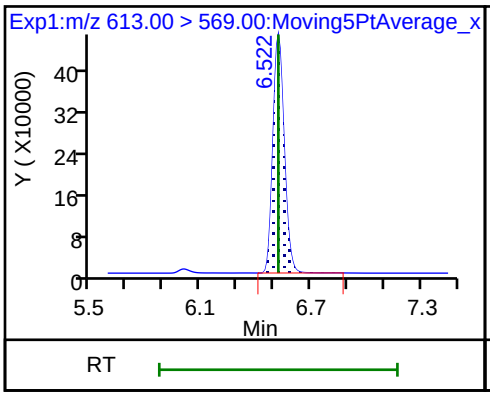
D 41 d5-NEtFOSAA



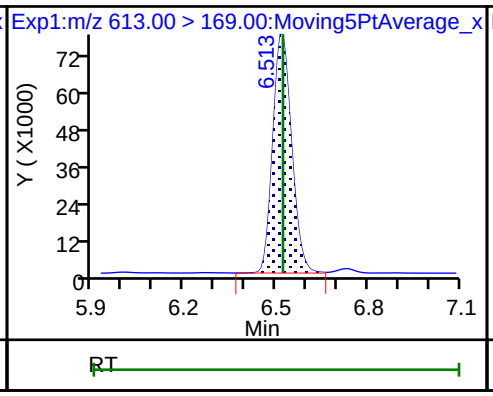
43 11ClFOS



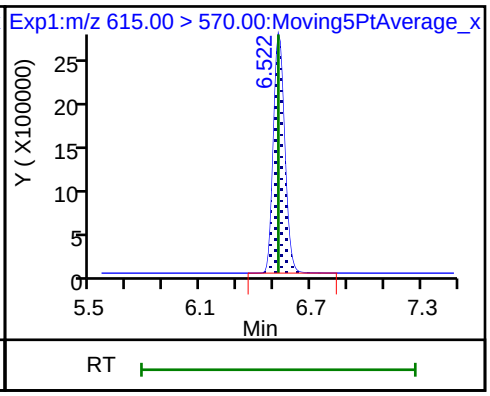
46 Perfluorododecanoic acid



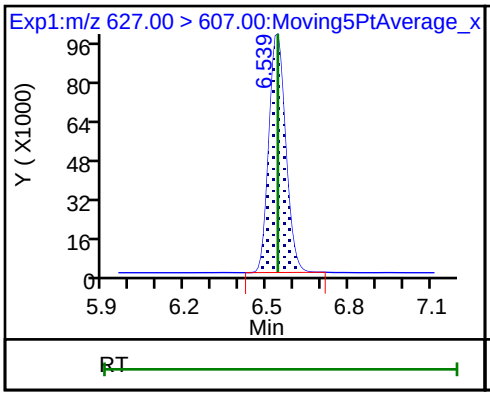
46 Perfluorododecanoic acid



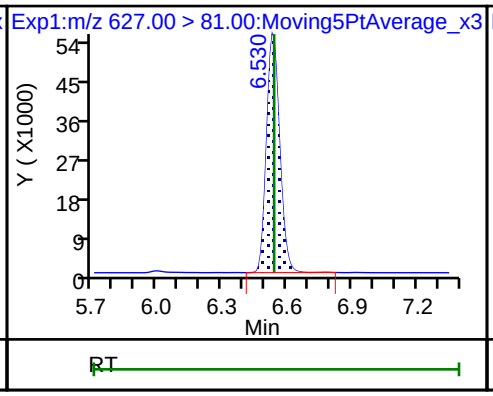
D 45 13C2-PFDoDA



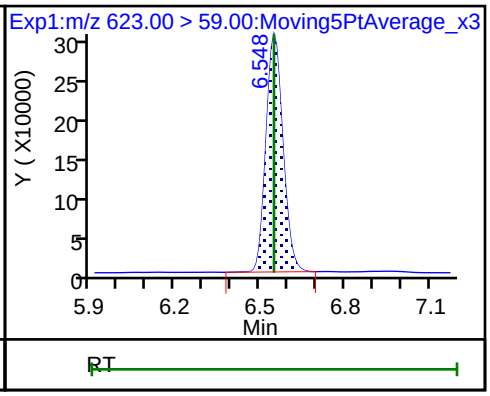
48 10:2 FTS



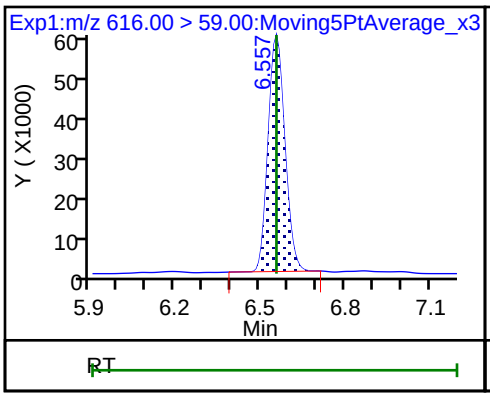
48 10:2 FTS



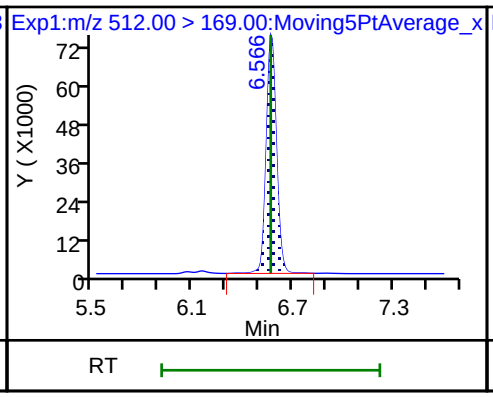
D 44 d7-N-MeFOSE-M



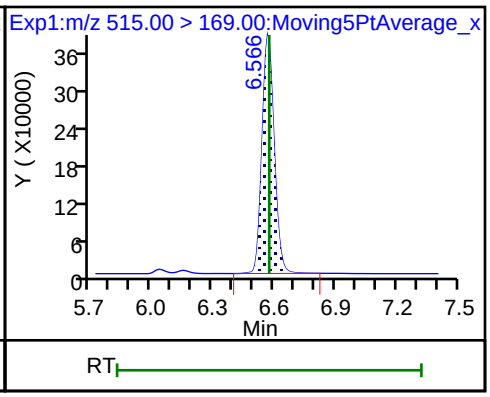
47 N-MeFOSE-M



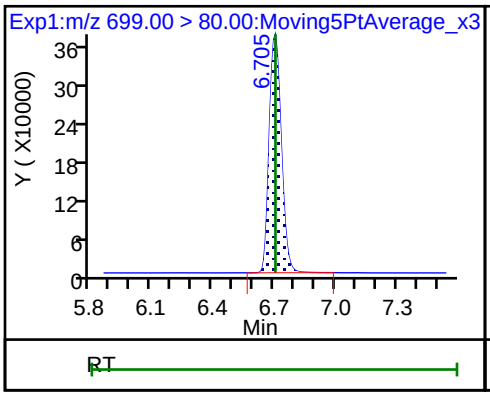
50 NMeFOSA



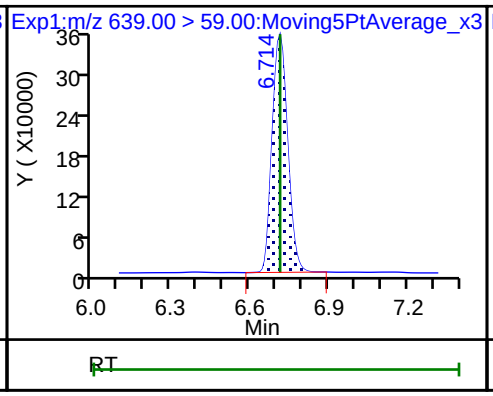
D 49 d3-NMePFOSA



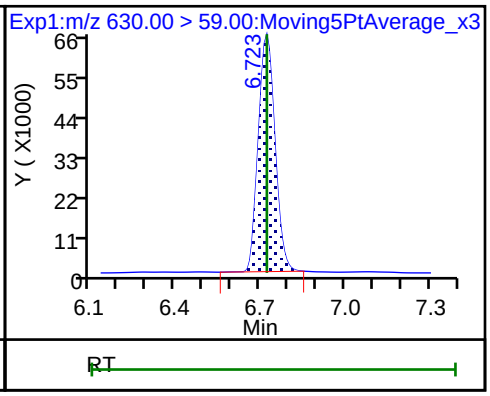
53 PFDoS



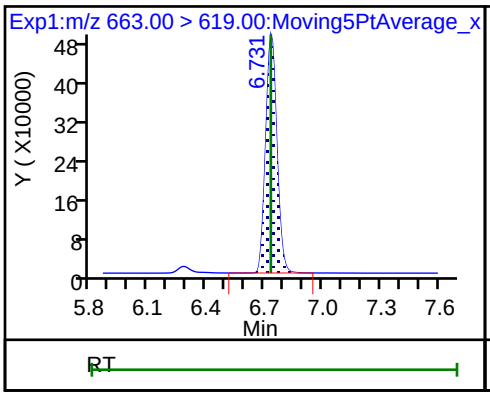
D 51 d9-N-EtFOSE-M



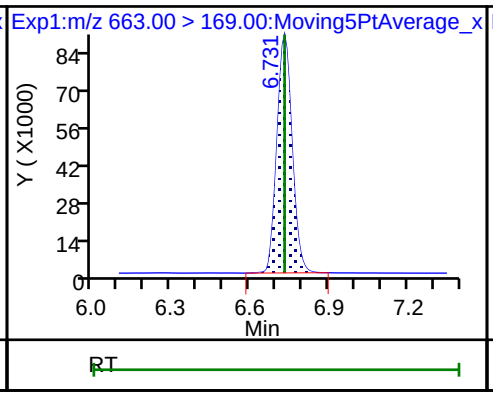
52 N-EtFOSE-M



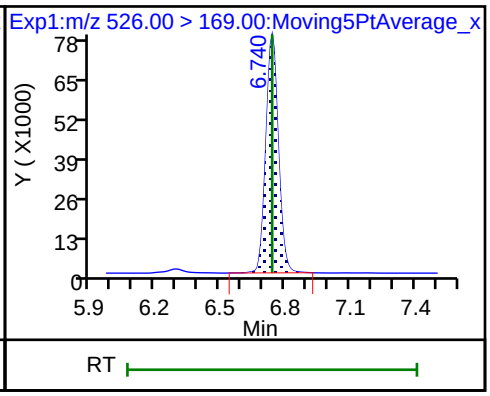
56 Perfluorotridecanoic acid



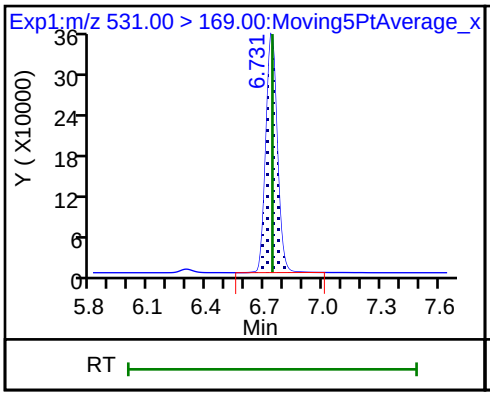
56 Perfluorotridecanoic acid



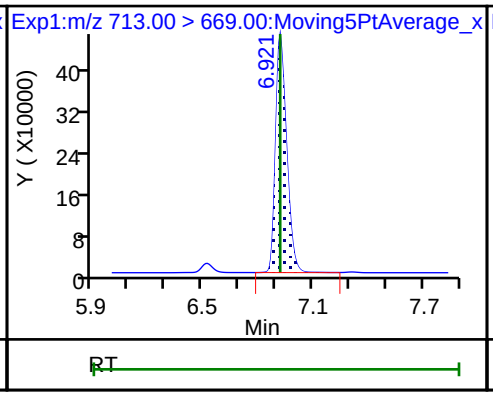
55 N-EtFOSA-M



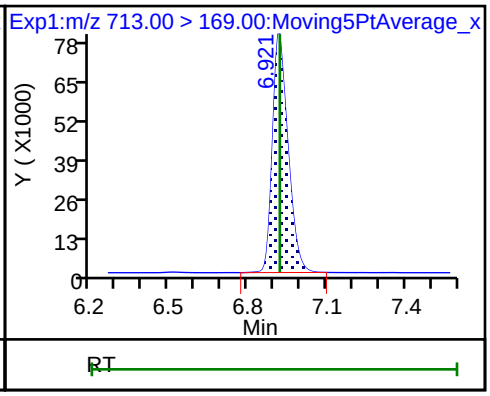
D 54 d5-NEtPFOSA



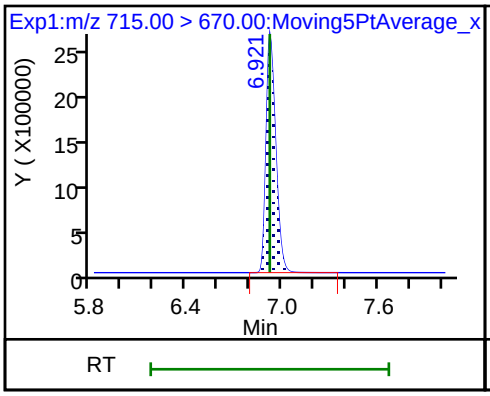
57 Perfluorotetradecanoic acid



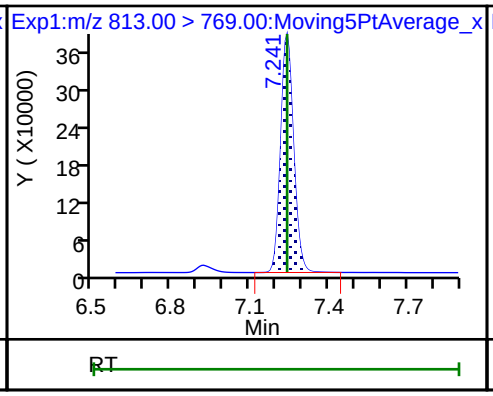
57 Perfluorotetradecanoic acid



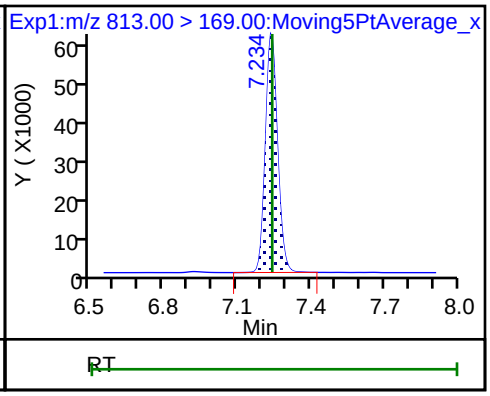
D 58 13C2 PFTeDA



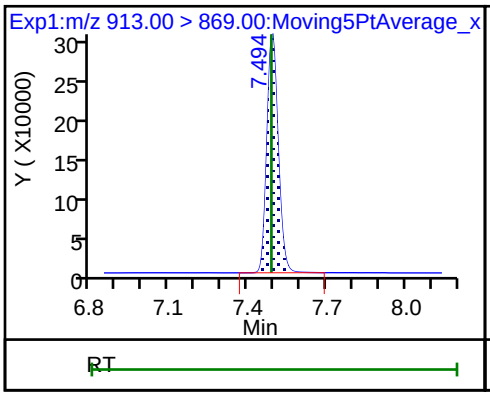
59 Perfluorohexadecanoic acid



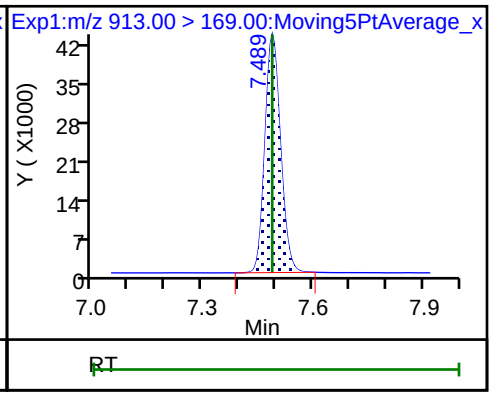
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCVIS 410-242084/1 Calibration Date: 04/07/2022 12:09

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-32.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8221	0.7979		0.485	0.500	-2.9	30.0
PFMPA	AveID	0.8092	0.7515		0.464	0.500	-7.1	30.0
3:3 FTCA	AveID	0.0602	0.0562		0.466	0.500	-6.7	30.0
Perfluoropentanoic acid	AveID	1.047	0.9724		0.464	0.500	-7.1	30.0
Perfluorobutanesulfonic acid	AveID	0.9581	0.9367		0.433	0.443	-2.2	30.0
PFMBA	AveID	0.8034	0.7418		0.462	0.500	-7.7	30.0
PFEESA	AveID	3.456	3.294		0.424	0.445	-4.7	30.0
NFDHA	AveID	0.2914	0.2619		0.449	0.500	-10.1	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.837	3.779		0.460	0.467	-1.5	30.0
Perfluorohexanoic acid	AveID	0.8536	0.8503		0.498	0.500	-0.4	30.0
Perfluoropentanesulfonic acid	AveID	0.8962	0.8696		0.455	0.469	-3.0	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.450	2.285		0.466	0.500	-6.7	30.0
Perfluoroheptanoic acid	AveID	0.9573	0.9276		0.485	0.500	-3.1	30.0
Perfluorohexanesulfonic acid	AveID	0.9746	0.9138		0.428	0.456	-6.2	30.0
DONA	AveID	1.621	1.548		0.451	0.473	-4.5	30.0
5:3 FTCA	AveID	0.1975	0.1894		0.480	0.500	-4.1	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.264	5.351		0.482	0.474	1.6	30.0
Perfluoroheptanesulfonic acid	AveID	0.9680	0.8823		0.434	0.476	-8.9	30.0
Perfluorooctanoic acid	AveID	0.9021	0.8879		0.492	0.500	-1.6	30.0
Perfluorooctanesulfonic acid	AveID	1.112	1.064		0.443	0.463	-4.3	30.0
Perfluorononanoic acid	AveID	0.9008	0.8700		0.483	0.500	-3.4	30.0
7:3 FTCA	AveID	0.1048	0.1047		0.500	0.500	-0.0	30.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.346	2.274		0.451	0.465	-3.1	30.0
Perfluorononanesulfonic acid	AveID	0.9364	0.8846		0.453	0.480	-5.5	30.0
Perfluorodecanoic acid	AveID	0.8656	0.8094		0.468	0.500	-6.5	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.853	7.301		0.445	0.479	-7.0	30.0
Perfluorooctanesulfonamide	AveID	1.036	0.9073		0.438	0.500	-12.4	30.0
NMeFOSAA	AveID	0.8731	0.8058		0.461	0.500	-7.7	30.0
Perfluorodecanesulfonic acid	AveID	1.038	0.9676		0.449	0.482	-6.7	30.0
Perfluoroundecanoic acid	AveID	0.8208	0.8117		0.494	0.500	-1.1	30.0
NEtFOSAA	AveID	0.9399	0.9918		0.528	0.500	5.5	30.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonic acid	AveID	2.075	2.075		0.465	0.465	-0.0	30.0
Perfluorododecanoic acid	AveID	0.8808	0.8574		0.487	0.500	-2.7	30.0
1H,1H,2H,2H-perfluorododecan esulfonic acid (10:2)	AveID	8.900	8.513		0.461	0.482	-4.3	30.0
2- (N-methylperfluoro-1-octanes ulfonamido) ethanol	AveID	1.050	0.9424		0.449	0.500	-10.2	30.0
NMeFOSA	AveID	1.036	0.8829		0.426	0.500	-14.8	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCVIS 410-242084/1 Calibration Date: 04/07/2022 12:09

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-32.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.9847	0.9581		0.471	0.484	-2.7	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9455	0.8464		0.448	0.500	-10.5	30.0
Perfluorotridecanoic acid	AveID	0.8823	0.8502		0.482	0.500	-3.6	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.118	0.9553		0.427	0.500	-14.6	30.0
Perfluorotetradecanoic acid	AveID	0.8909	0.8564		0.481	0.500	-3.9	30.0
Perfluorohexadecanoic acid	AveID	0.6314	0.5921		0.469	0.500	-6.2	30.0
Perfluorooctadecanoic acid	AveID	0.4183	0.3706		0.443	0.500	-11.4	30.0
13C4 PFBA	Ave	809587	849664		10.5	10.0	5.0	30.0
13C5 PFPeA	Ave	694051	716951		10.3	10.0	3.3	30.0
13C3 PFBS	Ave	922837	943575		9.51	9.30	2.2	30.0
M2-4:2 FTS	Ave	43630	46961		10.1	9.34	7.6	30.0
13C5 PFHxA	Ave	798937	866009		10.8	10.0	8.4	30.0
13C3 HFPO-DA	Ave	86595	88773		10.3	10.0	2.5	30.0
13C3 PFHxS	Ave	826639	890491		10.2	9.46	7.7	30.0
13C4 PFHpA	Ave	840835	938833		11.2	10.0	11.7	30.0
M2-6:2 FTS	Ave	29064	29680		9.70	9.50	2.1	30.0
13C8 PFOA	Ave	913254	942592		10.3	10.0	3.2	30.0
13C8 PFOS	Ave	746154	782081		10.0	9.56	4.8	30.0
13C9 PFNA	Ave	935044	986041		10.5	10.0	5.5	30.0
13C6 PFDA	Ave	1011228	1065592		10.5	10.0	5.4	30.0
M2-8:2 FTS	Ave	24281	24554		9.69	9.58	1.1	30.0
13C8 FOSA	Ave	1241961	1277520		10.3	10.0	2.9	30.0
d3-NMeFOSAA	Ave	289701	291549		10.1	10.0	0.6	30.0
13C7 PFUnA	Ave	1028028	1077182		10.5	10.0	4.8	30.0
d5-NEtFOSAA	Ave	221835	221974		10.0	10.0	0.0	30.0
13C2-PFDoDA	Ave	1064795	1106714		10.4	10.0	3.9	30.0
d7-N-MeFOSE-M	Ave	116144	121997		10.5	10.0	5.0	30.0
d3-NMePFOSA	Ave	156838	159328		10.2	10.0	1.6	30.0
d9-N-EtFOSE-M	Ave	139633	151137		10.8	10.0	8.2	30.0
d5-NEtPFOSA	Ave	140743	143471		10.2	10.0	1.9	30.0
13C2 PFTeDA	Ave	1061225	1109490		10.5	10.0	4.5	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d
Lims ID: CCVIS 1_CAL2
Client ID:
Sample Type: CCV
Inject. Date: 07-Apr-2022 12:09:30 ALS Bottle#: 20003 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVIS 1_CAL2
Misc. Info.: Plate: 1 Rack: 1 410-0054325-001
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 15:07:46 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: carpenterr Date: 07-Apr-2022 12:40:01
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.656	0.0	0.998	338976	0.4853		97.1	660	
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.663	0.0		8496635	10.5		105	142704	
63 PFECA F										
229.00 > 85.00	3.890	3.890	0.0	0.931	269403	0.4644		92.9	8374	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.172	0.0	0.998	20135	0.4663	Target=1.38	93.3	1367	
241.00 > 117.00	4.172	4.172	0.0	0.998	13494		1.49(0.69-2.06)		457	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.179	4.179	0.0	1.000	348565	0.4645		92.9	1360	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.179	0.0		7169506	10.3		103	73950	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.231	0.0	1.000	391109	0.4326	Target=2.90	97.8	531	
299.00 > 99.00	4.231	4.231	0.0	1.000	132409		2.95(1.45-4.36)		474	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.231	0.0		8775243	9.51		102	327201	
64 PFECA A										
279.00 > 85.00	4.301	4.301	0.0	1.029	265926	0.4617		92.3	5702	
65 PES										
315.00 > 135.00	4.396	4.396	0.0	0.958	1269509	0.4241	Target=12.33	95.3	38212	
315.00 > 83.00	4.396	4.396	0.0	0.958	82997		15.30(6.17-18.50)		94.0	
68 PFECA B										
295.00 > 201.00	4.520	4.520	0.0	0.985	113398	0.4493		89.9	4146	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.549	4.549	0.0	1.000	82868	0.4599	Target=1.82	98.5	6088	
327.00 > 81.00	4.549	4.549	0.0	1.000	52150		1.59(0.91-2.73)		1017	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.549	0.0		438614	10.1		108	13635	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.588	4.588	0.0	1.000	368164	0.4980	Target=14.46	99.6	3067	
313.00 > 119.00	4.588	4.588	0.0	1.000	25347		14.52(7.23-21.70)		916	
D 9 13C5 PFHxA										
318.00 > 273.00	4.588	4.588	0.0		8660092	10.8		108	137601	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.608	4.608	0.0	1.089	384810	0.4551	Target=3.09	97.0	17729	
349.00 > 99.00	4.608	4.608	0.0	1.089	126993		3.03(1.55-4.64)		7244	
12 HFPO-DA										
329.00 > 285.00	4.717	4.717	0.0	1.000	101434	0.4664		93.3	2735	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.717	4.717	0.0		887729	10.3		103	60555	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.976	4.976	0.0	0.998	435450	0.4845	Target=3.12	96.9	3006	
363.00 > 169.00	4.976	4.976	0.0	0.998	141382		3.08(1.56-4.68)		3199	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.986	4.986	0.0	1.000	371047	0.4275	Target=3.09	93.8	131692	
399.00 > 99.00	4.976	4.986	-0.010	0.998	127846		2.90(1.55-4.64)		49918	
D 17 13C4 PFHpA										
367.00 > 322.00	4.986	4.986	0.0		9388332	11.2		112	193384	
D 16 13C3 PFHxS										
402.00 > 80.00	4.986	4.986	0.0		8424044	10.2		108	3429648	
18 DONA										
377.00 > 251.00	5.028	5.028	0.0	1.008	686740	0.4513		95.5	9561	
62 5:3 FTCA										
341.00 > 237.00	5.051	5.051	0.0	1.101	82020	0.4796	Target=3.25	95.9	1896	
341.00 > 217.00	5.051	5.051	0.0	1.101	26392		3.11(1.63-4.88)		824	
19 6:2 FTS										
427.00 > 407.00	5.328	5.328	0.0	0.999	75274	0.4818	Target=1.70	102	7022	
427.00 > 81.00	5.328	5.328	0.0	0.999	39981		1.88(0.85-2.55)		2212	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.335	5.335	0.0		281958	9.70		102	19421	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.342	5.342	0.0	1.071	373995	0.4339	Target=3.14	91.1	21071	
449.00 > 99.00	5.335	5.342	-0.007	1.070	114324		3.27(1.57-4.70)		10543	
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.348	5.348	0.0	0.999	418479	0.4922	Target=2.30	98.4	12607	
413.00 > 169.00	5.342	5.348	-0.006	0.998	176735		2.37(1.15-3.44)		12402	M
D 22 13C8 PFOA										
421.00 > 376.00	5.354	5.354	0.0		9425920	10.3		103	765458	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.681	5.681	0.0	1.000	385140	0.4429	Target=3.71	95.7	118910	
499.00 > 99.00	5.681	5.681	0.0	1.000	102827		3.75(1.85-5.56)		192	
D 25 13C8 PFOS										
507.00 > 80.00	5.681	5.681	0.0		7476692	10.0		105	423648	
26 Perfluorononanoic acid										
463.00 > 419.00	5.697	5.697	0.0	1.000	428942	0.4829	Target=4.48	96.6	4961	
463.00 > 169.00	5.689	5.697	-0.008	0.999	93060		4.61(2.24-6.72)		3200	
D 27 13C9 PFNA										
472.00 > 427.00	5.697	5.697	0.0		9860414	10.5		105	183146	
66 7:3 FTCA										M
441.00 > 317.00	5.796	5.796	0.0	1.263	45355	0.4996	Target=10.10	99.9	1821	
441.00 > 337.00	5.796	5.796	0.0	1.263	4706		9.64(5.05-15.16)		183	M
28 9ClFOS										
531.00 > 351.00	5.862	5.862	0.0	1.032	827142	0.4507		96.9	43918	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.987	5.987	0.0	1.054	332096	0.4535	Target=3.33	94.5	16870	
549.00 > 99.00	5.979	5.987	-0.008	1.052	94191		3.53(1.66-4.99)		4735	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.003	6.003	0.0	0.999	431270	0.4676	Target=8.85	93.5	6438	
513.00 > 169.00	6.003	6.003	0.0	0.999	50895		8.47(4.42-13.27)		1196	
33 8:2 FTS										
527.00 > 507.00	6.011	6.011	0.0	1.000	85865	0.4453	Target=2.13	93.0	5167	
527.00 > 81.00	6.003	6.011	-0.008	0.999	48206		1.78(1.07-3.20)		746	
D 32 13C6 PFDA										
519.00 > 474.00	6.011	6.011	0.0		10655916	10.5		105	511149	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.011	6.011	0.0		235227	9.69		101	14050	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.110	6.110	0.0	1.000	579557	0.4379		87.6	16893	
D 35 13C8 FOSA										
506.00 > 78.00	6.110	6.110	0.0		12775203	10.3		103	231390	
36 NMeFOSAA										M
570.00 > 419.00	6.152	6.152	0.0	0.999	117465	0.4615	Target=1.85	92.3	3376	M
570.00 > 483.00	6.152	6.152	0.0	0.999	65412		1.80(0.92-2.77)		102	M
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.160	6.160	0.0		2915492	10.1		101	625669	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.258	6.258	0.0	1.102	364741	0.4495	Target=3.55	93.3	16616	
599.00 > 99.00	6.248	6.258	-0.010	1.100	102073		3.57(1.78-5.33)		7696	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.286	6.286	0.0	1.000	437174	0.4945	Target=8.25	98.9	3137	
563.00 > 169.00	6.277	6.286	-0.009	0.999	53699		8.14(4.13-12.38)		4008	
D 40 13C7 PFUnA										
570.00 > 525.00	6.286	6.286	0.0		10771821	10.5		105	402752	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.295	6.295	0.0		2219744	10.0		100	933442	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.305	6.305	0.0	1.001	110075	0.5276	Target=1.70	106	293	
584.00 > 526.00	6.305	6.305	0.0	1.001	58678		1.88(0.85-2.55)		66.1	
43 11ClFOS										
631.00 > 451.00	6.395	6.395	0.0	1.126	754509	0.4649		100.0	22847	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.528	6.528	0.0	1.000	474448	0.4867	Target=5.47	97.3	1810	
613.00 > 169.00	6.519	6.528	-0.009	0.999	84159		5.64(2.74-8.21)		1429	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.528	6.528	0.0		11067143	10.4		104	659655	
48 10:2 FTS										
627.00 > 607.00	6.537	6.537	0.0	1.087	100752	0.4610	Target=1.69	95.7	8021	
627.00 > 81.00	6.537	6.537	0.0	1.087	61615		1.64(0.84-2.53)		2125	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.555	6.555	0.0		1219967	10.5		105	6465	
47 N-MeFOSE-M										M
616.00 > 59.00	6.564	6.564	0.0	1.001	57485	0.4490		89.8	592	M
50 NMeFOSA										M
512.00 > 169.00	6.572	6.572	0.0	1.000	70337	0.4261		85.2	2149	M
D 49 d3-NMePFOSA										
515.00 > 169.00	6.572	6.572	0.0		1593280	10.2		102	6047	
53 PFDoS										
699.00 > 80.00	6.704	6.704	0.0	1.180	362671	0.4709		97.3	7385	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.713	6.713	0.0		1511371	10.8		108	11859	
52 N-EtFOSE-M										M
630.00 > 59.00	6.730	6.730	0.0	1.003	63960	0.4476		89.5	927	M
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.738	6.738	0.0	1.032	470462	0.4818	Target=5.53	96.4	1353	
663.00 > 169.00	6.738	6.738	0.0	1.032	83921		5.61(2.77-8.30)		3482	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.738	6.738	0.0		1434712	10.2		102	9229	
55 N-EtFOSA-M										
526.00 > 169.00	6.747	6.747	0.0	1.001	68526	0.4272		85.4	1573	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.919	6.919	0.0	0.999	475078	0.4806	Target=5.67	96.1	898	
713.00 > 169.00	6.919	6.919	0.0	0.999	75201		6.32(2.84-8.51)		3609	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.927	6.927	0.0		11094899	10.5		105	237568	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.247	7.247	0.0	1.046	328476	0.4689	Target=6.17	93.8	1202	
813.00 > 169.00	7.240	7.247	-0.007	1.045	53484		6.14(3.08-9.25)		2620	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.495	7.495	0.0	1.082	205611	0.4430	Target=7.20	88.6	4968	
913.00 > 169.00	7.495	7.495	0.0	1.082	28694		7.17(3.60-10.79)		2438	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD2_00013 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 15:07:48 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d

Injection Date: 07-Apr-2022 12:09:30 Instrument ID: 29347

Lims ID: CCVIS 1_CAL2

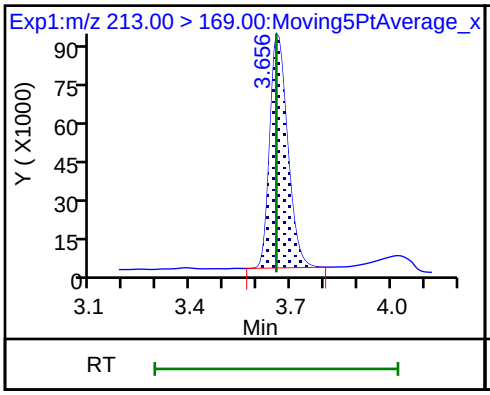
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20003 Worklist Smp#: 1

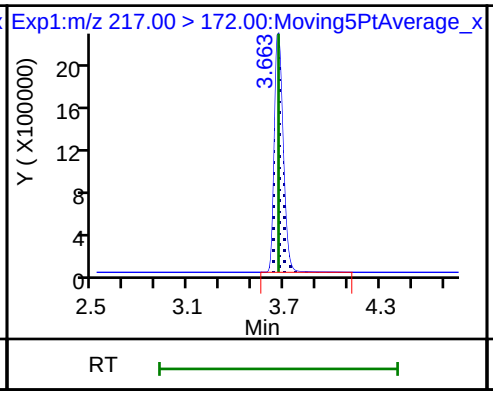
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

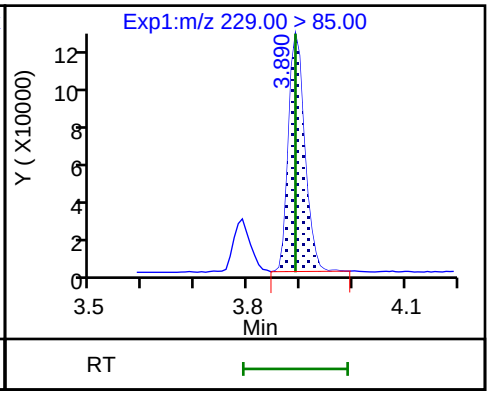
1 Perfluorobutanoic acid



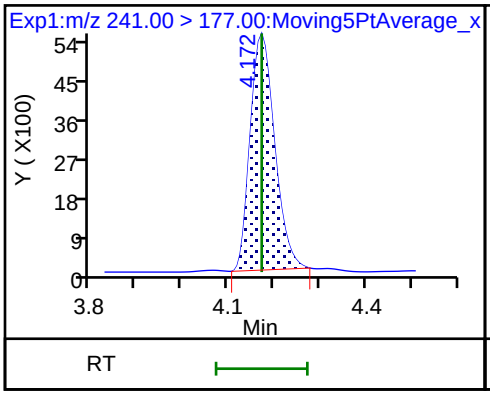
D 2 13C4 PFBA



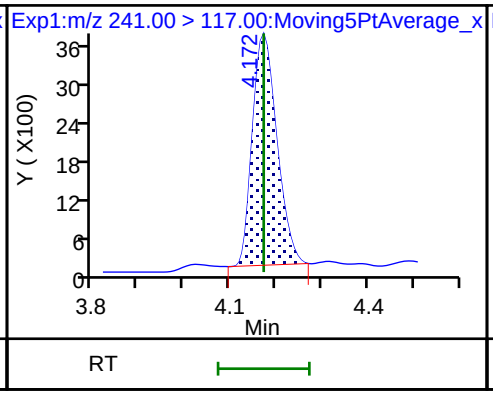
63 PFECA F



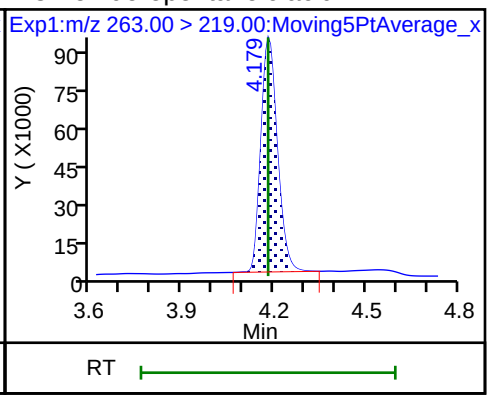
67 3:3 FTCA



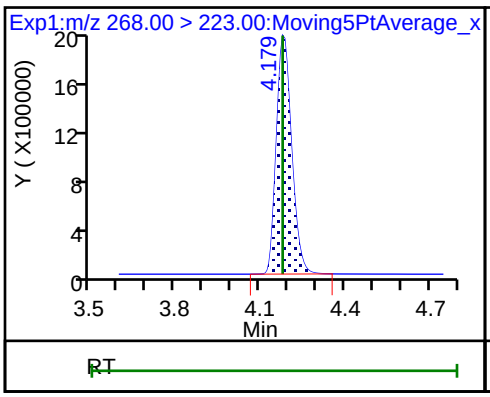
67 3:3 FTCA



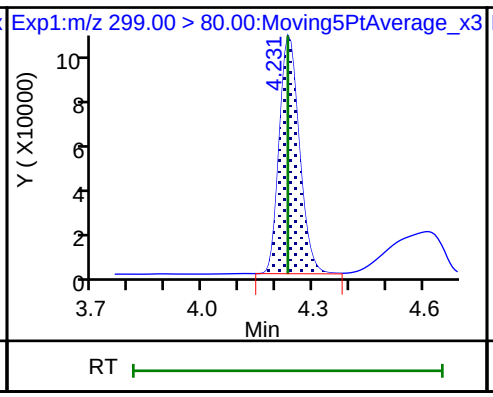
3 Perfluoropentanoic acid



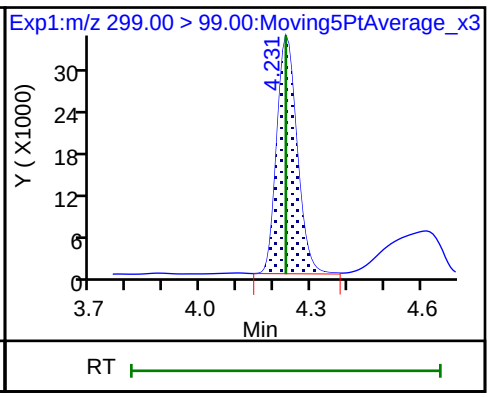
D 4 13C5 PFPeA



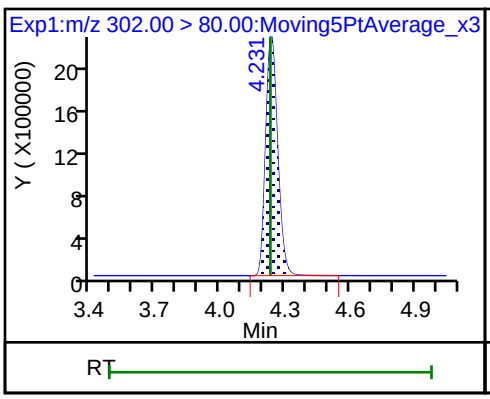
5 Perfluorobutanesulfonic acid



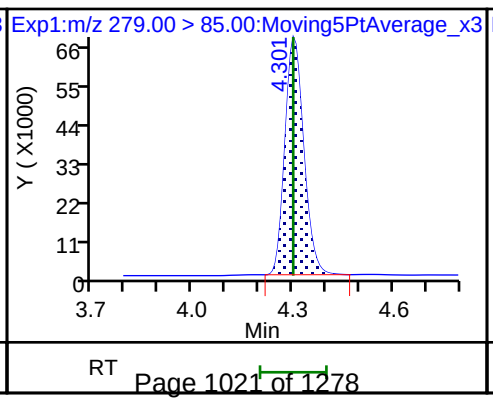
5 Perfluorobutanesulfonic acid



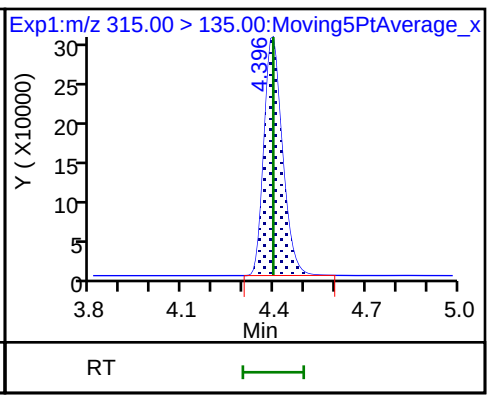
D 6 13C3 PFBS



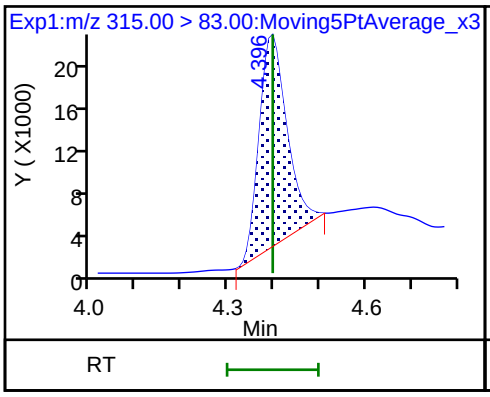
64 PFECA A



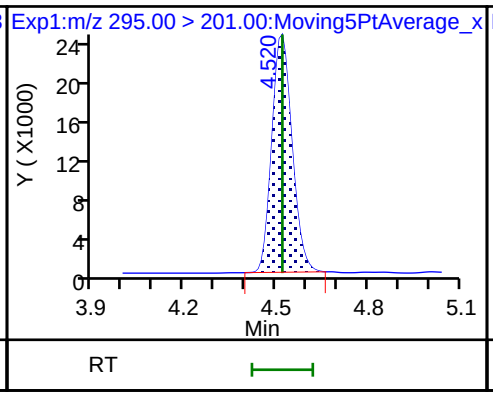
65 PES



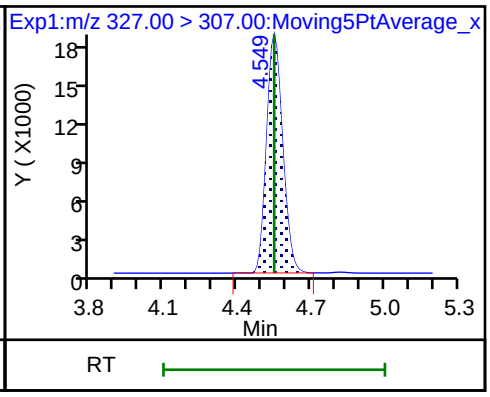
65 PES



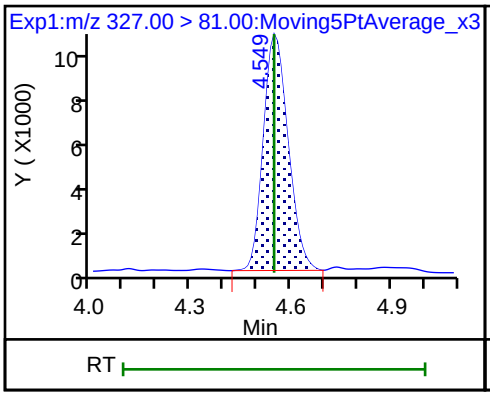
68 PFECA B



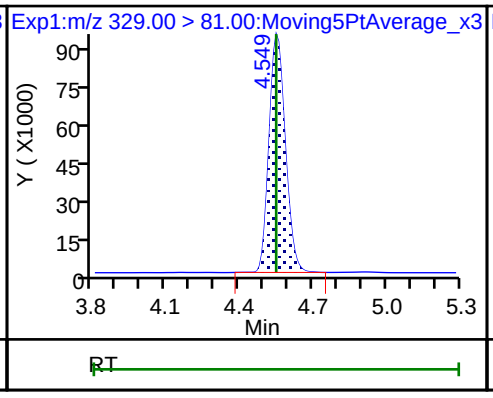
7 4:2 FTS



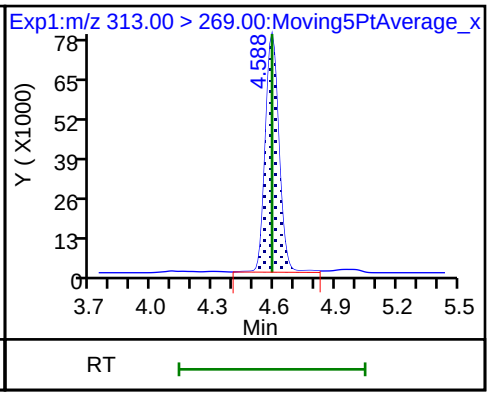
7 4:2 FTS



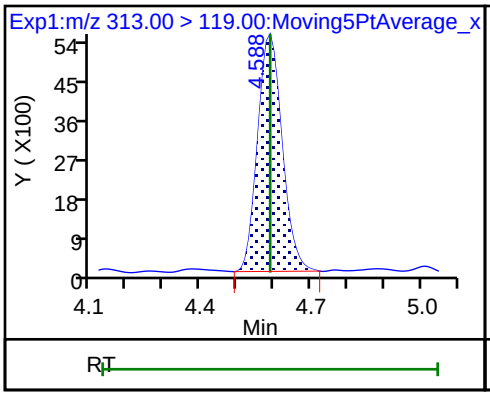
D 8 M2-4:2 FTS



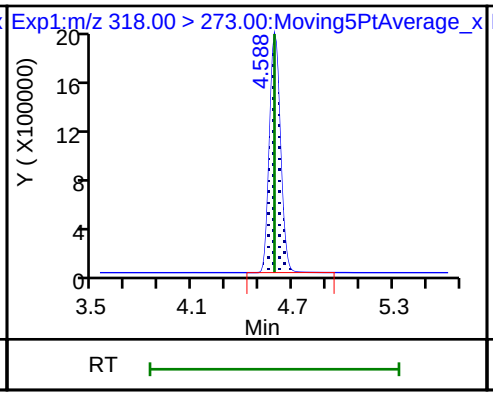
10 Perfluorohexanoic acid



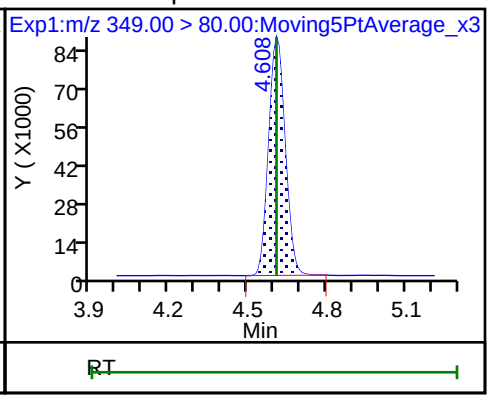
10 Perfluorohexanoic acid



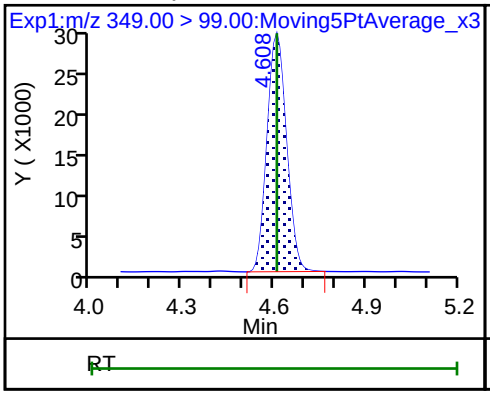
D 9 13C5 PFHxA



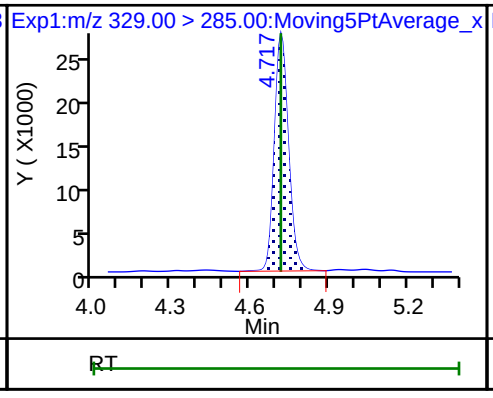
11 Perfluoropentanesulfonic acid



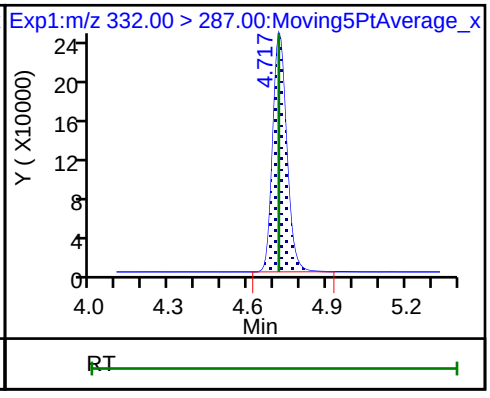
11 Perfluoropentanesulfonic acid



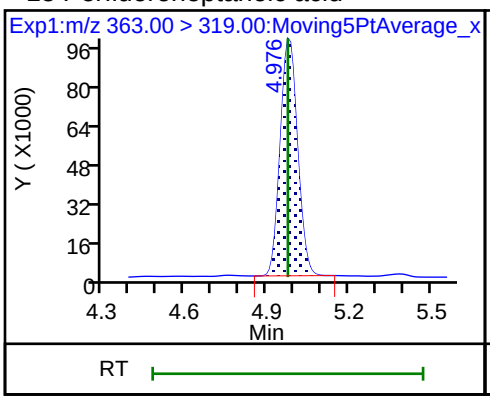
12 HFPO-DA



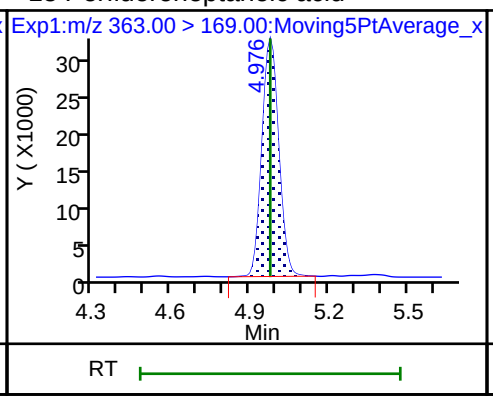
D 13 13C3 HFPO-DA



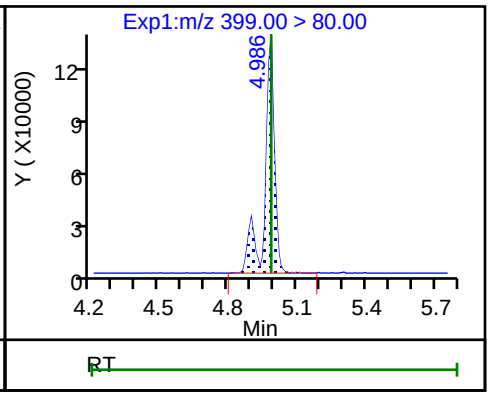
15 Perfluoroheptanoic acid



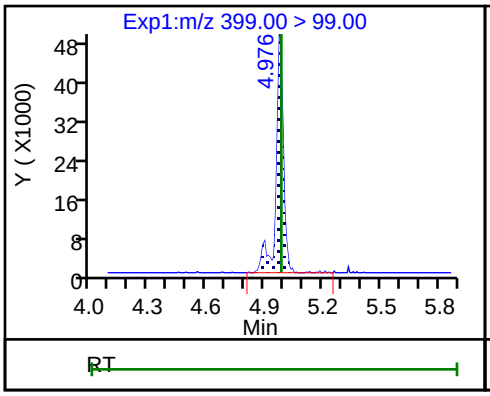
15 Perfluoroheptanoic acid



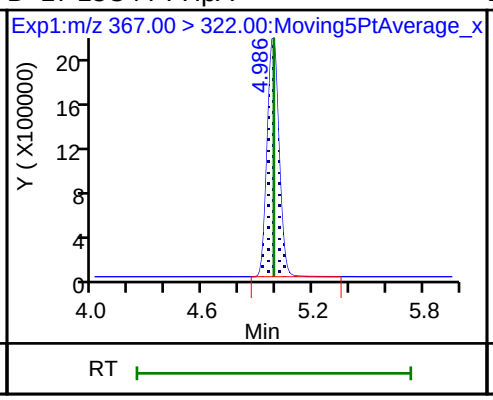
14 Perfluorohexanesulfonic acid



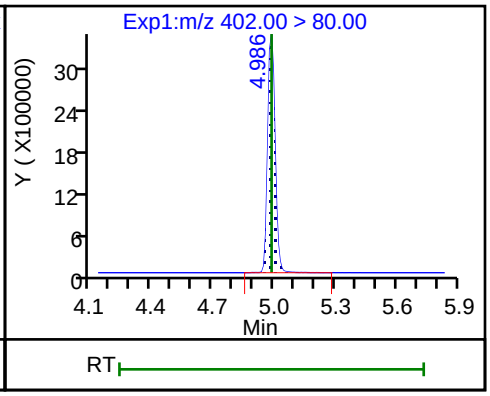
14 Perfluorohexanesulfonic acid



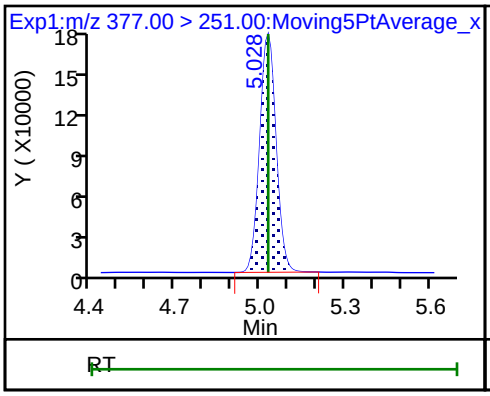
D 17 13C4 PFHpA



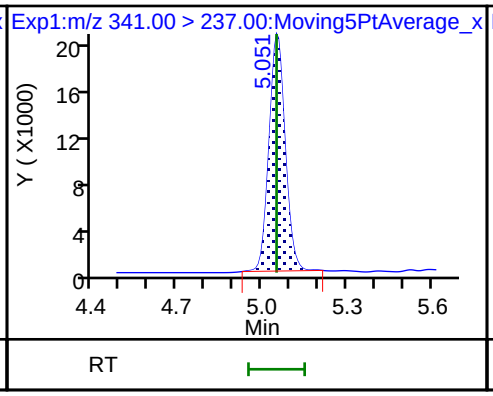
D 16 13C3 PFHxS



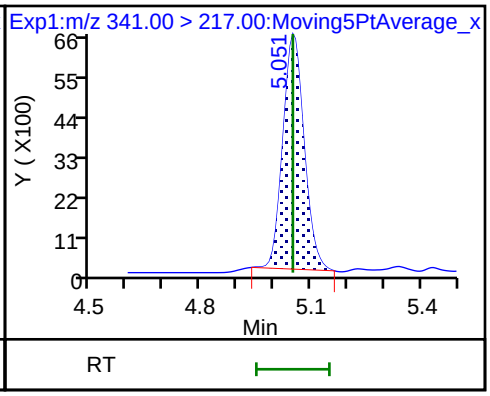
18 DONA



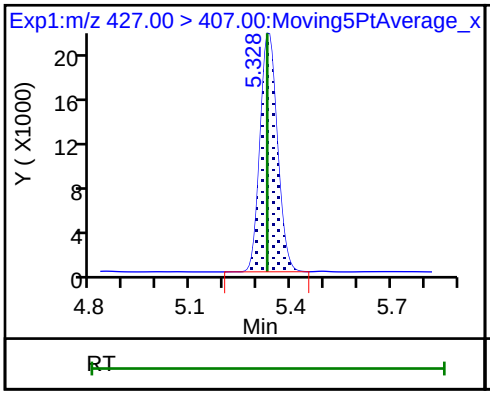
62 5:3 FTCA



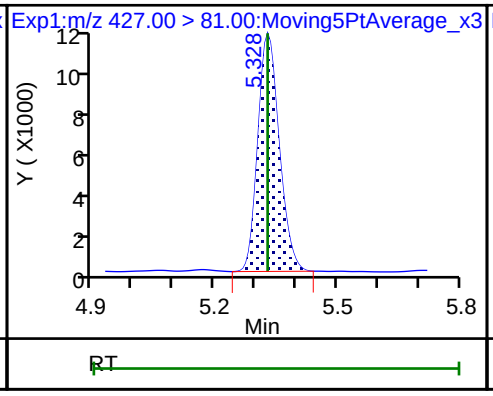
62 5:3 FTCA



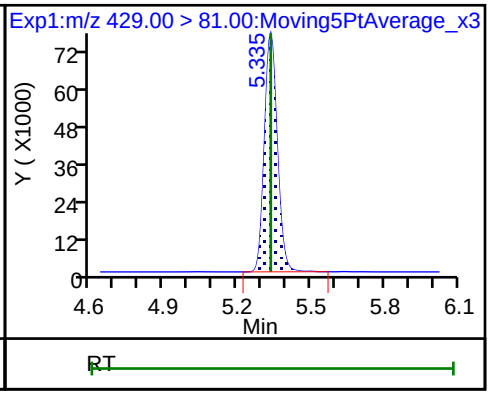
19 6:2 FTS



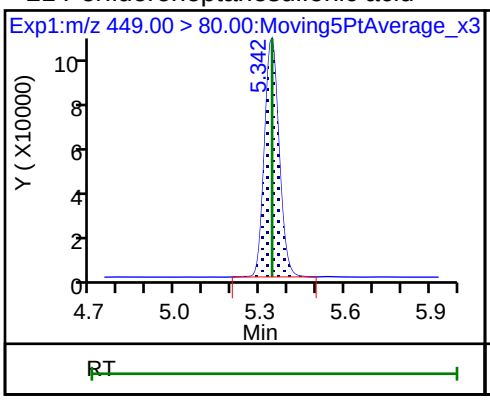
19 6:2 FTS



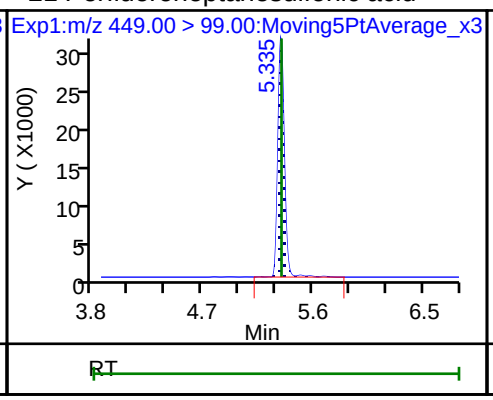
D 20 M2-6:2 FTS



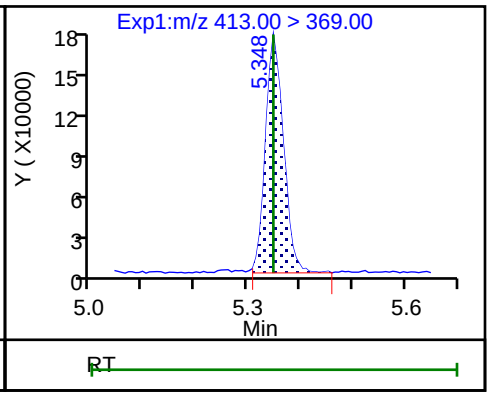
21 Perfluoroheptanesulfonic acid



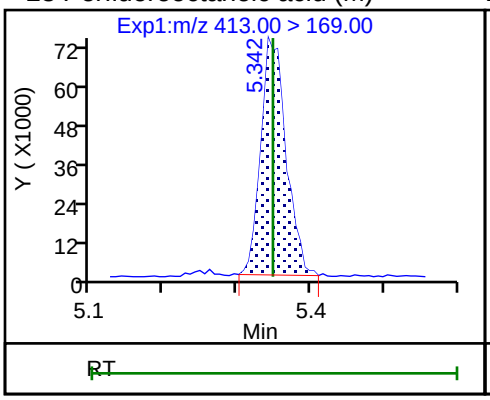
21 Perfluoroheptanesulfonic acid



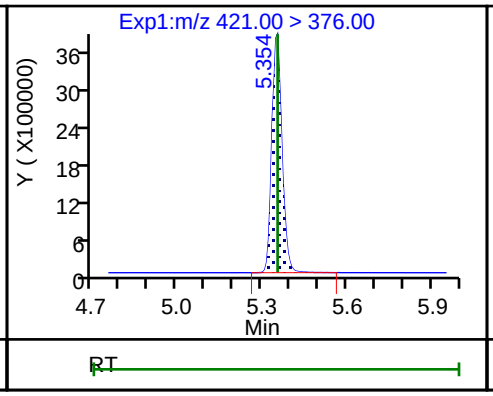
23 Perfluorooctanoic acid



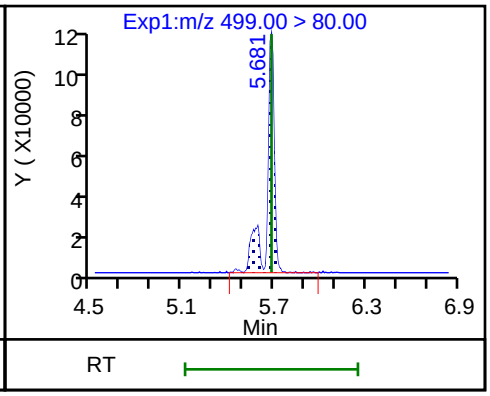
23 Perfluorooctanoic acid (M)



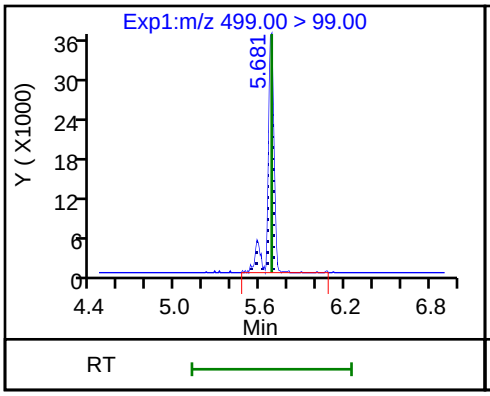
D 22 13C8 PFOA



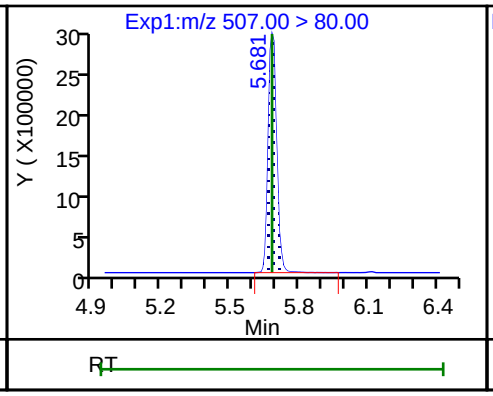
24 Perfluorooctanesulfonic acid



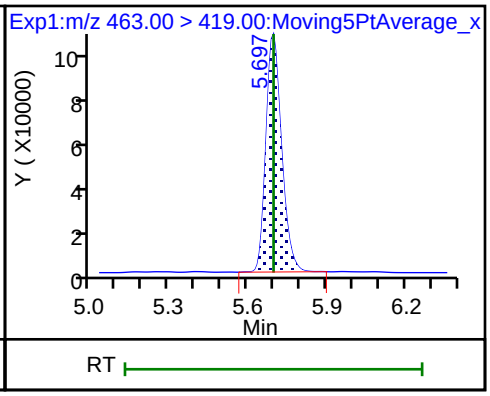
24 Perfluorooctanesulfonic acid



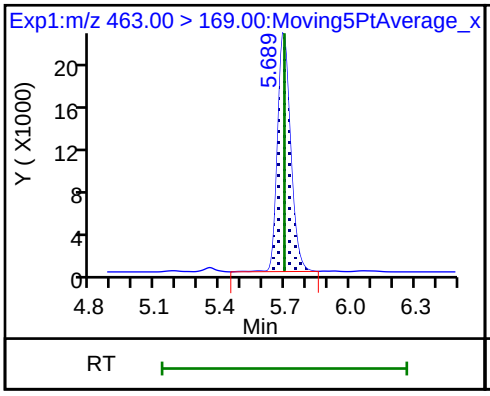
D 25 13C8 PFOS



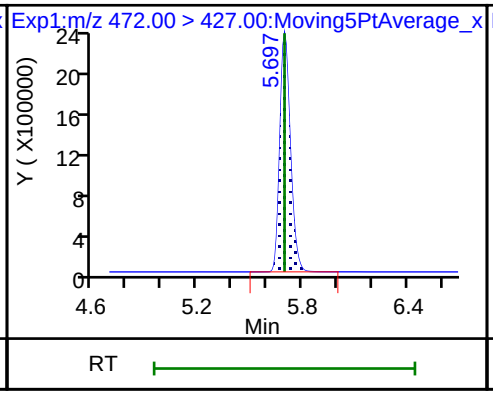
26 Perfluorononanoic acid



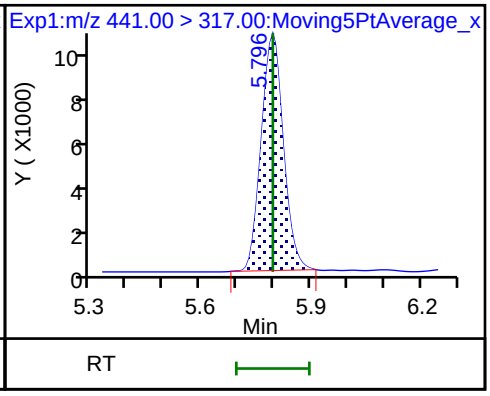
26 Perfluorononanoic acid



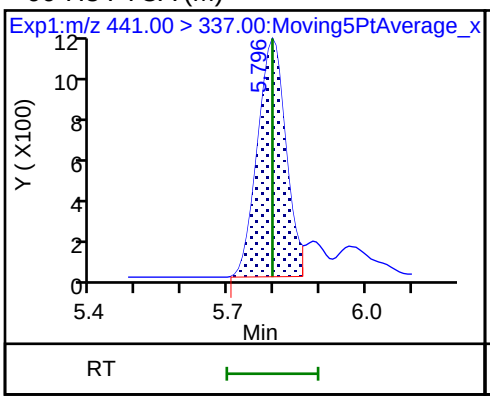
D 27 13C9 PFNA



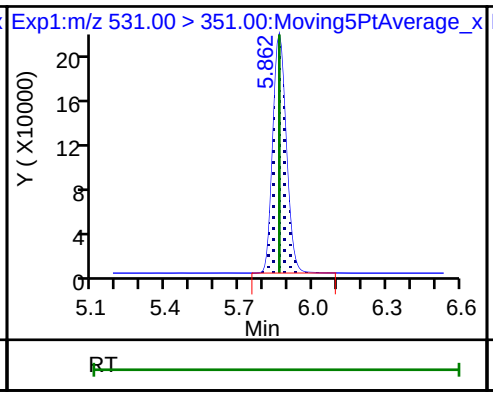
66 7:3 FTCA



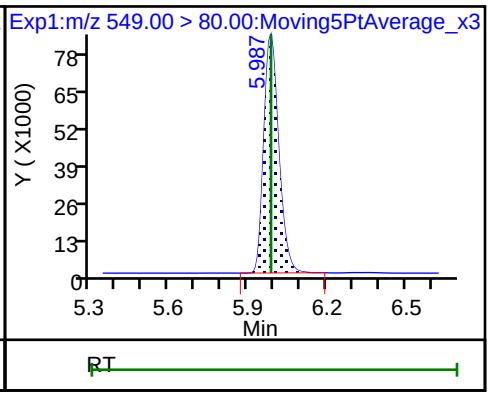
66 7:3 FTCA (M)



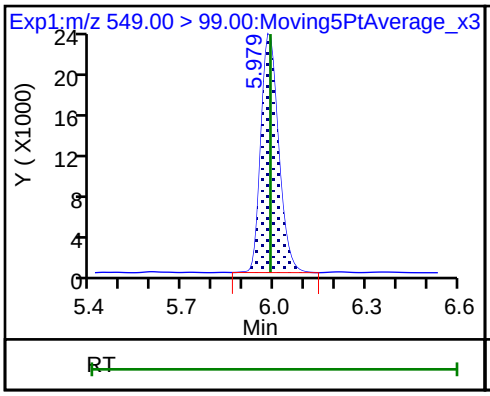
28 9ClFOS



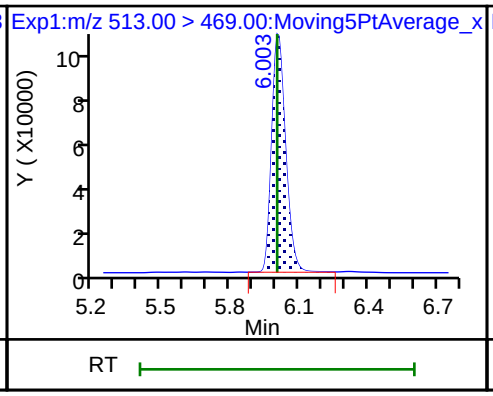
29 Perfluorononanesulfonic acid



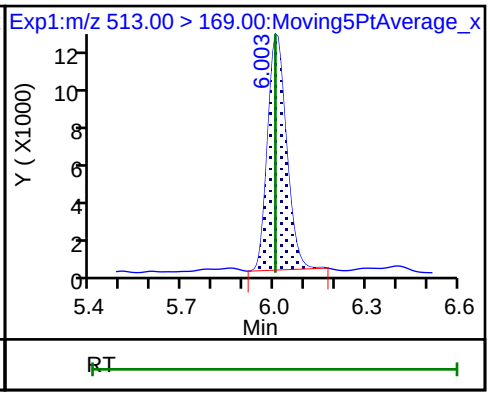
29 Perfluorononanesulfonic acid



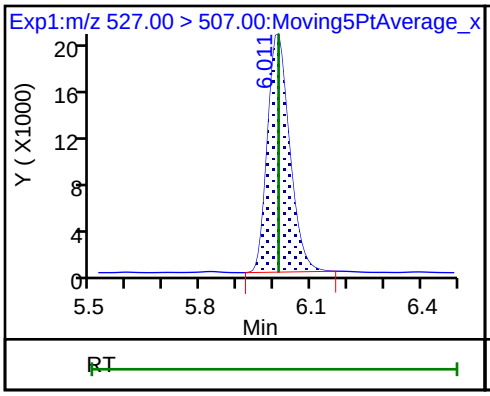
30 Perfluorodecanoic acid



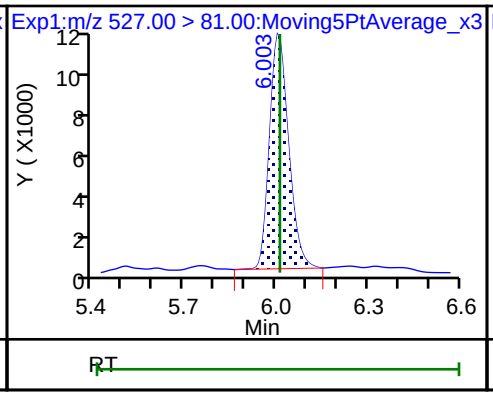
30 Perfluorodecanoic acid



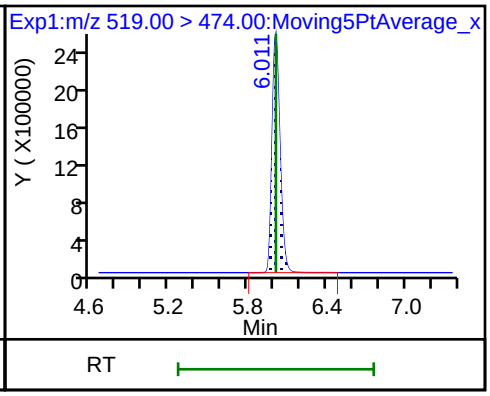
33 8:2 FTS



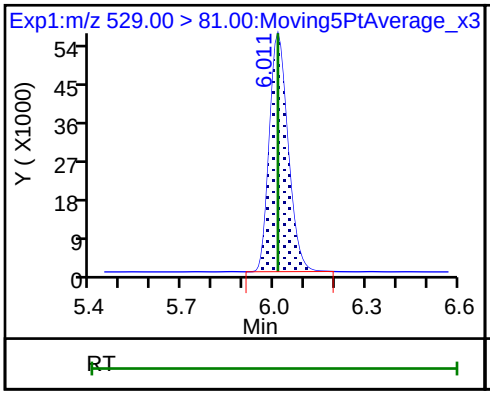
33 8:2 FTS



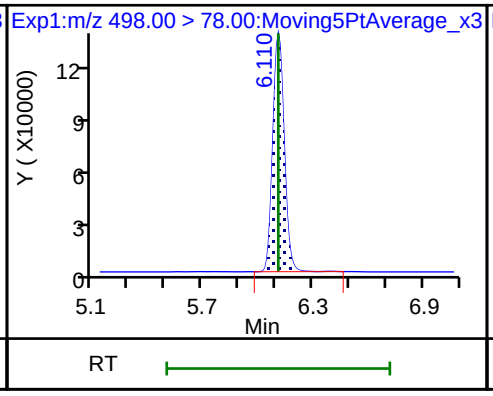
D 32 13C6 PFDA



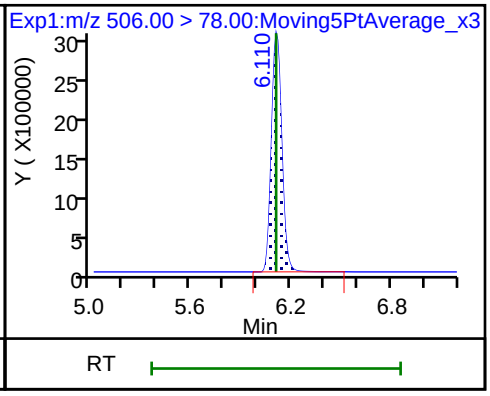
D 31 M2-8:2 FTS



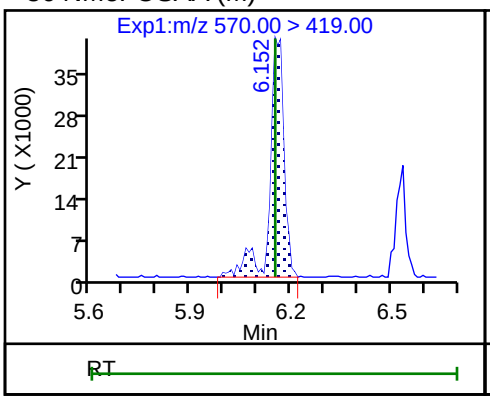
34 Perfluorooctanesulfonamide



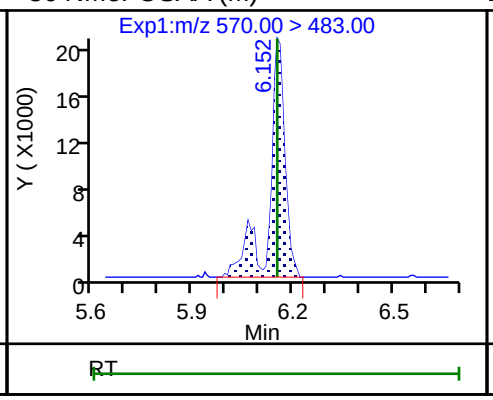
D 35 13C8 FOSA



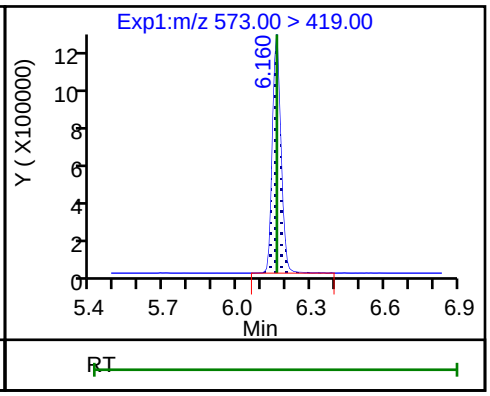
36 NMeFOSAA (M)



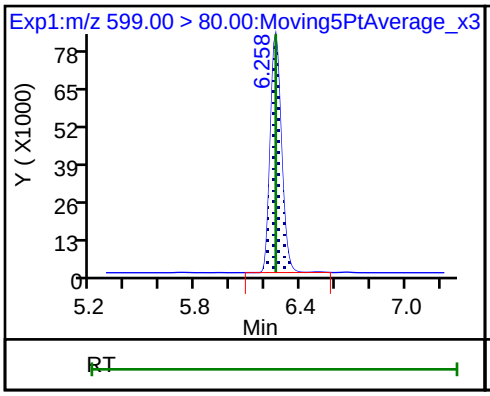
36 NMeFOSAA (M)



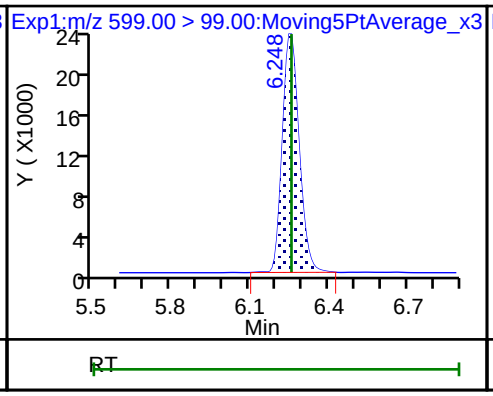
D 37 d3-NMeFOSAA



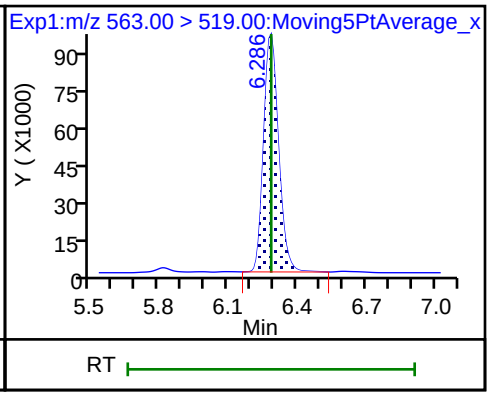
38 Perfluorodecanesulfonic acid



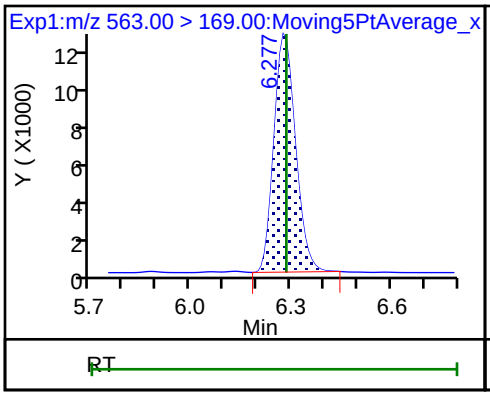
38 Perfluorodecanesulfonic acid



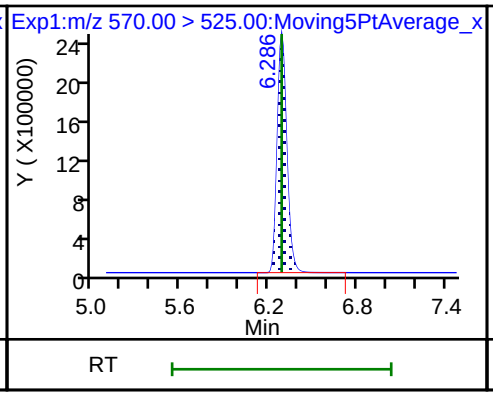
39 Perfluoroundecanoic acid



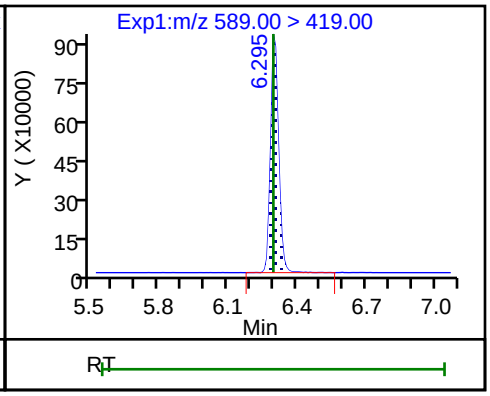
39 Perfluoroundecanoic acid



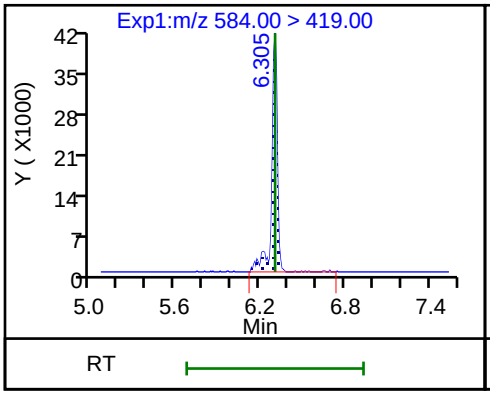
D 40 13C7 PFUnA



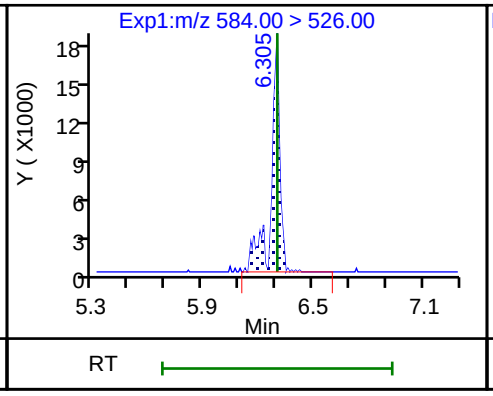
D 41 d5-NEtFOSAA



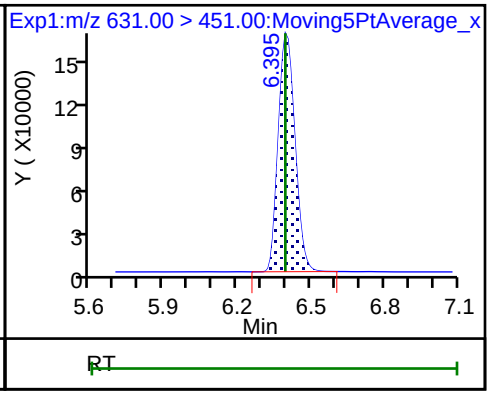
42 NEtFOSAA



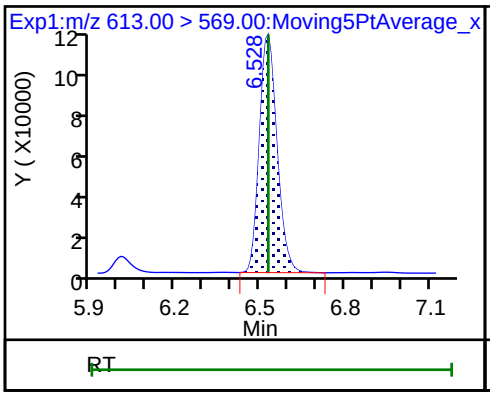
42 NEtFOSAA



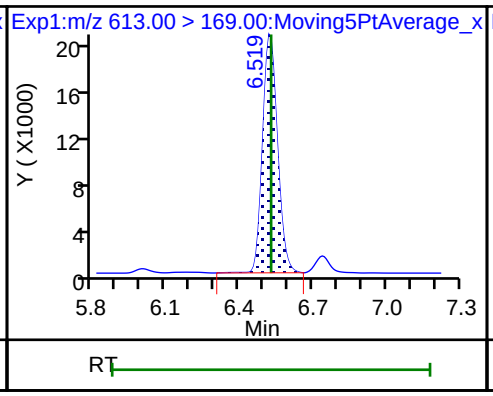
43 11ClFOS



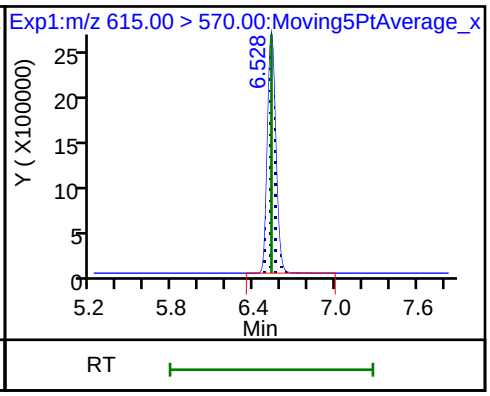
46 Perfluorododecanoic acid



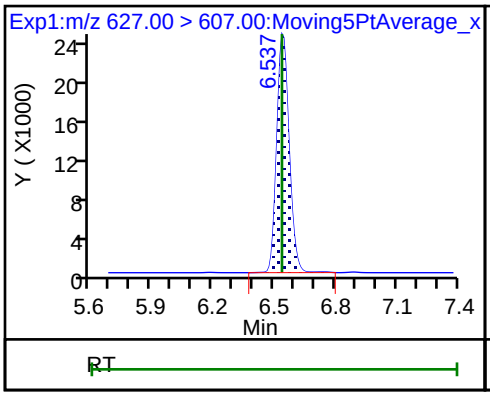
46 Perfluorododecanoic acid



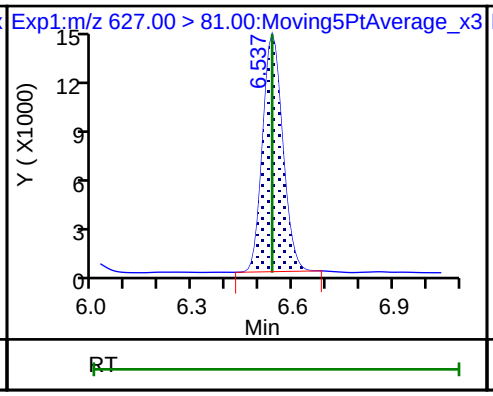
D 45 13C2-PFDoDA



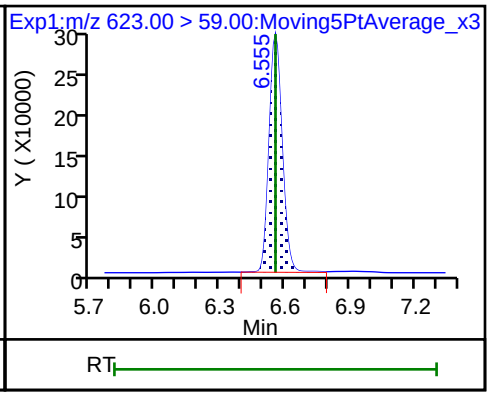
48 10:2 FTS



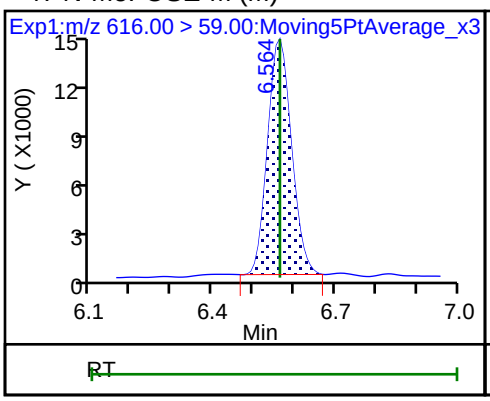
48 10:2 FTS



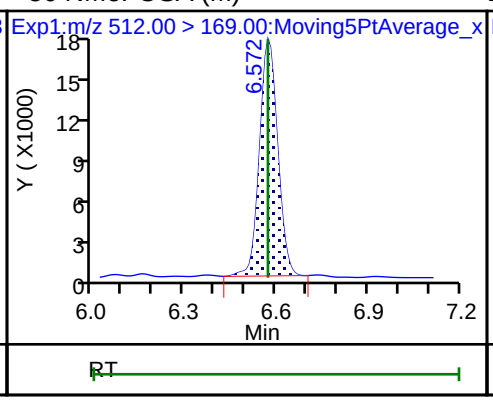
D 44 d7-N-MeFOSE-M



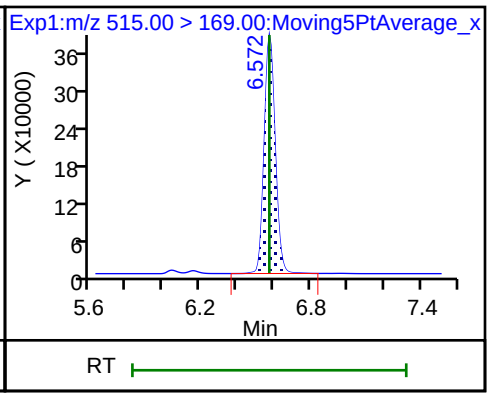
47 N-MeFOSE-M (M)



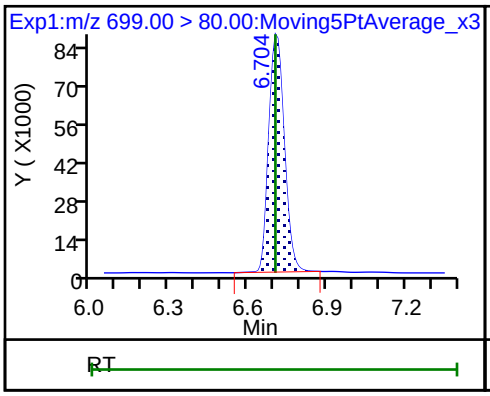
50 NMeFOSA (M)



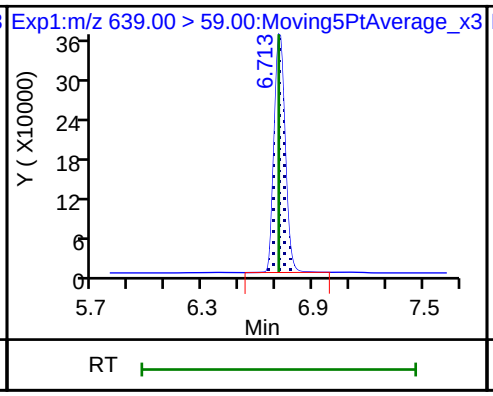
D 49 d3-NMePFOSA



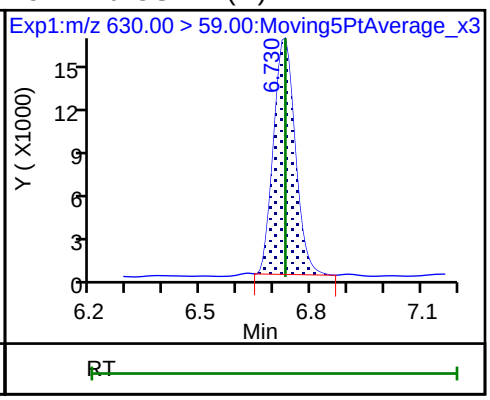
53 PFDoS



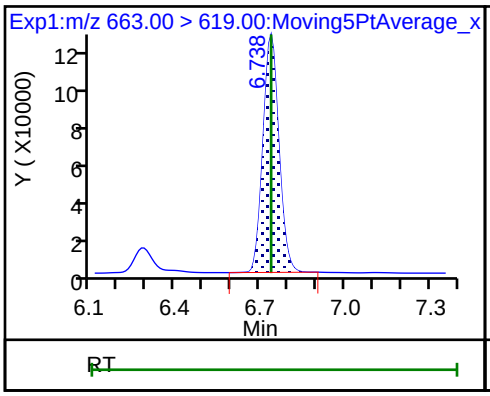
D 51 d9-N-EtFOSE-M



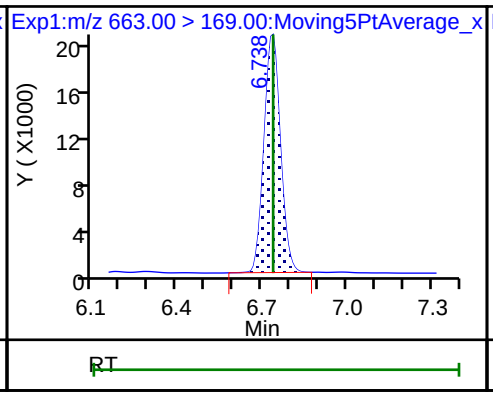
52 N-EtFOSE-M (M)



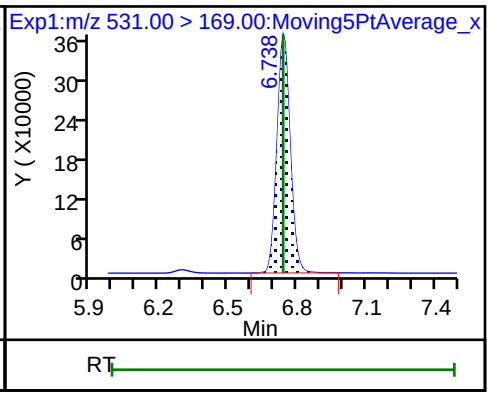
56 Perfluorotridecanoic acid



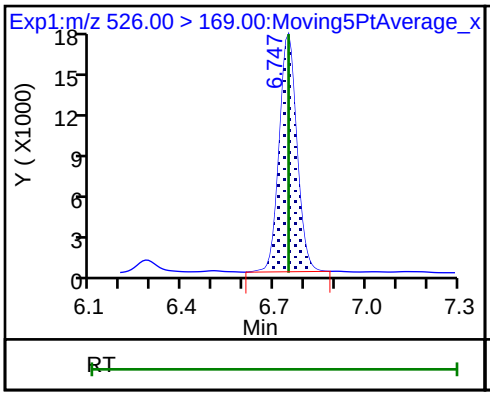
56 Perfluorotridecanoic acid



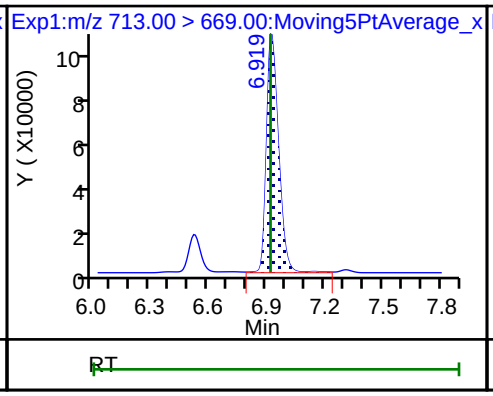
D 54 d5-NEtPFOSA



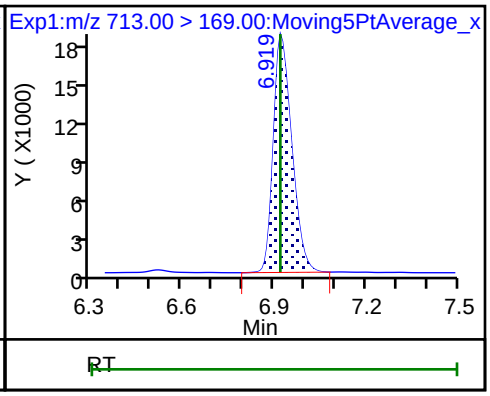
55 N-EtFOSA-M



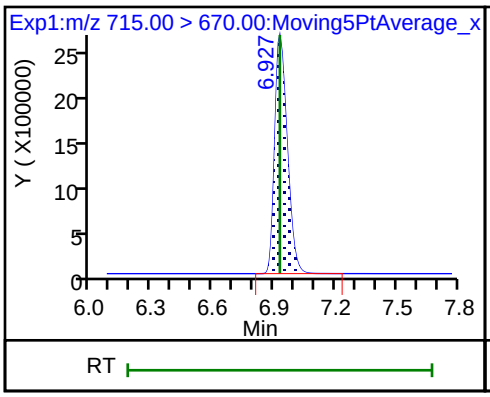
57 Perfluorotetradecanoic acid



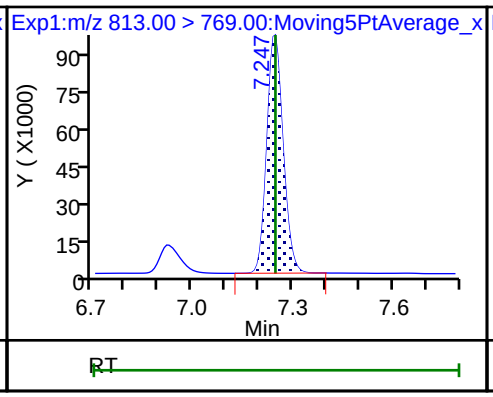
57 Perfluorotetradecanoic acid



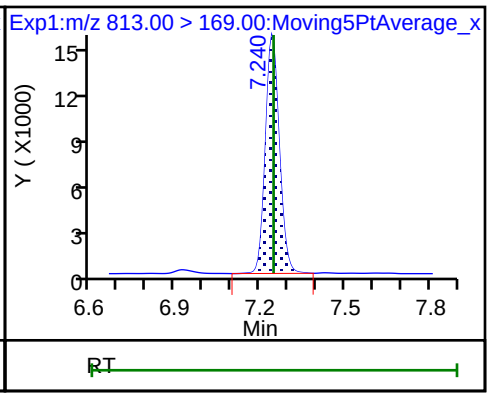
D 58 13C2 PFTeDA



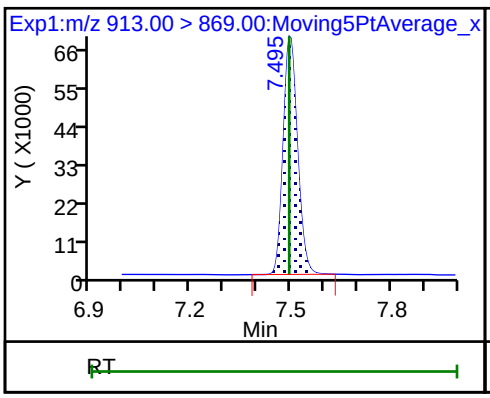
59 Perfluorohexadecanoic acid



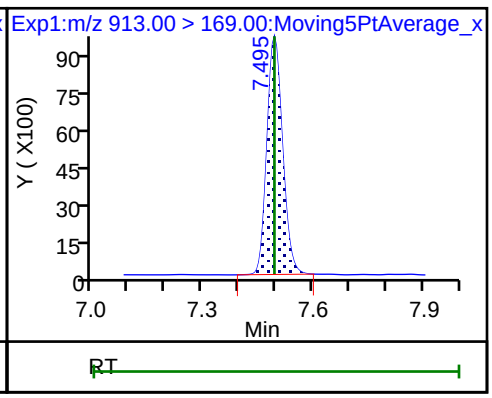
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

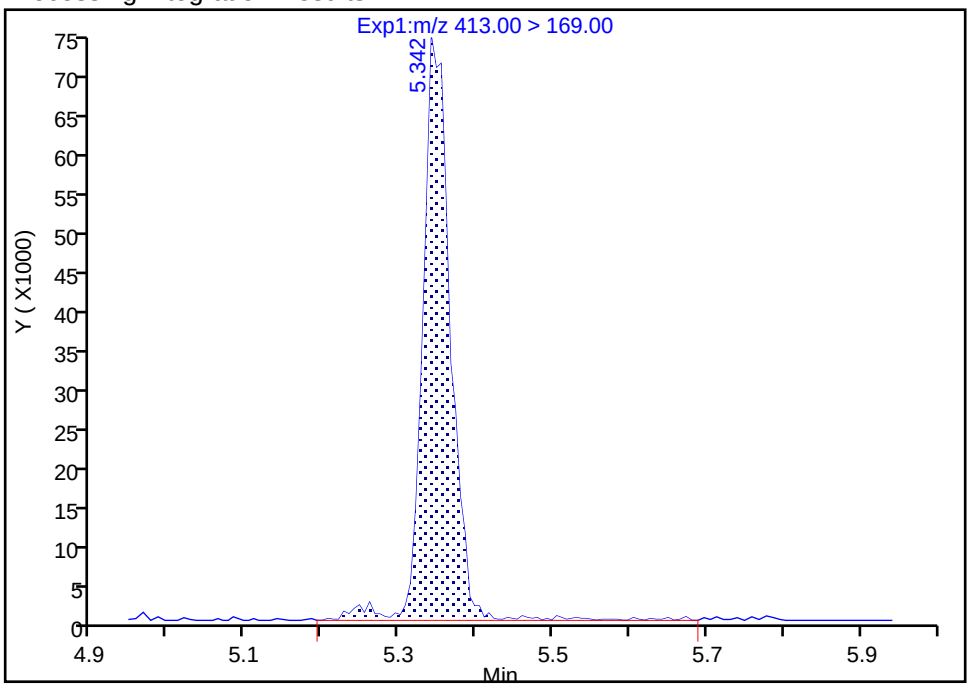
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d				
Injection Date:	07-Apr-2022 12:09:30	Instrument ID:	29347		
Lims ID:	CCVIS 1_CAL2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

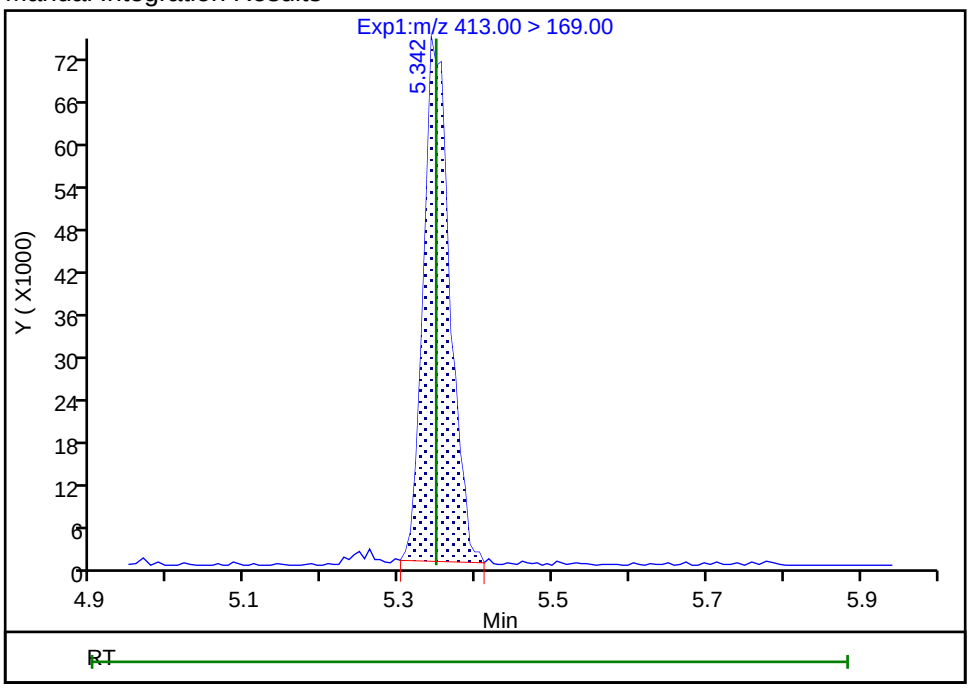
Processing Integration Results

RT: 5.34
Area: 188682
Amount: 0.492173
Amount Units: ng/ml



Manual Integration Results

RT: 5.34
Area: 176735
Amount: 0.492173
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 12:26:36

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

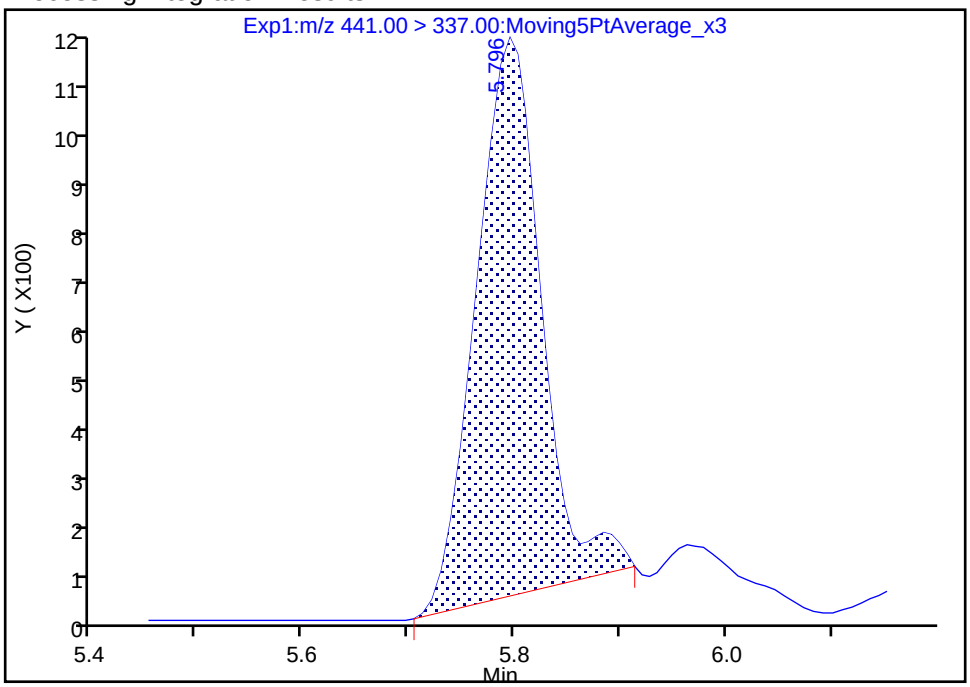
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d				
Injection Date:	07-Apr-2022 12:09:30	Instrument ID:	29347		
Lims ID:	CCVIS 1_CAL2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

66 7:3 FTCA, CAS: 812-70-4

Signal: 2

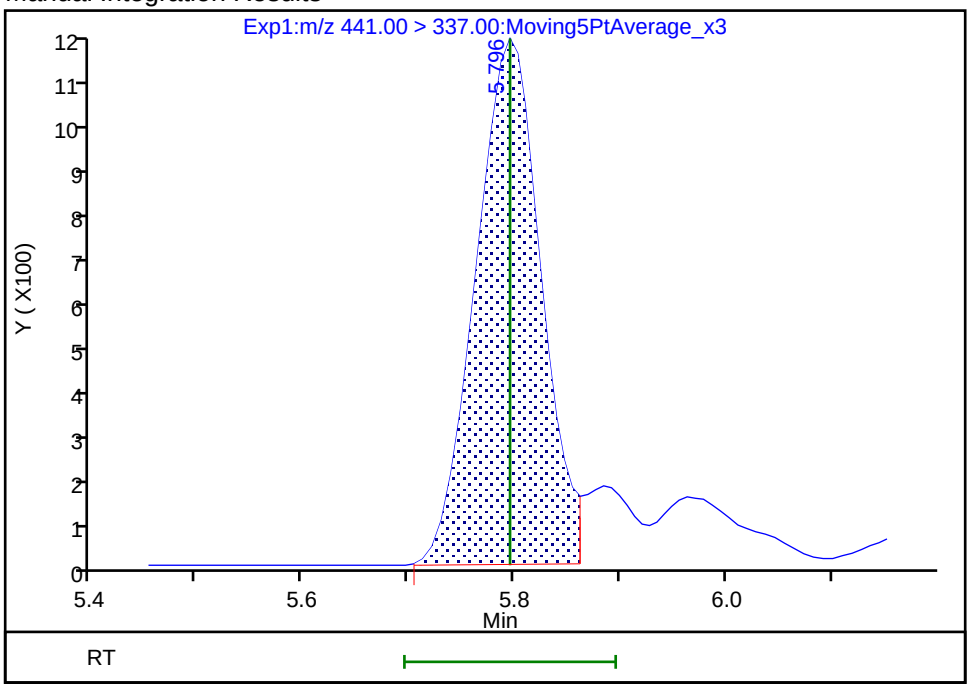
Processing Integration Results

RT: 5.80
Area: 4519
Amount: 0.499644
Amount Units: ng/ml



Manual Integration Results

RT: 5.80
Area: 4706
Amount: 0.499644
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 12:26:58

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

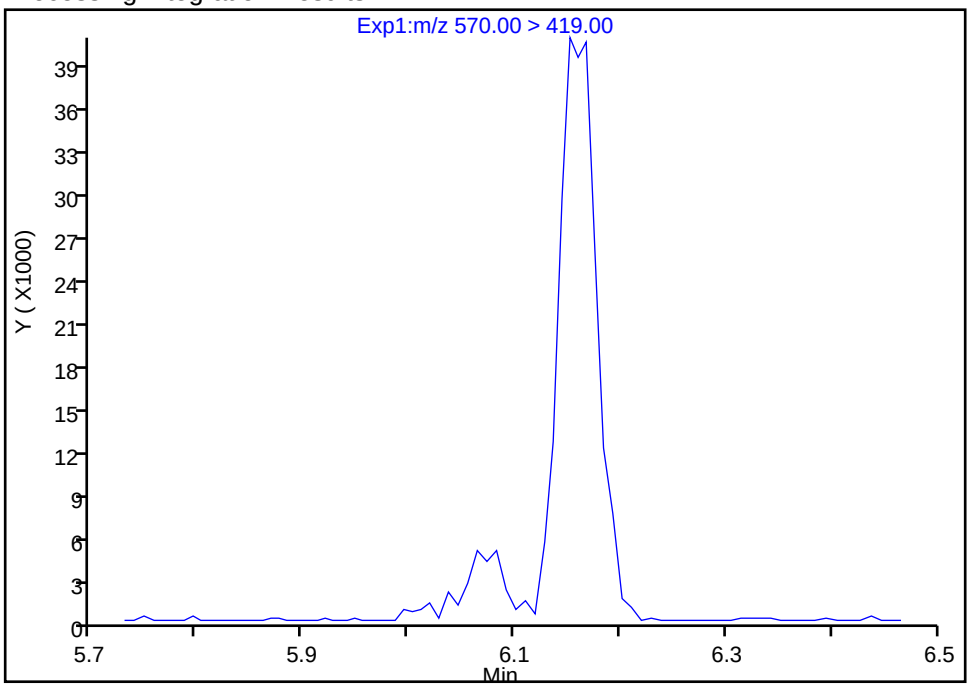
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d				
Injection Date:	07-Apr-2022 12:09:30	Instrument ID:	29347		
Lims ID:	CCVIS 1_CAL2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

36 NMeFOSAA, CAS: 2355-31-9

Signal: 1

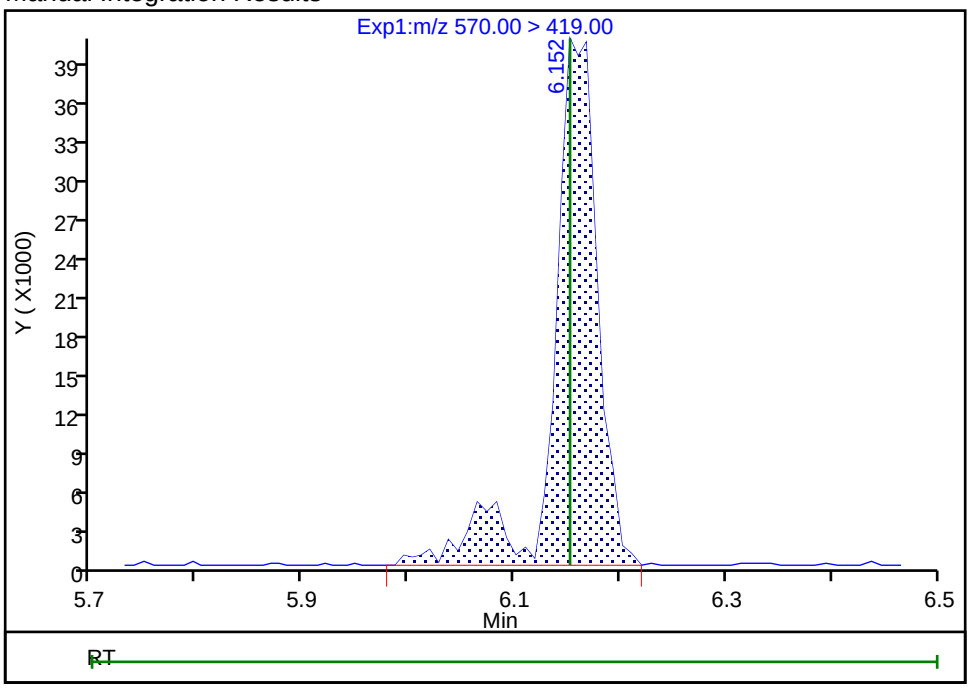
Processing Integration Results

Not Detected
Expected RT: 6.15



Manual Integration Results

RT: 6.15
Area: 117465
Amount: 0.461460
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 12:27:09
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

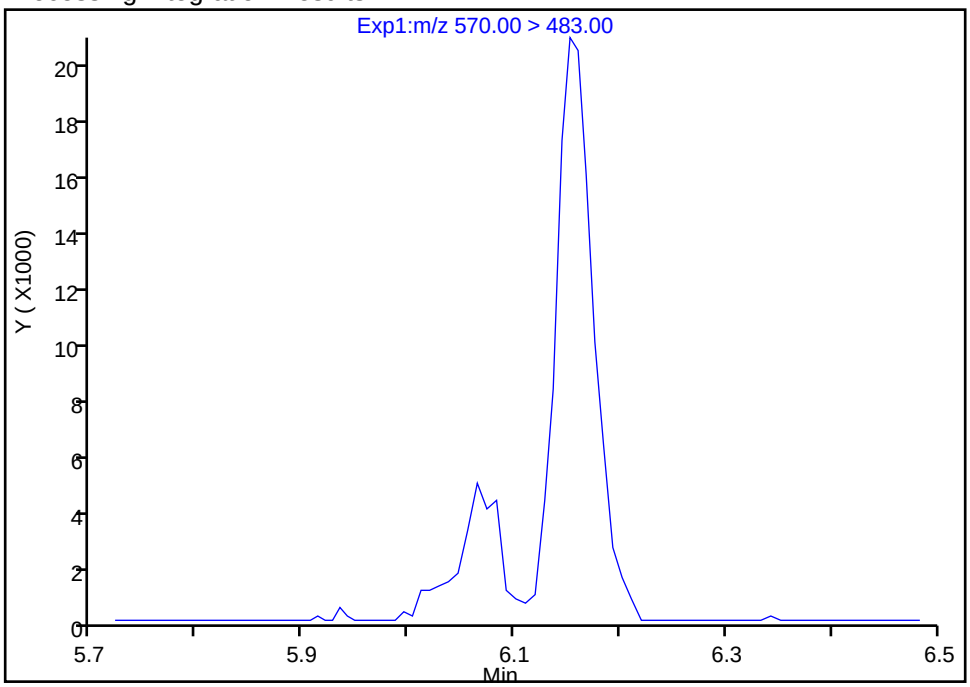
Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d
Injection Date: 07-Apr-2022 12:09:30 Instrument ID: 29347
Lims ID: CCVIS 1_CAL2
Client ID:
Operator ID: US19_USR_INS75556 ALS Bottle#: 20003 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3
Column: Detector EXP1

36 NMeFOSAA, CAS: 2355-31-9

Signal: 2

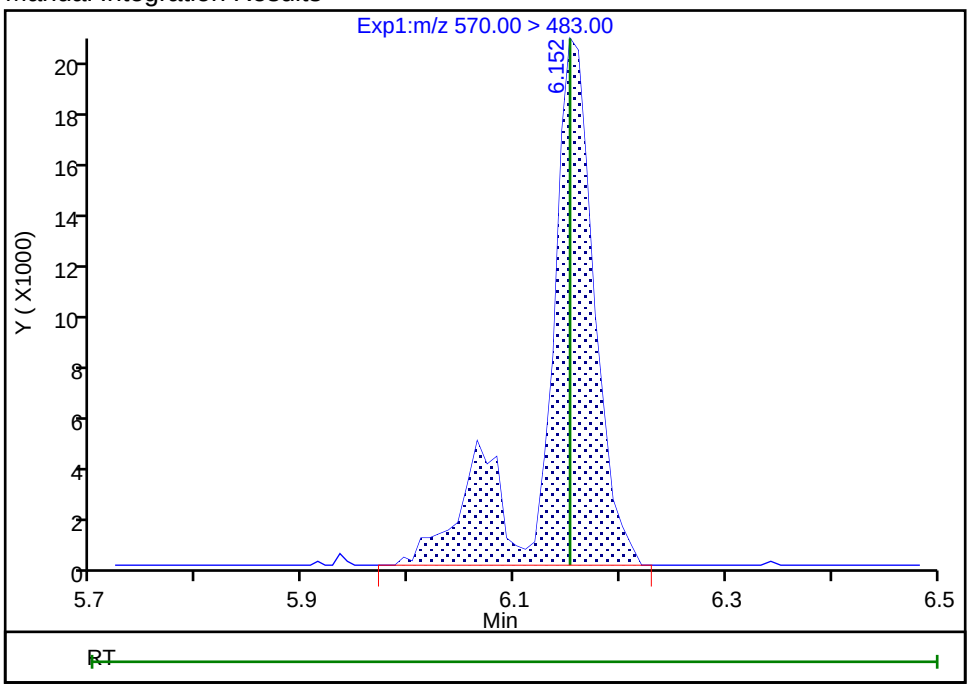
Not Detected
Expected RT: 6.15

Processing Integration Results



Manual Integration Results

RT: 6.15
Area: 65412
Amount: 0.461460
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 12:27:14
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

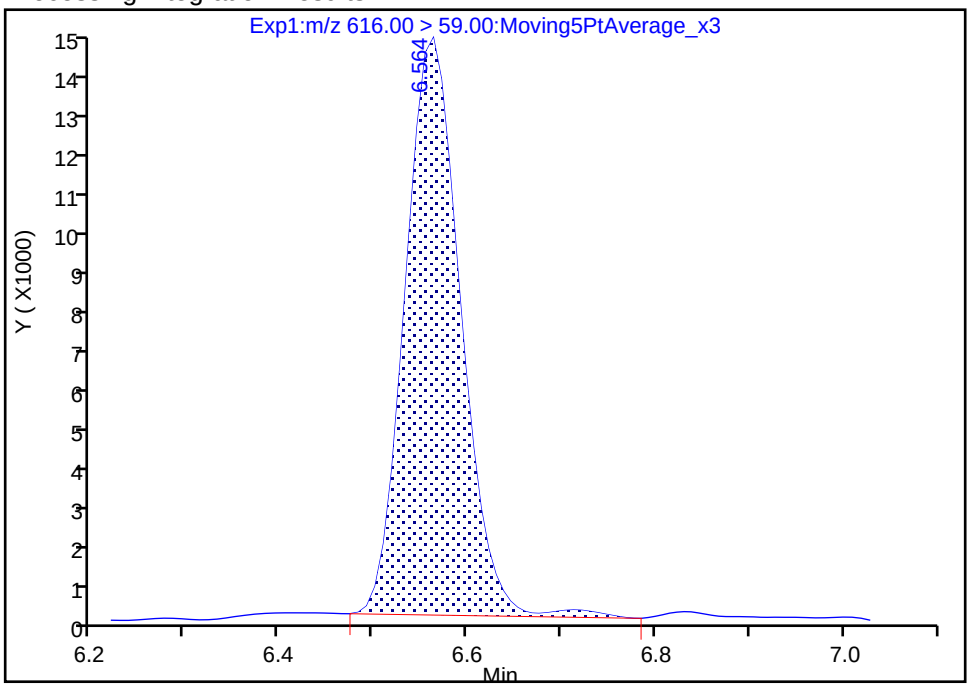
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d				
Injection Date:	07-Apr-2022 12:09:30	Instrument ID:	29347		
Lims ID:	CCVIS 1_CAL2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

47 N-MeFOSE-M, CAS: 24448-09-7

Signal: 1

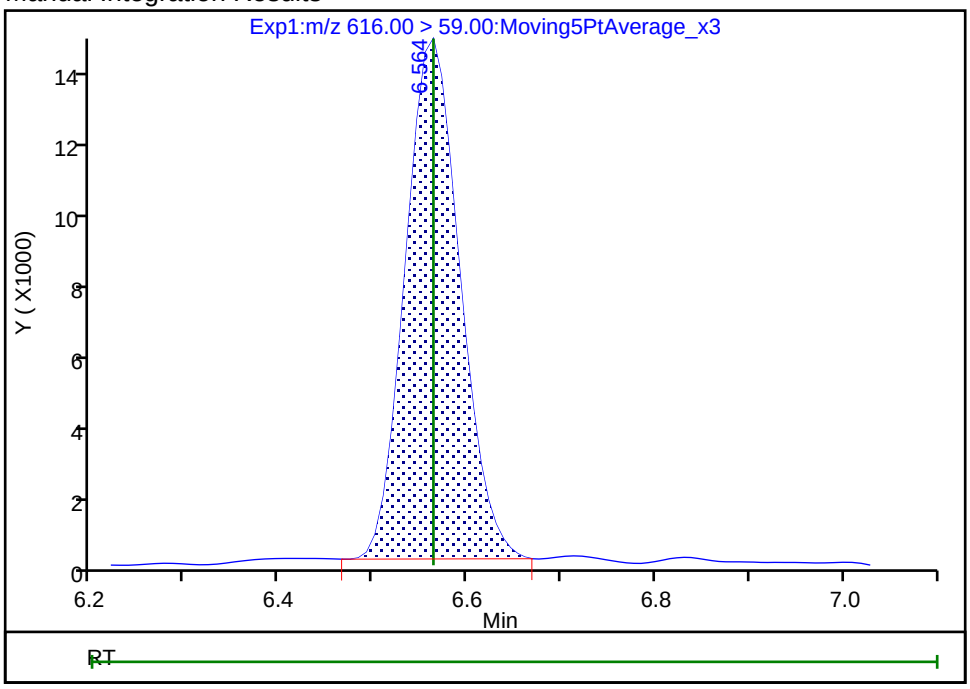
Processing Integration Results

RT: 6.56
Area: 58689
Amount: 0.458377
Amount Units: ng/ml



Manual Integration Results

RT: 6.56
Area: 57485
Amount: 0.448973
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 12:27:25

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

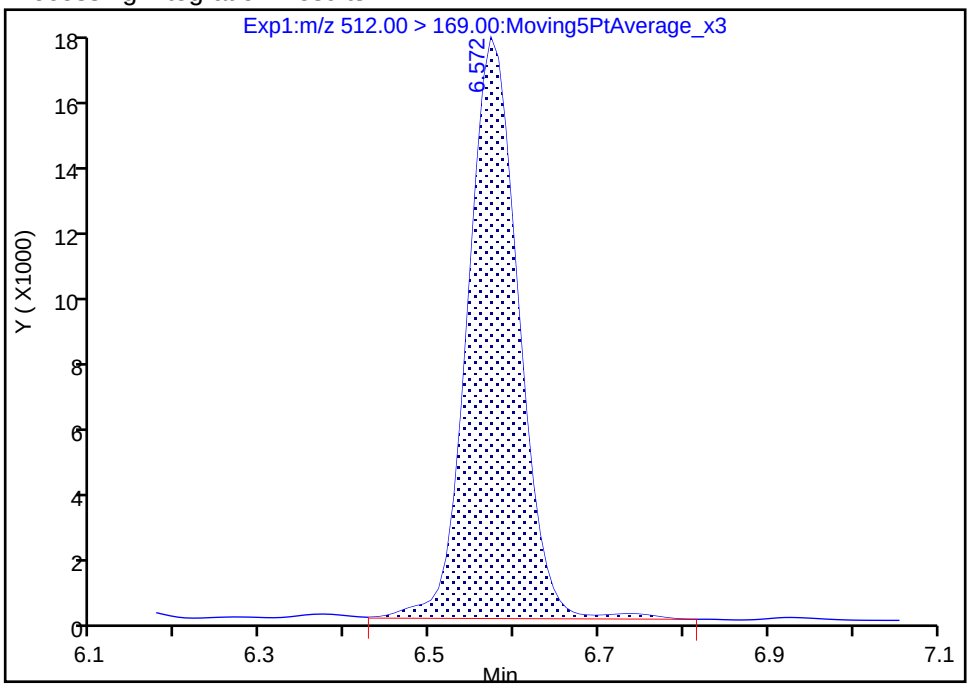
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d				
Injection Date:	07-Apr-2022 12:09:30	Instrument ID:	29347		
Lims ID:	CCVIS 1_CAL2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

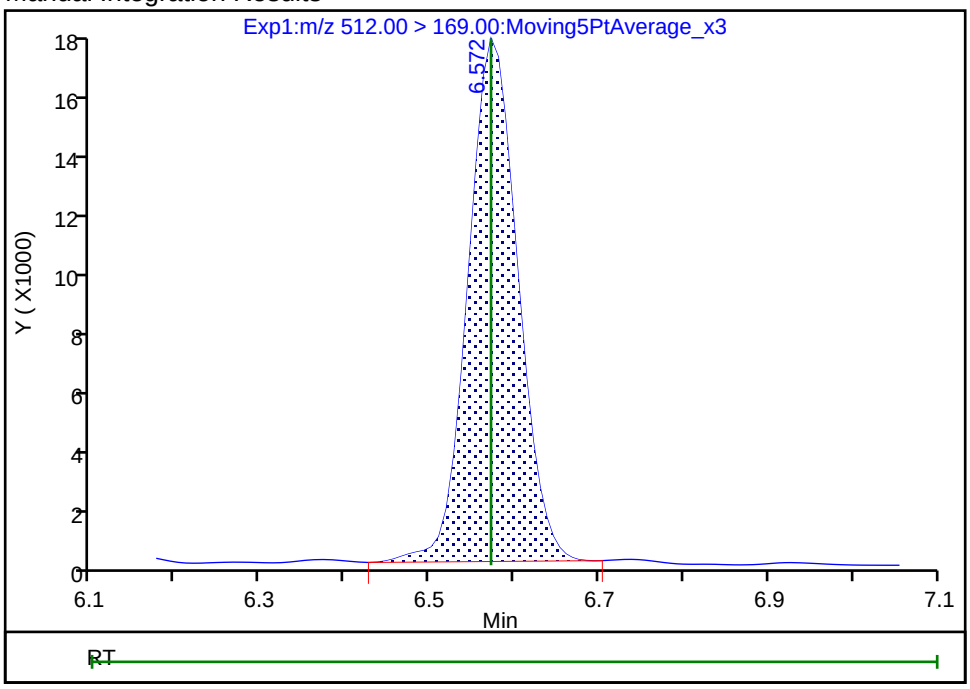
Processing Integration Results

RT: 6.57
Area: 72017
Amount: 0.436245
Amount Units: ng/ml



Manual Integration Results

RT: 6.57
Area: 70337
Amount: 0.426068
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 12:27:32

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

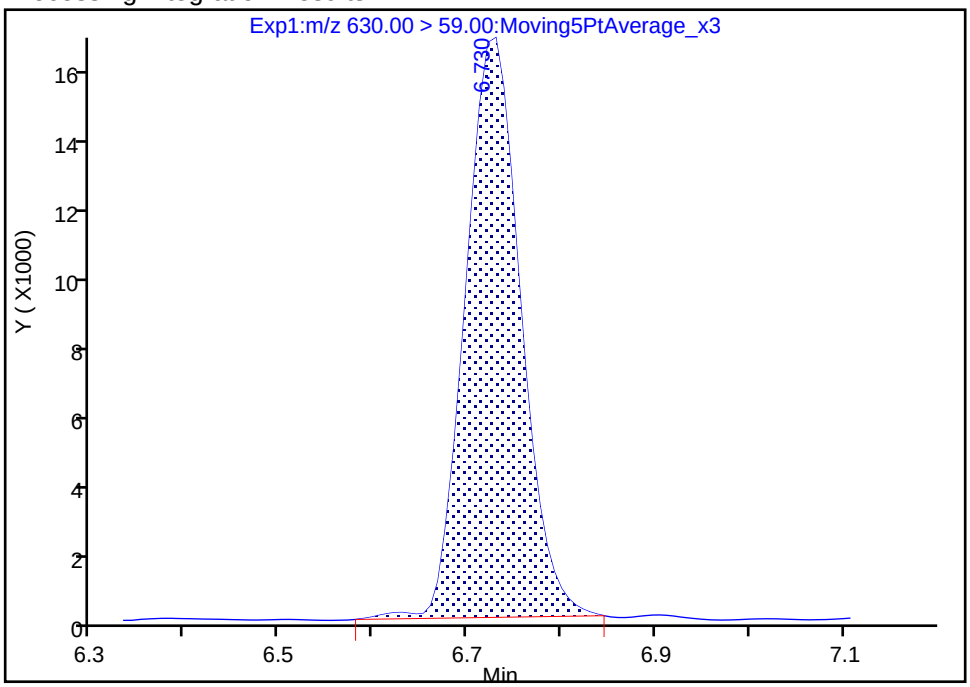
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d				
Injection Date:	07-Apr-2022 12:09:30	Instrument ID:	29347		
Lims ID:	CCVIS 1_CAL2				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20003	Worklist Smp#:	1
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

52 N-EtFOSE-M, CAS: 1691-99-2

Signal: 1

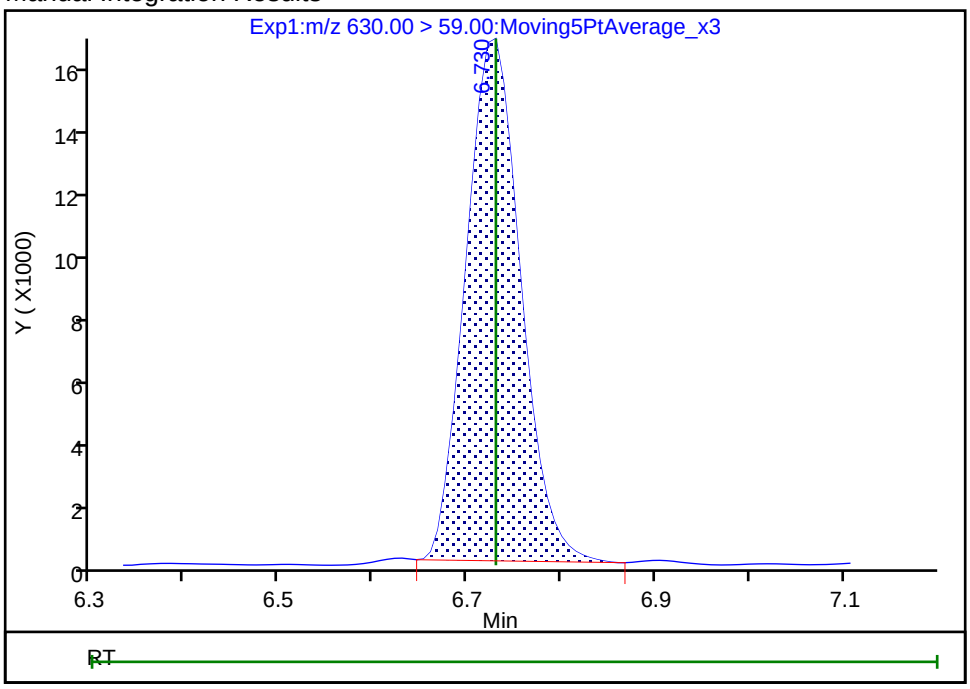
Processing Integration Results

RT: 6.73
Area: 64816
Amount: 0.453579
Amount Units: ng/ml



Manual Integration Results

RT: 6.73
Area: 63960
Amount: 0.447588
Amount Units: ng/ml



Reviewer: carpenterr, 07-Apr-2022 12:27:44

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-242084/30 Calibration Date: 04/07/2022 17:17

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-61.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8221	0.9058		8.81	8.00	10.2	30.0
PFMPA	AveID	0.8092	0.8602		8.50	8.00	6.3	30.0
3:3 FTCA	AveID	0.0602	0.0670		8.90	8.00	11.2	30.0
Perfluoropentanoic acid	AveID	1.047	1.160		8.87	8.00	10.8	30.0
Perfluorobutanesulfonic acid	AveID	0.9581	1.024		7.57	7.08	6.9	30.0
PFMBA	AveID	0.8034	0.8676		8.64	8.00	8.0	30.0
PFEESA	AveID	3.456	3.791		7.81	7.12	9.7	30.0
NFDHA	AveID	0.2914	0.2938		8.06	8.00	0.8	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.837	4.323		8.42	7.47	12.7	30.0
Perfluorohexanoic acid	AveID	0.8536	0.9186		8.61	8.00	7.6	30.0
Perfluoropentanesulfonic acid	AveID	0.8962	1.005		8.41	7.50	12.1	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.450	2.507		8.19	8.00	2.3	30.0
Perfluoroheptanoic acid	AveID	0.9573	1.003		8.38	8.00	4.8	30.0
Perfluorohexanesulfonic acid	AveID	0.9746	1.067		7.99	7.30	9.5	30.0
DONA	AveID	1.621	1.770		8.26	7.56	9.2	30.0
5:3 FTCA	AveID	0.1975	0.2119		8.58	8.00	7.3	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.264	5.891		8.49	7.58	11.9	30.0
Perfluoroheptanesulfonic acid	AveID	0.9680	1.080		8.50	7.62	11.6	30.0
Perfluorooctanoic acid	AveID	0.9021	0.8861		7.86	8.00	-1.8	30.0
Perfluorooctanesulfonic acid	AveID	1.112	1.150		7.66	7.40	3.4	30.0
Perfluorononanoic acid	AveID	0.9008	0.9400		8.35	8.00	4.4	30.0
7:3 FTCA	AveID	0.1048	0.1031		7.87	8.00	-1.6	30.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	AveID	2.346	2.530		8.02	7.44	7.8	30.0
Perfluorononanesulfonic acid	AveID	0.9364	1.015		8.32	7.68	8.4	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.853	8.726		8.52	7.66	11.1	30.0
Perfluorodecanoic acid	AveID	0.8656	0.8894		8.22	8.00	2.8	30.0
Perfluorooctanesulfonamide	AveID	1.036	1.129		8.72	8.00	9.0	30.0
NMeFOSAA	AveID	0.8731	0.9174		8.41	8.00	5.1	30.0
Perfluorodecanesulfonic acid	AveID	1.038	1.156		8.59	7.71	11.4	30.0
Perfluoroundecanoic acid	AveID	0.8208	0.8439		8.23	8.00	2.8	30.0
NEtFOSAA	AveID	0.9399	1.035		8.81	8.00	10.1	30.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	AveID	2.075	2.224		7.97	7.44	7.2	30.0
Perfluorododecanoic acid	AveID	0.8808	0.9278		8.43	8.00	5.3	30.0
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	AveID	8.900	9.902		8.58	7.71	11.3	30.0
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	AveID	1.050	1.117		8.52	8.00	6.4	30.0
NMeFOSA	AveID	1.036	1.109		8.56	8.00	7.0	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-242084/30 Calibration Date: 04/07/2022 17:17

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-61.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.9847	1.091		8.58	7.74	10.8	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9455	1.019		8.63	8.00	7.8	30.0
Perfluorotridecanoic acid	AveID	0.8823	0.9710		8.80	8.00	10.1	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.118	1.223		8.75	8.00	9.4	30.0
Perfluorotetradecanoic acid	AveID	0.8909	0.8974		8.06	8.00	0.7	30.0
Perfluorohexadecanoic acid	AveID	0.6314	0.6263		7.94	8.00	-0.8	30.0
Perfluorooctadecanoic acid	AveID	0.4183	0.4325		8.27	8.00	3.4	30.0
13C4 PFBA	Ave	809587	806072		9.96	10.0	-0.4	30.0
13C5 PFPeA	Ave	694051	675953		9.74	10.0	-2.6	30.0
13C3 PFBS	Ave	922837	898102		9.05	9.30	-2.7	30.0
M2-4:2 FTS	Ave	43630	42207		9.04	9.34	-3.3	30.0
13C5 PFHxA	Ave	798937	803998		10.1	10.0	0.6	30.0
13C3 HFPO-DA	Ave	86595	84626		9.77	10.0	-2.3	30.0
13C4 PFHpA	Ave	840835	852471		10.1	10.0	1.4	30.0
13C3 PFHxS	Ave	826639	788751		9.03	9.46	-4.6	30.0
M2-6:2 FTS	Ave	29064	27064		8.85	9.50	-6.9	30.0
13C8 PFOA	Ave	913254	913814		10.0	10.0	0.0	30.0
13C8 PFOS	Ave	746154	744386		9.54	9.56	-0.2	30.0
13C9 PFNA	Ave	935044	902569		9.65	10.0	-3.5	30.0
13C6 PFDA	Ave	1011228	1024859		10.1	10.0	1.3	30.0
M2-8:2 FTS	Ave	24281	22878		9.03	9.58	-5.8	30.0
13C8 FOSA	Ave	1241961	1190442		9.59	10.0	-4.1	30.0
d3-NMeFOSAA	Ave	289701	271475		9.37	10.0	-6.3	30.0
13C7 PFUnA	Ave	1028028	1014392		9.87	10.0	-1.3	30.0
d5-NEtFOSAA	Ave	221835	214608		9.67	10.0	-3.3	30.0
13C2-PFDoDA	Ave	1064795	1027373		9.65	10.0	-3.5	30.0
d7-N-MeFOSE-M	Ave	116144	112161		9.66	10.0	-3.4	30.0
d3-NMePFOSA	Ave	156838	149302		9.52	10.0	-4.8	30.0
d9-N-EtFOSE-M	Ave	139633	134237		9.61	10.0	-3.9	30.0
d5-NEtPFOSA	Ave	140743	136435		9.69	10.0	-3.1	30.0
13C2 PFTeDA	Ave	1061225	1084371		10.2	10.0	2.2	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-61.d
Lims ID: CCV 3_CAL4
Client ID:
Sample Type: CCV
Inject. Date: 07-Apr-2022 17:17:46 ALS Bottle#: 20005 Worklist Smp#: 30
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 3_CAL4
Misc. Info.: Plate: 1 Rack: 1 410-0054325-030
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 17:47:16 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: matthewsl Date: 07-Apr-2022 17:38:06
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.649	0.007	1.000	5841373	8.81		110	10629	
D 2 13C4 PFBA										
217.00 > 172.00	3.656	3.649	0.007		8060717	9.96		99.6	156093	
63 PFECA F										
229.00 > 85.00	3.890	3.881	0.009	0.931	4651821	8.50		106	10605	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.161	0.011	0.998	362308	8.90	Target=1.38	111	16153	
241.00 > 117.00	4.165	4.161	0.004	0.997	264882		1.37(0.69-2.06)		10084	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.179	4.168	0.011	1.000	6272898	8.87		111	41252	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.168	0.011		6759533	9.74		97.4	70366	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.220	0.011	1.000	6513349	7.57	Target=2.90	107	7645	
299.00 > 99.00	4.231	4.220	0.011	1.000	2235660		2.91(1.45-4.36)		7130	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.227	0.004		8352345	9.05		97.3	313834	
64 PFECA A										
279.00 > 85.00	4.301	4.289	0.012	1.029	4691485	8.64		108	63634	
65 PES										
315.00 > 135.00	4.388	4.384	0.004	0.956	21701928	7.81	Target=12.33	110	273352	
315.00 > 83.00	4.388	4.384	0.004	0.956	1511319		14.36(6.17-18.50)		1843	
68 PFECA B										
295.00 > 201.00	4.510	4.504	0.006	0.983	1889569	8.06		101	40876	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.549	4.534	0.015	1.000	1363350	8.42	Target=1.82	113	73916	
327.00 > 81.00	4.539	4.534	0.005	0.998	752498		1.81(0.91-2.73)		17887	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.544	0.005		394216	9.04		96.7	9644	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.588	4.573	0.015	1.000	5908612	8.61	Target=14.46	108	41531	
313.00 > 119.00	4.578	4.573	0.005	0.998	416011		14.20(7.23-21.70)		15194	
D 9 13C5 PFHxA										
318.00 > 273.00	4.588	4.583	0.005		8039976	10.1		101	253112	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.608	4.603	0.005	1.089	6770902	8.41	Target=3.09	112	257845	
349.00 > 99.00	4.608	4.603	0.005	1.089	2147072		3.15(1.55-4.64)		121605	
12 HFPO-DA										
329.00 > 285.00	4.717	4.706	0.011	1.000	1697402	8.19		102	45174	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.717	4.706	0.011		846259	9.77		97.7	44999	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.977	4.971	0.006	1.000	6840004	8.38	Target=3.12	105	41736	
363.00 > 169.00	4.977	4.971	0.006	1.000	2107937		3.24(1.56-4.68)		24792	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.977	4.971	0.006	0.998	6142169	7.99	Target=3.09	110	2118831	
399.00 > 99.00	4.977	4.971	0.006	0.998	1945893		3.16(1.55-4.64)		6353	
D 17 13C4 PFHpA										
367.00 > 322.00	4.977	4.971	0.006		8524706	10.1		101	275076	
D 16 13C3 PFHxS										
402.00 > 80.00	4.986	4.971	0.015		7461588	9.03		95.4	605722	
18 DONA										
377.00 > 251.00	5.020	5.015	0.005	1.009	11408456	8.26		109	201336	
62 5:3 FTCA										
341.00 > 237.00	5.051	5.038	0.013	1.101	1362872	8.58	Target=3.25	107	12936	
341.00 > 217.00	5.051	5.038	0.013	1.101	430479		3.17(1.63-4.88)		10069	
19 6:2 FTS										
427.00 > 407.00	5.329	5.317	0.012	1.000	1209175	8.49	Target=1.70	112	66219	
427.00 > 81.00	5.322	5.317	0.005	0.999	695759		1.74(0.85-2.55)		26886	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.329	5.324	0.005		257105	8.85		93.1	17739	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.335	5.330	0.005	1.070	6487494	8.50	Target=3.14	112	201689	
449.00 > 99.00	5.335	5.330	0.005	1.070	1962014		3.31(1.57-4.70)		137254	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.342	5.337	0.005	0.999	6478122	7.86	Target=2.30	98.2	182191	
413.00 > 169.00	5.342	5.337	0.005	0.999	2873312		2.25(1.15-3.44)		295064	
D 22 13C8 PFOA										
421.00 > 376.00	5.348	5.337	0.011		9138140	10.0		100	1255181	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.673	5.669	0.004	1.000	6337948	7.66	Target=3.71	103	2049194	
499.00 > 99.00	5.665	5.669	-0.004	0.999	1680687		3.77(1.85-5.56)		2924	
D 25 13C8 PFOS										
507.00 > 80.00	5.673	5.669	0.004		7116329	9.54		99.8	1030941	
26 Perfluorononanoic acid										
463.00 > 419.00	5.689	5.684	0.005	1.000	6787518	8.35	Target=4.48	104	91520	
463.00 > 169.00	5.689	5.684	0.005	1.000	1459137		4.65(2.24-6.72)		44605	
D 27 13C9 PFNA										
472.00 > 427.00	5.689	5.684	0.005		9025691	9.65		96.5	310911	
66 7:3 FTCA										
441.00 > 317.00	5.787	5.782	0.005	1.261	663081	7.87	Target=10.10	98.4	17018	
441.00 > 337.00	5.787	5.782	0.005	1.261	66066		10.04(5.05-15.16)		3753	
28 9ClFOS										
531.00 > 351.00	5.855	5.849	0.006	1.032	14013946	8.02		108	615043	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.979	5.972	0.007	1.054	5800272	8.32	Target=3.33	108	245844	
549.00 > 99.00	5.979	5.972	0.007	1.054	1740877		3.33(1.66-4.99)		89306	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.003	5.997	0.006	1.000	7292455	8.22	Target=8.85	103	93882	
513.00 > 169.00	6.003	5.997	0.006	1.000	820984		8.88(4.42-13.27)		16682	
33 8:2 FTS										
527.00 > 507.00	6.003	5.997	0.006	1.000	1529936	8.52	Target=2.13	111	122896	
527.00 > 81.00	6.003	5.997	0.006	1.000	794429		1.93(1.07-3.20)		13571	
D 32 13C6 PFDA										
519.00 > 474.00	6.003	5.997	0.006		10248588	10.1		101	311005	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.003	5.997	0.006		219170	9.03		94.2	10427	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.110	6.095	0.015	1.000	10751939	8.72		109	354637	
D 35 13C8 FOSA										
506.00 > 78.00	6.110	6.104	0.006		11904423	9.59		95.9	174359	
36 NMeFOSAA										M
570.00 > 419.00	6.153	6.146	0.007	1.000	1992470	8.41	Target=1.85	105	61967	
570.00 > 483.00	6.153	6.146	0.007	1.000	1145945		1.74(0.92-2.77)		189095	M
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.153	6.146	0.007		2714749	9.37		93.7	72733	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.249	6.242	0.007	1.102	6633637	8.59	Target=3.55	111	189461	
599.00 > 99.00	6.249	6.242	0.007	1.102	1846650		3.59(1.78-5.33)		60304	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.277	6.270	0.007	1.000	6848064	8.23	Target=8.25	103	51277	
563.00 > 169.00	6.277	6.270	0.007	1.000	836311		8.19(4.13-12.38)		37173	
D 40 13C7 PFUnA										
570.00 > 525.00	6.277	6.270	0.007		10143922	9.87		98.7	226411	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.306	6.289	0.017	1.001	1776373	8.81	Target=1.70	110	2064	
584.00 > 526.00	6.296	6.289	0.007	1.000	1038448		1.71(0.85-2.55)		627	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.296	6.289	0.007		2146081	9.67		96.7	305562	
43 11ClFOS										
631.00 > 451.00	6.396	6.387	0.009	1.127	12316067	7.97		107	236170	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.520	6.512	0.008	1.000	7625904	8.43	Target=5.47	105	26982	
613.00 > 169.00	6.511	6.512	-0.001	0.999	1304580		5.85(2.74-8.21)		20414	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.520	6.512	0.008		10273730	9.65		96.5	303301	
48 10:2 FTS										
627.00 > 607.00	6.538	6.530	0.008	1.089	1747032	8.58	Target=1.69	111	82957	
627.00 > 81.00	6.529	6.530	-0.001	1.088	949364		1.84(0.84-2.53)		27891	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.547	6.539	0.008		1121610	9.66		96.6	5372	
47 N-MeFOSE-M										
616.00 > 59.00	6.556	6.548	0.008	1.001	1002344	8.52		106	10949	
50 NMeFOSA										
512.00 > 169.00	6.573	6.566	0.007	1.001	1324775	8.56		107	9019	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.564	6.566	-0.002		1493015	9.52		95.2	6401	
53 PFDoS										
699.00 > 80.00	6.704	6.696	0.008	1.182	6286932	8.58		111	192271	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.713	6.705	0.008		1342368	9.61		96.1	5976	
52 N-EtFOSE-M										
630.00 > 59.00	6.722	6.714	0.008	1.001	1094747	8.63		108	14141	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.730	6.724	0.006	1.032	7980437	8.80	Target=5.53	110	22759	
663.00 > 169.00	6.730	6.724	0.006	1.032	1440002		5.54(2.77-8.30)		44899	
55 N-EtFOSA-M										
526.00 > 169.00	6.739	6.732	0.007	1.000	1334407	8.75		109	8989	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.739	6.732	0.007		1364347	9.69		96.9	9976	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.920	6.909	0.011	1.000	7784637	8.06	Target=5.67	101	14458	
713.00 > 169.00	6.912	6.909	0.003	0.999	1281491		6.07(2.84-8.51)		44338	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.920	6.916	0.004		10843710	10.2		102	290569	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.232	0.009	1.046	5433384	7.94	Target=6.17	99.2	18591	
813.00 > 169.00	7.234	7.232	0.002	1.045	876293		6.20(3.08-9.25)		36612	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.488	7.482	0.006	1.082	3751527	8.27	Target=7.20	103	42467	
913.00 > 169.00	7.488	7.482	0.006	1.082	518539		7.23(3.60-10.79)		25162	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_STD_XMOD4_00014 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 17:47:17 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-61.d

Injection Date: 07-Apr-2022 17:17:46 Instrument ID: 29347

Lims ID: CCV 3_CAL4

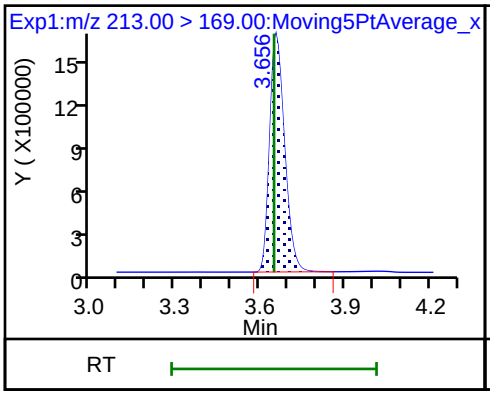
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20005 Worklist Smp#: 30

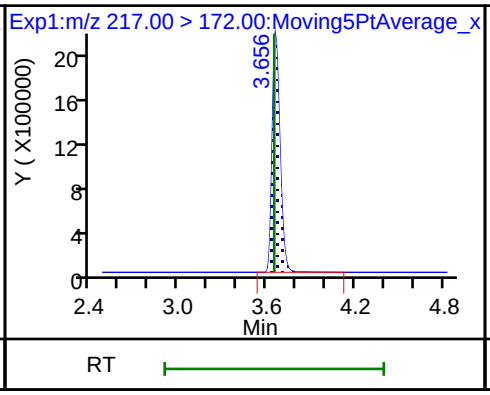
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

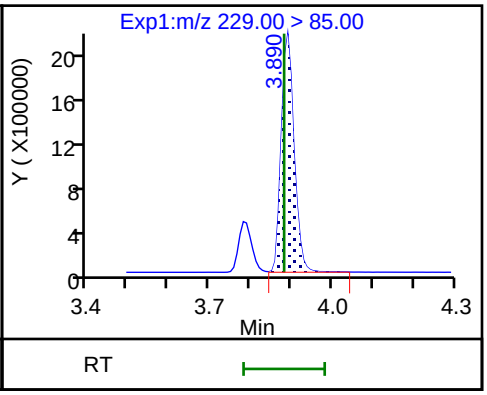
1 Perfluorobutanoic acid



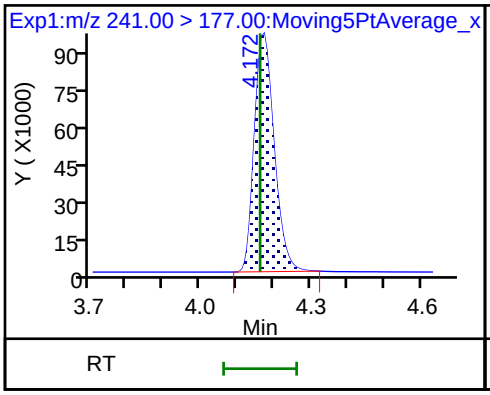
D 2 13C4 PFBA



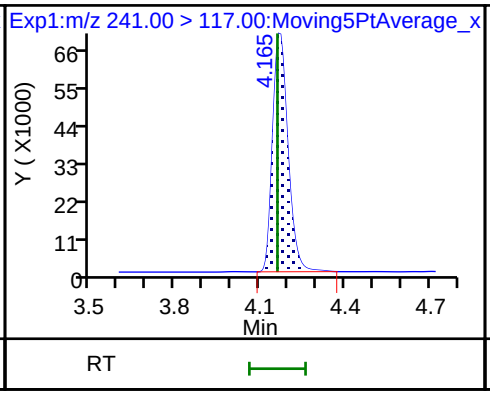
63 PFECA F



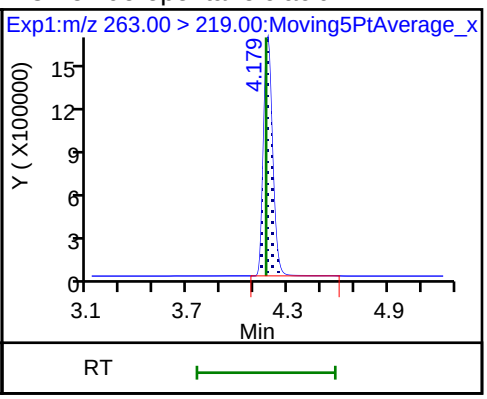
67 3:3 FTCA



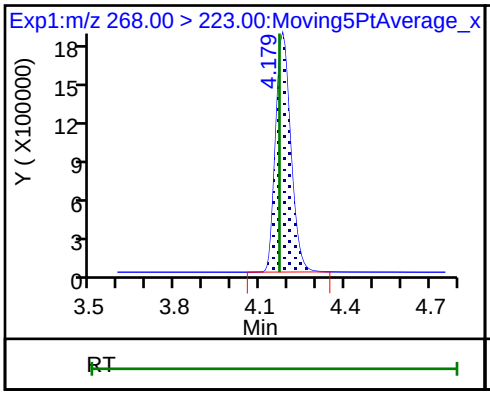
67 3:3 FTCA



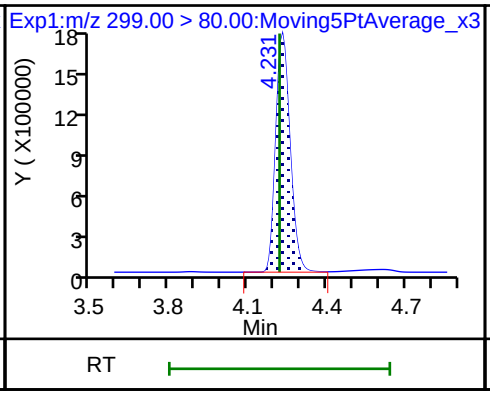
3 Perfluoropentanoic acid



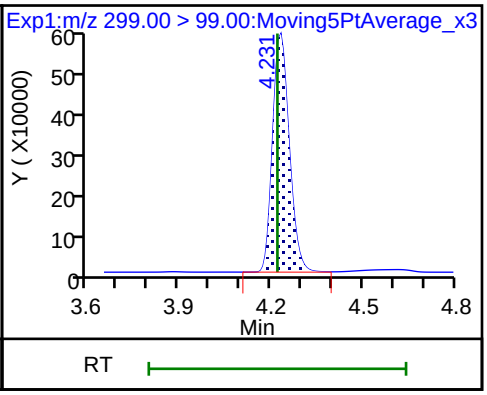
D 4 13C5 PFPeA



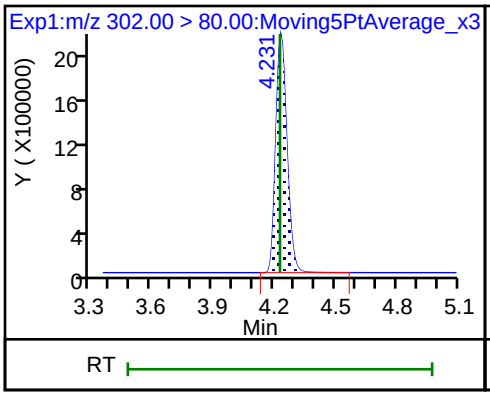
5 Perfluorobutanesulfonic acid



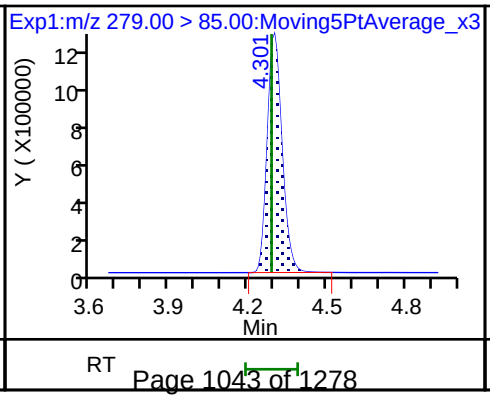
5 Perfluorobutanesulfonic acid



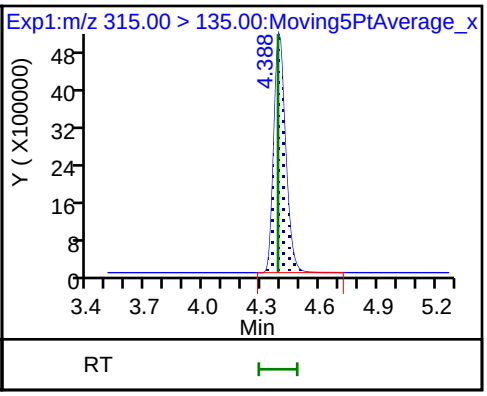
D 6 13C3 PFBS



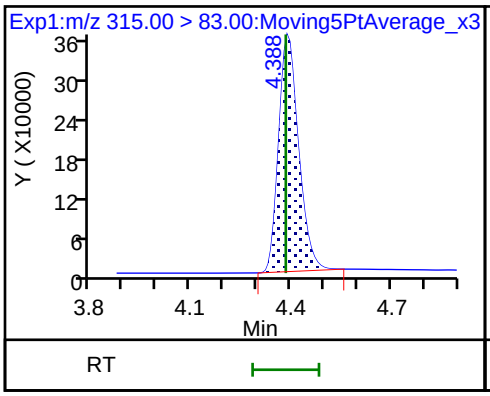
64 PFECA A



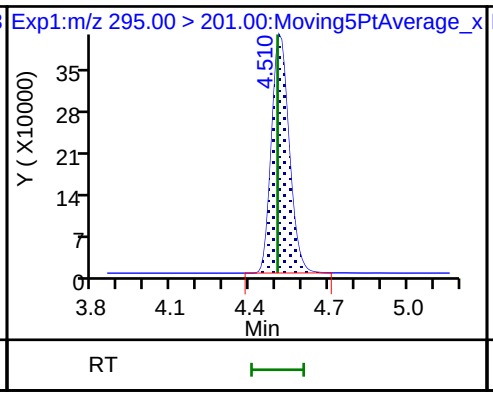
65 PES



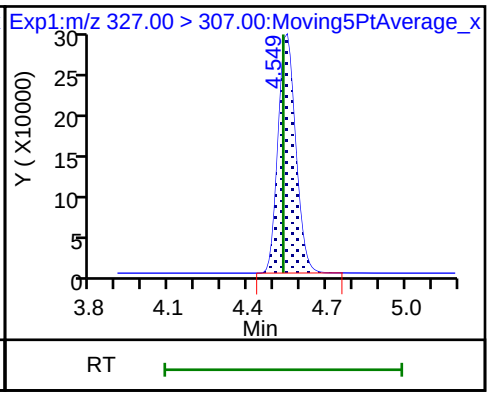
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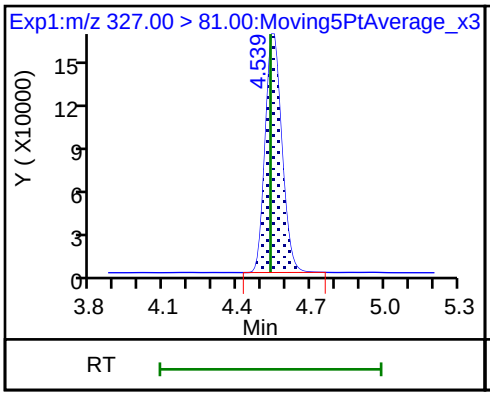
68 PFECA B



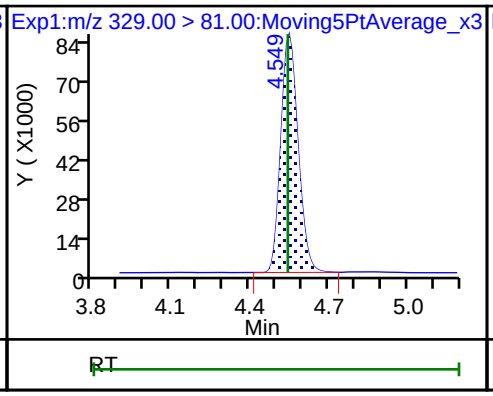
7 4:2 FTS



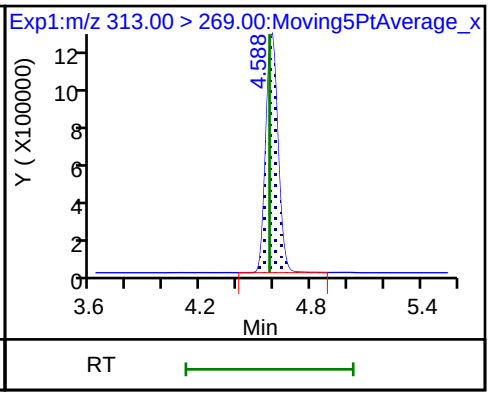
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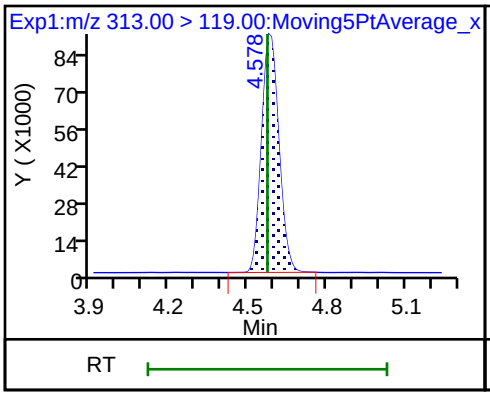
D 8 M2-4:2 FTS



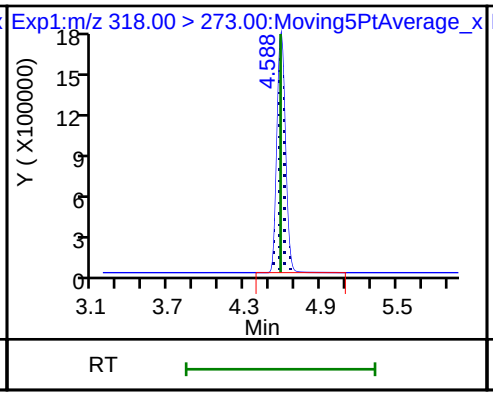
10 Perfluorohexanoic acid



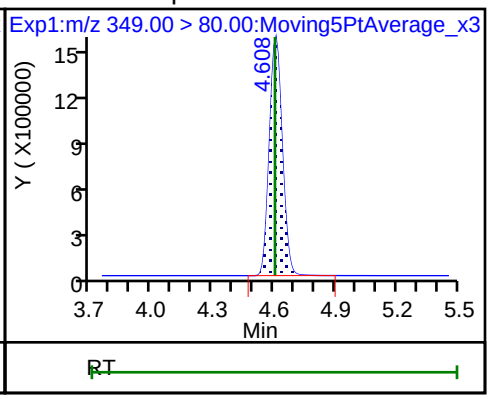
10 Perfluorohexanoic acid



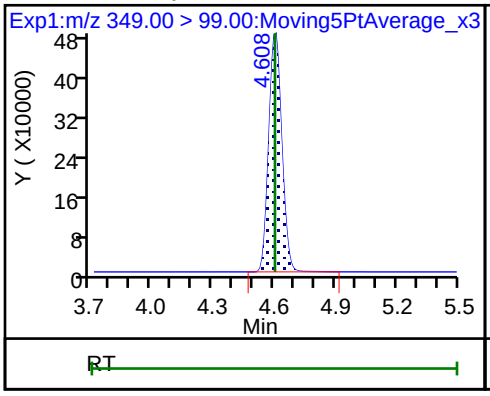
D 9 13C5 PFHxA



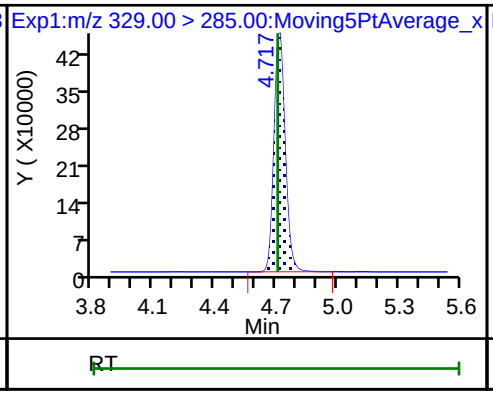
11 Perfluoropentanesulfonic acid



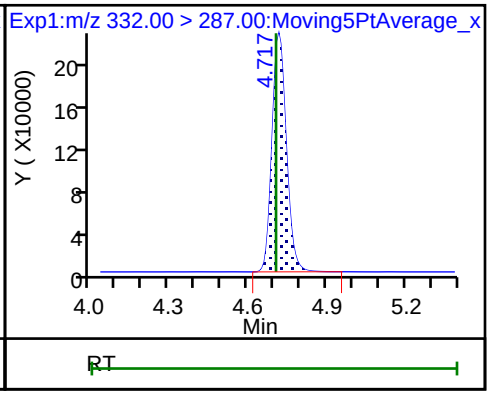
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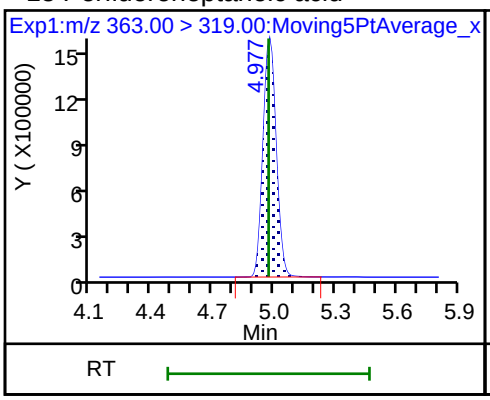
12 HFPO-DA



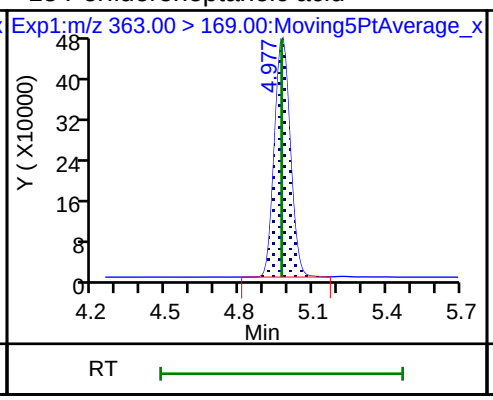
D 13 13C3 HFPO-DA



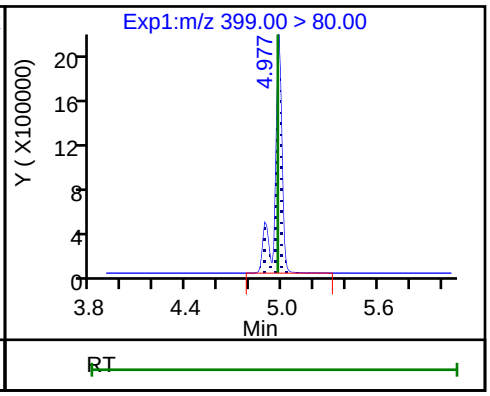
15 Perfluoroheptanoic acid



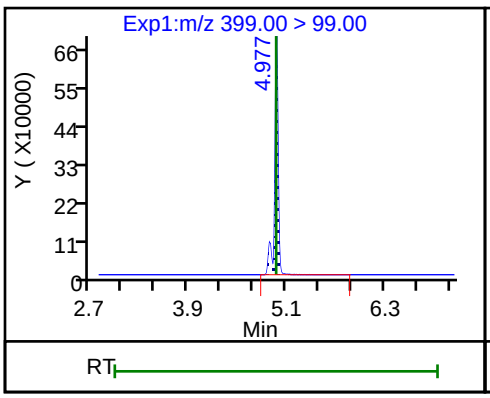
15 Perfluoroheptanoic acid



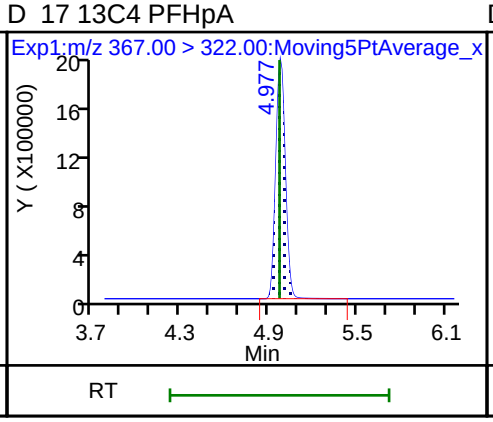
14 Perfluorohexanesulfonic acid



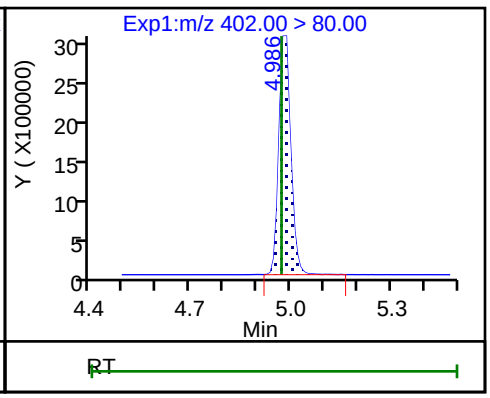
14 Perfluorohexanesulfonic acid



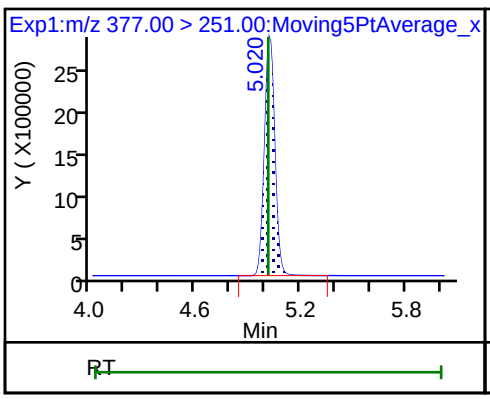
D 17 13C4 PFHpA



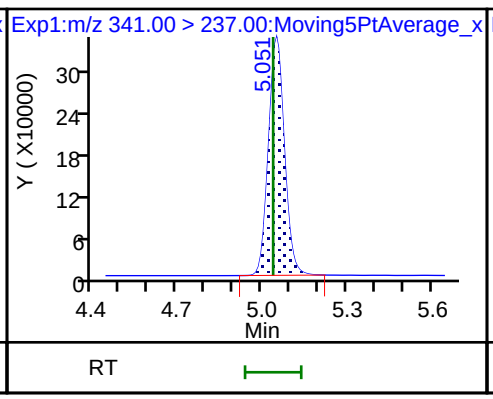
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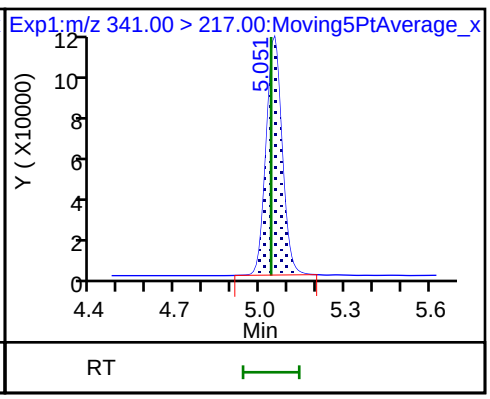
18 DONA



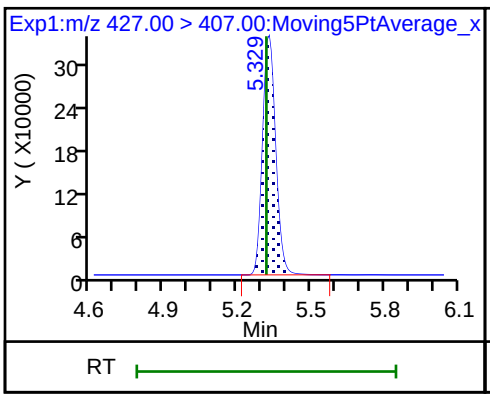
62 5:3 FTCA



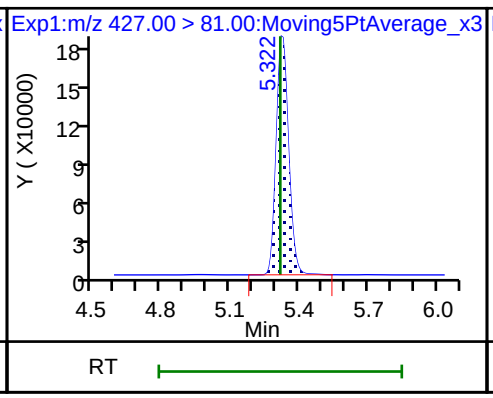
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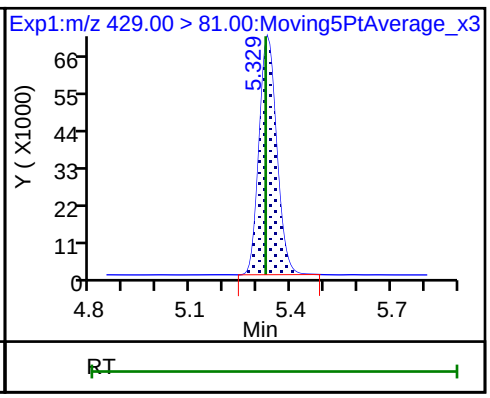
19 6:2 FTS



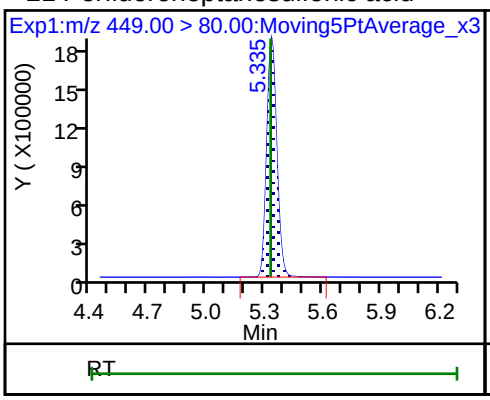
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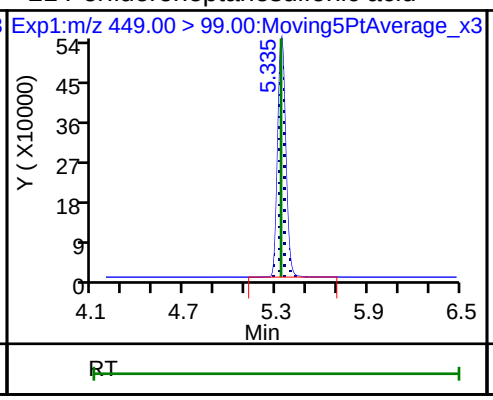
D 20 M2-6:2 FTS



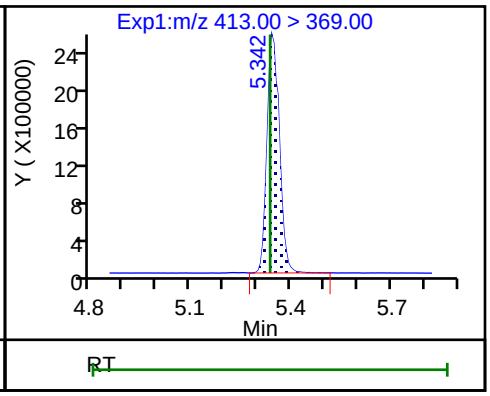
21 Perfluoroheptanesulfonic acid



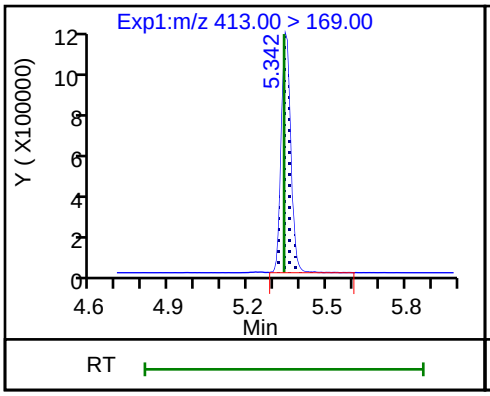
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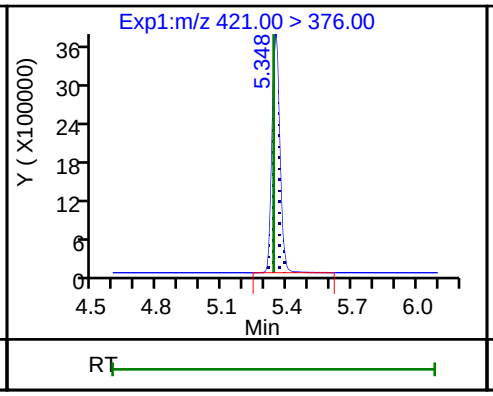
23 Perfluorooctanoic acid



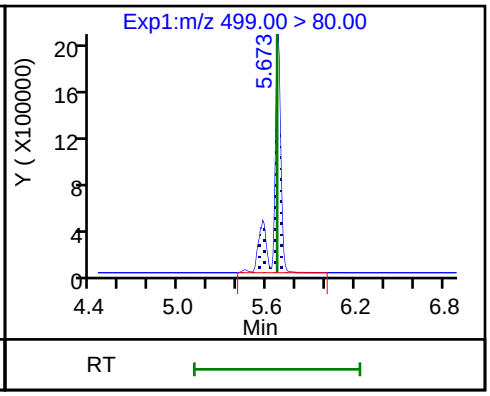
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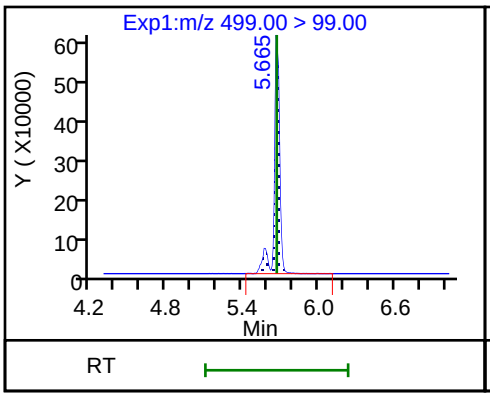
D 22 13C8 PFOA



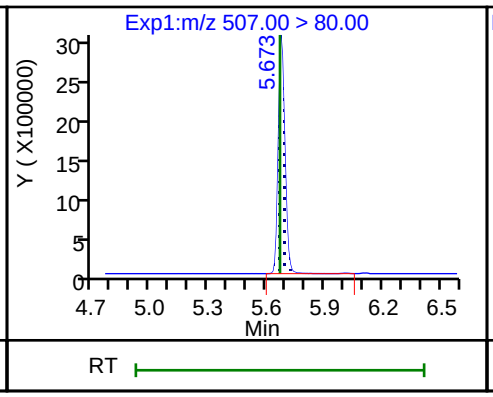
24 Perfluorooctanesulfonic acid



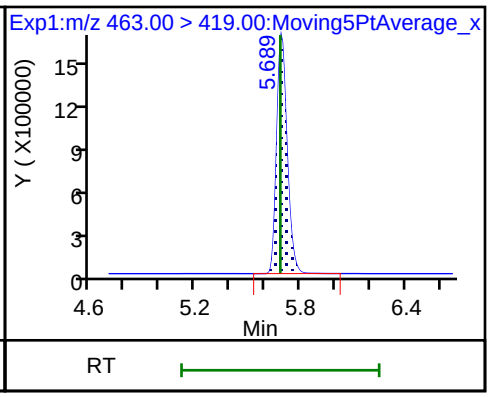
24 Perfluorooctanesulfonic acid



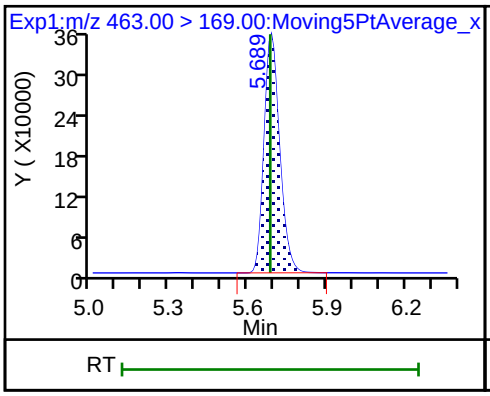
D 25 13C8 PFOS



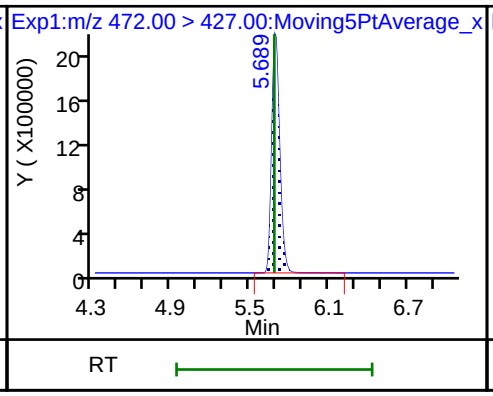
26 Perfluorononanoic acid



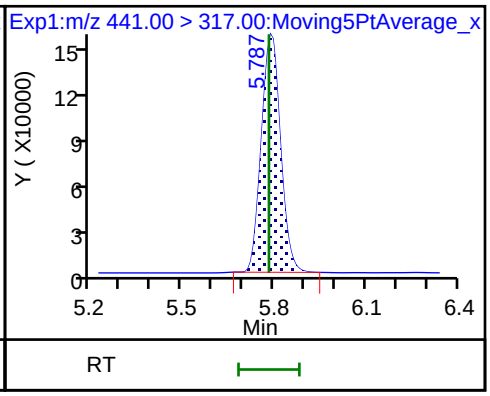
26 Perfluorononanoic acid



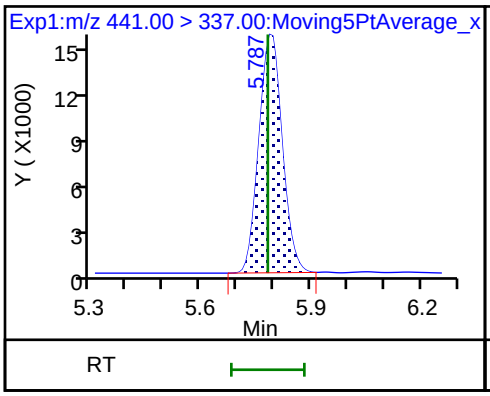
D 27 13C9 PFNA



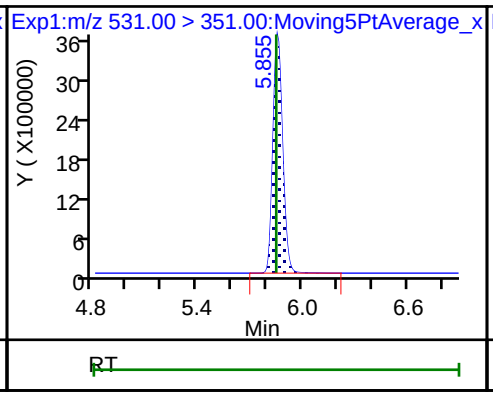
66 7:3 FTCA



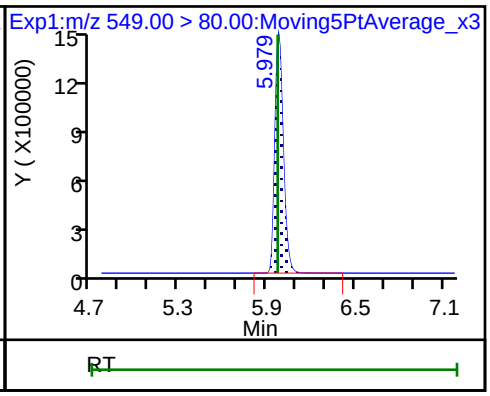
66 7:3 FTCA



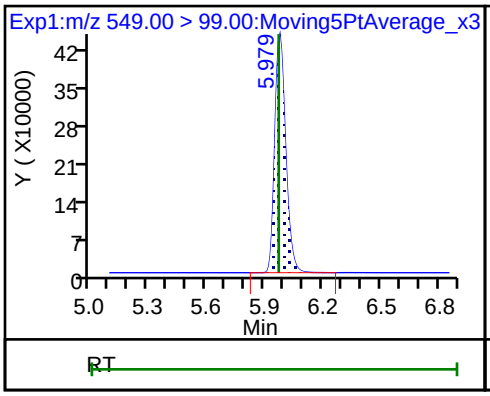
28 9ClFOS



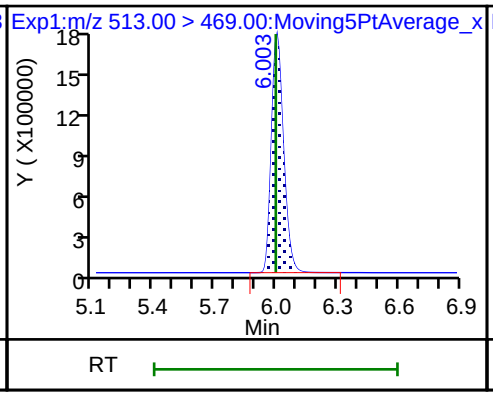
29 Perfluorononanesulfonic acid



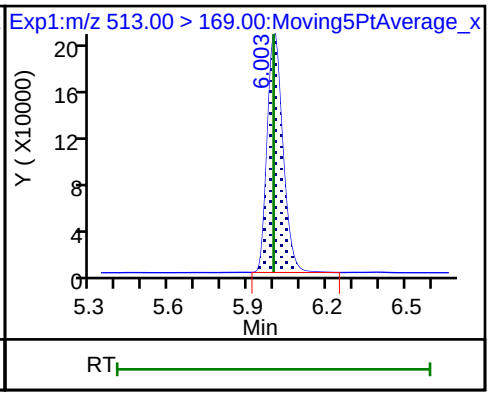
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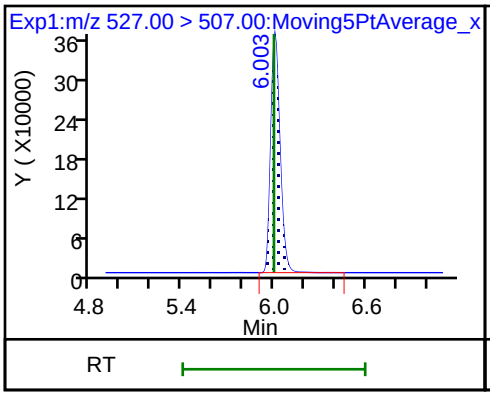
30 Perfluorodecanoic acid



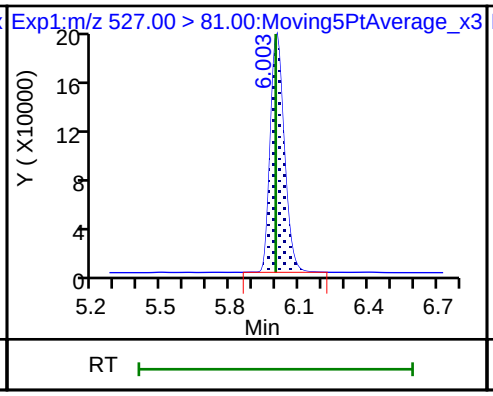
30 Perfluorodecanoic acid



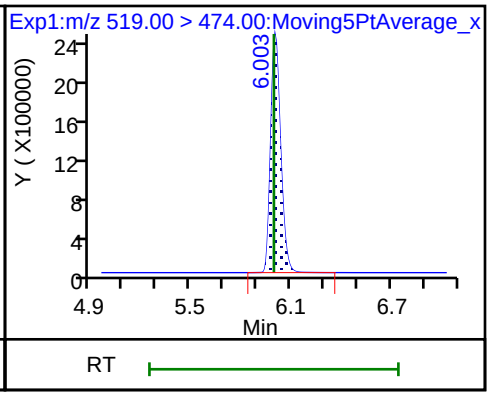
33 8:2 FTS



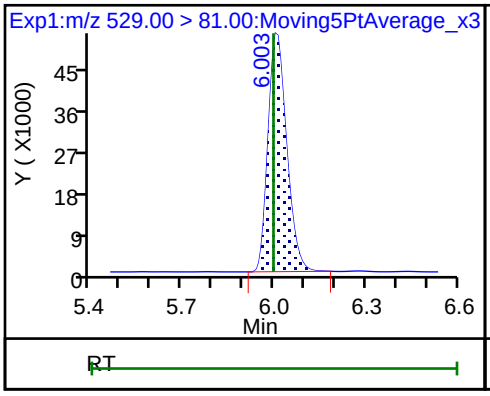
33 8:2 FTS



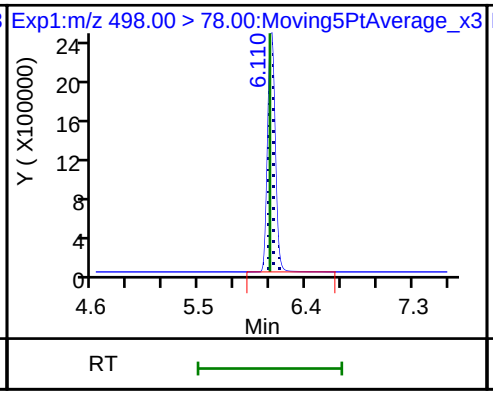
D 32 13C6 PFDA



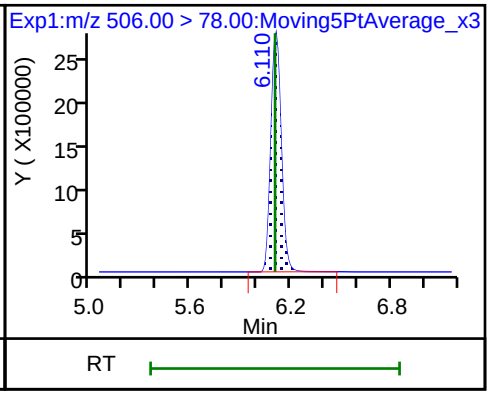
D 31 M2-8:2 FTS



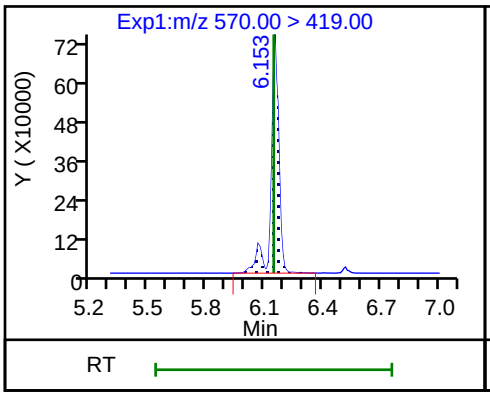
34 Perfluorooctanesulfonamide



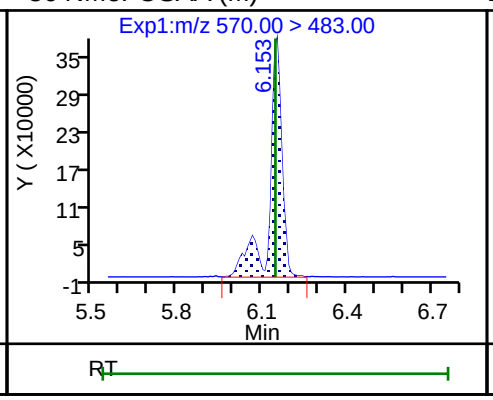
D 35 13C8 FOSA



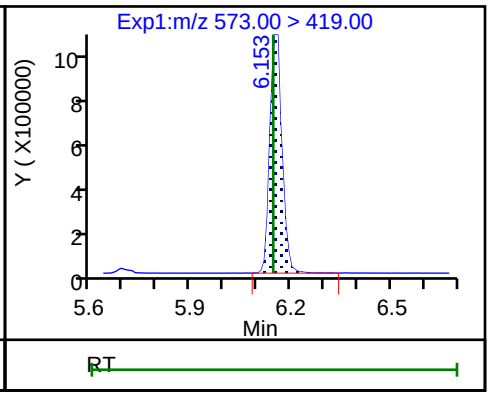
36 NMeFOSAA



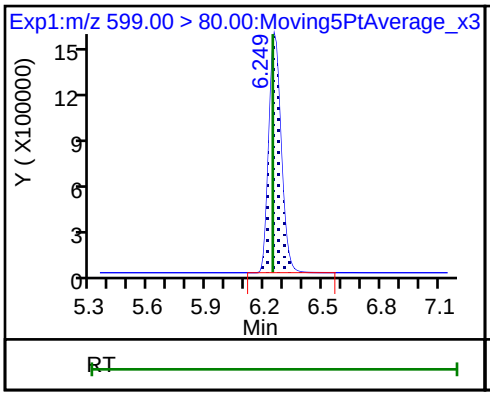
36 NMeFOSAA (M)



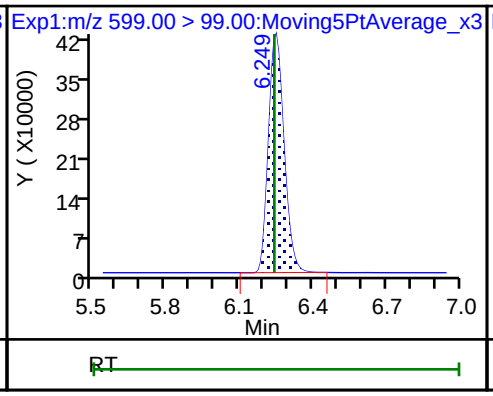
D 37 d3-NMeFOSAA



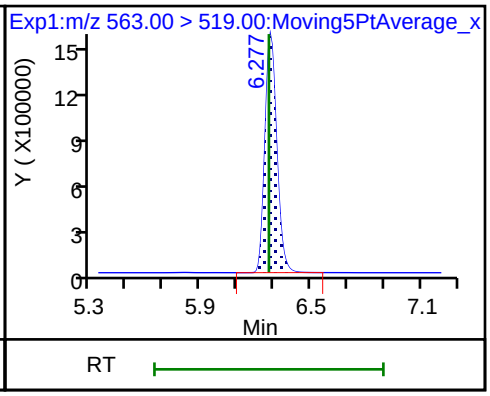
38 Perfluorodecanesulfonic acid



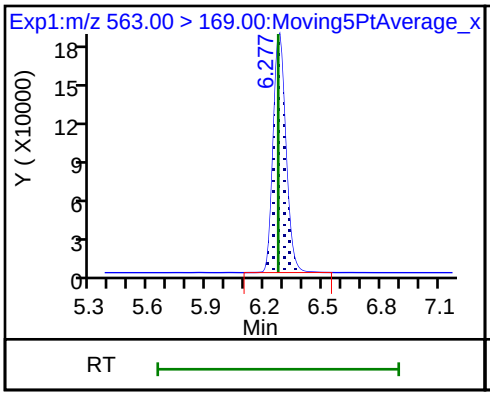
38 Perfluorodecanesulfonic acid



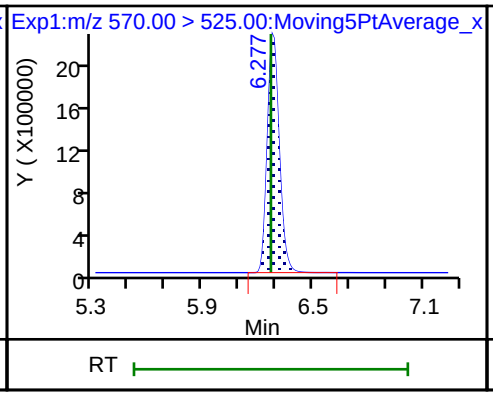
39 Perfluoroundecanoic acid



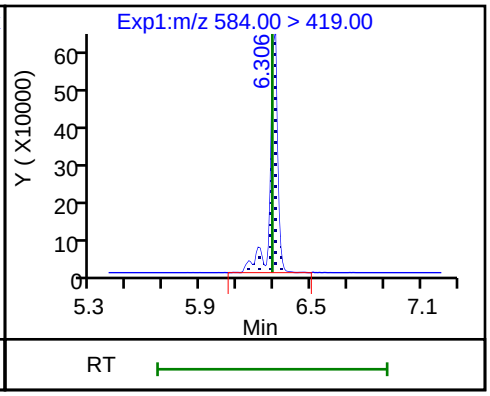
39 Perfluoroundecanoic acid



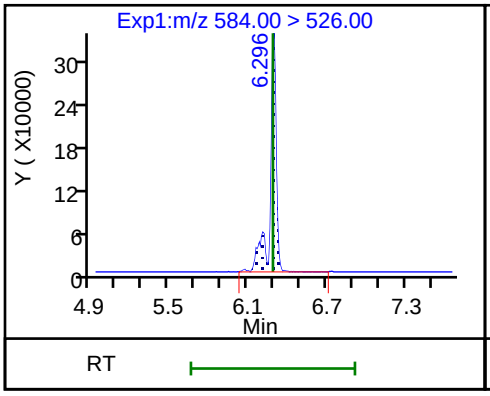
D 40 13C7 PFUnA



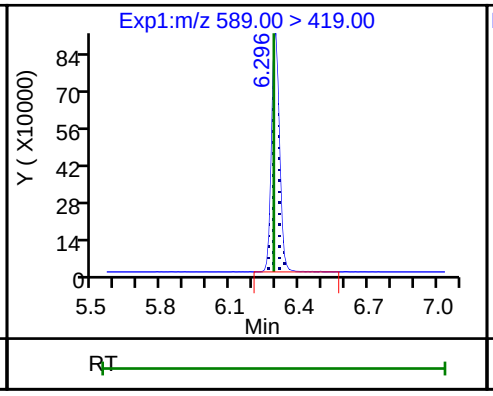
42 NEtFOSAA



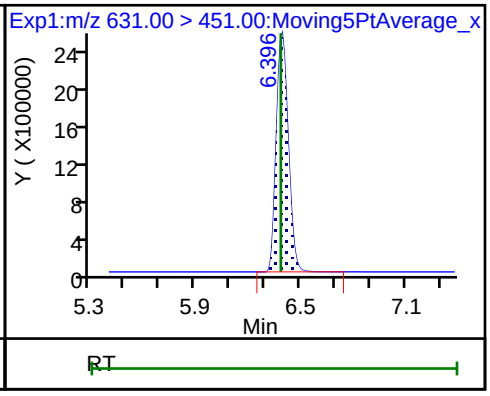
42 NEtFOSAA



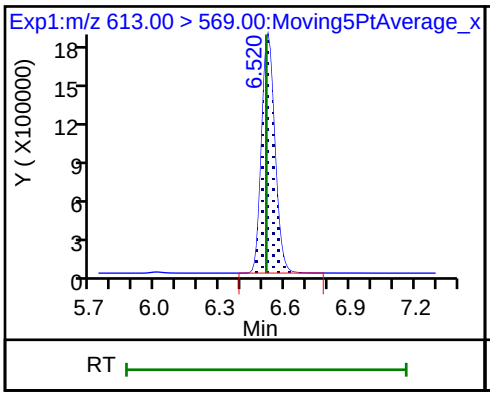
D 41 d5-NEtFOSAA



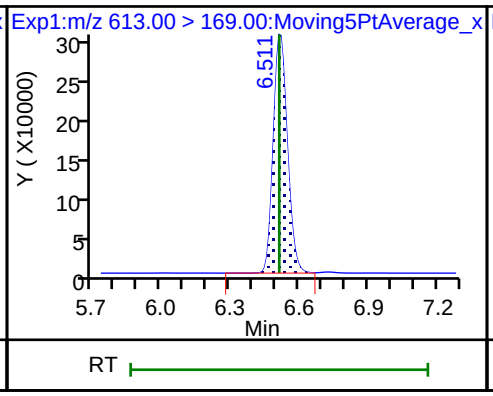
43 11ClFOS



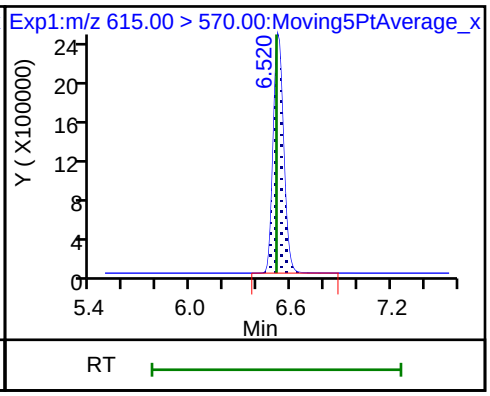
46 Perfluorododecanoic acid



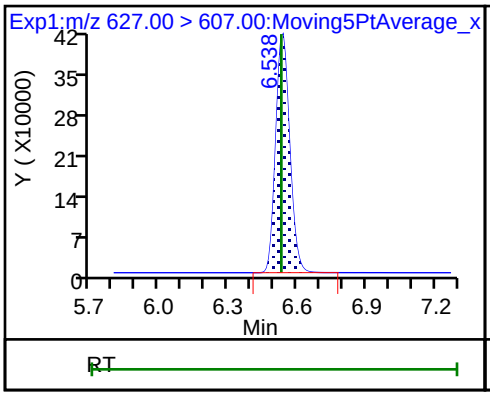
46 Perfluorododecanoic acid



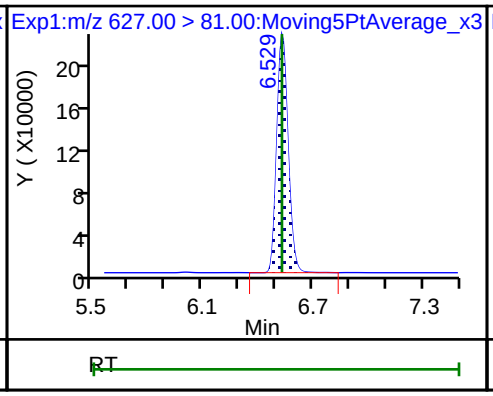
D 45 13C2-PFDoDA



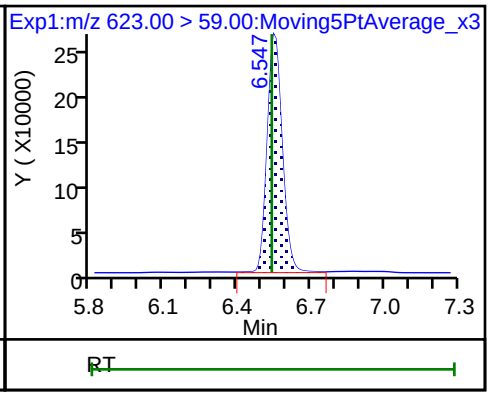
48 10:2 FTS



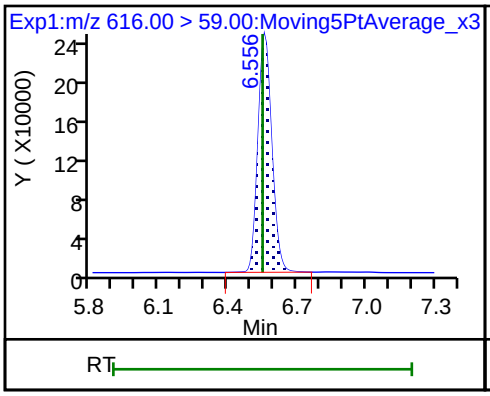
48 10:2 FTS



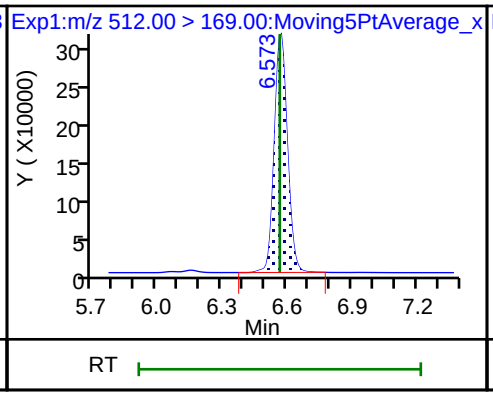
D 44 d7-N-MeFOSE-M



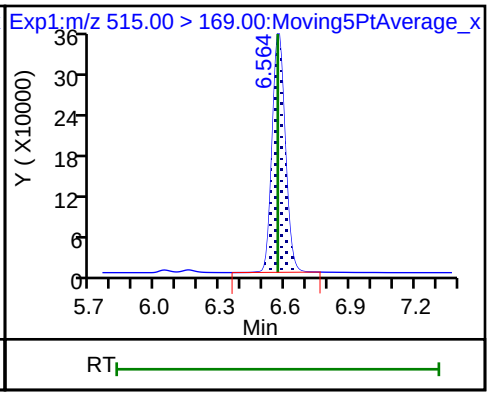
47 N-MeFOSE-M



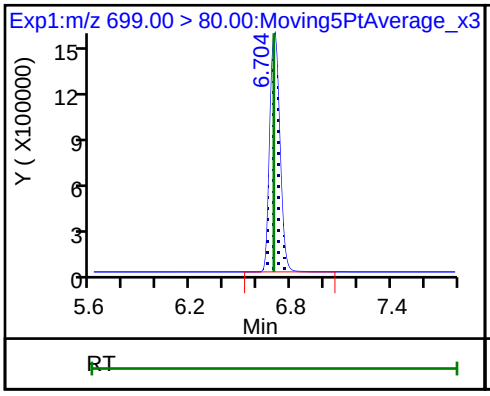
50 NMeFOSA



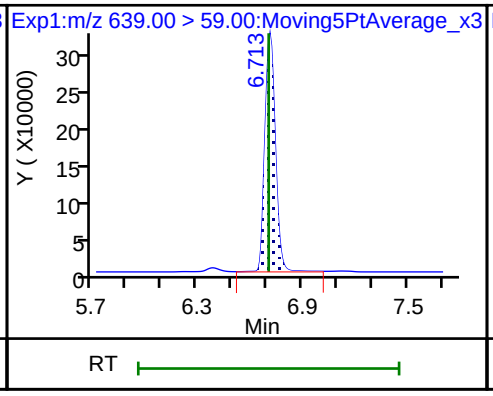
D 49 d3-NMePFOSA



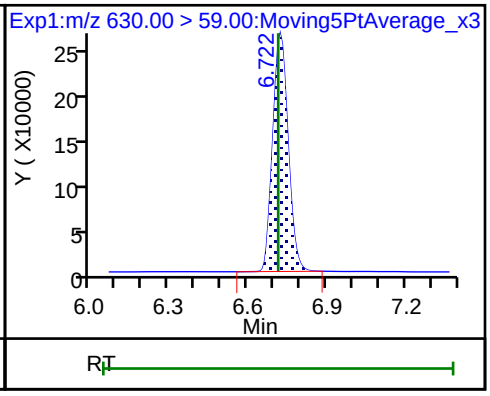
53 PFDoS



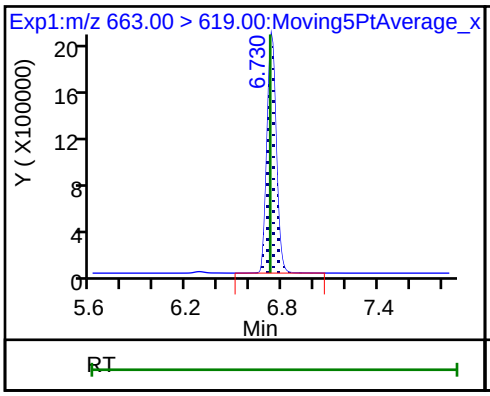
D 51 d9-N-EtFOSE-M



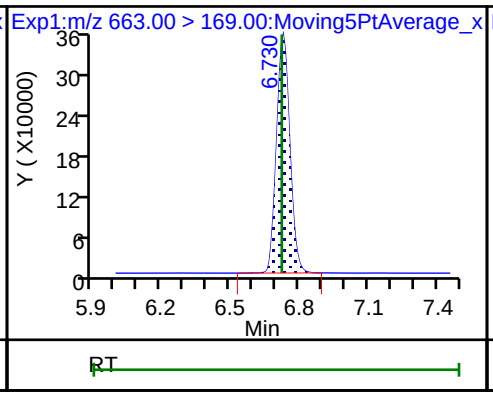
52 N-EtFOSE-M



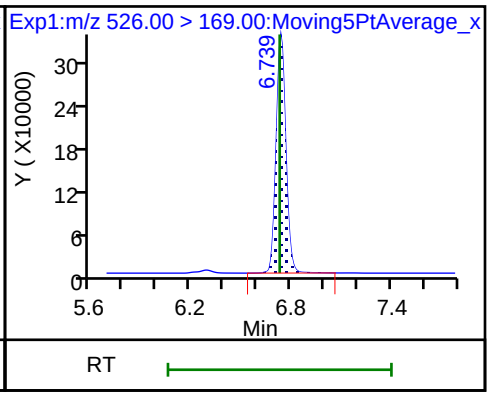
56 Perfluorotridecanoic acid



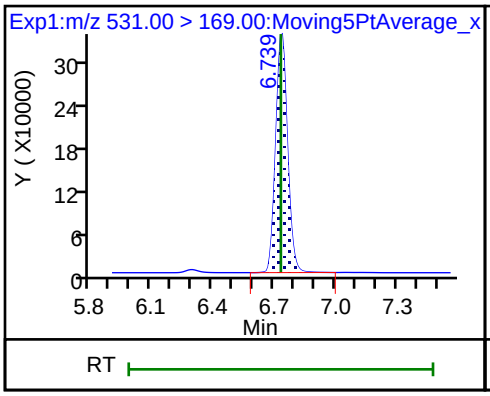
56 Perfluorotridecanoic acid



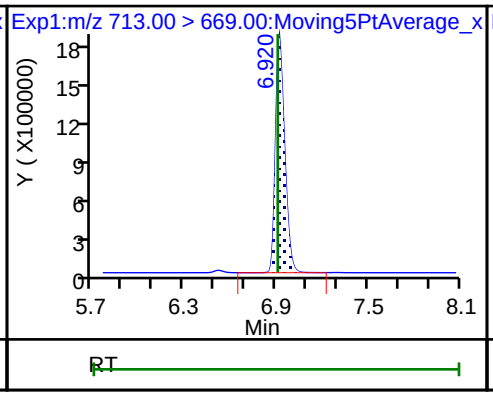
55 N-EtFOSA-M



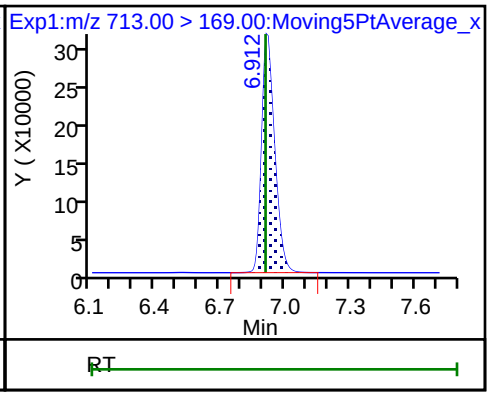
D 54 d5-NEtPFOSA



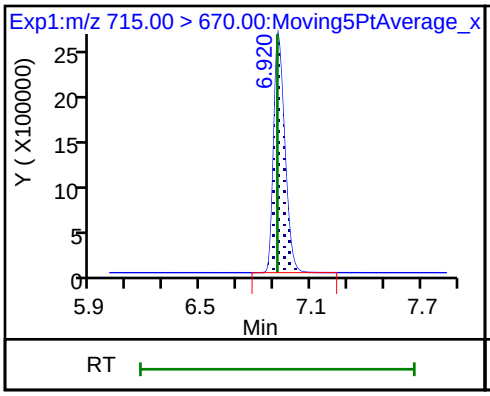
57 Perfluorotetradecanoic acid



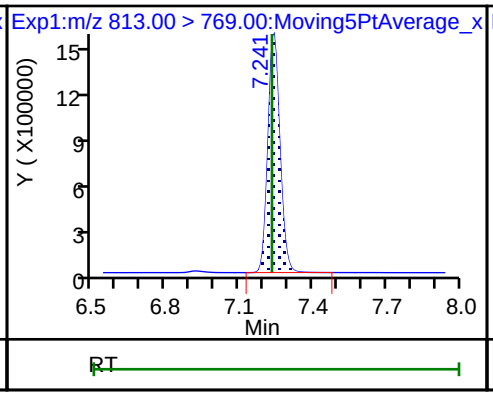
57 Perfluorotetradecanoic acid



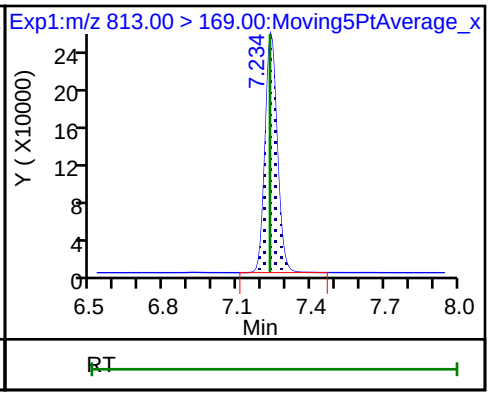
D 58 13C2 PFTeDA



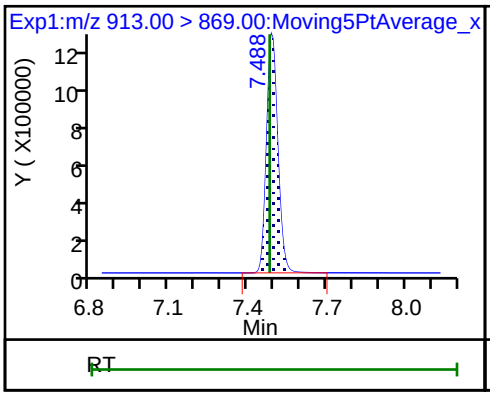
59 Perfluorohexadecanoic acid



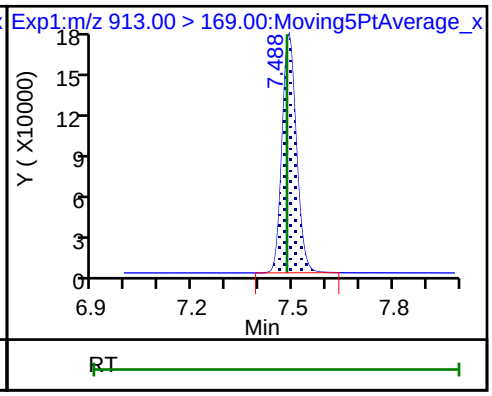
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

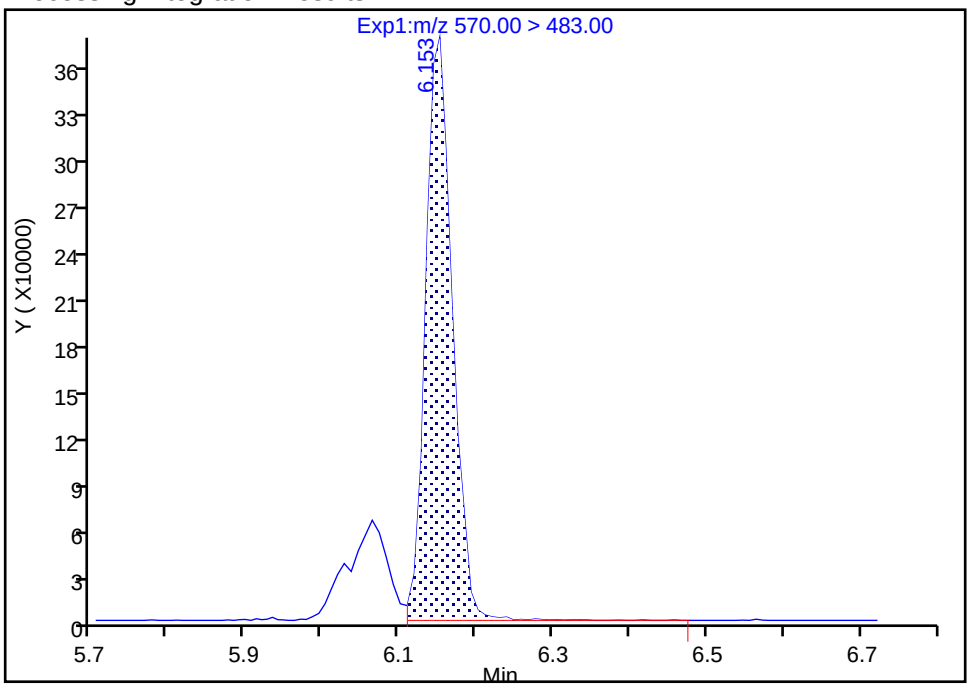
Data File:	\\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-61.d				
Injection Date:	07-Apr-2022 17:17:46	Instrument ID:	29347		
Lims ID:	CCV 3_CAL4				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20005	Worklist Smp#:	30
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

36 NMeFOSAA, CAS: 2355-31-9

Signal: 2

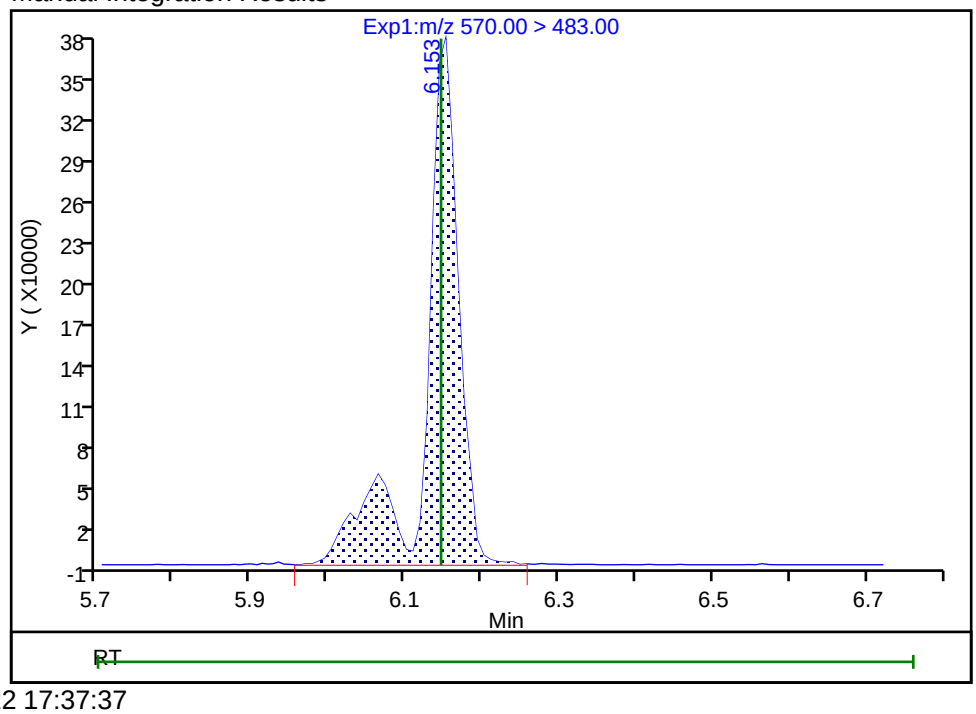
Processing Integration Results

RT: 6.15
Area: 905627
Amount: 8.406199
Amount Units: ng/ml



Manual Integration Results

RT: 6.15
Area: 1145945
Amount: 8.406199
Amount Units: ng/ml



Reviewer: matthewsl, 07-Apr-2022 17:37:37

Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-242084/46 Calibration Date: 04/07/2022 20:07

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-77.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8221	0.7835		0.477	0.500	-4.7	30.0
PFMPA	AveID	0.8092	0.7509		0.464	0.500	-7.2	30.0
3:3 FTCA	AveID	0.0602	0.0551		0.457	0.500	-8.5	30.0
Perfluoropentanoic acid	AveID	1.047	0.9790		0.468	0.500	-6.5	30.0
Perfluorobutanesulfonic acid	AveID	0.9581	0.9460		0.437	0.443	-1.3	30.0
PFMBA	AveID	0.8034	0.7599		0.473	0.500	-5.4	30.0
PFEESA	AveID	3.456	3.314		0.427	0.445	-4.1	30.0
NFDHA	AveID	0.2914	0.2829		0.485	0.500	-2.9	30.0
4:2 Fluorotelomer sulfonic acid	AveID	3.837	3.976		0.484	0.467	3.6	30.0
Perfluorohexanoic acid	AveID	0.8536	0.8664		0.507	0.500	1.5	30.0
Perfluoropentanesulfonic acid	AveID	0.8962	0.8805		0.461	0.469	-1.7	30.0
Perfluoro(2-propoxypropanoic) acid	AveID	2.450	2.148		0.438	0.500	-12.3	30.0
Perfluoroheptanoic acid	AveID	0.9573	0.9213		0.481	0.500	-3.8	30.0
Perfluorohexanesulfonic acid	AveID	0.9746	0.9409		0.440	0.456	-3.5	30.0
DONA	AveID	1.621	1.605		0.468	0.473	-1.0	30.0
5:3 FTCA	AveID	0.1975	0.1863		0.472	0.500	-5.7	30.0
6:2 Fluorotelomer sulfonic acid	AveID	5.264	4.947		0.445	0.474	-6.0	30.0
Perfluoroheptanesulfonic acid	AveID	0.9680	0.8972		0.441	0.476	-7.3	30.0
Perfluorooctanoic acid	AveID	0.9021	0.8849		0.491	0.500	-1.9	30.0
Perfluorooctanesulfonic acid	AveID	1.112	1.062		0.442	0.463	-4.5	30.0
Perfluorononanoic acid	AveID	0.9008	0.8319		0.462	0.500	-7.6	30.0
7:3 FTCA	AveID	0.1048	0.1002		0.478	0.500	-4.4	30.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.346	2.239		0.444	0.465	-4.6	30.0
Perfluorononanesulfonic acid	AveID	0.9364	0.8624		0.442	0.480	-7.9	30.0
8:2 Fluorotelomer sulfonic acid	AveID	7.853	8.157		0.498	0.479	3.9	30.0
Perfluorodecanoic acid	AveID	0.8656	0.8379		0.484	0.500	-3.2	30.0
Perfluorooctanesulfonamide	AveID	1.036	0.9496		0.458	0.500	-8.3	30.0
NMeFOSAA	AveID	0.8731	0.7761		0.444	0.500	-11.1	30.0
Perfluorodecanesulfonic acid	AveID	1.038	0.9832		0.457	0.482	-5.2	30.0
Perfluoroundecanoic acid	AveID	0.8208	0.7951		0.484	0.500	-3.1	30.0
NEtFOSAA	AveID	0.9399	0.8853		0.471	0.500	-5.8	30.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonic acid	AveID	2.075	1.971		0.442	0.465	-5.0	30.0
Perfluorododecanoic acid	AveID	0.8808	0.8982		0.510	0.500	2.0	30.0
1H,1H,2H,2H-perfluorododecan esulfonic acid (10:2)	AveID	8.900	9.307		0.504	0.482	4.6	30.0
2- (N-methylperfluoro-1-octanes ulfonamido) ethanol	AveID	1.050	1.017		0.484	0.500	-3.1	30.0
NMeFOSA	AveID	1.036	1.012		0.488	0.500	-2.3	30.0

FORM VII EPA 537(Mod)

FORM VII
PFAS CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Lab Sample ID: CCV 410-242084/46 Calibration Date: 04/07/2022 20:07

Instrument ID: 29347 Calib Start Date: 04/07/2022 09:52

GC Column: Gemini C18 50mm ID: 3.00(mm) Calib End Date: 04/07/2022 10:55

Lab File ID: 22APR07-77.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.9847	0.9642		0.474	0.484	-2.1	30.0
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	AveID	0.9455	0.8436		0.446	0.500	-10.8	30.0
N-ethylperfluoro-1-octanesulfonamide	AveID	1.118	1.004		0.449	0.500	-10.2	30.0
Perfluorotridecanoic acid	AveID	0.8823	0.8315		0.471	0.500	-5.7	30.0
Perfluorotetradecanoic acid	AveID	0.8909	0.8126		0.456	0.500	-8.8	30.0
Perfluorohexadecanoic acid	AveID	0.6314	0.5639		0.447	0.500	-10.7	30.0
Perfluorooctadecanoic acid	AveID	0.4183	0.3558		0.425	0.500	-14.9	30.0
13C4 PFBA	Ave	809587	836490		10.3	10.0	3.3	30.0
13C5 PFPeA	Ave	694051	705797		10.2	10.0	1.7	30.0
13C3 PFBS	Ave	922837	922147		9.29	9.30	-0.0	30.0
M2-4:2 FTS	Ave	43630	45662		9.77	9.34	4.7	30.0
13C5 PFHxA	Ave	798937	846093		10.6	10.0	5.9	30.0
13C3 HFPO-DA	Ave	86595	95520		11.0	10.0	10.3	30.0
13C4 PFHpA	Ave	840835	886942		10.5	10.0	5.5	30.0
13C3 PFHxS	Ave	826639	856372		9.80	9.46	3.6	30.0
M2-6:2 FTS	Ave	29064	28714		9.39	9.50	-1.2	30.0
13C8 PFOA	Ave	913254	954118		10.4	10.0	4.5	30.0
13C8 PFOS	Ave	746154	771232		9.88	9.56	3.4	30.0
13C9 PFNA	Ave	935044	966577		10.3	10.0	3.4	30.0
13C6 PFDA	Ave	1011228	1022153		10.1	10.0	1.1	30.0
M2-8:2 FTS	Ave	24281	24498		9.67	9.58	0.9	30.0
13C8 FOSA	Ave	1241961	1277943		10.3	10.0	2.9	30.0
d3-NMeFOSAA	Ave	289701	295390		10.2	10.0	2.0	30.0
13C7 PFUnA	Ave	1028028	1066186		10.4	10.0	3.7	30.0
d5-NEtFOSAA	Ave	221835	230841		10.4	10.0	4.1	30.0
13C2-PFDoDA	Ave	1064795	1078570		10.1	10.0	1.3	30.0
d7-N-MeFOSE-M	Ave	116144	120533		10.4	10.0	3.8	30.0
d3-NMePFOSA	Ave	156838	152773		9.74	10.0	-2.6	30.0
d9-N-EtFOSE-M	Ave	139633	143294		10.3	10.0	2.6	30.0
d5-NEtPFOSA	Ave	140743	141897		10.1	10.0	0.8	30.0
13C2 PFTeDA	Ave	1061225	1129534		10.6	10.0	6.4	30.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-77.d
Lims ID: CCV 4_CAL2
Client ID:
Sample Type: CCV
Inject. Date: 07-Apr-2022 20:07:29 ALS Bottle#: 20003 Worklist Smp#: 46
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV 4_CAL2
Misc. Info.: Plate: 1 Rack: 1 410-0054325-046
Operator ID: US19_USR_INS75556 Instrument ID: 29347
Sublist: chrom-PFAS_29347_QSM5.3*sub4

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 20:37:21 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: matthewsl Date: 07-Apr-2022 20:33:31
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.661	3.649	0.012	1.000	327697	0.4765		95.3	621	
D 2 13C4 PFBA										
217.00 > 172.00	3.661	3.649	0.012		8364901	10.3		103	141097	
63 PFECA F										
229.00 > 85.00	3.888	3.881	0.007	0.930	264994	0.4640		92.8	9416	
67 3:3 FTCA										
241.00 > 177.00	4.175	4.161	0.014	0.998	19444	0.4574	Target=1.38	91.5	1315	
241.00 > 117.00	4.175	4.161	0.014	0.998	15109		1.29(0.69-2.06)		590	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.182	4.168	0.014	1.000	345501	0.4677		93.5	1422	
D 4 13C5 PFPeA										
268.00 > 223.00	4.182	4.168	0.014		7057970	10.2		102	68412	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.234	4.220	0.014	1.000	386022	0.4369	Target=2.90	98.7	503	
299.00 > 99.00	4.234	4.220	0.014	1.000	130545		2.96(1.45-4.36)		470	
D 6 13C3 PFBS										
302.00 > 80.00	4.234	4.227	0.007		8575965	9.29		99.9	562116	
64 PFECA A										
279.00 > 85.00	4.303	4.289	0.014	1.029	268166	0.4729		94.6	8589	
65 PES										
315.00 > 135.00	4.391	4.384	0.007	0.956	1247705	0.4266	Target=12.33	95.9	42995	
315.00 > 83.00	4.391	4.384	0.007	0.956	79619		15.67(6.17-18.50)		85.6	
68 PFECA B										
295.00 > 201.00	4.513	4.504	0.009	0.983	119691	0.4854		97.1	5284	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00	4.553	4.534	0.019	1.000	84781	0.4839	Target=1.82	104	6249	
327.00 > 81.00	4.553	4.534	0.019	1.000	51233		1.65(0.91-2.73)		714	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.553	4.544	0.009		426483	9.77		105	10390	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.592	4.573	0.019	1.000	366536	0.5075	Target=14.46	101	3217	
313.00 > 119.00	4.592	4.573	0.019	1.000	21467		17.07(7.23-21.70)		940	
D 9 13C5 PFHxA										
318.00 > 273.00	4.592	4.583	0.009		8460925	10.6		106	171775	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.610	4.603	0.007	1.089	380799	0.4608	Target=3.09	98.3	22117	
349.00 > 99.00	4.610	4.603	0.007	1.089	119965		3.17(1.55-4.64)		5580	
12 HFPO-DA										
329.00 > 285.00	4.719	4.706	0.013	1.000	102597	0.4385		87.7	3093	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.719	4.706	0.013		955203	11.0		110	64500	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.980	4.971	0.009	1.000	408591	0.4812	Target=3.12	96.2	3338	
363.00 > 169.00	4.980	4.971	0.009	1.000	129610		3.15(1.56-4.68)		2912	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.980	4.971	0.009	0.998	367418	0.4402	Target=3.09	96.5	65244	
399.00 > 99.00	4.980	4.971	0.009	0.998	123404		2.98(1.55-4.64)		41379	
D 17 13C4 PFHpA										
367.00 > 322.00	4.980	4.971	0.009		8869424	10.5		105	223681	
D 16 13C3 PFHxS										
402.00 > 80.00	4.990	4.971	0.019		8101278	9.80		104	1138485	
18 DONA										
377.00 > 251.00	5.031	5.015	0.016	1.010	672810	0.4680		99.0	15219	
62 5:3 FTCA										
341.00 > 237.00	5.053	5.038	0.015	1.100	78821	0.4717	Target=3.25	94.3	1484	
341.00 > 217.00	5.053	5.038	0.015	1.100	26200		3.01(1.63-4.88)		871	
19 6:2 FTS										
427.00 > 407.00	5.331	5.317	0.014	1.000	67333	0.4454	Target=1.70	94.0	6398	
427.00 > 81.00	5.331	5.317	0.014	1.000	42336		1.59(0.85-2.55)		2251	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.324	0.007		272786	9.39		98.8	18907	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.330	0.007	1.070	365746	0.4412	Target=3.14	92.7	25579	
449.00 > 99.00	5.337	5.330	0.007	1.070	117657		3.11(1.57-4.70)		8211	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.350	5.337	0.013	1.001	422159	0.4905	Target=2.30	98.1	16519	
413.00 > 169.00	5.350	5.337	0.013	1.001	175263		2.41(1.15-3.44)		37145	
D 22 13C8 PFOA										
421.00 > 376.00	5.344	5.337	0.007		9541182	10.4		104	627834	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.684	5.669	0.015	1.001	379012	0.4420	Target=3.71	95.5	718	
499.00 > 99.00	5.677	5.669	0.008	1.000	99621		3.80(1.85-5.56)		238	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.669	0.008		7372976	9.88		103	430146	
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.684	0.008	1.000	402069	0.4618	Target=4.48	92.4	5427	
463.00 > 169.00	5.692	5.684	0.008	1.000	91853		4.38(2.24-6.72)		2803	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.684	0.008		9665769	10.3		103	332372	
66 7:3 FTCA										
441.00 > 317.00	5.798	5.782	0.016	1.263	42371	0.4778	Target=10.10	95.6	1741	
441.00 > 337.00	5.791	5.782	0.009	1.261	4923		8.61(5.05-15.16)		244	
28 9ClFOS										
531.00 > 351.00	5.857	5.849	0.008	1.032	803112	0.4438		95.4	42379	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.972	0.009	1.054	319245	0.4421	Target=3.33	92.1	13267	
549.00 > 99.00	5.981	5.972	0.009	1.054	92907		3.44(1.66-4.99)		4656	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	5.997	0.008	1.000	428235	0.4840	Target=8.85	96.8	7281	
513.00 > 169.00	6.005	5.997	0.008	1.000	47696		8.98(4.42-13.27)		953	
33 8:2 FTS										
527.00 > 507.00	6.005	5.997	0.008	1.000	95720	0.4976	Target=2.13	104	7665	
527.00 > 81.00	6.005	5.997	0.008	1.000	50962		1.88(1.07-3.20)		845	
D 32 13C6 PFDA										
519.00 > 474.00	6.005	5.997	0.008		10221525	10.1		101	162405	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	5.997	0.008		234693	9.67		101	13777	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.113	6.095	0.018	1.000	606736	0.4583		91.7	17792	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.104	0.009		12779425	10.3		103	337024	
36 NMeFOSAA										
570.00 > 419.00	6.162	6.146	0.016	1.001	114629	0.4445	Target=1.85	88.9	4805	
570.00 > 483.00	6.147	6.146	0.001	0.999	62092		1.85(0.92-2.77)		104	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.154	6.146	0.008		2953903	10.2		102	413696	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.242	0.009	1.101	365491	0.4567	Target=3.55	94.8	16643	
599.00 > 99.00	6.251	6.242	0.009	1.101	110543		3.31(1.78-5.33)		5080	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.280	6.270	0.010	0.999	423872	0.4844	Target=8.25	96.9	2884	
563.00 > 169.00	6.280	6.270	0.010	0.999	49477		8.57(4.13-12.38)		2790	
D 40 13C7 PFUnA										
570.00 > 525.00	6.289	6.270	0.019		10661855	10.4		104	168874	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00	6.298	6.289	0.009	1.000	102181	0.4710	Target=1.70	94.2	187	
584.00 > 526.00	6.289	6.289	0.0	0.999	57990		1.76(0.85-2.55)		94.1	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.289	0.009		2308411	10.4		104	344910	
43 11ClFOS										
631.00 > 451.00	6.398	6.387	0.011	1.127	706840	0.4417		95.0	19026	
46 Perfluorododecanoic acid										
613.00 > 569.00	6.521	6.512	0.009	0.999	484383	0.5099	Target=5.47	102	1876	
613.00 > 169.00	6.521	6.512	0.009	0.999	78349		6.18(2.74-8.21)		1338	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.530	6.512	0.018		10785701	10.1		101	150325	
48 10:2 FTS										
627.00 > 607.00	6.539	6.530	0.009	1.089	109899	0.5040	Target=1.69	105	8832	
627.00 > 81.00	6.539	6.530	0.009	1.089	58069		1.89(0.84-2.53)		1707	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.539	0.018		1205327	10.4		104	6448	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.548	0.009	1.000	61283	0.4844		96.9	647	
50 NMeFOSA										
512.00 > 169.00	6.574	6.566	0.008	1.000	77312	0.4884		97.7	2649	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.566	0.008		1527733	9.74		97.4	4404	
53 PFDoS										
699.00 > 80.00	6.705	6.696	0.009	1.181	359901	0.4739		97.9	8017	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.705	0.009		1432943	10.3		103	8950	
52 N-EtFOSE-M										
630.00 > 59.00	6.723	6.714	0.009	1.001	60438	0.4461		89.2	942	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.724	0.016	1.032	448438	0.4713	Target=5.53	94.3	1331	
663.00 > 169.00	6.732	6.724	0.008	1.031	87713		5.11(2.77-8.30)		4359	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.732	0.008	1.000	71232	0.4490		89.8	1971	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.732	0.008		1418967	10.1		101	9652	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.909	0.012	1.000	458910	0.4560	Target=5.67	91.2	826	
713.00 > 169.00	6.921	6.909	0.012	1.000	79842		5.75(2.84-8.51)		3948	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.916	0.005		11295335	10.6		106	269132	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.232	0.009	1.046	318500	0.4466	Target=6.17	89.3	1131	
813.00 > 169.00	7.241	7.232	0.009	1.046	52686		6.05(3.08-9.25)		3084	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.482	0.012	1.083	200967	0.4253	Target=7.20	85.1	5263	
913.00 > 169.00	7.494	7.482	0.012	1.083	27148		7.40(3.60-10.79)		2294	

QC Flag Legend

Processing Flags

Reagents:

PFC_STD_XMOD2_00013 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 20:37:22 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-77.d

Injection Date: 07-Apr-2022 20:07:29 Instrument ID: 29347

Lims ID: CCV 4_CAL2

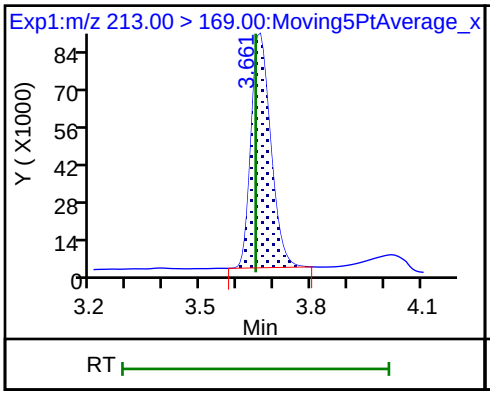
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20003 Worklist Smp#: 46

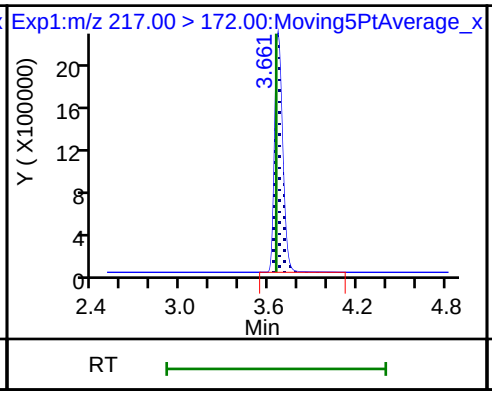
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

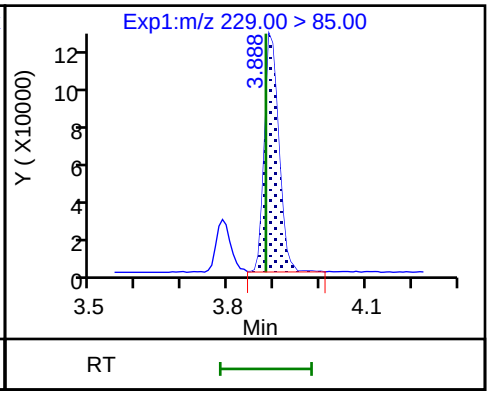
1 Perfluorobutanoic acid



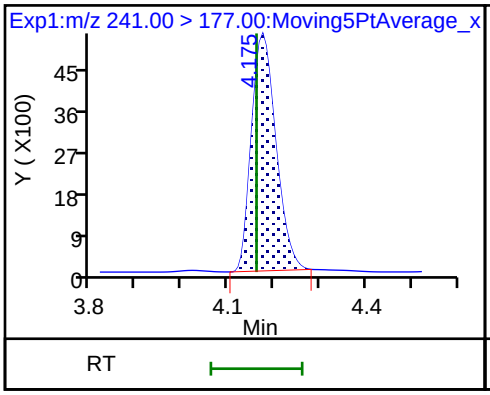
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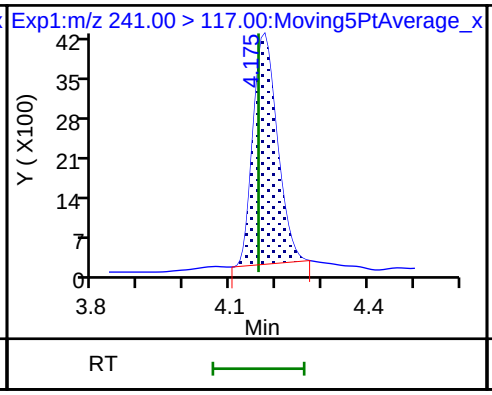
63 PFECA F



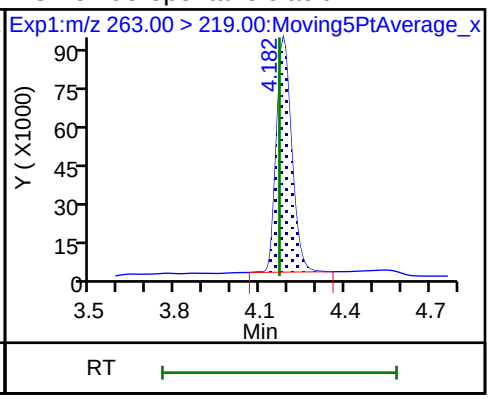
67 3:3 FTCA



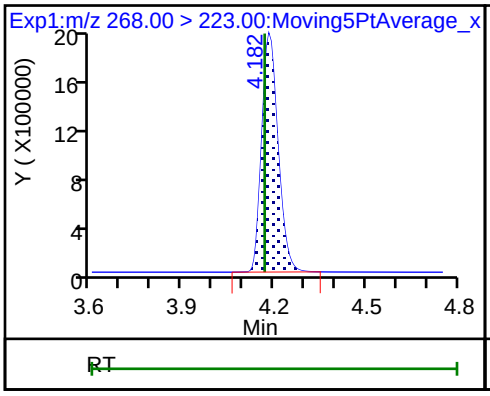
67 3:3 FTCA



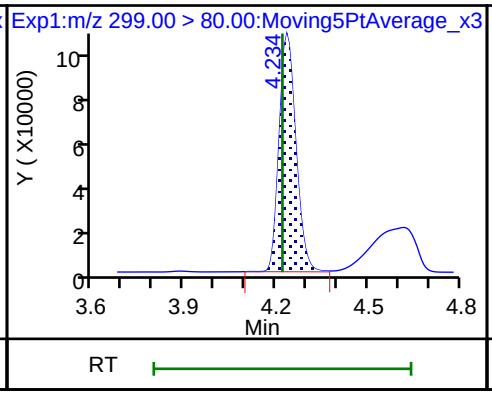
3 Perfluoropentanoic acid



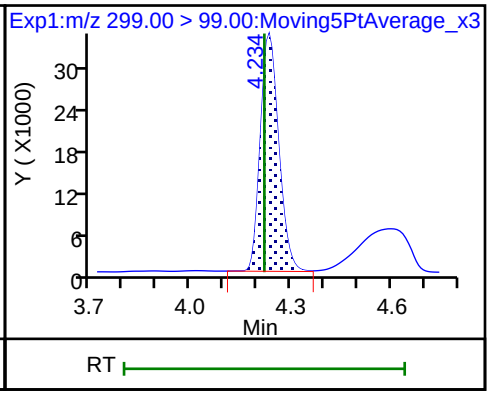
D 4 13C5 PFPeA



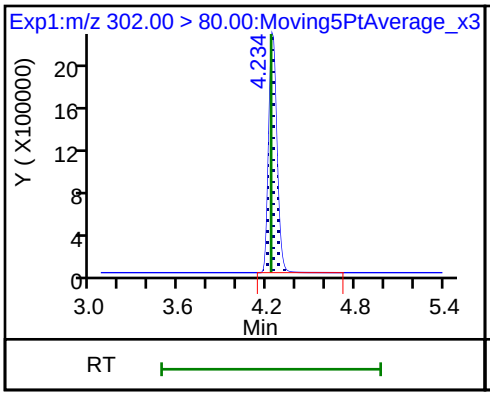
5 Perfluorobutanesulfonic acid



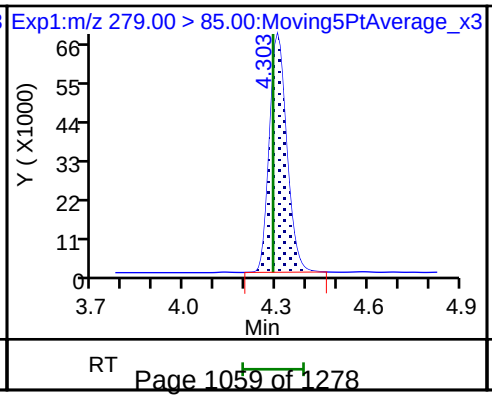
5 Perfluorobutanesulfonic acid



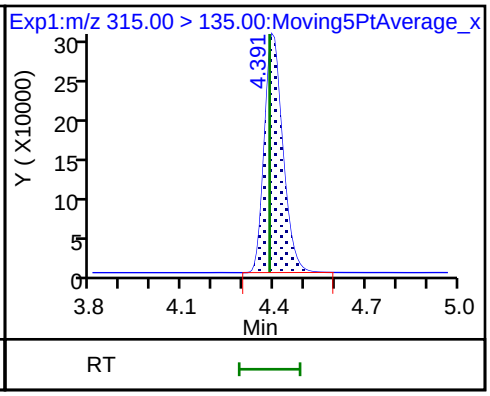
D 6 13C3 PFBS



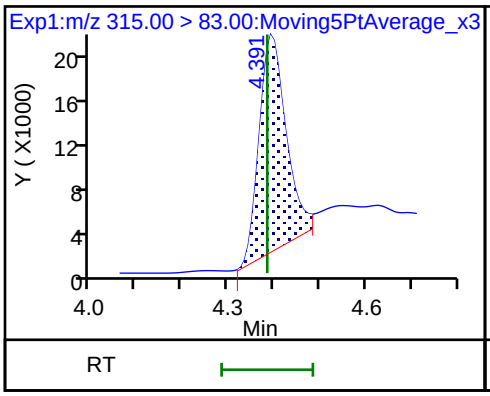
64 PFECA A



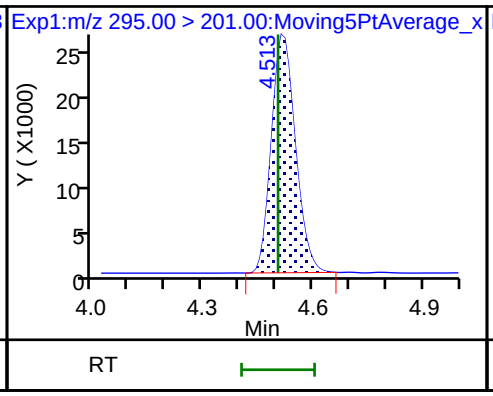
65 PES



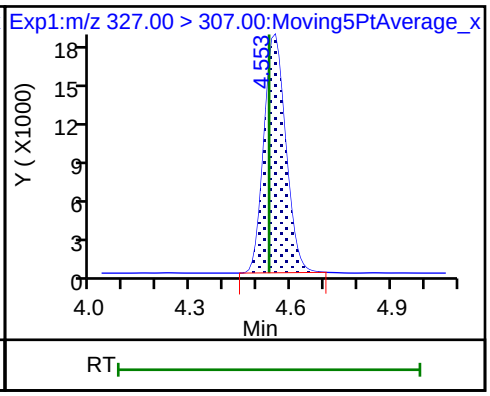
65 PES



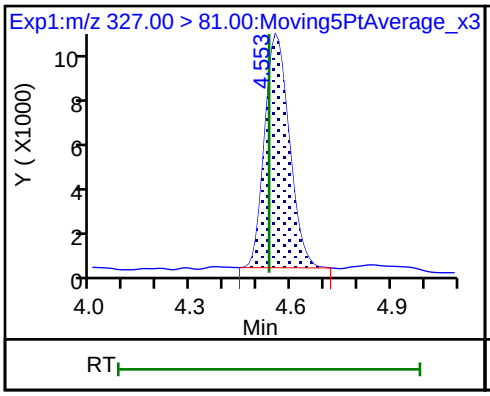
68 PFECA B



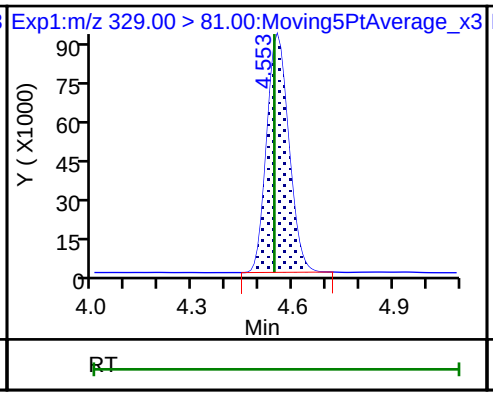
7 4:2 FTS



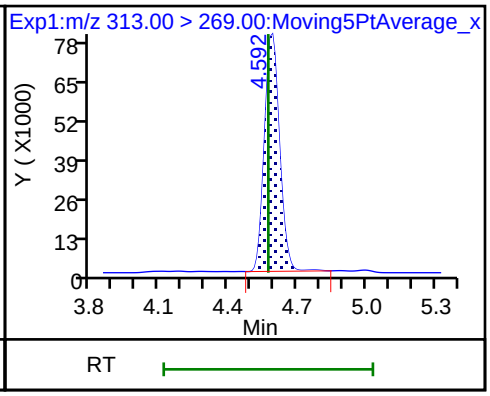
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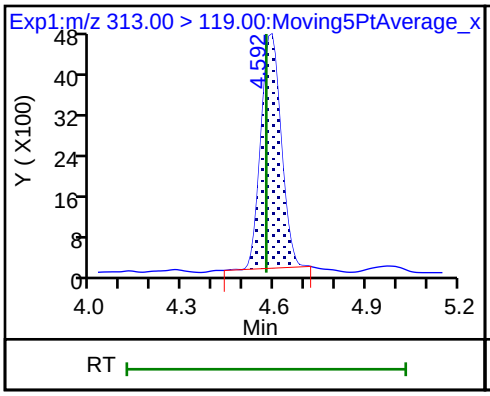
D 8 M2-4:2 FTS



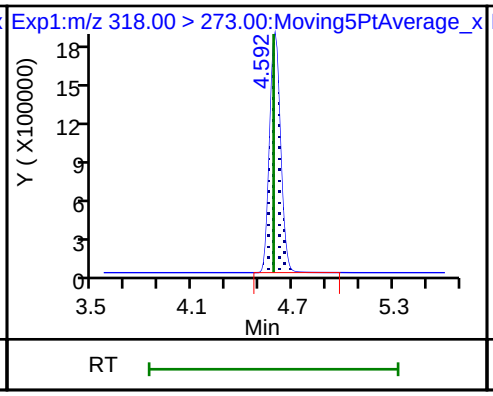
10 Perfluorohexanoic acid



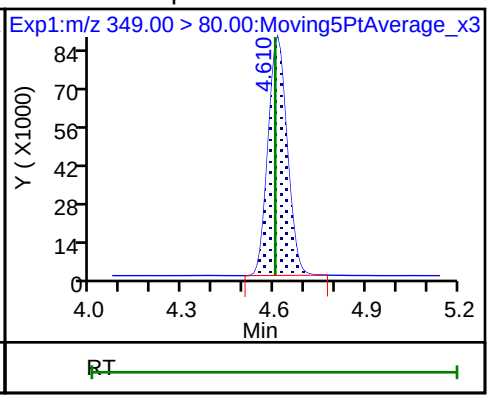
10 Perfluorohexanoic acid



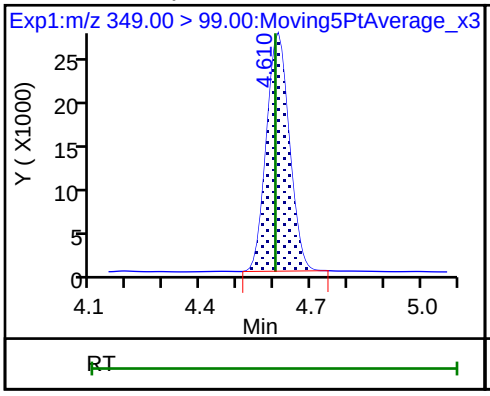
D 9 13C5 PFHxA



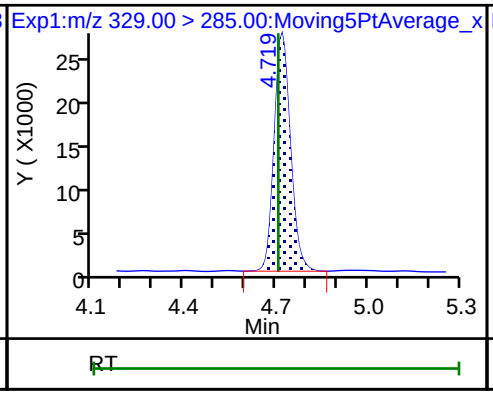
11 Perfluoropentanesulfonic acid



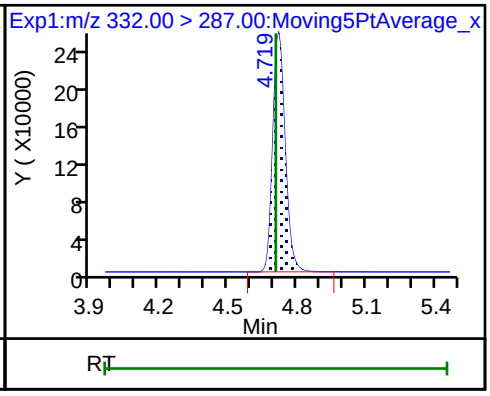
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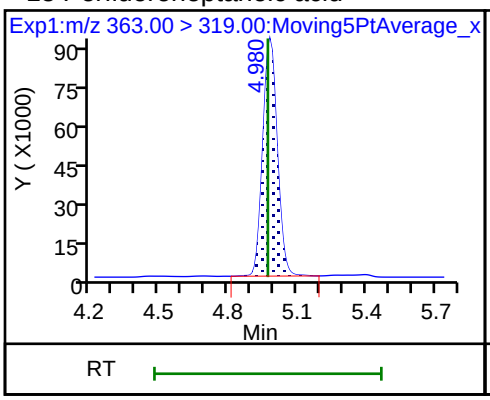
12 HFPO-DA



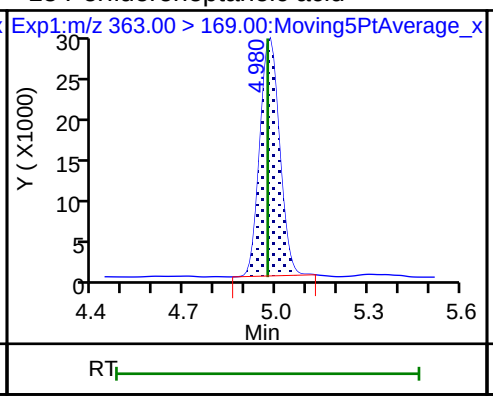
D 13 13C3 HFPO-DA



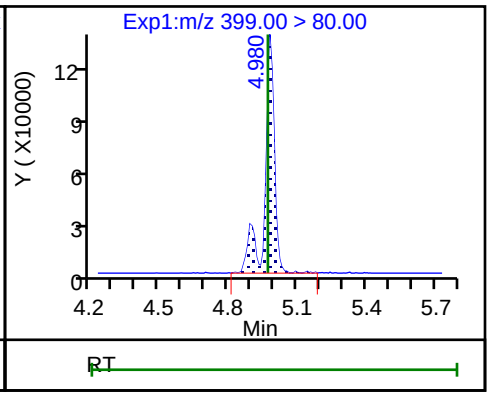
15 Perfluoroheptanoic acid



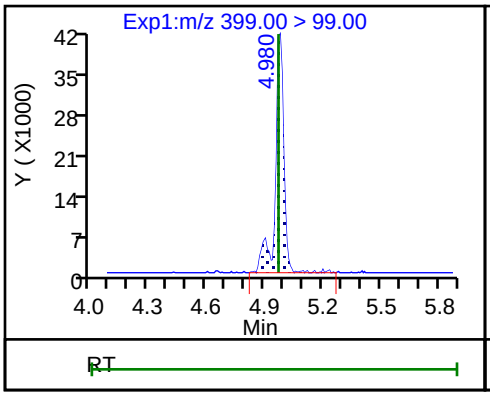
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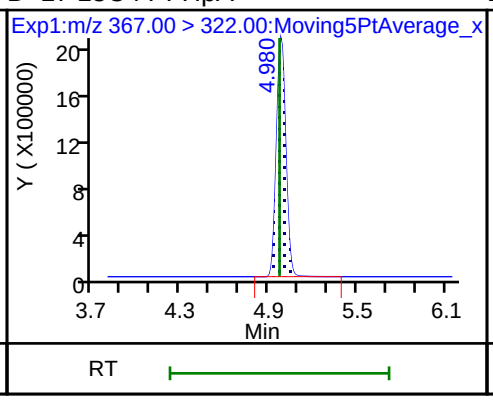
14 Perfluorohexanesulfonic acid



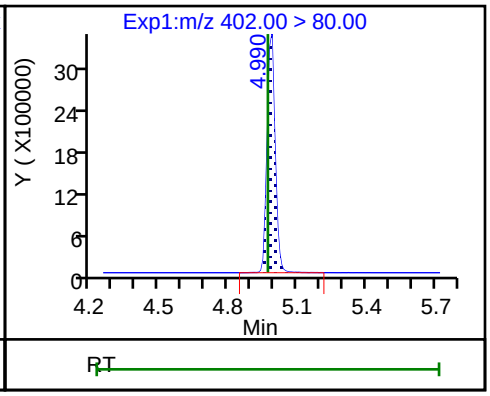
14 Perfluorohexanesulfonic acid



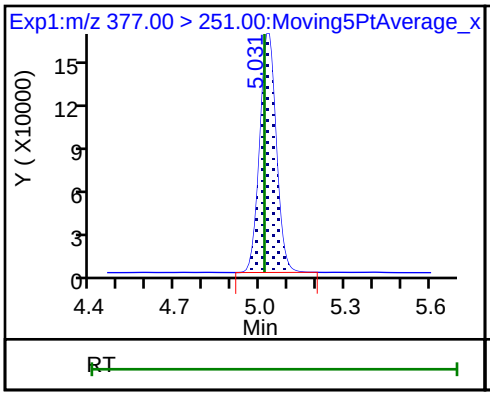
D 17 13C4 PFHpA



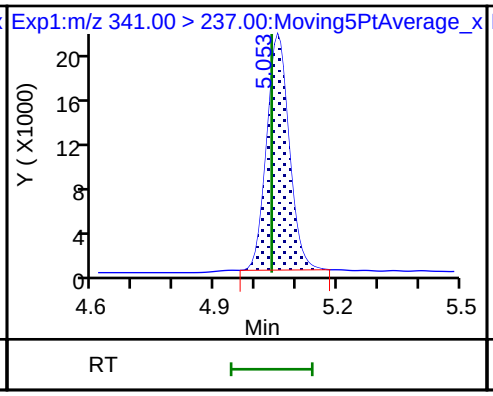
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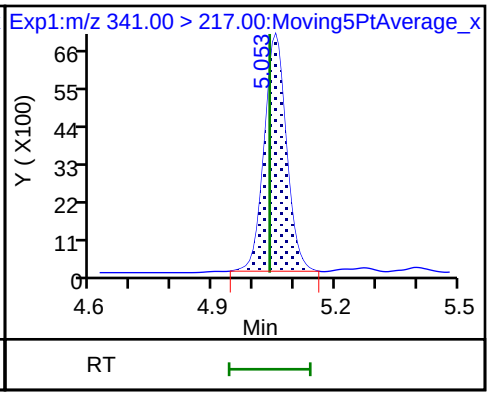
18 DONA



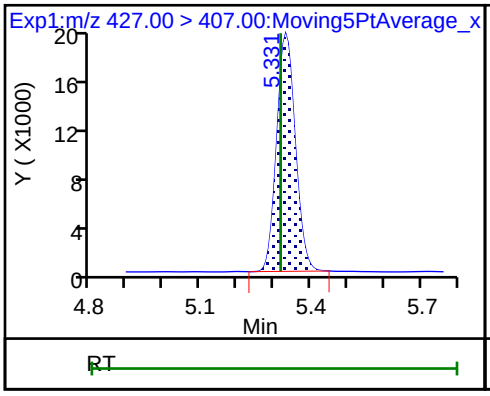
62 5:3 FTCA



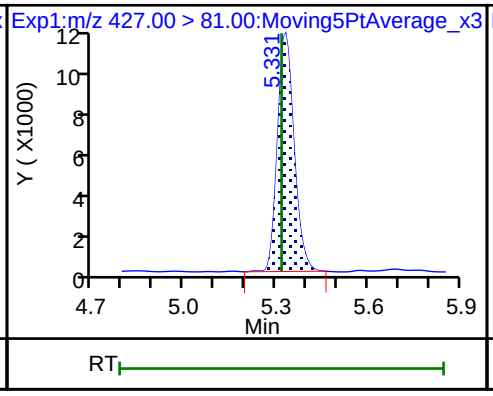
62 5:3 FTCA



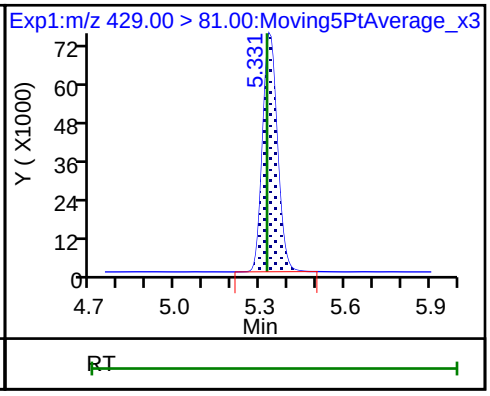
19 6:2 FTS



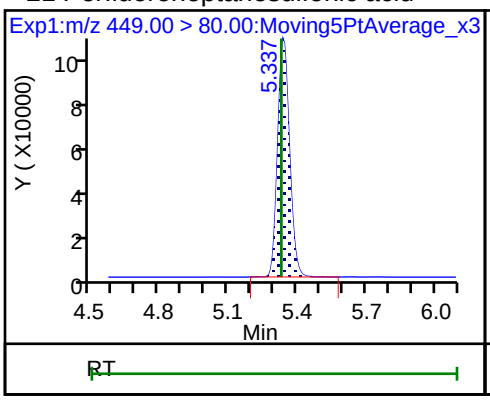
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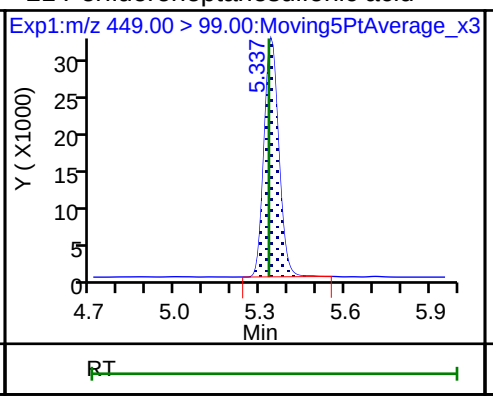
D 20 M2-6:2 FTS



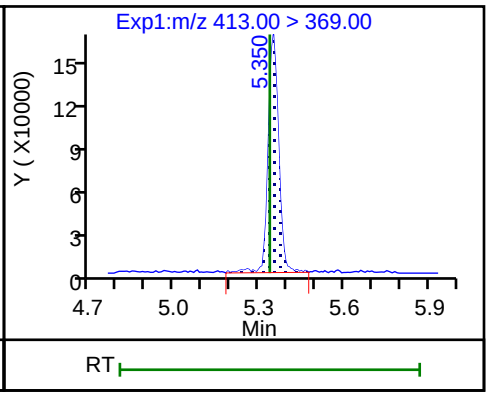
21 Perfluoroheptanesulfonic acid



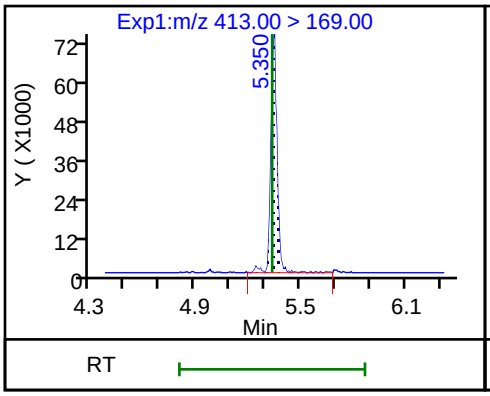
21 Perfluoroheptanesulfonic acid



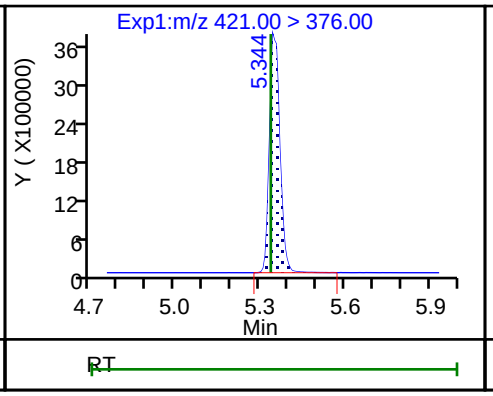
23 Perfluorooctanoic acid



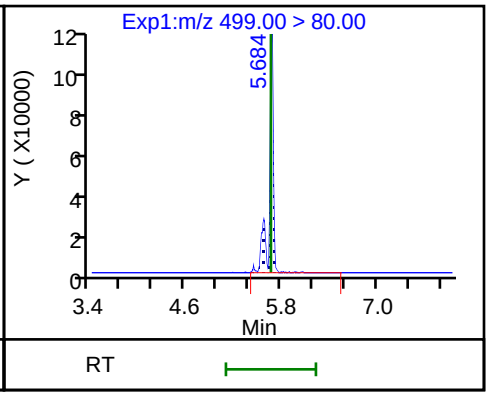
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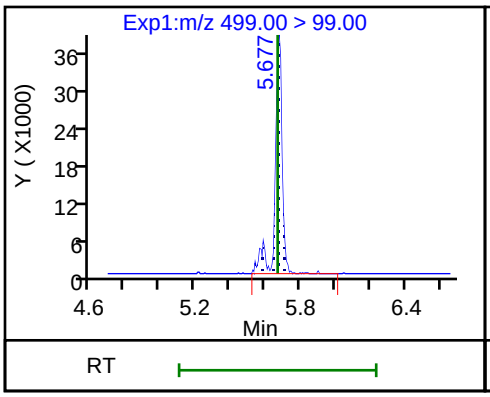
D 22 13C8 PFOA



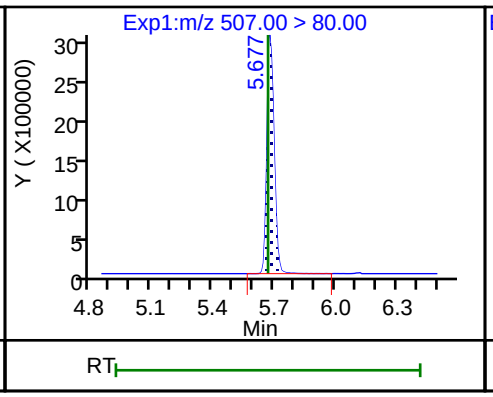
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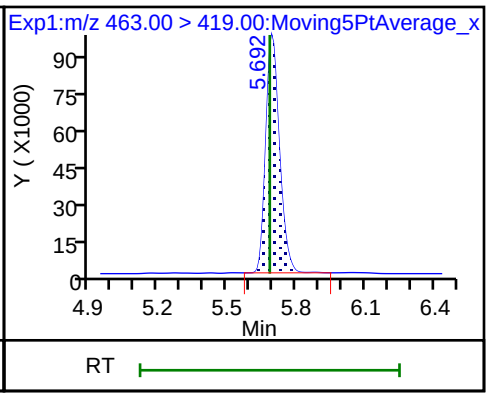
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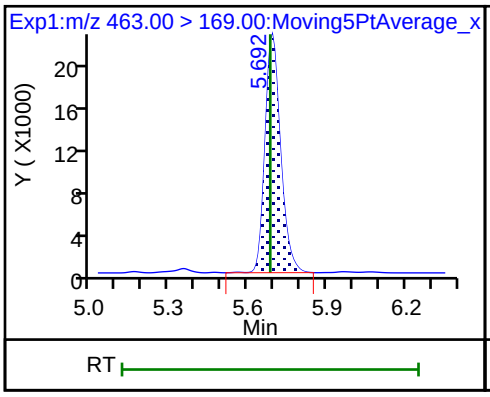
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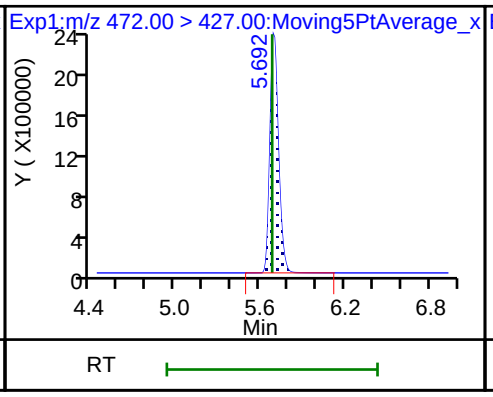
26 Perfluorononanoic acid



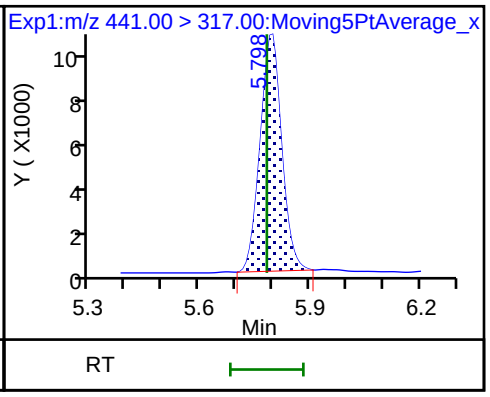
26 Perfluorononanoic acid



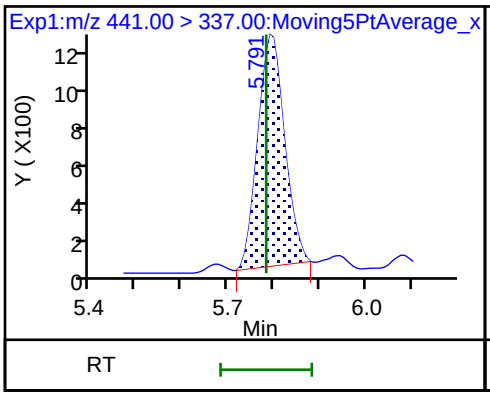
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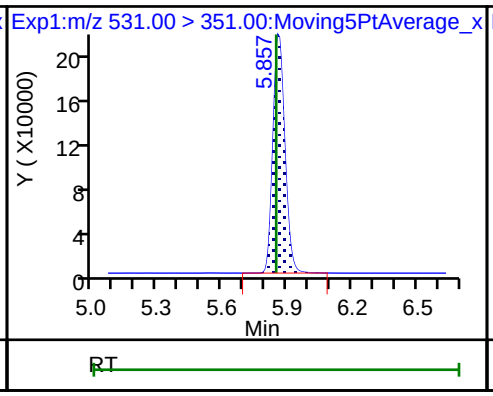
66 7:3 FTCA



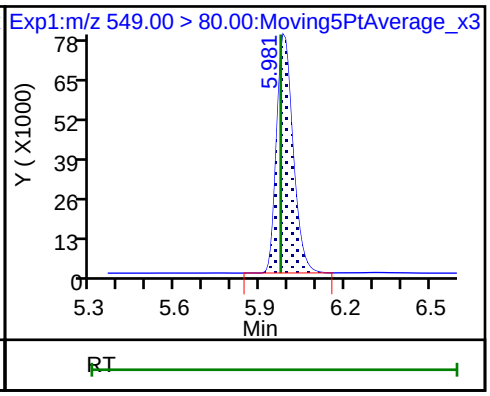
66 7:3 FTCA



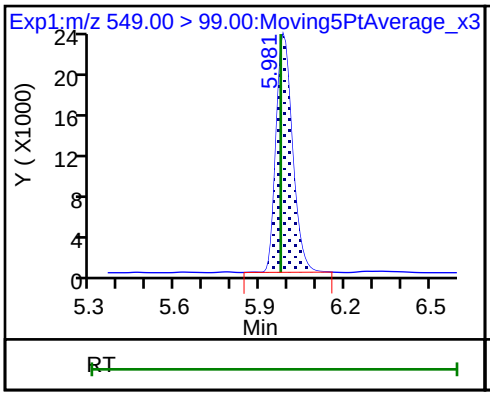
28 9ClFOS



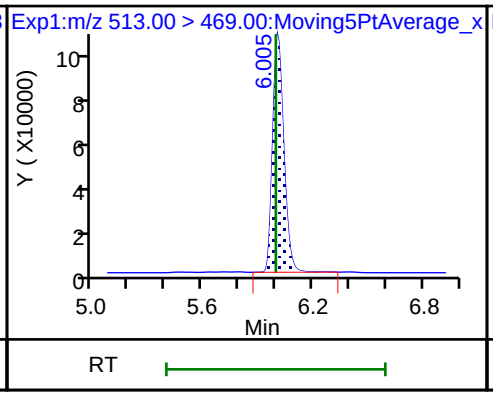
29 Perfluorononanesulfonic acid



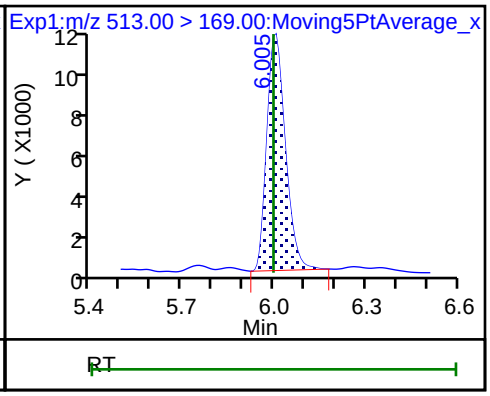
29 Perfluorononanesulfonic acid



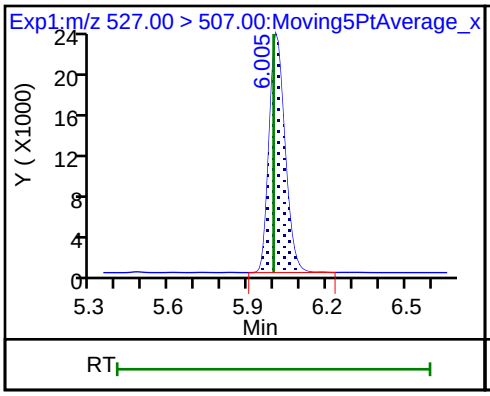
30 Perfluorodecanoic acid



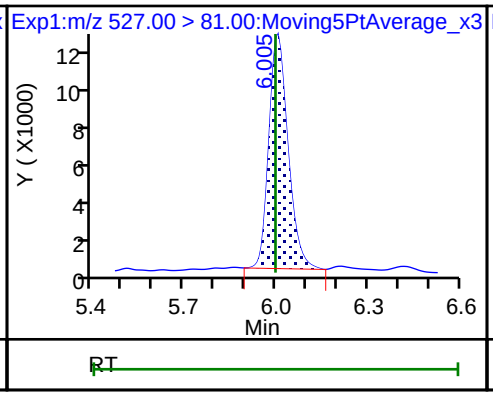
30 Perfluorodecanoic acid



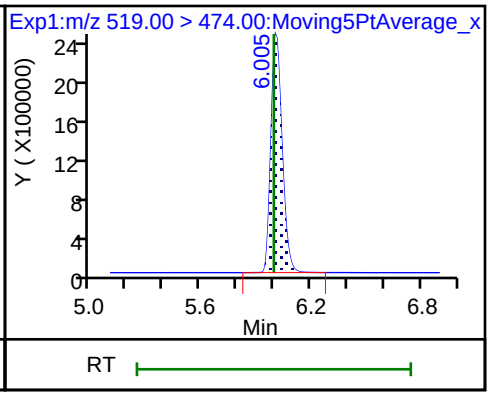
33 8:2 FTS



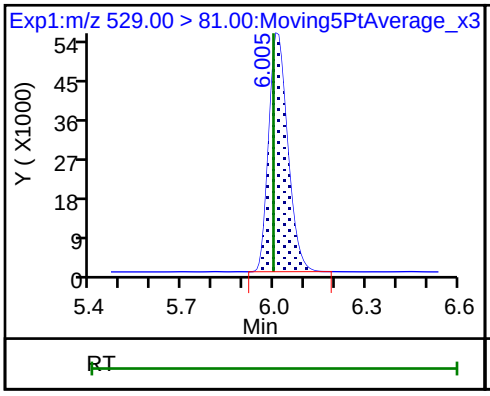
33 8:2 FTS



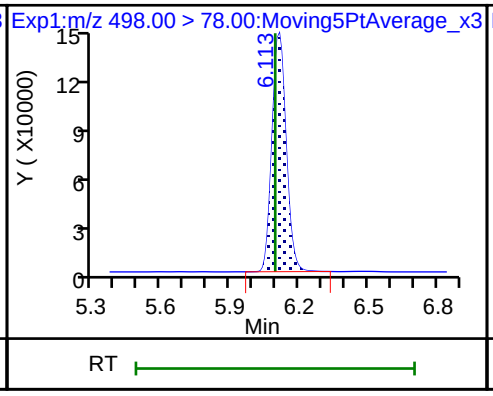
D 32 13C6 PFDA



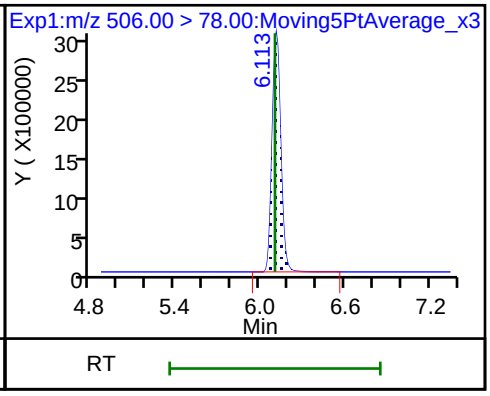
D 31 M2-8:2 FTS



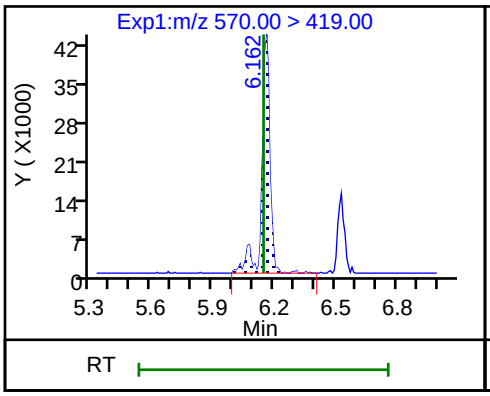
34 Perfluorooctanesulfonamide



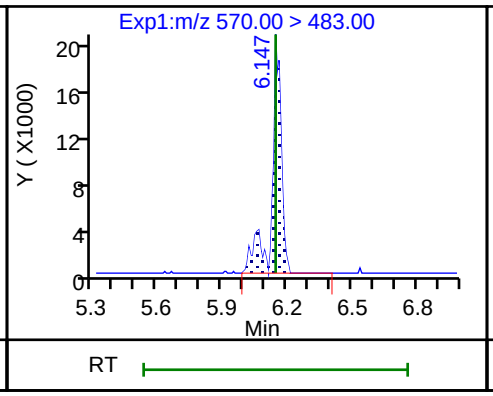
D 35 13C8 FOSA



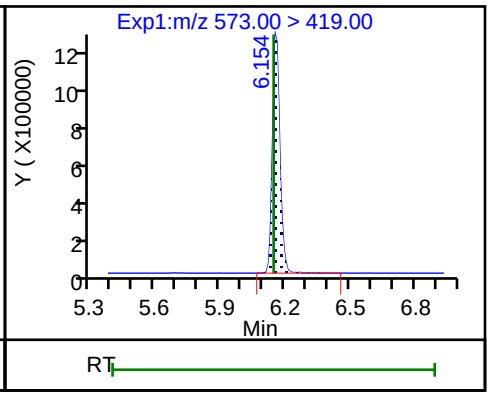
36 NMeFOSAA



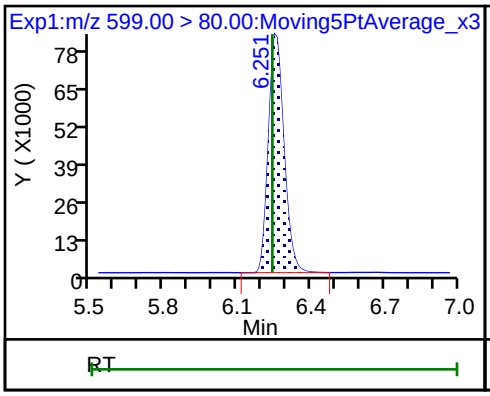
36 NMeFOSAA



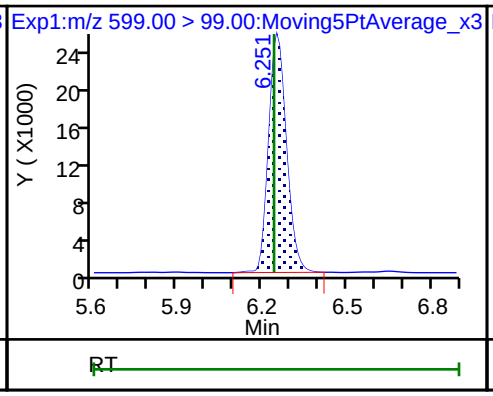
D 37 d3-NMeFOSAA



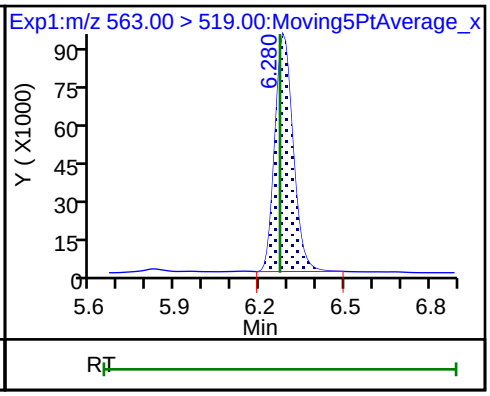
38 Perfluorodecanesulfonic acid



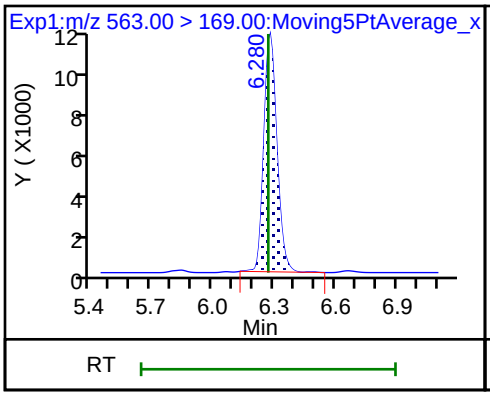
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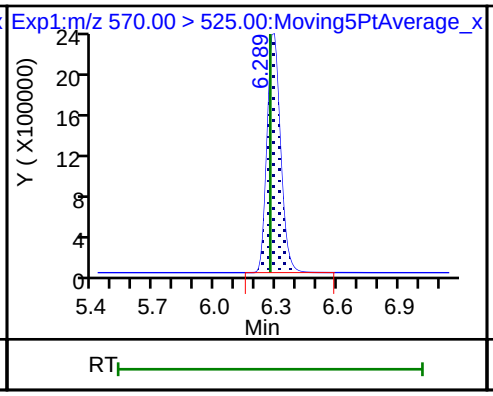
39 Perfluoroundecanoic acid



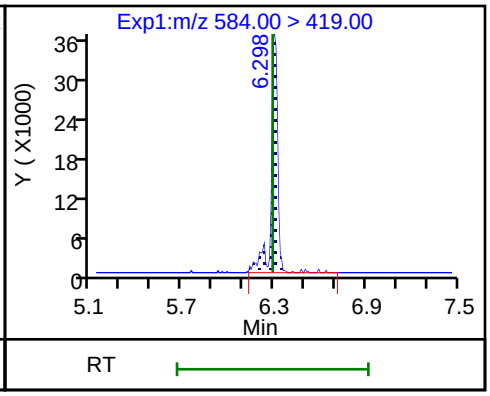
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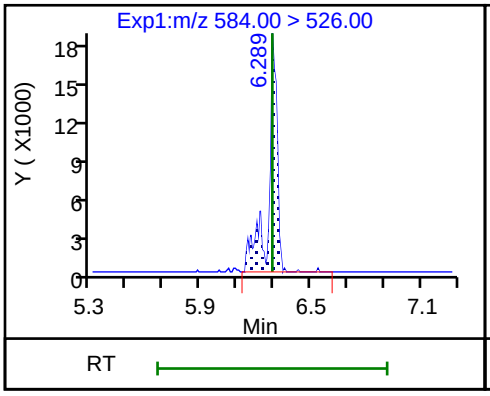
D 40 13C7 PFUnA



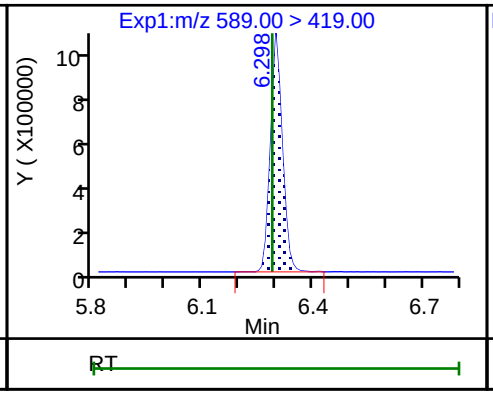
42 NEtFOSAA



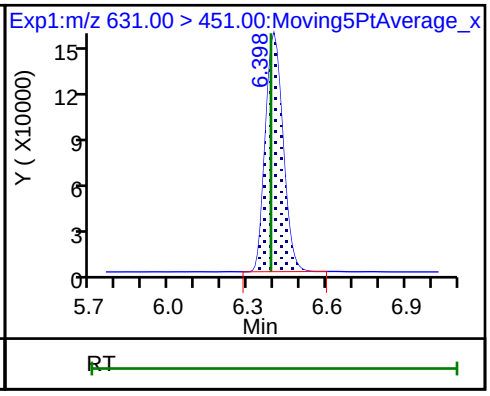
42 NEtFOSAA



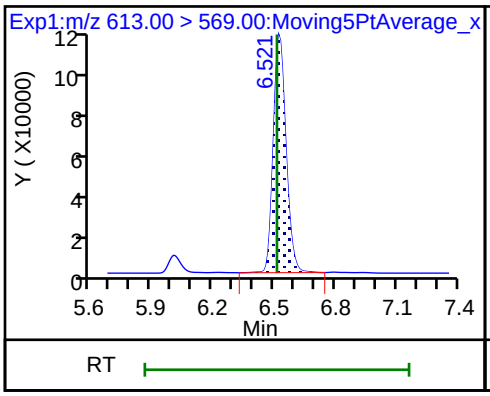
D 41 d5-NEtFOSAA



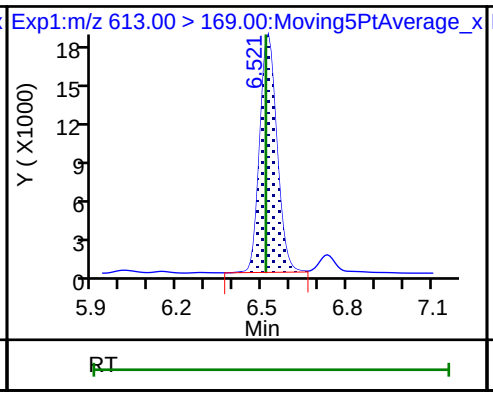
43 11ClFOS



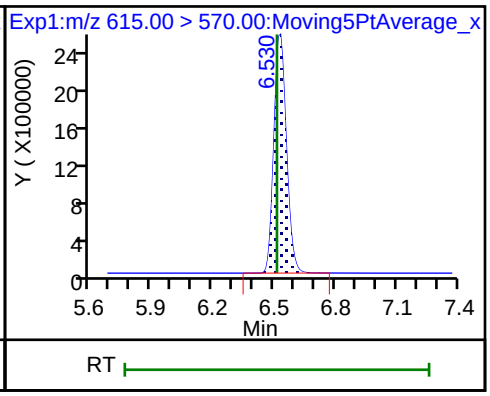
46 Perfluorododecanoic acid



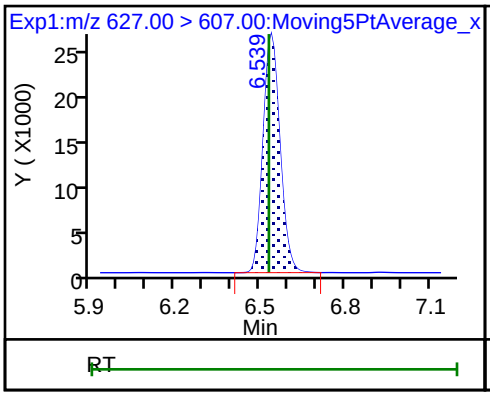
46 Perfluorododecanoic acid



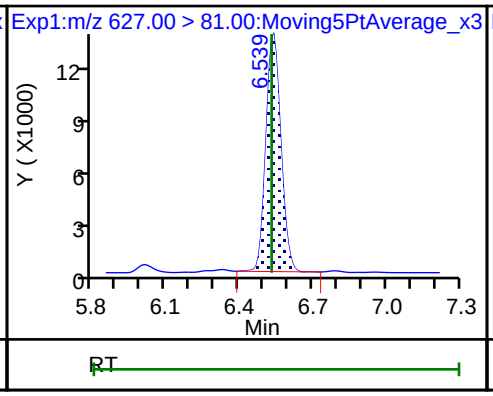
D 45 13C2-PFDoDA



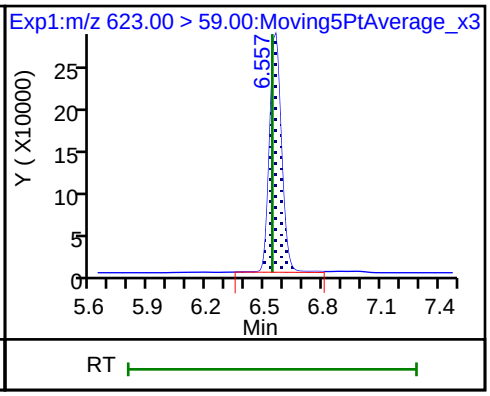
48 10:2 FTS



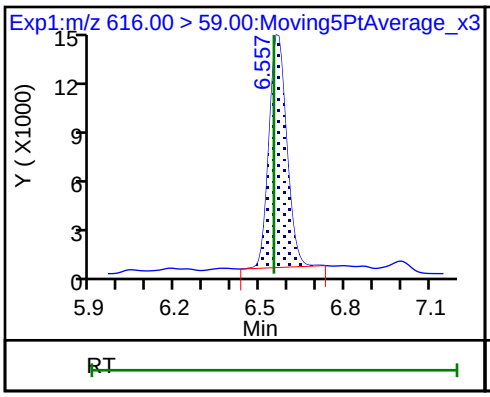
48 10:2 FTS



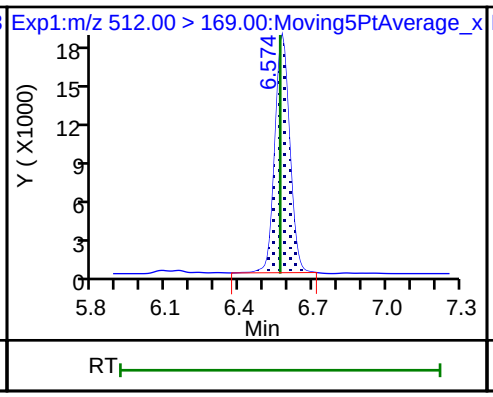
D 44 d7-N-MeFOSE-M



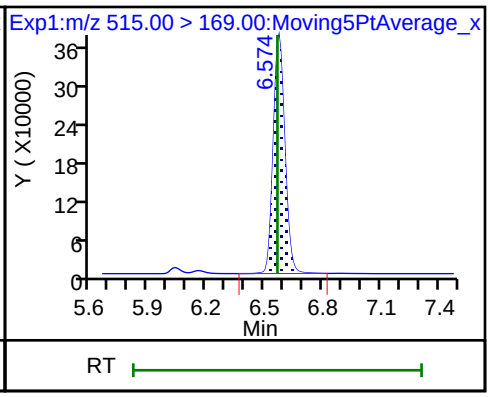
47 N-MeFOSE-M



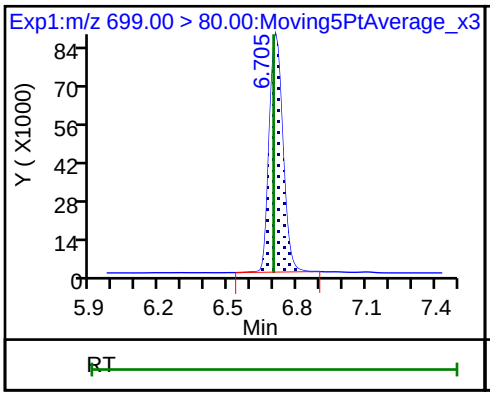
50 NMeFOSA



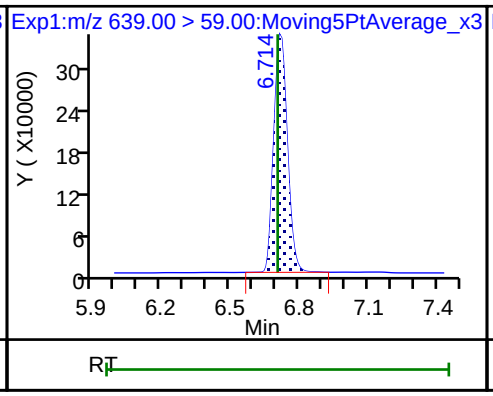
D 49 d3-NMePFOSA



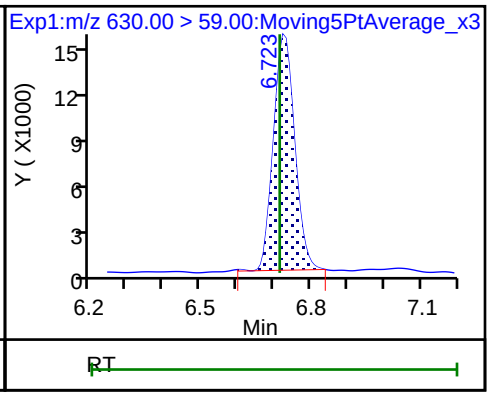
53 PFDoS



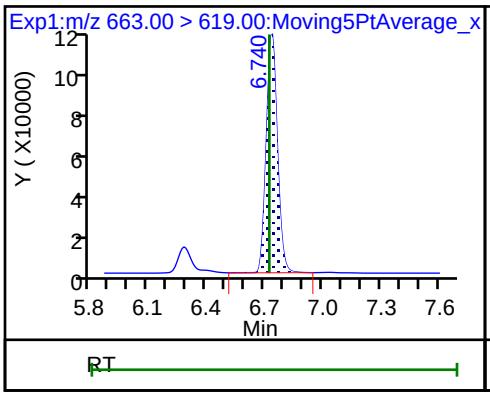
D 51 d9-N-EtFOSE-M



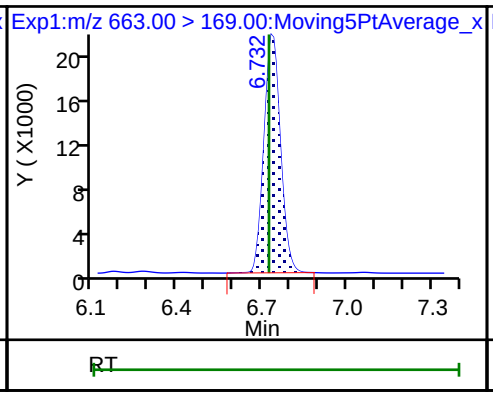
52 N-EtFOSE-M



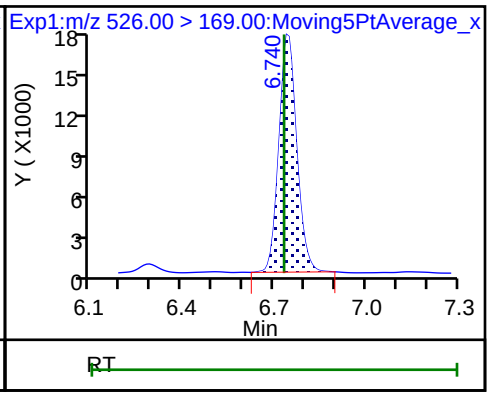
56 Perfluorotridecanoic acid



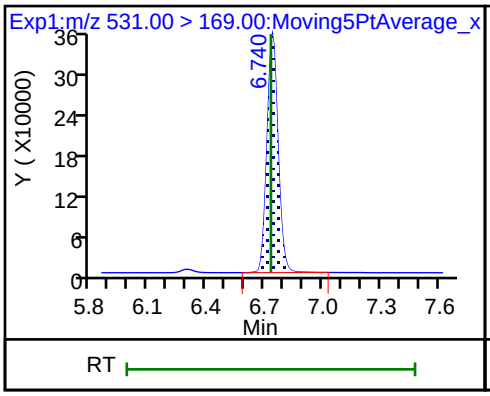
56 Perfluorotridecanoic acid



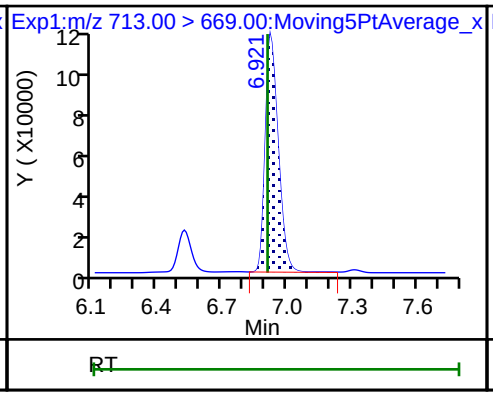
55 N-EtFOSA-M



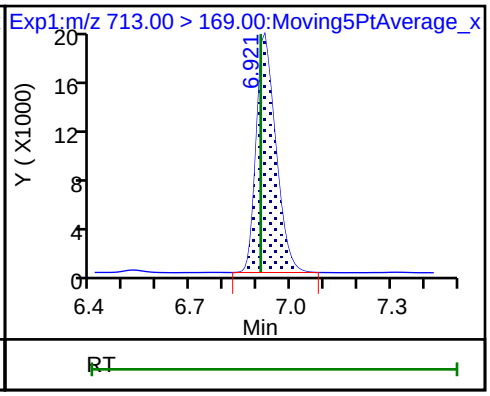
D 54 d5-NEtPFOSA



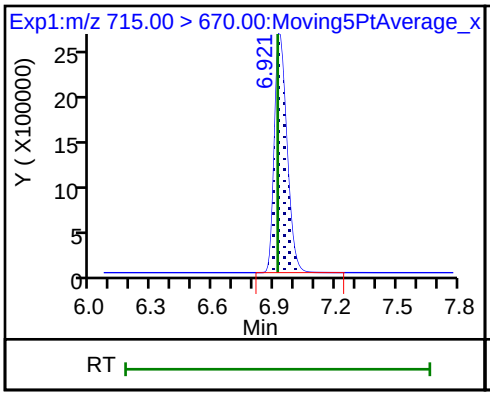
57 Perfluorotetradecanoic acid



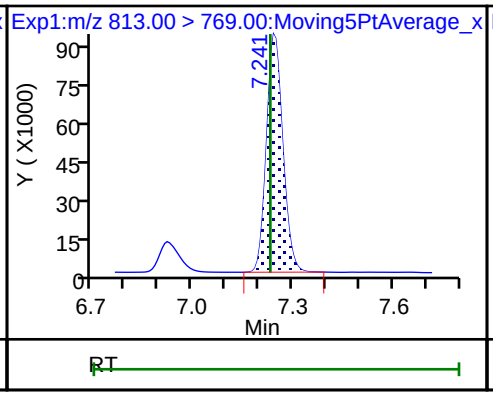
57 Perfluorotetradecanoic acid



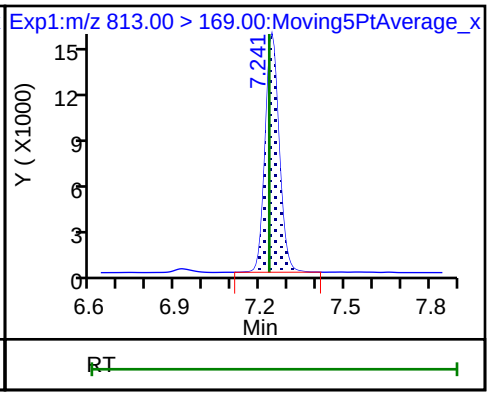
D 58 13C2 PFTeDA



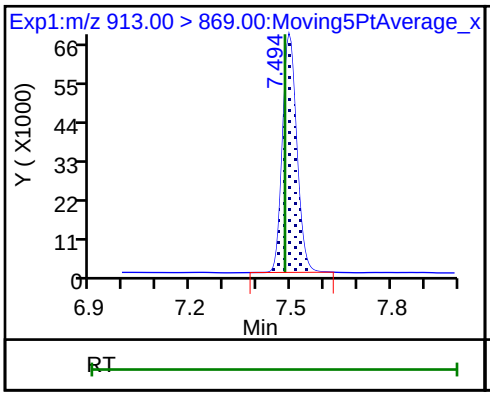
59 Perfluorohexadecanoic acid



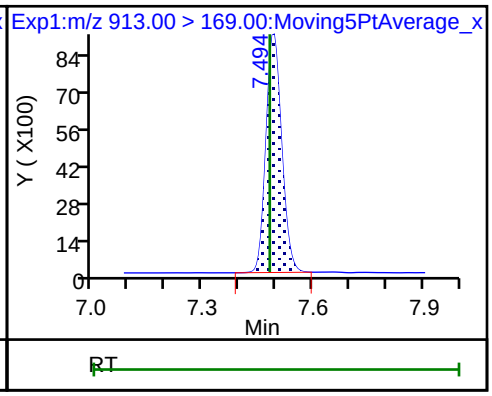
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-50.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 03-Apr-2022 18:47:58 ALS Bottle#: 20010 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM
Misc. Info.: Plate: 1 Rack: 1 410-0053897-010
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:27:38 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:15:39
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	3.656	3.656	0.0		8261277	9.50		95.0	122758	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.179	0.0		7009042	9.65		96.5	67635	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.231	0.0		8381732	8.92		95.9	440323	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.549	0.0		394971	9.73		104	12256	
D 9 13C5 PFHxA										
318.00 > 273.00	4.588	4.588	0.0		8724432	9.84		98.4	211090	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.710	4.710	0.0		1089592	9.87		98.7	72061	
D 17 13C4 PFHpA										
367.00 > 322.00	4.976	4.976	0.0		9358255	10.5		105	96480	
D 16 13C3 PFHxS										
402.00 > 80.00	4.976	4.976	0.0		7987951	9.53		101	917657	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.328	5.328	0.0		263614	10.3		109	17936	
D 22 13C8 PFOA										
421.00 > 376.00	5.342	5.342	0.0		9916202	10.2		102	1301374	
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.342	5.344	-0.002	1.000	1469365	1.66	Target=2.38		49602	M
413.00 > 169.00	5.342	5.344	-0.002	1.000	673448		2.18(1.19-3.57)		73194	
D 25 13C8 PFOS										
507.00 > 80.00	5.673	5.673	0.0		7351595	9.07		94.9	509204	
D 27 13C9 PFNA										
472.00 > 427.00	5.689	5.689	0.0		9879082	9.71		97.1	264613	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 13C6 PFDA										
519.00 > 474.00	6.003	6.003	0.0		10452225	9.67		96.7	629466	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.003	6.003	0.0		238149	10.6		111	14258	
D 35 13C8 FOSA										
506.00 > 78.00	6.110	6.110	0.0		13781894	10.7		107	404605	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.152	6.152	0.0		2989887	10.6		106	639774	
D 40 13C7 PFUnA										
570.00 > 525.00	6.277	6.277	0.0		11299040	10.0		100	194254	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.296	6.296	0.0		2356154	10.8		108	230344	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.520	6.520	0.0		12195570	10.2		102	578714	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.556	6.556	0.0		1454274	10.7		107	6058	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.573	6.573	0.0		1816612	10.5		105	8799	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.722	6.722	0.0		1758898	10.7		107	14755	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.738	6.738	0.0		1627064	10.3		103	13511	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.920	6.920	0.0		12133087	10.1		101	224916	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

PFC_LB_MOD_00029 Amount Added: 200.00 Units: uL

Report Date: 03-Apr-2022 21:27:38 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-50.d

Injection Date: 03-Apr-2022 18:47:58 Instrument ID: 29347

Lims ID: WDM

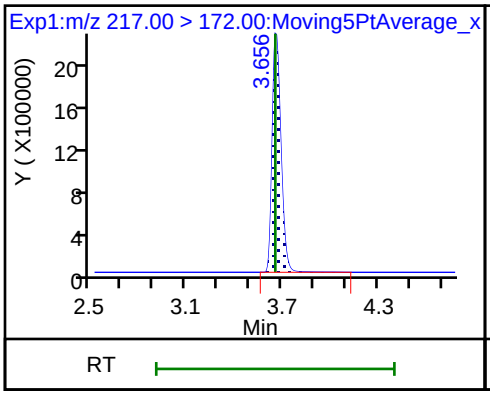
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20010 Worklist Smp#: 10

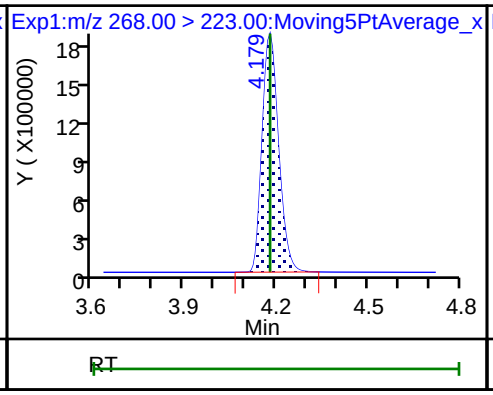
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

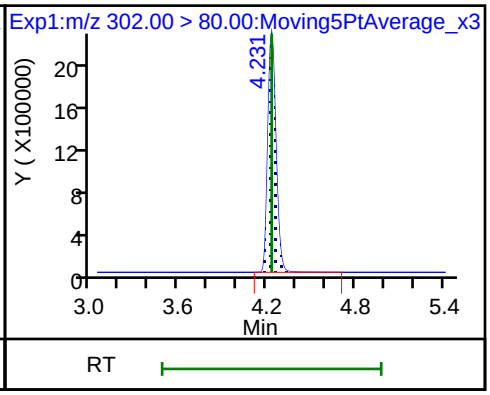
D 2 13C4 PFBA



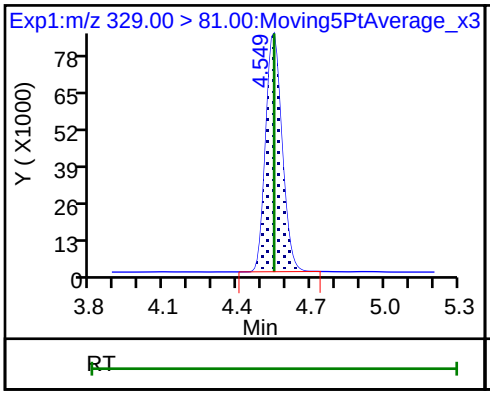
D 4 13C5 PFPeA



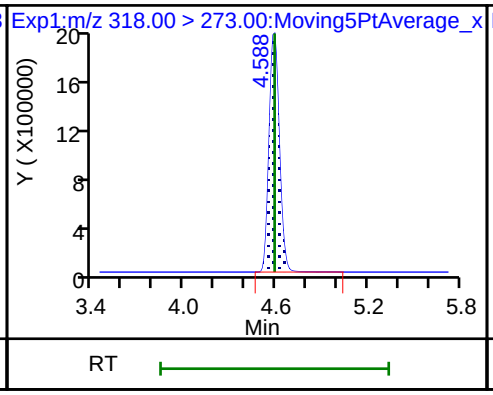
D 6 13C3 PFBS



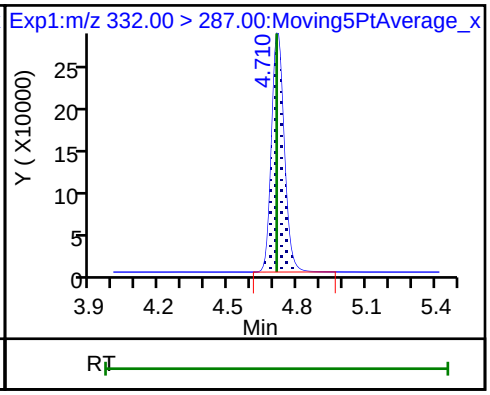
D 8 M2-4:2 FTS



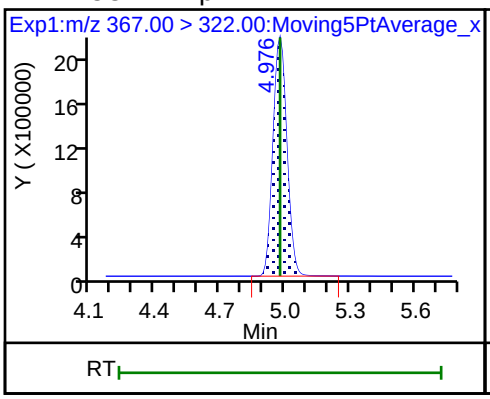
D 9 13C5 PFHxA



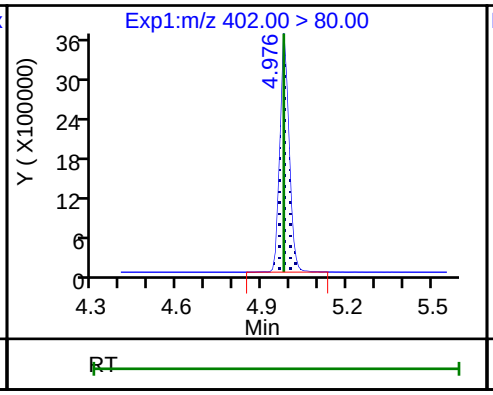
D 13 13C3 HFPO-DA



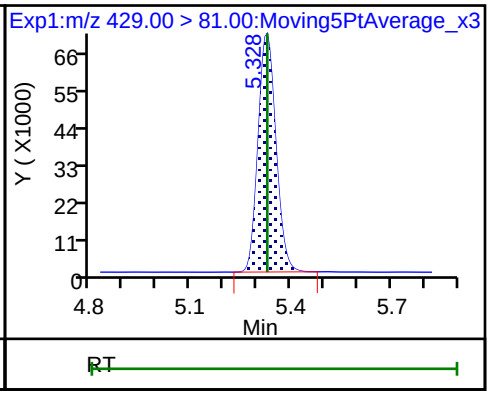
D 17 13C4 PFHpA



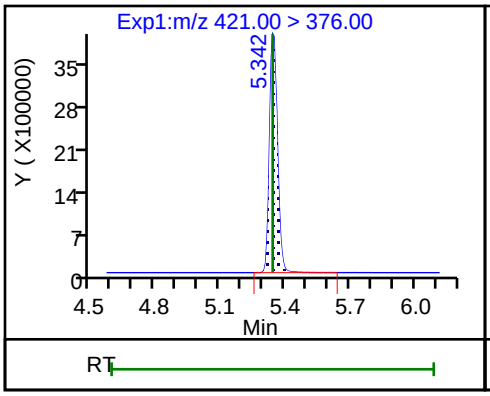
D 16 13C3 PFHxS



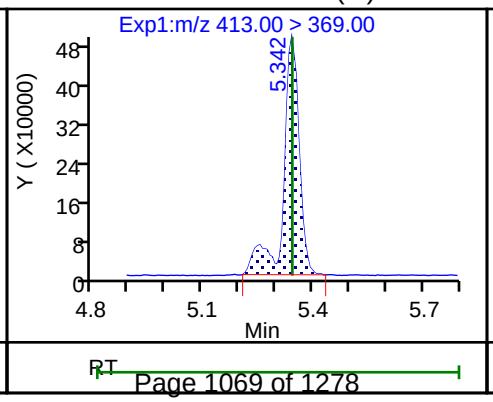
D 20 M2-6:2 FTS



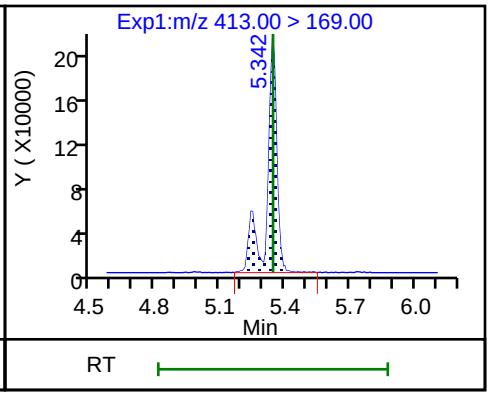
D 22 13C8 PFOA



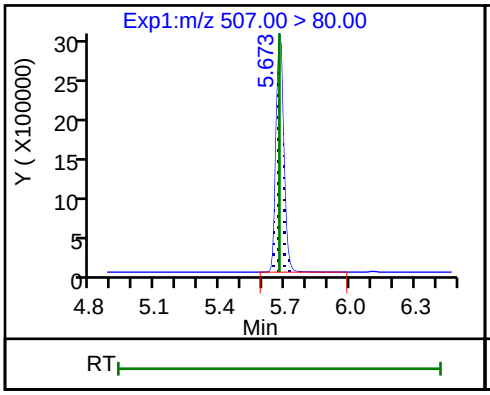
23 Perfluorooctanoic acid (M)



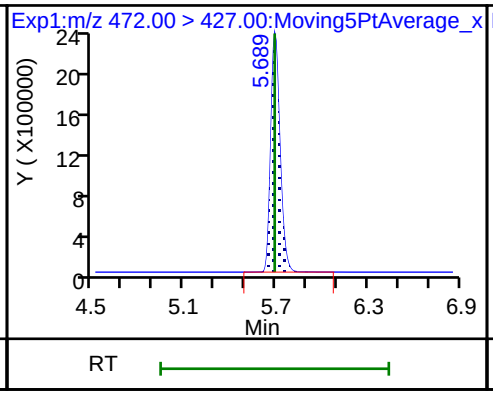
23 Perfluorooctanoic acid



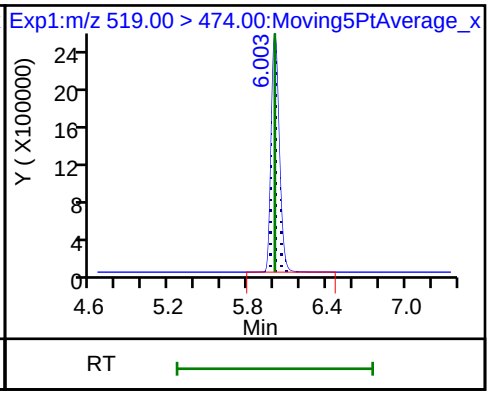
D 25 13C8 PFOS



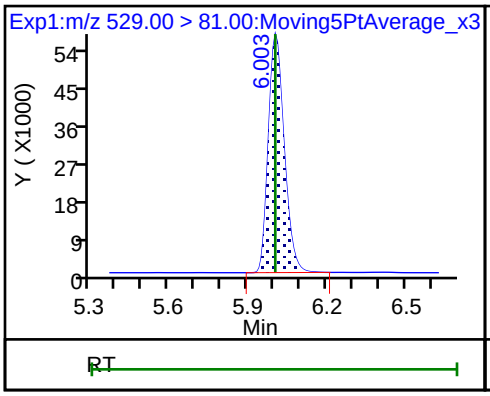
D 27 13C9 PFNA



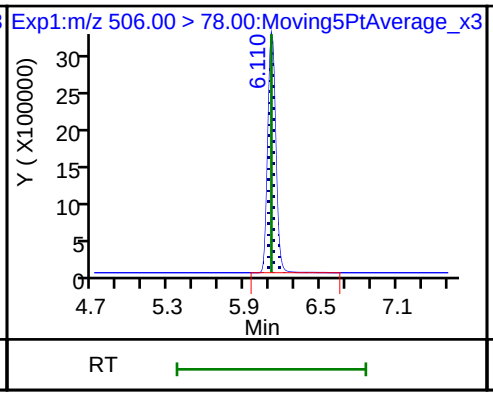
D 32 13C6 PFDA



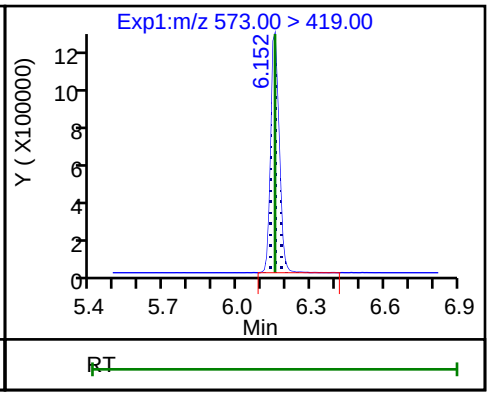
D 31 M2-8:2 FTS



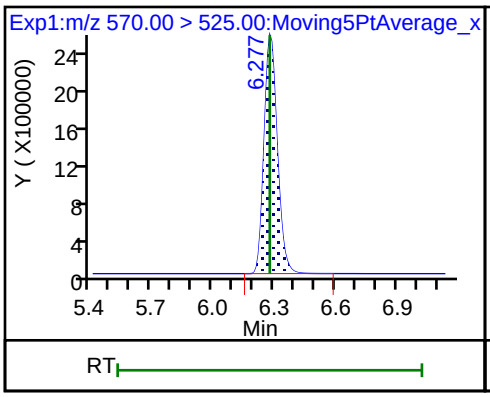
D 35 13C8 FOSA



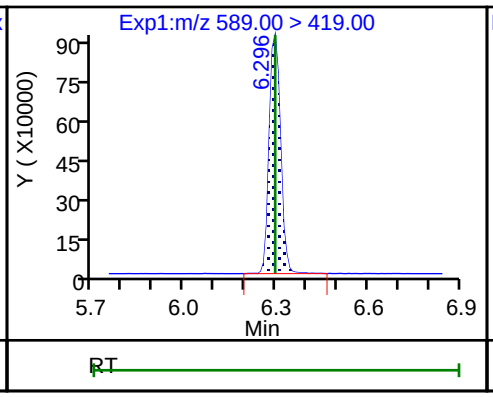
D 37 d3-NMeFOSAA



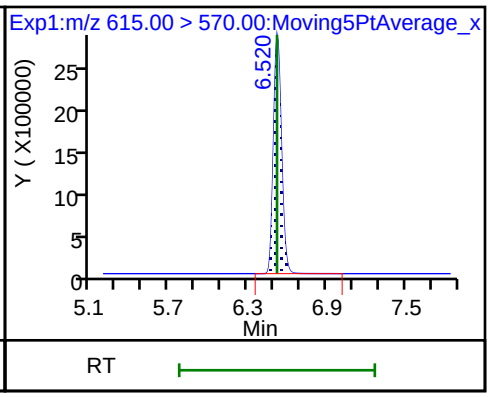
D 40 13C7 PFUnA



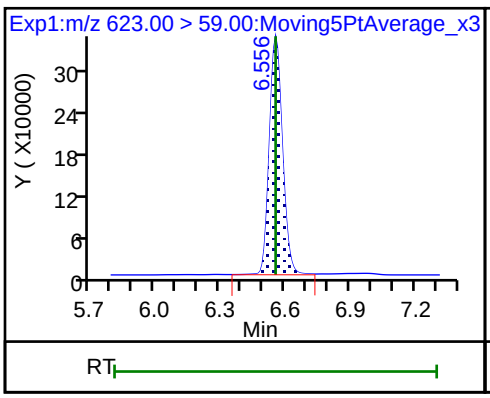
D 41 d5-NEtFOSAA



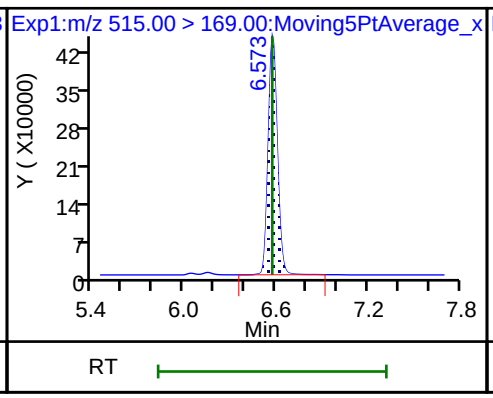
D 45 13C2-PFDoDA



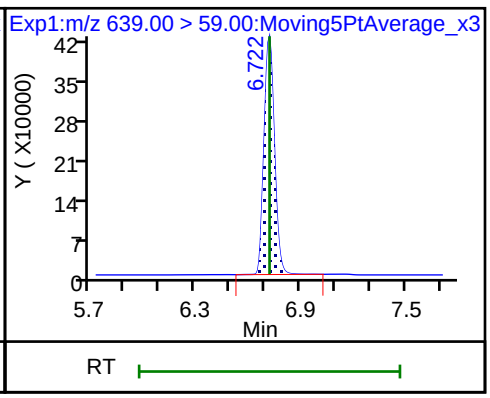
D 44 d7-N-MeFOSE-M



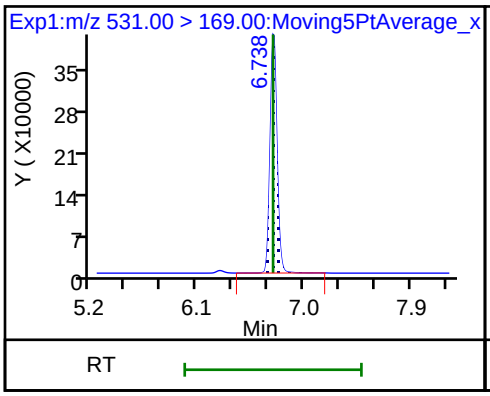
D 49 d3-NMePFOSA



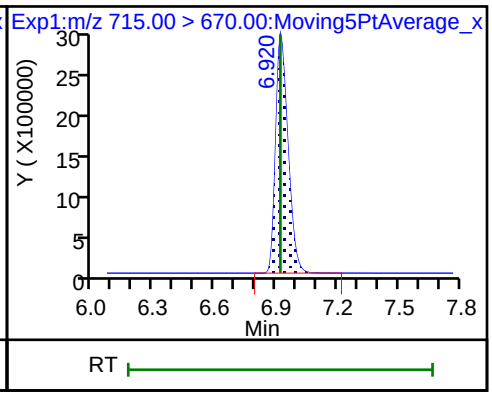
D 51 d9-N-EtFOSE-M



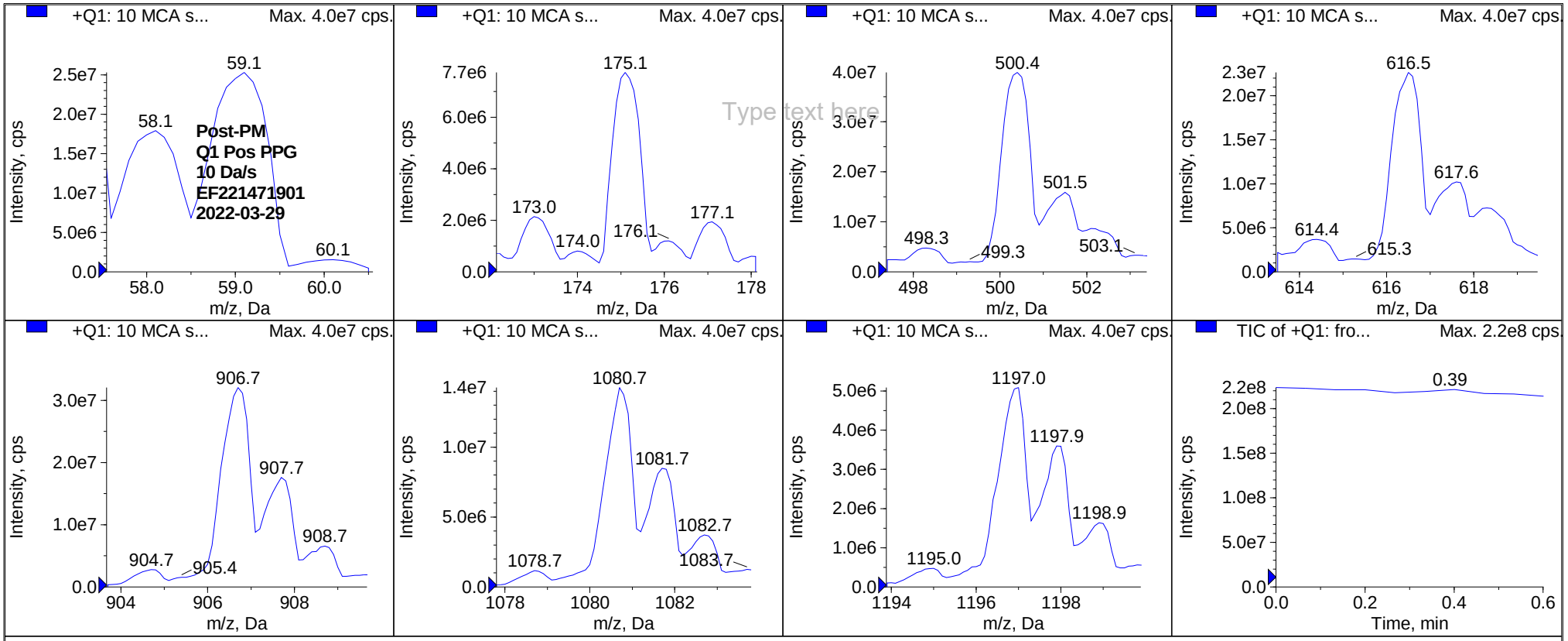
D 54 d5-NEtPFOSA



D 58 13C2 PFTeDA

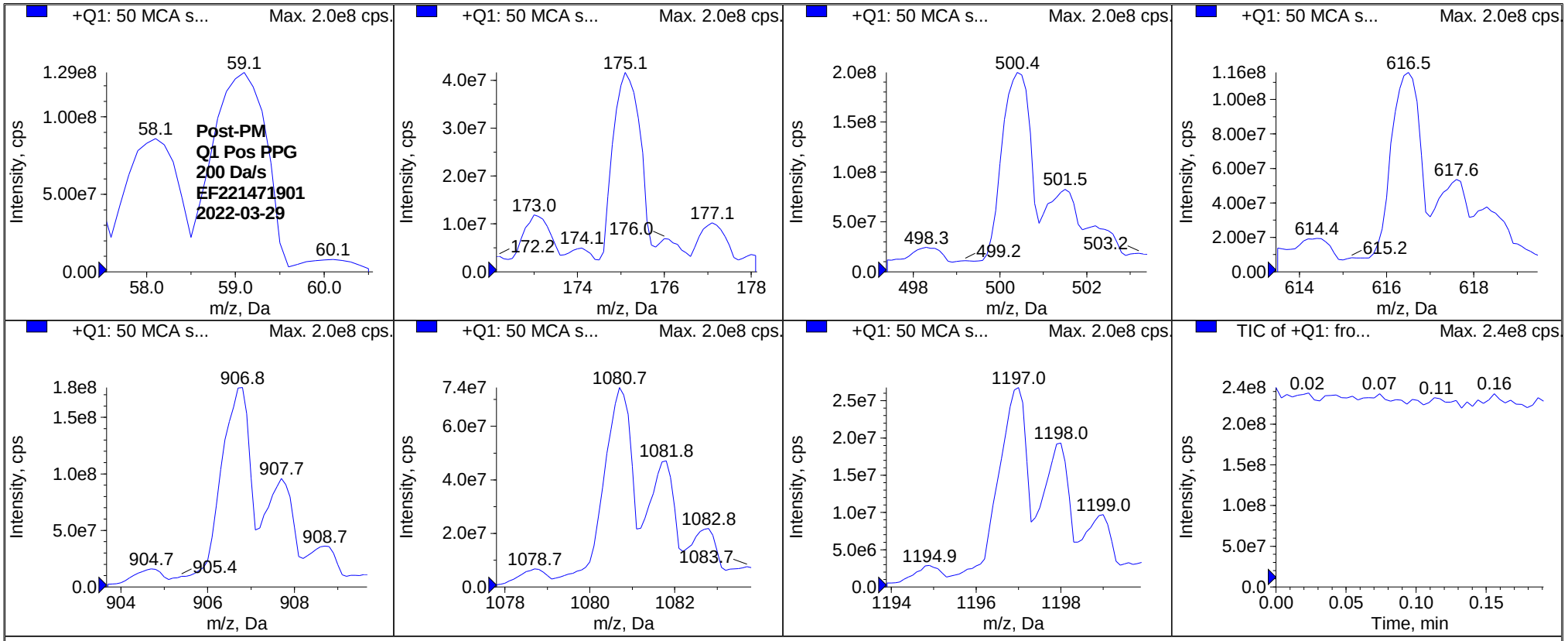


LM29347



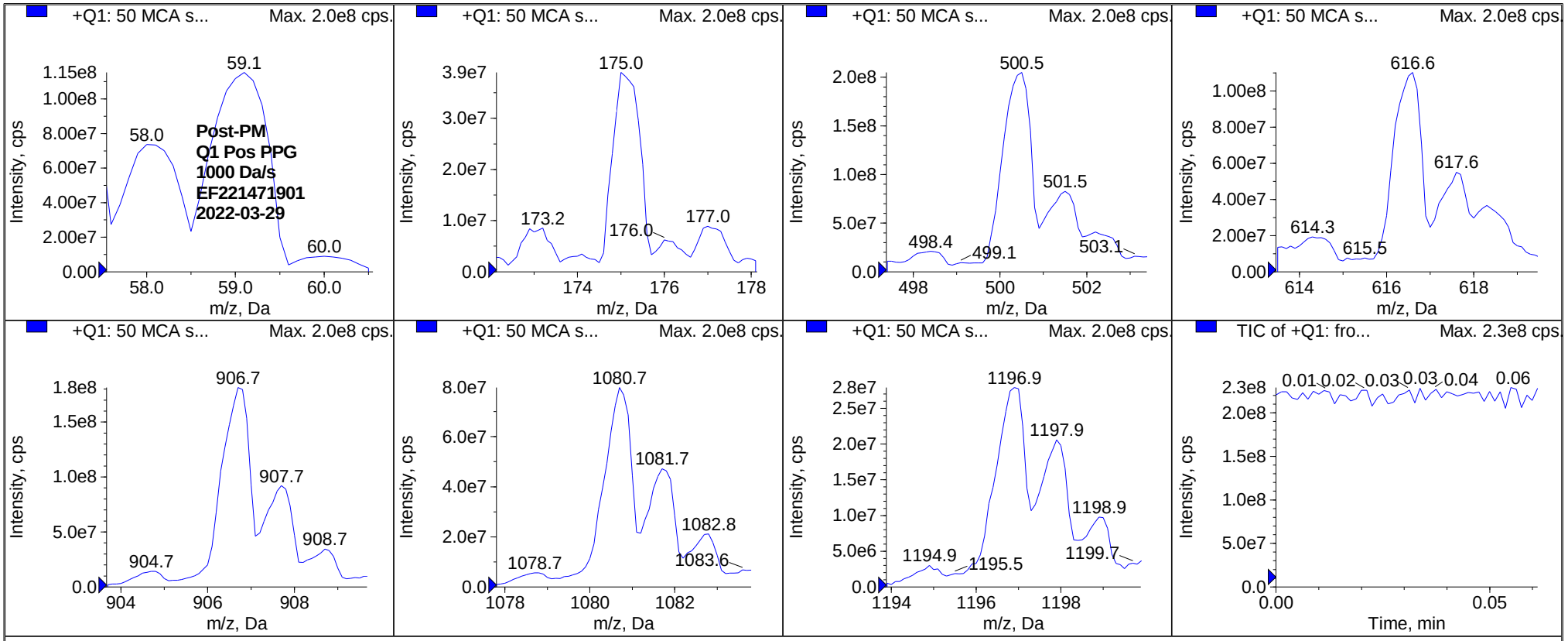
Peak List for " +Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329102559.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0516	2.5295e7	0.7704	-1.5524e-3
2	175.1330	175.1179	7.7432e6	0.7526	0.0151
3	500.3800	500.3730	3.9852e7	0.7483	7.0059e-3
4	616.4640	616.4639	2.2651e7	0.7823	1.3455e-4
5	906.6730	906.6598	3.2046e7	0.7522	0.0132
6	1080.7000	1080.7080	1.4256e7	0.7170	-8.0314e-3
7	1196.8830	1196.9119	5.0874e6	0.7511	-0.0289
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



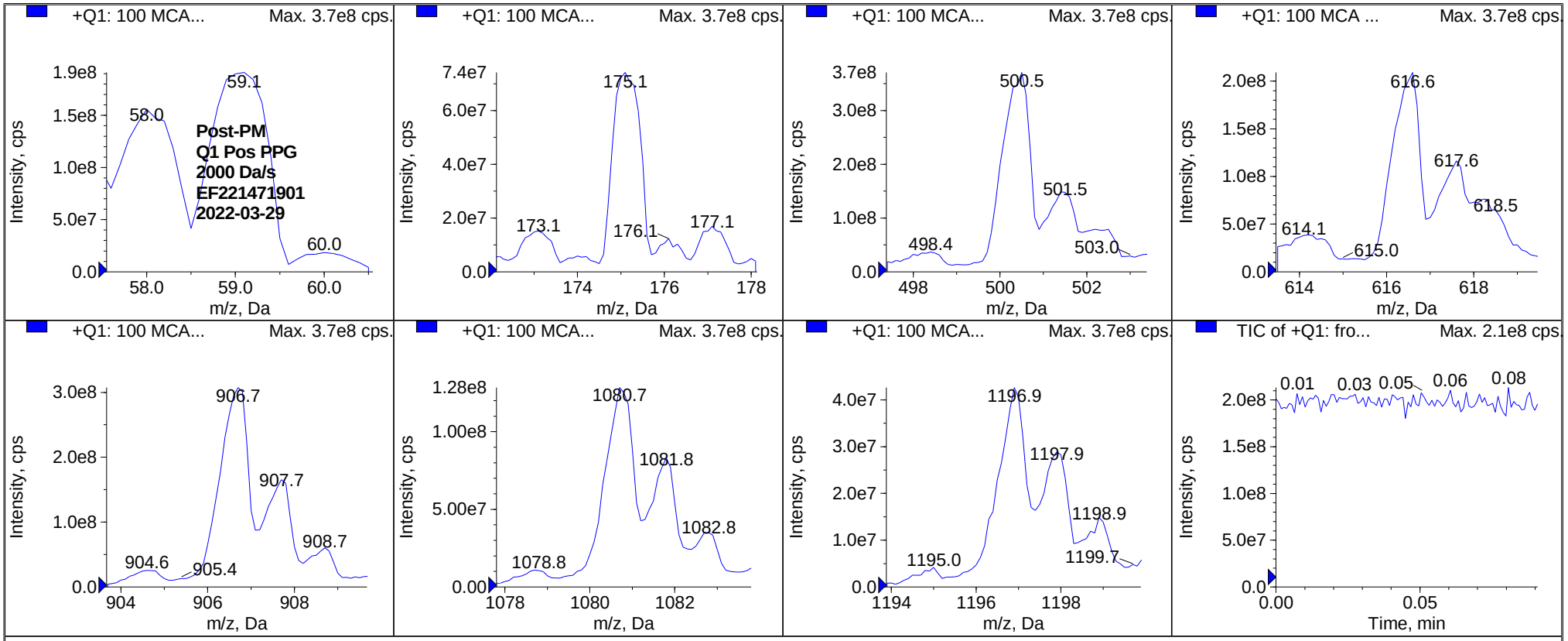
Peak List for " +Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329103224.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0567	1.2868e8	0.7314	-6.7394e-3
2	175.1330	175.1371	4.1638e7	0.7816	-4.1031e-3
3	500.3800	500.3895	1.9959e8	0.7734	-9.4529e-3
4	616.4640	616.4500	1.1571e8	0.7824	0.0140
5	906.6730	906.7145	1.7630e8	0.7657	-0.0415
6	1080.7000	1080.6997	7.4446e7	0.7334	2.9335e-4
7	1196.8830	1196.9351	2.6762e7	0.7649	-0.0521
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



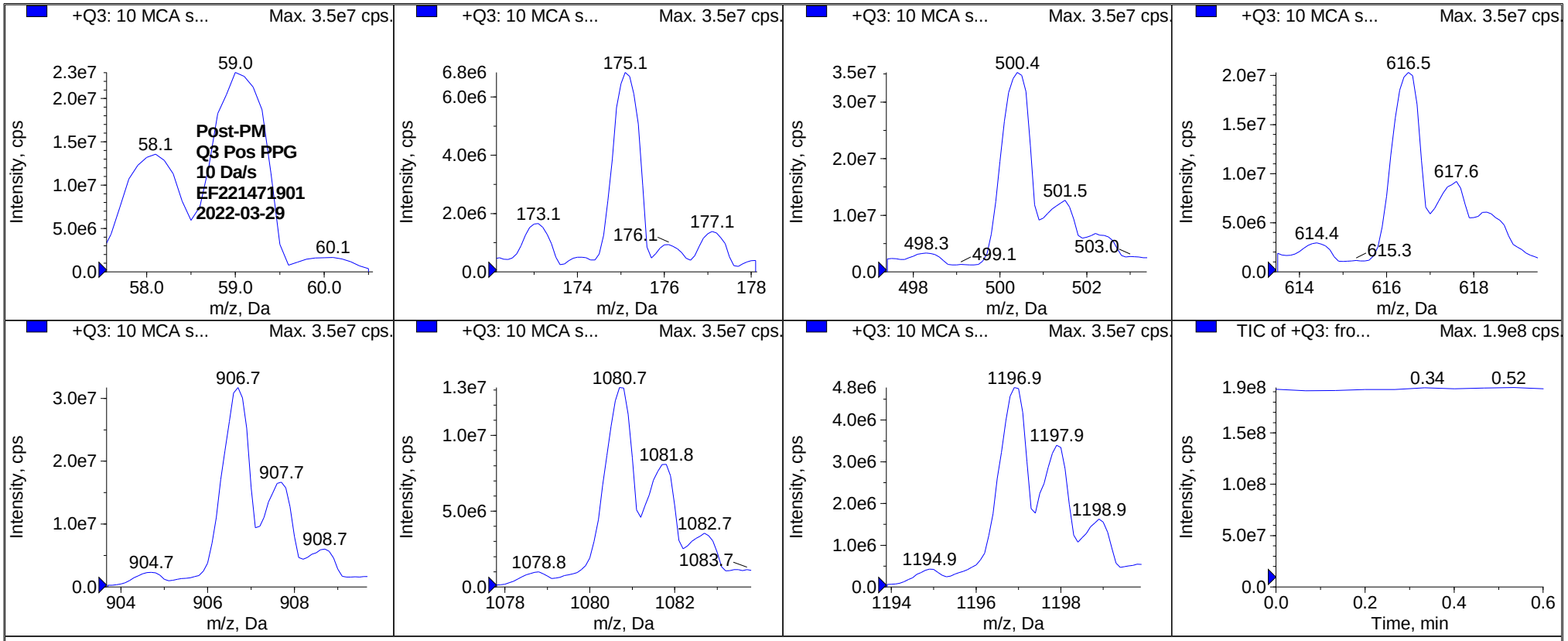
Peak List for " +Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329103449.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0590	1.1535e8	0.7664	-9.0116e-3
2	175.1330	175.1338	3.8970e7	0.7558	-7.6729e-4
3	500.3800	500.4131	2.0491e8	0.7510	-0.0331
4	616.4640	616.4969	1.1023e8	0.7426	-0.0329
5	906.6730	906.6685	1.8130e8	0.7444	4.5480e-3
6	1080.7000	1080.7016	7.9590e7	0.7188	-1.6347e-3
7	1196.8830	1196.8465	2.7900e7	0.7981	0.0365
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



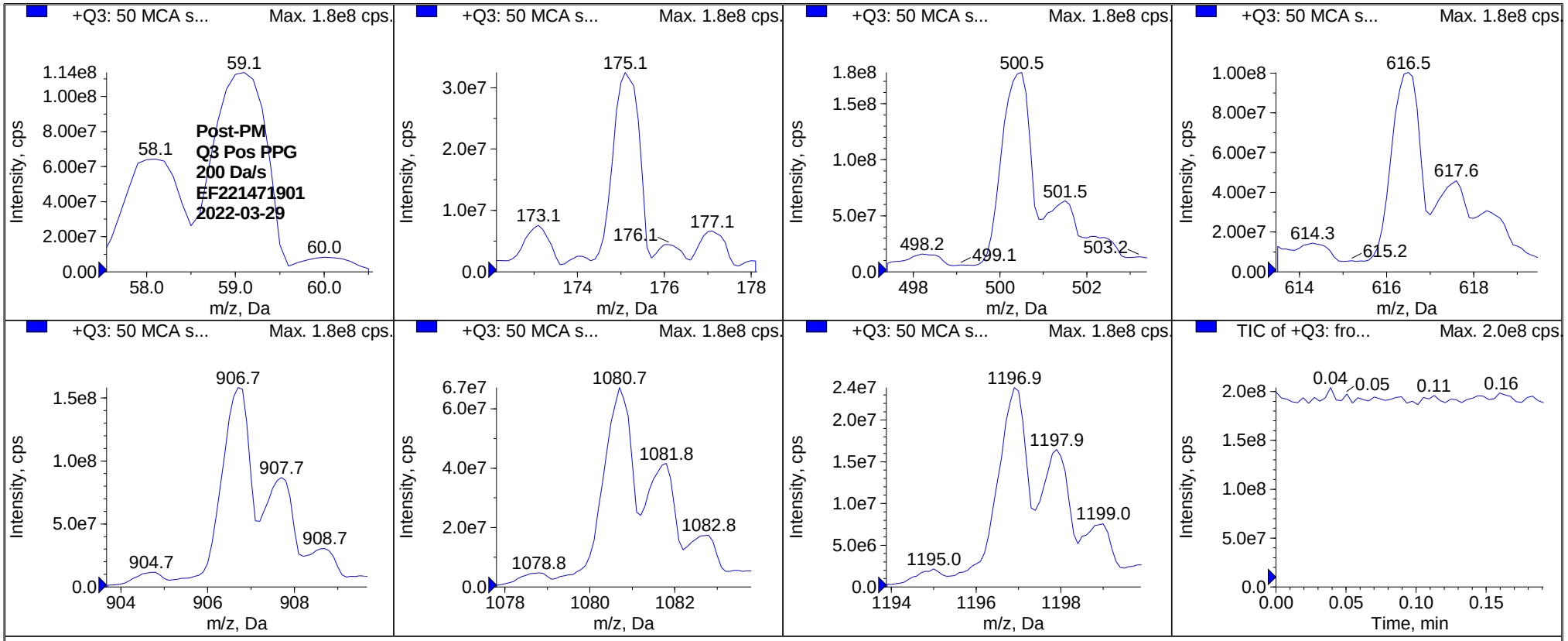
Peak List for " +Q1: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329103739.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0478	1.7324e8	0.7686	2.1777e-3
2	175.1330	175.1298	6.7220e7	0.7562	3.2004e-3
3	500.3800	500.3946	3.3686e8	0.7530	-0.0146
4	616.4640	616.5063	1.8950e8	0.7445	-0.0423
5	906.6730	906.6441	2.7978e8	0.7356	0.0289
6	1080.7000	1080.7219	1.1758e8	0.7771	-0.0219
7	1196.8830	1196.8769	3.8840e7	0.7304	6.1179e-3
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



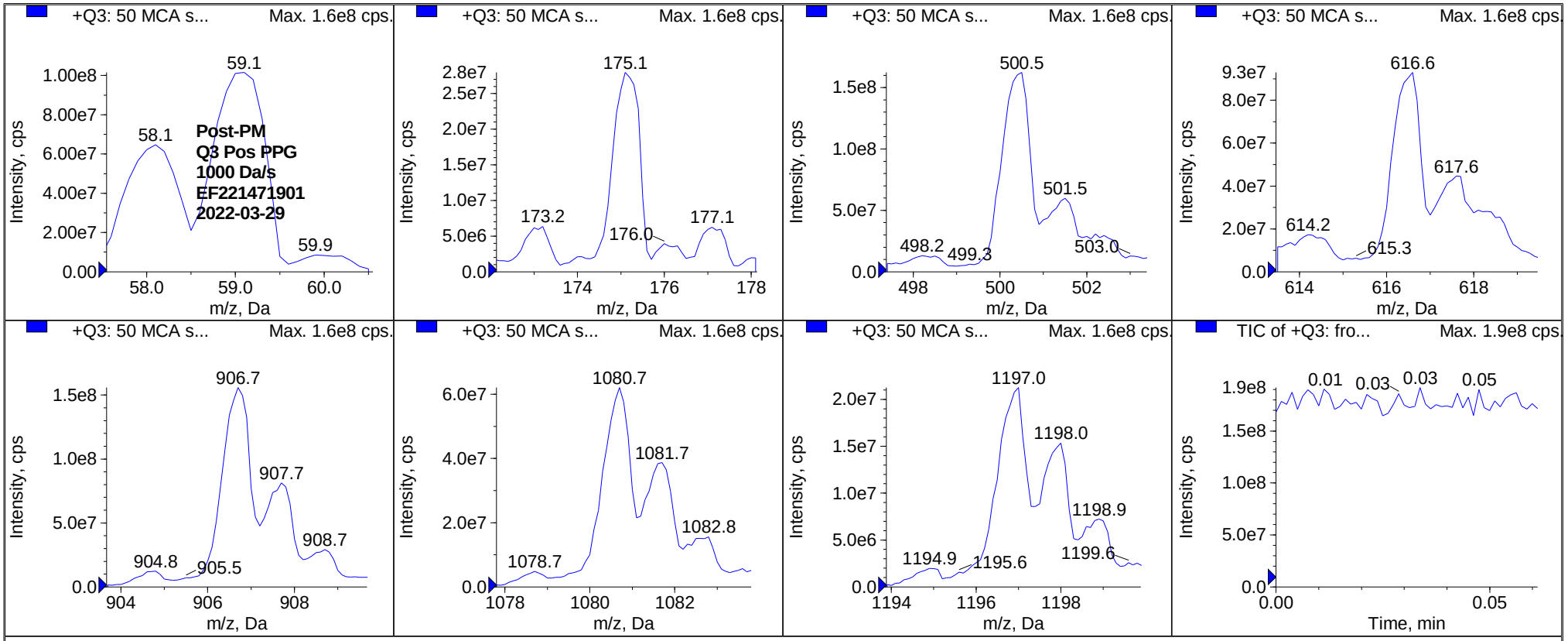
Peak List for " +Q3: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329104352.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0499	2.3012e7	0.7120	9.6523e-5
2	175.1330	175.1291	6.8439e6	0.7088	3.9114e-3
3	500.3800	500.3792	3.5263e7	0.7707	7.9827e-4
4	616.4640	616.4571	2.0309e7	0.7661	6.9039e-3
5	906.6730	906.6652	3.1711e7	0.7194	7.7806e-3
6	1080.7000	1080.7044	1.3154e7	0.7624	-4.4378e-3
7	1196.8830	1196.8923	4.7786e6	0.7795	-9.3479e-3
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



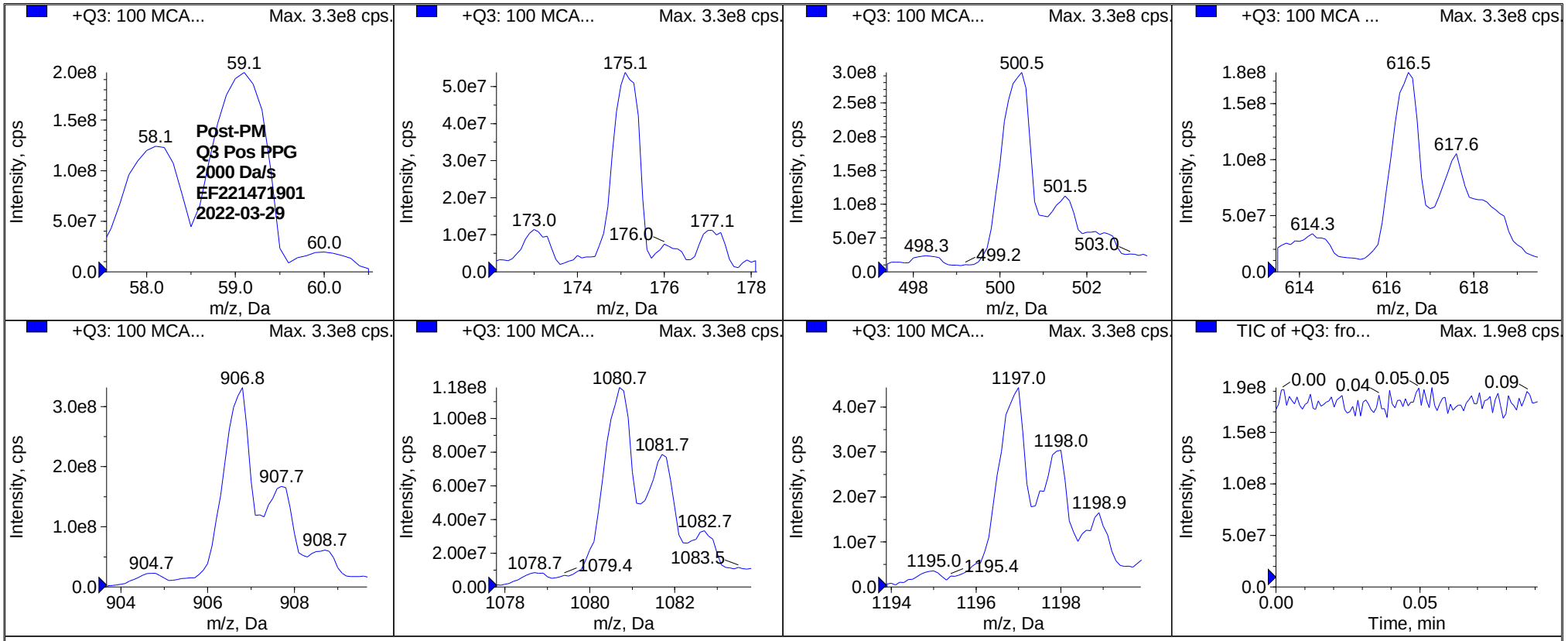
Peak List for " +Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329104752.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0596	1.1369e8	0.7157	-9.5696e-3
2	175.1330	175.1359	3.2490e7	0.7080	-2.8725e-3
3	500.3800	500.3901	1.7791e8	0.7603	-0.0101
4	616.4640	616.4527	1.0031e8	0.7550	0.0113
5	906.6730	906.6800	1.5826e8	0.7335	-7.0216e-3
6	1080.7000	1080.6915	6.7138e7	0.7703	8.4882e-3
7	1196.8830	1196.8947	2.3892e7	0.7711	-0.0117
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



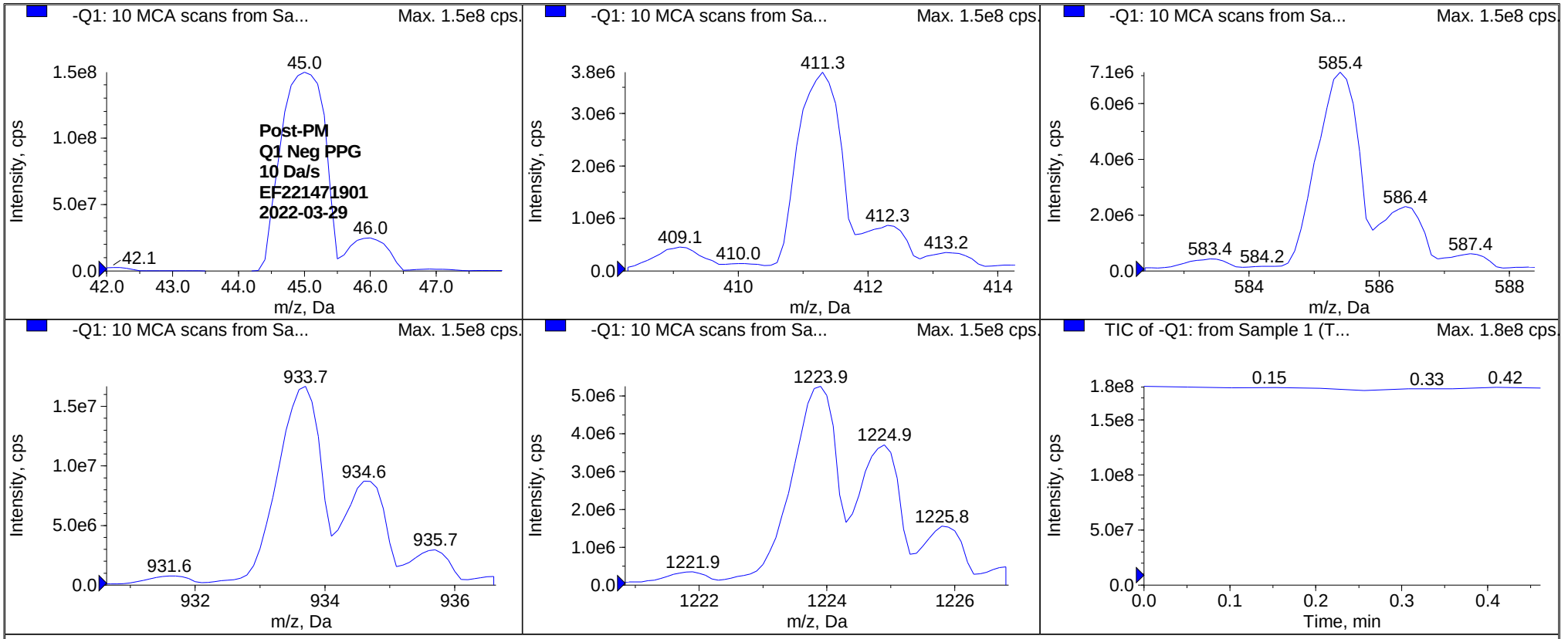
Peak List for " +Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329104908.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0545	1.0153e8	0.6855	-4.5233e-3
2	175.1330	175.1426	2.7960e7	0.7013	-9.5813e-3
3	500.3800	500.3888	1.6231e8	0.7296	-8.7741e-3
4	616.4640	616.4780	9.2960e7	0.7434	-0.0140
5	906.6730	906.6737	1.5581e8	0.7051	-6.6833e-4
6	1080.7000	1080.6506	6.2060e7	0.7361	0.0494
7	1196.8830	1196.9046	2.1250e7	0.7794	-0.0216
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



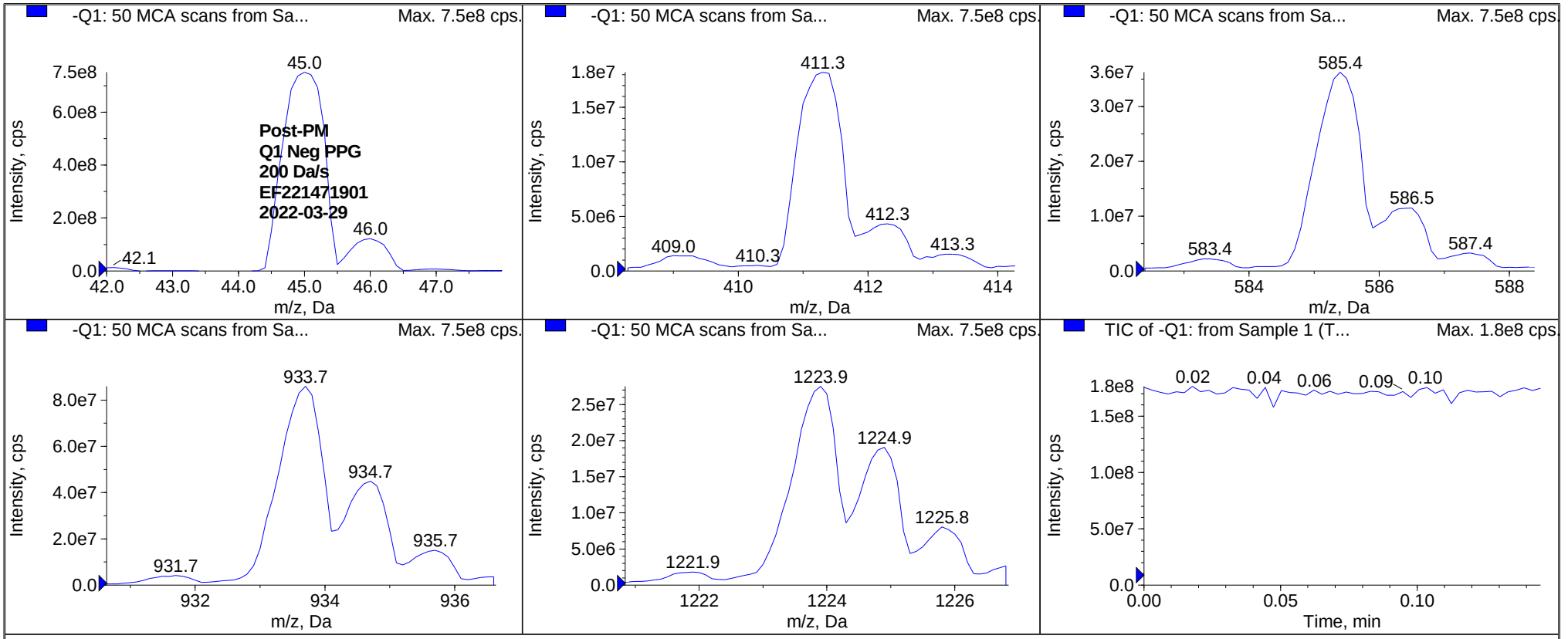
Peak List for " +Q3: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329105050.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0544	1.9710e8	0.7244	-4.3540e-3
2	175.1330	175.1349	5.3820e7	0.7028	-1.8718e-3
3	500.3800	500.3855	2.9512e8	0.7739	-5.5084e-3
4	616.4640	616.4470	1.7772e8	0.7368	0.0170
5	906.6730	906.6925	3.3142e8	0.6946	-0.0195
6	1080.7000	1080.6783	1.1826e8	0.7755	0.0217
7	1196.8830	1196.8985	4.4320e7	0.7550	-0.0155
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



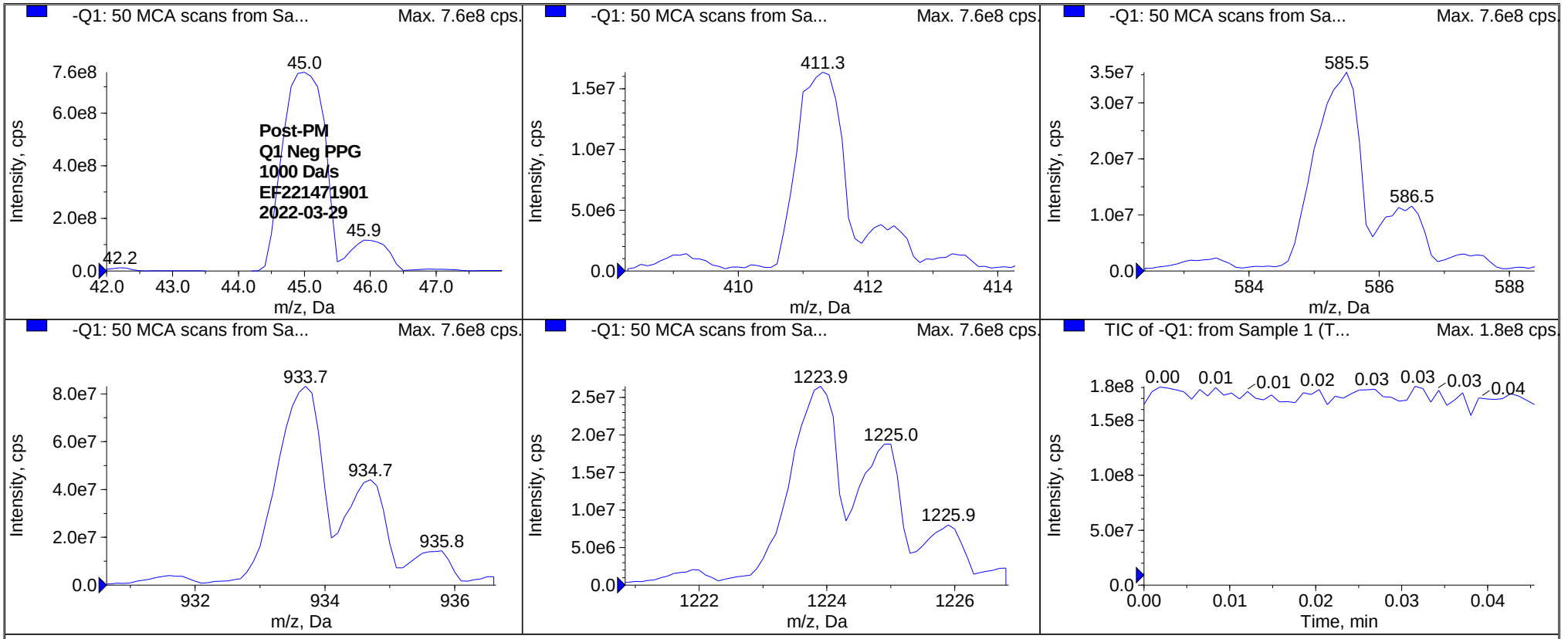
Peak List for " -Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329110109.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9929	1.4950e8	0.7907	5.1028e-3
2	411.2590	411.2530	3.7873e6	0.7795	5.9952e-3
3	585.3850	585.3856	7.1207e6	0.7550	-6.3426e-4
4	933.6360	933.6332	1.6673e7	0.7423	2.7551e-3
5	1223.8450	1223.8413	5.2516e6	0.7609	3.7375e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



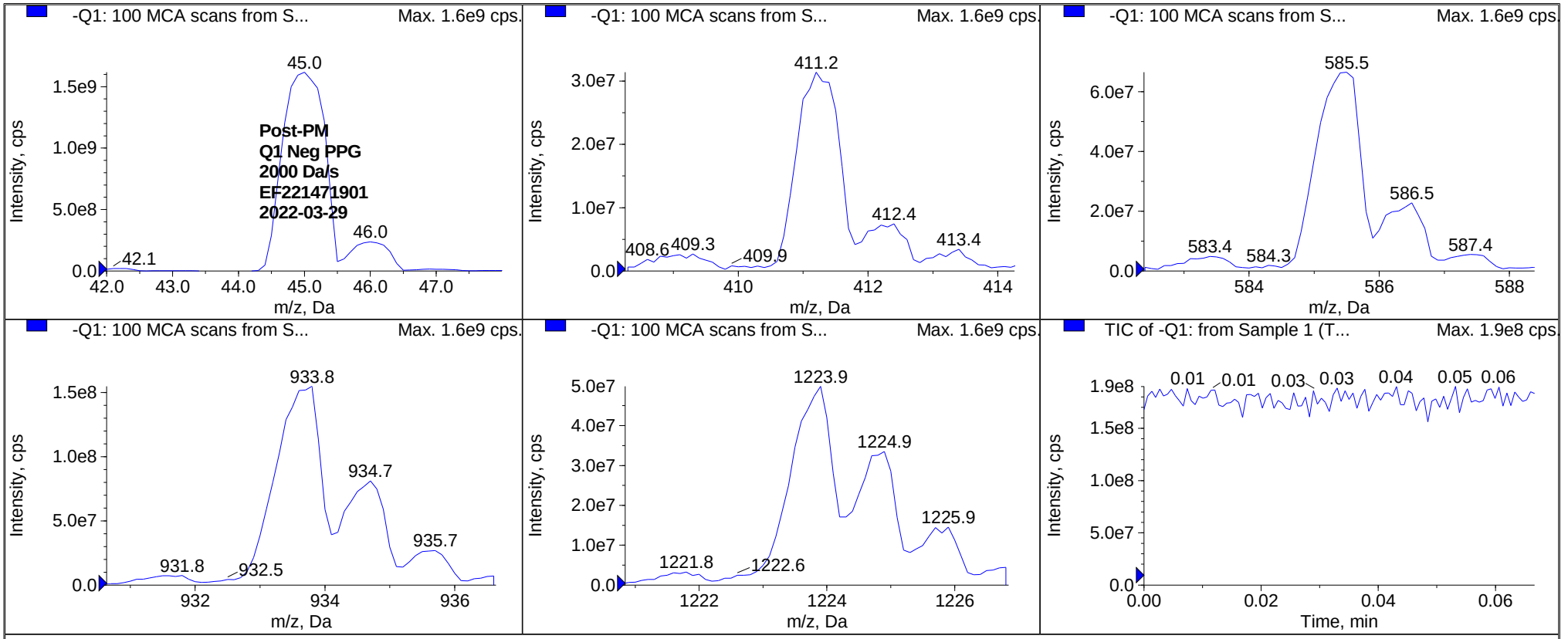
Peak List for " -Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329110438.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0013	7.5110e8	0.7404	-3.2678e-3
2	411.2590	411.2587	1.8222e7	0.7889	3.2027e-4
3	585.3850	585.3901	3.6254e7	0.7848	-5.1143e-3
4	933.6360	933.6512	8.5918e7	0.7722	-0.0152
5	1223.8450	1223.8407	2.7512e7	0.7674	4.2983e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



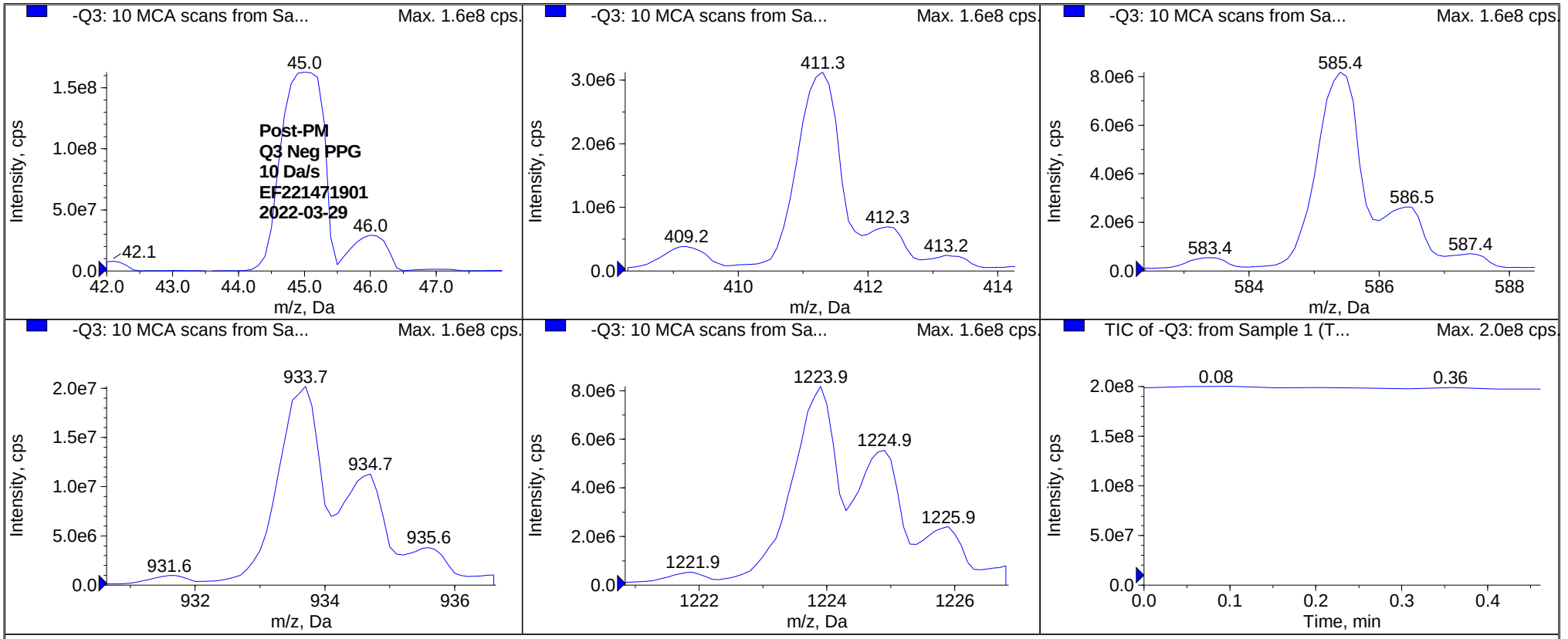
Peak List for " -Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329110750.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0028	7.5518e8	0.7501	-4.7940e-3
2	411.2590	411.2592	1.6350e7	0.7838	-2.0075e-4
3	585.3850	585.3815	3.5450e7	0.7978	3.5437e-3
4	933.6360	933.6335	8.3120e7	0.7736	2.4946e-3
5	1223.8450	1223.8350	2.6470e7	0.7862	9.9944e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



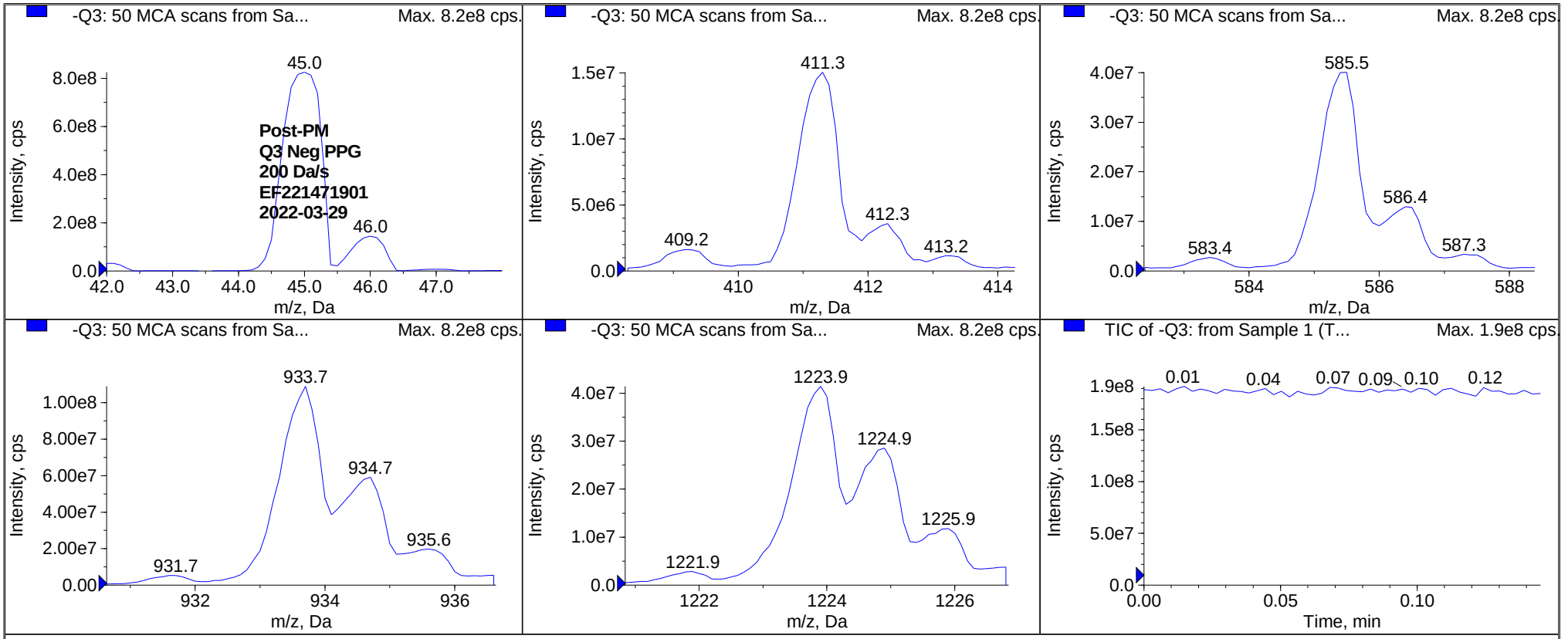
Peak List for " -Q1: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329111124.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9995	1.6177e9	0.7553	-1.4968e-3
2	411.2590	411.2345	3.1400e7	0.7563	0.0245
3	585.3850	585.3879	6.6560e7	0.7732	-2.8641e-3
4	933.6360	933.6855	1.5474e8	0.7803	-0.0495
5	1223.8450	1223.8166	4.9840e7	0.7287	0.0284
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



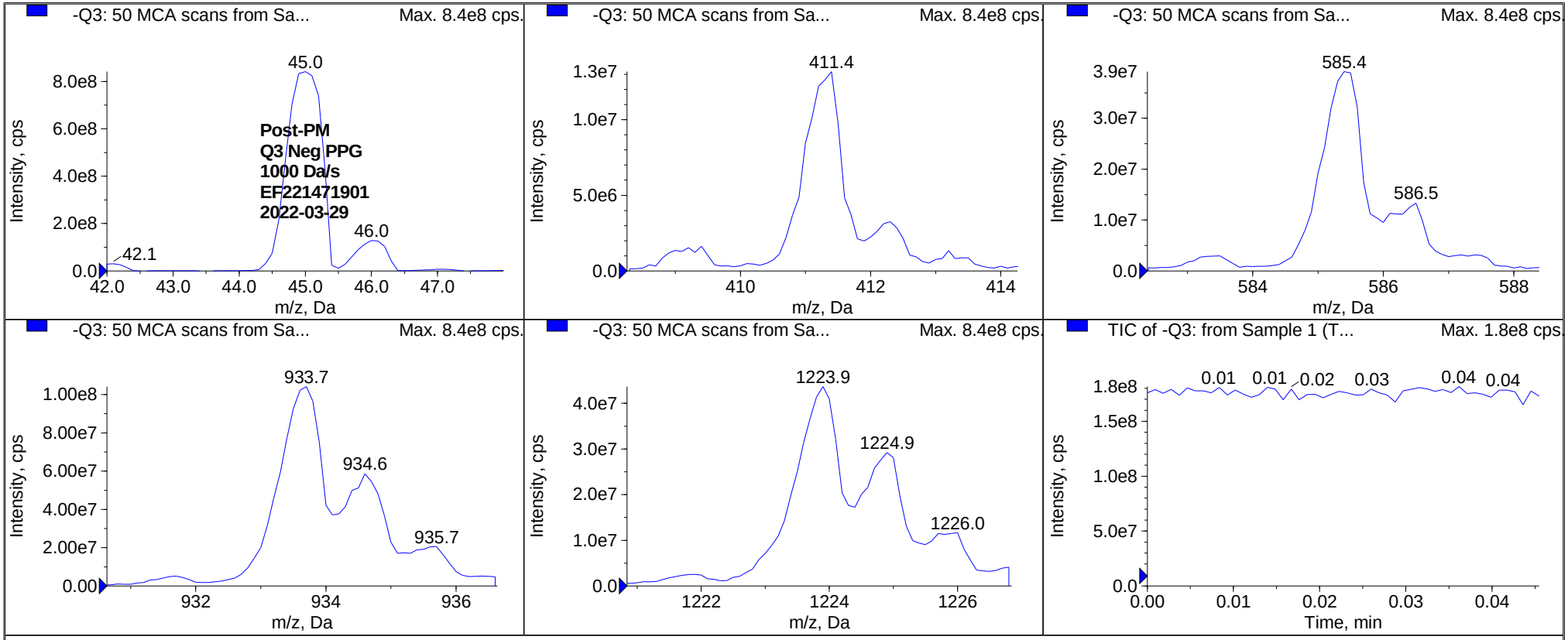
Peak List for " -Q3: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329111432.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9946	1.6274e8	0.7493	3.4119e-3
2	411.2590	411.2460	3.1239e6	0.7100	0.0130
3	585.3850	585.3815	8.1828e6	0.7047	3.5319e-3
4	933.6360	933.6248	2.0190e7	0.7152	0.0112
5	1223.8450	1223.8403	8.1758e6	0.7510	4.6541e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



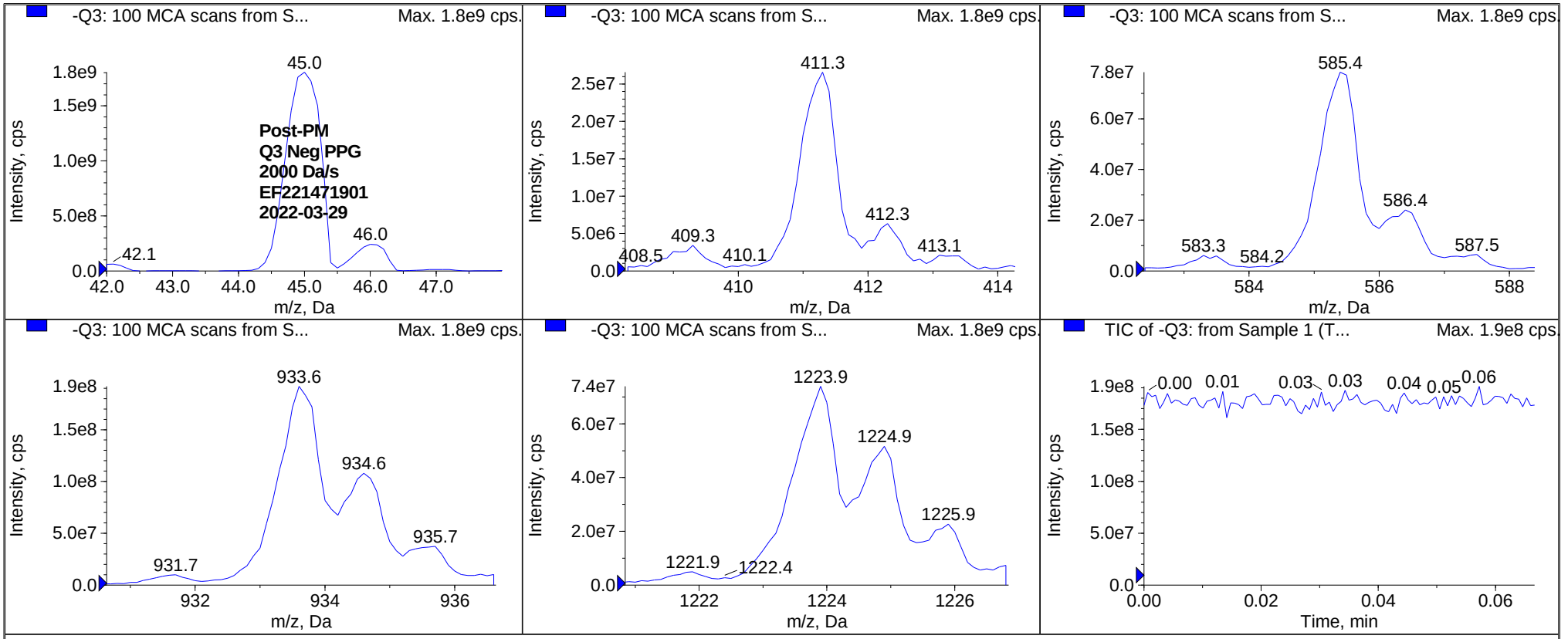
Peak List for " -Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329111734.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9698	8.2497e8	0.6793	0.0282
2	411.2590	411.2470	1.5058e7	0.6746	0.0120
3	585.3850	585.3925	4.0100e7	0.6480	-7.4734e-3
4	933.6360	933.6438	1.0896e8	0.7112	-7.7670e-3
5	1223.8450	1223.8391	4.1414e7	0.7681	5.8964e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



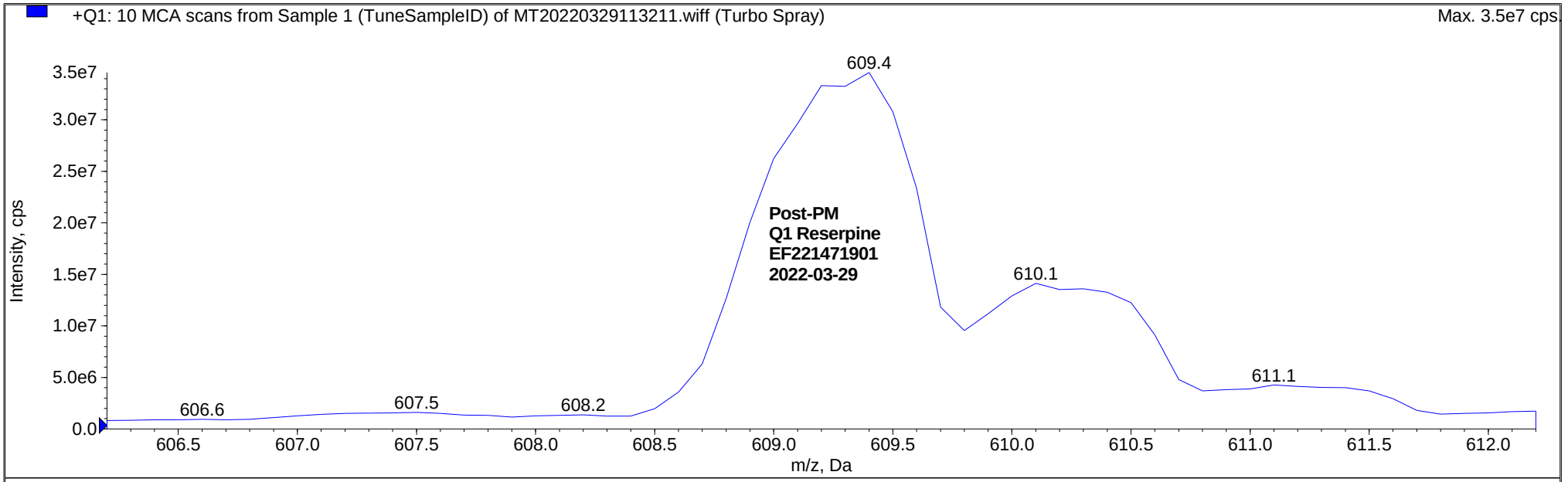
Peak List for " -Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329111856.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9945	8.4128e8	0.6203	3.4701e-3
2	411.2590	411.2796	1.3180e7	0.6161	-0.0206
3	585.3850	585.3864	3.9160e7	0.6791	-1.4278e-3
4	933.6360	933.6402	1.0412e8	0.7243	-4.1525e-3
5	1223.8450	1223.8481	4.3640e7	0.7495	-3.0811e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



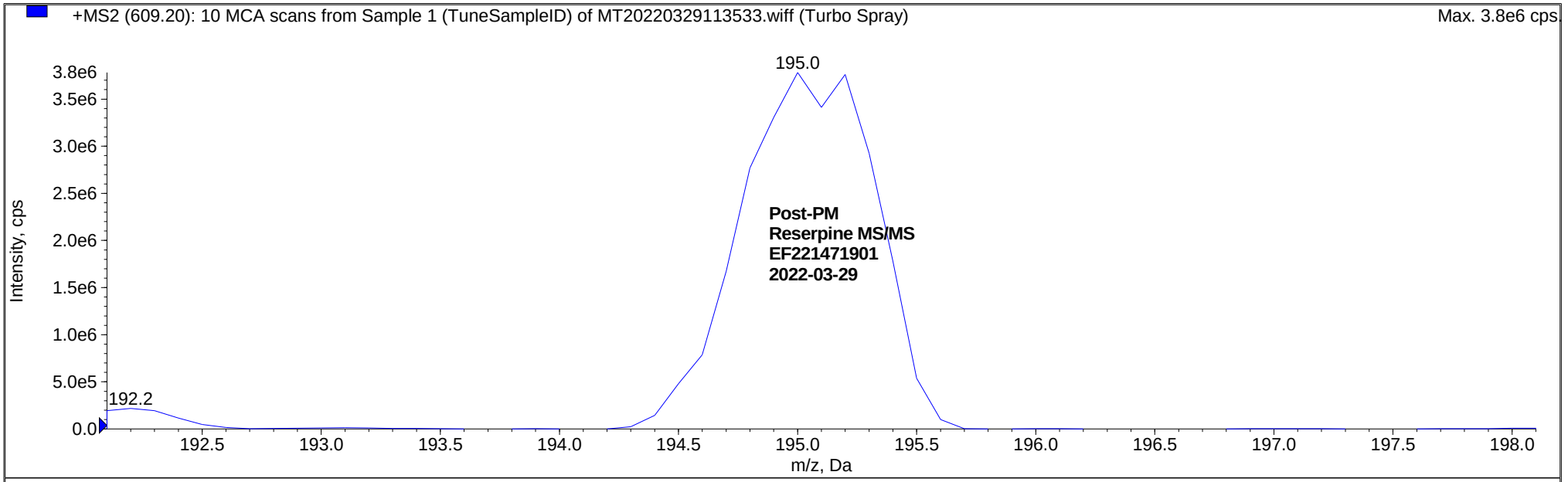
Peak List for " -Q3: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329112011.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9938	1.8050e9	0.6119	4.1642e-3
2	411.2590	411.2452	2.6580e7	0.6085	0.0138
3	585.3850	585.3882	7.8360e7	0.6470	-3.1506e-3
4	933.6360	933.6275	1.9174e8	0.7168	8.5377e-3
5	1223.8450	1223.8442	7.3900e7	0.7699	7.8466e-4
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



Peak List for " +Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329113211.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	195.1000	n/a	n/a	n/a	n/a
2	609.2810	609.2943	3.4591e7	0.7899	-0.0133



Peak List for " +MS2 (609.20): 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329113533.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	195.1000	195.0604	3.7822e6	0.6705	0.0396
2	609.2810	n/a	n/a	n/a	n/a

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-28.d
Lims ID: WDM
Client ID:
Sample Type: WDM
Inject. Date: 07-Apr-2022 11:27:08 ALS Bottle#: 20010 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: WDM
Misc. Info.: Plate: 1 Rack: 1 410-0054309-010
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:46:00 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 11:45:40
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.663	0.0		7511478	9.28		92.8	96498	
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.183	0.0		6502619	9.37		93.7	73266	
D 6 13C3 PFBS										
302.00 > 80.00	4.236	4.236	0.0		8054554	8.73		93.8	423655	
D 8 M2-4:2 FTS										
329.00 > 81.00	4.554	4.554	0.0		425601	9.75		104	13240	
D 9 13C5 PFHxA										
318.00 > 273.00	4.594	4.594	0.0		7959514	9.96		99.6	219023	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.721	4.721	0.0		961458	11.1		111	64167	
D 17 13C4 PFHpA										
367.00 > 322.00	4.982	4.982	0.0		8535947	10.2		102	140193	
D 16 13C3 PFHxS										
402.00 > 80.00	4.982	4.982	0.0		7401973	8.95		94.7	1552592	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.331	0.0		266677	9.18		96.6	18442	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.344	5.348	-0.004	0.999	1371990	1.74	Target=2.30		47746	
413.00 > 169.00	5.350	5.348	0.002	1.000	624425		2.20(1.15-3.44)		67876	
D 22 13C8 PFOA										
421.00 > 376.00	5.350	5.350	0.0		8749308	9.58		95.8	742341	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.677	0.0		6792449	9.10		95.2	503418	
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.693	0.0		8727730	9.33		93.3	260966	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 13C6 PFDA										
519.00 > 474.00	6.006	6.006	0.0		9681064	9.57		95.7	460259	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.006	0.0		226001	9.31		97.2	13497	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.114	0.0		12635533	10.2		102	370415	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.155	0.0		2858974	9.87		98.7	1277260	
D 40 13C7 PFUnA										
570.00 > 525.00	6.290	6.290	0.0		9509203	9.25		92.5	264104	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.299	0.0		2281786	10.3		103	502815	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.522	0.0		9970431	9.36		93.6	213443	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.548	0.0		1197661	10.3		103	6633	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.574	0.0		1561510	9.96		99.6	5135	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.714	0.0		1445486	10.4		104	9502	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.740	0.0		1391343	9.89		98.9	10829	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.921	0.0		9859579	9.29		92.9	194585	

QC Flag Legend

Processing Flags

Reagents:

PFC_LB_MOD_00029 Amount Added: 200.00 Units: uL

Report Date: 07-Apr-2022 11:46:01 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-28.d

Injection Date: 07-Apr-2022 11:27:08 Instrument ID: 29347

Lims ID: WDM

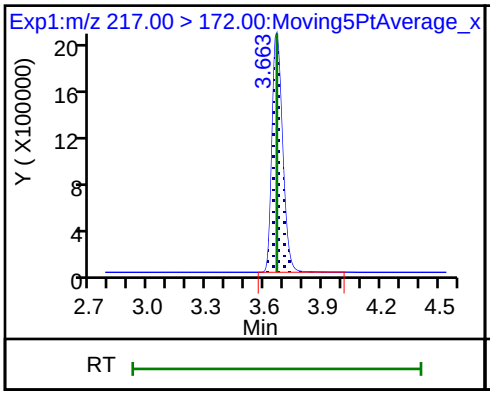
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20010 Worklist Smp#: 10

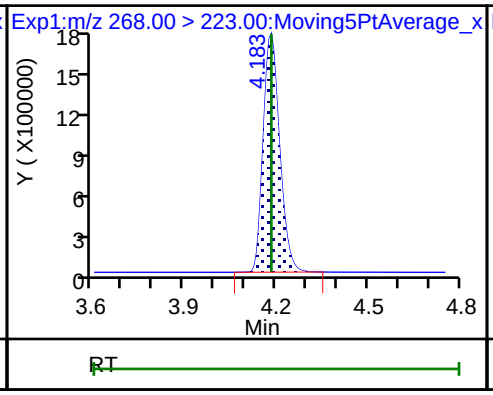
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

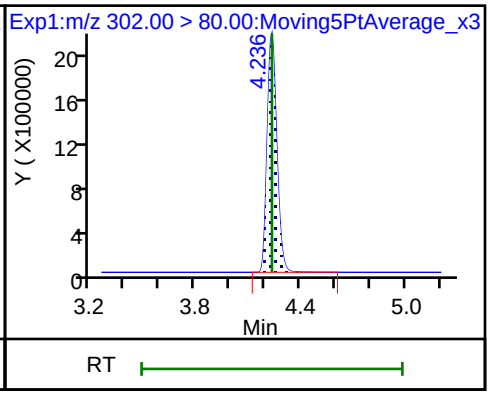
D 2 13C4 PFBA



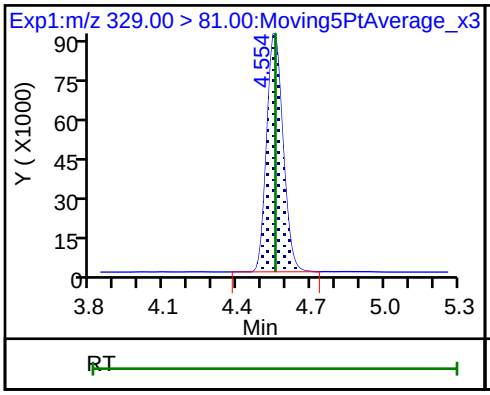
D 4 13C5 PFPeA



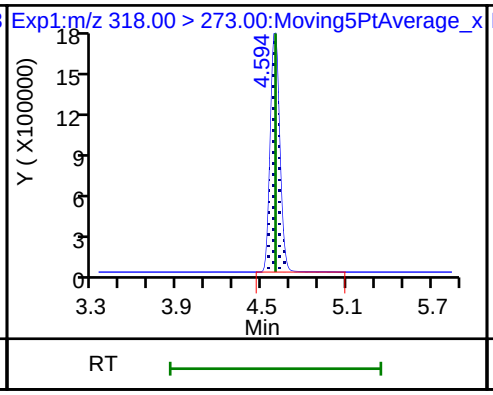
D 6 13C3 PFBS



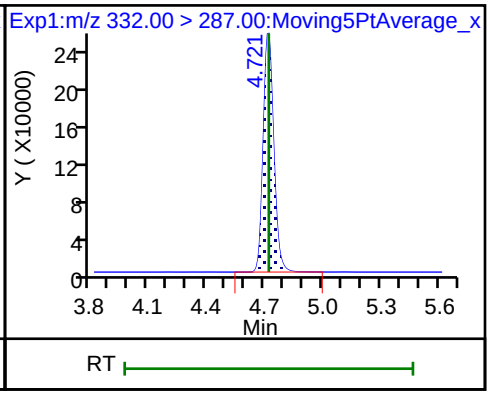
D 8 M2-4:2 FTS



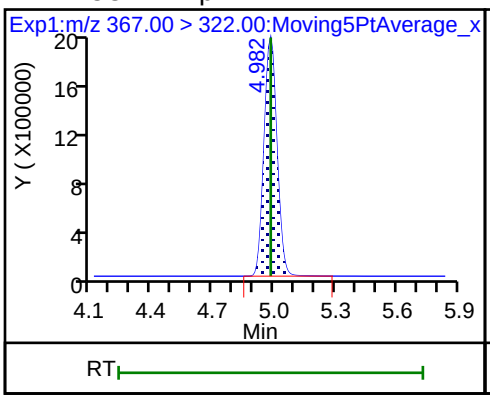
D 9 13C5 PFHxA



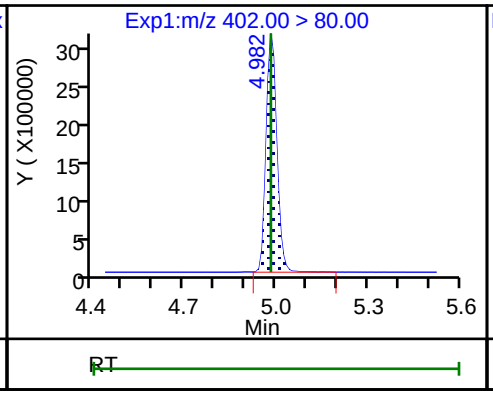
D 13 13C3 HFPO-DA



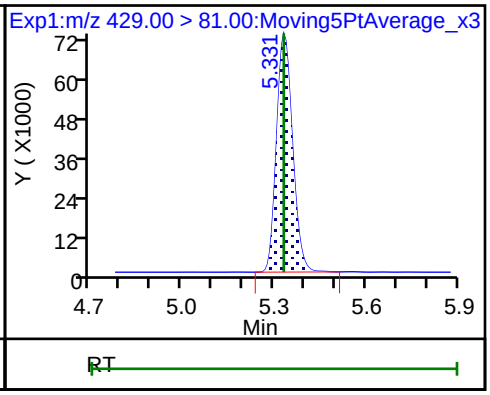
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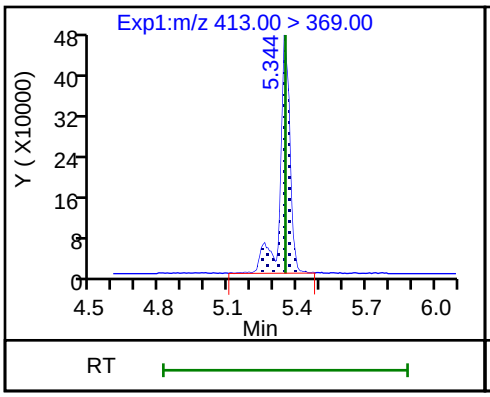
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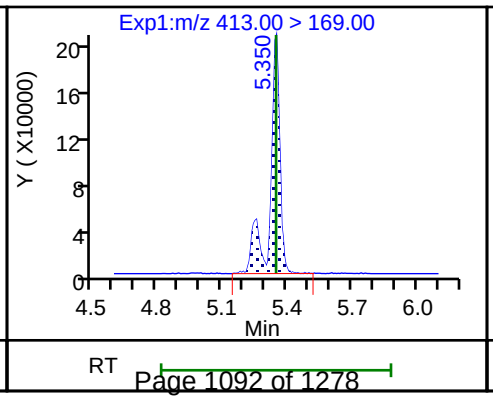
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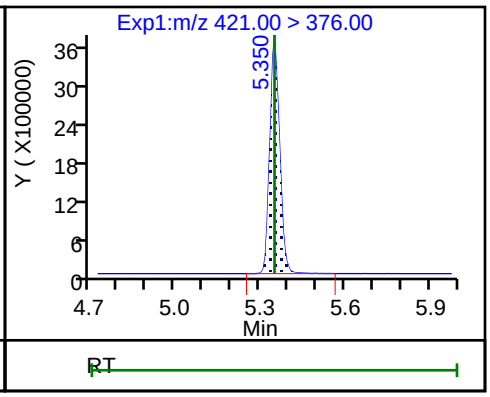
23 Perfluorooctanoic acid



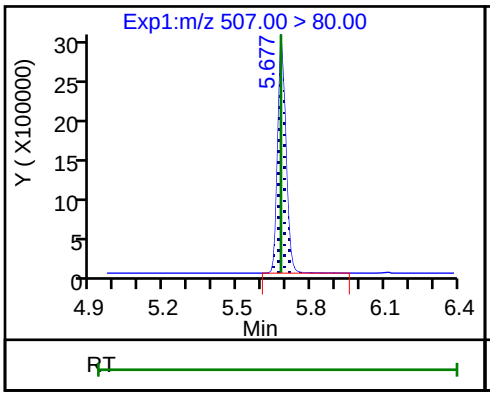
23 Perfluorooctanoic acid



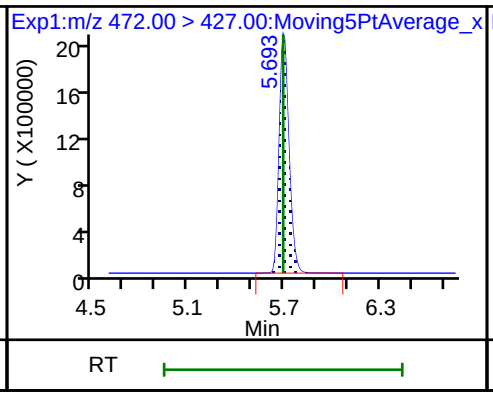
D 22 13C8 PFOA



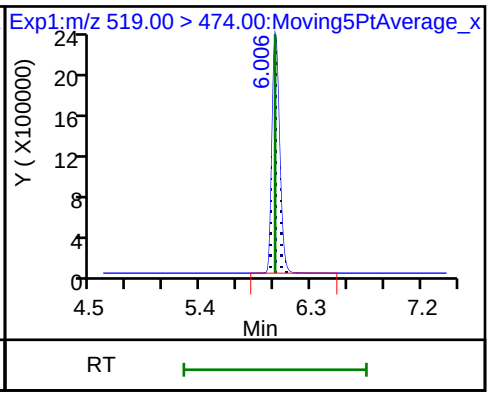
D 25 13C8 PFOS



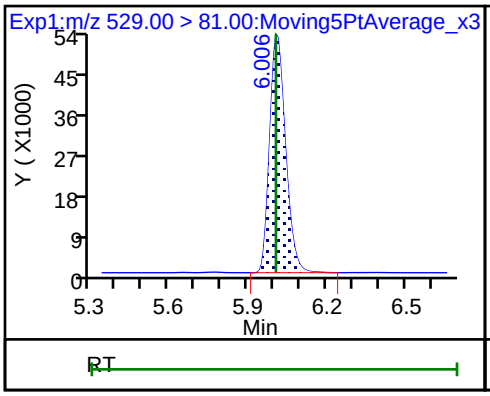
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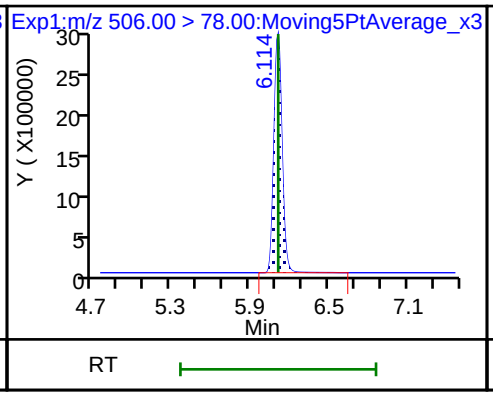
D 32 13C6 PFDA



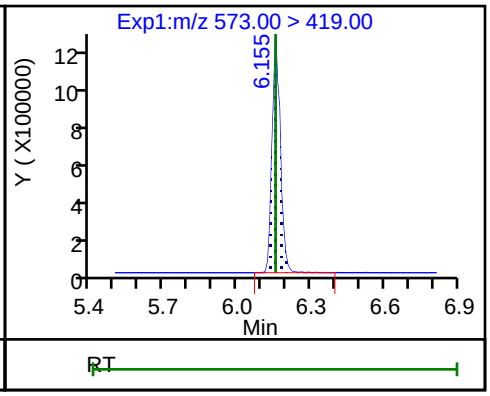
D 31 M2-8:2 FTS



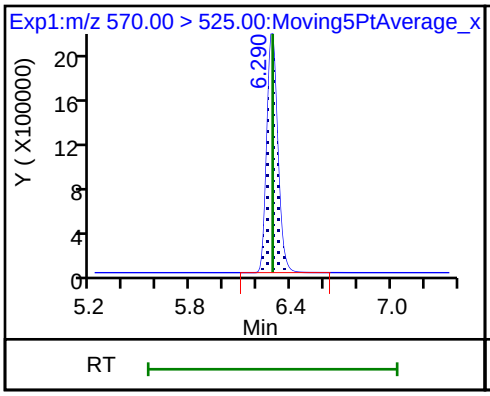
D 35 13C8 FOSA



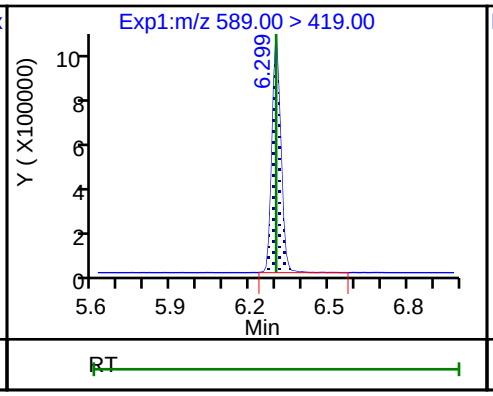
D 37 d3-NMeFOSAA



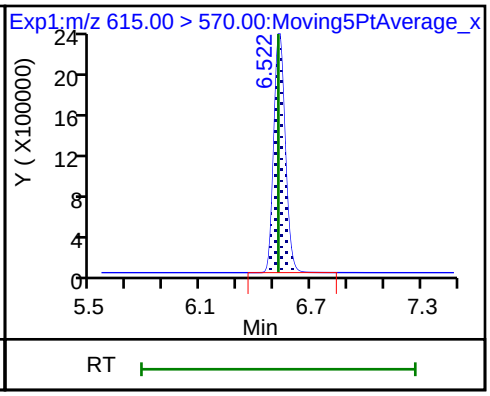
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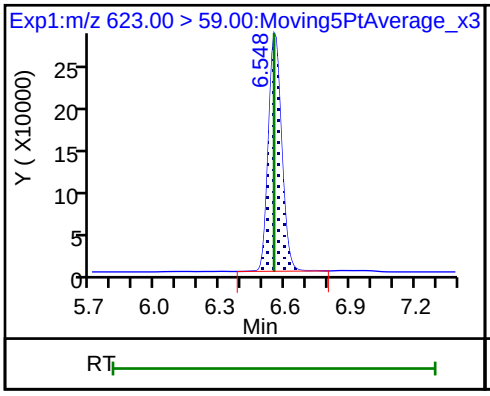
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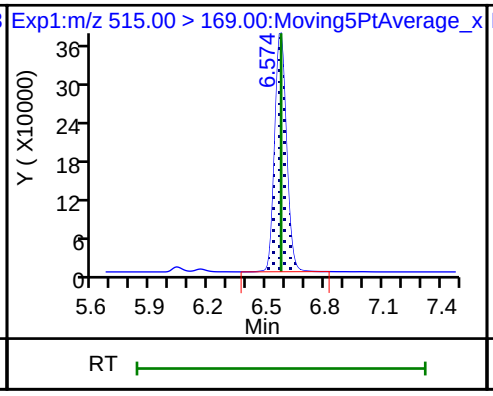
D 45 13C2-PFDoDA



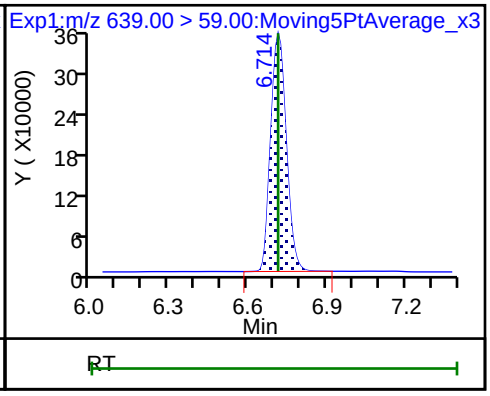
D 44 d7-N-MeFOSE-M



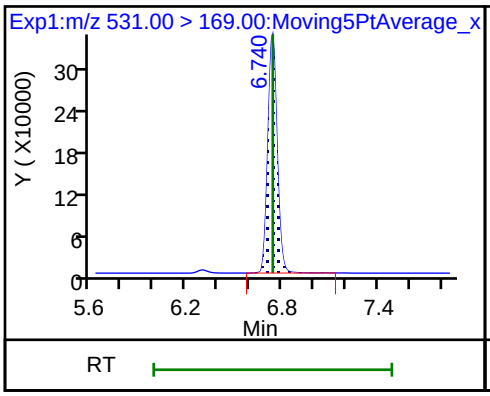
D 49 d3-NMePFOSA



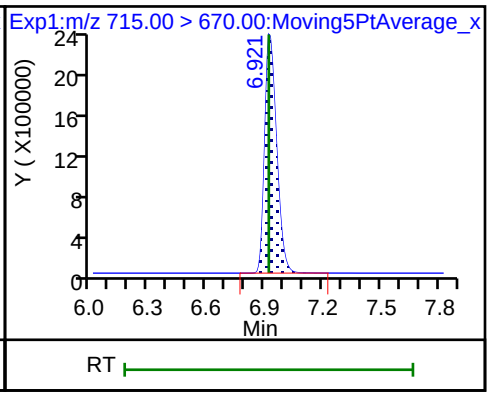
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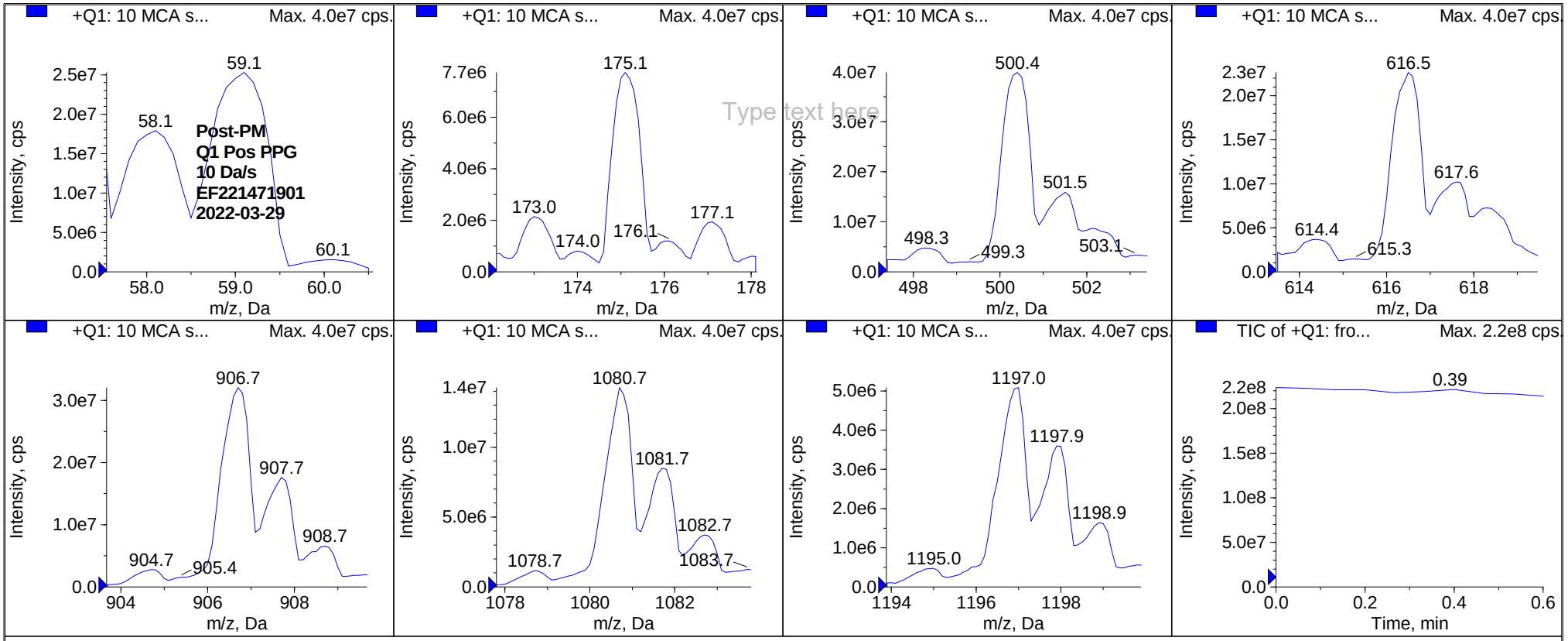
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D 58 13C2 PFTeDA

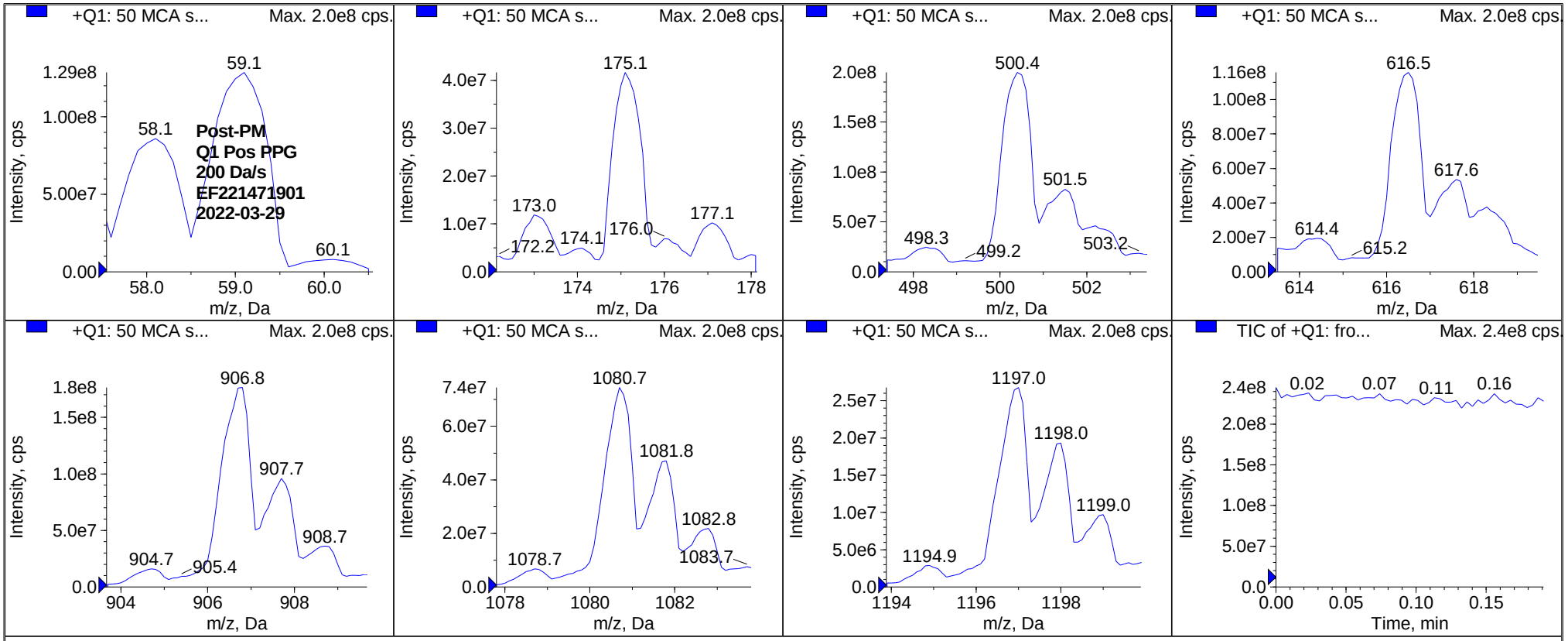


LM29347



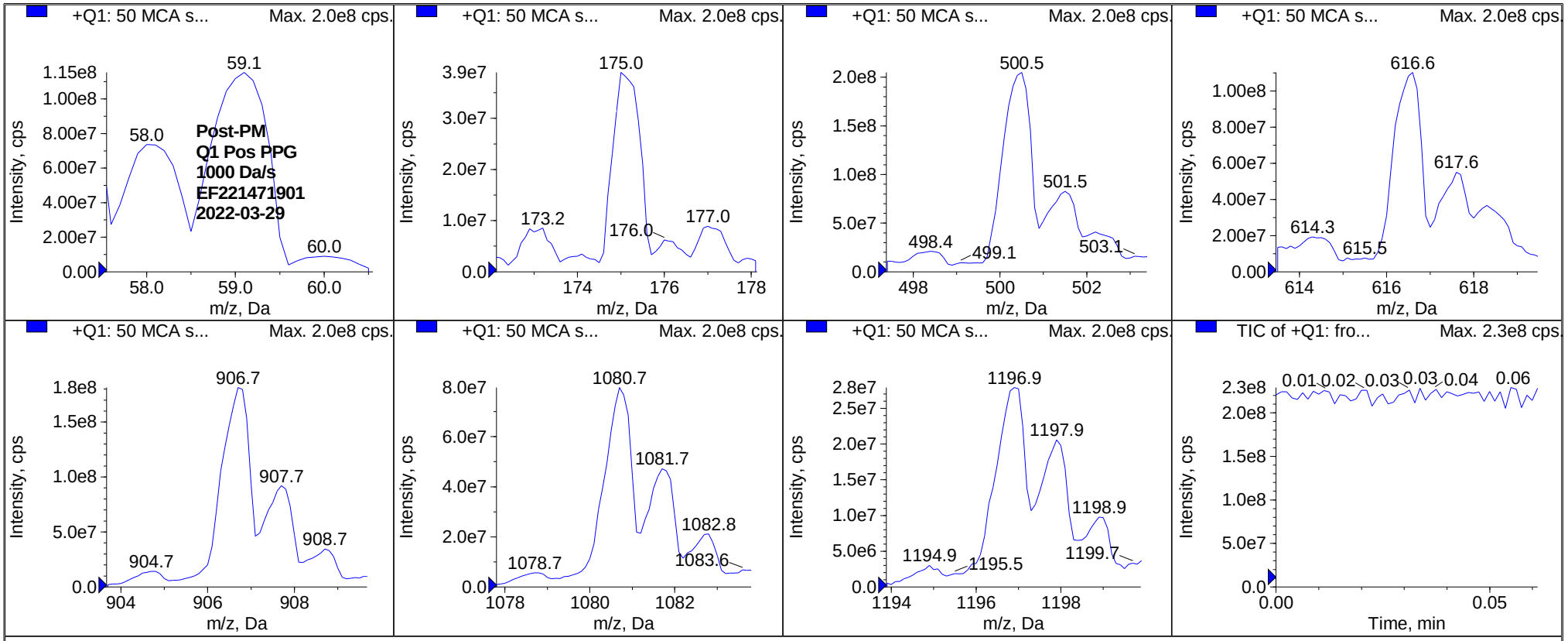
Peak List for " +Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329102559.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0516	2.5295e7	0.7704	-1.5524e-3
2	175.1330	175.1179	7.7432e6	0.7526	0.0151
3	500.3800	500.3730	3.9852e7	0.7483	7.0059e-3
4	616.4640	616.4639	2.2651e7	0.7823	1.3455e-4
5	906.6730	906.6598	3.2046e7	0.7522	0.0132
6	1080.7000	1080.7080	1.4256e7	0.7170	-8.0314e-3
7	1196.8830	1196.9119	5.0874e6	0.7511	-0.0289
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



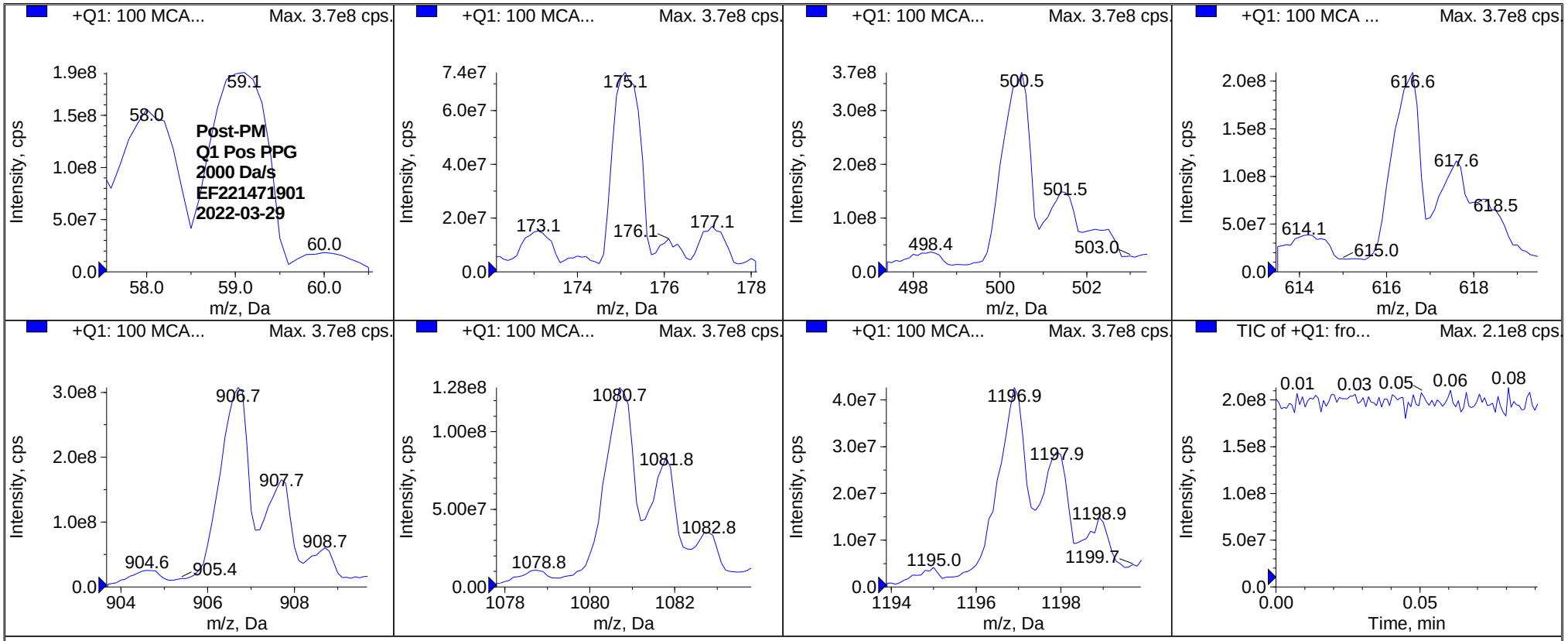
Peak List for " +Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329103224.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0567	1.2868e8	0.7314	-6.7394e-3
2	175.1330	175.1371	4.1638e7	0.7816	-4.1031e-3
3	500.3800	500.3895	1.9959e8	0.7734	-9.4529e-3
4	616.4640	616.4500	1.1571e8	0.7824	0.0140
5	906.6730	906.7145	1.7630e8	0.7657	-0.0415
6	1080.7000	1080.6997	7.4446e7	0.7334	2.9335e-4
7	1196.8830	1196.9351	2.6762e7	0.7649	-0.0521
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



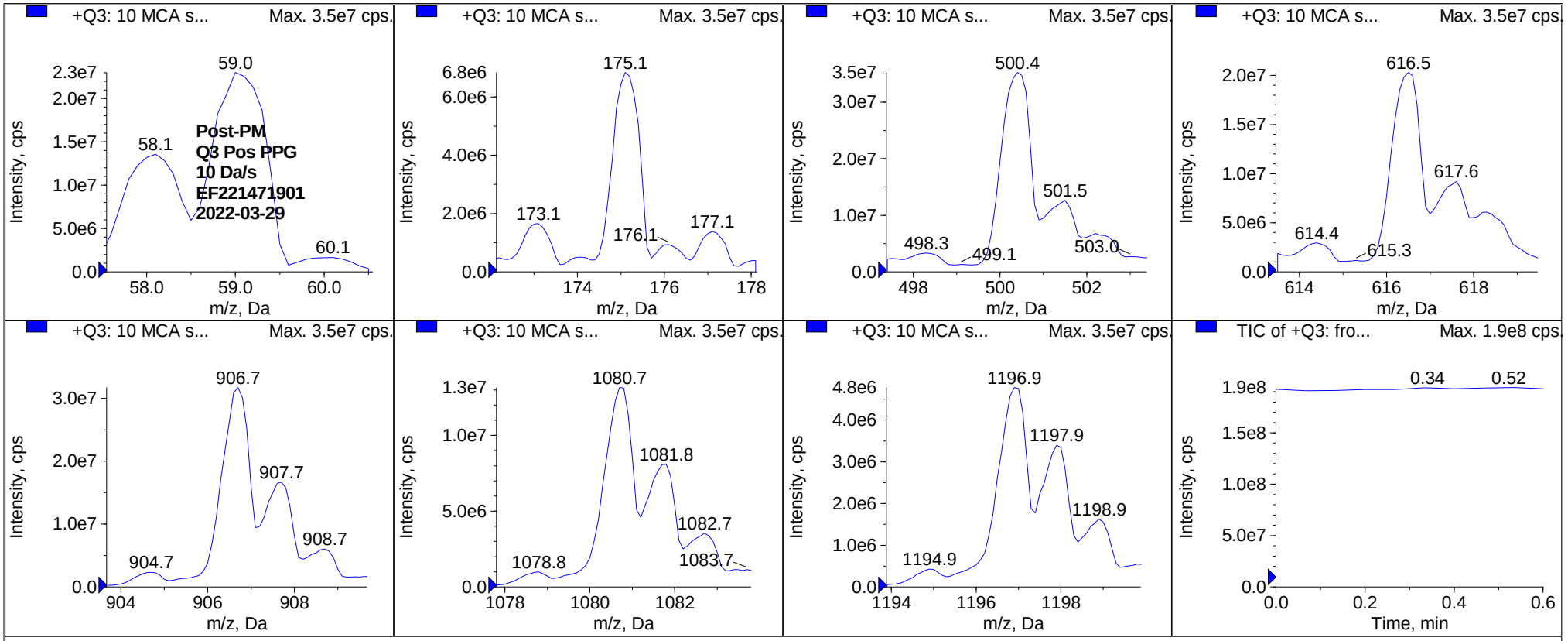
Peak List for " +Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329103449.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0590	1.1535e8	0.7664	-9.0116e-3
2	175.1330	175.1338	3.8970e7	0.7558	-7.6729e-4
3	500.3800	500.4131	2.0491e8	0.7510	-0.0331
4	616.4640	616.4969	1.1023e8	0.7426	-0.0329
5	906.6730	906.6685	1.8130e8	0.7444	4.5480e-3
6	1080.7000	1080.7016	7.9590e7	0.7188	-1.6347e-3
7	1196.8830	1196.8465	2.7900e7	0.7981	0.0365
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



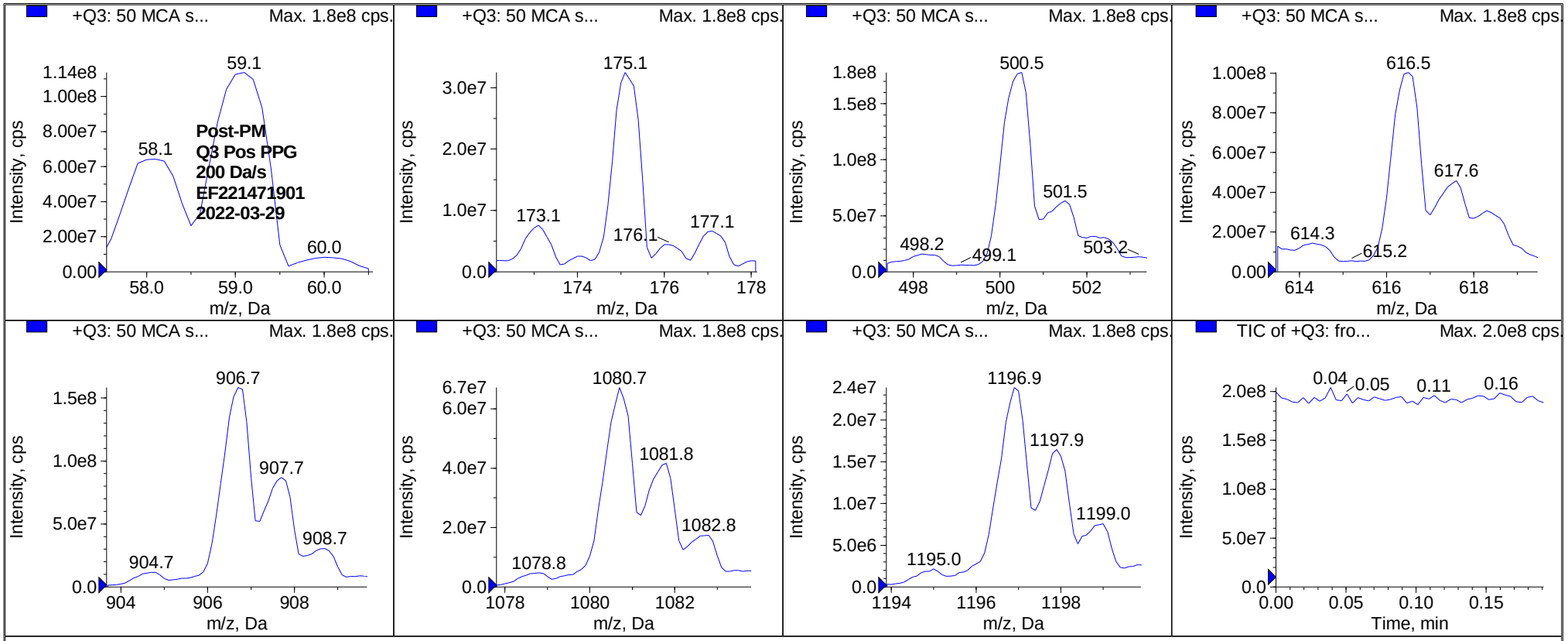
Peak List for " +Q1: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329103739.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0478	1.7324e8	0.7686	2.1777e-3
2	175.1330	175.1298	6.7220e7	0.7562	3.2004e-3
3	500.3800	500.3946	3.3686e8	0.7530	-0.0146
4	616.4640	616.5063	1.8950e8	0.7445	-0.0423
5	906.6730	906.6441	2.7978e8	0.7356	0.0289
6	1080.7000	1080.7219	1.1758e8	0.7771	-0.0219
7	1196.8830	1196.8769	3.8840e7	0.7304	6.1179e-3
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



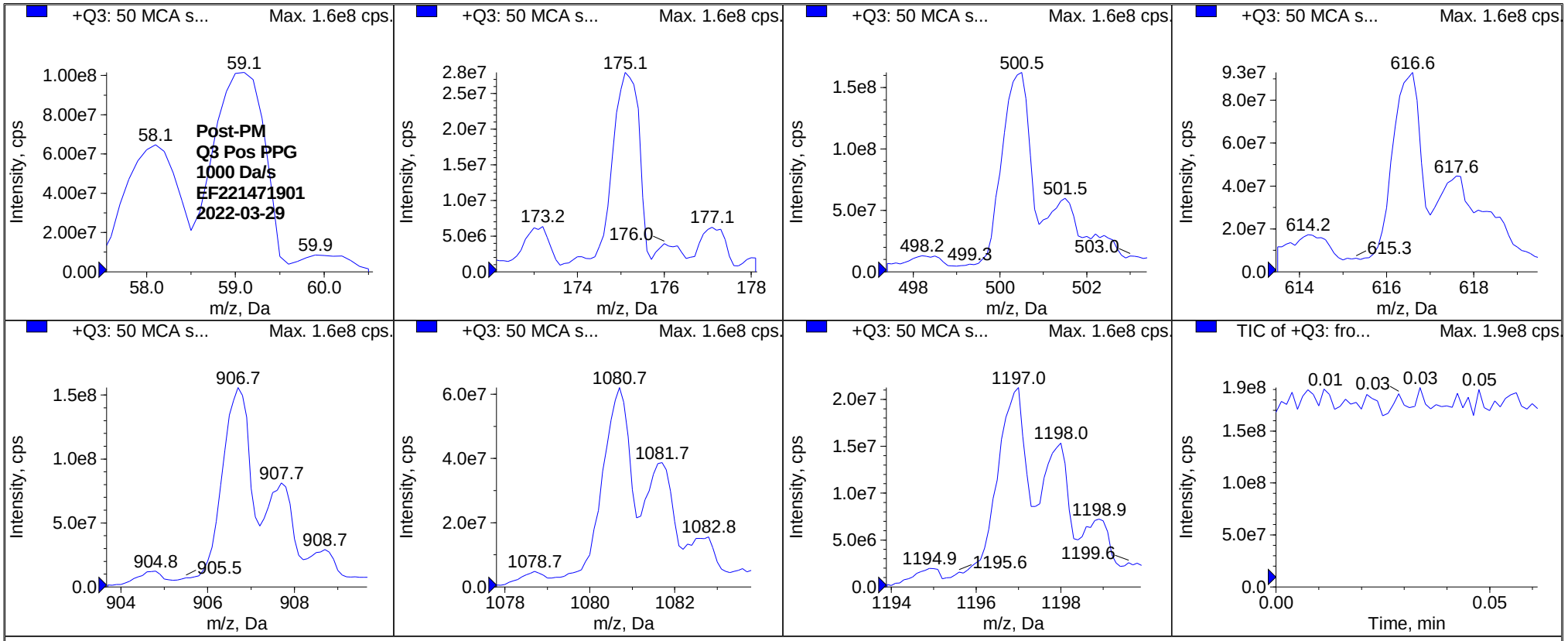
Peak List for " +Q3: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329104352.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0499	2.3012e7	0.7120	9.6523e-5
2	175.1330	175.1291	6.8439e6	0.7088	3.9114e-3
3	500.3800	500.3792	3.5263e7	0.7707	7.9827e-4
4	616.4640	616.4571	2.0309e7	0.7661	6.9039e-3
5	906.6730	906.6652	3.1711e7	0.7194	7.7806e-3
6	1080.7000	1080.7044	1.3154e7	0.7624	-4.4378e-3
7	1196.8830	1196.8923	4.7786e6	0.7795	-9.3479e-3
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



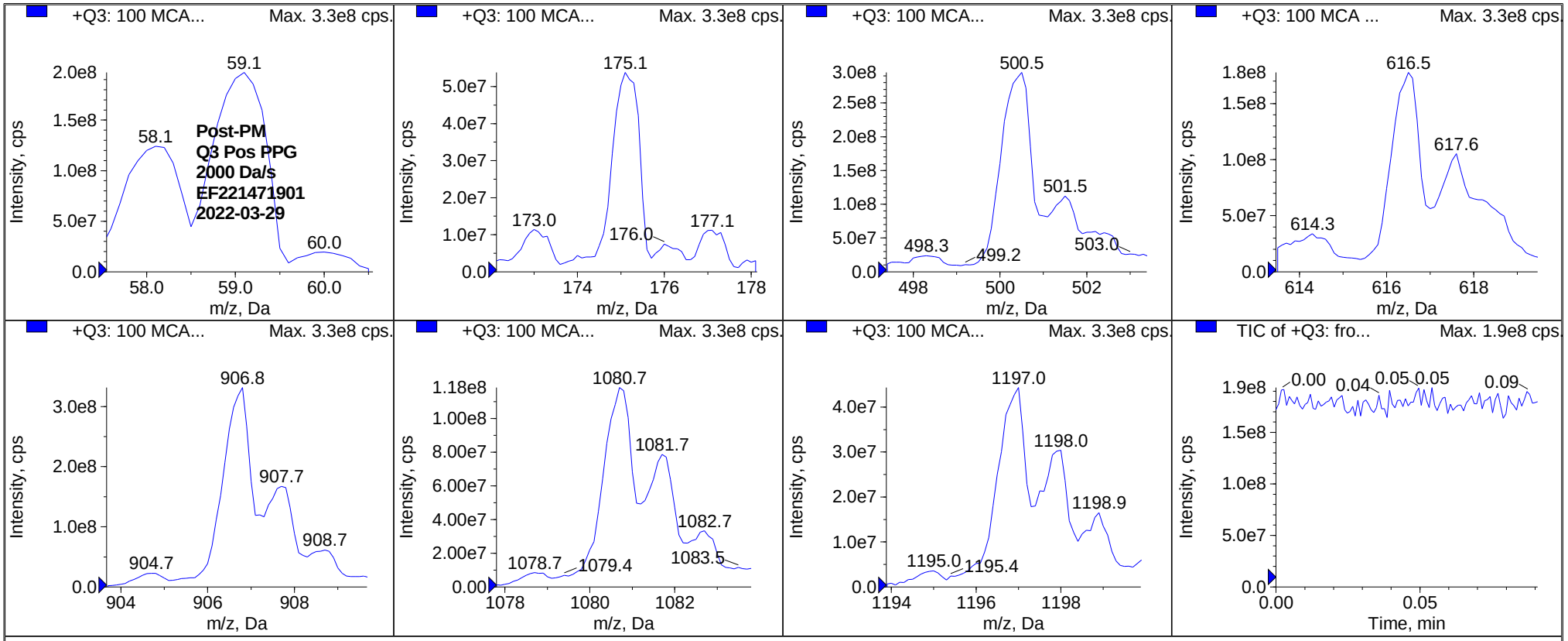
Peak List for " +Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329104752.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0596	1.1369e8	0.7157	-9.5696e-3
2	175.1330	175.1359	3.2490e7	0.7080	-2.8725e-3
3	500.3800	500.3901	1.7791e8	0.7603	-0.0101
4	616.4640	616.4527	1.0031e8	0.7550	0.0113
5	906.6730	906.6800	1.5826e8	0.7335	-7.0216e-3
6	1080.7000	1080.6915	6.7138e7	0.7703	8.4882e-3
7	1196.8830	1196.8947	2.3892e7	0.7711	-0.0117
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



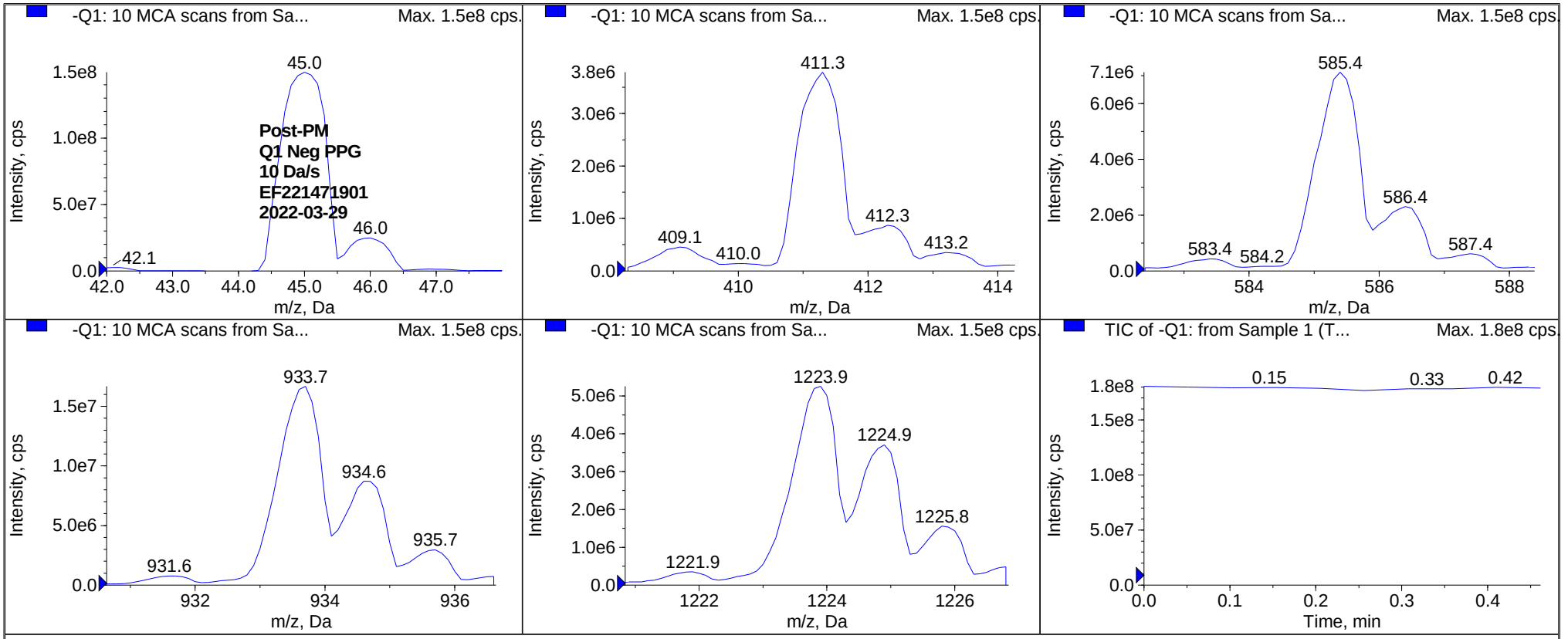
Peak List for " +Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329104908.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0545	1.0153e8	0.6855	-4.5233e-3
2	175.1330	175.1426	2.7960e7	0.7013	-9.5813e-3
3	500.3800	500.3888	1.6231e8	0.7296	-8.7741e-3
4	616.4640	616.4780	9.2960e7	0.7434	-0.0140
5	906.6730	906.6737	1.5581e8	0.7051	-6.6833e-4
6	1080.7000	1080.6506	6.2060e7	0.7361	0.0494
7	1196.8830	1196.9046	2.1250e7	0.7794	-0.0216
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



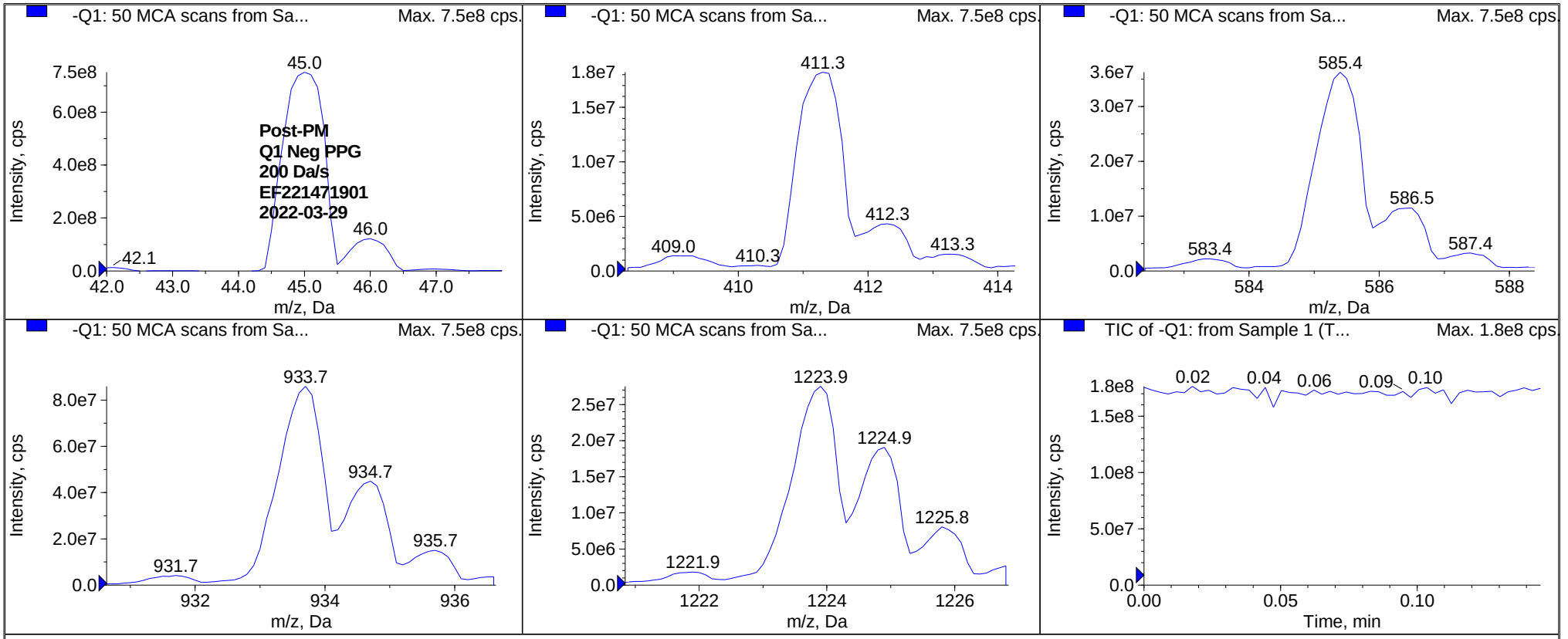
Peak List for " +Q3: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329105050.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	59.0500	59.0544	1.9710e8	0.7244	-4.3540e-3
2	175.1330	175.1349	5.3820e7	0.7028	-1.8718e-3
3	500.3800	500.3855	2.9512e8	0.7739	-5.5084e-3
4	616.4640	616.4470	1.7772e8	0.7368	0.0170
5	906.6730	906.6925	3.3142e8	0.6946	-0.0195
6	1080.7000	1080.6783	1.1826e8	0.7755	0.0217
7	1196.8830	1196.8985	4.4320e7	0.7550	-0.0155
8	1254.9250	n/a	n/a	n/a	n/a
9	1545.1340	n/a	n/a	n/a	n/a



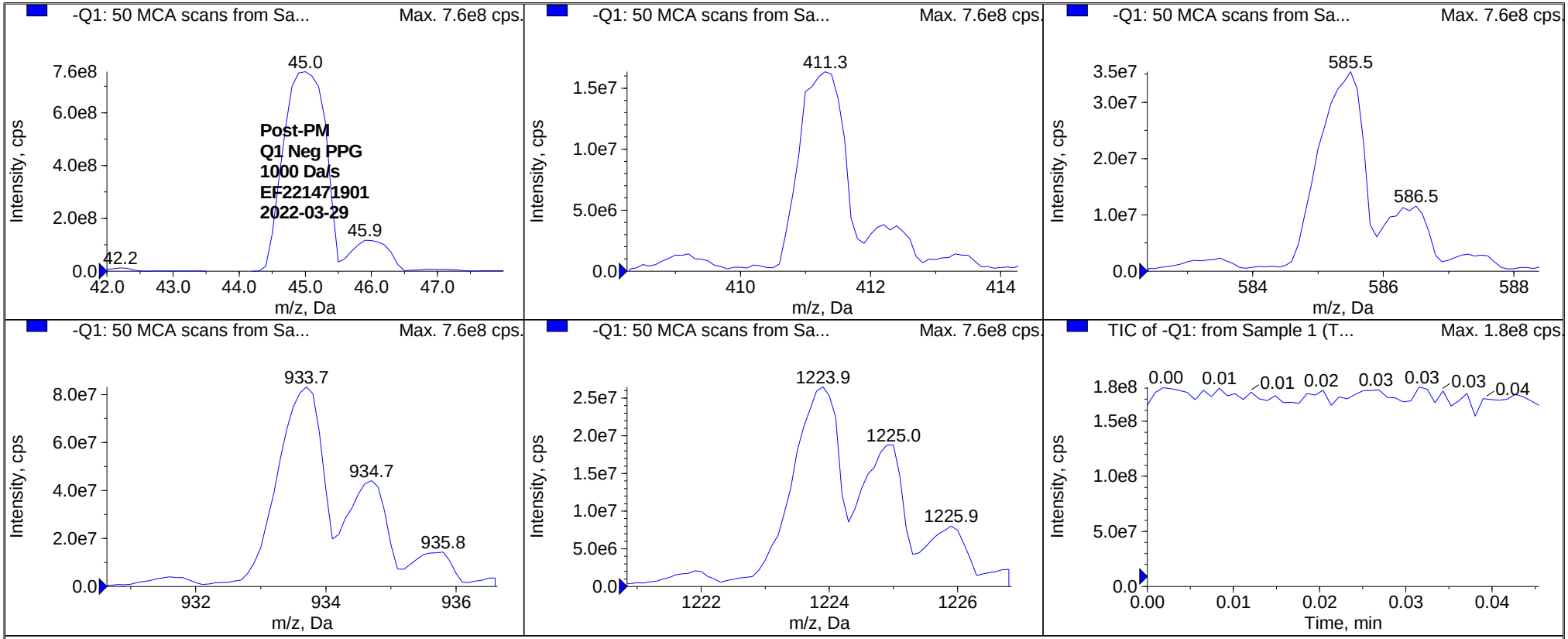
Peak List for " -Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329110109.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9929	1.4950e8	0.7907	5.1028e-3
2	411.2590	411.2530	3.7873e6	0.7795	5.9952e-3
3	585.3850	585.3856	7.1207e6	0.7550	-6.3426e-4
4	933.6360	933.6332	1.6673e7	0.7423	2.7551e-3
5	1223.8450	1223.8413	5.2516e6	0.7609	3.7375e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



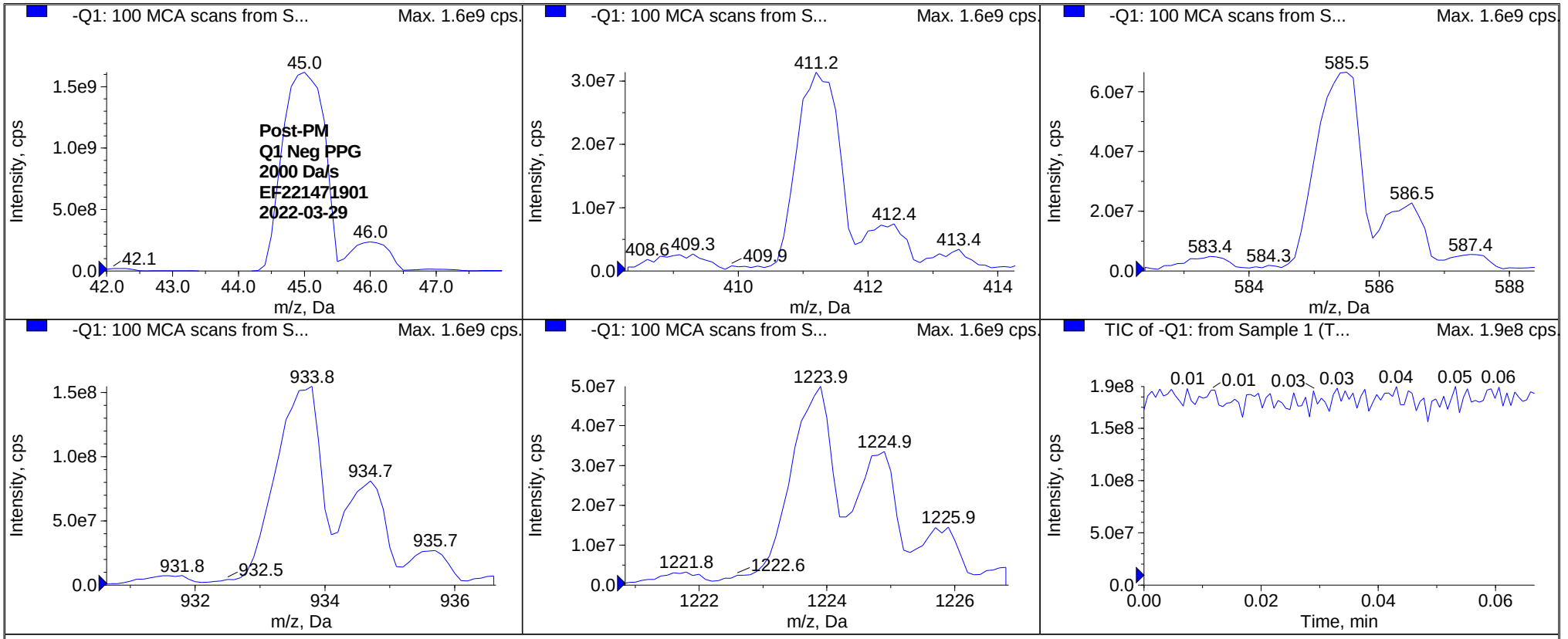
Peak List for " -Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329110438.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0013	7.5110e8	0.7404	-3.2678e-3
2	411.2590	411.2587	1.8222e7	0.7889	3.2027e-4
3	585.3850	585.3901	3.6254e7	0.7848	-5.1143e-3
4	933.6360	933.6512	8.5918e7	0.7722	-0.0152
5	1223.8450	1223.8407	2.7512e7	0.7674	4.2983e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



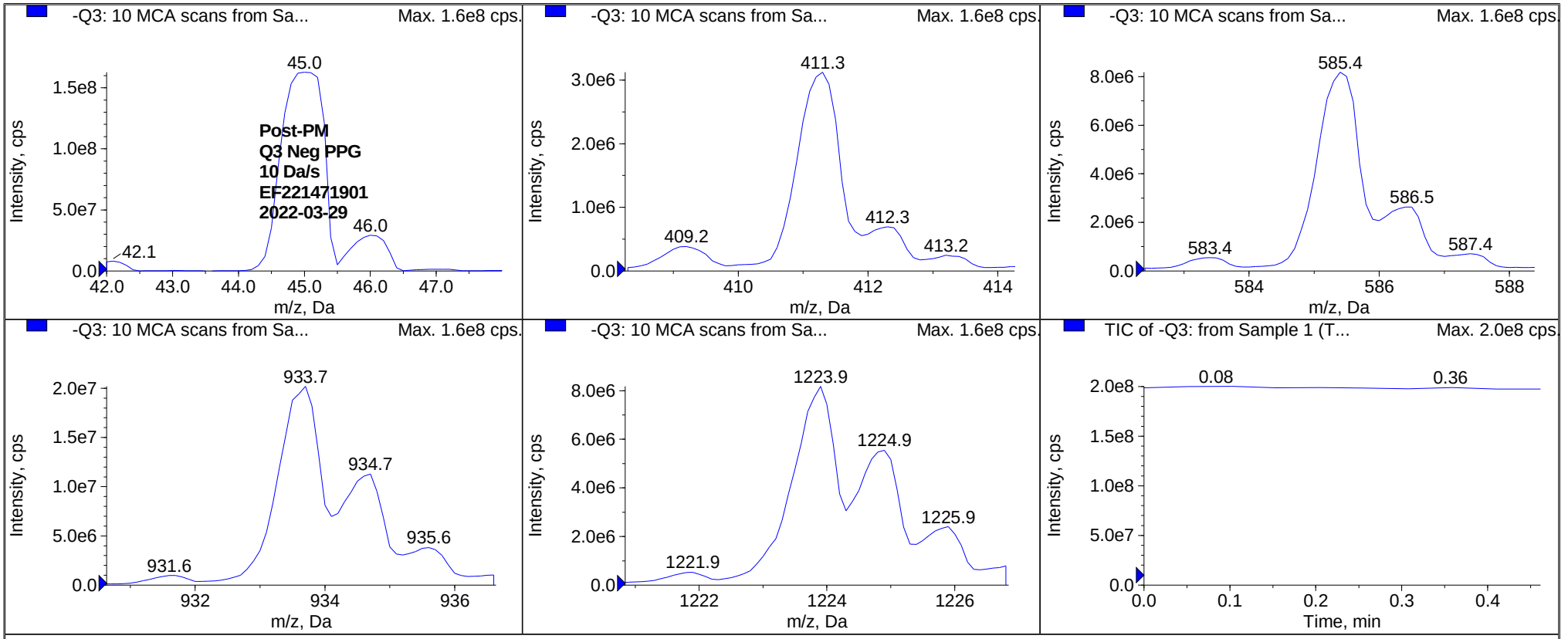
Peak List for " -Q1: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329110750.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0028	7.5518e8	0.7501	-4.7940e-3
2	411.2590	411.2592	1.6350e7	0.7838	-2.0075e-4
3	585.3850	585.3815	3.5450e7	0.7978	3.5437e-3
4	933.6360	933.6335	8.3120e7	0.7736	2.4946e-3
5	1223.8450	1223.8350	2.6470e7	0.7862	9.9944e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



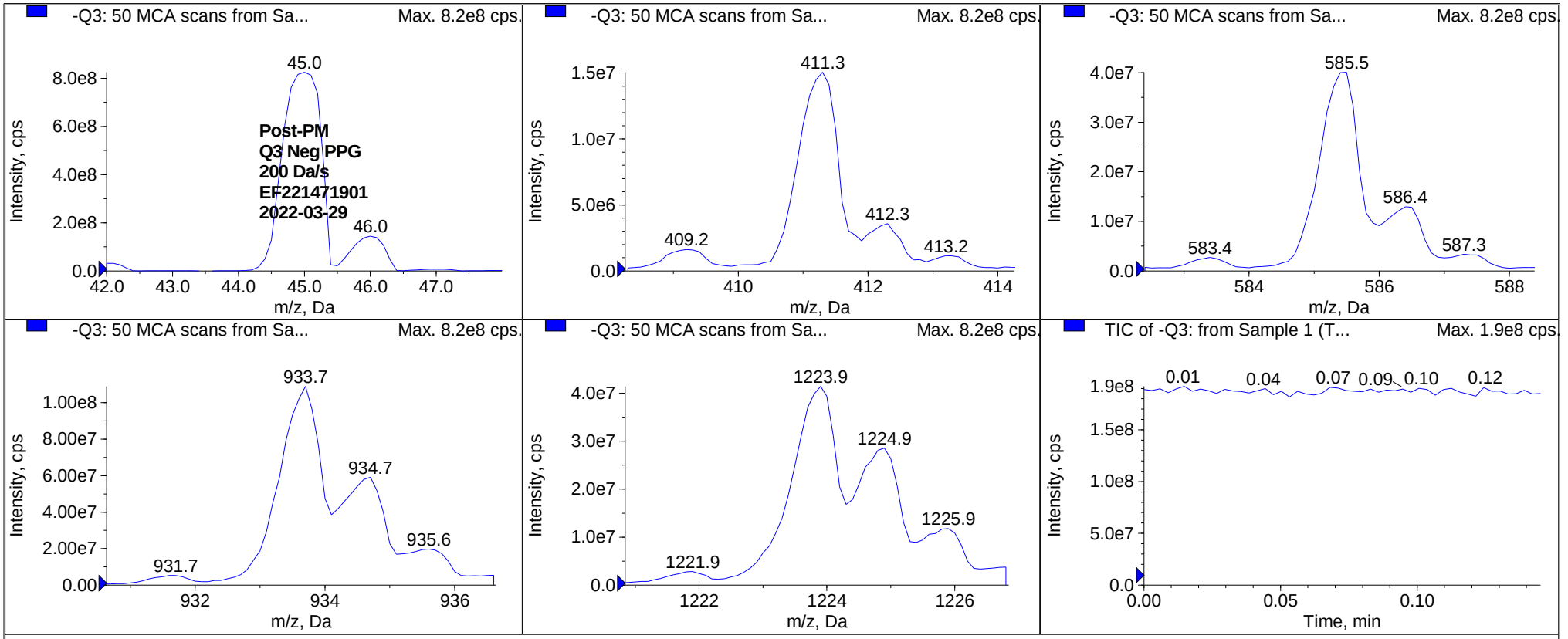
Peak List for " -Q1: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329111124.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9995	1.6177e9	0.7553	-1.4968e-3
2	411.2590	411.2345	3.1400e7	0.7563	0.0245
3	585.3850	585.3879	6.6560e7	0.7732	-2.8641e-3
4	933.6360	933.6855	1.5474e8	0.7803	-0.0495
5	1223.8450	1223.8166	4.9840e7	0.7287	0.0284
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



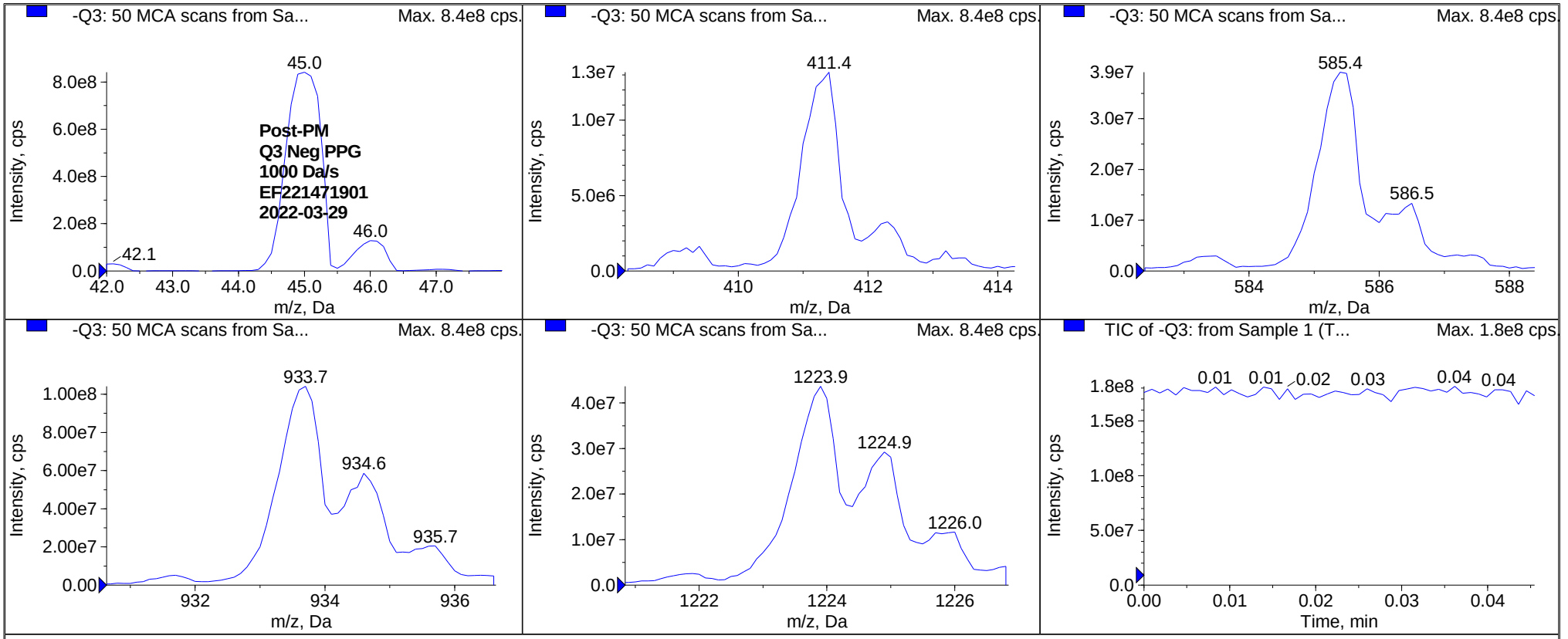
Peak List for " -Q3: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329111432.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9946	1.6274e8	0.7493	3.4119e-3
2	411.2590	411.2460	3.1239e6	0.7100	0.0130
3	585.3850	585.3815	8.1828e6	0.7047	3.5319e-3
4	933.6360	933.6248	2.0190e7	0.7152	0.0112
5	1223.8450	1223.8403	8.1758e6	0.7510	4.6541e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



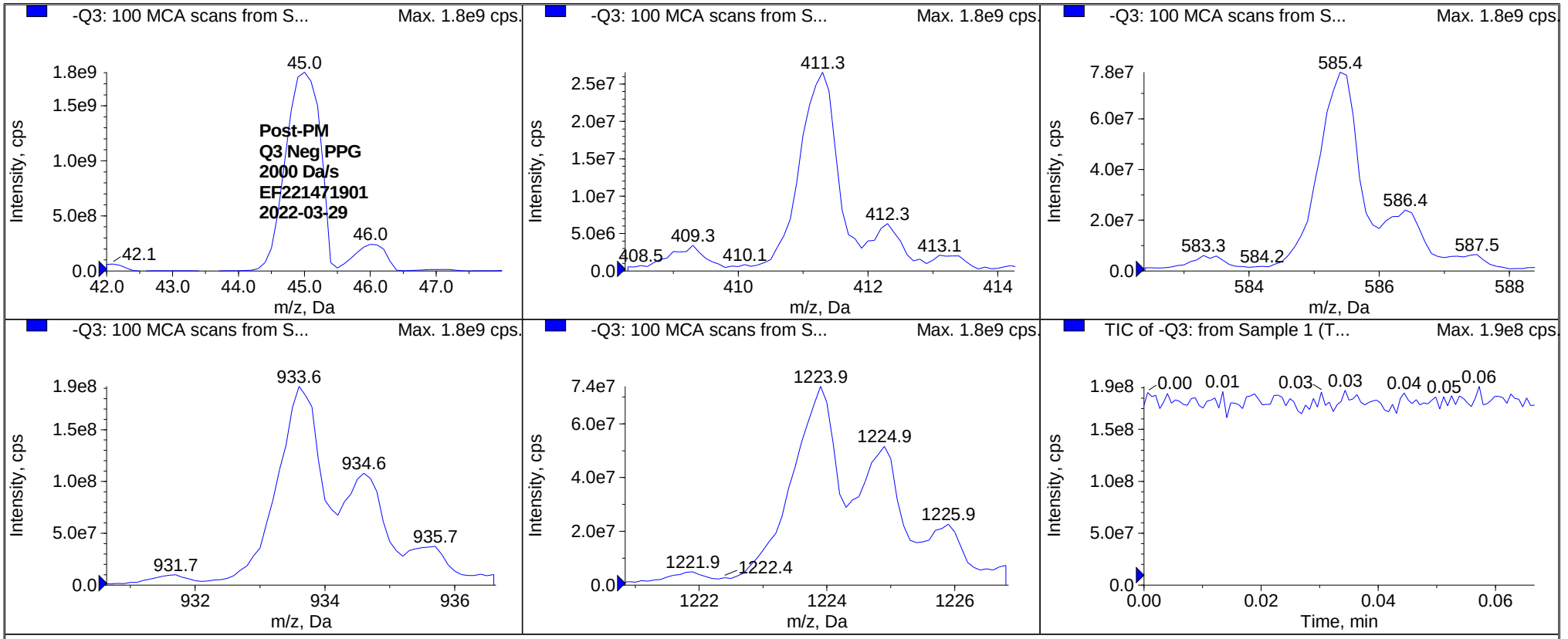
Peak List for " -Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329111734.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9698	8.2497e8	0.6793	0.0282
2	411.2590	411.2470	1.5058e7	0.6746	0.0120
3	585.3850	585.3925	4.0100e7	0.6480	-7.4734e-3
4	933.6360	933.6438	1.0896e8	0.7112	-7.7670e-3
5	1223.8450	1223.8391	4.1414e7	0.7681	5.8964e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



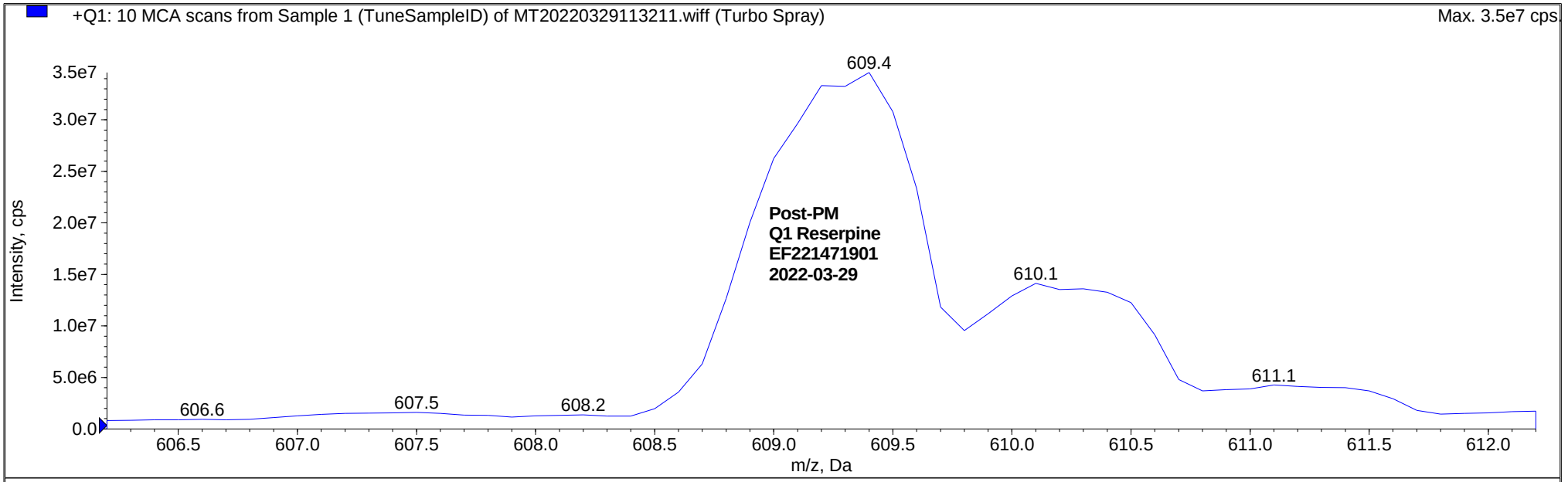
Peak List for " -Q3: 50 MCA scans from Sample 1 (TuneSampleID) of MT20220329111856.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9945	8.4128e8	0.6203	3.4701e-3
2	411.2590	411.2796	1.3180e7	0.6161	-0.0206
3	585.3850	585.3864	3.9160e7	0.6791	-1.4278e-3
4	933.6360	933.6402	1.0412e8	0.7243	-4.1525e-3
5	1223.8450	1223.8481	4.3640e7	0.7495	-3.0811e-3
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



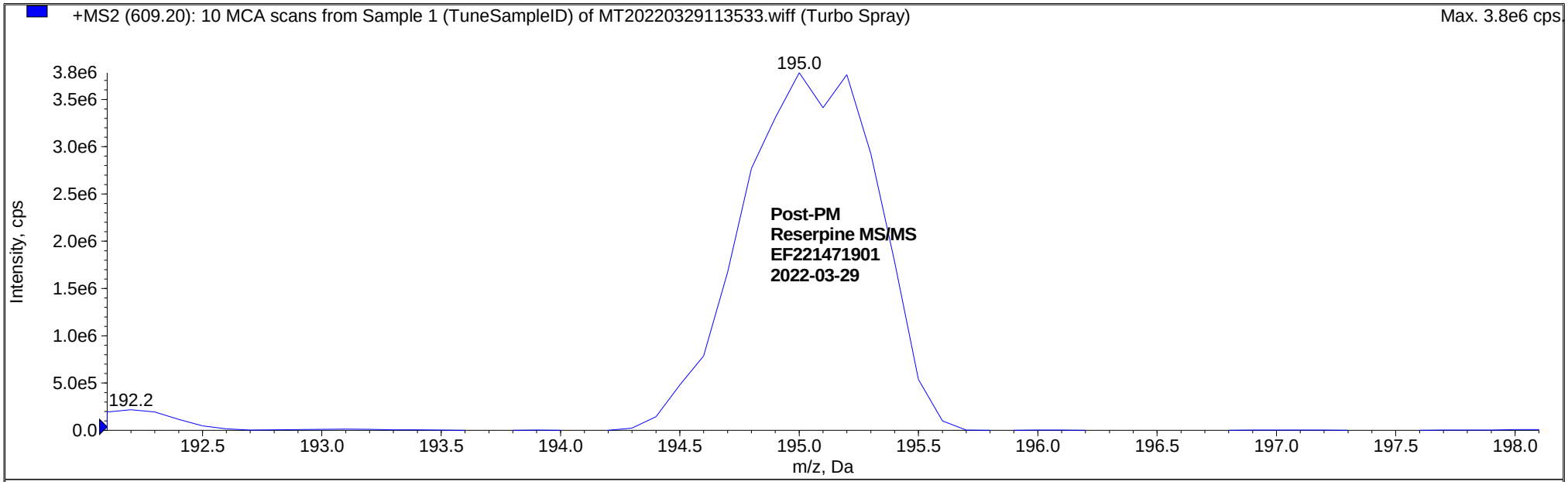
Peak List for " -Q3: 100 MCA scans from Sample 1 (TuneSampleID) of MT20220329112011.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9938	1.8050e9	0.6119	4.1642e-3
2	411.2590	411.2452	2.6580e7	0.6085	0.0138
3	585.3850	585.3882	7.8360e7	0.6470	-3.1506e-3
4	933.6360	933.6275	1.9174e8	0.7168	8.5377e-3
5	1223.8450	1223.8442	7.3900e7	0.7699	7.8466e-4
6	1572.0970	n/a	n/a	n/a	n/a
7	1863.3060	n/a	n/a	n/a	n/a
8	1979.3890	n/a	n/a	n/a	n/a



Peak List for " +Q1: 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329113211.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	195.1000	n/a	n/a	n/a	n/a
2	609.2810	609.2943	3.4591e7	0.7899	-0.0133



Peak List for " +MS2 (609.20): 10 MCA scans from Sample 1 (TuneSampleID) of MT20220329113533.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	195.1000	195.0604	3.7822e6	0.6705	0.0396
2	609.2810	n/a	n/a	n/a	n/a

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-239491/1-A

Matrix: Water Lab File ID: 22APR04-03.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 03/31/2022 06:58

Sample wt/vol: 250(mL) Date Analyzed: 04/04/2022 07:54

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	*Perfluorohexanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
375-85-9	*Perfluoroheptanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
335-67-1	*Perfluorooctanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
375-95-1	*Perfluorononanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
335-76-2	*Perfluorodecanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
72629-94-8	*Perfluorotridecanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
376-06-7	*Perfluorotetradecanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
375-73-5	*Perfluorobutanesulfonic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
355-46-4	*Perfluorohexanesulfonic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
1763-23-1	*Perfluorooctanesulfonic acid*	*0.705*	*J*	*2.0*	1.0	*0.50*
2991-50-6	*NEtFOSAA*	*1.0*	*U*	*3.0*	1.0	*0.50*
2355-31-9	*NMeFOSAA*	*1.2*	*U*	*2.0*	1.2	*0.60*
2706-91-4	*Perfluoropentanesulfonic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
375-92-8	*Perfluoroheptanesulfonic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
68259-12-1	*Perfluorononanesulfonic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
335-77-3	*Perfluorodecanesulfonic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
754-91-6	*Perfluorooctanesulfonamide*	*1.0*	*U*	*2.0*	1.0	*0.50*
375-22-4	*Perfluorobutanoic acid*	*4.0*	*U*	*5.0*	4.0	*2.0*
2706-90-3	*Perfluoropentanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
2058-94-8	*Perfluoroundecanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
307-55-1	*Perfluorododecanoic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*
27619-97-2	*6:2 Fluorotelomer sulfonic acid*	*4.0*	*U*	*5.0*	4.0	*2.0*
39108-34-4	*8:2 Fluorotelomer sulfonic acid*	*2.0*	*U*	*3.0*	2.0	*1.0*
757124-72-4	*4:2 Fluorotelomer sulfonic acid*	*1.0*	*U*	*2.0*	1.0	*0.50*

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-239491/1-A

Matrix: Water Lab File ID: 22APR04-03.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 03/31/2022 06:58

Sample wt/vol: 250(mL) Date Analyzed: 04/04/2022 07:54

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	187	*5+	50-150
STL02280	M2-8:2 FTS	179	*5+	50-150
STL02279	M2-6:2 FTS	179	*5+	50-150
STL02577	13C5 PFHxA	147		50-150
STL01892	13C4 PFHpA	150		50-150
STL01052	13C8 PFOA	145		50-150
STL02578	13C9 PFNA	145		50-150
STL02579	13C6 PFDA	154	*5+	50-150
STL02580	13C7 PFUnA	146		50-150
STL02703	13C2-PFDoDA	132		50-150
STL02116	13C2 PFTeDA	117		50-150
STL02337	13C3 PFBS	142		50-150
STL02581	13C3 PFHxS	146		50-150
STL01054	13C8 PFOS	142		50-150
STL02118	d3-NMeFOSAA	148		50-150
STL02117	d5-NEtFOSAA	154	*5+	50-150
STL01056	13C8 FOSA	117		50-150
STL00992	13C4 PFBA	133		50-150
STL01893	13C5 PFPeA	146		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-03.d
Lims ID: MB 410-239491/1-A
Client ID:
Sample Type: MB
Inject. Date: 04-Apr-2022 07:54:02 ALS Bottle#: 1 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 410-239491/1-A
Misc. Info.: Plate: 2 Rack: 1 410-0053975-003
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 04-Apr-2022 15:44:42 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1662

First Level Reviewer: carpenterr Date: 04-Apr-2022 08:21:05
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-01.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.671	3.671	0.0	1.000	56147	0.0582			65.7	
D 2 13C4 PFBA										
217.00 > 172.00	3.671	3.671	0.0		11569419	13.3		133	160155	
63 PFECA F										
229.00 > 85.00	3.882	3.898	-0.016	0.927	1253	0.001454			166	
67 3:3 FTCA										
241.00 > 177.00		4.180				ND				
241.00 > 117.00		4.180								
3 Perfluoropentanoic acid										
263.00 > 219.00	4.186	4.187	-0.001	1.000	21302	0.0195			68.3	
D 4 13C5 PFPeA										
268.00 > 223.00	4.186	4.187	-0.001		10588052	14.6		146	84081	
D 6 13C3 PFBS										
302.00 > 80.00	4.239	4.239	0.0		12421899	13.2		142	645052	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.239	4.239	0.0	1.000	126258	0.0984	Target=2.92		135	
299.00 > 99.00	4.231	4.239	-0.008	0.998	41604		3.03(1.46-4.38)		115	
64 PFECA A										
279.00 > 85.00		4.309				ND				
65 PES										
315.00 > 135.00		4.397				ND				
315.00 > 83.00		4.397								
68 PFECA B										
295.00 > 201.00	4.520	4.521	-0.001	0.983	5669	0.0154			259	
7 4:2 FTS										
327.00 > 307.00		4.551				ND				
327.00 > 81.00		4.551								

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.559	4.560	-0.001		708992	17.5		187	19270	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.588	4.590	-0.002	0.998	106913	0.0939	Target=13.98		692	
313.00 > 119.00	4.588	4.590	-0.002	0.998	6961		15.36(6.99-20.97)		319	
D 9 13C5 PFHxA										
318.00 > 273.00	4.598	4.600	-0.002		13020331	14.7		147	320385	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00		4.618				ND				
349.00 > 99.00		4.618								
12 HFPO-DA										
329.00 > 285.00	4.724	4.726	-0.002	1.000	1278	0.003850			34.8	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.724	4.726	-0.002		1566185	14.2		142	81836	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.986	4.989	-0.003	1.000	18593	0.0146	Target=3.24		115	
363.00 > 169.00	4.986	4.989	-0.003	1.000	7222		2.57(1.62-4.86)		173	
D 17 13C4 PFHpA										
367.00 > 322.00	4.986	4.989	-0.003		13315287	15.0		150	191480	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.995	4.989	0.006	1.002	14147	0.0119	Target=3.24		2080	
399.00 > 99.00	4.977	4.989	-0.012	0.998	3693		3.83(1.62-4.86)		1642	
D 16 13C3 PFHxS										
402.00 > 80.00	4.986	4.989	-0.003		11597691	13.8		146	1140667	
18 DONA										
377.00 > 251.00		5.031				ND				
62 5:3 FTCA										
341.00 > 237.00		5.053				ND				
341.00 > 217.00		5.053								
D 20 M2-6:2 FTS										
429.00 > 81.00	5.336	5.338	-0.002		435467	17.0		179	16932	
19 6:2 FTS										
427.00 > 407.00		5.338				ND				
427.00 > 81.00		5.338								
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.344				ND				
449.00 > 99.00		5.344								
23 Perfluorooctanoic acid										
413.00 > 369.00	5.349	5.357	-0.008	0.999	81067	0.0642	Target=2.41		3245	
413.00 > 169.00	5.349	5.357	-0.008	0.999	41085		1.97(1.20-3.61)		8319	
D 22 13C8 PFOA										
421.00 > 376.00	5.355	5.357	-0.002		14109964	14.5		145	1121285	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.689	5.685	0.004	1.001	217224	0.1763	Target=3.80		547	
499.00 > 99.00	5.674	5.685	-0.011	0.999	63983		3.40(1.90-5.70)		198	
D 25 13C8 PFOS										
507.00 > 80.00	5.681	5.685	-0.004		10966048	13.5		142	576300	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.697	5.701	-0.004	1.000	13955	0.0111	Target=4.84		128	
463.00 > 169.00	5.705	5.701	0.004	1.001	3639		3.83(2.42-7.26)		196	
D 27 13C9 PFNA										
472.00 > 427.00	5.697	5.701	-0.004		14704850	14.5		145	699053	
66 7:3 FTCA										
441.00 > 317.00		5.799				ND				
441.00 > 337.00		5.799								
28 9ClFOS										
531.00 > 351.00		5.865				ND				
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.990				ND				
549.00 > 99.00		5.990								
33 8:2 FTS										
527.00 > 507.00		6.014				ND				
527.00 > 81.00		6.014								
30 Perfluorodecanoic acid										
513.00 > 469.00	6.012	6.014	-0.002	1.000	45029	0.0312	Target=8.57		535	
513.00 > 169.00	6.012	6.014	-0.002	1.000	5009		8.99(4.29-12.86)		69.2	
D 32 13C6 PFDA										
519.00 > 474.00	6.012	6.014	-0.002		16608697	15.4		154	661191	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.012	6.014	-0.002		384624	17.2		179	10179	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.111	6.115	-0.004	1.000	132657	0.0873			4581	
D 35 13C8 FOSA										
506.00 > 78.00	6.111	6.115	-0.004		15120608	11.7		117	298237	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.160	6.163	-0.003		4179498	14.8		148	936626	
36 NMeFOSAA										
570.00 > 419.00		6.171				ND				
570.00 > 483.00		6.171								
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.262				ND				
599.00 > 99.00		6.262								
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.290				ND				
563.00 > 169.00		6.290								
D 40 13C7 PFUnA										
570.00 > 525.00	6.286	6.290	-0.004		16447522	14.6		146	166487	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.296	6.309	-0.013		3377620	15.4		154	274774	
42 NEtFOSAA										
584.00 > 419.00		6.309				ND				
584.00 > 526.00		6.309								
43 11ClFOS										
631.00 > 451.00		6.410				ND				

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										R
613.00 > 569.00	6.555	6.531	0.024	1.004	21987	0.0158	Target=6.12		214	R
613.00 > 169.00	6.519	6.531	-0.012	0.999	1607		13.68(3.06-9.17)		25.4	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.528	6.531	-0.003		15794311	13.2		132	747833	
48 10:2 FTS										
627.00 > 607.00		6.549				ND				
627.00 > 81.00		6.549								
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.555	6.558	-0.003		1677280	12.3		123	6324	
47 N-MeFOSE-M										
616.00 > 59.00		6.566				ND				
D 49 d3-NMePFOSA										
515.00 > 169.00	6.572	6.575	-0.003		1774305	10.3		103	9130	
50 NMeFOSA										
512.00 > 169.00	6.555	6.575	-0.020	0.997	2184	0.0122			63.5	
53 PFDoS										
699.00 > 80.00	6.738	6.715	0.023	1.186	12904	0.0109			80.8	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.713	6.724	-0.011		1883496	11.5		115	10440	
52 N-EtFOSE-M										
630.00 > 59.00		6.732				ND				
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.738	6.740	-0.002	1.032	4475	0.003225	Target=5.77		45.9	
663.00 > 169.00	6.730	6.740	-0.010	1.031	1027		4.36(2.89-8.66)		45.3	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.738	6.740	-0.002		1599441	10.2		102	8035	
55 N-EtFOSA-M										
526.00 > 169.00	6.277	6.748	-0.471	0.931	4239	0.0242			133	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.927	6.928	-0.001	1.000	16780	0.0137	Target=6.00		32.4	
713.00 > 169.00	6.920	6.928	-0.008	0.999	2908		5.77(3.00-9.00)		145	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.927	6.928	-0.001		14099232	11.7		117	299768	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.247	7.248	-0.001	1.046	36024	0.0395	Target=5.95		127	
813.00 > 169.00	7.247	7.248	-0.001	1.046	6080		5.93(2.98-8.93)		253	
60 Perfluorooctadecanoic acid										
913.00 > 869.00		7.505				ND				
913.00 > 169.00		7.505								
S 61 Total PFOA and PFOS										
216.00 > 172.00						0.2405				

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

R - Failed Signal Ratio Test

Report Date: 04-Apr-2022 15:44:53 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-03.d

Injection Date: 04-Apr-2022 07:54:02 Instrument ID: 29347

Lims ID: MB 410-239491/1-A

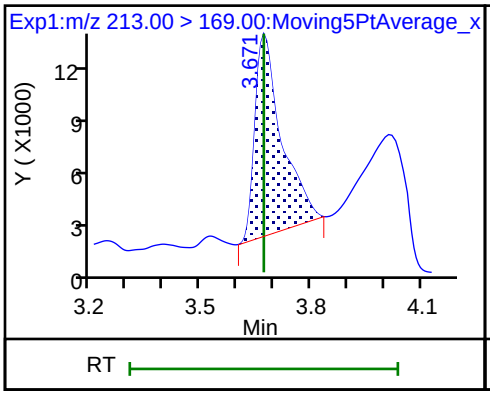
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 1 Worklist Smp#: 3

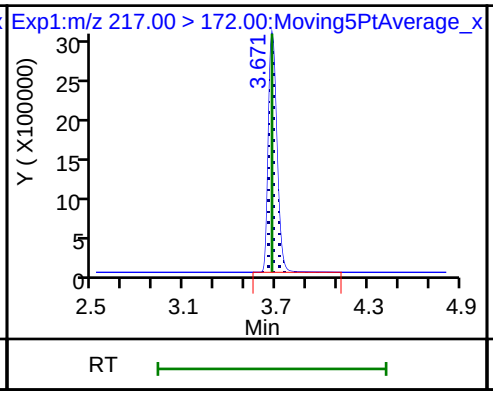
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

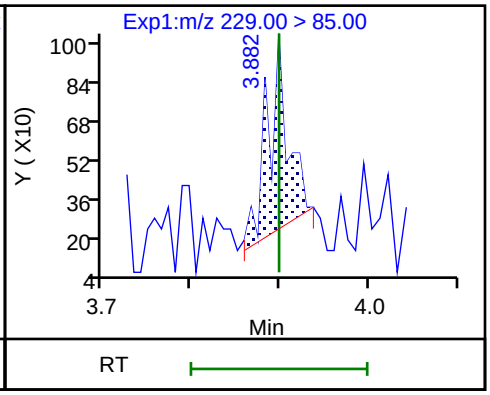
1 Perfluorobutanoic acid



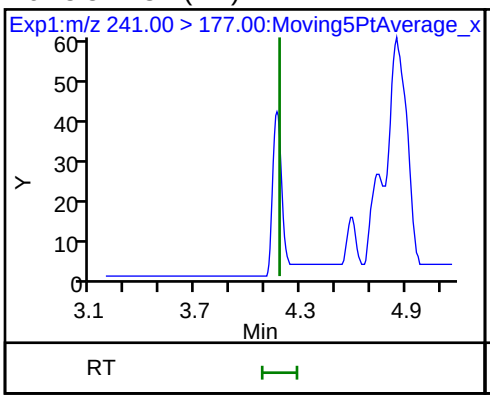
D 2 13C4 PFBA



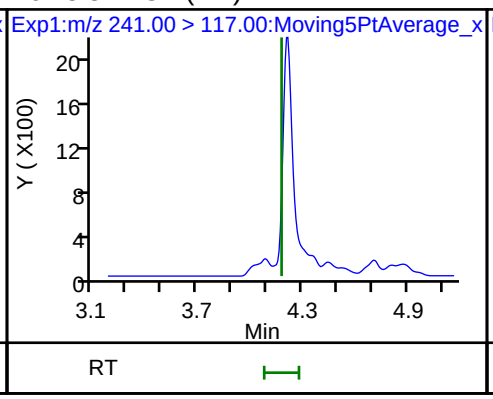
63 PFECA F



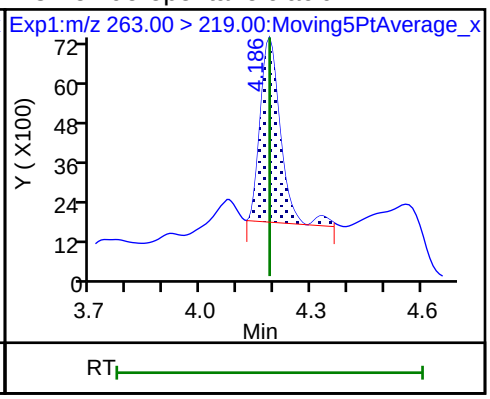
67 3:3 FTCA (ND)



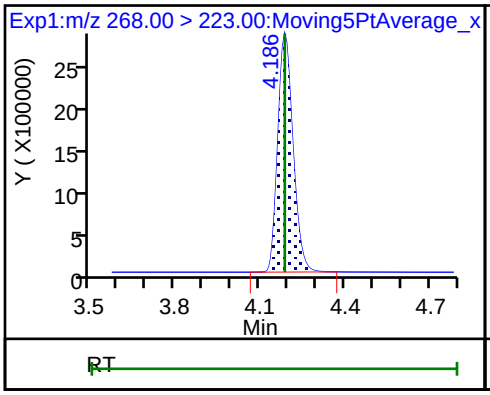
67 3:3 FTCA (ND)



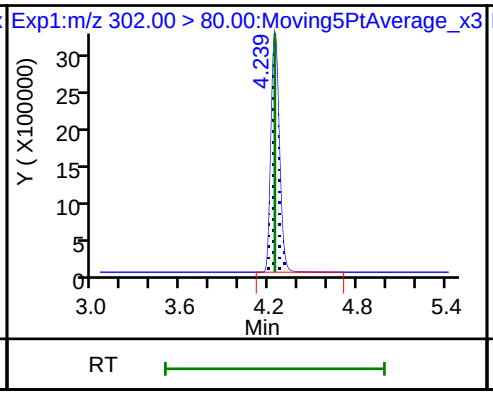
3 Perfluoropentanoic acid



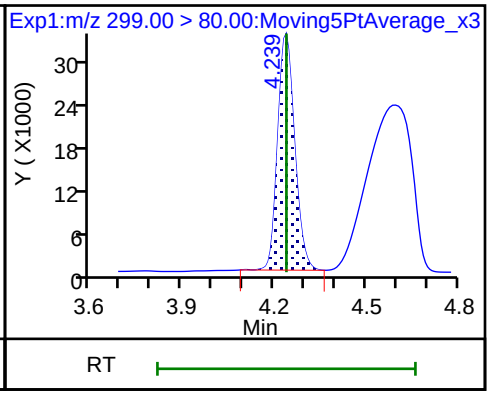
D 4 13C5 PFPeA



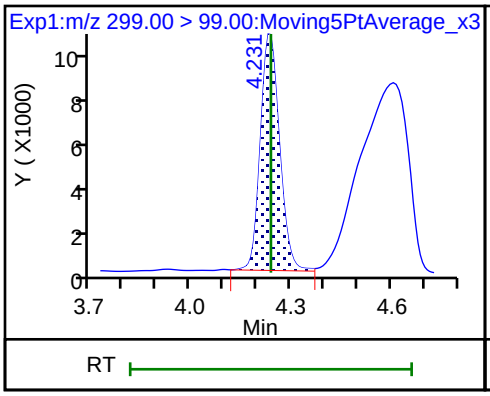
D 6 13C3 PFBS



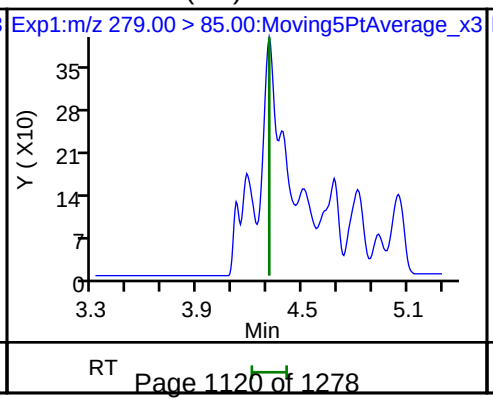
5 Perfluorobutanesulfonic acid



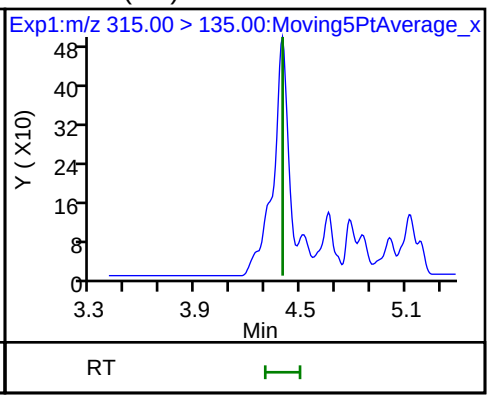
5 Perfluorobutanesulfonic acid



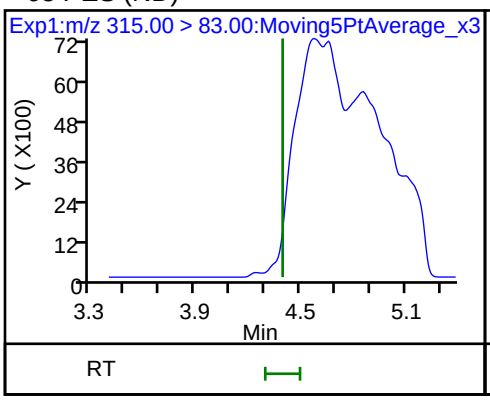
64 PFECA A (ND)



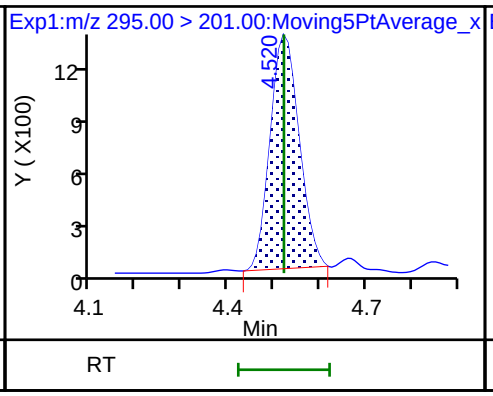
65 PES (ND)



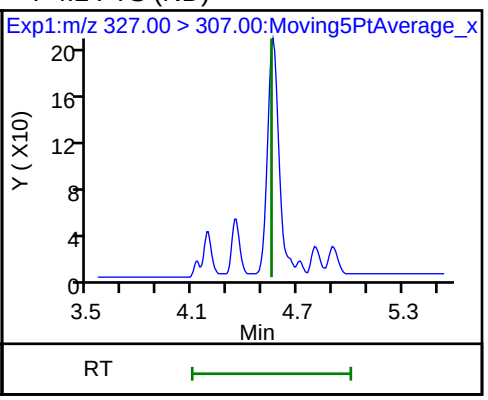
65 PES (ND)



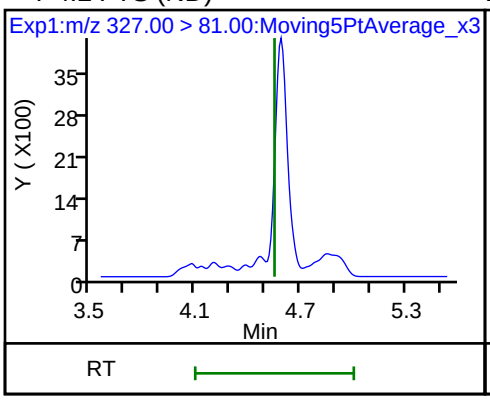
68 PFECA B



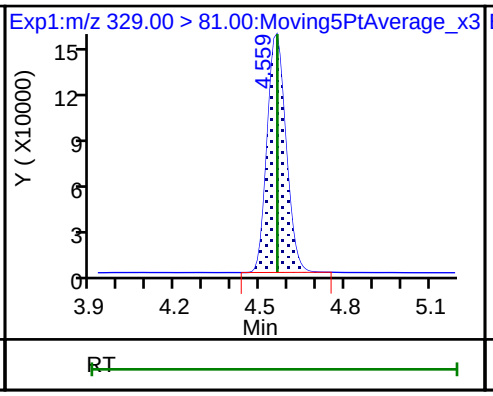
7 4:2 FTS (ND)



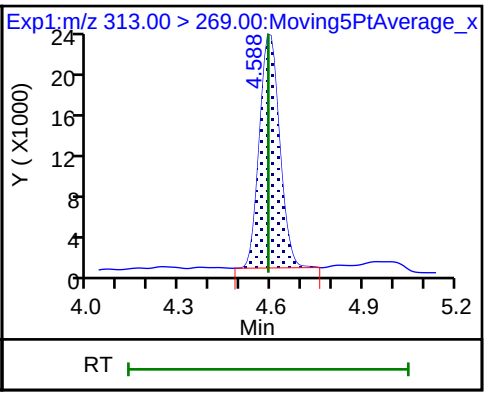
7 4:2 FTS (ND)



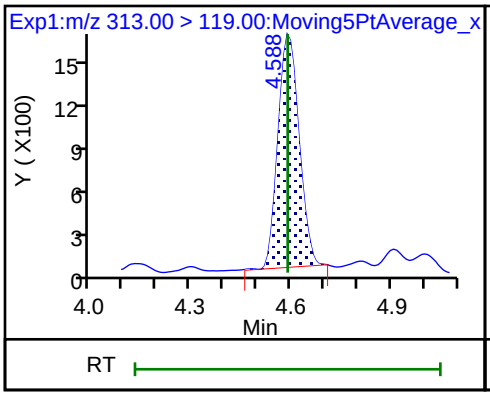
D 8 M2-4:2 FTS



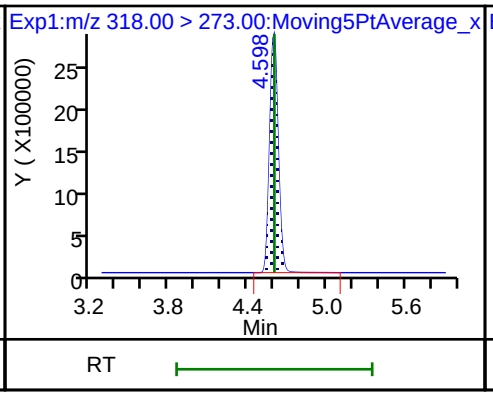
10 Perfluorohexanoic acid



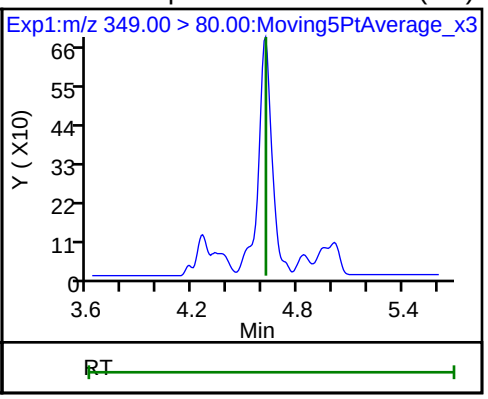
10 Perfluorohexanoic acid



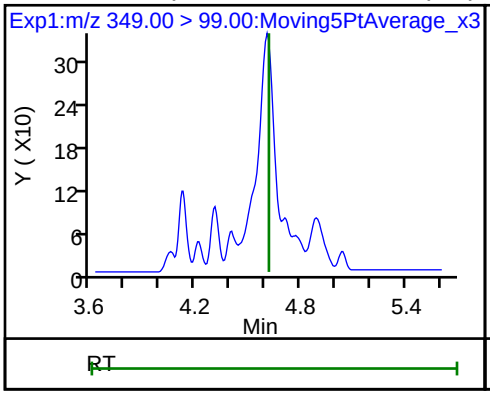
D 9 13C5 PFHxA



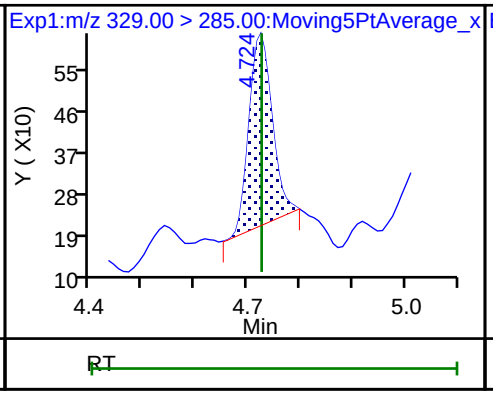
11 Perfluoropentanesulfonic acid (ND)



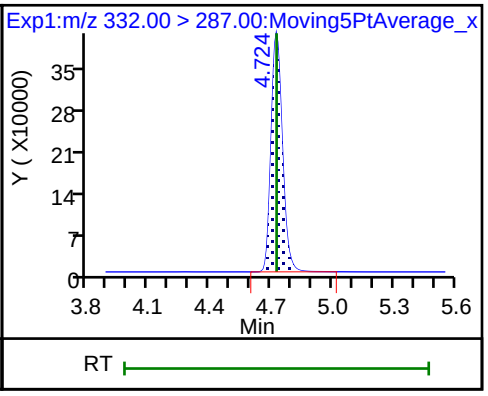
11 Perfluoropentanesulfonic acid (ND)



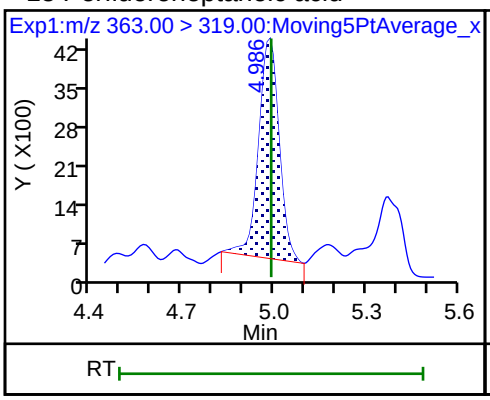
12 HFPO-DA



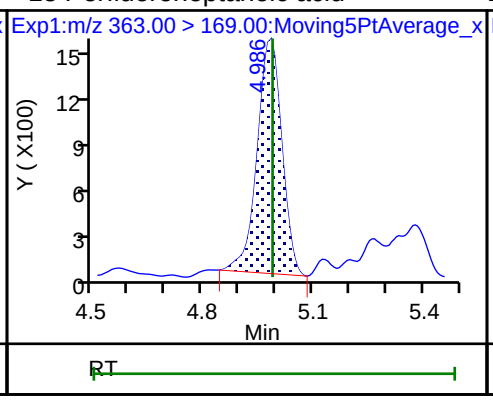
D 13 13C3 HFPO-DA



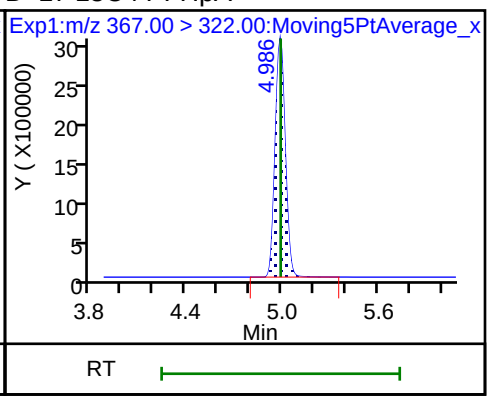
15 Perfluoroheptanoic acid



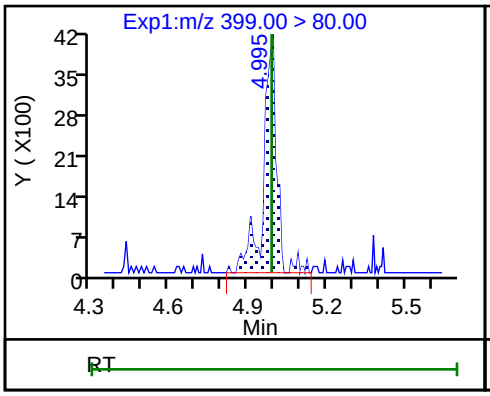
15 Perfluoroheptanoic acid



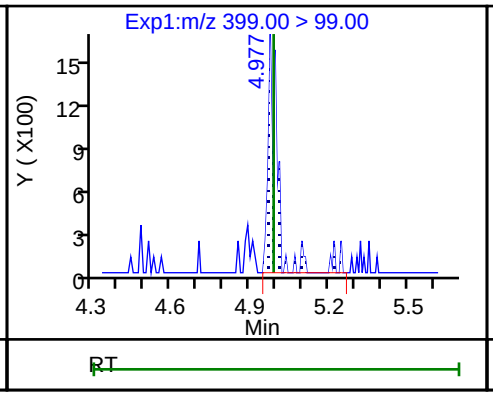
D 17 13C4 PFHpA



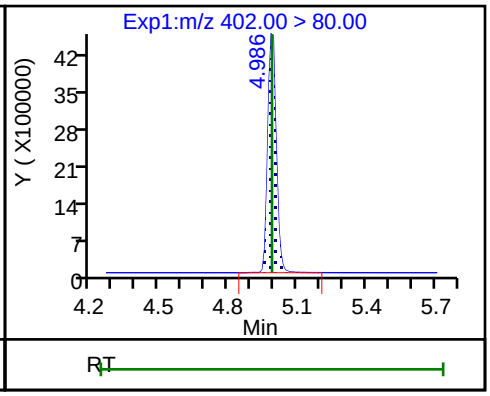
14 Perfluorohexanesulfonic acid



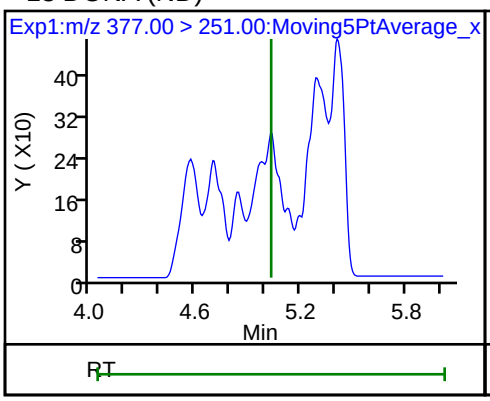
14 Perfluorohexanesulfonic acid



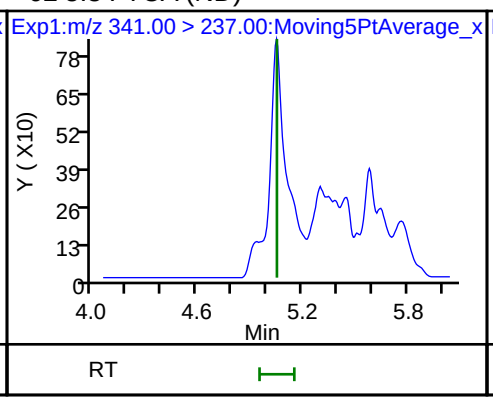
D 16 13C3 PFHxS



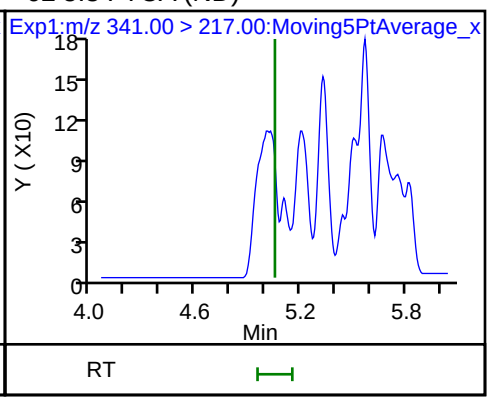
18 DONA (ND)



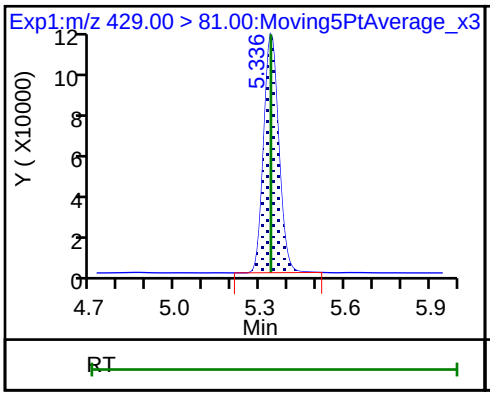
62 5:3 FTCA (ND)



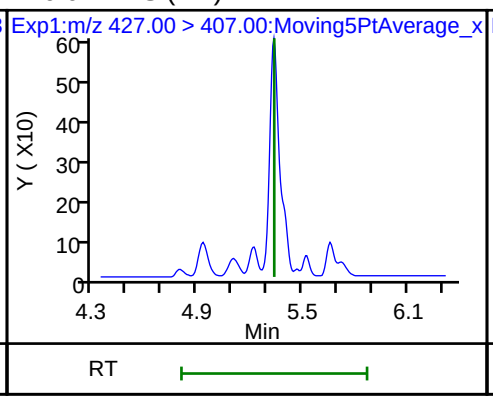
62 5:3 FTCA (ND)



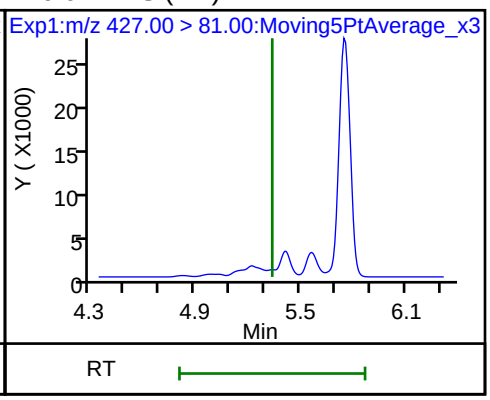
D 20 M2-6:2 FTS



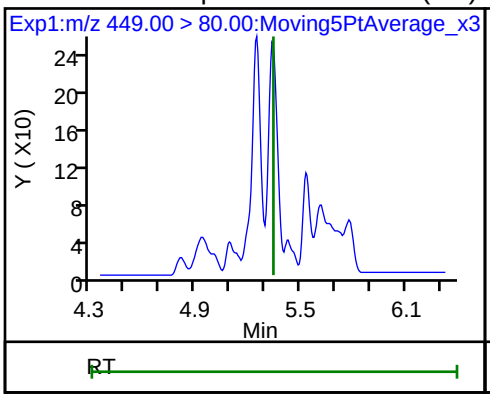
19 6:2 FTS (ND)



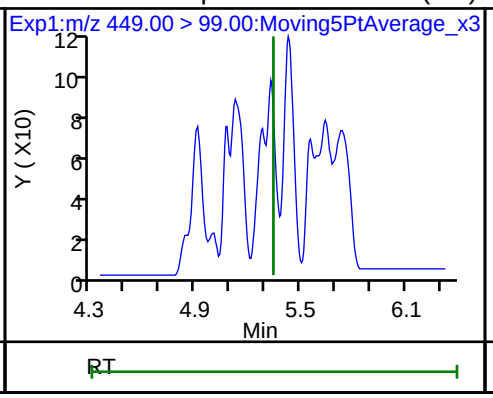
19 6:2 FTS (ND)



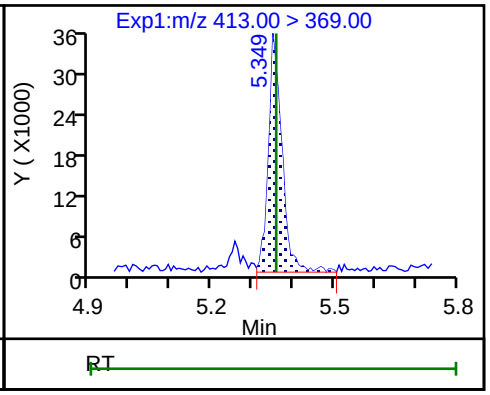
21 Perfluoroheptanesulfonic acid (ND)



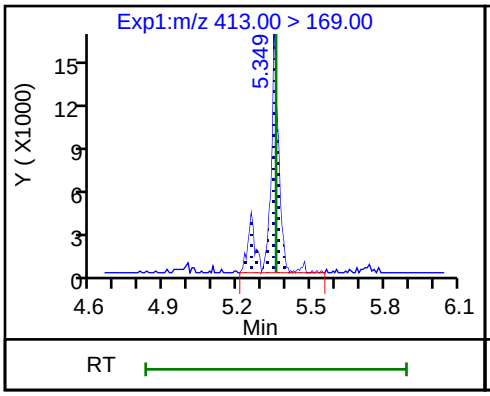
21 Perfluoroheptanesulfonic acid (ND)



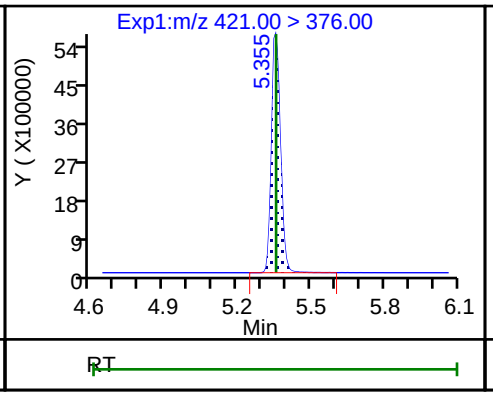
23 Perfluorooctanoic acid



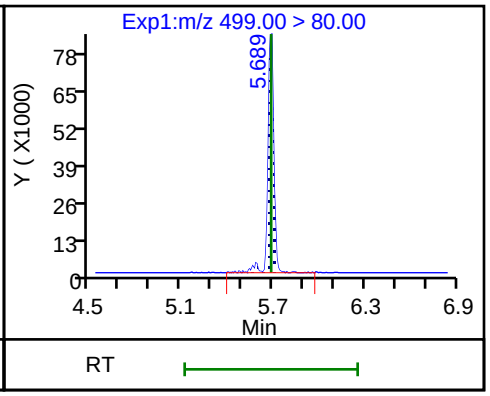
23 Perfluorooctanoic acid



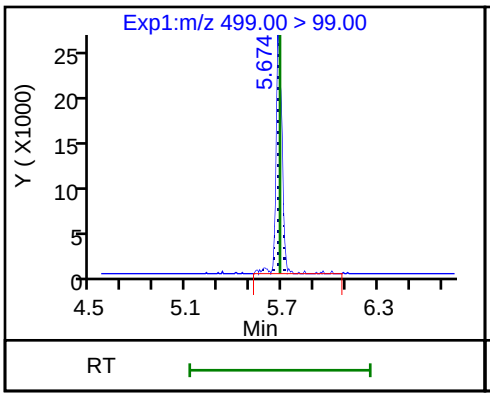
D 22 13C8 PFOA



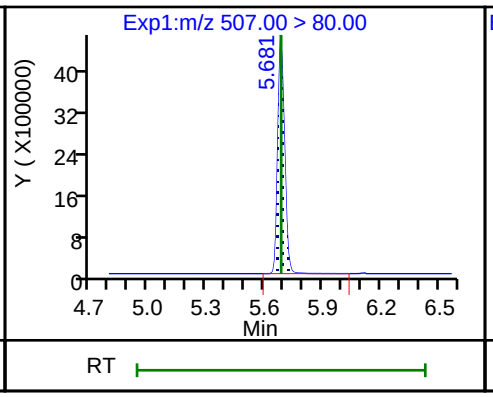
24 Perfluorooctanesulfonic acid



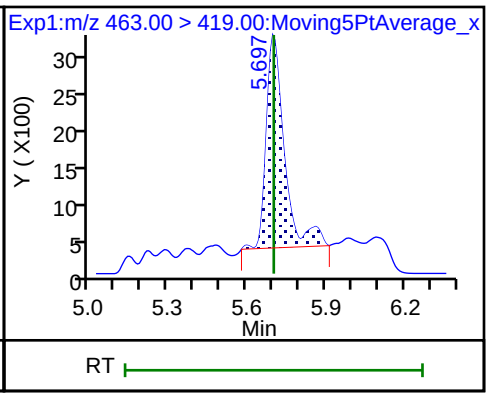
24 Perfluorooctanesulfonic acid



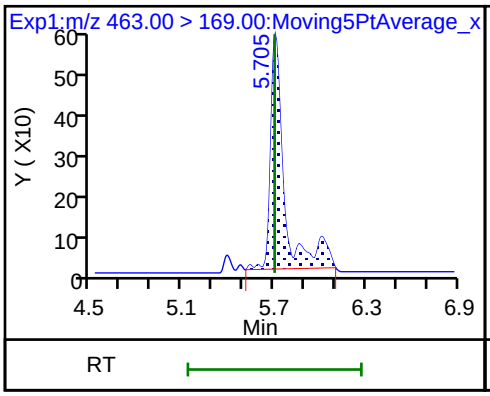
D 25 13C8 PFOS



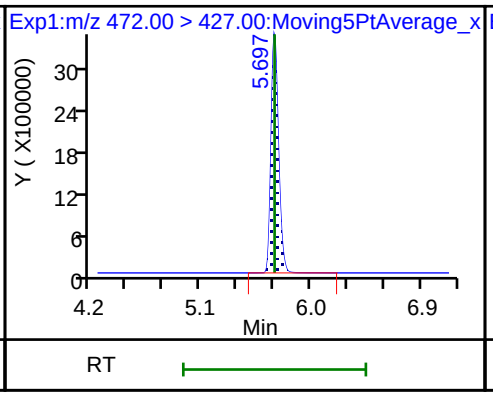
26 Perfluorononanoic acid



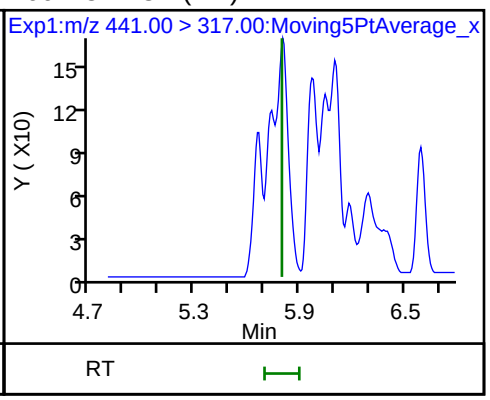
26 Perfluorononanoic acid



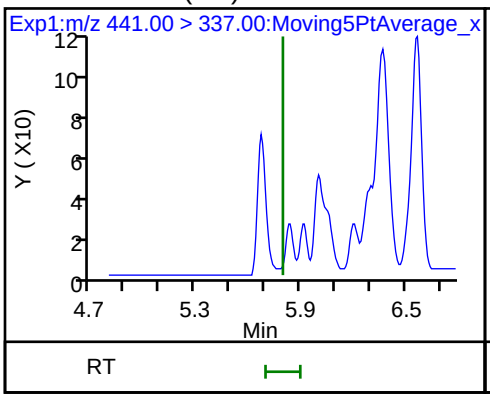
D 27 13C9 PFNA



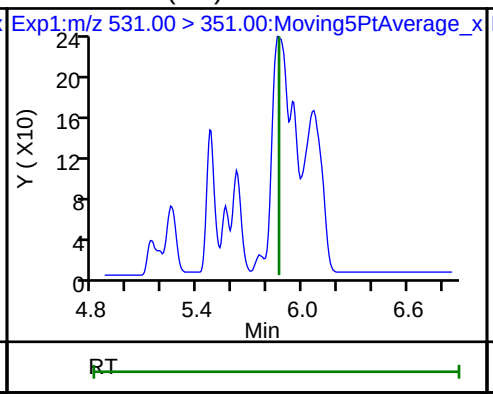
66 7:3 FTCA (ND)



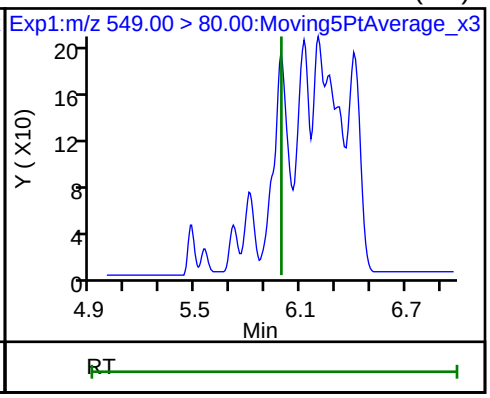
66 7:3 FTCA (ND)



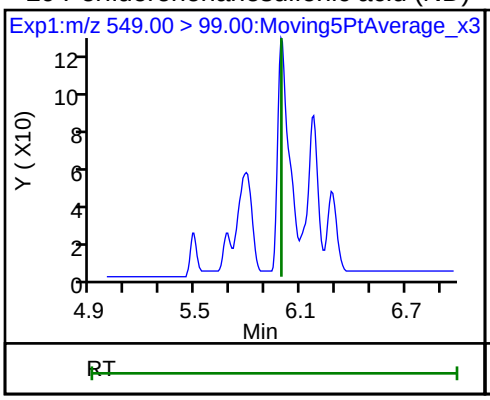
28 9ClFOS (ND)



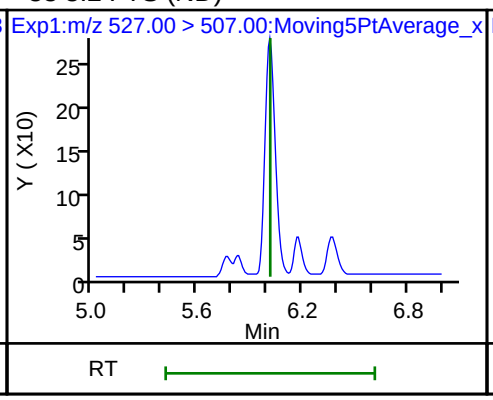
29 Perfluorononanesulfonic acid (ND)



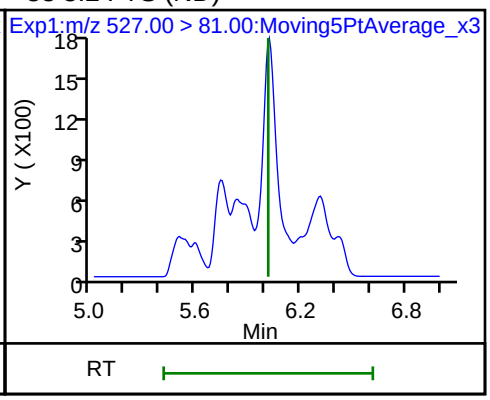
29 Perfluorononanesulfonic acid (ND)



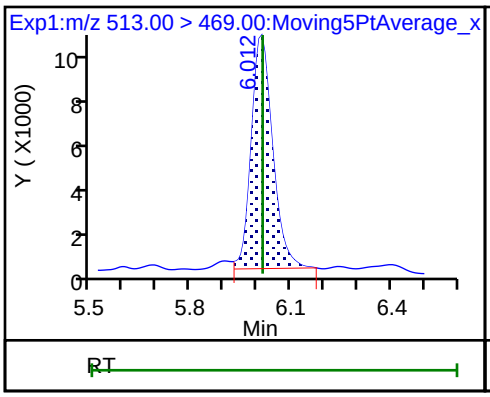
33 8:2 FTS (ND)



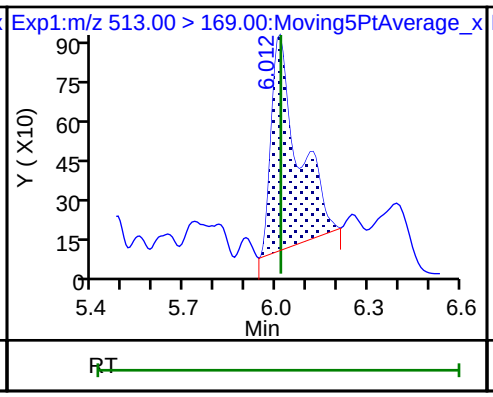
33 8:2 FTS (ND)



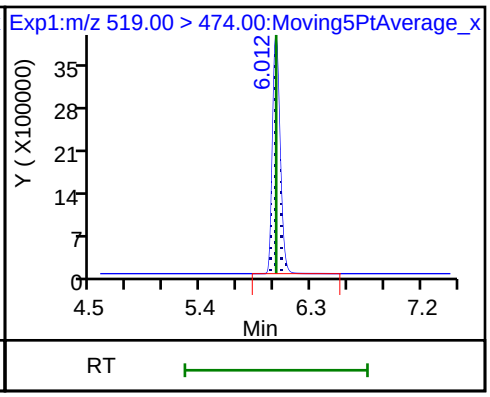
30 Perfluorodecanoic acid



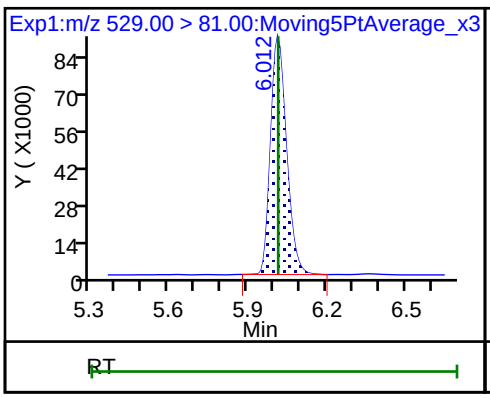
30 Perfluorodecanoic acid



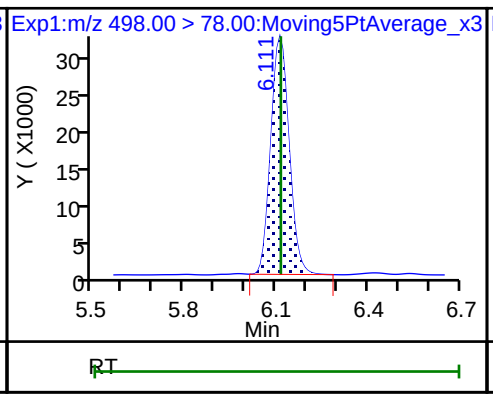
D 32 13C6 PFDA



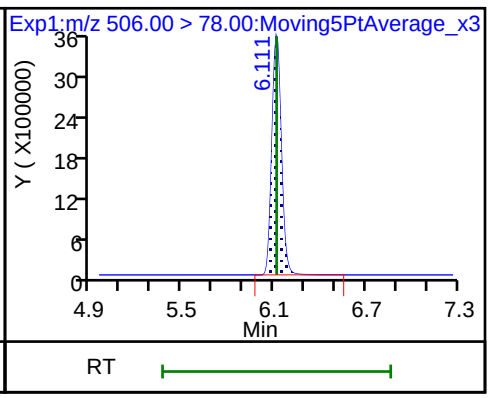
D 31 M2-8:2 FTS



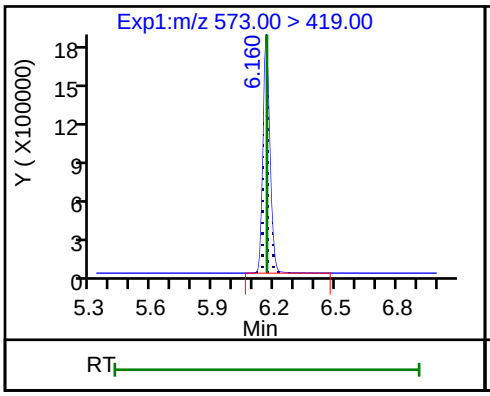
34 Perfluorooctanesulfonamide



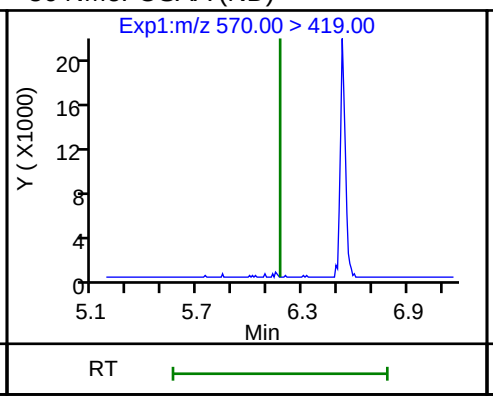
D 35 13C8 FOSA



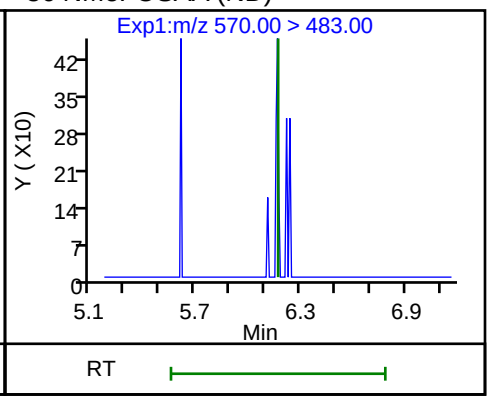
D 37 d3-NMeFOSAA



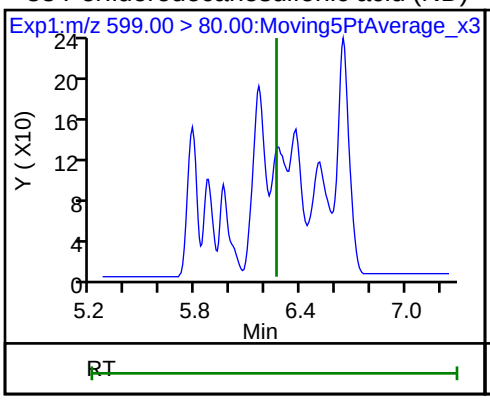
36 NMeFOSAA (ND)



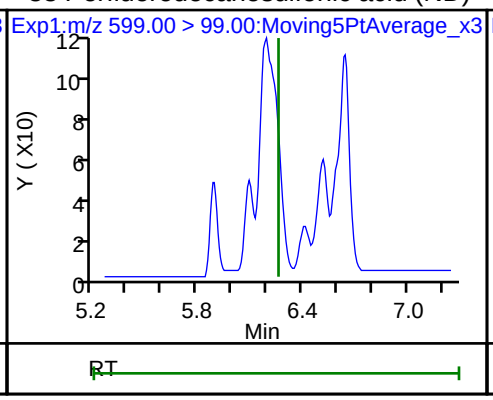
36 NMeFOSAA (ND)



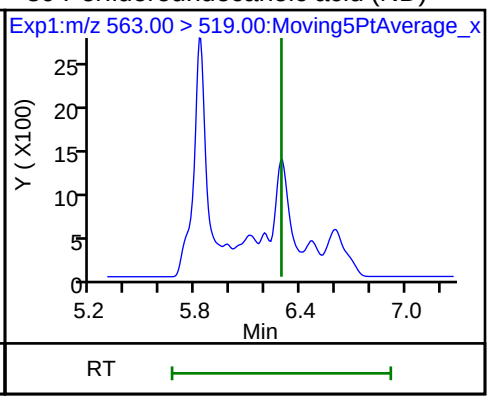
38 Perfluorodecanesulfonic acid (ND)



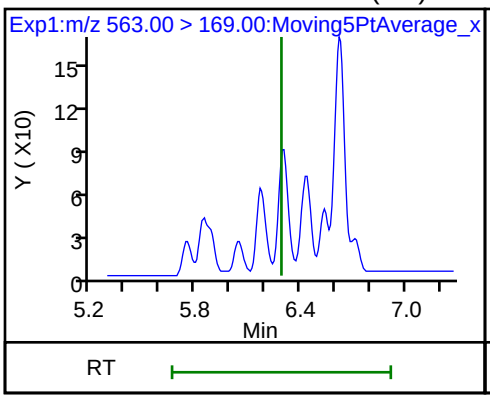
38 Perfluorodecanesulfonic acid (ND)



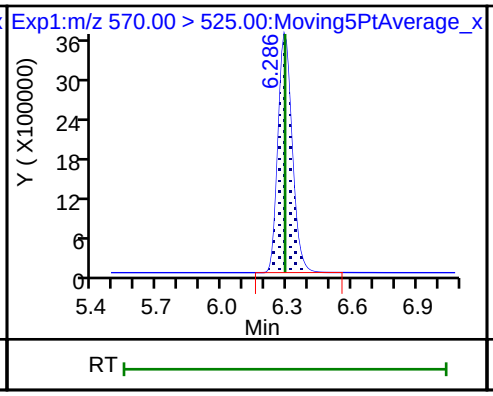
39 Perfluoroundecanoic acid (ND)



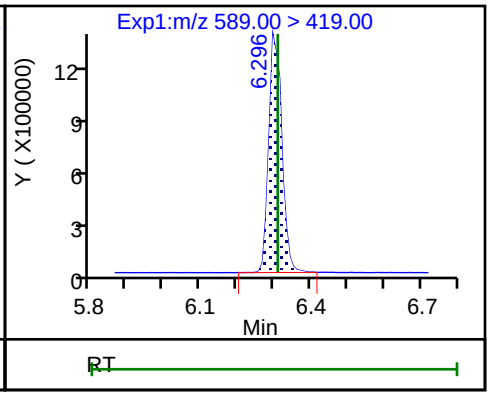
39 Perfluoroundecanoic acid (ND)



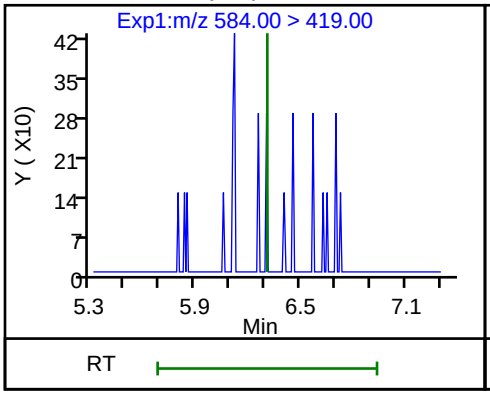
D 40 13C7 PFUnA



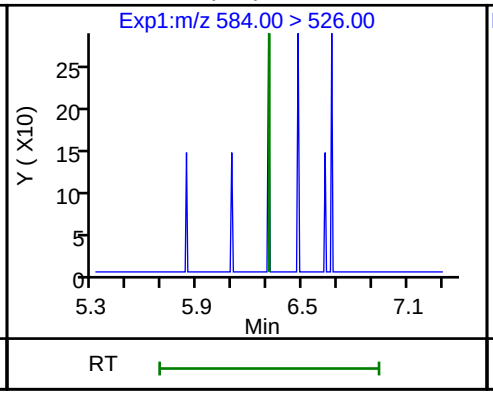
D 41 d5-NEtFOSAA



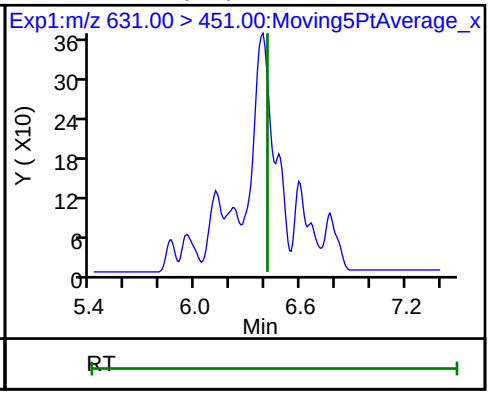
42 NEtFOSAA (ND)



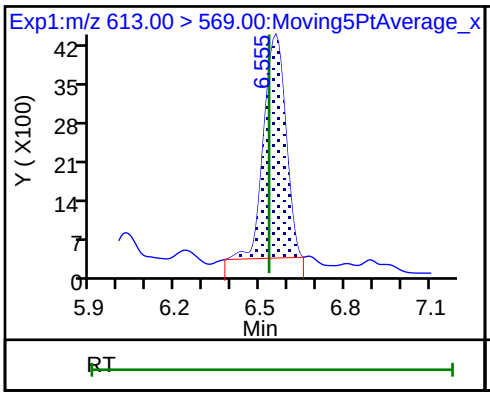
42 NEtFOSAA (ND)



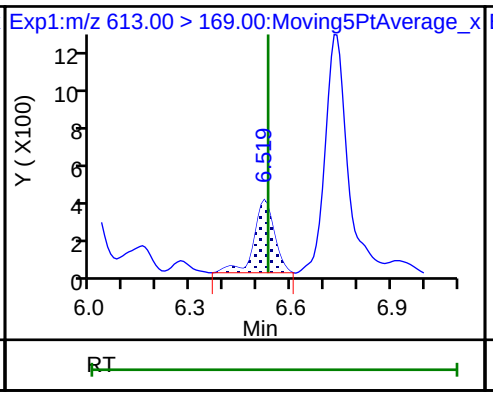
43 11ClFOS (ND)



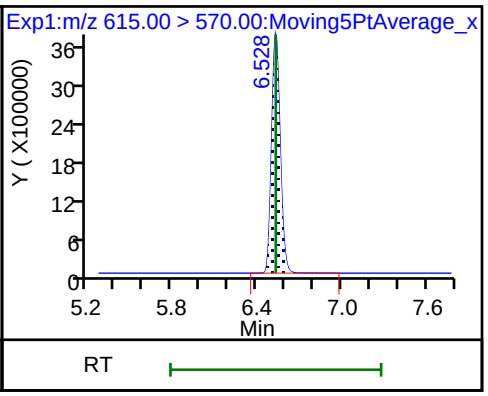
46 Perfluorododecanoic acid



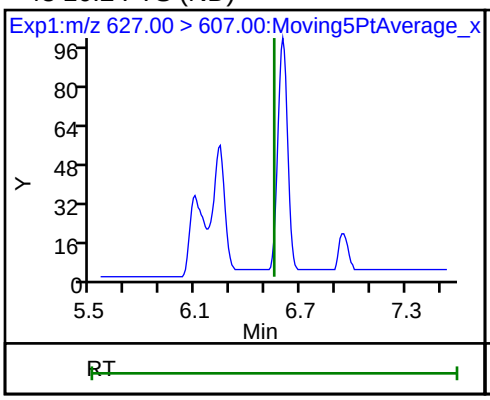
46 Perfluorododecanoic acid



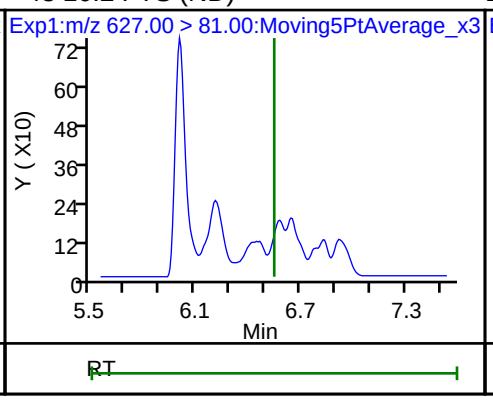
D 45 13C2-PFDoDA



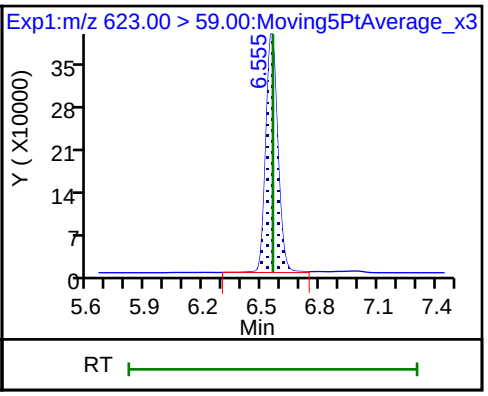
48 10:2 FTS (ND)



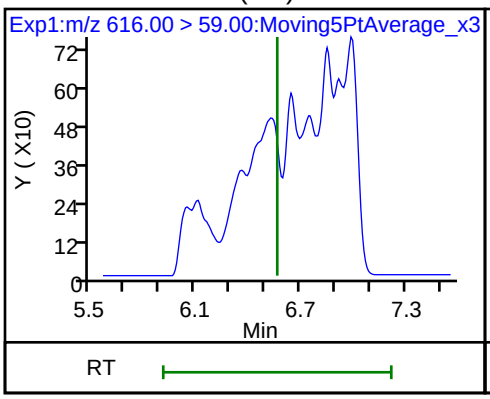
48 10:2 FTS (ND)



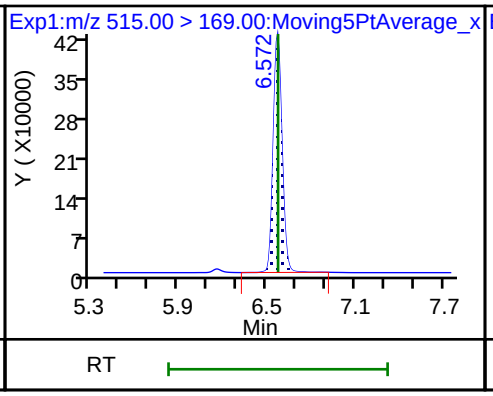
D 44 d7-N-MeFOSE-M



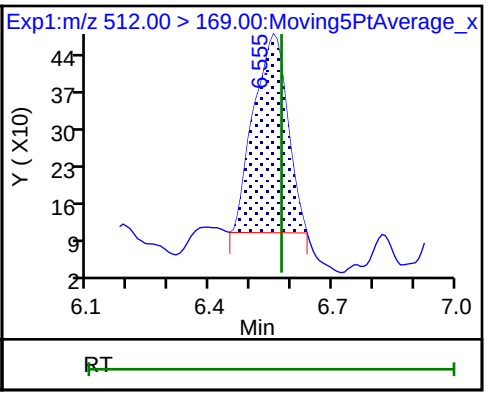
47 N-MeFOSE-M (ND)



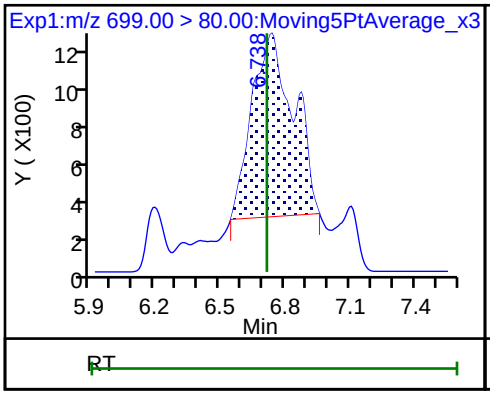
D 49 d3-NMePFOSA



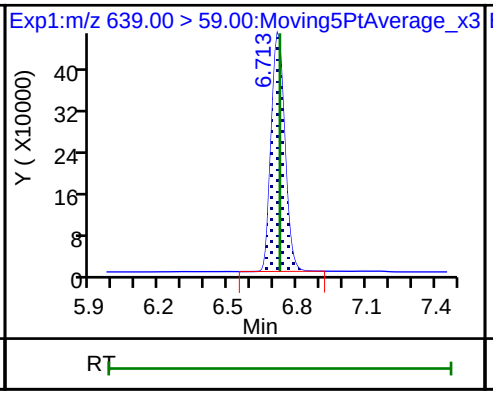
50 NMeFOSA



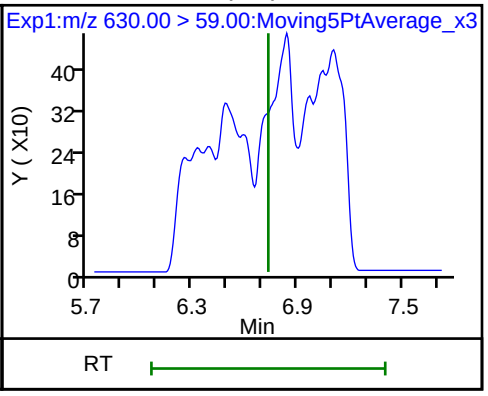
53 PFDoS



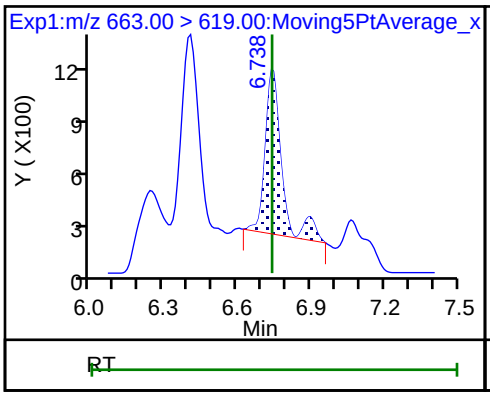
D 51 d9-N-EtFOSE-M



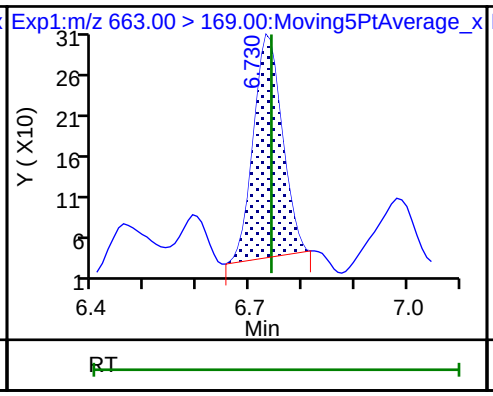
52 N-EtFOSE-M (ND)



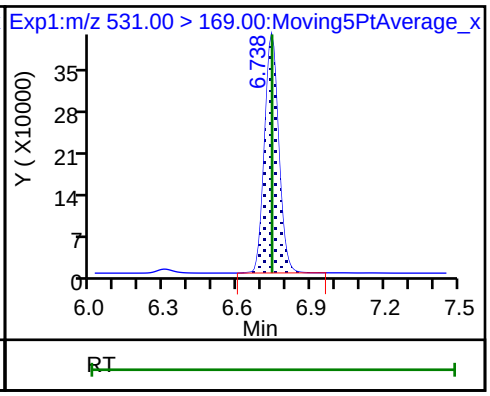
56 Perfluorotridecanoic acid



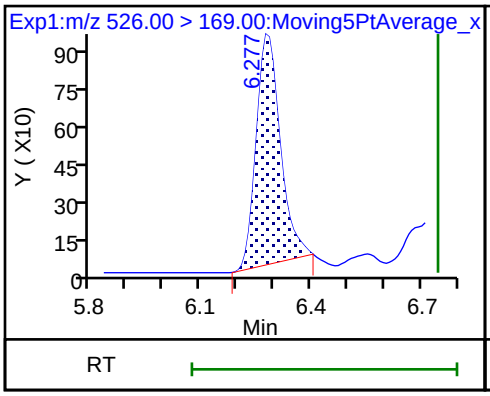
56 Perfluorotridecanoic acid



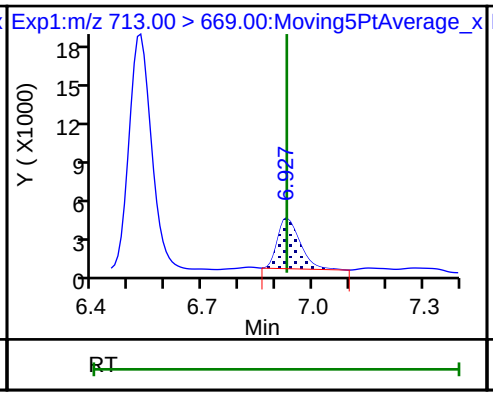
D 54 d5-NEtPFOSA



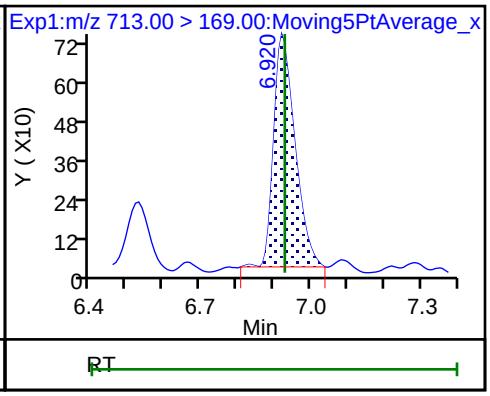
55 N-EtFOSA-M



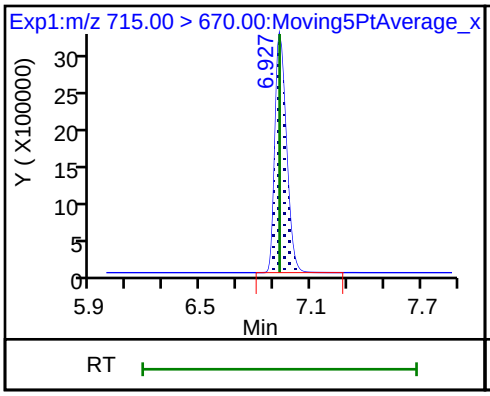
57 Perfluorotetradecanoic acid



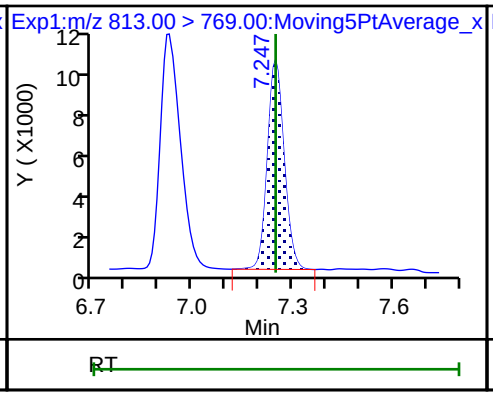
57 Perfluorotetradecanoic acid



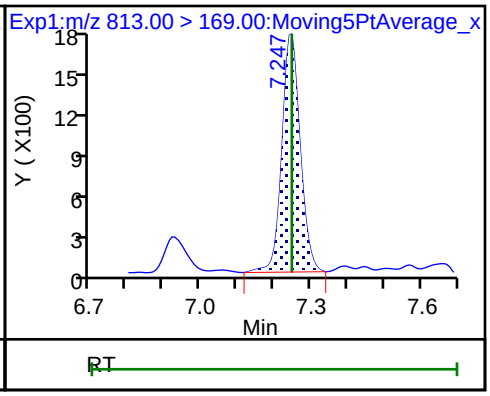
D 58 13C2 PFTeDA



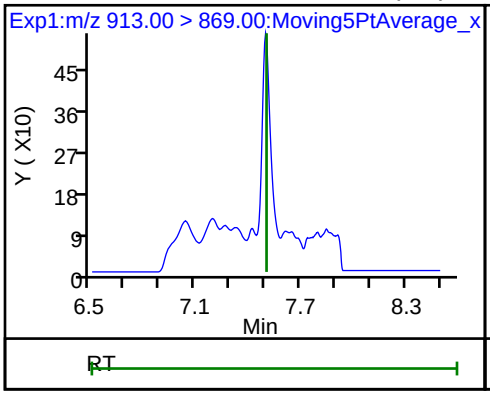
59 Perfluorohexadecanoic acid



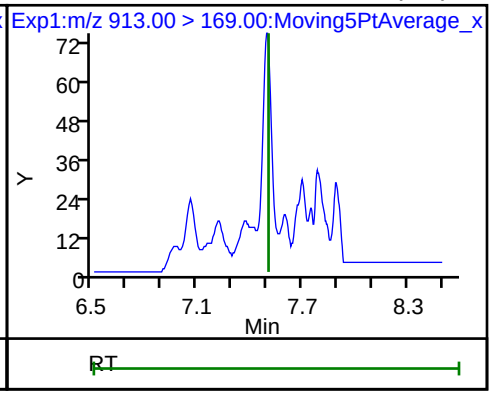
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid (ND)



60 Perfluorooctadecanoic acid (ND)



FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-241437/1-A

Matrix: Water Lab File ID: 22APR07-64.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 250(mL) Date Analyzed: 04/07/2022 17:49

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	1.0	U	2.0	1.0	0.50
375-85-9	Perfluoroheptanoic acid	1.0	U	2.0	1.0	0.50
335-67-1	Perfluorooctanoic acid	1.0	U	2.0	1.0	0.50
375-95-1	Perfluorononanoic acid	1.0	U	2.0	1.0	0.50
335-76-2	Perfluorodecanoic acid	1.0	U	2.0	1.0	0.50
72629-94-8	Perfluorotridecanoic acid	1.0	U	2.0	1.0	0.50
376-06-7	Perfluorotetradecanoic acid	1.0	U	2.0	1.0	0.50
375-73-5	Perfluorobutanesulfonic acid	1.0	U	2.0	1.0	0.50
355-46-4	Perfluorohexanesulfonic acid	1.0	U	2.0	1.0	0.50
1763-23-1	Perfluorooctanesulfonic acid	0.653	J	2.0	1.0	0.50
2991-50-6	NEtFOSAA	1.0	U	3.0	1.0	0.50
2355-31-9	NMeFOSAA	1.2	U	2.0	1.2	0.60
2706-91-4	Perfluoropentanesulfonic acid	1.0	U	2.0	1.0	0.50
375-92-8	Perfluoroheptanesulfonic acid	1.0	U	2.0	1.0	0.50
68259-12-1	Perfluorononanesulfonic acid	1.0	U	2.0	1.0	0.50
335-77-3	Perfluorodecanesulfonic acid	1.0	U	2.0	1.0	0.50
754-91-6	Perfluorooctanesulfonamide	1.0	U	2.0	1.0	0.50
375-22-4	Perfluorobutanoic acid	4.0	U	5.0	4.0	2.0
2706-90-3	Perfluoropentanoic acid	1.0	U	2.0	1.0	0.50
2058-94-8	Perfluoroundecanoic acid	1.0	U	2.0	1.0	0.50
307-55-1	Perfluorododecanoic acid	1.0	U	2.0	1.0	0.50
27619-97-2	6:2 Fluorotelomer sulfonic acid	4.0	U	5.0	4.0	2.0
39108-34-4	8:2 Fluorotelomer sulfonic acid	2.0	U	3.0	2.0	1.0
757124-72-4	4:2 Fluorotelomer sulfonic acid	1.0	U	2.0	1.0	0.50

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-241437/1-A

Matrix: Water Lab File ID: 22APR07-64.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 250(mL) Date Analyzed: 04/07/2022 17:49

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	130		50-150
STL02280	M2-8:2 FTS	116		50-150
STL02279	M2-6:2 FTS	121		50-150
STL02577	13C5 PFHxA	115		50-150
STL01892	13C4 PFHpA	119		50-150
STL01052	13C8 PFOA	113		50-150
STL02578	13C9 PFNA	109		50-150
STL02579	13C6 PFDA	117		50-150
STL02580	13C7 PFUnA	107		50-150
STL02703	13C2-PFDoDA	104		50-150
STL02116	13C2 PFTeDA	90		50-150
STL02337	13C3 PFBS	105		50-150
STL02581	13C3 PFHxS	115		50-150
STL01054	13C8 PFOS	111		50-150
STL02118	d3-NMeFOSAA	111		50-150
STL02117	d5-NEtFOSAA	114		50-150
STL01056	13C8 FOSA	94		50-150
STL00992	13C4 PFBA	111		50-150
STL01893	13C5 PFPeA	111		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-64.d
Lims ID: MB 410-241437/1-A
Client ID:
Sample Type: MB
Inject. Date: 07-Apr-2022 17:49:33 ALS Bottle#: 28 Worklist Smp#: 33
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 410-241437/1-A
Misc. Info.: Plate: 1 Rack: 1 410-0054325-033
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 20:37:21 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: matthewsl Date: 07-Apr-2022 19:53:18
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-61.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.655	3.649	0.006	0.998	28544	0.0387			44.9	
D 2 13C4 PFBA										
217.00 > 172.00	3.662	3.649	0.013		8976470	11.1		111	142497	
63 PFECA F										
229.00 > 85.00	3.905	3.881	0.024	0.934	1168	0.001878			194	
67 3:3 FTCA										
241.00 > 177.00		4.161				ND				
241.00 > 117.00		4.161								
3 Perfluoropentanoic acid										
263.00 > 219.00	4.183	4.168	0.015	1.000	12559	0.0156			34.1	
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.168	0.015		7684753	11.1		111	79953	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.228	4.220	0.008	0.998	50357	0.0540	Target=2.91		60.2	
299.00 > 99.00	4.228	4.220	0.008	0.998	17447		2.89(1.46-4.37)		57.6	
D 6 13C3 PFBS										
302.00 > 80.00	4.235	4.227	0.008		9045623	9.80		105	397123	
64 PFECA A										
279.00 > 85.00		4.289				ND				
65 PES										
315.00 > 135.00		4.384				ND				
315.00 > 83.00		4.384								
68 PFECA B										
295.00 > 201.00		4.504				ND				
7 4:2 FTS										
327.00 > 307.00		4.534				ND				
327.00 > 81.00		4.534								

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.544	4.544	0.0		528091	12.1		130	10411	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.583	4.573	0.010	1.000	31344	0.0401	Target=14.20		183	
313.00 > 119.00	4.583	4.573	0.010	1.000	2271		13.80(7.10-21.30)		87.7	
D 9 13C5 PFHxA										
318.00 > 273.00	4.583	4.583	0.0		9151484	11.5		115	253399	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00		4.603				ND				
349.00 > 99.00		4.603								
12 HFPO-DA										
329.00 > 285.00	4.713	4.706	0.007	1.000	1670	0.006448			50.6	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.713	4.706	0.007		1057181	12.2		122	70052	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.972	4.971	0.001	0.998	11745	0.0123	Target=3.24		69.6	
363.00 > 169.00	4.972	4.971	0.001	0.998	4164		2.82(1.62-4.87)		84.9	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00		4.971				ND				
399.00 > 99.00		4.971								
D 17 13C4 PFHpA										
367.00 > 322.00	4.981	4.971	0.010		10004537	11.9		119	175682	
D 16 13C3 PFHxS										
402.00 > 80.00	4.981	4.971	0.010		9025599	10.9		115	950840	
18 DONA										
377.00 > 251.00		5.015				ND				
62 5:3 FTCA										
341.00 > 237.00		5.038				ND				
341.00 > 217.00		5.038								
19 6:2 FTS										
427.00 > 407.00		5.317				ND				
427.00 > 81.00		5.317								
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.324	0.007		335277	11.5		121	13129	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.330				ND				
449.00 > 99.00		5.330								
23 Perfluorooctanoic acid										
413.00 > 369.00	5.237	5.337	-0.100	0.980	14937	0.0160	Target=2.25		174	
413.00 > 169.00	5.244	5.337	-0.093	0.981	4576		3.26(1.13-3.38)		413	
D 22 13C8 PFOA										
421.00 > 376.00	5.344	5.337	0.007		10320590	11.3		113	2085416	
24 Perfluorooctanesulfonic acid										M
499.00 > 80.00	5.677	5.669	0.008	1.000	150883	0.1633	Target=3.77		34471	M
499.00 > 99.00	5.669	5.669	0.0	0.999	39794		3.79(1.89-5.66)		114	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.669	0.008		7945800	10.6		111	468336	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.693	5.684	0.008	1.000	6994	0.007612	Target=4.65		70.9	
463.00 > 169.00	5.684	5.684	0.0	0.999	2043		3.42(2.33-6.98)		90.2	
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.684	0.008		10199076	10.9		109	246927	
66 7:3 FTCA										
441.00 > 317.00		5.782				ND				
441.00 > 337.00		5.782								
28 9ClFOS										
531.00 > 351.00		5.849				ND				
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.972				ND				
549.00 > 99.00		5.972								
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	5.997	0.008	1.000	22948	0.0224	Target=8.88		296	
513.00 > 169.00	5.997	5.997	0.0	0.999	2971		7.72(4.44-13.32)		43.6	
33 8:2 FTS										
527.00 > 507.00		5.997				ND				
527.00 > 81.00		5.997								
D 32 13C6 PFDA										
519.00 > 474.00	6.005	5.997	0.008		11811648	11.7		117	572535	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.005	5.997	0.008		270364	11.1		116	12896	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.104	6.095	0.009	0.999	104609	0.0864			2930	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.104	0.009		11687260	9.41		94.1	306100	
36 NMeFOSAA										
570.00 > 419.00		6.146				ND				
570.00 > 483.00		6.146								
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.147	6.146	0.001		3219811	11.1		111	661842	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.242				ND				
599.00 > 99.00		6.242								
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.270				ND				
563.00 > 169.00		6.270								
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.270	0.010		11046788	10.7		107	248245	
42 NEtFOSAA										
584.00 > 419.00		6.289				ND				
584.00 > 526.00		6.289								
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.289	0.009		2536526	11.4		114	363913	
43 11ClFOS										
631.00 > 451.00		6.387				ND				

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										
613.00 > 569.00	6.557	6.512	0.045	1.005	13151	0.0134	Target=5.85		122	
613.00 > 169.00	6.512	6.512	0.0	0.999	1615		8.14(2.92-8.77)		31.1	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.521	6.512	0.009		11103622	10.4		104	264098	
48 10:2 FTS										
627.00 > 607.00		6.530				ND				
627.00 > 81.00		6.530								
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.539	0.009		1112571	9.58		95.8	5932	
47 N-MeFOSE-M										
616.00 > 59.00		6.548				ND				
50 NMeFOSA										
512.00 > 169.00		6.566				ND				
D 49 d3-NMePFOSA										
515.00 > 169.00	6.565	6.566	-0.001		1042244	6.65		66.5	6785	
53 PFDoS										
699.00 > 80.00	6.624	6.696	-0.072	1.167	1155	0.001411			12.3	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.714	6.705	0.009		1227030	8.79		87.9	7277	
52 N-EtFOSE-M										
630.00 > 59.00		6.714				ND				
56 Perfluorotridecanoic acid										
663.00 > 619.00		6.724				ND				
663.00 > 169.00		6.724								
55 N-EtFOSA-M										
526.00 > 169.00	6.270	6.732	-0.462	0.930	3859	0.0382			104	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.732	0.008		904099	6.42		64.2	5638	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.909	0.012	1.000	10566	0.0124	Target=6.07		23.4	
713.00 > 169.00	6.921	6.909	0.012	1.000	1383		7.64(3.04-9.11)		69.0	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.916	0.005		9557159	9.01		90.1	231448	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.232	0.009	1.046	19361	0.0321	Target=6.20		73.1	
813.00 > 169.00	7.234	7.232	0.002	1.045	3315		5.84(3.10-9.30)		199	
60 Perfluorooctadecanoic acid										
913.00 > 869.00		7.482				ND				
913.00 > 169.00		7.482								
S 61 Total PFOA and PFOS										
216.00 > 172.00						0.1793				

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

M - Manually Integrated

Report Date: 07-Apr-2022 20:39:02 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-64.d

Injection Date: 07-Apr-2022 17:49:33 Instrument ID: 29347

Lims ID: MB 410-241437/1-A

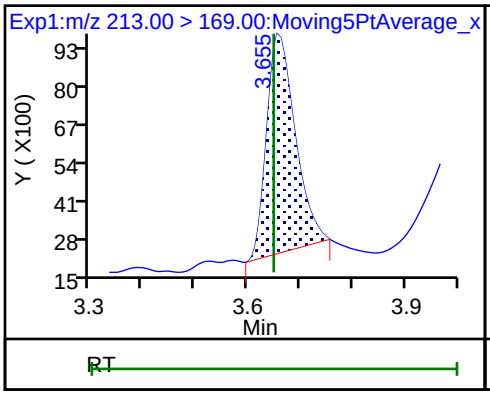
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 28 Worklist Smp#: 33

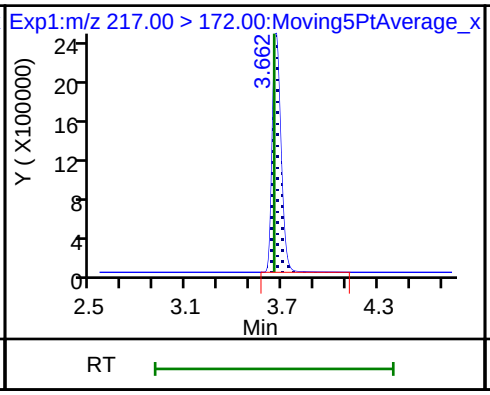
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

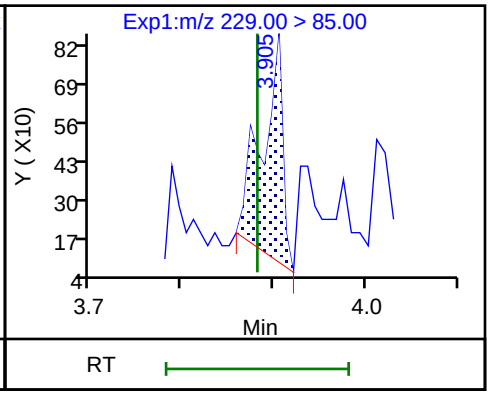
1 Perfluorobutanoic acid



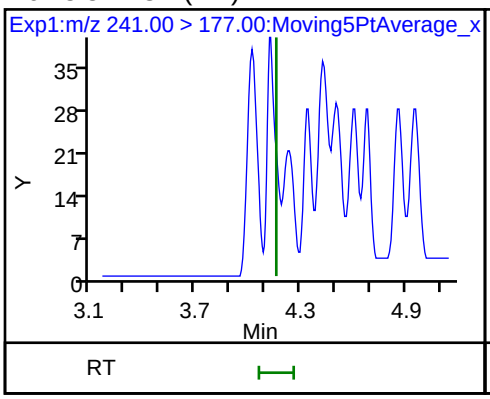
D 2 13C4 PFBA



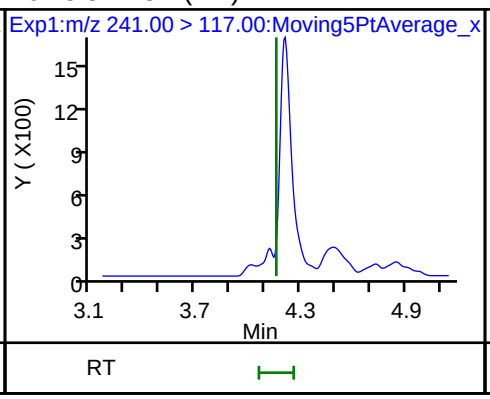
63 PFECA F



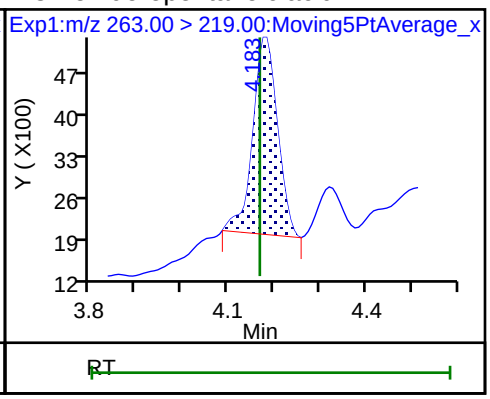
67 3:3 FTCA (ND)



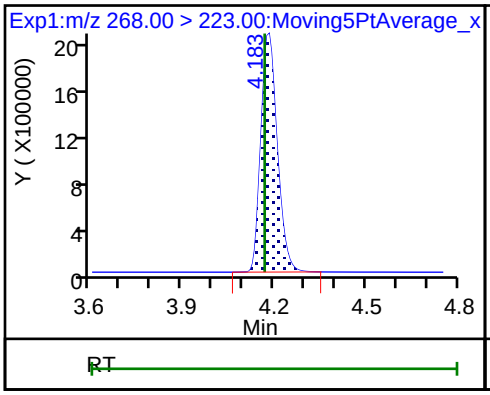
67 3:3 FTCA (ND)



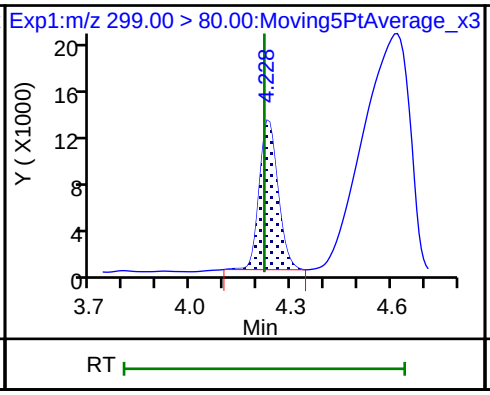
3 Perfluoropentanoic acid



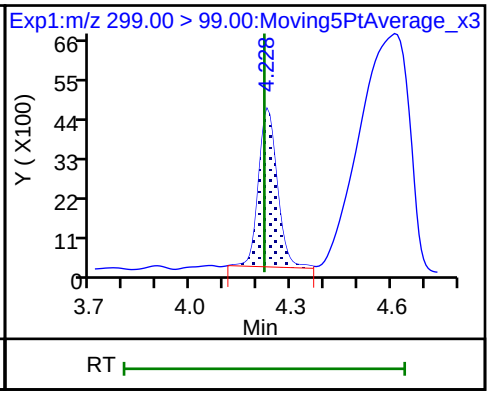
D 4 13C5 PFPeA



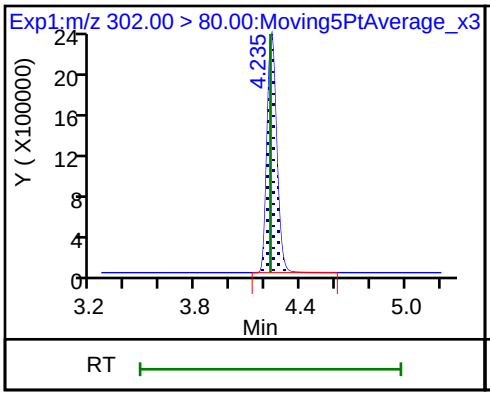
5 Perfluorobutanesulfonic acid



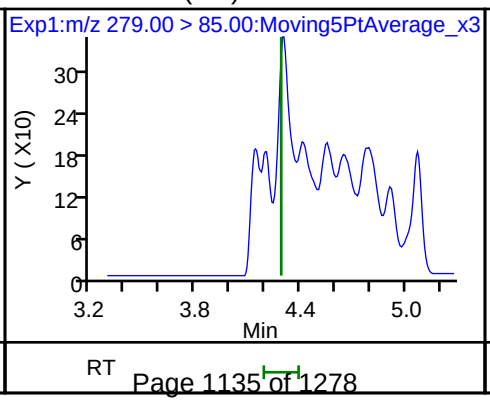
5 Perfluorobutanesulfonic acid



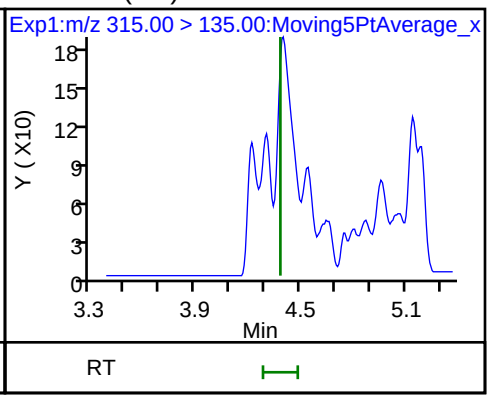
D 6 13C3 PFBS



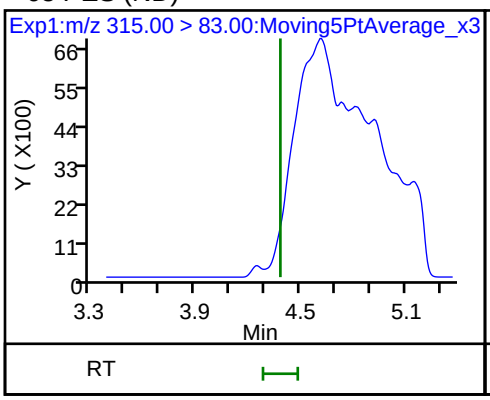
64 PFECA A (ND)



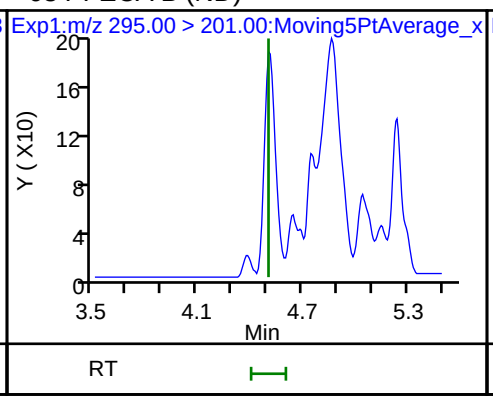
65 PES (ND)



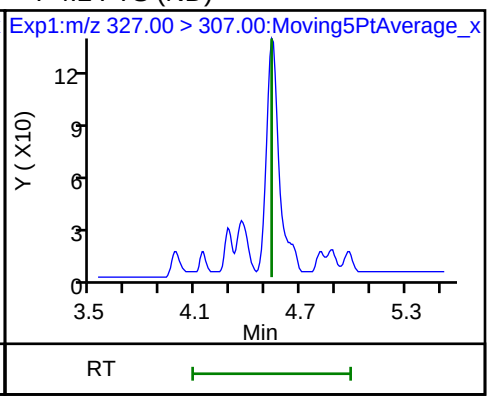
65 PES (ND)



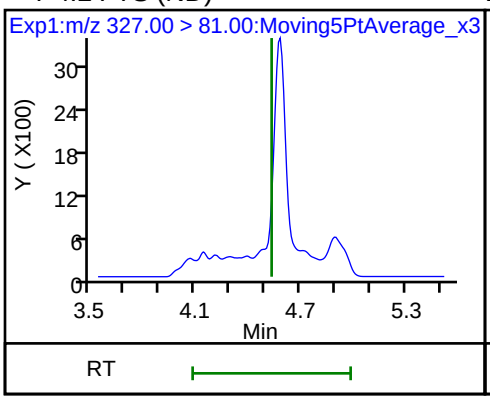
68 PFECA B (ND)



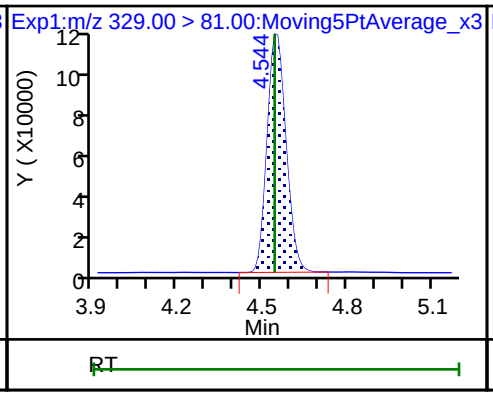
7 4:2 FTS (ND)



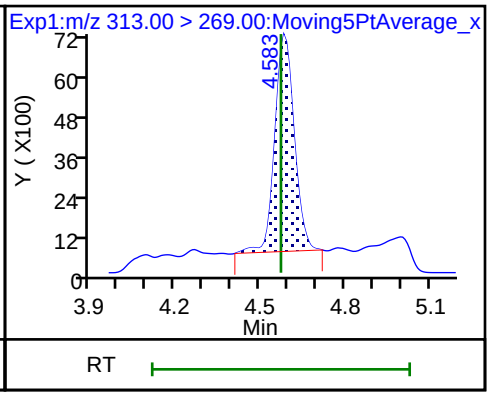
7 4:2 FTS (ND)



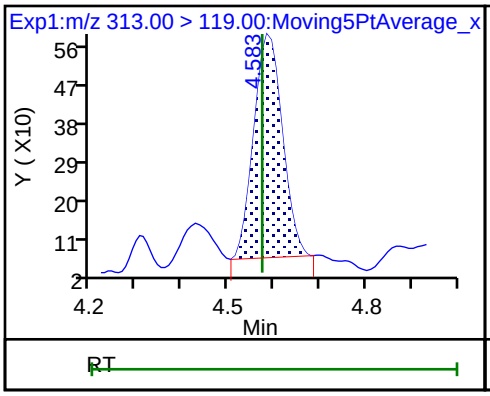
D 8 M2-4:2 FTS



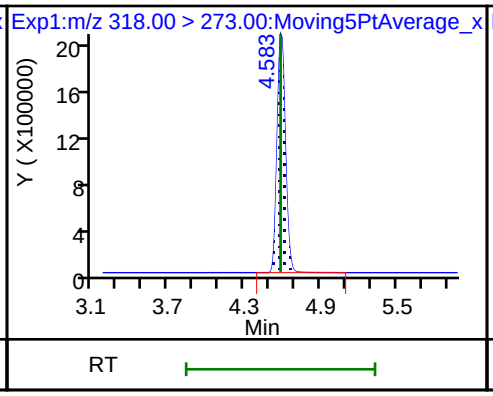
10 Perfluorohexanoic acid



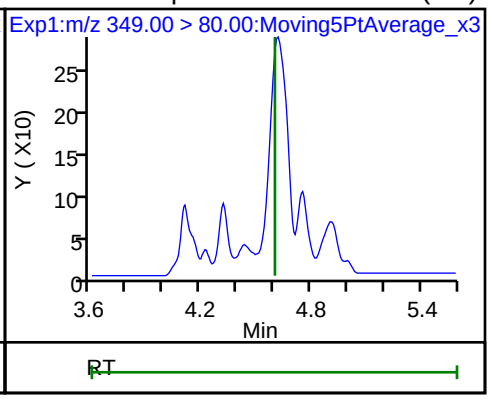
10 Perfluorohexanoic acid



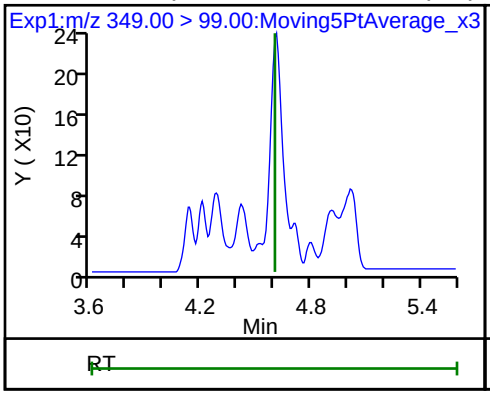
D 9 13C5 PFHxA



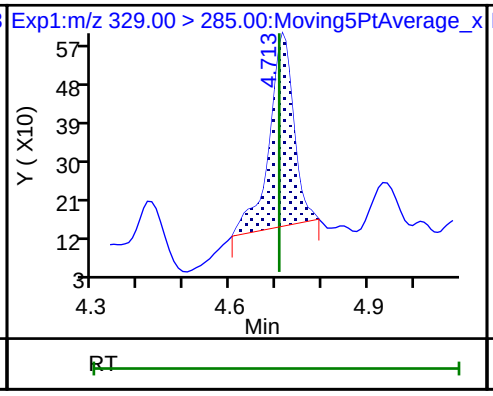
11 Perfluoropentanesulfonic acid (ND)



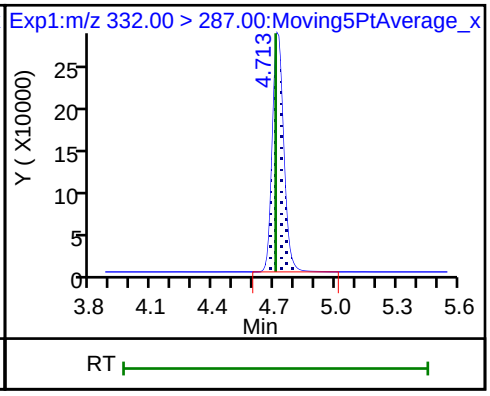
11 Perfluoropentanesulfonic acid (ND)



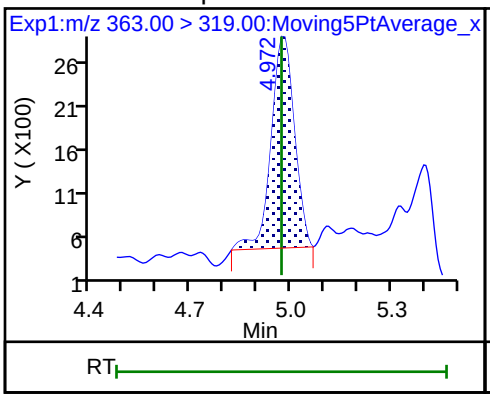
12 HFPO-DA



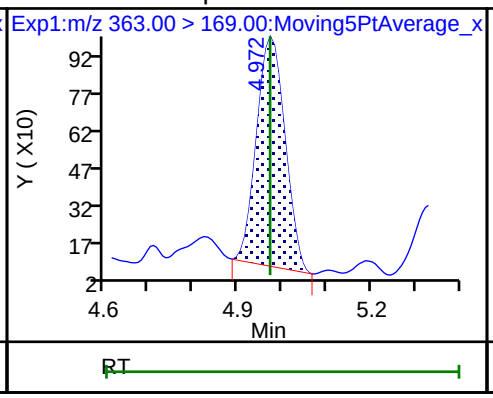
D 13 13C3 HFPO-DA



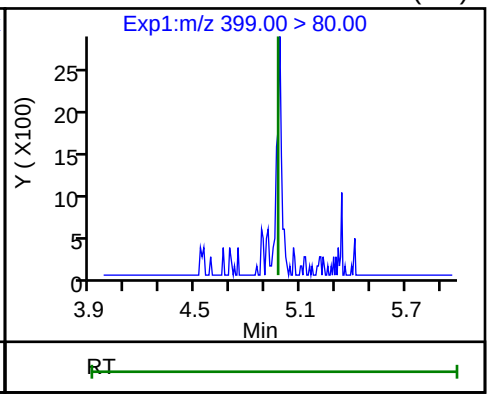
15 Perfluoroheptanoic acid



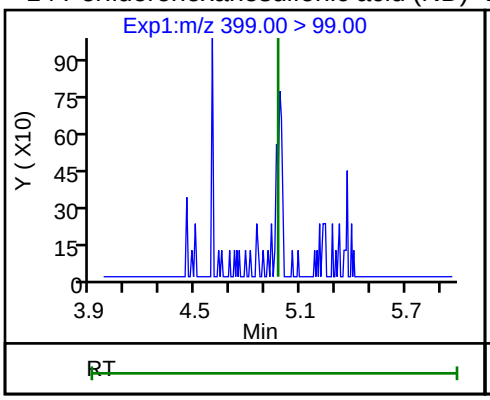
15 Perfluoroheptanoic acid



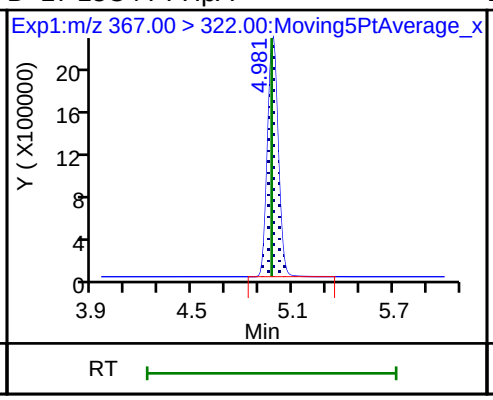
14 Perfluorohexanesulfonic acid (ND)



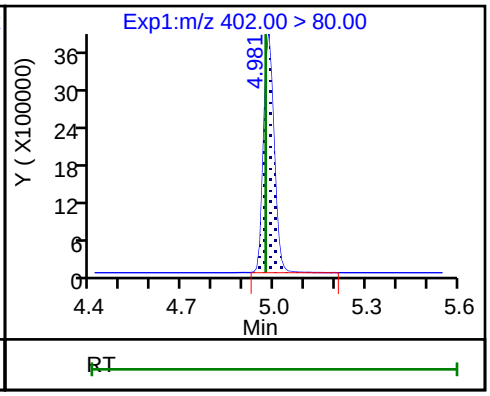
14 Perfluorohexanesulfonic acid (ND)



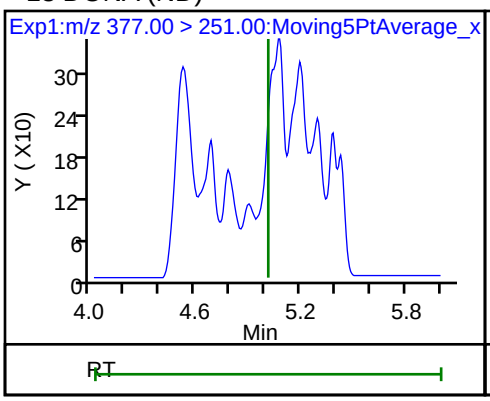
D 17 13C4 PFHpA



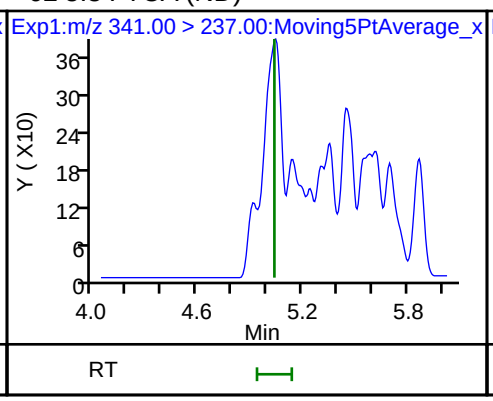
D 16 13C3 PFHxS



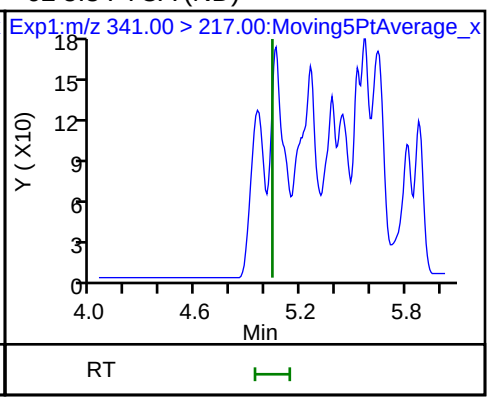
18 DONA (ND)



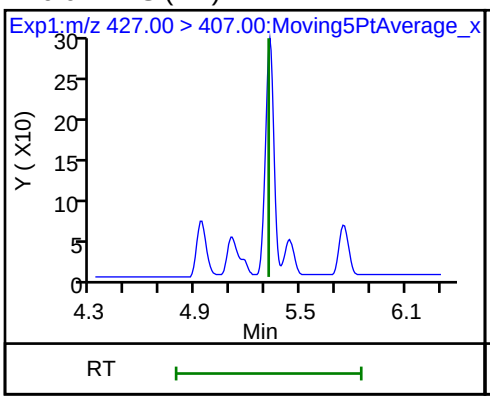
62 5:3 FTCA (ND)



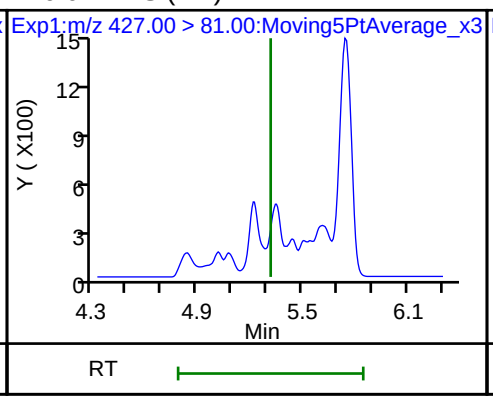
62 5:3 FTCA (ND)



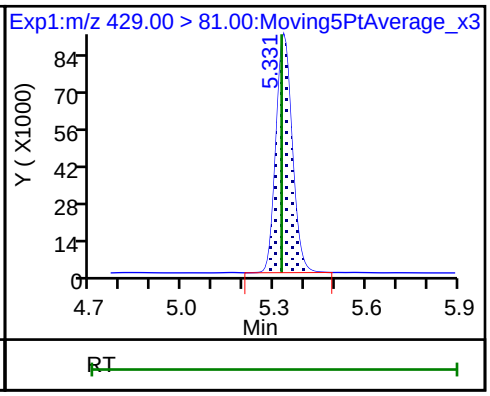
19 6:2 FTS (ND)



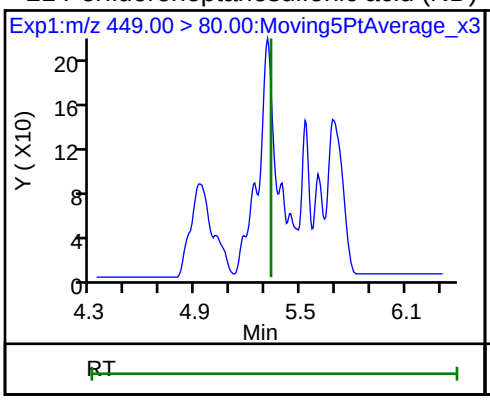
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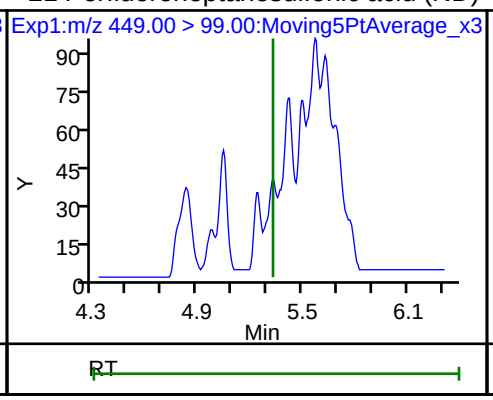
D 20 M2-6:2 FTS



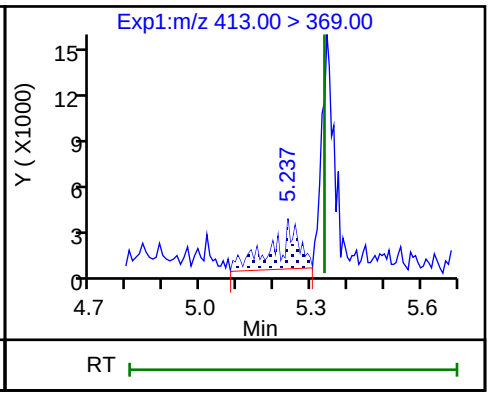
21 Perfluoroheptanesulfonic acid (ND)



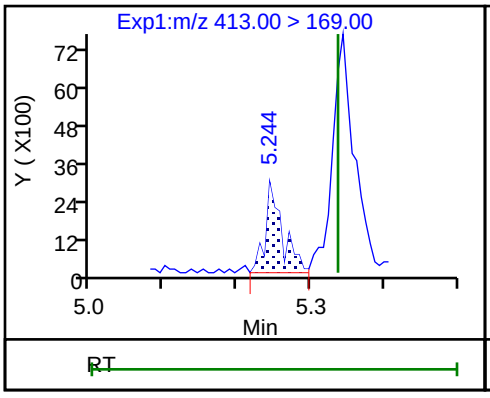
21 Perfluoroheptanesulfonic acid (ND)



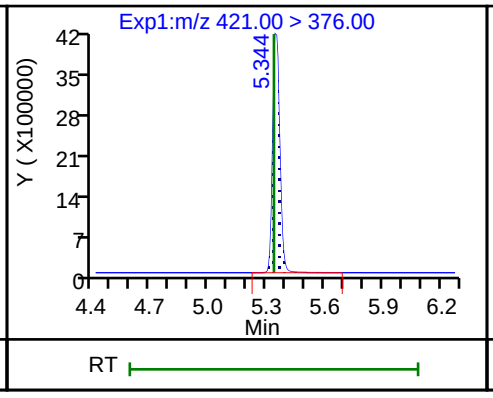
23 Perfluorooctanoic acid



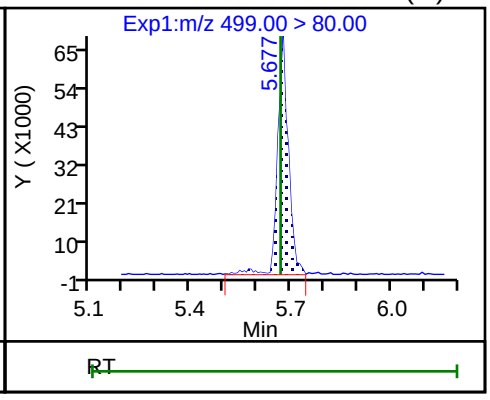
23 Perfluorooctanoic acid



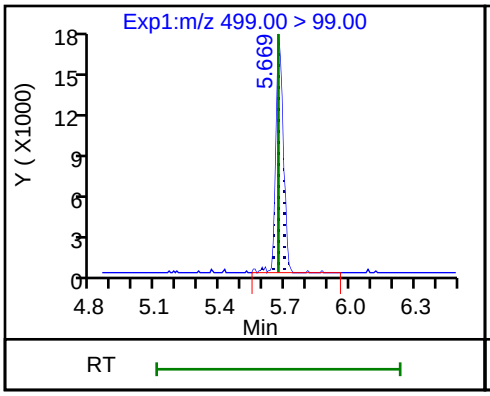
D 22 13C8 PFOA



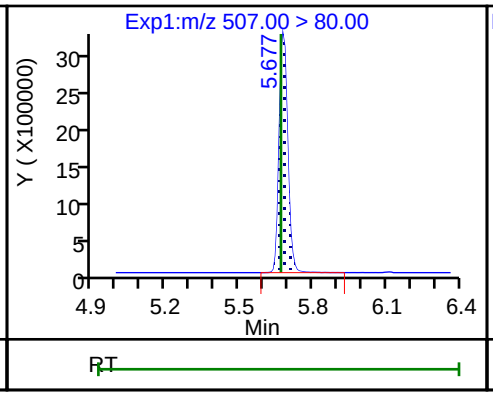
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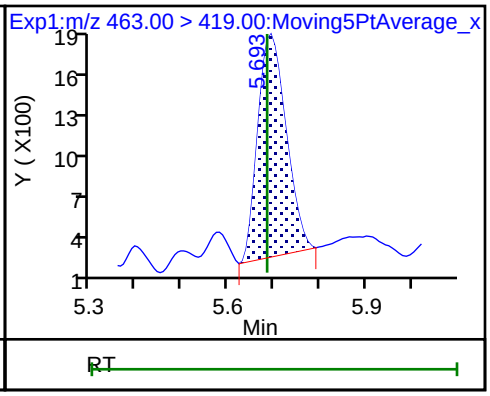
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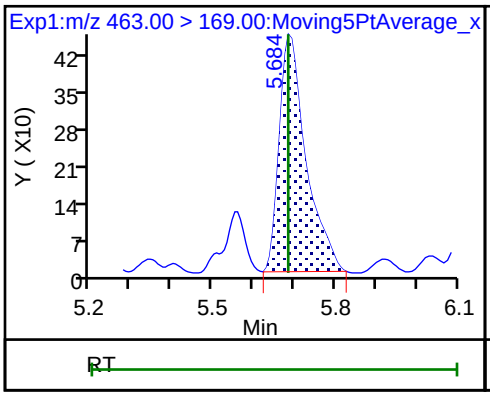
D 25 13C8 PFOS



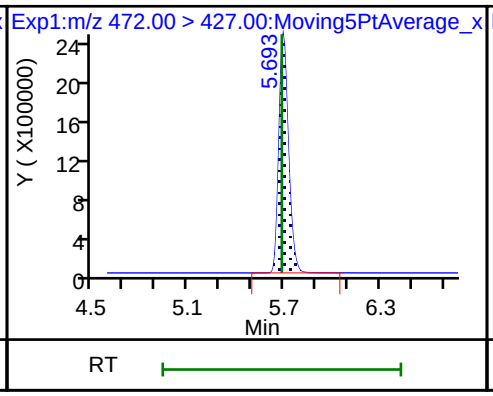
26 Perfluorononanoic acid



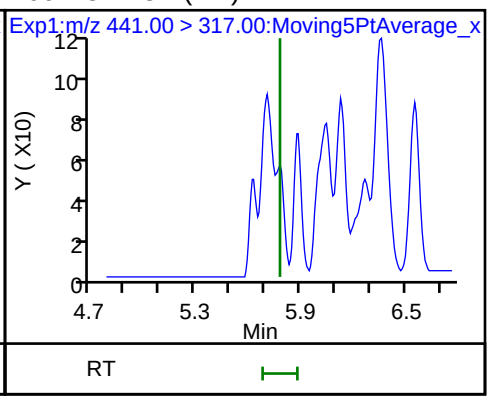
26 Perfluorononanoic acid



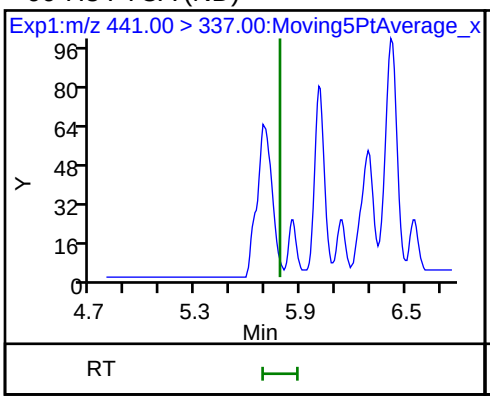
D 27 13C9 PFNA



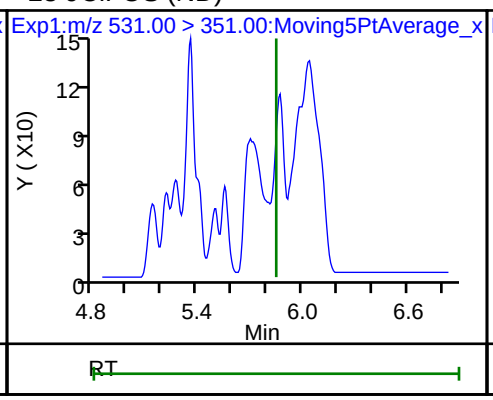
66 7:3 FTCA (ND)



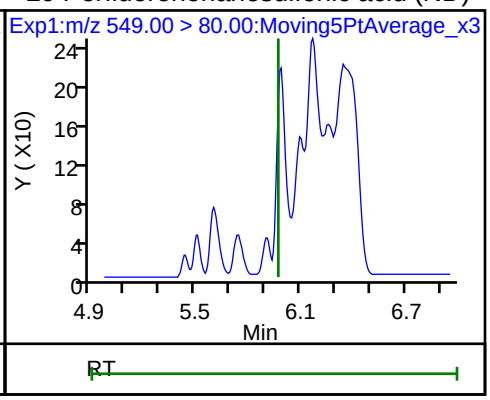
66 7:3 FTCA (ND)



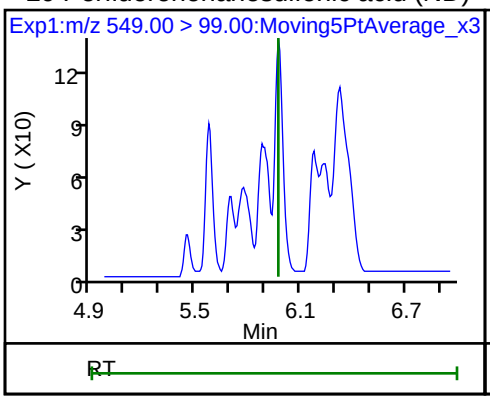
28 9ClFOS (ND)



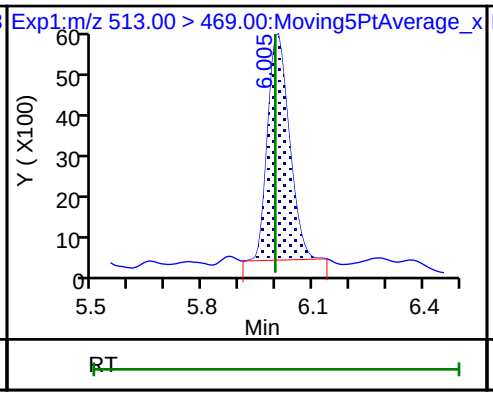
29 Perfluorononanesulfonic acid (ND)



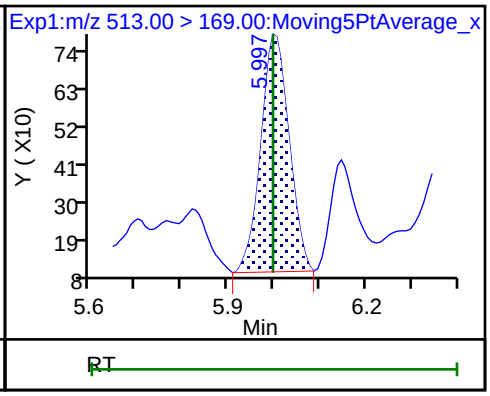
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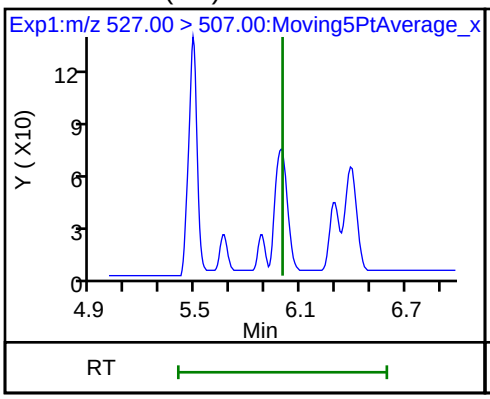
30 Perfluorodecanoic acid



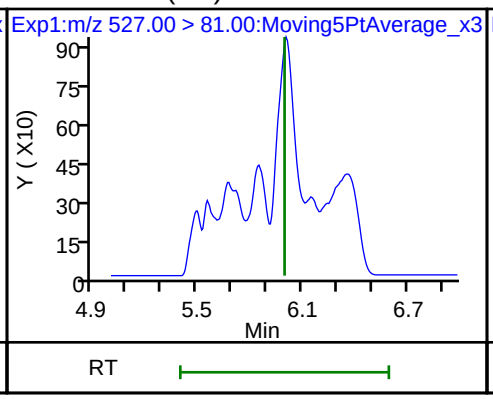
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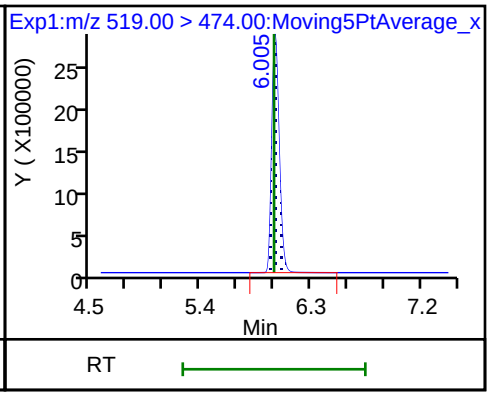
33 8:2 FTS (ND)



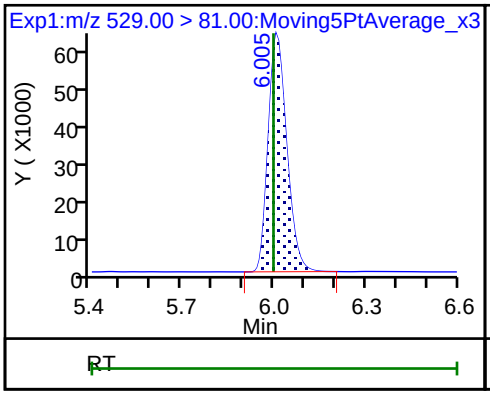
33 8:2 FTS (ND)



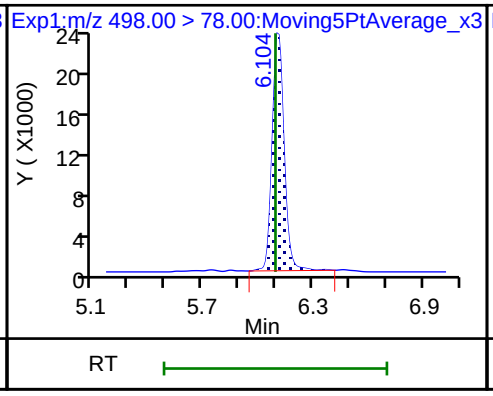
D 32 13C6 PFDA



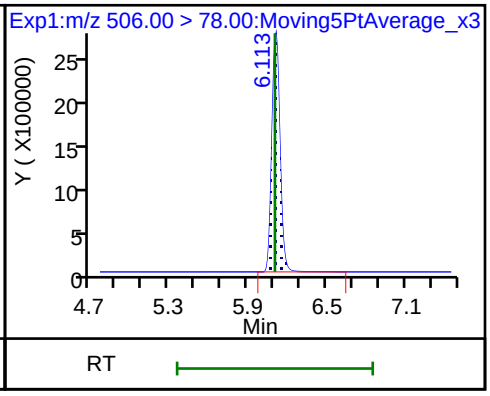
D 31 M2-8:2 FTS



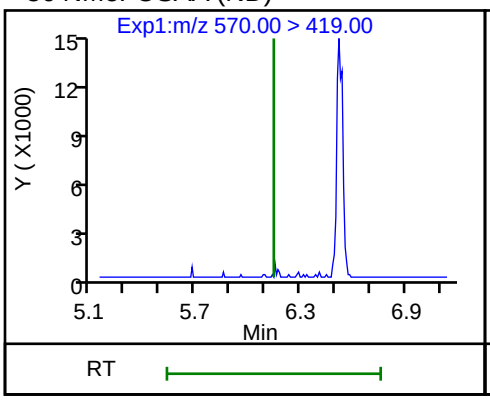
34 Perfluorooctanesulfonamide



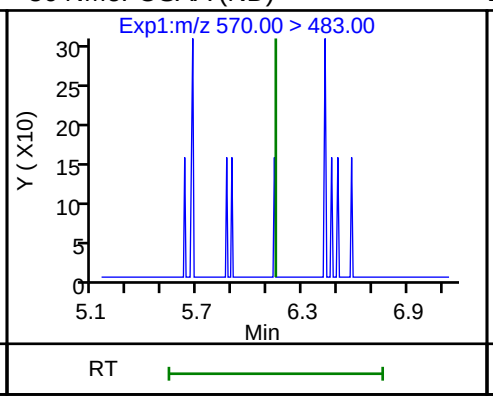
D 35 13C8 FOSA



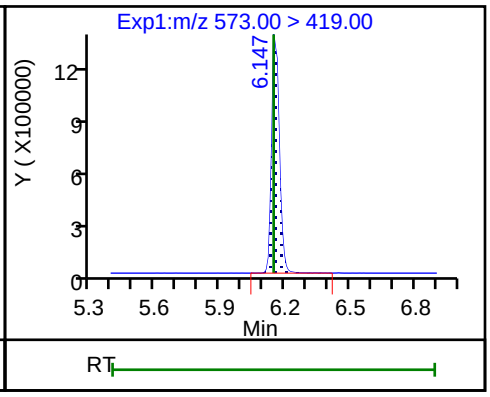
36 NMeFOSAA (ND)



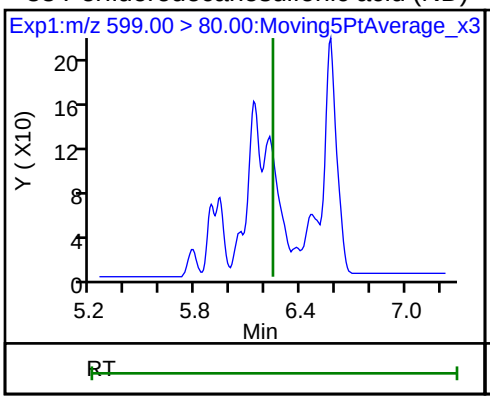
36 NMeFOSAA (ND)



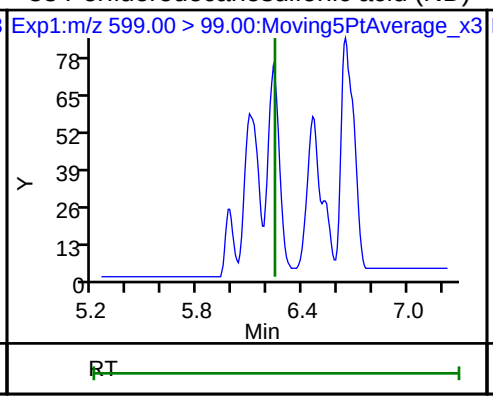
D 37 d3-NMeFOSAA



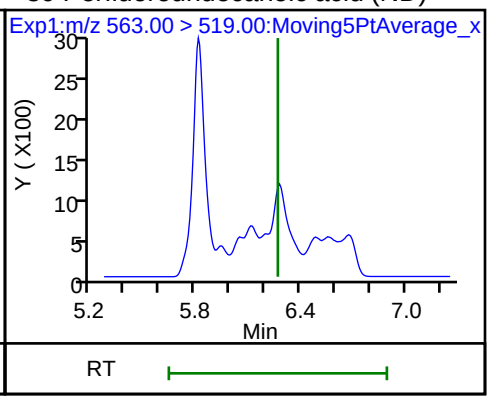
38 Perfluorodecanesulfonic acid (ND)



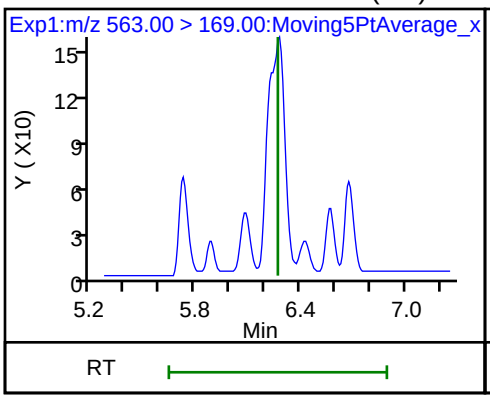
38 Perfluorodecanesulfonic acid (ND)



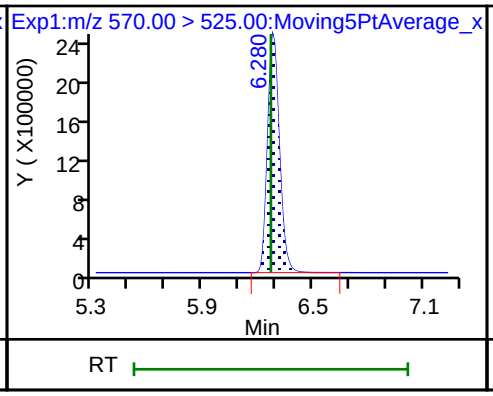
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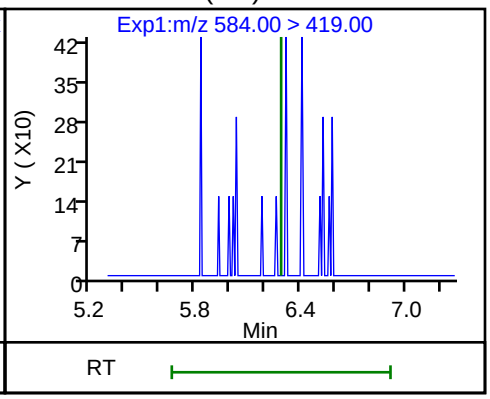
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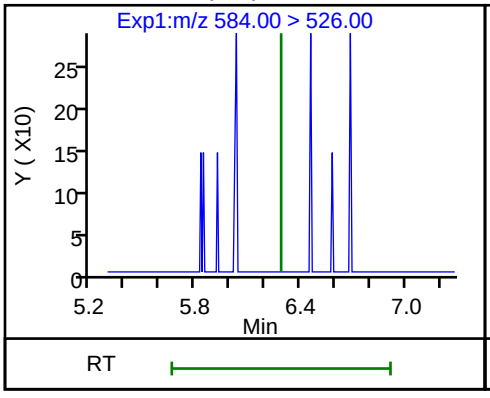
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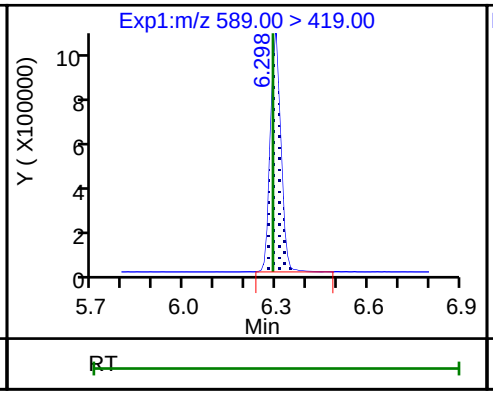
42 NEtFOSAA (ND)



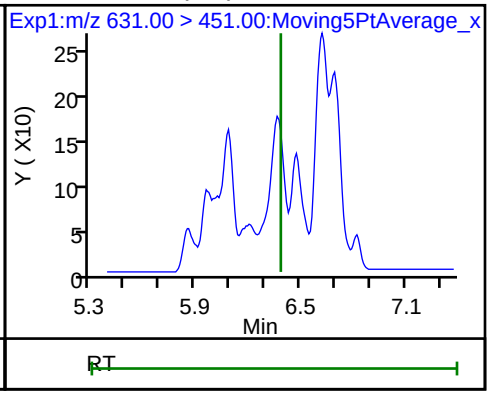
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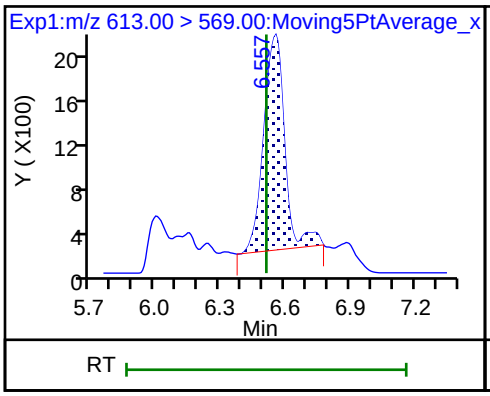
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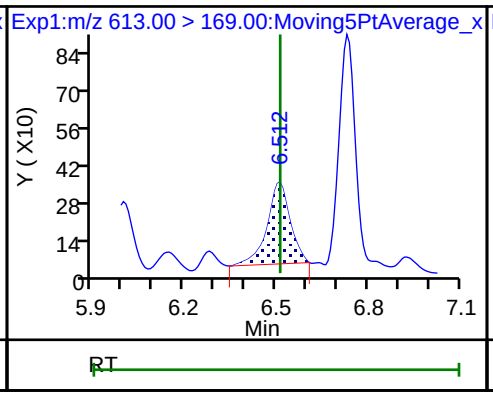
43 11ClFOS (ND)



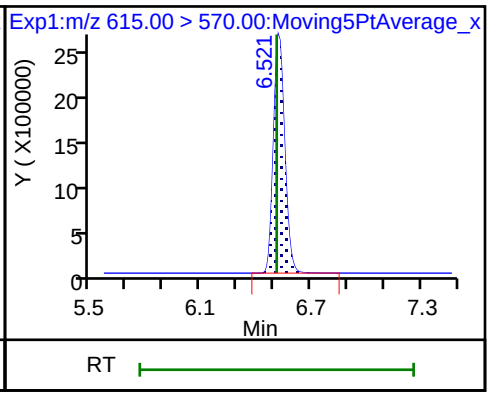
46 Perfluorododecanoic acid



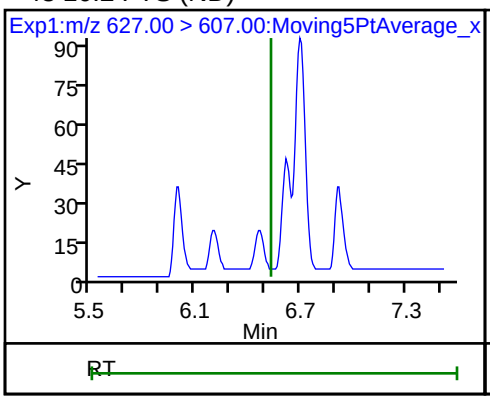
46 Perfluorododecanoic acid



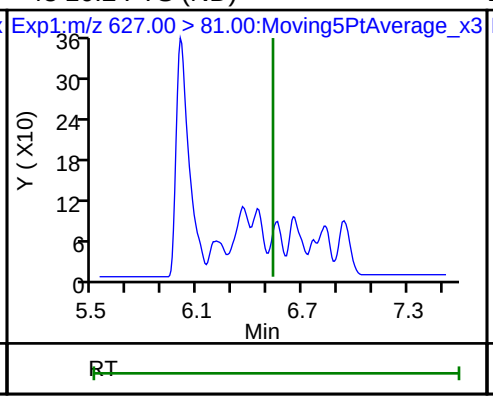
D 45 13C2-PFDoDA



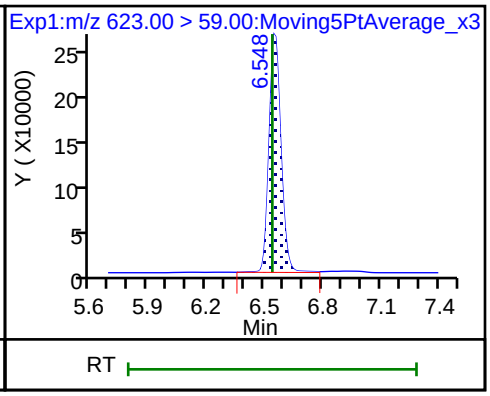
48 10:2 FTS (ND)



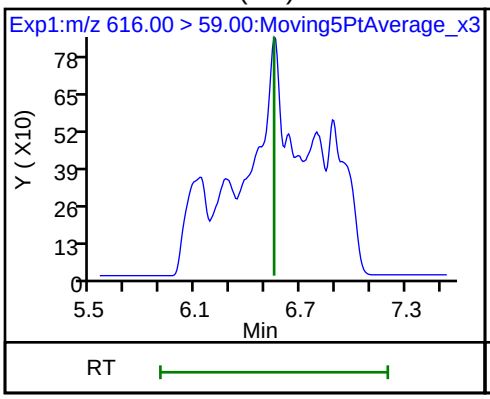
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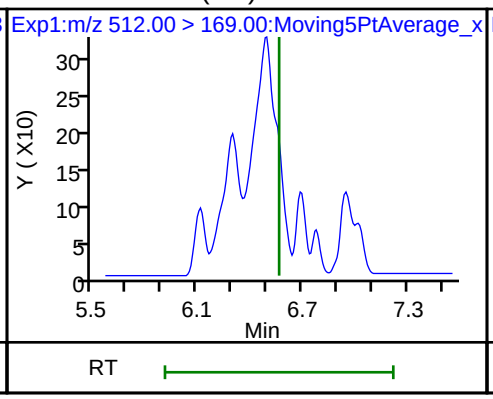
D 44 d7-N-MeFOSE-M



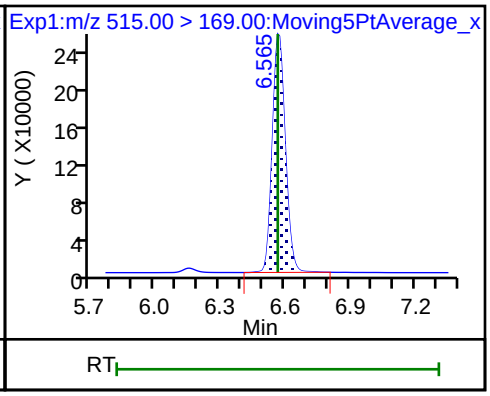
47 N-MeFOSE-M (ND)



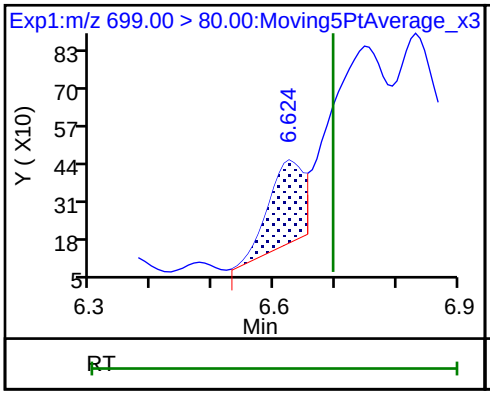
50 NMeFOSA (ND)



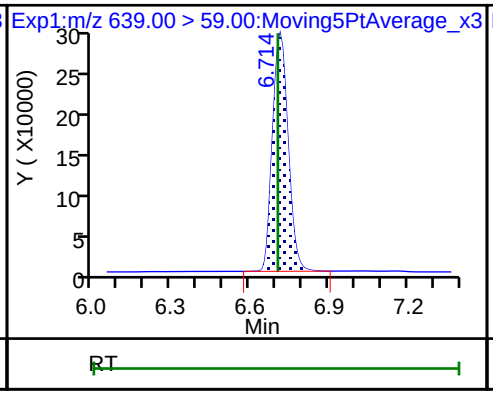
D 49 d3-NMePFOSA



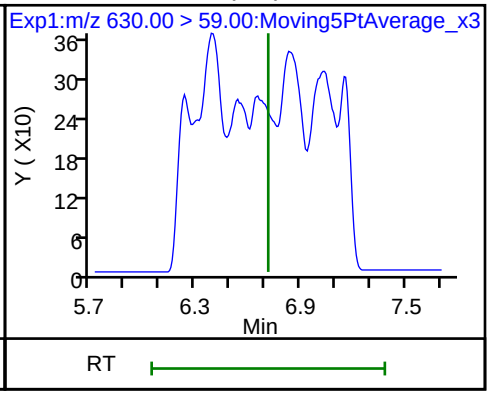
53 PFDoS



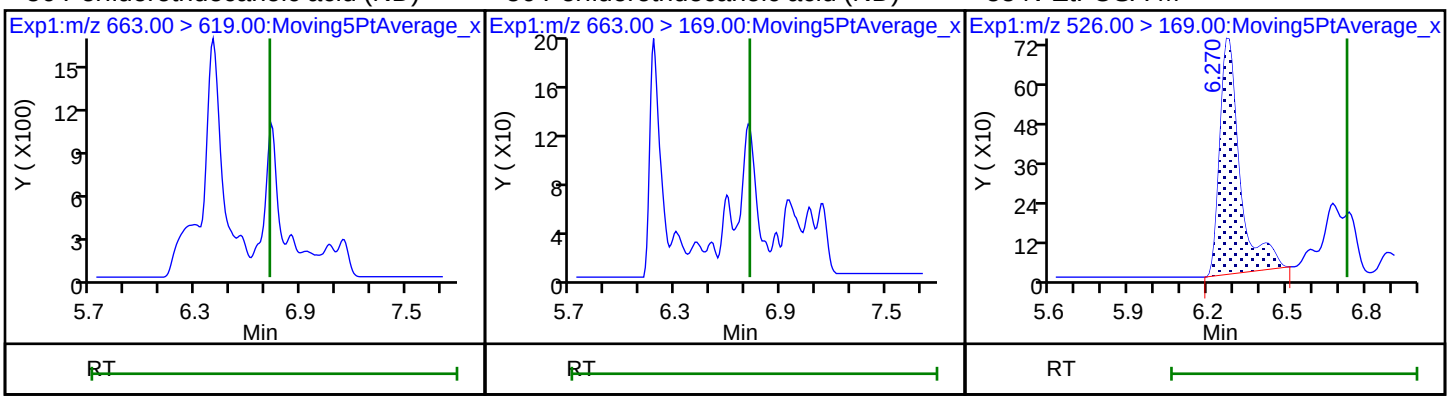
D 51 d9-N-EtFOSE-M



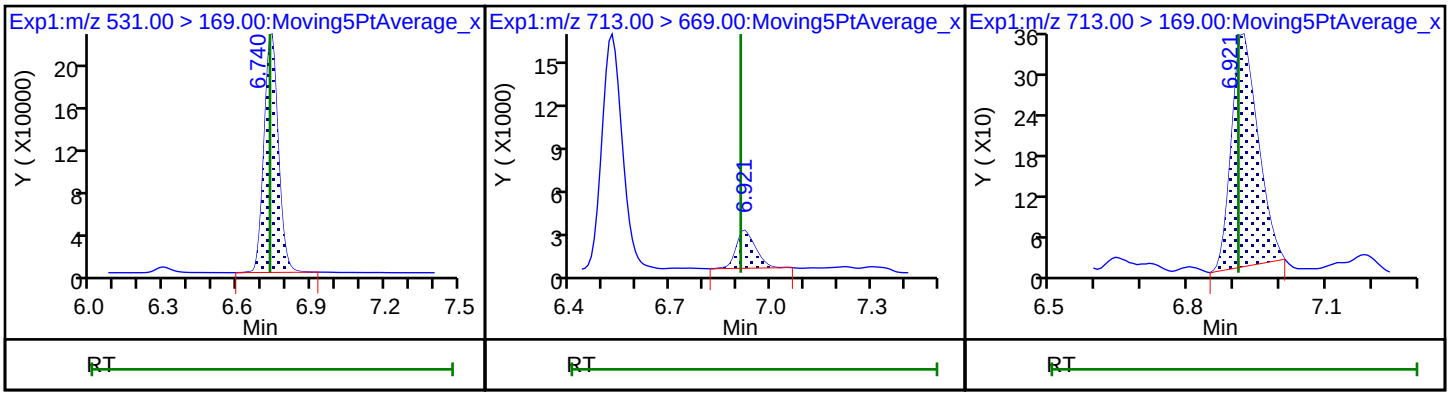
52 N-EtFOSE-M (ND)



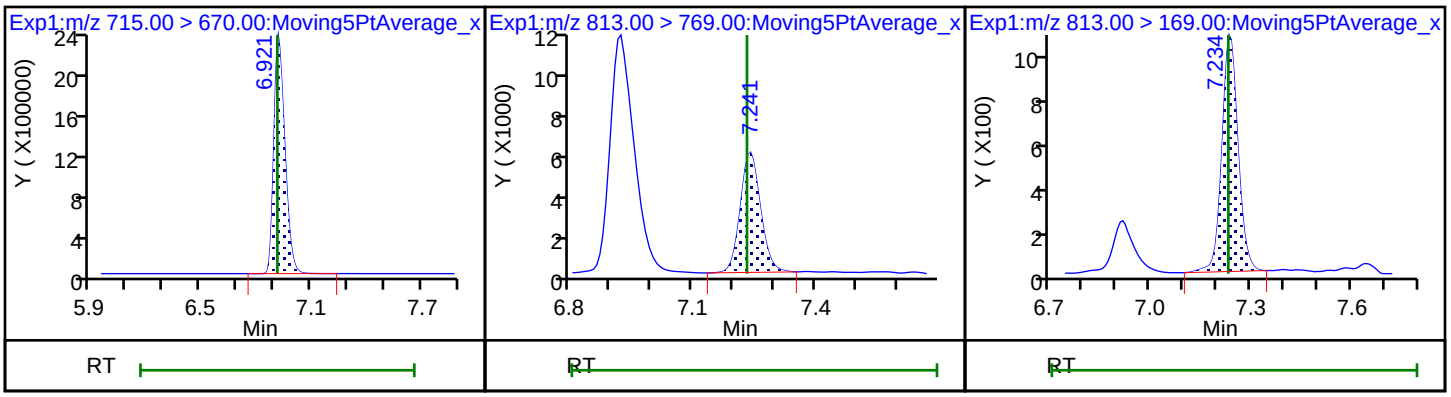
56 Perfluorotridecanoic acid (ND) 56 Perfluorotridecanoic acid (ND) 55 N-EtFOSA-M



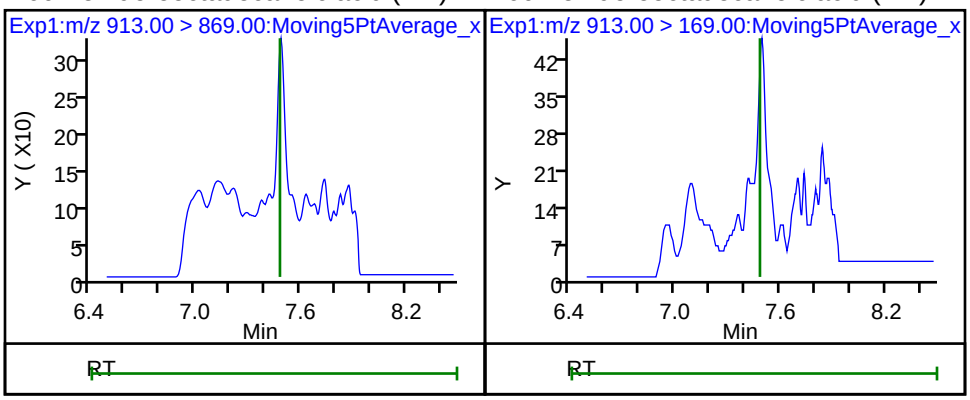
D 54 d5-NEtPFOSA 57 Perfluorotetradecanoic acid 57 Perfluorotetradecanoic acid



D 58 13C2 PFTeDA 59 Perfluorohexadecanoic acid 59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid (ND) 60 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

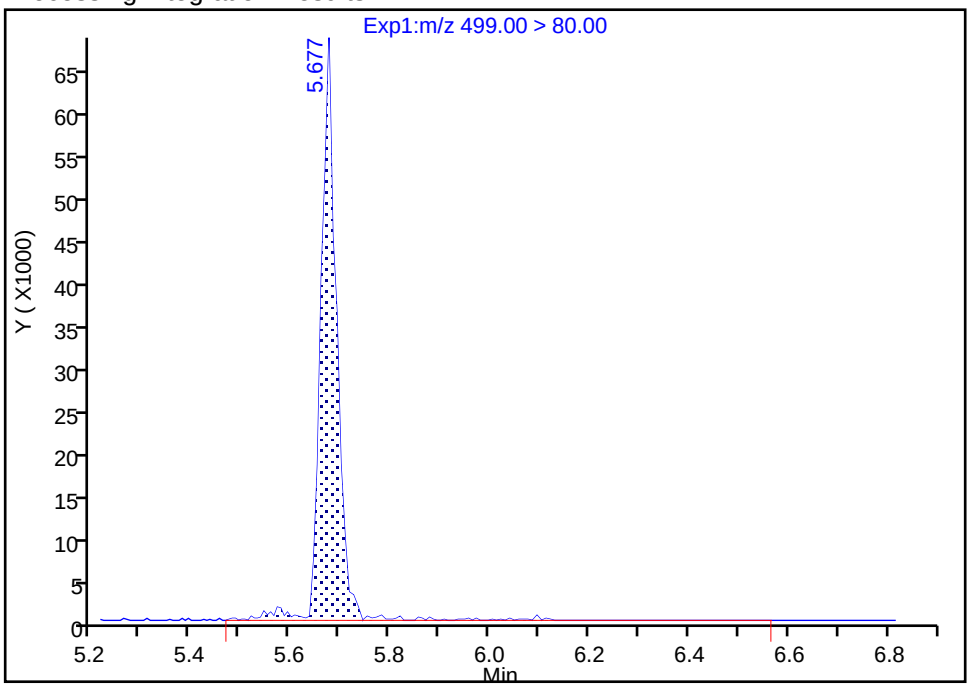
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Injection Date:	07-Apr-2022 17:49:33	Instrument ID:	29347		
Lims ID:	MB 410-241437/1-A				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	28	Worklist Smp#:	33
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

24 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

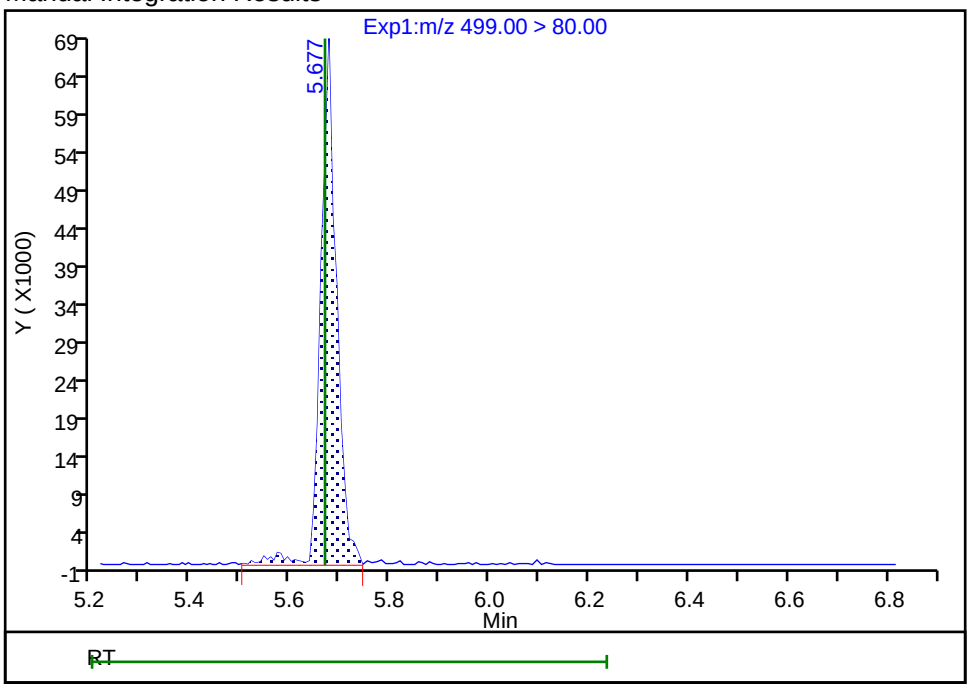
Processing Integration Results

RT: 5.68
Area: 153003
Amount: 0.165562
Amount Units: ng/ml



Manual Integration Results

RT: 5.68
Area: 150883
Amount: 0.163268
Amount Units: ng/ml



Reviewer: matthewsl, 07-Apr-2022 19:52:56

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: CCB 410-240466/2

Matrix: Water Lab File ID: 22APR04-02.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/04/2022 07:43

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	0.25	U	0.50	0.25	0.13
375-85-9	Perfluoroheptanoic acid	0.25	U	0.50	0.25	0.13
335-67-1	Perfluorooctanoic acid	0.25	U	0.50	0.25	0.13
375-95-1	Perfluorononanoic acid	0.25	U	0.50	0.25	0.13
335-76-2	Perfluorodecanoic acid	0.25	U	0.50	0.25	0.13
72629-94-8	Perfluorotridecanoic acid	0.25	U	0.50	0.25	0.13
376-06-7	Perfluorotetradecanoic acid	0.25	U	0.50	0.25	0.13
375-73-5	Perfluorobutanesulfonic acid	0.25	U	0.50	0.25	0.13
355-46-4	Perfluorohexanesulfonic acid	0.25	U	0.50	0.25	0.13
1763-23-1	Perfluorooctanesulfonic acid	0.25	U	0.50	0.25	0.13
2991-50-6	NEtFOSAA	0.50	U	0.75	0.50	0.13
2355-31-9	NMeFOSAA	0.50	U	0.50	0.50	0.15
2706-91-4	Perfluoropentanesulfonic acid	0.25	U	0.50	0.25	0.13
375-92-8	Perfluoroheptanesulfonic acid	0.25	U	0.50	0.25	0.13
68259-12-1	Perfluorononanesulfonic acid	0.25	U	0.50	0.25	0.13
335-77-3	Perfluorodecanesulfonic acid	0.25	U	0.50	0.25	0.13
754-91-6	Perfluorooctanesulfonamide	0.25	U	0.50	0.25	0.13
375-22-4	Perfluorobutanoic acid	1.0	U	1.3	1.0	0.13
2706-90-3	Perfluoropentanoic acid	0.25	U	0.50	0.25	0.13
2058-94-8	Perfluoroundecanoic acid	0.25	U	0.50	0.25	0.13
307-55-1	Perfluorododecanoic acid	0.25	U	0.50	0.25	0.13
27619-97-2	6:2 Fluorotelomer sulfonic acid	1.0	U	1.3	1.0	0.13
39108-34-4	8:2 Fluorotelomer sulfonic acid	0.50	U	0.75	0.50	0.25
757124-72-4	4:2 Fluorotelomer sulfonic acid	0.25	U	0.50	0.25	0.13

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: CCB 410-240466/2

Matrix: Water Lab File ID: 22APR04-02.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/04/2022 07:43

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/mL

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	162	*5+	50-150
STL02280	M2-8:2 FTS	169	*5+	50-150
STL02279	M2-6:2 FTS	170	*5+	50-150
STL02577	13C5 PFHxA	143		50-150
STL01892	13C4 PFHpA	154	*5+	50-150
STL01052	13C8 PFOA	149		50-150
STL02578	13C9 PFNA	146		50-150
STL02579	13C6 PFDA	156	*5+	50-150
STL02580	13C7 PFUnA	151	*5+	50-150
STL02703	13C2-PFDoDA	142		50-150
STL02116	13C2 PFTeDA	131		50-150
STL02337	13C3 PFBS	136		50-150
STL02581	13C3 PFHxS	144		50-150
STL01054	13C8 PFOS	148		50-150
STL02118	d3-NMeFOSAA	168	*5+	50-150
STL02117	d5-NEtFOSAA	170	*5+	50-150
STL01056	13C8 FOSA	147		50-150
STL00992	13C4 PFBA	143		50-150
STL01893	13C5 PFPeA	140		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-02.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 04-Apr-2022 07:43:26 ALS Bottle#: 20001 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: Plate: 1 Rack: 1 410-0053975-002
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 04-Apr-2022 15:44:42 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1662

First Level Reviewer: carpenterr Date: 04-Apr-2022 08:11:29
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-01.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00		3.671				ND				
D 2 13C4 PFBA										
217.00 > 172.00	3.671	3.671	0.0		12417000	14.3		143	171793	
63 PFECA F										
229.00 > 85.00	3.906	3.898	0.008	0.934	1413	0.001701			239	
67 3:3 FTCA										
241.00 > 177.00		4.180				ND				
241.00 > 117.00		4.180								
3 Perfluoropentanoic acid										
263.00 > 219.00	4.184	4.187	-0.003	1.000	10039	0.009553			39.4	
D 4 13C5 PFPeA										
268.00 > 223.00	4.184	4.187	-0.003		10206343	14.0		140	90774	
D 6 13C3 PFBS										
302.00 > 80.00	4.236	4.239	-0.003		11915779	12.7		136	771036	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00		4.239				0				
299.00 > 99.00		4.239								
64 PFECA A										
279.00 > 85.00		4.309				ND				
65 PES										
315.00 > 135.00		4.397				ND				
315.00 > 83.00		4.397								
68 PFECA B										
295.00 > 201.00		4.521				ND				
7 4:2 FTS										
327.00 > 307.00		4.551				ND				
327.00 > 81.00		4.551								

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.555	4.560	-0.005		612303	15.1		162	22200	
10 Perfluorohexanoic acid										
313.00 > 269.00		4.590				ND				
313.00 > 119.00		4.590								
D 9 13C5 PFHxA										
318.00 > 273.00	4.594	4.600	-0.006		12694238	14.3		143	283023	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00		4.618				ND				
349.00 > 99.00		4.618								
12 HFPO-DA										
329.00 > 285.00	4.721	4.726	-0.005	1.000	781	0.002186			21.6	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.721	4.726	-0.005		1685478	15.3		153	90863	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.982	4.989	-0.007	1.000	9740	0.007438	Target=3.24		67.5	
363.00 > 169.00	4.982	4.989	-0.007	1.000	2424		4.02(1.62-4.86)		69.4	
D 17 13C4 PFHpA										
367.00 > 322.00	4.982	4.989	-0.007		13711628	15.4		154	285234	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.982	4.989	-0.007	0.998	4708	0.004018	Target=3.24		2408	
399.00 > 99.00	5.008	4.989	0.019	1.003	2040		2.31(1.62-4.86)		4.0	
D 16 13C3 PFHxS										
402.00 > 80.00	4.991	4.989	0.002		11394223	13.6		144	1148737	
18 DONA										
377.00 > 251.00		5.031				ND				
62 5:3 FTCA										
341.00 > 237.00		5.053				ND				
341.00 > 217.00		5.053								
D 20 M2-6:2 FTS										
429.00 > 81.00	5.338	5.338	0.0		412452	16.1		170	28605	
19 6:2 FTS										
427.00 > 407.00		5.338				ND				
427.00 > 81.00		5.338								
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.344				ND				
449.00 > 99.00		5.344								
23 Perfluorooctanoic acid										
413.00 > 369.00		5.357				ND				
413.00 > 169.00		5.357								
D 22 13C8 PFOA										
421.00 > 376.00	5.357	5.357	0.0		14570007	14.9		149	982376	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00		5.685				ND				
499.00 > 99.00		5.685								
D 25 13C8 PFOS										
507.00 > 80.00	5.685	5.685	0.0		11430428	14.1		148	528520	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.702	5.701	0.001	1.000	3929	0.003104	Target=4.84		47.7	
463.00 > 169.00	5.702	5.701	0.001	1.000	1326		2.96(2.42-7.26)		69.6	
D 27 13C9 PFNA										
472.00 > 427.00	5.702	5.701	0.001		14863249	14.6		146	701306	
66 7:3 FTCA										
441.00 > 317.00		5.799				ND				
441.00 > 337.00		5.799								
28 9ClFOS										
531.00 > 351.00		5.865				ND				
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.990				ND				
549.00 > 99.00		5.990								
33 8:2 FTS										
527.00 > 507.00		6.014				ND				
527.00 > 81.00		6.014								
30 Perfluorodecanoic acid										
513.00 > 469.00	6.015	6.014	0.001	1.000	10486	0.007155	Target=8.57		129	
513.00 > 169.00	6.007	6.014	-0.007	0.999	931		11.26(4.29-12.86)		19.9	
D 32 13C6 PFDA										
519.00 > 474.00	6.015	6.014	0.001		16864178	15.6		156	796676	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.015	6.014	0.001		362456	16.2		169	21229	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.115	6.115	0.0	1.000	6071	0.003185			210	
D 35 13C8 FOSA										
506.00 > 78.00	6.115	6.115	0.0		18963775	14.7		147	494811	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.163	6.163	0.0		4717331	16.8		168	982630	
36 NMeFOSAA										
570.00 > 419.00		6.171				ND				
570.00 > 483.00		6.171								
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.262				ND				
599.00 > 99.00		6.262								
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.290				ND				
563.00 > 169.00		6.290								
D 40 13C7 PFUnA										
570.00 > 525.00	6.290	6.290	0.0		17066486	15.1		151	636632	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.309	6.309	0.0		3722641	17.0		170	397084	
42 NEtFOSAA										
584.00 > 419.00		6.309				ND				
584.00 > 526.00		6.309								
43 11ClFOS										
631.00 > 451.00		6.410				ND				

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										R
613.00 > 569.00	6.566	6.531	0.035	1.005	25141	0.0169	Target=6.12		280	R
613.00 > 169.00	6.531	6.531	0.0	1.000	2268		11.09(3.06-9.17)		28.8	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.531	6.531	0.0		16912164	14.2		142	799824	
48 10:2 FTS										
627.00 > 607.00		6.549				ND				
627.00 > 81.00		6.549								
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.558	-0.001		2179713	16.0		160	17811	
47 N-MeFOSE-M										
616.00 > 59.00		6.566				ND				
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.575	-0.001		2478117	14.4		144	11177	
50 NMeFOSA										
512.00 > 169.00		6.575				ND				
53 PFDoS										
699.00 > 80.00	6.647	6.715	-0.068	1.169	804	0.000652			7.3	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.724	-0.001		2412958	14.7		147	17322	
52 N-EtFOSE-M										
630.00 > 59.00		6.732				ND				
56 Perfluorotridecanoic acid										
663.00 > 619.00		6.740				ND				
663.00 > 169.00		6.740								
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.740	0.0		2312247	14.7		147	12585	
55 N-EtFOSA-M										
526.00 > 169.00	6.290	6.748	-0.458	0.933	3817	0.0151			147	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.928	6.928	0.0	1.000	18791	0.0137	Target=6.00		29.4	
713.00 > 169.00	6.928	6.928	0.0	1.000	2501		7.51(3.00-9.00)		125	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.928	0.0		15769437	13.1		131	366155	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.248	7.248	0.0	1.046	50891	0.0499	Target=5.95		163	
813.00 > 169.00	7.248	7.248	0.0	1.046	7956		6.40(2.98-8.93)		328	
60 Perfluorooctadecanoic acid										
913.00 > 869.00		7.505				ND				
913.00 > 169.00		7.505								
S 61 Total PFOA and PFOS										
216.00 > 172.00		0.0				0				

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

R - Failed Signal Ratio Test

Reagents:

PFC_SS_MODX_00228 Amount Added: 25.00 Units: uL

Report Date: 04-Apr-2022 15:44:49 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-02.d

Injection Date: 04-Apr-2022 07:43:26 Instrument ID: 29347

Lims ID: CCB

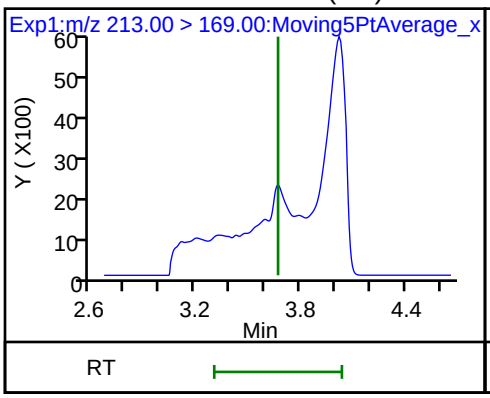
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20001 Worklist Smp#: 2

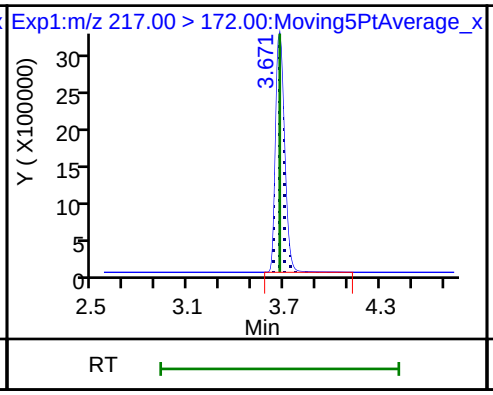
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

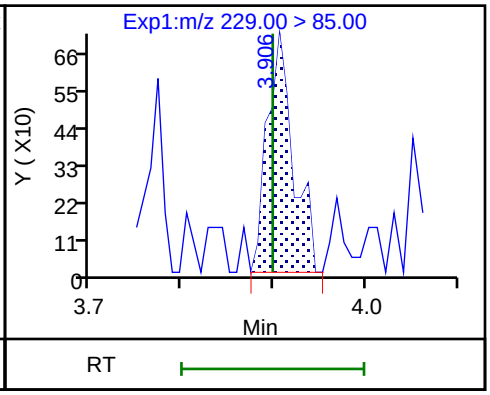
1 Perfluorobutanoic acid (ND)



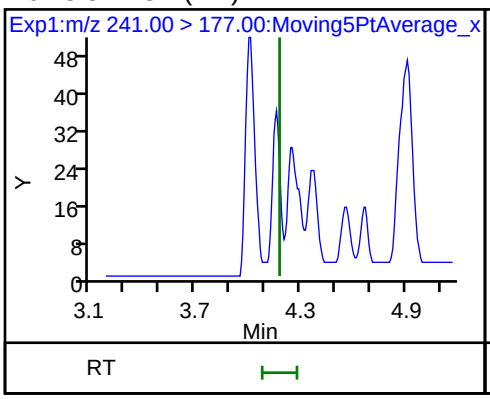
D 2 13C4 PFBA



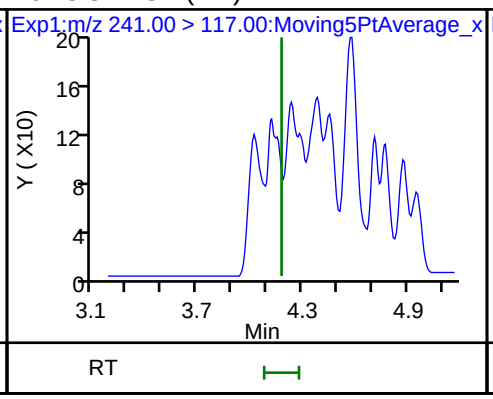
63 PFECA F



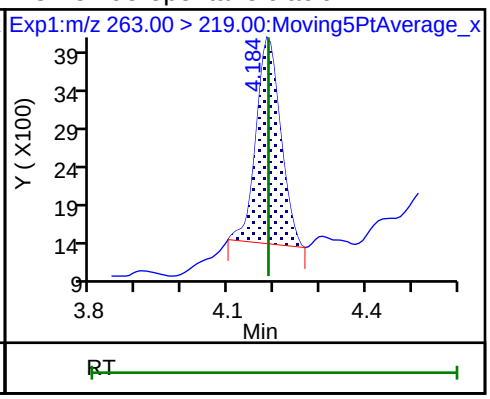
67 3:3 FTCA (ND)



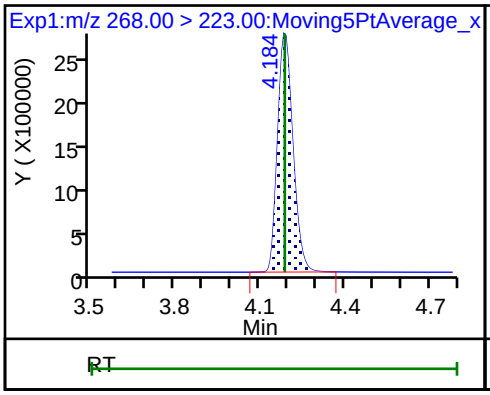
67 3:3 FTCA (ND)



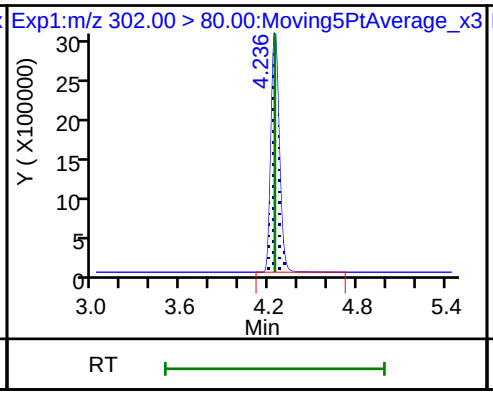
3 Perfluoropentanoic acid



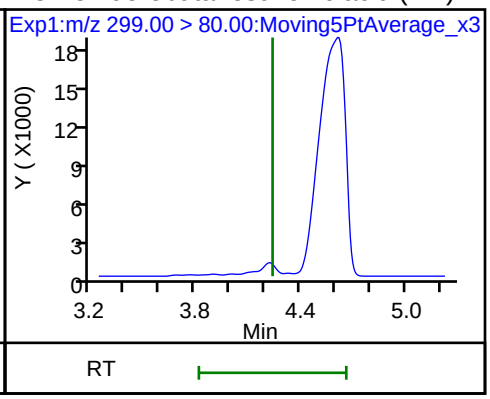
D 4 13C5 PFPeA



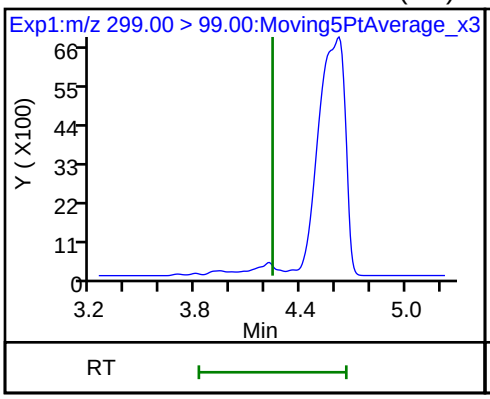
D 6 13C3 PFBS



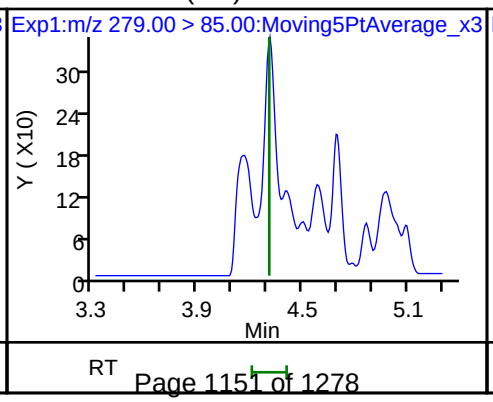
5 Perfluorobutanesulfonic acid (ND)



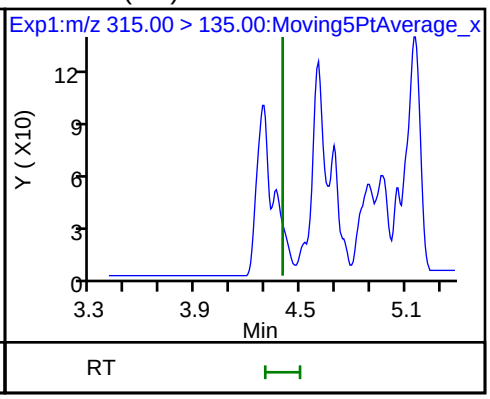
5 Perfluorobutanesulfonic acid (ND)



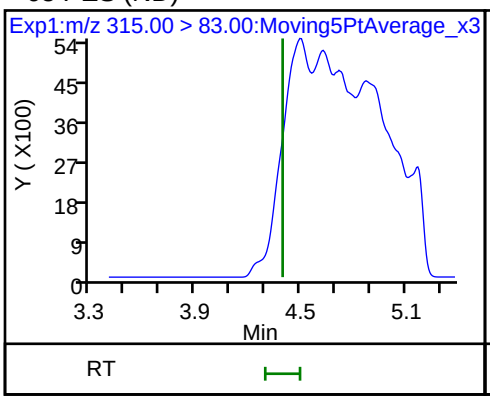
64 PFECA A (ND)



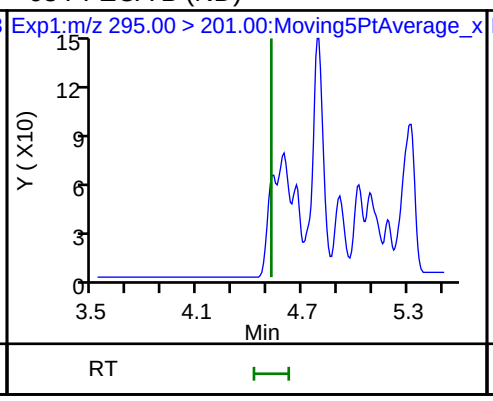
65 PES (ND)



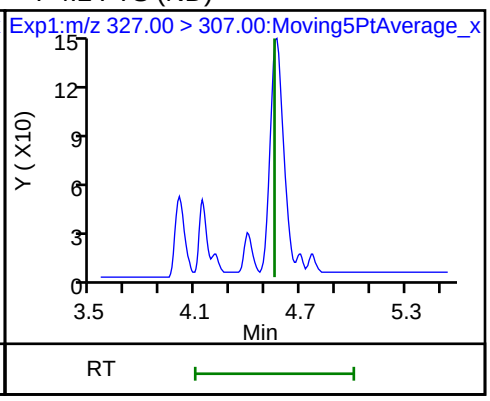
65 PES (ND)



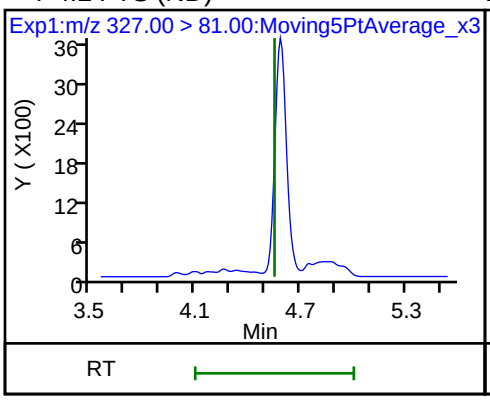
68 PFECA B (ND)



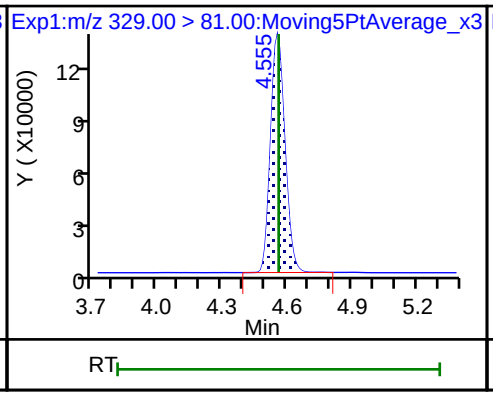
7 4:2 FTS (ND)



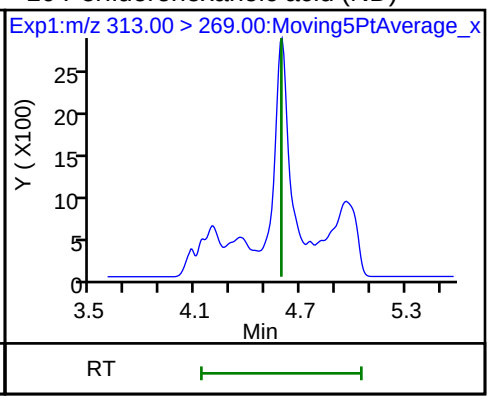
7 4:2 FTS (ND)



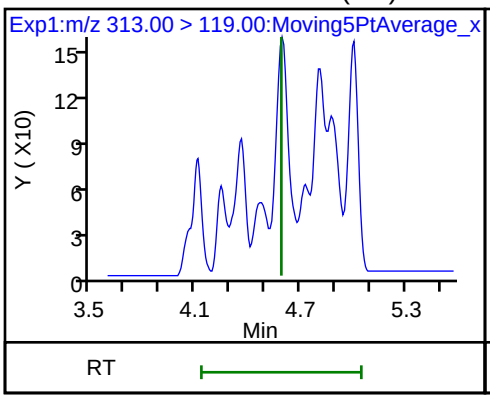
D 8 M2-4:2 FTS



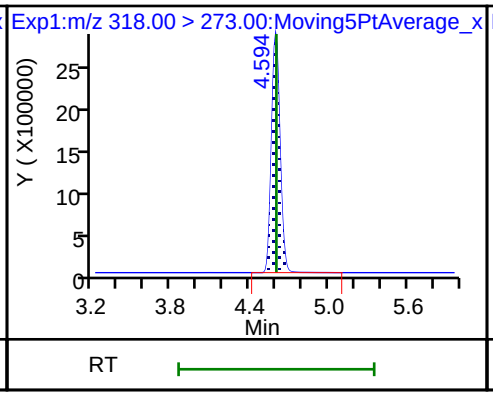
10 Perfluorohexanoic acid (ND)



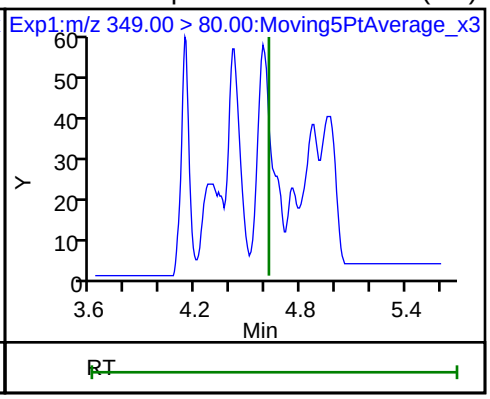
10 Perfluorohexanoic acid (ND)



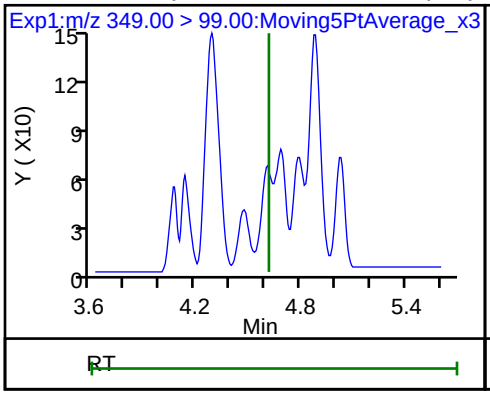
D 9 13C5 PFHxA



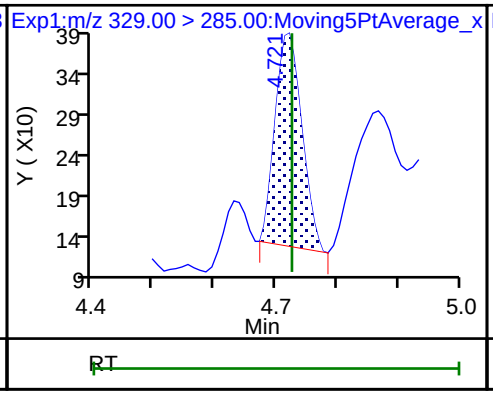
11 Perfluoropentanesulfonic acid (ND)



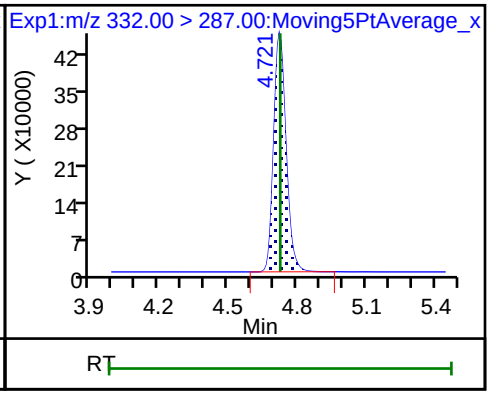
11 Perfluoropentanesulfonic acid (ND)



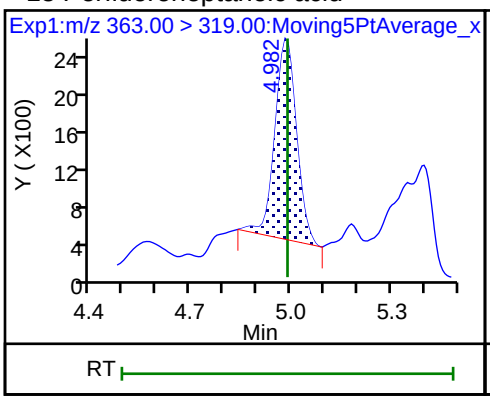
12 HFPO-DA



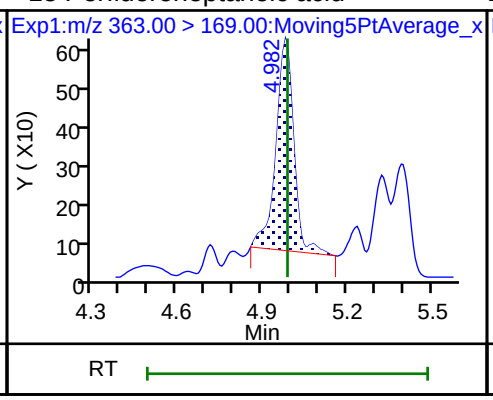
D 13 13C3 HFPO-DA



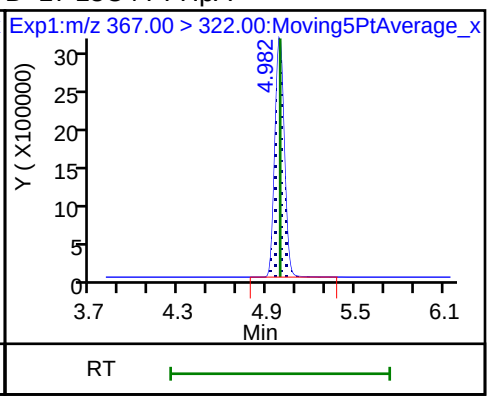
15 Perfluoroheptanoic acid



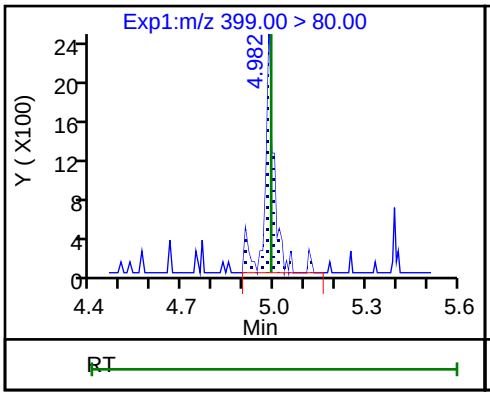
15 Perfluoroheptanoic acid



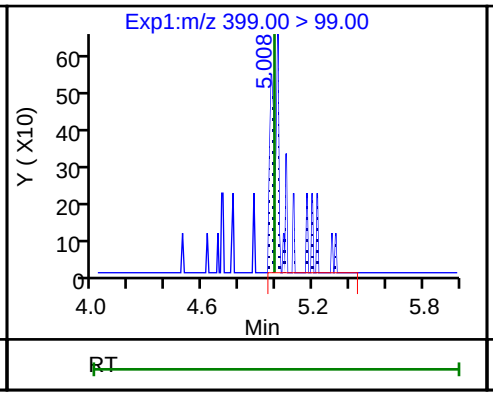
D 17 13C4 PFHpA



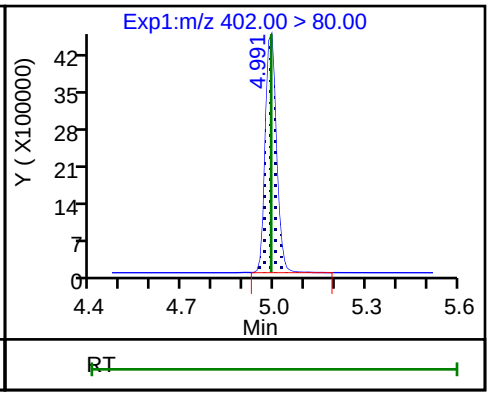
14 Perfluorohexanesulfonic acid



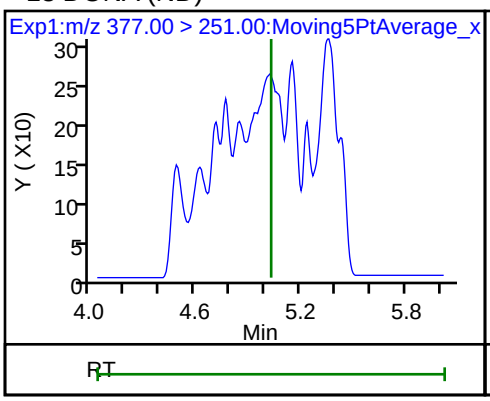
14 Perfluorohexanesulfonic acid



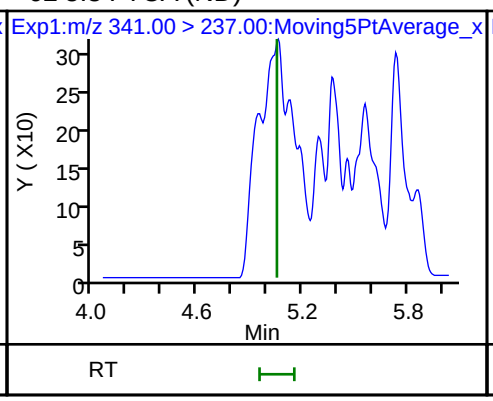
D 16 13C3 PFHxS



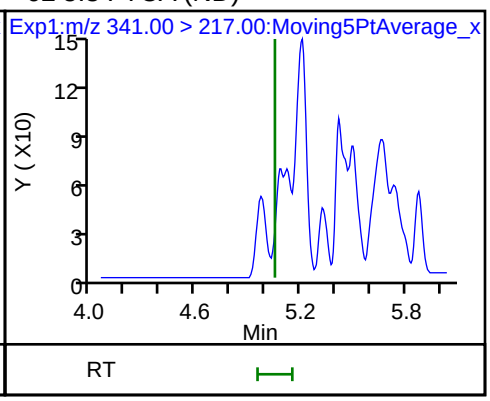
18 DONA (ND)



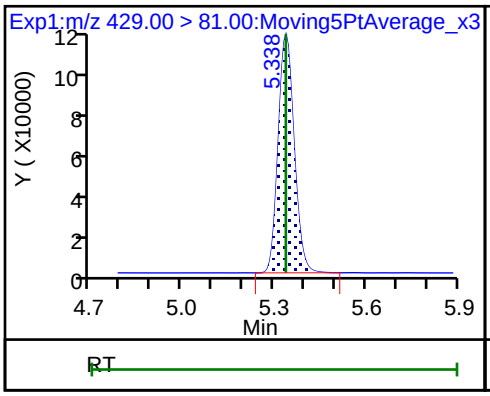
62 5:3 FTCA (ND)



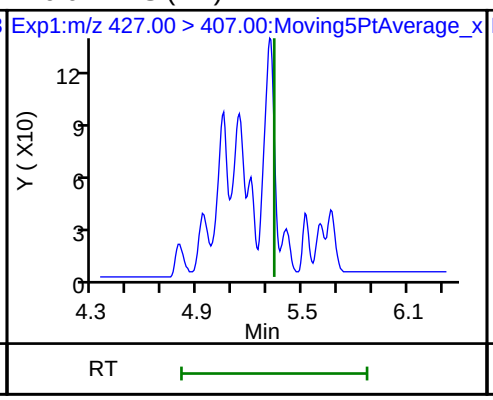
62 5:3 FTCA (ND)



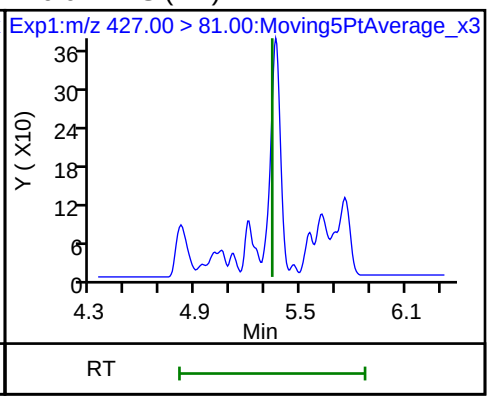
D 20 M2-6:2 FTS



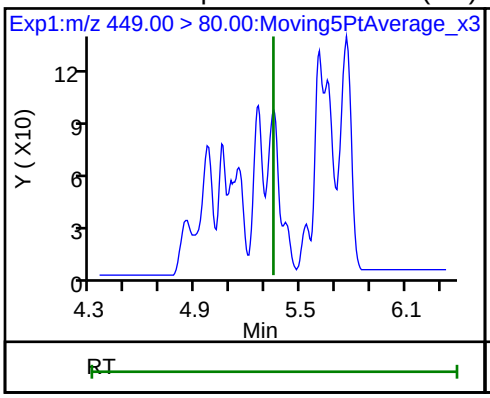
19 6:2 FTS (ND)



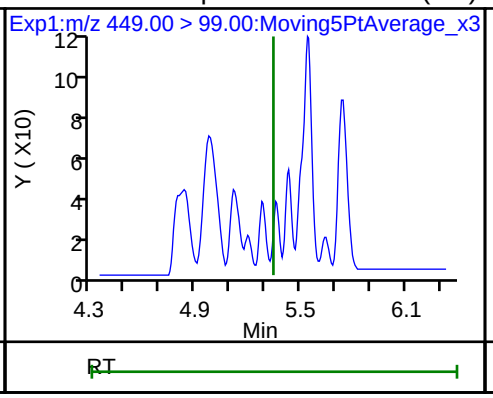
19 6:2 FTS (ND)



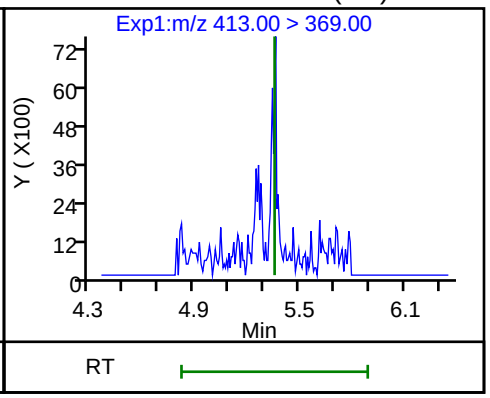
21 Perfluoroheptanesulfonic acid (ND)



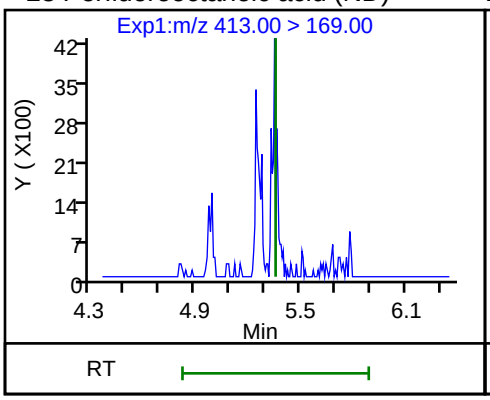
21 Perfluoroheptanesulfonic acid (ND)



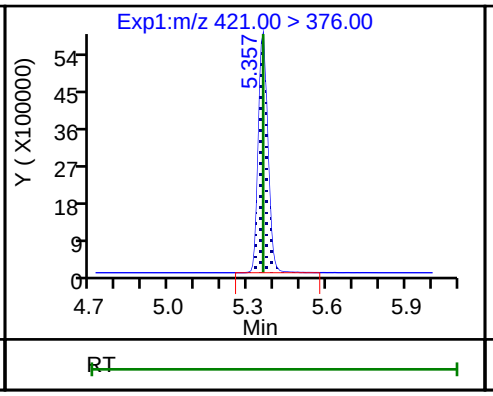
23 Perfluorooctanoic acid (ND)



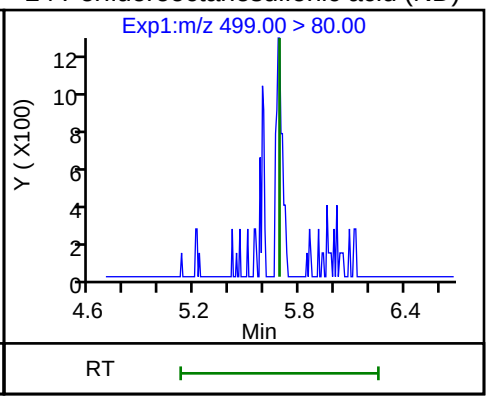
23 Perfluorooctanoic acid (ND)



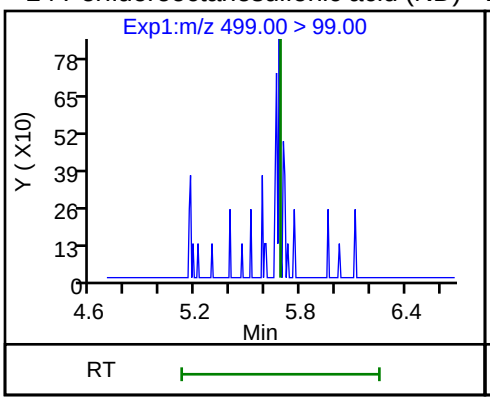
D 22 13C8 PFOA



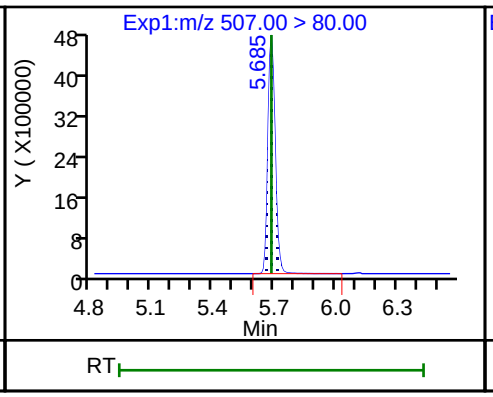
24 Perfluorooctanesulfonic acid (ND)



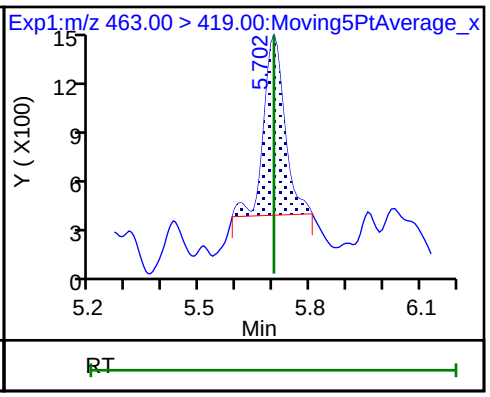
24 Perfluorooctanesulfonic acid (ND)



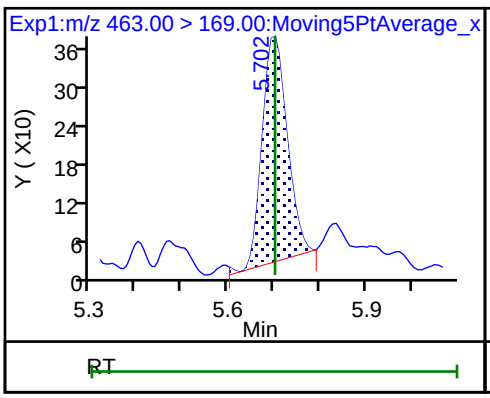
D 25 13C8 PFOS



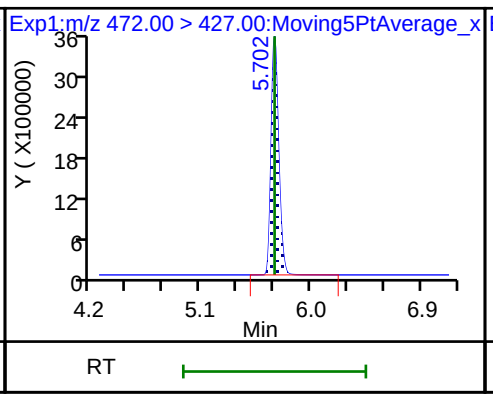
26 Perfluorononanoic acid



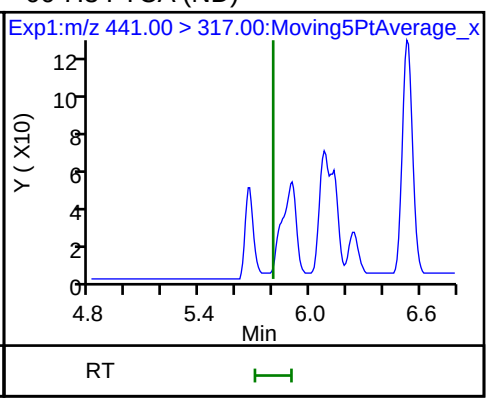
26 Perfluorononanoic acid



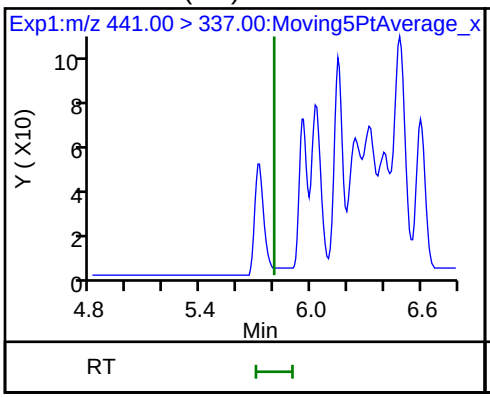
D 27 13C9 PFNA



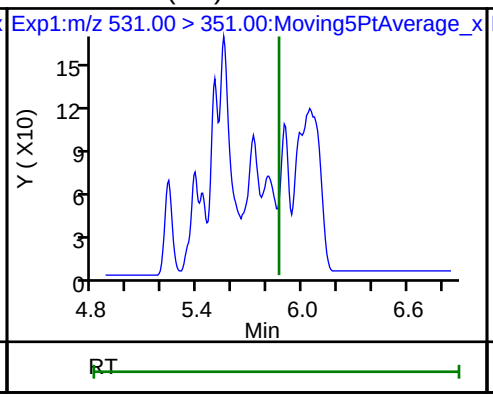
66 7:3 FTCA (ND)



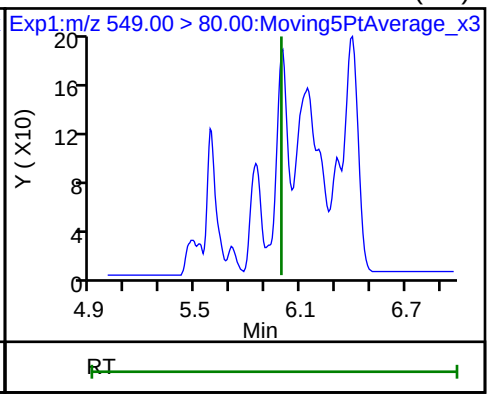
66 7:3 FTCA (ND)



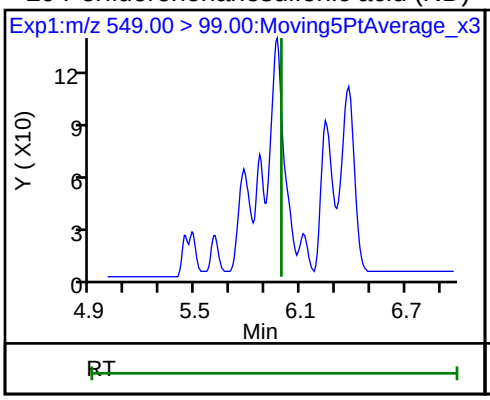
28 9ClFOS (ND)



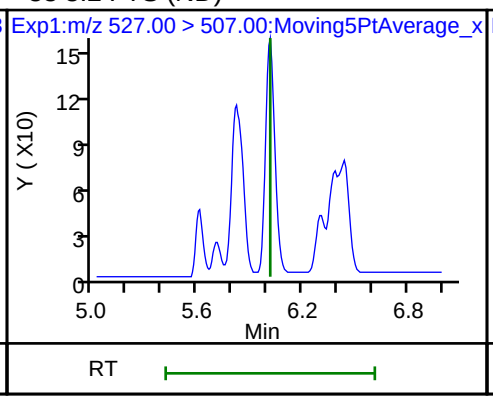
29 Perfluorononanesulfonic acid (ND)



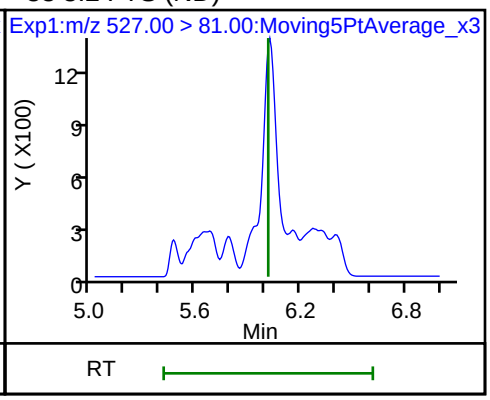
29 Perfluorononanesulfonic acid (ND)



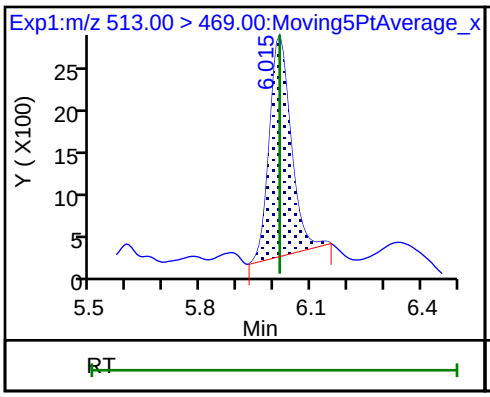
33 8:2 FTS (ND)



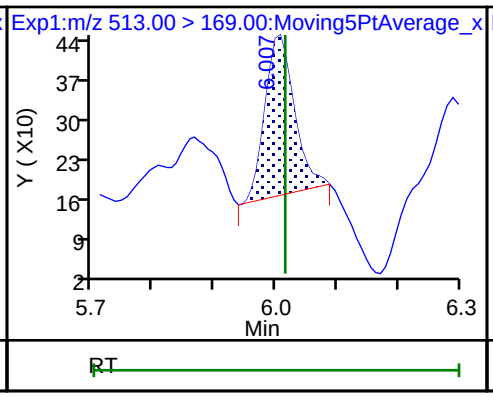
33 8:2 FTS (ND)



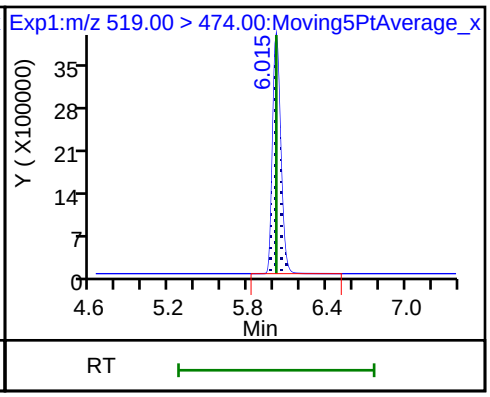
30 Perfluorodecanoic acid



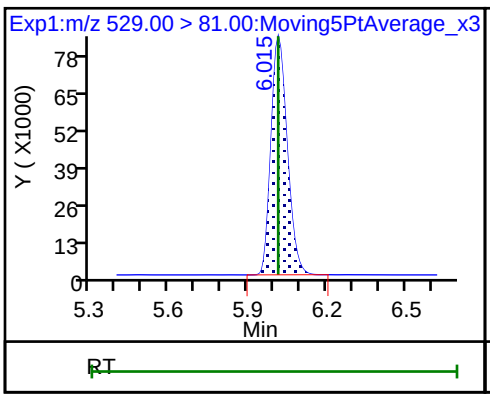
30 Perfluorodecanoic acid



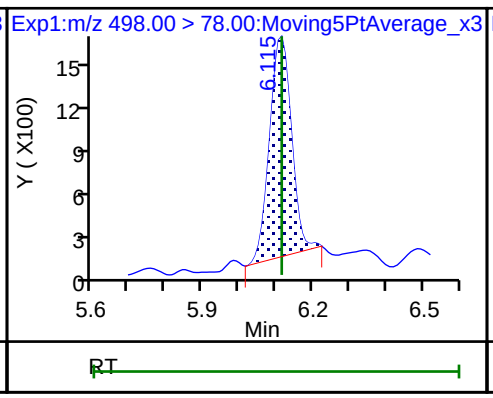
D 32 13C6 PFDA



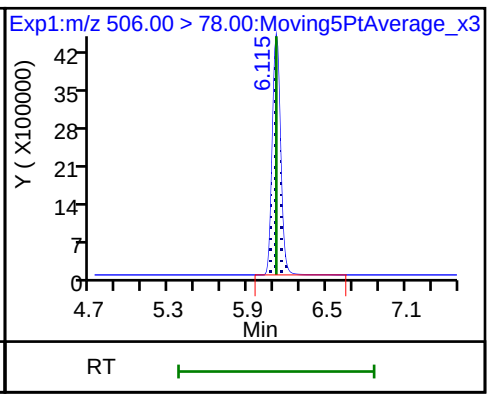
D 31 M2-8:2 FTS



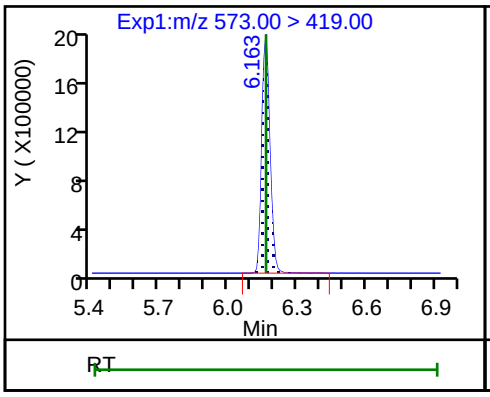
34 Perfluorooctanesulfonamide



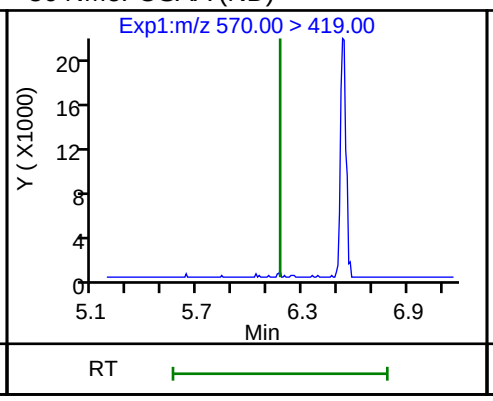
D 35 13C8 FOSA



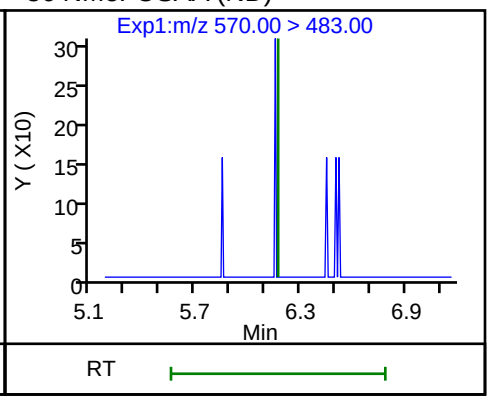
D 37 d3-NMeFOSAA



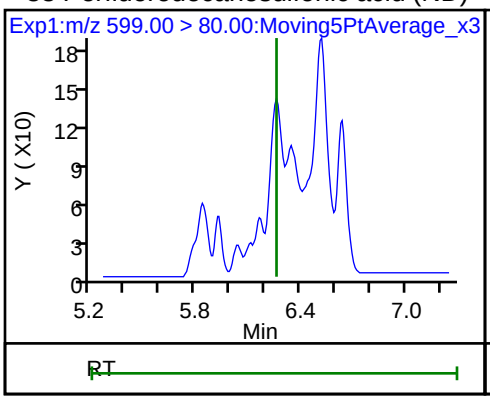
36 NMeFOSAA (ND)



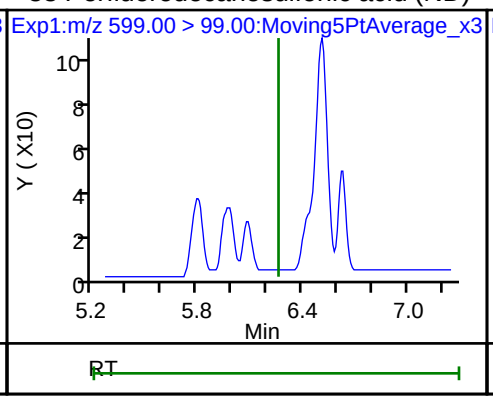
36 NMeFOSAA (ND)



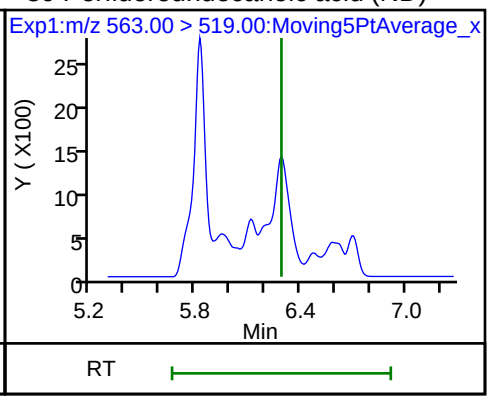
38 Perfluorodecanesulfonic acid (ND)



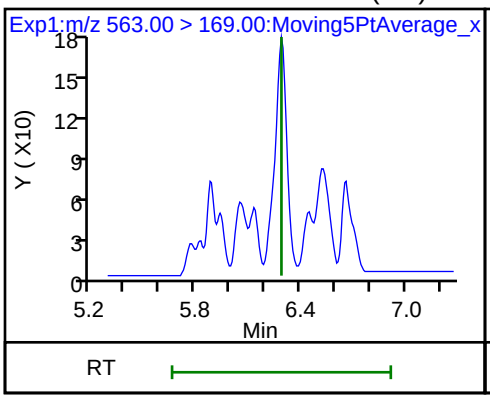
38 Perfluorodecanesulfonic acid (ND)



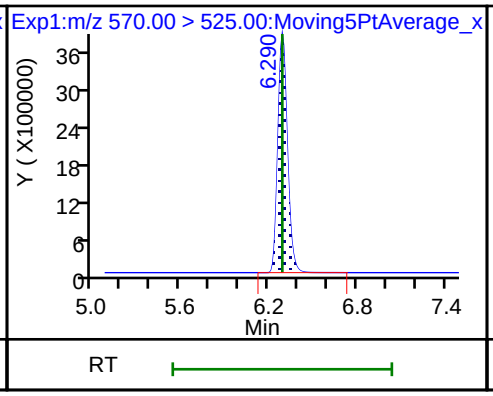
39 Perfluoroundecanoic acid (ND)



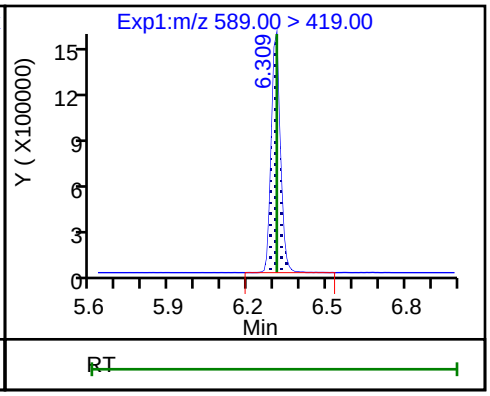
39 Perfluoroundecanoic acid (ND)



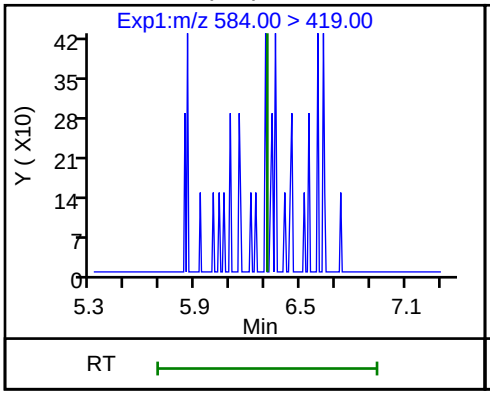
D 40 13C7 PFUnA



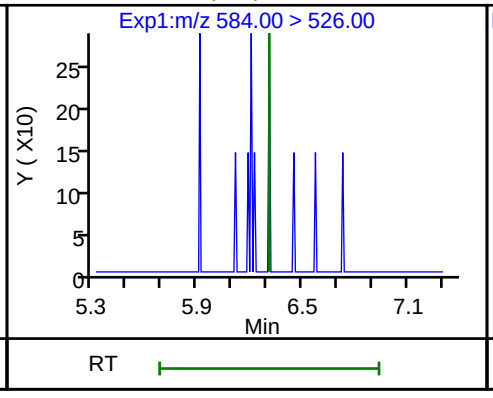
D 41 d5-NEtFOSAA



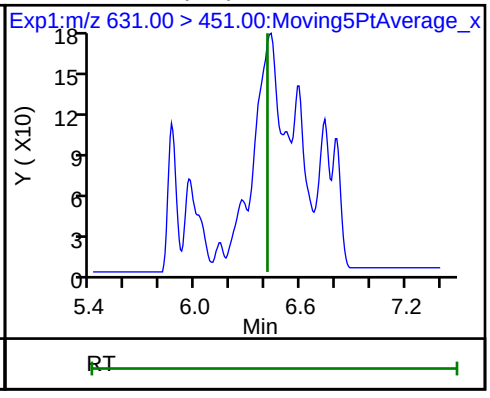
42 NEtFOSAA (ND)



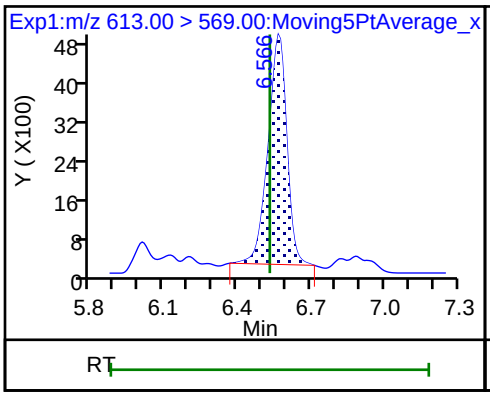
42 NEtFOSAA (ND)



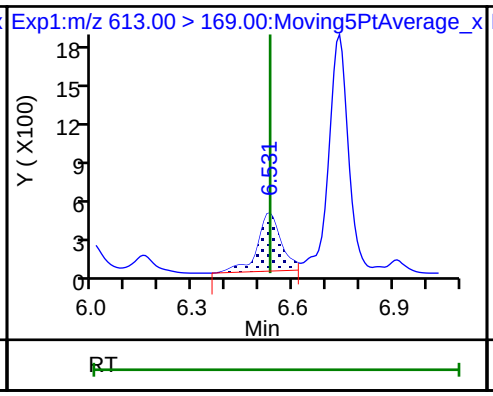
43 11ClFOS (ND)



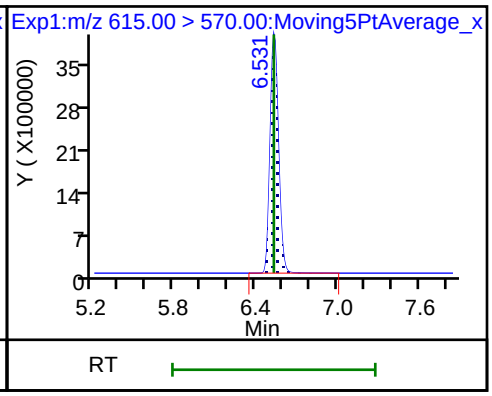
46 Perfluorododecanoic acid



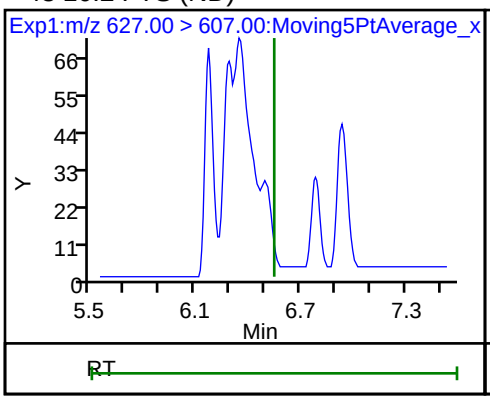
46 Perfluorododecanoic acid



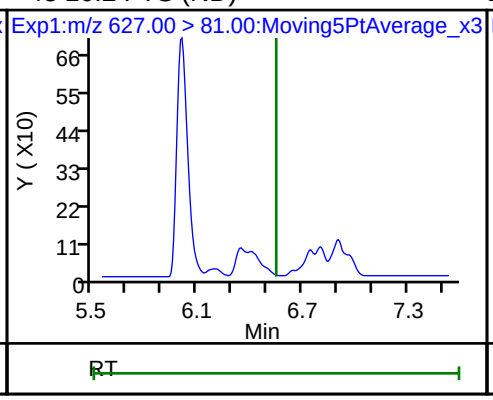
D 45 13C2-PFDoDA



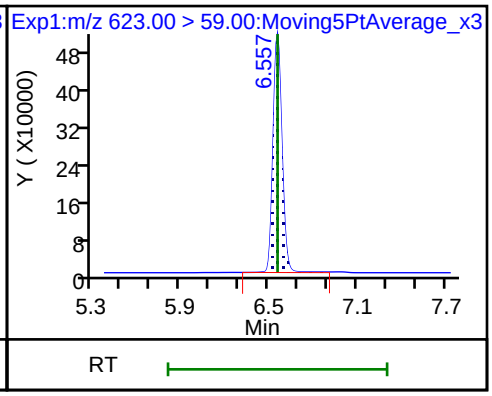
48 10:2 FTS (ND)



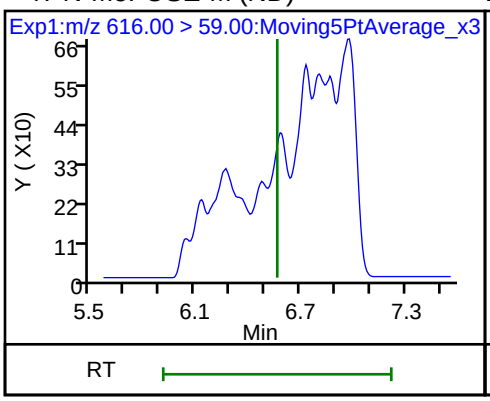
48 10:2 FTS (ND)



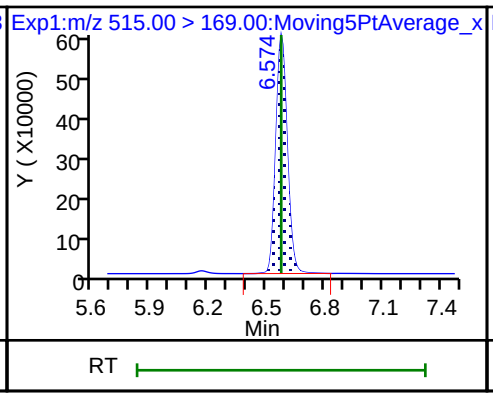
D 44 d7-N-MeFOSE-M



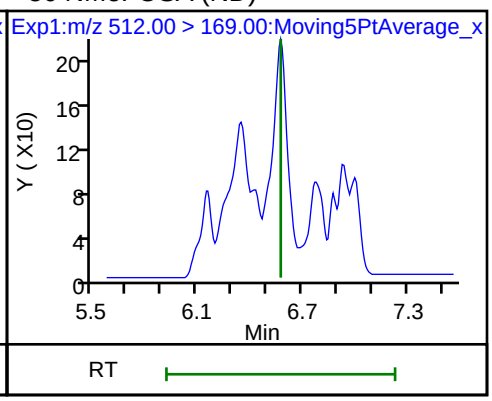
47 N-MeFOSE-M (ND)



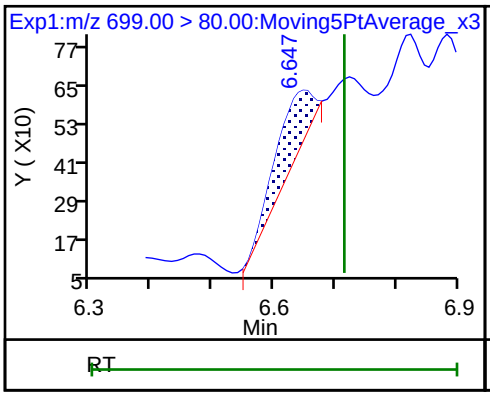
D 49 d3-NMePFOSA



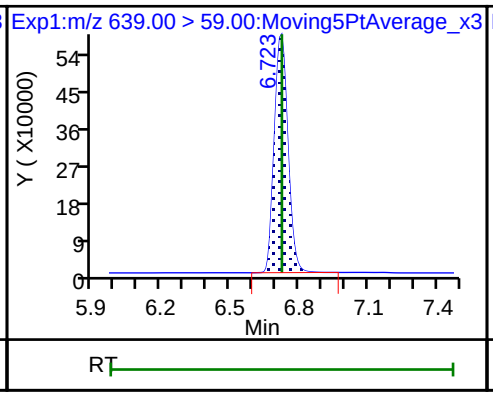
50 NMeFOSA (ND)



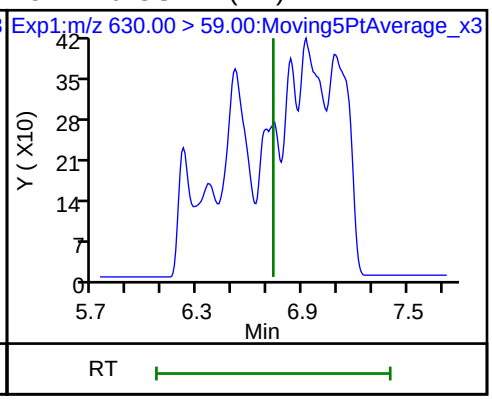
53 PFDoS



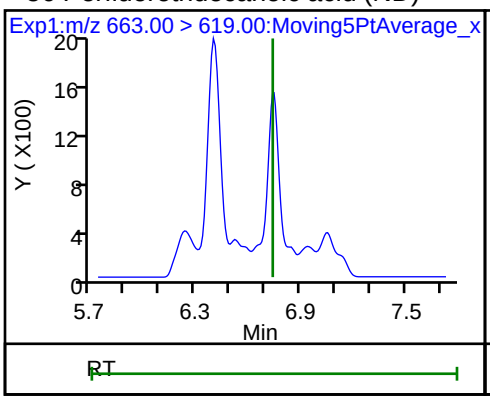
D 51 d9-N-EtFOSE-M



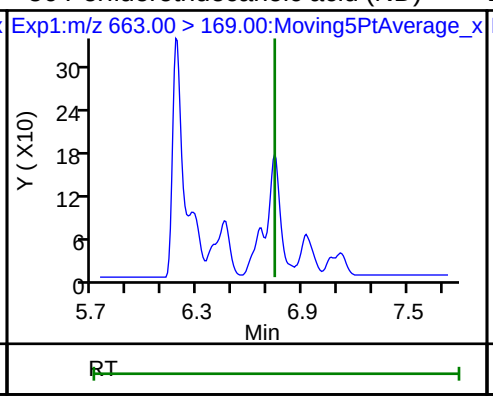
52 N-EtFOSE-M (ND)



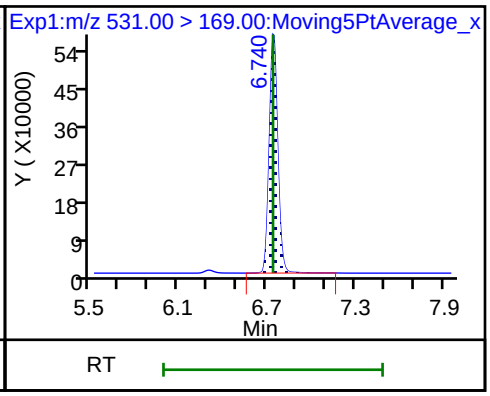
56 Perfluorotridecanoic acid (ND)



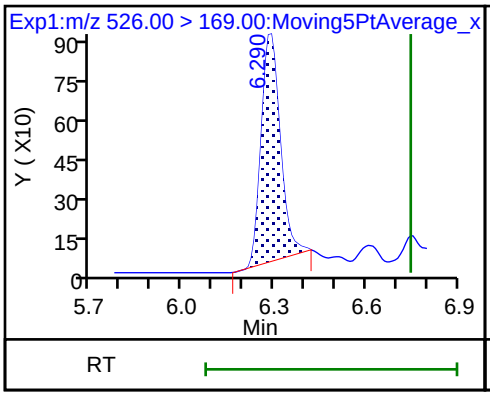
56 Perfluorotridecanoic acid (ND)



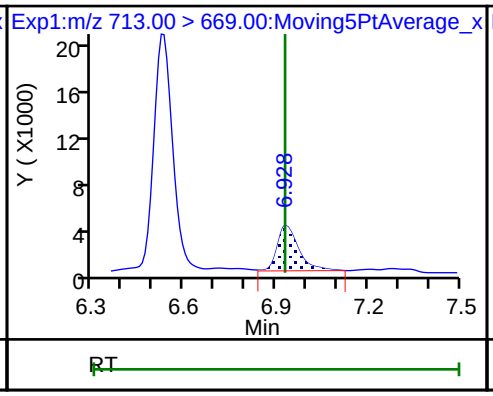
D 54 d5-NEtPFOSA



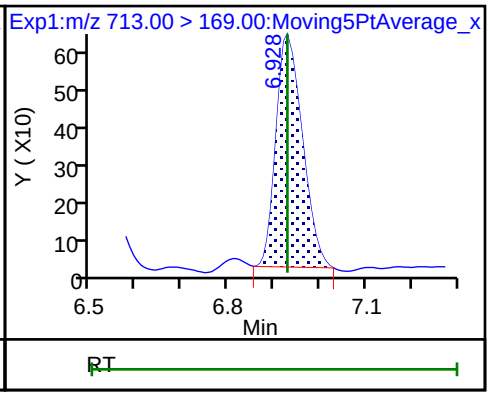
55 N-EtFOSA-M



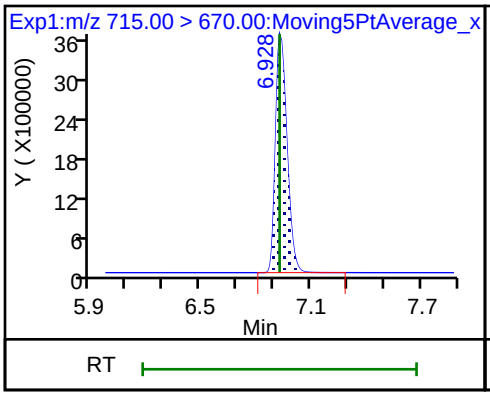
57 Perfluorotetradecanoic acid



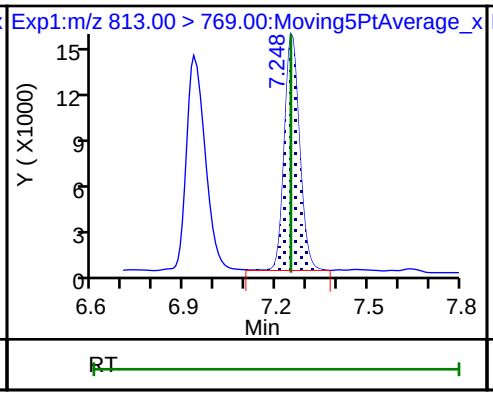
57 Perfluorotetradecanoic acid



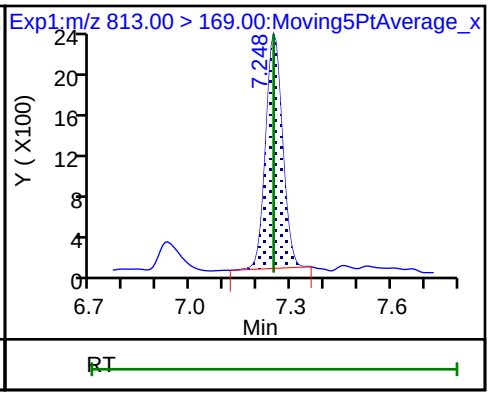
D 58 13C2 PFTeDA



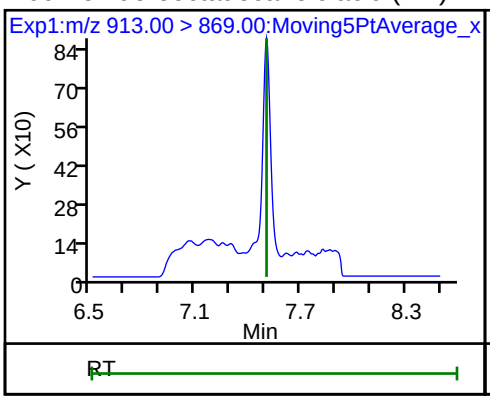
59 Perfluorohexadecanoic acid



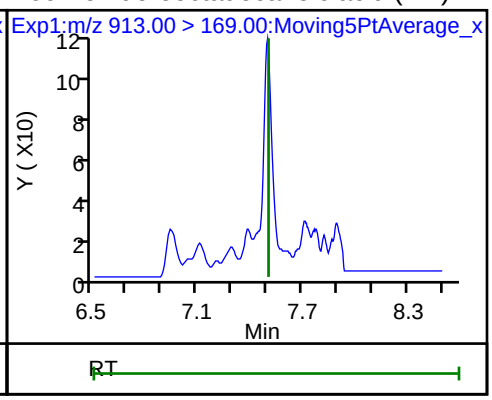
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid (ND)



60 Perfluorooctadecanoic acid (ND)



FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: CCB 410-242084/2

Matrix: Water Lab File ID: 22APR07-33.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/07/2022 12:20

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	0.25	U	0.50	0.25	0.13
375-85-9	Perfluoroheptanoic acid	0.25	U	0.50	0.25	0.13
335-67-1	Perfluorooctanoic acid	0.25	U	0.50	0.25	0.13
375-95-1	Perfluorononanoic acid	0.25	U	0.50	0.25	0.13
335-76-2	Perfluorodecanoic acid	0.25	U	0.50	0.25	0.13
72629-94-8	Perfluorotridecanoic acid	0.25	U	0.50	0.25	0.13
376-06-7	Perfluorotetradecanoic acid	0.25	U	0.50	0.25	0.13
375-73-5	Perfluorobutanesulfonic acid	0.25	U	0.50	0.25	0.13
355-46-4	Perfluorohexanesulfonic acid	0.25	U	0.50	0.25	0.13
1763-23-1	Perfluorooctanesulfonic acid	0.25	U	0.50	0.25	0.13
2991-50-6	NEtFOSAA	0.50	U	0.75	0.50	0.13
2355-31-9	NMeFOSAA	0.50	U	0.50	0.50	0.15
2706-91-4	Perfluoropentanesulfonic acid	0.25	U	0.50	0.25	0.13
375-92-8	Perfluoroheptanesulfonic acid	0.25	U	0.50	0.25	0.13
68259-12-1	Perfluorononanesulfonic acid	0.25	U	0.50	0.25	0.13
335-77-3	Perfluorodecanesulfonic acid	0.25	U	0.50	0.25	0.13
754-91-6	Perfluorooctanesulfonamide	0.25	U	0.50	0.25	0.13
375-22-4	Perfluorobutanoic acid	1.0	U	1.3	1.0	0.13
2706-90-3	Perfluoropentanoic acid	0.25	U	0.50	0.25	0.13
2058-94-8	Perfluoroundecanoic acid	0.25	U	0.50	0.25	0.13
307-55-1	Perfluorododecanoic acid	0.25	U	0.50	0.25	0.13
27619-97-2	6:2 Fluorotelomer sulfonic acid	1.0	U	1.3	1.0	0.13
39108-34-4	8:2 Fluorotelomer sulfonic acid	0.50	U	0.75	0.50	0.25
757124-72-4	4:2 Fluorotelomer sulfonic acid	0.25	U	0.50	0.25	0.13

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: CCB 410-242084/2

Matrix: Water Lab File ID: 22APR07-33.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/07/2022 12:20

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/mL

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	105		50-150
STL02280	M2-8:2 FTS	105		50-150
STL02279	M2-6:2 FTS	108		50-150
STL02577	13C5 PFHxA	99		50-150
STL01892	13C4 PFHpA	99		50-150
STL01052	13C8 PFOA	99		50-150
STL02578	13C9 PFNA	93		50-150
STL02579	13C6 PFDA	102		50-150
STL02580	13C7 PFUnA	98		50-150
STL02703	13C2-PFDoDA	97		50-150
STL02116	13C2 PFTeDA	93		50-150
STL02337	13C3 PFBS	92		50-150
STL02581	13C3 PFHxS	98		50-150
STL01054	13C8 PFOS	95		50-150
STL02118	d3-NMeFOSAA	106		50-150
STL02117	d5-NEtFOSAA	108		50-150
STL01056	13C8 FOSA	103		50-150
STL00992	13C4 PFBA	94		50-150
STL01893	13C5 PFPeA	96		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-33.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 07-Apr-2022 12:20:04 ALS Bottle#: 20001 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCB
Misc. Info.: Plate: 1 Rack: 1 410-0054325-002
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 15:07:46 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: carpenterr Date: 07-Apr-2022 12:45:45
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-32.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00		3.656				ND				
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.663	0.0		7627454	9.42		94.2	128299	
63 PFECA F										
229.00 > 85.00	3.898	3.890	0.008	0.932	1266	0.002351			147	
67 3:3 FTCA										
241.00 > 177.00		4.172				ND				
241.00 > 117.00		4.172								
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.179	0.004		6653895	9.59		95.9	64782	
3 Perfluoropentanoic acid										
263.00 > 219.00		4.179				ND				
D 6 13C3 PFBS										
302.00 > 80.00	4.236	4.231	0.005		7907361	8.57		92.1	297237	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00		4.231				0				
299.00 > 99.00		4.231								
64 PFECA A										
279.00 > 85.00		4.301				ND				
65 PES										
315.00 > 135.00		4.396				ND				
315.00 > 83.00		4.396								
68 PFECA B										
295.00 > 201.00		4.520				ND				
D 8 M2-4:2 FTS										
329.00 > 81.00	4.554	4.549	0.005		428355	9.82		105	13440	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
7 4:2 FTS										
327.00 > 307.00		4.549				ND				
327.00 > 81.00		4.549								
D 9 13C5 PFHxA										
318.00 > 273.00	4.593	4.588	0.005		7884346	9.87		98.7	146888	
10 Perfluorohexanoic acid										
313.00 > 269.00		4.588				ND				
313.00 > 119.00		4.588								
11 Perfluoropentanesulfonic acid										
349.00 > 80.00		4.608				ND				
349.00 > 99.00		4.608								
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.721	4.717	0.004		875395	10.1		101	57550	
12 HFPO-DA										
329.00 > 285.00		4.717				ND				
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.982	4.976	0.006	1.000	7803	0.009771	Target=3.08		49.2	
363.00 > 169.00	4.972	4.976	-0.004	0.998	2180		3.58(1.54-4.62)		45.9	
D 17 13C4 PFHpA										
367.00 > 322.00	4.982	4.986	-0.004		8342005	9.92		99.2	107033	
D 16 13C3 PFHxS										
402.00 > 80.00	4.990	4.986	0.004		7641732	9.24		97.7	1577010	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00		4.986				ND				
399.00 > 99.00		4.986								
18 DONA										
377.00 > 251.00	5.007	5.028	-0.021	1.005	2288	0.001692			20.9	
62 5:3 FTCA										
341.00 > 237.00		5.051				ND				
341.00 > 217.00		5.051								
19 6:2 FTS										
427.00 > 407.00		5.328				ND				
427.00 > 81.00		5.328								
D 20 M2-6:2 FTS										
429.00 > 81.00	5.338	5.335	0.003		297934	10.3		108	20525	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.342				ND				
449.00 > 99.00		5.342								
23 Perfluorooctanoic acid										
413.00 > 369.00	5.351	5.348	0.003	0.999	26699	0.0326	Target=2.37		351	
413.00 > 169.00	5.344	5.348	-0.004	0.998	9960		2.68(1.18-3.55)		847	
D 22 13C8 PFOA										
421.00 > 376.00	5.357	5.354	0.003		9085038	9.95		99.5	652649	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.681	-0.004		6800913	9.11		95.3	406421	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanesulfonic acid										
499.00 > 80.00		5.681				ND				
499.00 > 99.00		5.681								
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.697	-0.004		8729565	9.34		93.4	188714	
26 Perfluorononanoic acid										
463.00 > 419.00		5.697				ND				
463.00 > 169.00		5.697								
66 7:3 FTCA										
441.00 > 317.00		5.796				ND				
441.00 > 337.00		5.796								
28 9ClFOS										
531.00 > 351.00		5.862				ND				
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.987				ND				
549.00 > 99.00		5.987								
30 Perfluorodecanoic acid										
513.00 > 469.00		6.003				ND				
513.00 > 169.00		6.003								
D 32 13C6 PFDA										
519.00 > 474.00	6.014	6.011	0.003		10305747	10.2		102	203676	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.014	6.011	0.003		243859	10.0		105	19097	
33 8:2 FTS										
527.00 > 507.00		6.011				ND				
527.00 > 81.00		6.011								
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.110	0.004		12750573	10.3		103	333761	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.105	6.110	-0.005	0.999	5111	0.003869			112	
36 NMeFOSAA										
570.00 > 419.00		6.152				ND				
570.00 > 483.00		6.152								
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.163	6.160	0.003		3059700	10.6		106	677352	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.258				ND				
599.00 > 99.00		6.258								
D 40 13C7 PFUnA										
570.00 > 525.00	6.290	6.286	0.004		10067796	9.79		97.9	173629	
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.286				ND				
563.00 > 169.00		6.286								
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.295	0.004		2388730	10.8		108	359369	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 NEtFOSAA										
584.00 > 419.00		6.305				ND				
584.00 > 526.00		6.305								
43 11ClFOS										
631.00 > 451.00		6.395				ND				
D 45 13C2-PFDoDA										
615.00 > 570.00	6.531	6.528	0.003		10328936	9.70		97.0	271938	
46 Perfluorododecanoic acid										
613.00 > 569.00		6.528				ND				
613.00 > 169.00		6.528								
48 10:2 FTS										
627.00 > 607.00		6.537				ND				
627.00 > 81.00		6.537								
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.558	6.555	0.003		1152973	9.93		99.3	5839	
47 N-MeFOSE-M										
616.00 > 59.00		6.564				ND				
D 49 d3-NMePFOSA										
515.00 > 169.00	6.575	6.572	0.003		1531609	9.77		97.7	10359	
50 NMeFOSA										
512.00 > 169.00		6.572				ND				
53 PFDoS										
699.00 > 80.00	6.778	6.704	0.074	1.194	1267	0.001809			20.2	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.715	6.713	0.002		1392273	9.97		99.7	10285	
52 N-EtFOSE-M										
630.00 > 59.00		6.730				ND				
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.738	0.002		1397589	9.93		99.3	9553	
56 Perfluorotridecanoic acid										
663.00 > 619.00		6.738				ND				
663.00 > 169.00		6.738								
55 N-EtFOSA-M										
526.00 > 169.00	6.280	6.747	-0.466	0.932	2379	0.0152			67.0	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.919	0.002	0.999	11136	0.0127	Target=6.32		24.0	
713.00 > 169.00	6.921	6.919	0.002	0.999	1637		6.80(3.16-9.48)		84.2	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.927	0.001		9824568	9.26		92.6	194037	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.248	7.247	0.001	1.046	26031	0.0420	Target=6.14		99.6	
813.00 > 169.00	7.241	7.247	-0.006	1.045	5117		5.09(3.07-9.21)		298	
60 Perfluorooctadecanoic acid										
913.00 > 869.00		7.495				ND				
913.00 > 169.00		7.495								
S 61 Total PFOA and PFOS										
216.00 > 172.00						0.0326				

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

PFC_SS_MODX_00228 Amount Added: 25.00 Units: uL

Report Date: 07-Apr-2022 15:07:55 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-33.d

Injection Date: 07-Apr-2022 12:20:04 Instrument ID: 29347

Lims ID: CCB

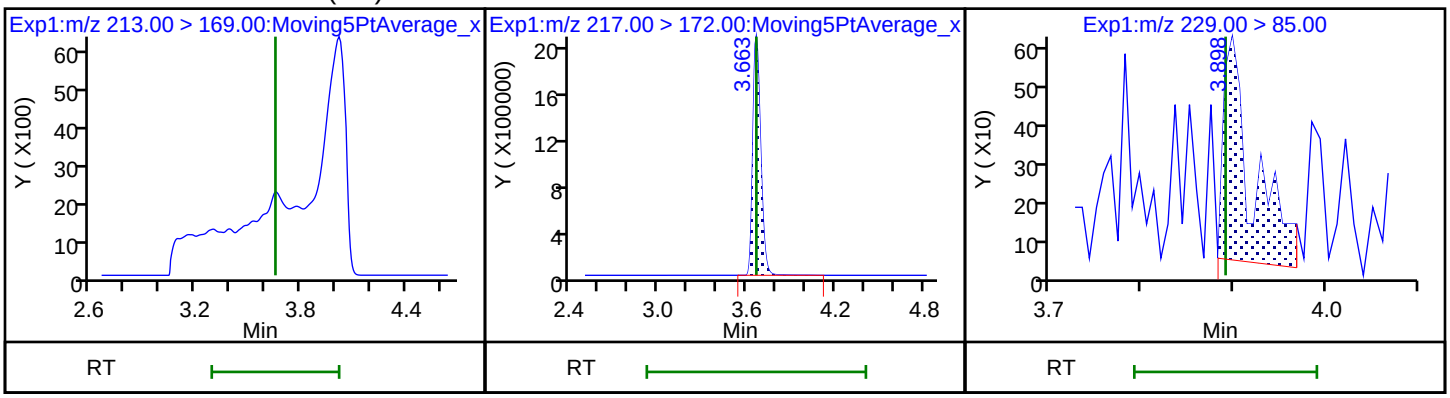
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20001 Worklist Smp#: 2

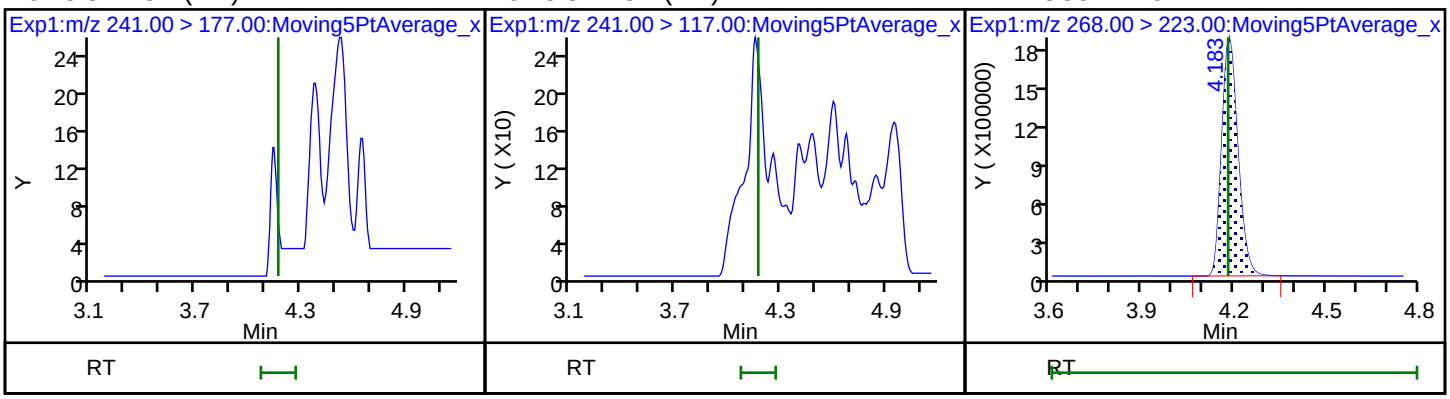
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

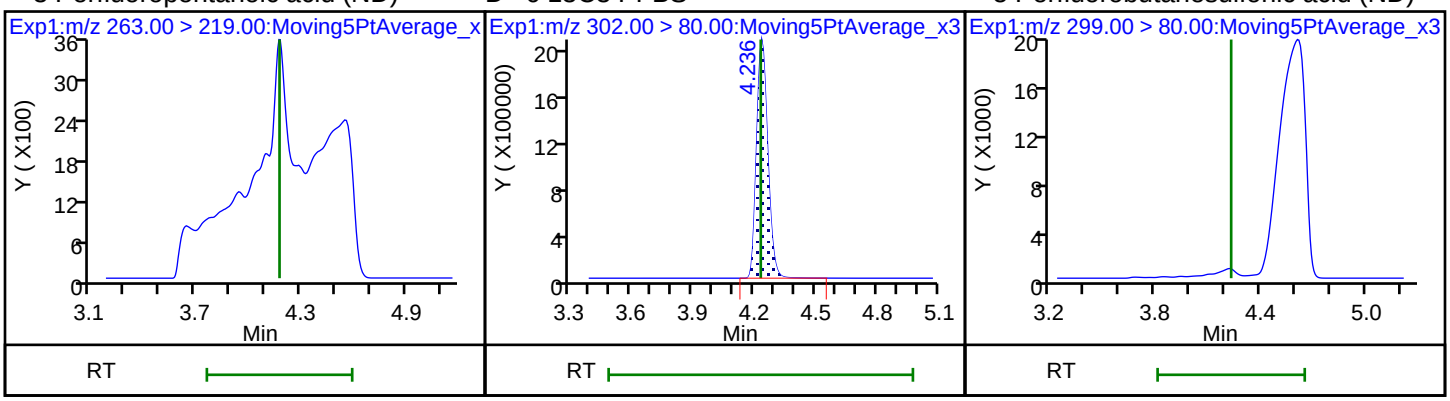
1 Perfluorobutanoic acid (ND) D 2 13C4 PFBA 63 PFECA F



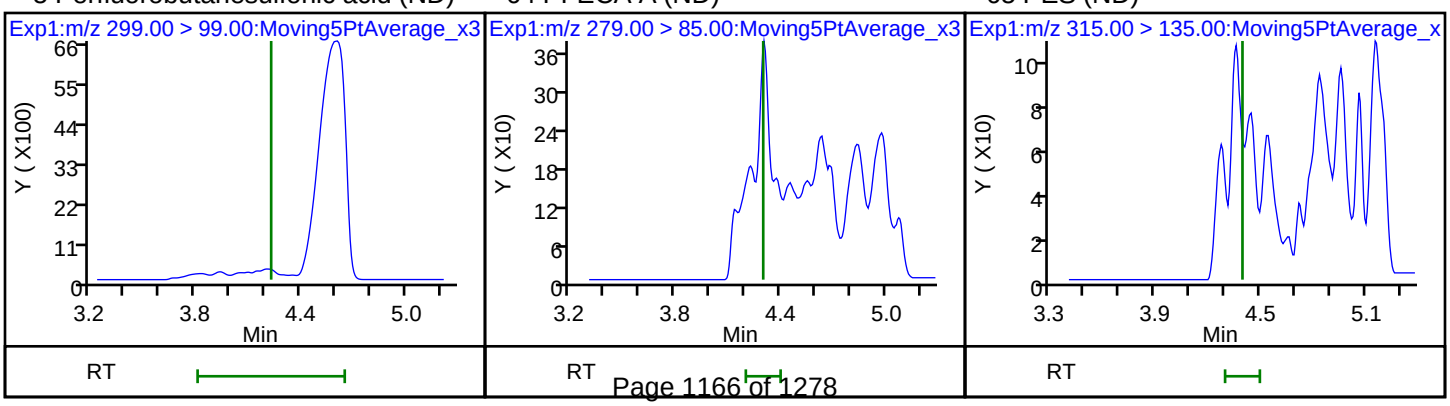
67 3:3 FTCA (ND) 67 3:3 FTCA (ND) D 4 13C5 PFPeA



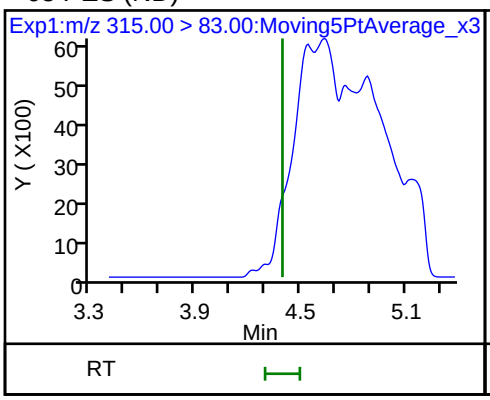
3 Perfluoropentanoic acid (ND) D 6 13C3 PFBS 5 Perfluorobutanesulfonic acid (ND)



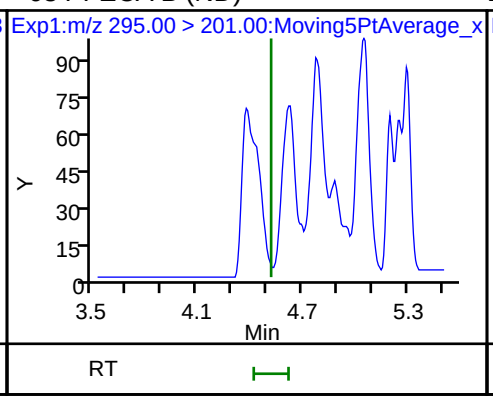
5 Perfluorobutanesulfonic acid (ND) 64 PFECA A (ND) 65 PES (ND)



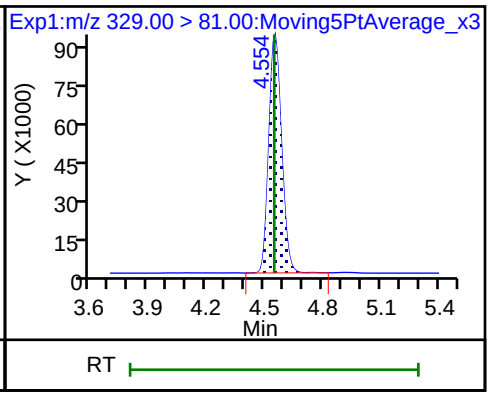
65 PES (ND)



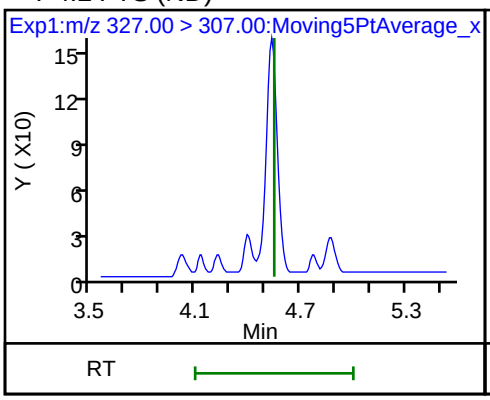
68 PFECA B (ND)



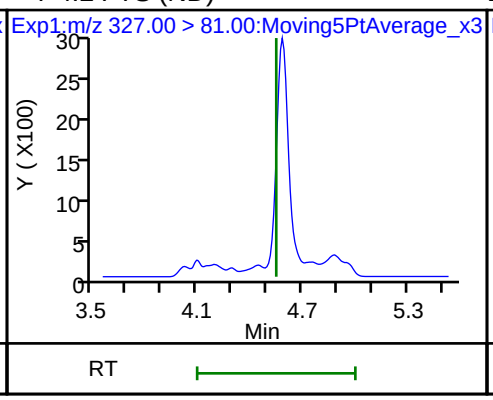
D 8 M2-4:2 FTS



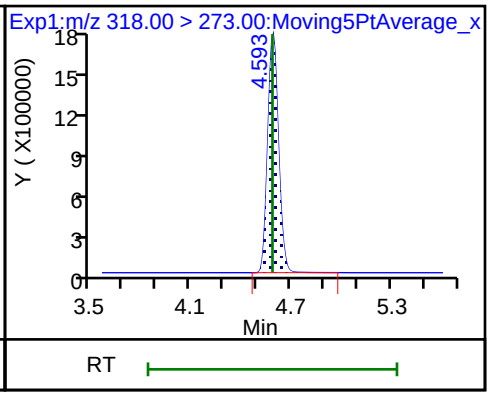
7 4:2 FTS (ND)



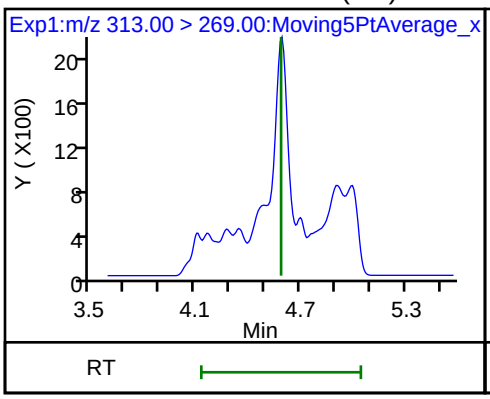
7 4:2 FTS (ND)



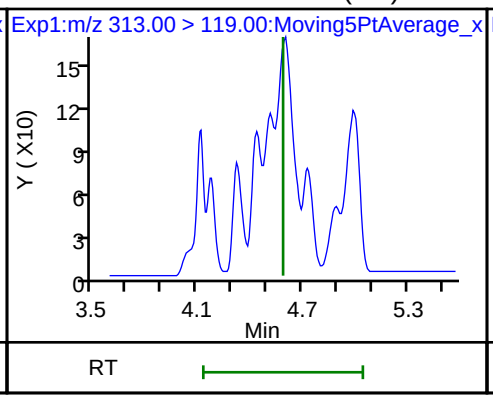
D 9 13C5 PFHxA



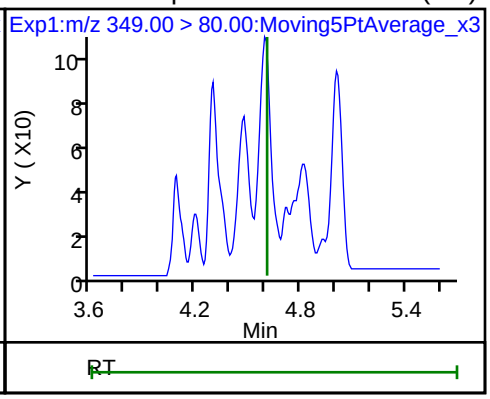
10 Perfluorohexanoic acid (ND)



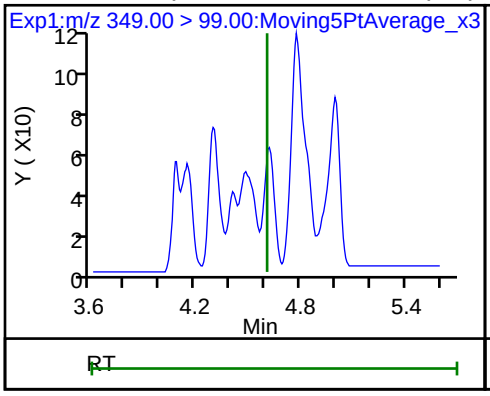
10 Perfluorohexanoic acid (ND)



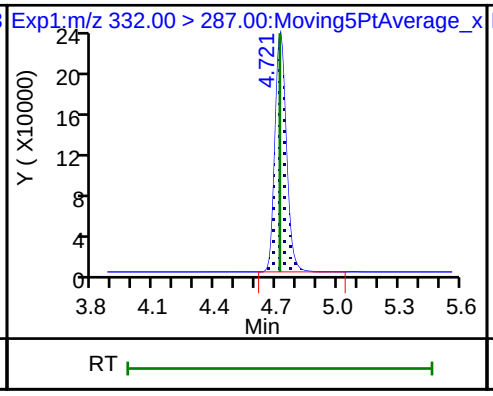
11 Perfluoropentanesulfonic acid (ND)



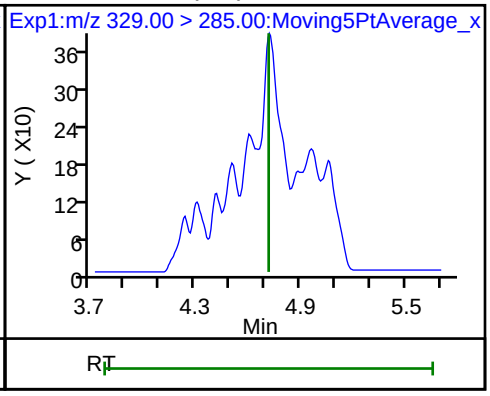
11 Perfluoropentanesulfonic acid (ND)



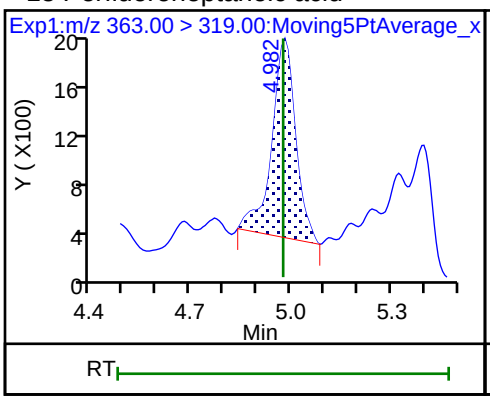
D 13 13C3 HFPO-DA



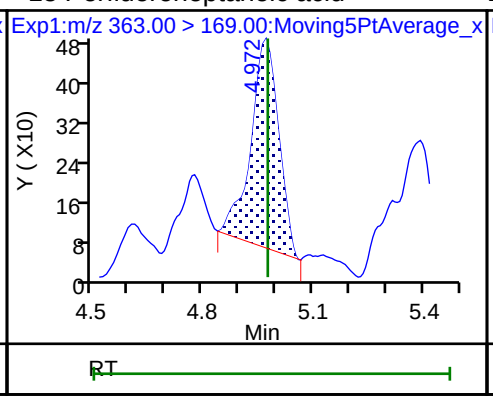
12 HFPO-DA (ND)



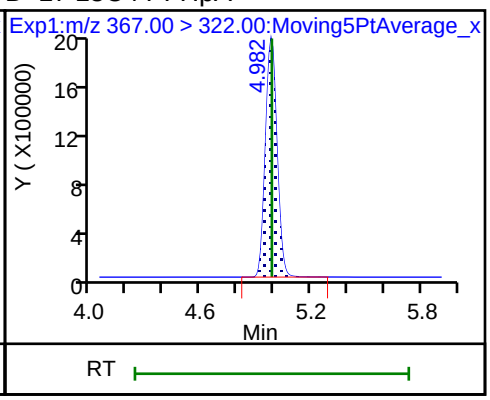
15 Perfluoroheptanoic acid



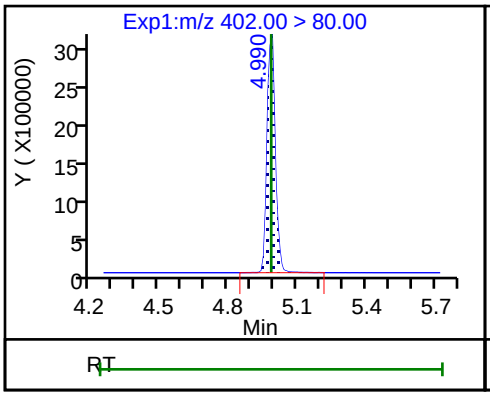
15 Perfluoroheptanoic acid



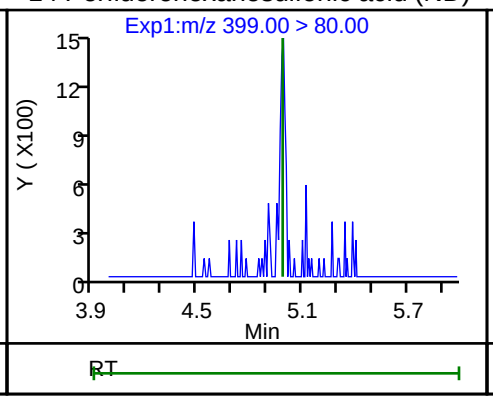
D 17 13C4 PFHpA



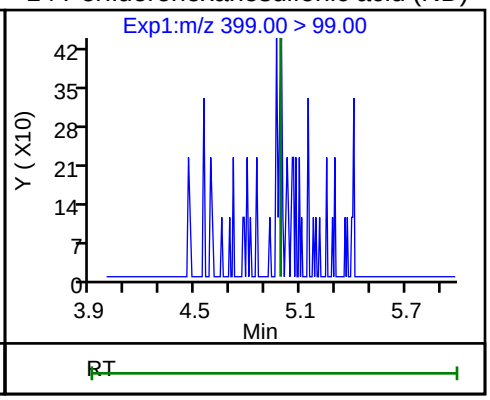
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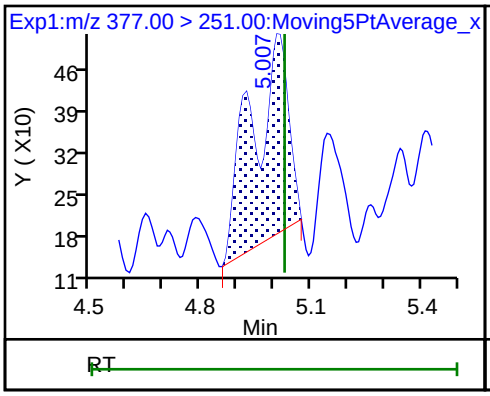
14 Perfluorohexanesulfonic acid (ND)



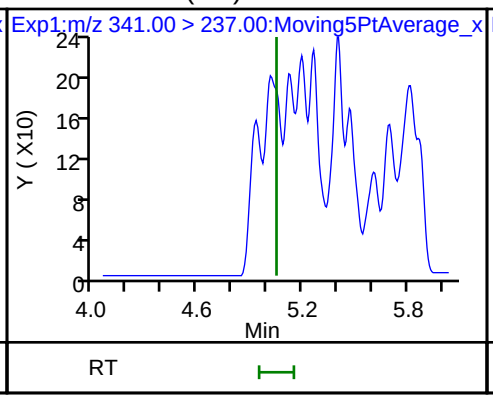
14 Perfluorohexanesulfonic acid (ND)



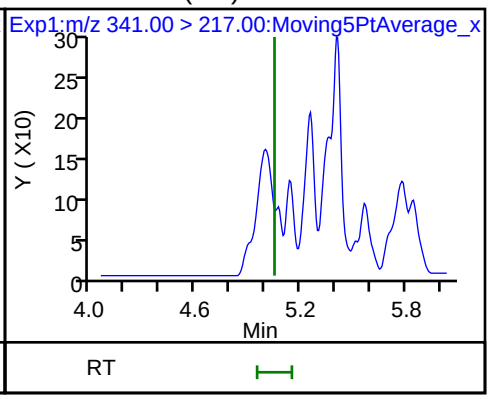
18 DONA



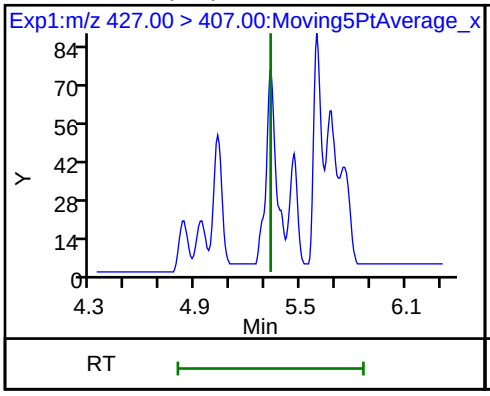
62 5:3 FTCA (ND)



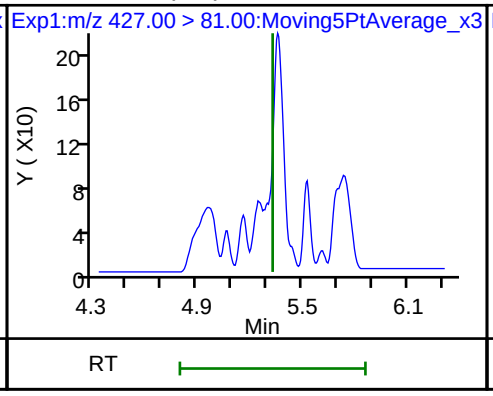
62 5:3 FTCA (ND)



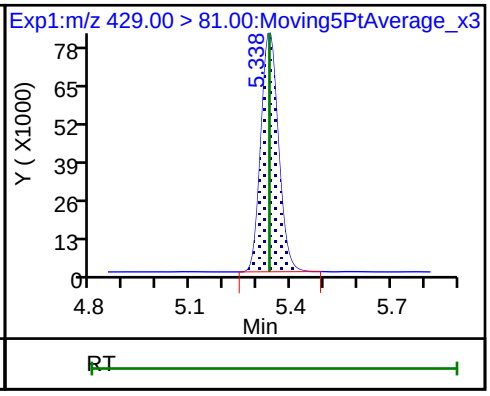
19 6:2 FTS (ND)



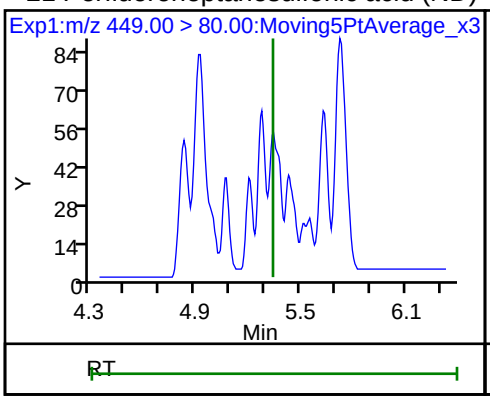
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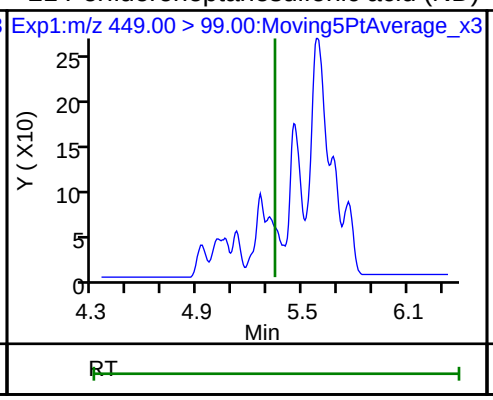
D 20 M2-6:2 FTS



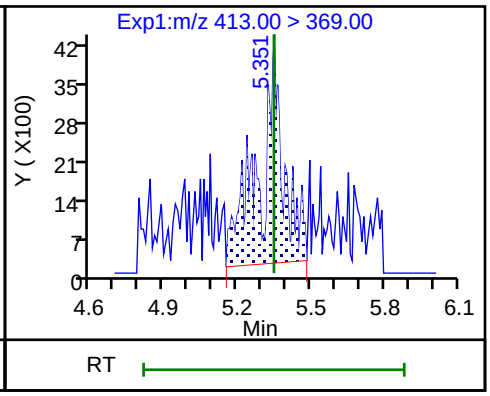
21 Perfluoroheptanesulfonic acid (ND)



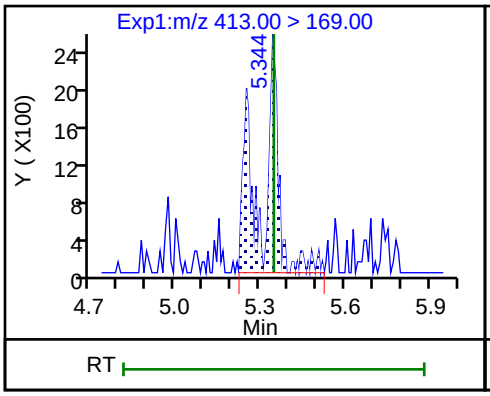
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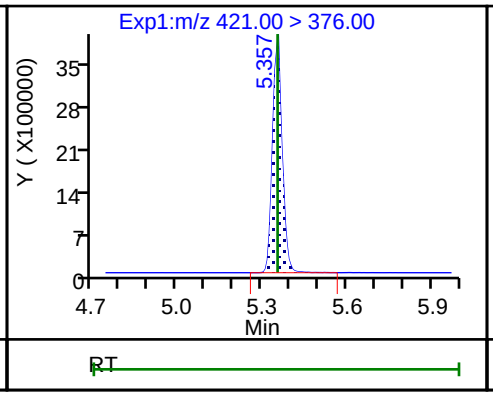
23 Perfluorooctanoic acid



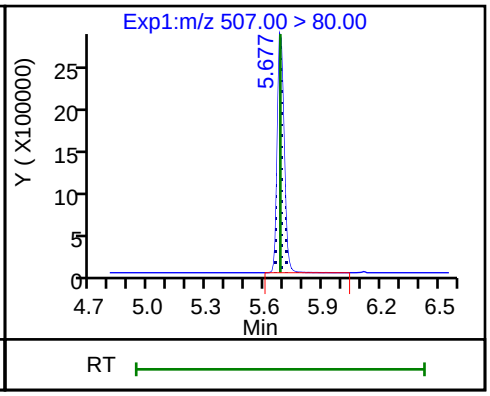
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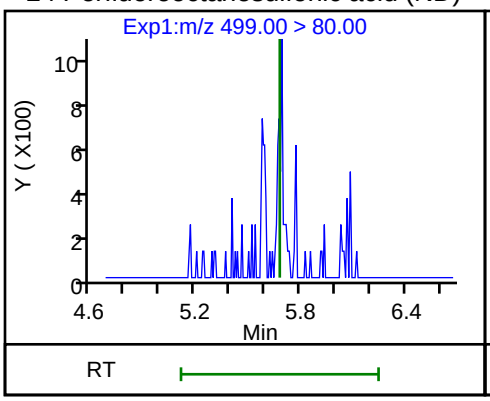
D 22 13C8 PFOA



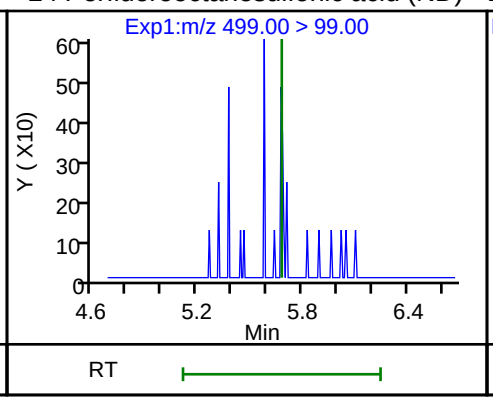
D 25 13C8 PFOS



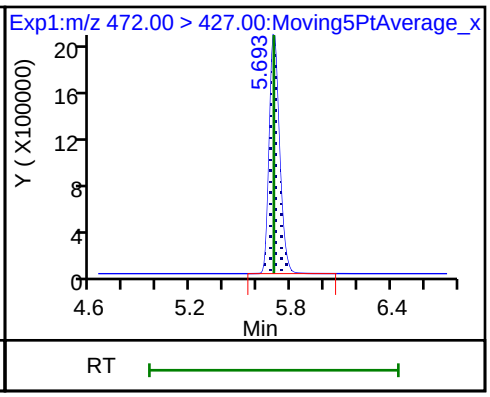
24 Perfluorooctanesulfonic acid (ND)



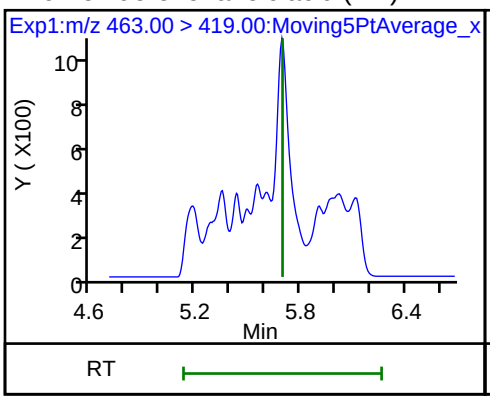
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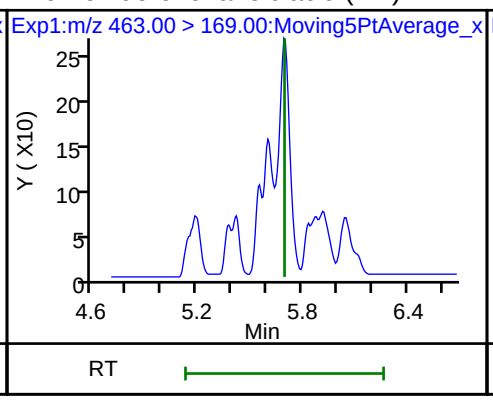
D 27 13C9 PFNA



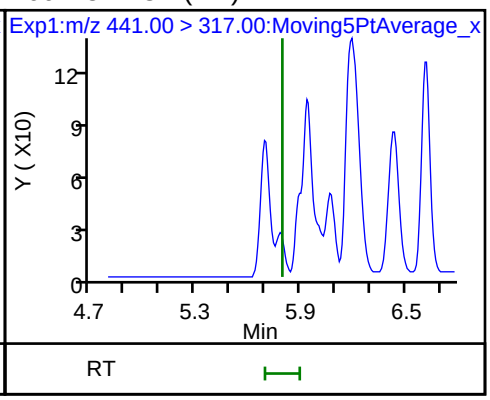
26 Perfluorononanoic acid (ND)



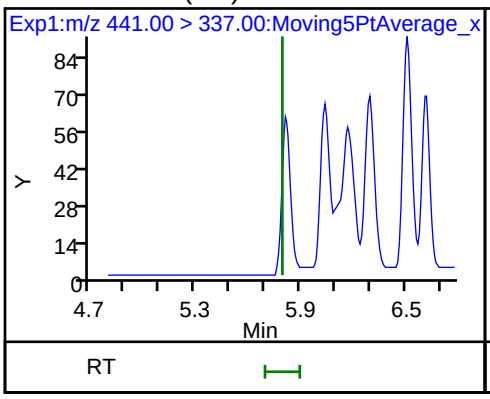
26 Perfluorononanoic acid (ND)



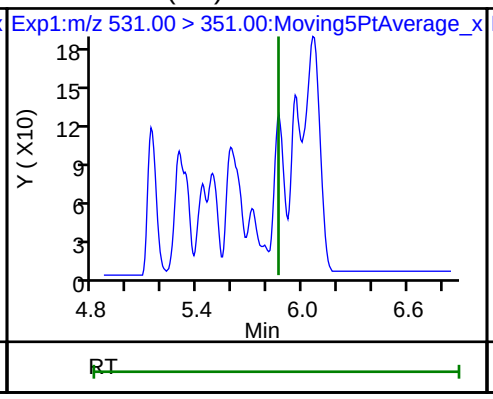
66 7:3 FTCA (ND)



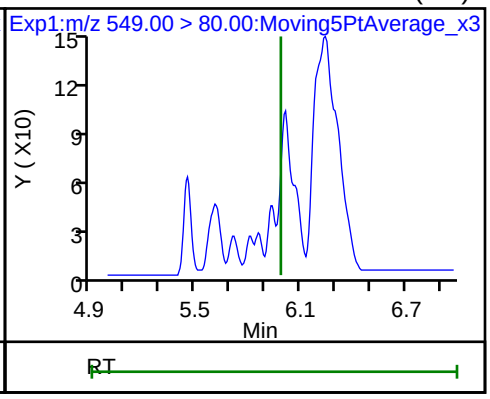
66 7:3 FTCA (ND)



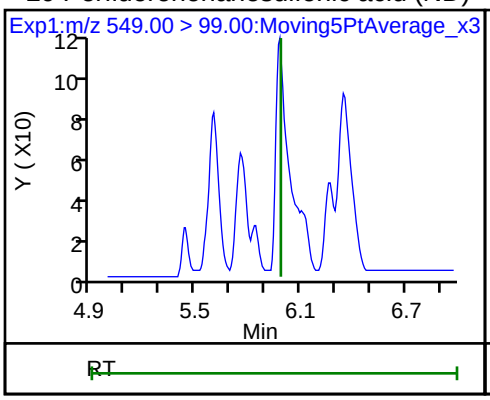
28 9ClFOS (ND)



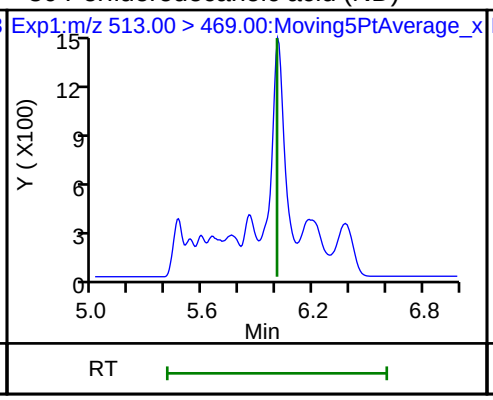
29 Perfluorononanesulfonic acid (ND)



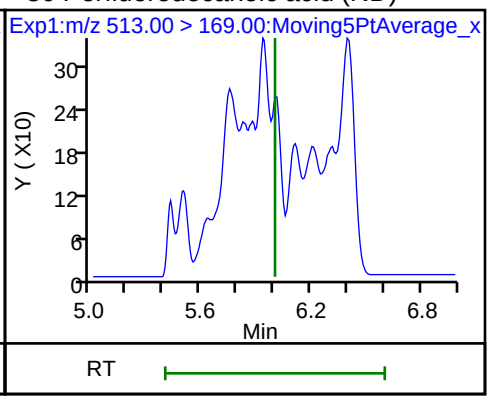
29 Perfluorononanesulfonic acid (ND)



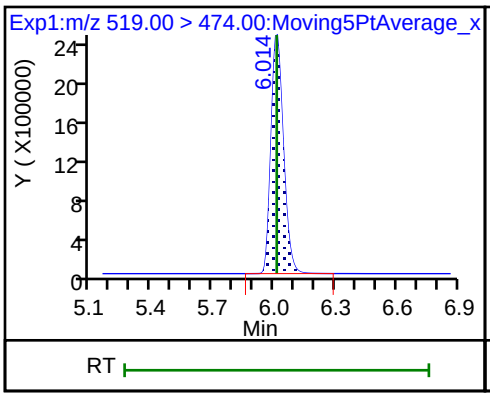
30 Perfluorodecanoic acid (ND)



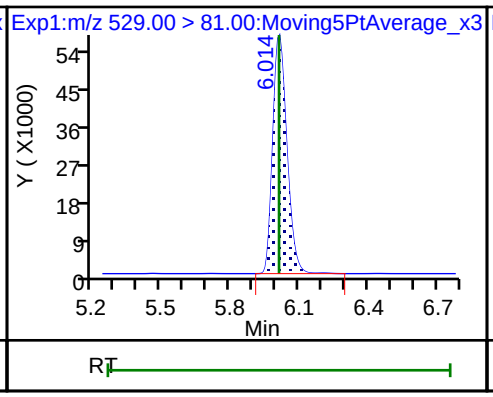
30 Perfluorodecanoic acid (ND)



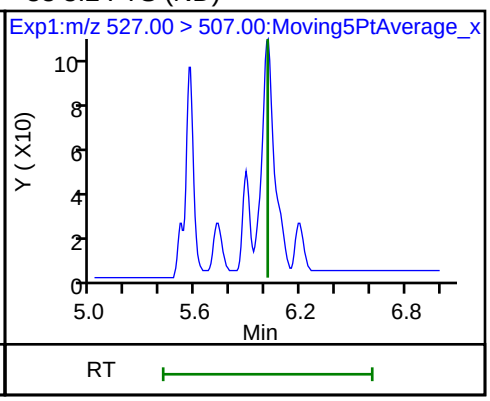
D 32 13C6 PFDA



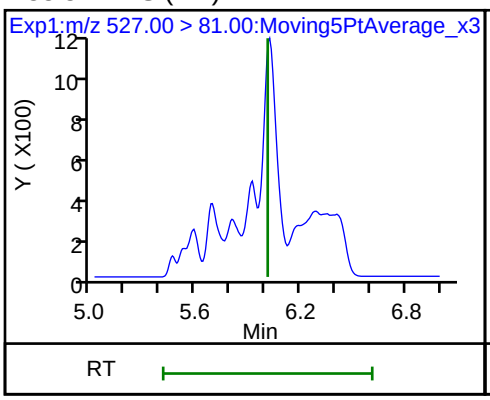
D 31 M2-8:2 FTS



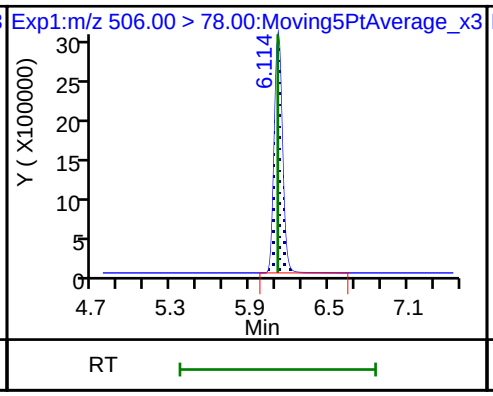
33 8:2 FTS (ND)



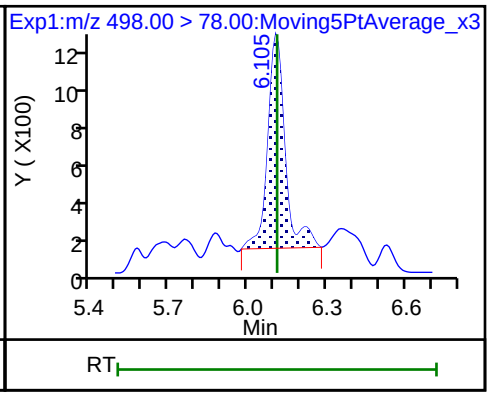
33 8:2 FTS (ND)



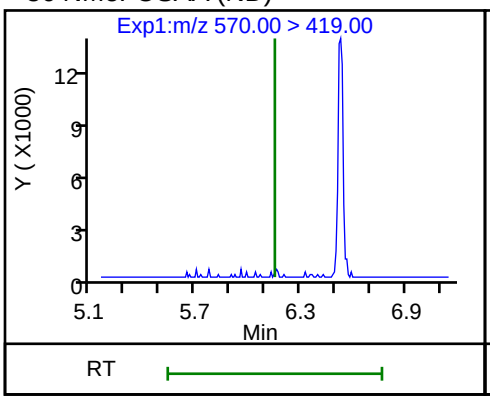
D 35 13C8 FOSA



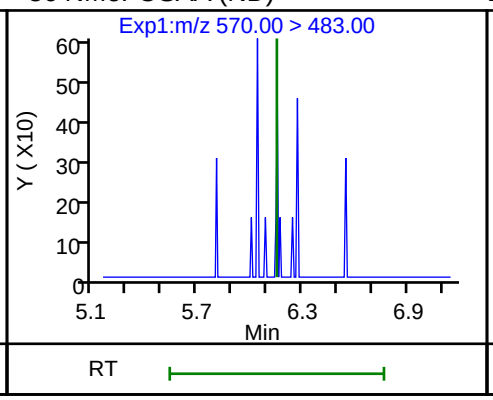
34 Perfluorooctanesulfonamide



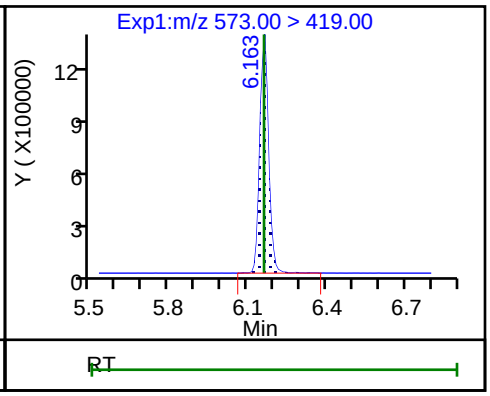
36 NMeFOSAA (ND)



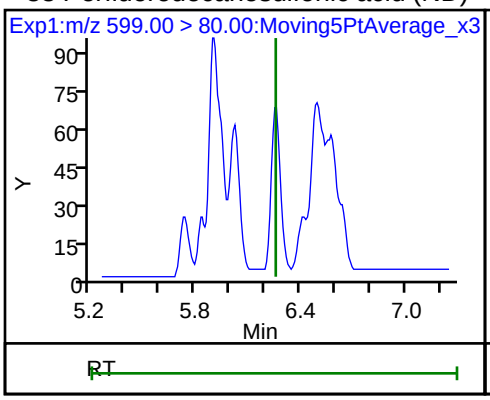
36 NMeFOSAA (ND)



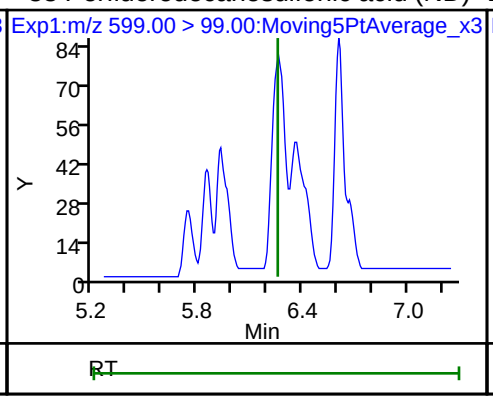
D 37 d3-NMeFOSAA



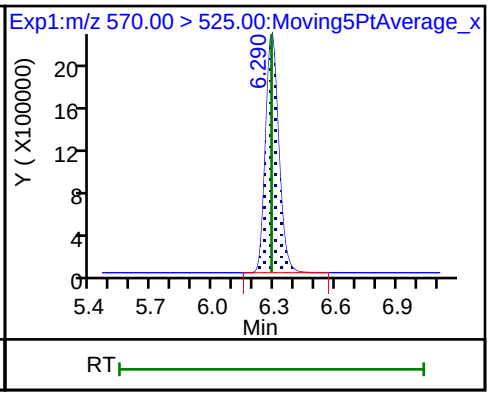
38 Perfluorodecanesulfonic acid (ND)



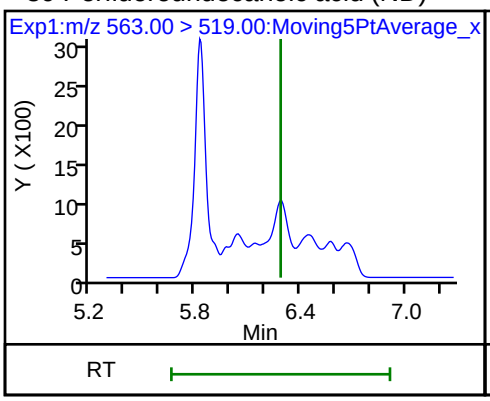
38 Perfluorodecanesulfonic acid (ND)



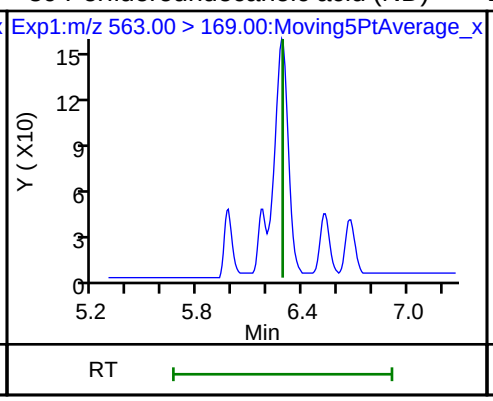
D 40 13C7 PFUnA



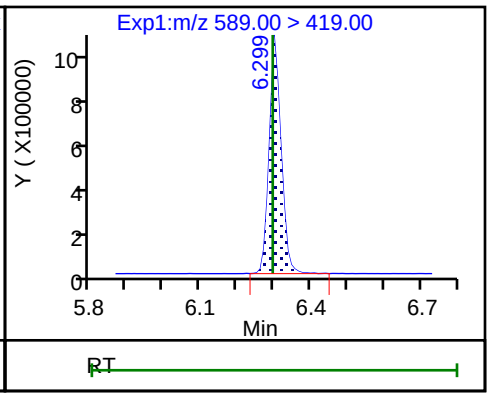
39 Perfluoroundecanoic acid (ND)



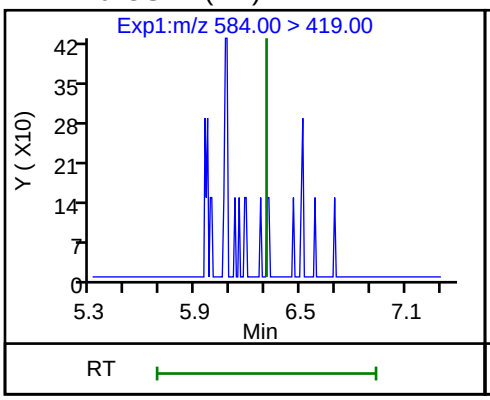
39 Perfluoroundecanoic acid (ND)



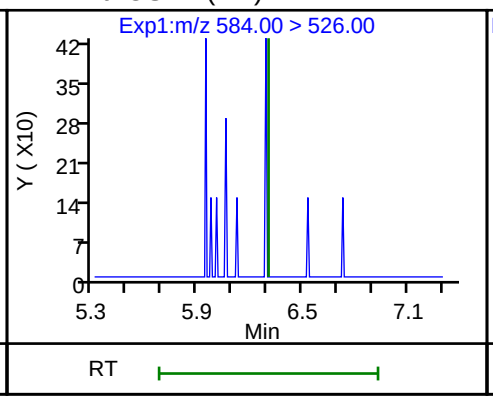
D 41 d5-NEtFOSAA



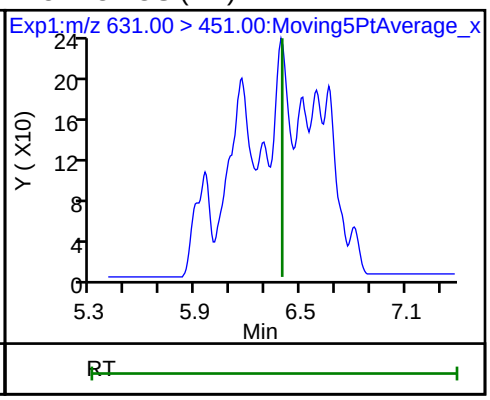
42 NEtFOSAA (ND)



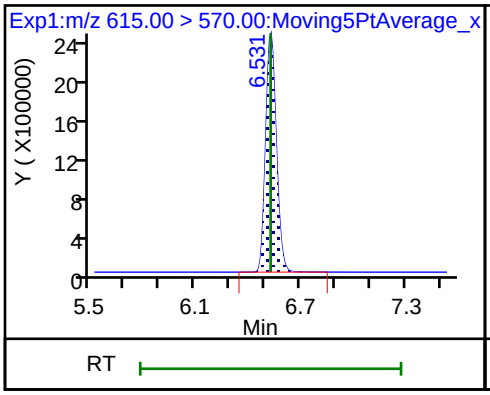
42 NEtFOSAA (ND)



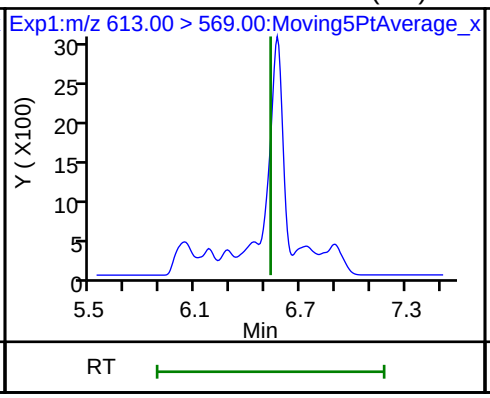
43 11ClFOS (ND)



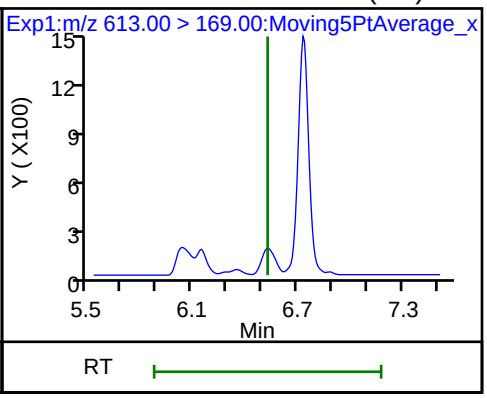
D 45 13C2-PFDoDA



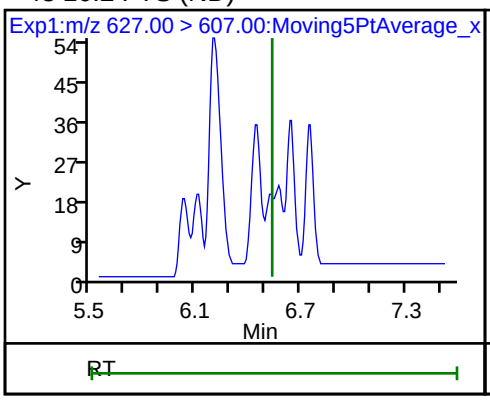
46 Perfluorododecanoic acid (ND)



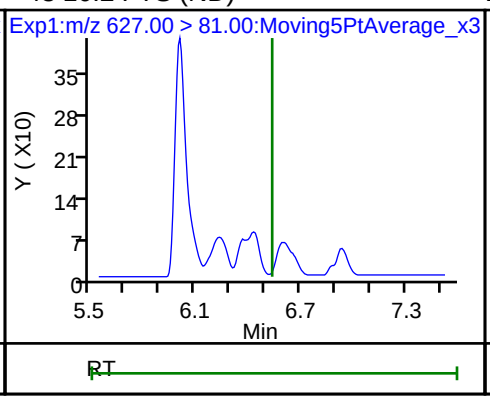
46 Perfluorododecanoic acid (ND)



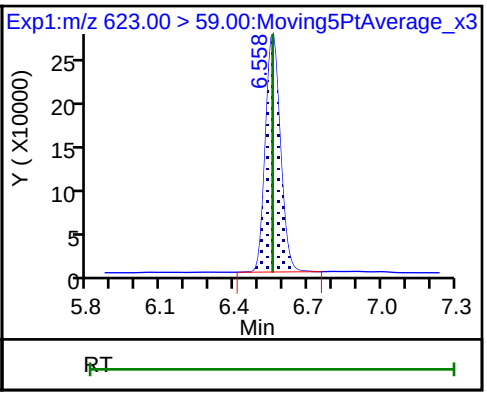
48 10:2 FTS (ND)



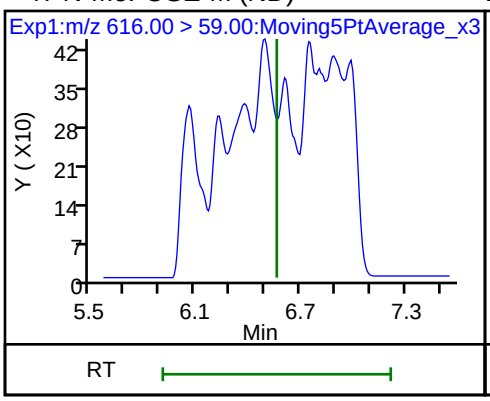
48 10:2 FTS (ND)



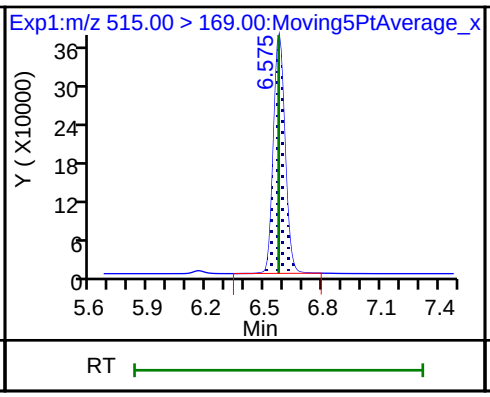
D 44 d7-N-MeFOSE-M



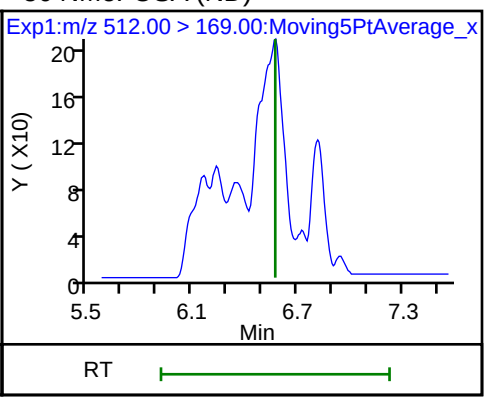
47 N-MeFOSE-M (ND)



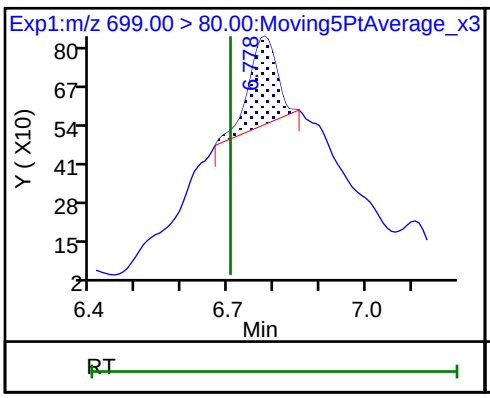
D 49 d3-NMePFOSA



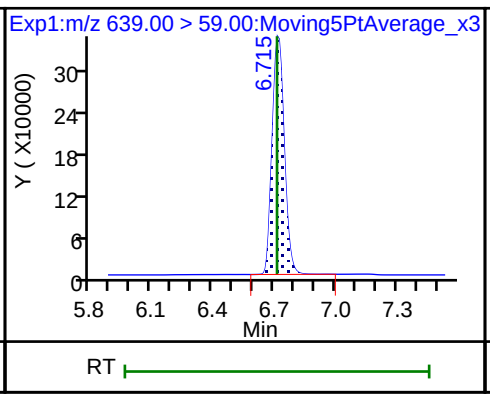
50 NMeFOSA (ND)



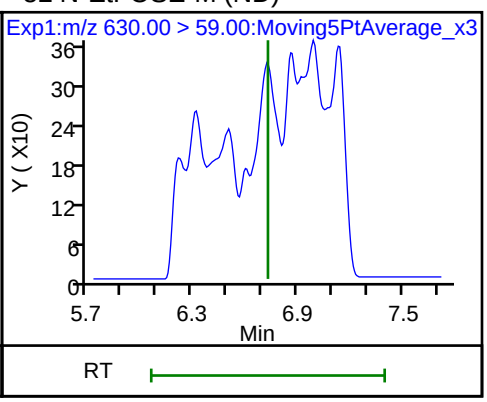
53 PFDoS



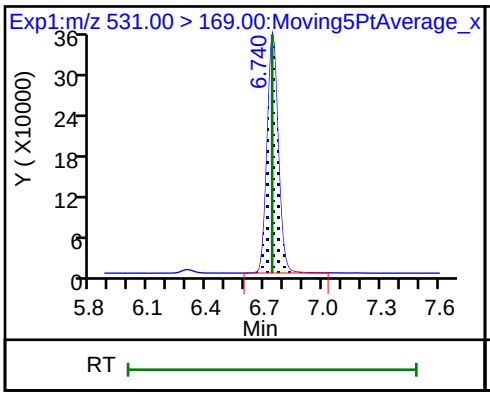
D 51 d9-N-EtFOSE-M



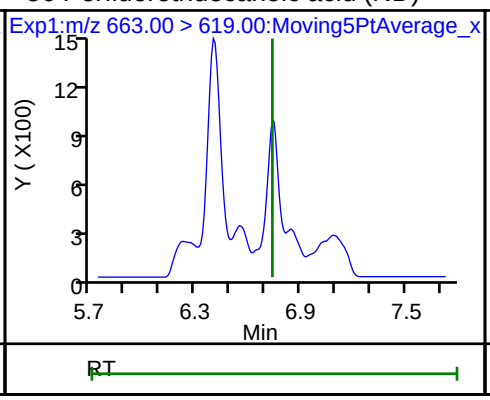
52 N-EtFOSE-M (ND)



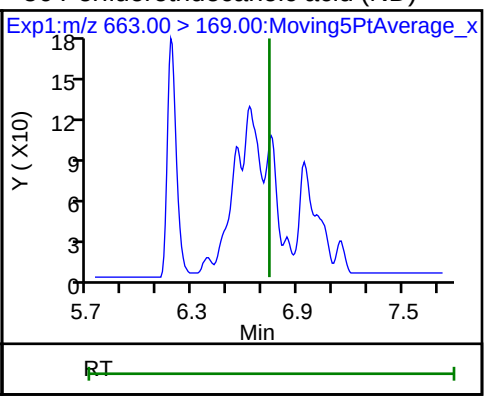
D 54 d5-NEtPFOSA



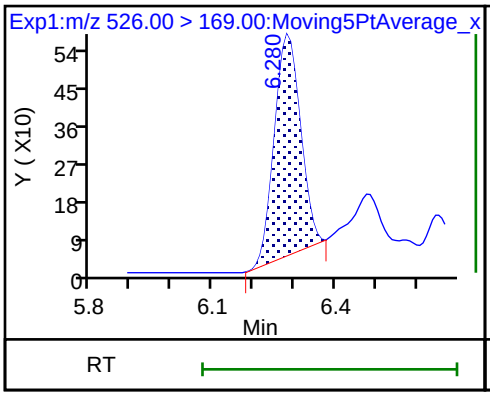
56 Perfluorotridecanoic acid (ND)



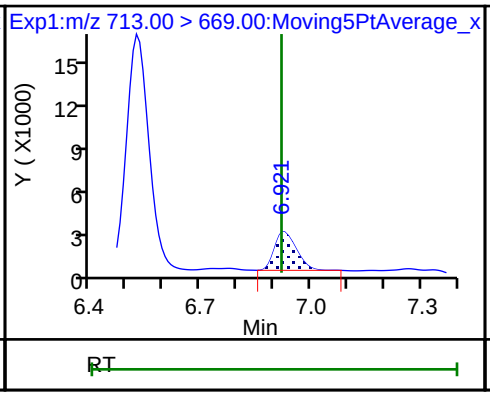
56 Perfluorotridecanoic acid (ND)



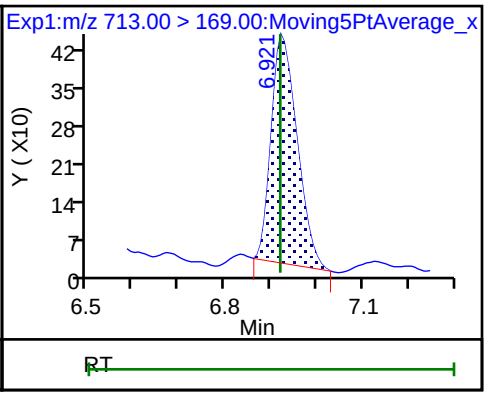
55 N-EtFOSA-M



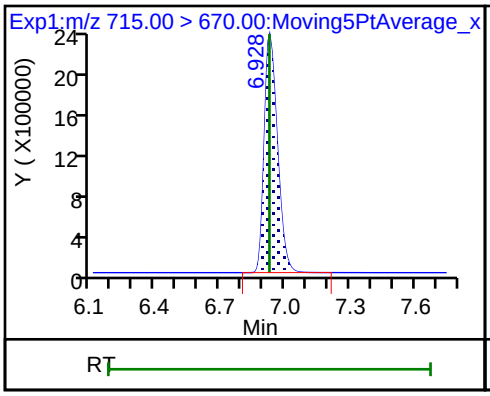
57 Perfluorotetradecanoic acid



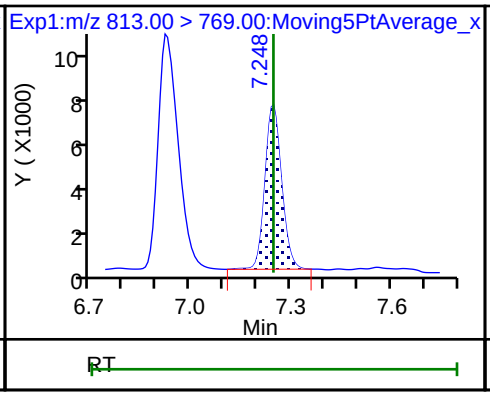
57 Perfluorotetradecanoic acid



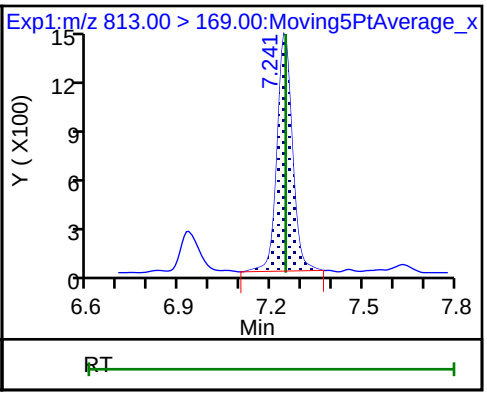
D 58 13C2 PFTeDA



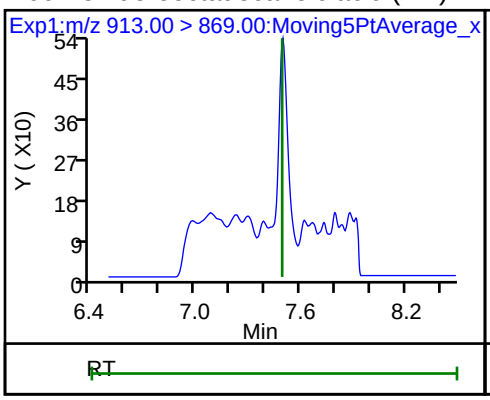
59 Perfluorohexadecanoic acid



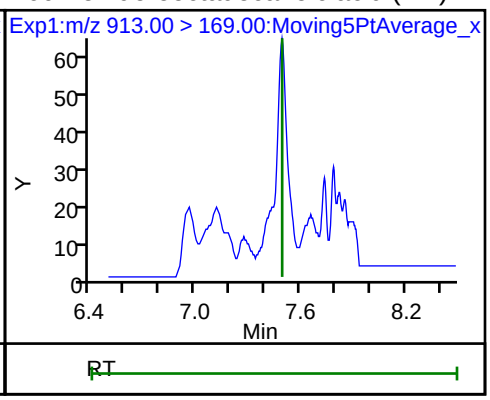
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid (ND)



60 Perfluorooctadecanoic acid (ND)



FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: ICB 410-240108/8

Matrix: Water Lab File ID: 22APR03DCAL-48.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/03/2022 18:26

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240108 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	0.25	U	0.50	0.25	0.13
375-85-9	Perfluoroheptanoic acid	0.25	U	0.50	0.25	0.13
335-67-1	Perfluorooctanoic acid	0.25	U	0.50	0.25	0.13
375-95-1	Perfluorononanoic acid	0.25	U	0.50	0.25	0.13
335-76-2	Perfluorodecanoic acid	0.25	U	0.50	0.25	0.13
72629-94-8	Perfluorotridecanoic acid	0.25	U	0.50	0.25	0.13
376-06-7	Perfluorotetradecanoic acid	0.25	U	0.50	0.25	0.13
375-73-5	Perfluorobutanesulfonic acid	0.25	U	0.50	0.25	0.13
355-46-4	Perfluorohexanesulfonic acid	0.25	U	0.50	0.25	0.13
1763-23-1	Perfluorooctanesulfonic acid	0.25	U	0.50	0.25	0.13
2991-50-6	NEtFOSAA	0.50	U	0.75	0.50	0.13
2355-31-9	NMeFOSAA	0.50	U	0.50	0.50	0.15
2706-91-4	Perfluoropentanesulfonic acid	0.25	U	0.50	0.25	0.13
375-92-8	Perfluoroheptanesulfonic acid	0.25	U	0.50	0.25	0.13
68259-12-1	Perfluorononanesulfonic acid	0.25	U	0.50	0.25	0.13
335-77-3	Perfluorodecanesulfonic acid	0.25	U	0.50	0.25	0.13
754-91-6	Perfluorooctanesulfonamide	0.25	U	0.50	0.25	0.13
375-22-4	Perfluorobutanoic acid	1.0	U	1.3	1.0	0.13
2706-90-3	Perfluoropentanoic acid	0.25	U	0.50	0.25	0.13
2058-94-8	Perfluoroundecanoic acid	0.25	U	0.50	0.25	0.13
307-55-1	Perfluorododecanoic acid	0.25	U	0.50	0.25	0.13
27619-97-2	6:2 Fluorotelomer sulfonic acid	1.0	U	1.3	1.0	0.13
39108-34-4	8:2 Fluorotelomer sulfonic acid	0.50	U	0.75	0.50	0.25
757124-72-4	4:2 Fluorotelomer sulfonic acid	0.25	U	0.50	0.25	0.13

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: ICB 410-240108/8

Matrix: Water Lab File ID: 22APR03DCAL-48.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/03/2022 18:26

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240108 Units: ng/mL

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	157	*5+	50-150
STL02280	M2-8:2 FTS	159	*5+	50-150
STL02279	M2-6:2 FTS	165	*5+	50-150
STL02577	13C5 PFHxA	145		50-150
STL01892	13C4 PFHpA	153	*5+	50-150
STL01052	13C8 PFOA	146		50-150
STL02578	13C9 PFNA	142		50-150
STL02579	13C6 PFDA	148		50-150
STL02580	13C7 PFUnA	147		50-150
STL02703	13C2-PFDoDA	138		50-150
STL02116	13C2 PFTeDA	137		50-150
STL02337	13C3 PFBS	140		50-150
STL02581	13C3 PFHxS	145		50-150
STL01054	13C8 PFOS	143		50-150
STL02118	d3-NMeFOSAA	166	*5+	50-150
STL02117	d5-NEtFOSAA	166	*5+	50-150
STL01056	13C8 FOSA	149		50-150
STL00992	13C4 PFBA	145		50-150
STL01893	13C5 PFPeA	140		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-48.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 03-Apr-2022 18:26:49 ALS Bottle#: 20001 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICB
Misc. Info.: Plate: 1 Rack: 1 410-0053897-008
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 03-Apr-2022 21:26:40 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1666

First Level Reviewer: polaskia Date: 03-Apr-2022 21:13:54
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.662	0.001		12608134	14.5		145	224358	
1 Perfluorobutanoic acid										
213.00 > 169.00		3.662				ND				
63 PFECA F										
229.00 > 85.00	3.882	3.897	-0.015	0.928	2871	0.003464			140	
67 3:3 FTCA										
241.00 > 177.00		4.175				ND				
241.00 > 117.00		4.175								
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.182	0.001		10182118	14.0		140	80294	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.183	4.182	0.001	1.000	13416	0.0128			39.8	
D 6 13C3 PFBS										
302.00 > 80.00	4.236	4.235	0.001		12215410	13.0		140	532587	
5 Perfluorobutanesulfonic acid										M
299.00 > 80.00	4.220	4.235	-0.015	0.996	4121	0.003265	Target=2.85		3.7	M
299.00 > 99.00	4.220	4.235	-0.015	0.996	1054		3.91(1.42-4.27)		3.5	M
64 PFECA A										
279.00 > 85.00		4.304				ND				
65 PES										
315.00 > 135.00		4.400				ND				
315.00 > 83.00		4.400								
68 PFECA B										
295.00 > 201.00		4.514				ND				
7 4:2 FTS										
327.00 > 307.00		4.553				ND				
327.00 > 81.00		4.553								

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.544	4.553	-0.009		593354	14.6		157	21264	
10 Perfluorohexanoic acid										
313.00 > 269.00		4.593				ND				
313.00 > 119.00		4.593								
D 9 13C5 PFHxA										
318.00 > 273.00	4.594	4.593	0.001		12828009	14.5		145	351482	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00		4.611				ND				
349.00 > 99.00		4.611								
12 HFPO-DA										
329.00 > 285.00	4.721	4.720	0.001	1.001	1688	0.004721			24.3	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.714	4.720	-0.006		1687070	15.3		153	88084	
D 17 13C4 PFHpA										
367.00 > 322.00	4.982	4.981	0.001		13596933	15.3		153	238004	
15 Perfluoroheptanoic acid										R
363.00 > 319.00	4.982	4.981	0.001	1.000	15101	0.0116	Target=3.13		69.8	R
363.00 > 169.00	4.972	4.981	-0.009	0.998	2978		5.07(1.57-4.70)		40.6	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.962	4.981	-0.019	0.996	6326	0.005339	Target=3.05		2299	
399.00 > 99.00	4.999	4.981	0.018	1.003	2466		2.57(1.52-4.57)		2.8	
D 16 13C3 PFHxS										
402.00 > 80.00	4.982	4.981	0.001		11521388	13.7		145	4846158	
18 DONA										
377.00 > 251.00	4.904	5.032	-0.128	0.984	379	0.000170			2.6	
62 5:3 FTCA										
341.00 > 237.00		5.053				ND				
341.00 > 217.00		5.053								
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.331	0.0		401260	15.7		165	27858	
19 6:2 FTS										
427.00 > 407.00		5.331				ND				
427.00 > 81.00		5.331								
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.338				ND				
449.00 > 99.00		5.338								
D 22 13C8 PFOA										
421.00 > 376.00	5.350	5.344	0.006		14291556	14.6		146	742107	
23 Perfluorooctanoic acid										M
413.00 > 369.00	5.344	5.350	-0.006	0.999	27622	0.0216	Target=2.38		591	M
413.00 > 169.00	5.250	5.350	-0.100	0.981	15657		1.76(1.19-3.57)		716	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00		5.677				ND				
499.00 > 99.00		5.677								
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.677	0.0		11041025	13.6		143	457359	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00		5.693				ND				
463.00 > 169.00		5.693								
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.701	-0.008		14428887	14.2		142	690621	
66 7:3 FTCA										
441.00 > 317.00		5.791				ND				
441.00 > 337.00		5.791								
28 9ClFOS										
531.00 > 351.00		5.864				ND				
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.981				ND				
549.00 > 99.00		5.981								
33 8:2 FTS										
527.00 > 507.00		6.006				ND				
527.00 > 81.00		6.006								
30 Perfluorodecanoic acid										
513.00 > 469.00		6.006				ND				
513.00 > 169.00		6.006								
D 32 13C6 PFDA										
519.00 > 474.00	6.006	6.014	-0.008		16010864	14.8		148	291329	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.014	-0.008		341640	15.3		159	16162	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.114	6.123	-0.009	1.000	9570	0.004935			45.3	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.123	-0.009		19292639	14.9		149	643193	
36 NMeFOSAA										
570.00 > 419.00		6.162				ND				
570.00 > 483.00		6.162								
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.162	-0.007		4675112	16.6		166	955090	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.252				ND				
599.00 > 99.00		6.252								
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.289				ND				
563.00 > 169.00		6.289								
D 40 13C7 PFUnA										
570.00 > 525.00	6.280	6.289	-0.009		16569512	14.7		147	229742	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.299	0.0		3631233	16.6		166	519619	
42 NEtFOSAA										
584.00 > 419.00		6.308				ND				
584.00 > 526.00		6.308								
43 11ClFOS										
631.00 > 451.00	6.388	6.398	-0.010	1.125	1660	0.000713			28.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										R
613.00 > 569.00	6.575	6.521	0.054	1.007	26718	0.0185	Target=5.80		170	R
613.00 > 169.00	6.522	6.521	0.001	0.999	1661		16.09(2.90-8.70)		20.4	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.531	6.530	0.001		16430535	13.8		138	183691	
48 10:2 FTS										
627.00 > 607.00		6.539				ND				
627.00 > 81.00		6.539								
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.558	6.566	-0.008		2146260	15.8		158	17425	
47 N-MeFOSE-M										
616.00 > 59.00		6.566				ND				
D 49 d3-NMePFOSA										
515.00 > 169.00	6.583	6.583	0.0		2474679	14.4		144	12271	
50 NMeFOSA										
512.00 > 169.00	6.583	6.583	0.0	1.000	1450	0.005787			28.8	
53 PFDoS										
699.00 > 80.00	6.696	6.705	-0.009	1.180	2480	0.002082			18.7	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.723	0.0		2454460	15.0		150	18350	
52 N-EtFOSE-M										
630.00 > 59.00		6.731				ND				
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.739	0.001	1.032	9204	0.006376	Target=5.49		69.3	
663.00 > 169.00	6.732	6.739	-0.007	1.031	1419		6.49(2.75-8.24)		50.6	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.748	6.748	0.0		2313363	14.7		147	11958	
55 N-EtFOSA-M										
526.00 > 169.00	6.280	6.755	-0.475	0.931	4224	0.0167			118	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.926	-0.005	0.999	22640	0.0158	Target=5.81		36.0	
713.00 > 169.00	6.921	6.926	-0.005	0.999	3901		5.80(2.91-8.72)		140	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.926	0.002		16546958	13.7		137	354301	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.247	7.246	0.001	1.046	61051	0.0570	Target=5.99		157	
813.00 > 169.00	7.241	7.246	-0.005	1.045	10297		5.93(2.99-8.98)		274	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.499	0.0	1.082	15470	0.0213	Target=7.27		95.2	
913.00 > 169.00	7.494	7.499	-0.005	1.082	1970		7.85(3.63-10.90)		66.5	
S 61 Total PFOA and PFOS										
216.00 > 172.00						0.0216				

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

PFC_SS_MODX_00228 Amount Added: 25.00 Units: uL

Report Date: 03-Apr-2022 21:27:30 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-48.d

Injection Date: 03-Apr-2022 18:26:49 Instrument ID: 29347

Lims ID: ICB

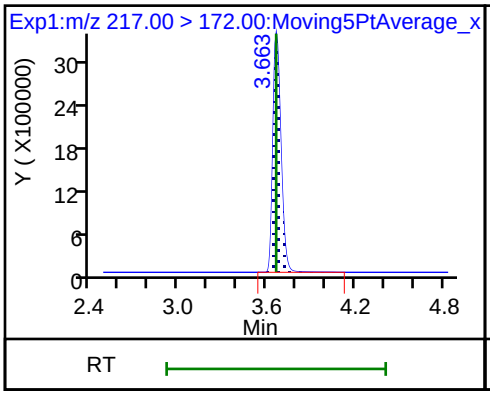
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20001 Worklist Smp#: 8

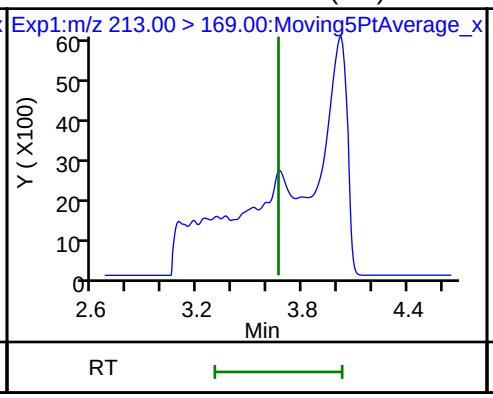
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

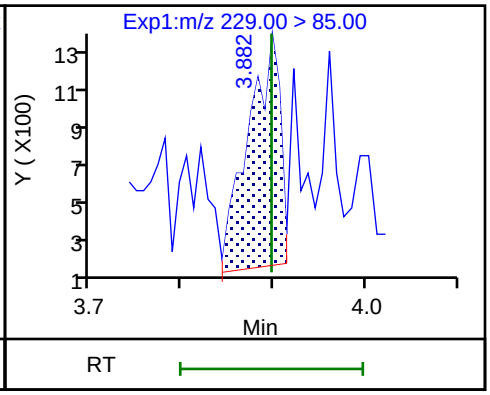
D 2 13C4 PFBA



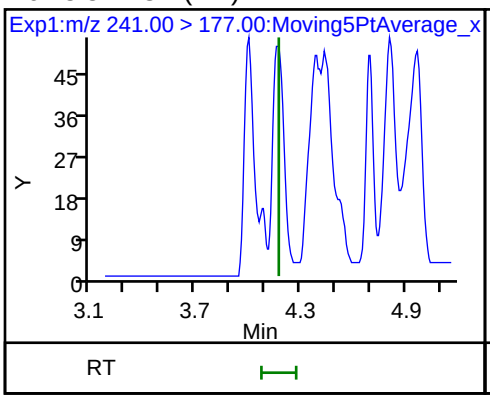
1 Perfluorobutanoic acid (ND)



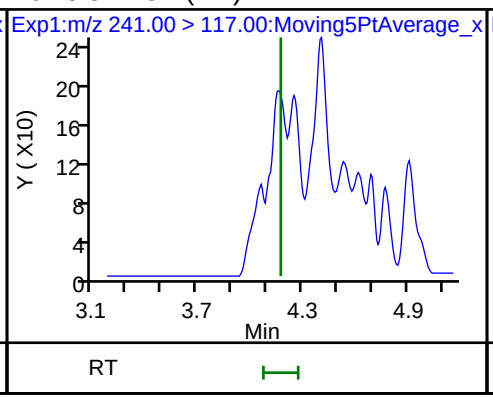
63 PFECA F



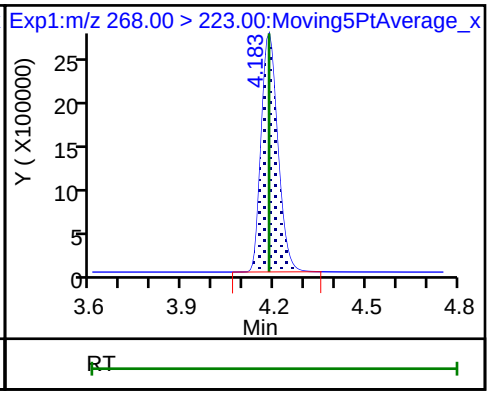
67 3:3 FTCA (ND)



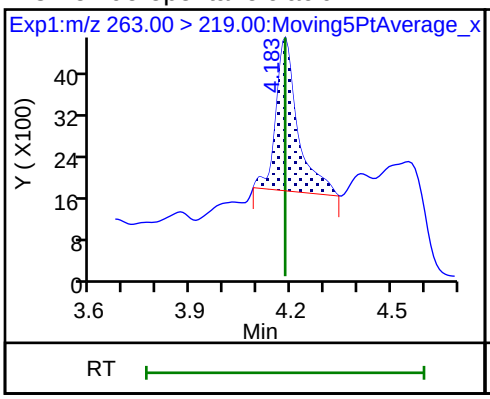
67 3:3 FTCA (ND)



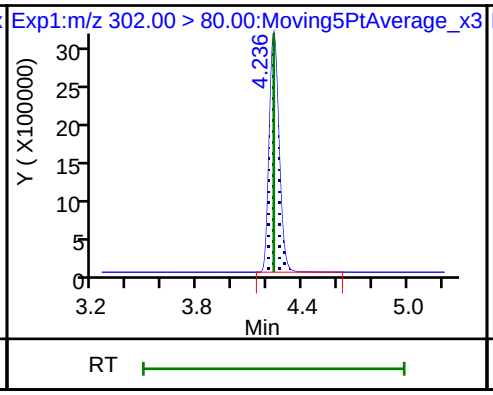
D 4 13C5 PFPeA



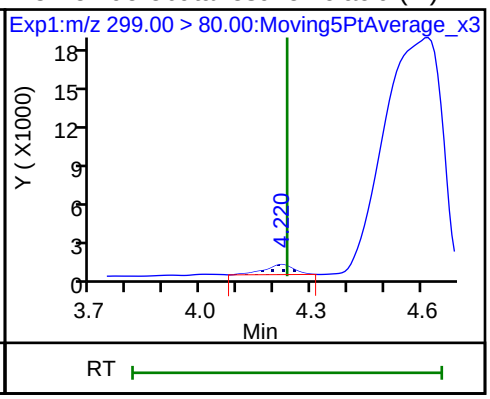
3 Perfluoropentanoic acid



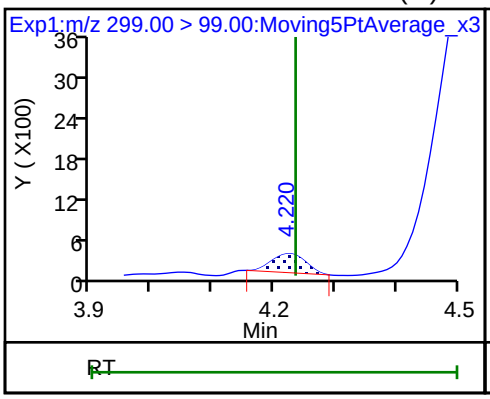
D 6 13C3 PFBS



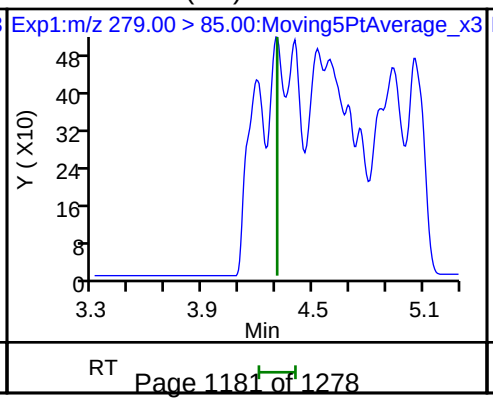
5 Perfluorobutanesulfonic acid (M)



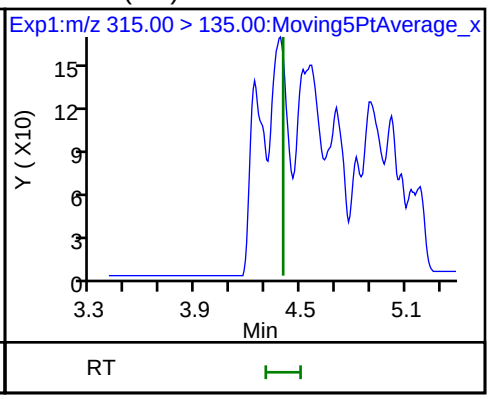
5 Perfluorobutanesulfonic acid (M)



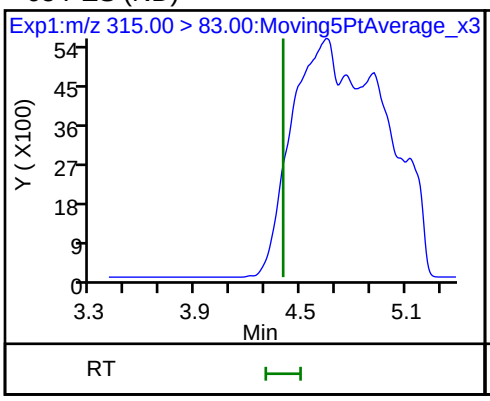
64 PFECA A (ND)



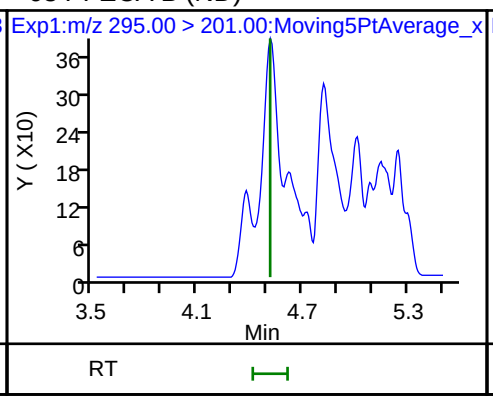
65 PES (ND)



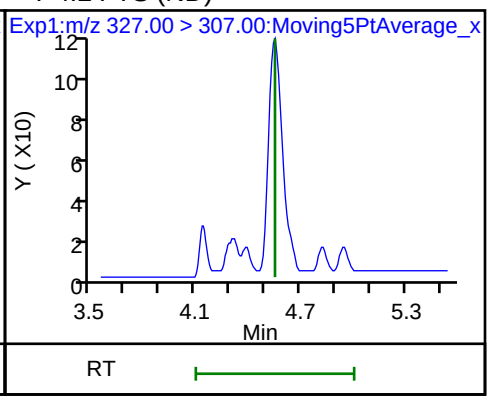
65 PES (ND)



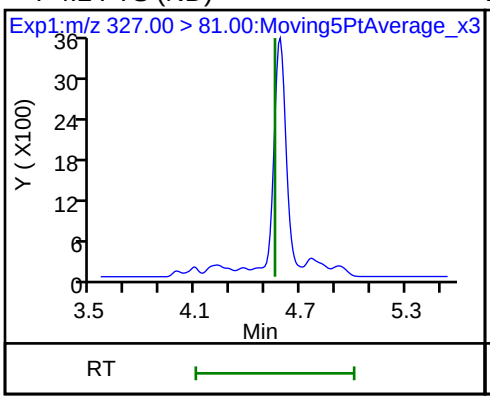
68 PFECA B (ND)



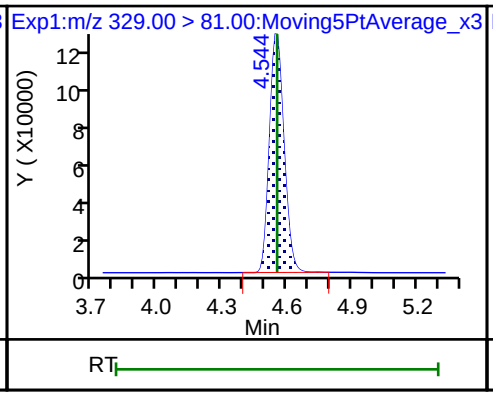
7 4:2 FTS (ND)



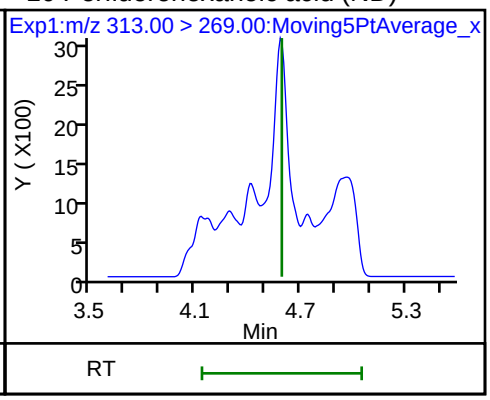
7 4:2 FTS (ND)



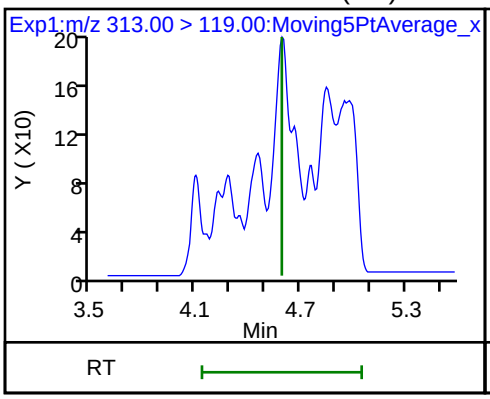
D 8 M2-4:2 FTS



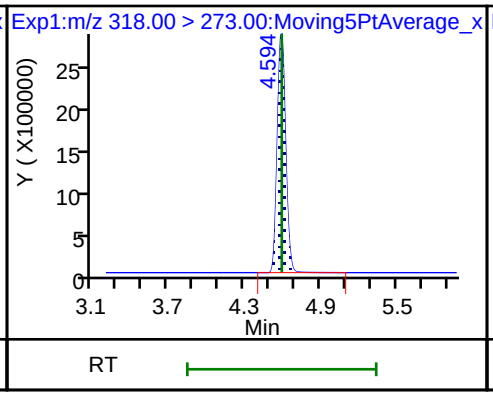
10 Perfluorohexanoic acid (ND)



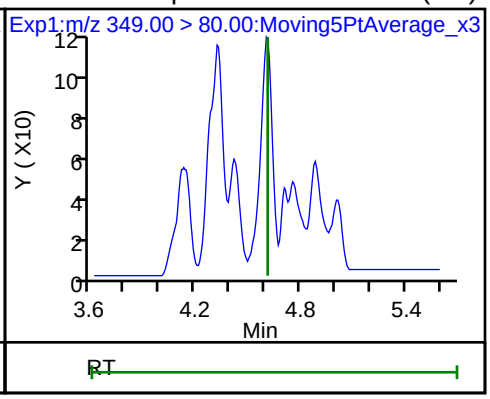
10 Perfluorohexanoic acid (ND)



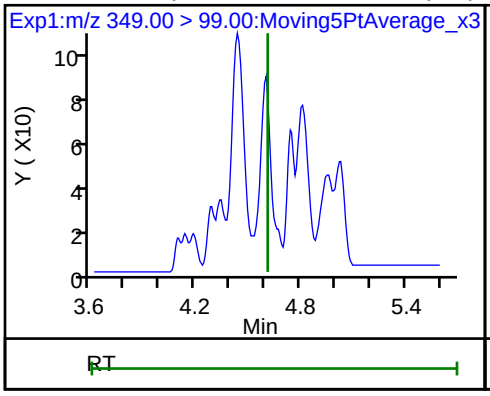
D 9 13C5 PFHxA



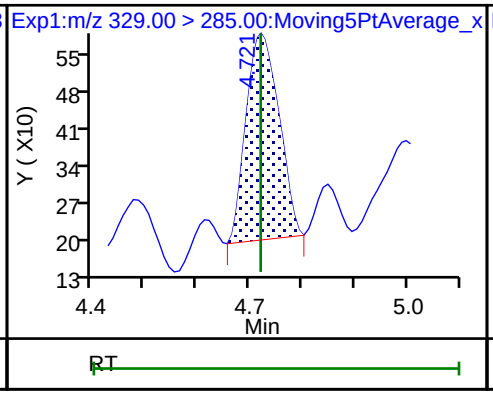
11 Perfluoropentanesulfonic acid (ND)



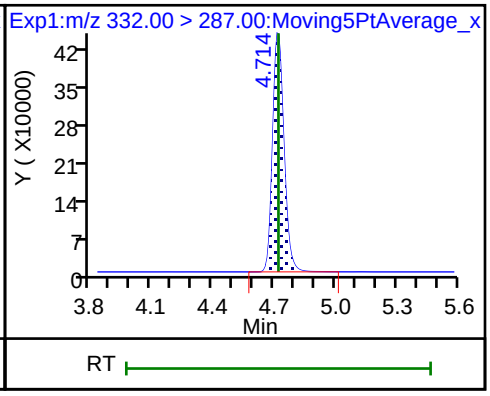
11 Perfluoropentanesulfonic acid (ND)



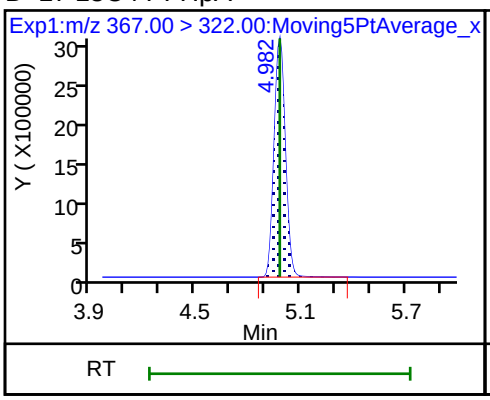
12 HFPO-DA



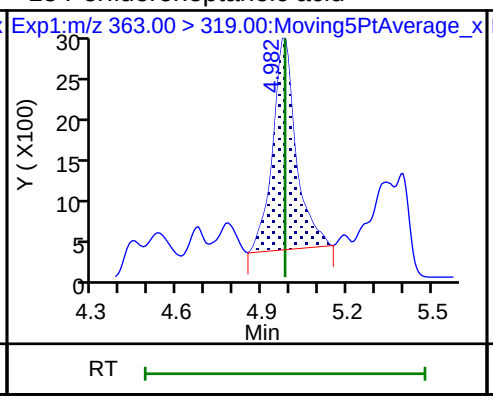
D 13 13C3 HFPO-DA



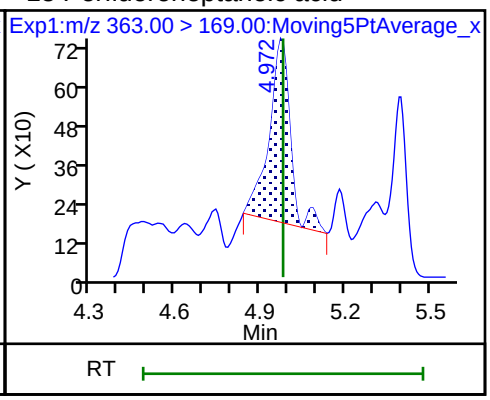
D 17 13C4 PFHpA



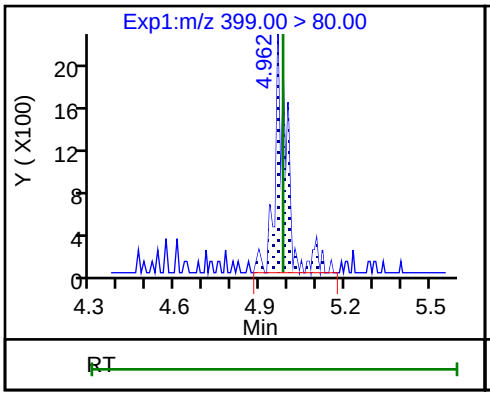
15 Perfluoroheptanoic acid



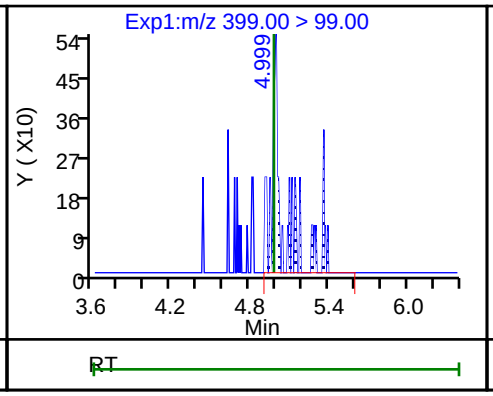
15 Perfluoroheptanoic acid



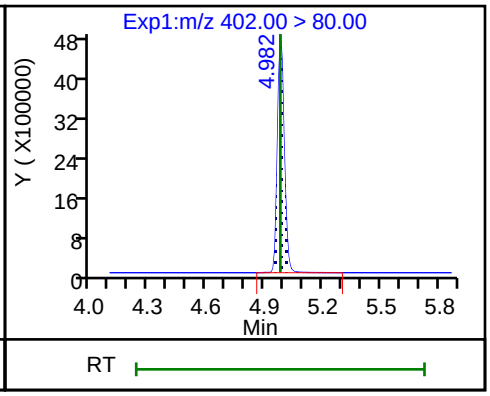
14 Perfluorohexanesulfonic acid



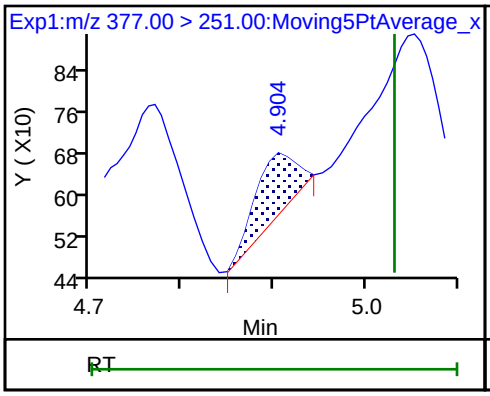
14 Perfluorohexanesulfonic acid



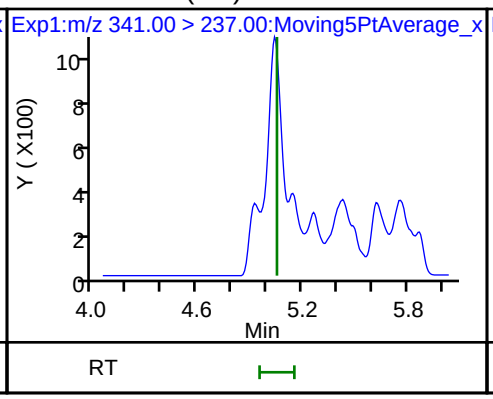
D 16 13C3 PFHxS



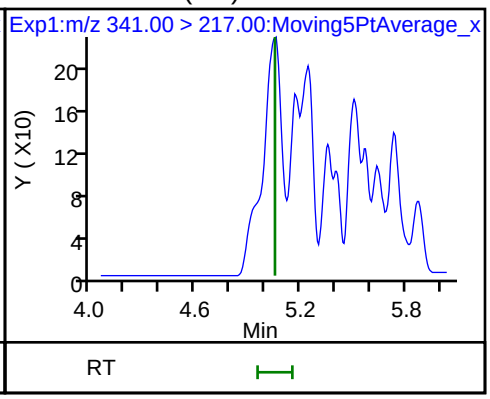
18 DONA



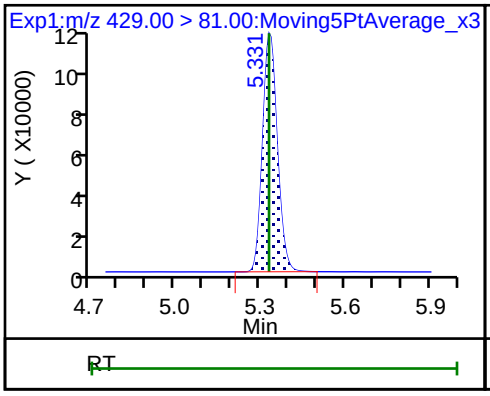
62 5:3 FTCA (ND)



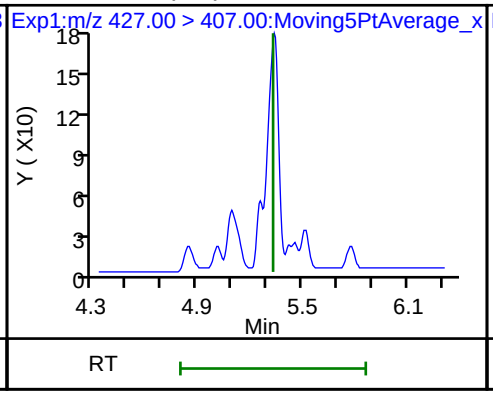
62 5:3 FTCA (ND)



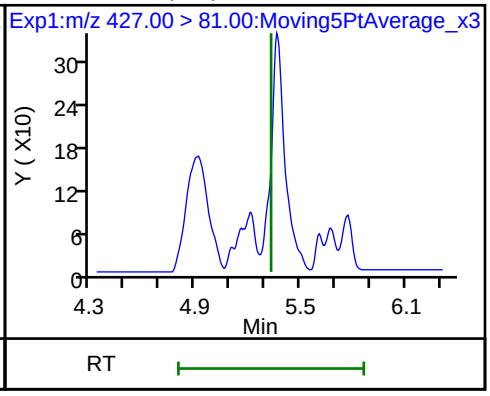
D 20 M2-6:2 FTS



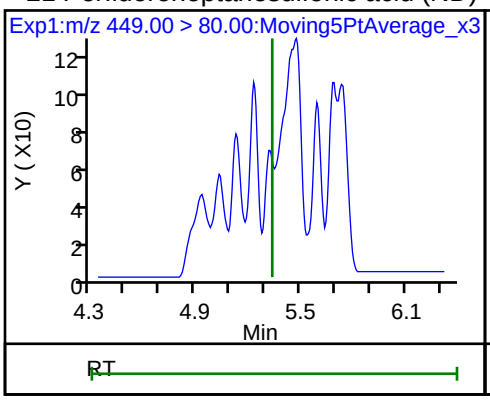
19 6:2 FTS (ND)



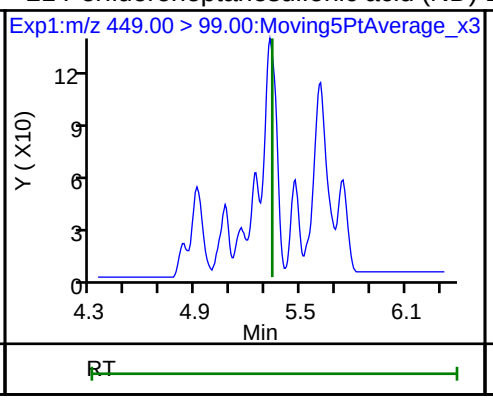
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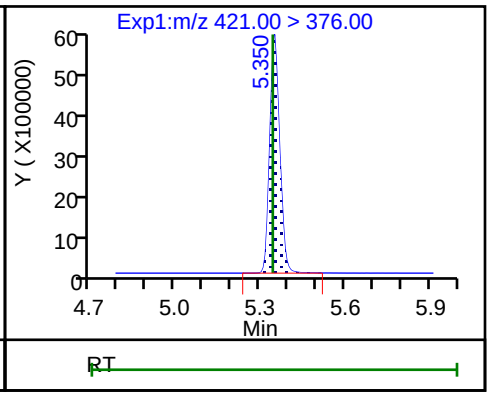


21 Perfluoroheptanesulfonic acid (ND)

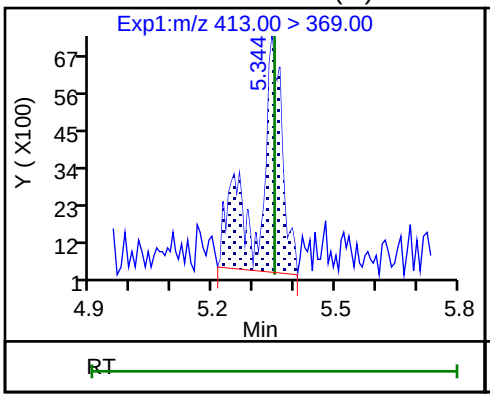


21 Perfluoroheptanesulfonic acid (ND) D 22 13C8 PFOA

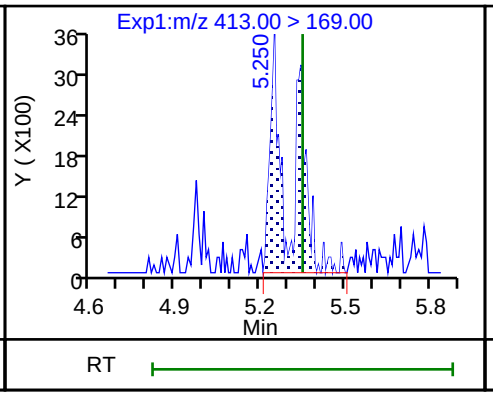




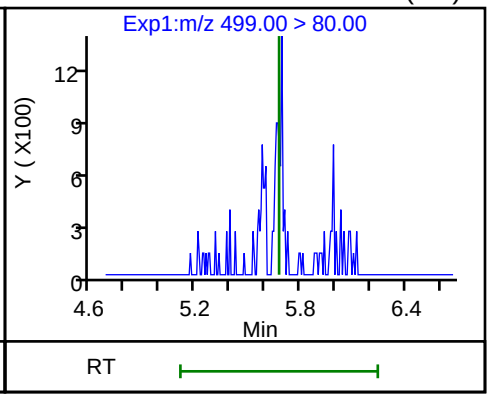
23 Perfluorooctanoic acid (M)



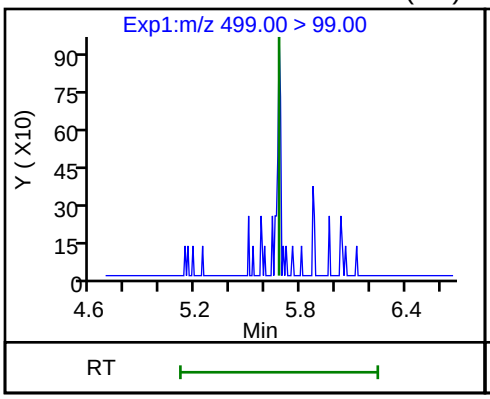
23 Perfluorooctanoic acid

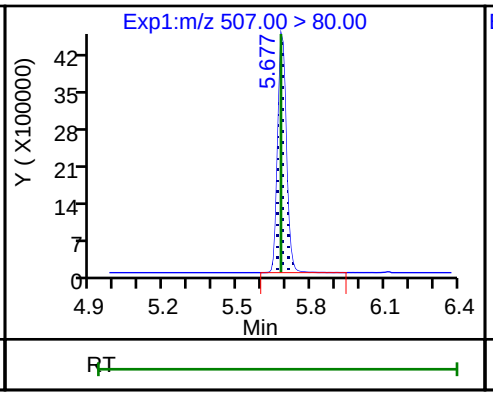


24 Perfluorooctanesulfonic acid (ND)

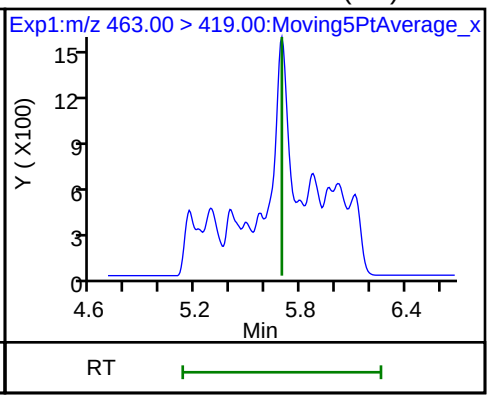


24 Perfluorooctanesulfonic acid (ND) D 25 13C8 PFOS

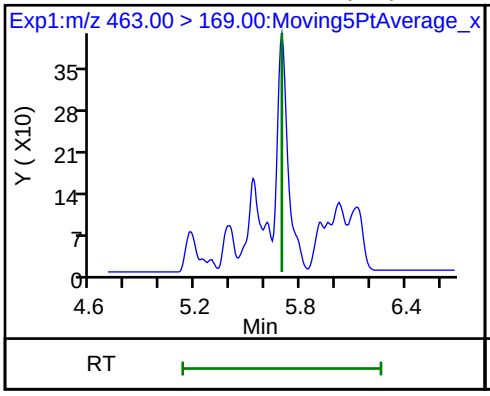


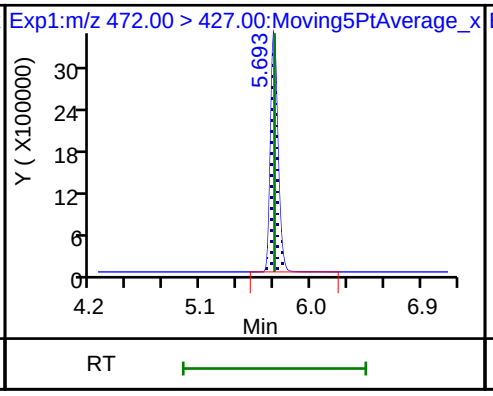


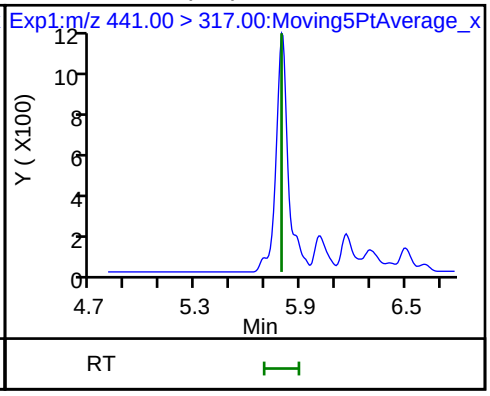
26 Perfluorononanoic acid (ND)



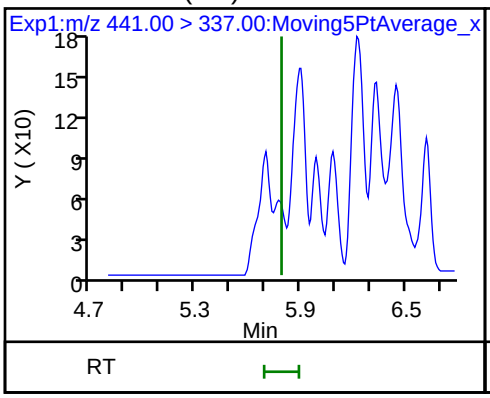
26 Perfluorononanoic acid (ND) D 27 13C9 PFNA 66 7:3 FTCA (ND)



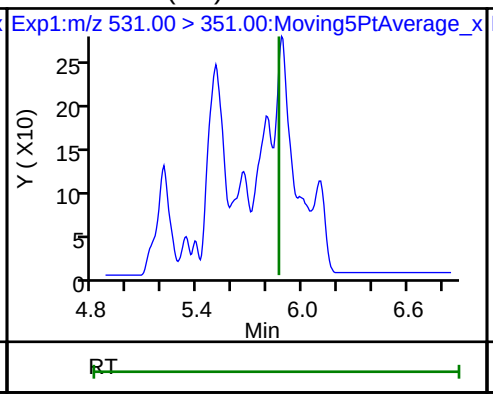




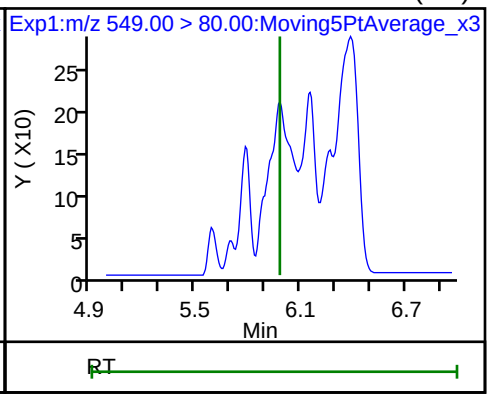
66 7:3 FTCA (ND)



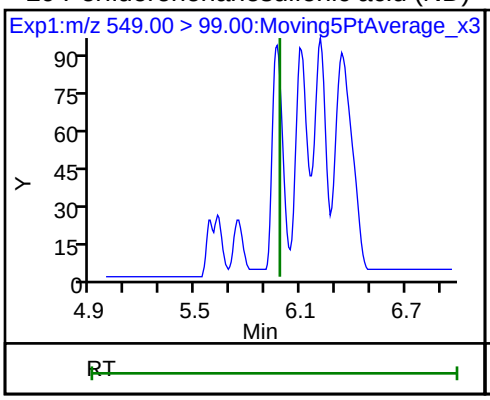
28 9ClFOS (ND)



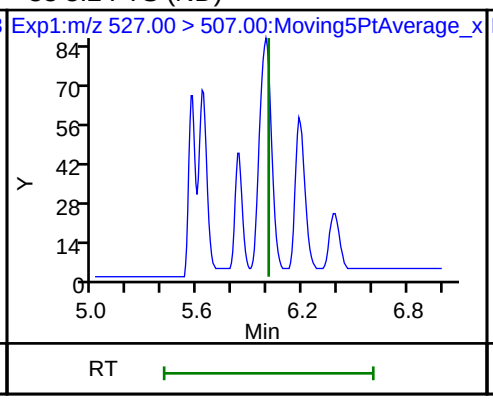
29 Perfluorononanesulfonic acid (ND)



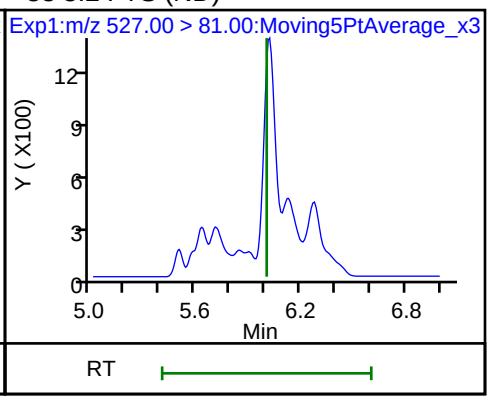
29 Perfluorononanesulfonic acid (ND)



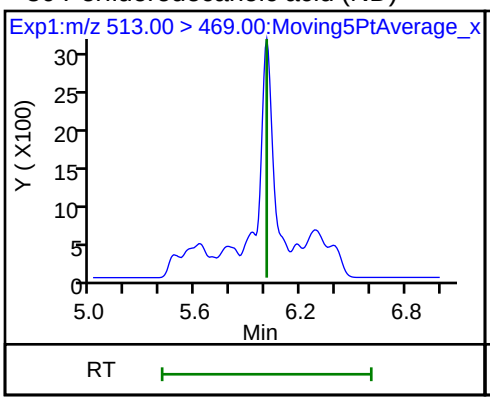
33 8:2 FTS (ND)



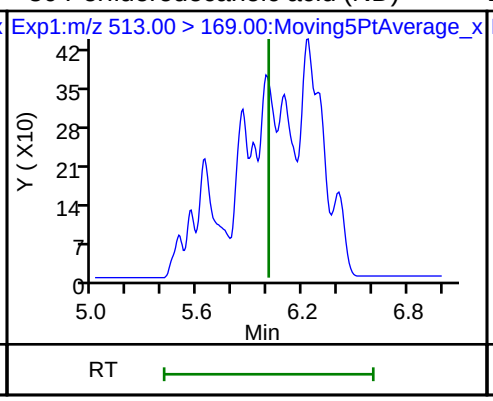
33 8:2 FTS (ND)



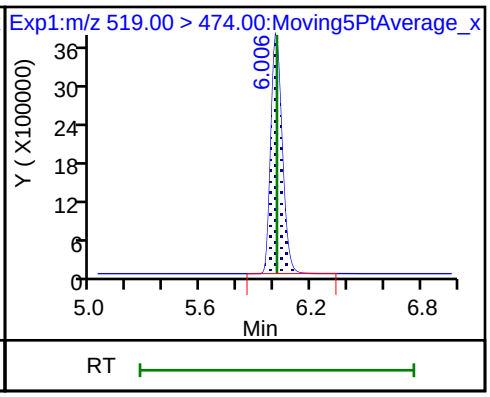
30 Perfluorodecanoic acid (ND)



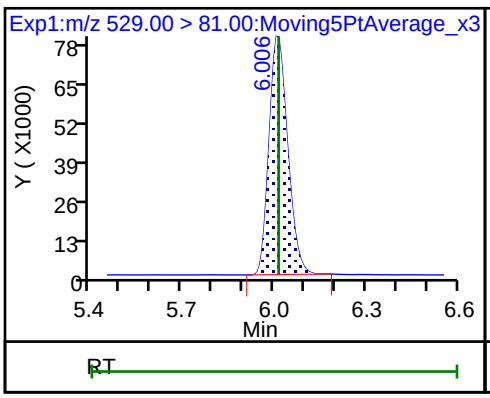
30 Perfluorodecanoic acid (ND)



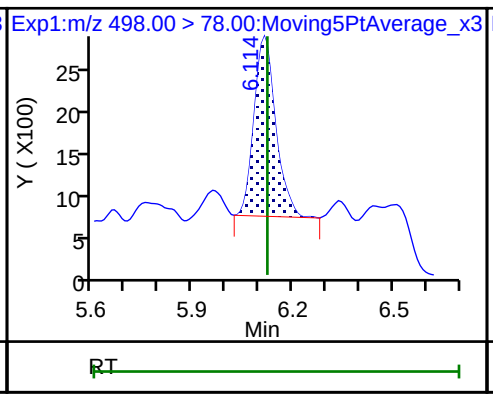
D 32 13C6 PFDA



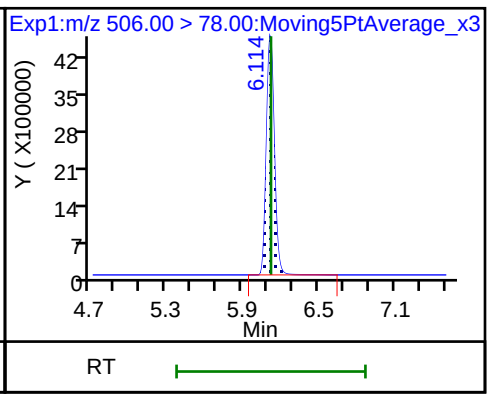
D 31 M2-8:2 FTS



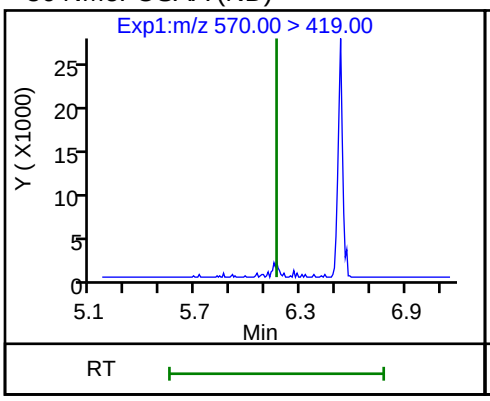
34 Perfluorooctanesulfonamide



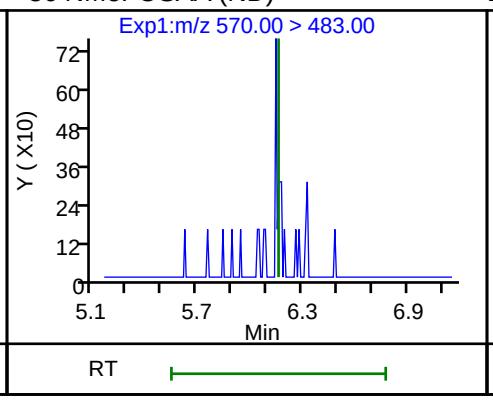
D 35 13C8 FOSA



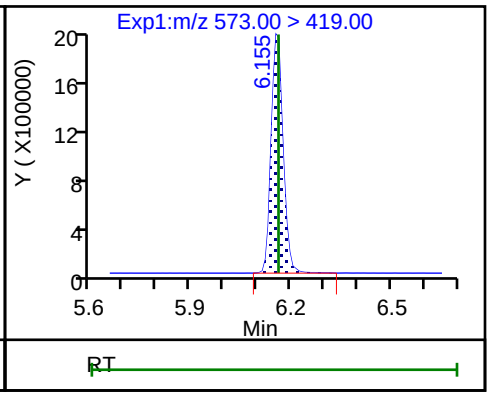
36 NMeFOSAA (ND)



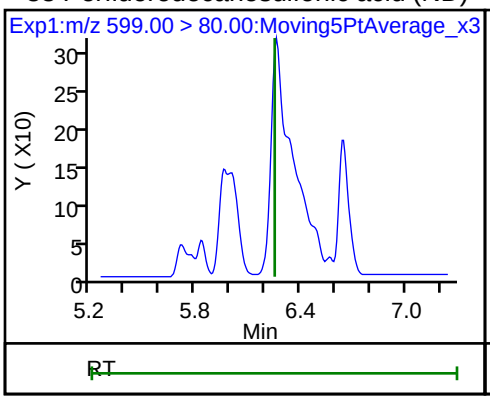
36 NMeFOSAA (ND)



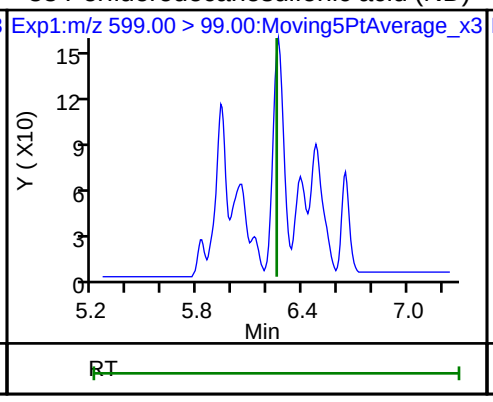
D 37 d3-NMeFOSAA



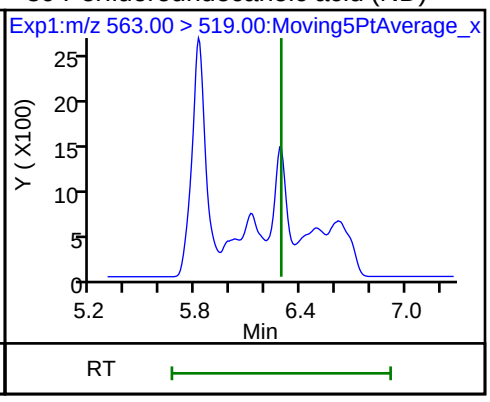
38 Perfluorodecanesulfonic acid (ND)



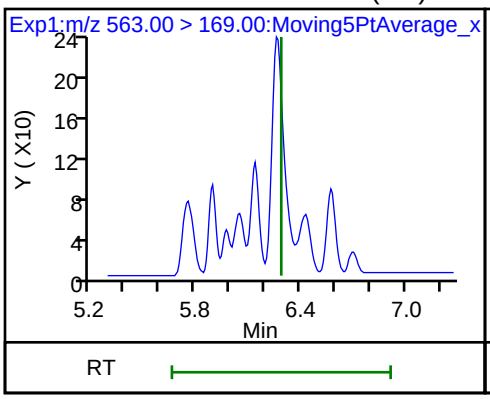
38 Perfluorodecanesulfonic acid (ND)



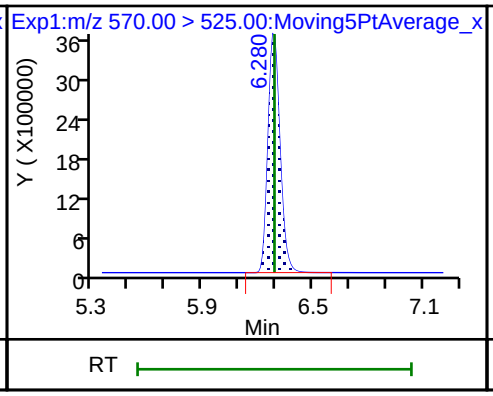
39 Perfluoroundecanoic acid (ND)



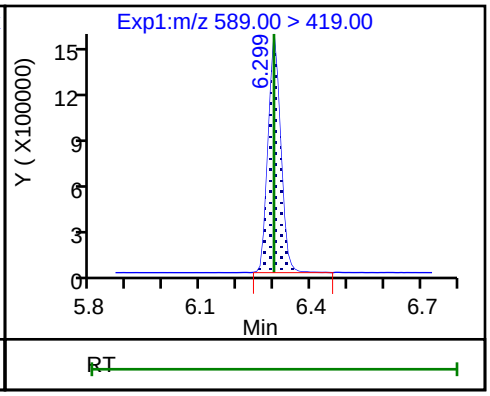
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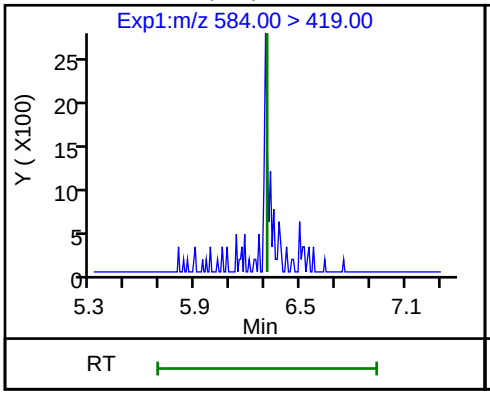
D 40 13C7 PFUnA



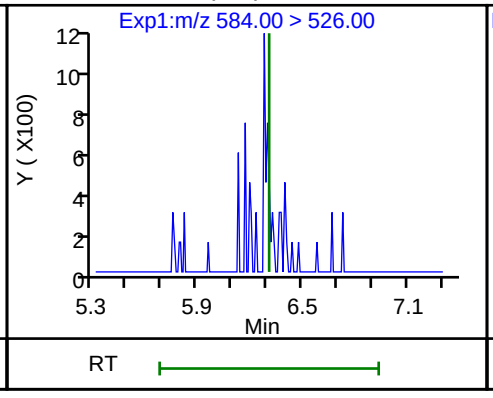
D 41 d5-NEtFOSAA



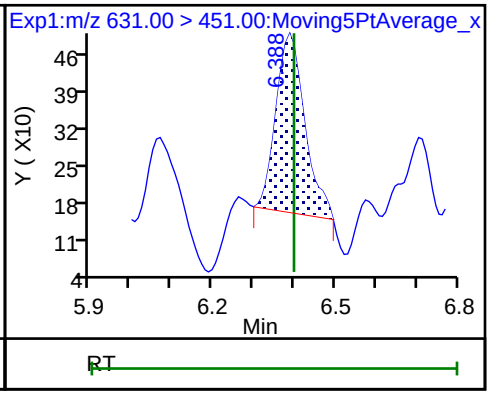
42 NEtFOSAA (ND)



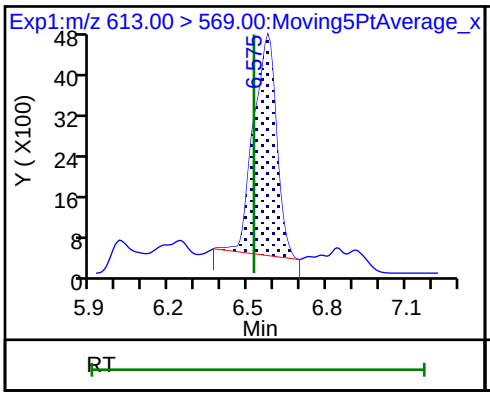
42 NEtFOSAA (ND)



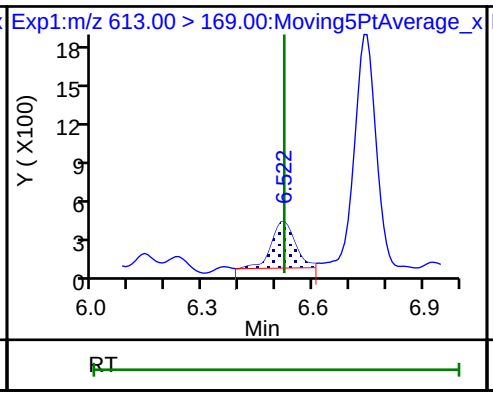
43 11ClFOS



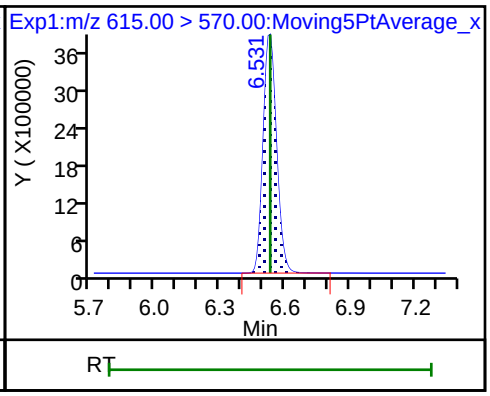
46 Perfluorododecanoic acid



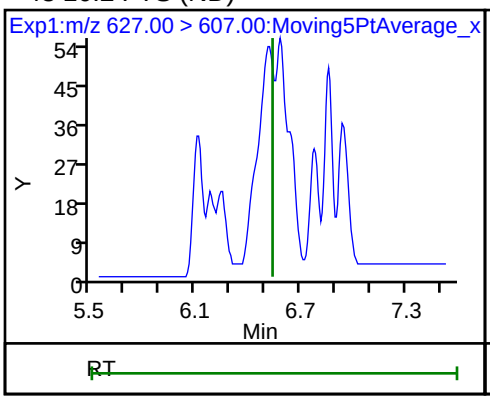
46 Perfluorododecanoic acid



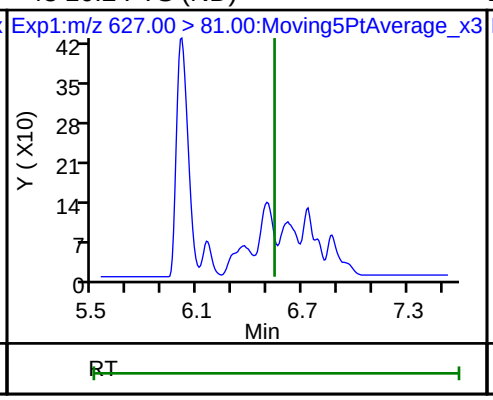
D 45 13C2-PFDoDA



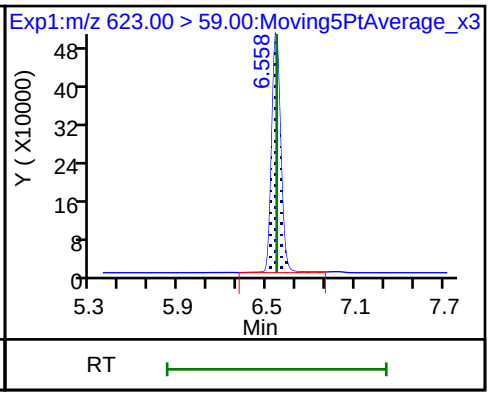
48 10:2 FTS (ND)



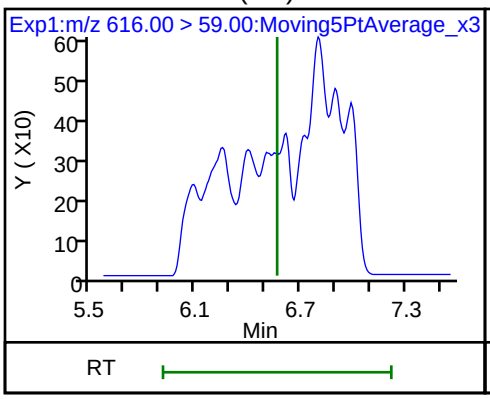
48 10:2 FTS (ND)



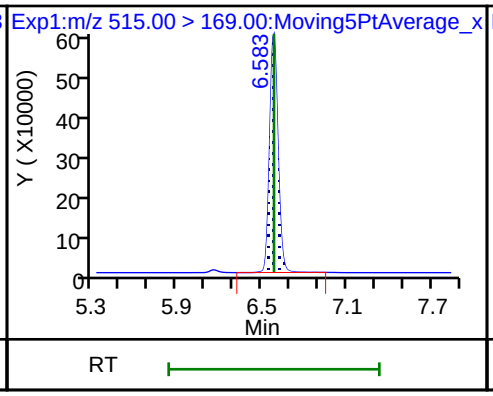
D 44 d7-N-MeFOSE-M



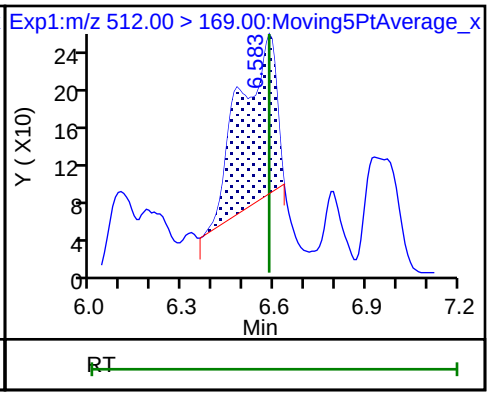
47 N-MeFOSE-M (ND)



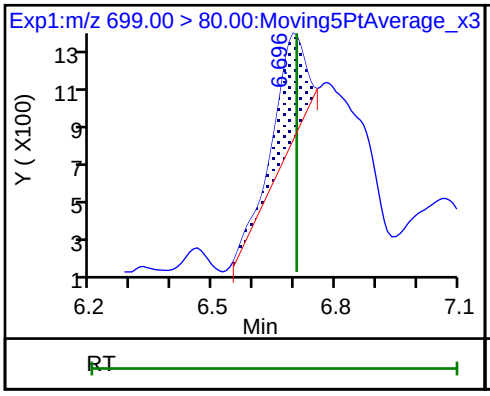
D 49 d3-NMePFOSA



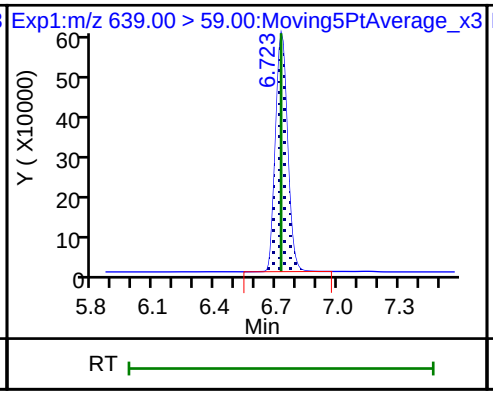
50 NMeFOSA



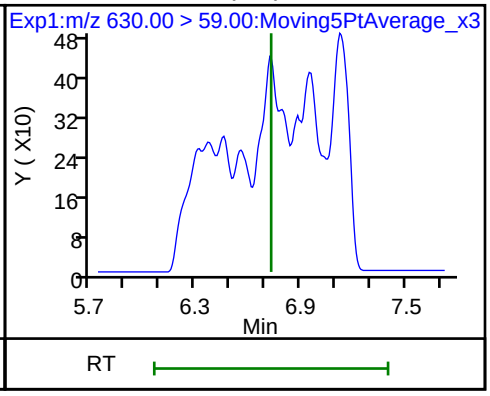
53 PFDoS



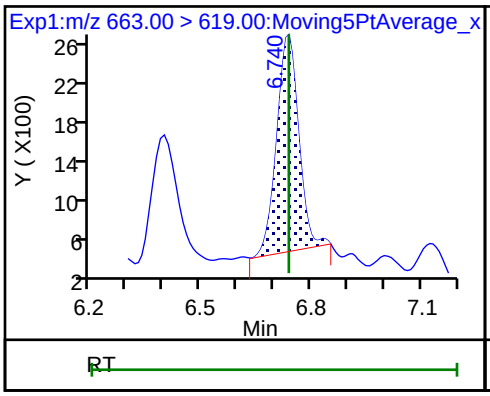
D 51 d9-N-EtFOSE-M



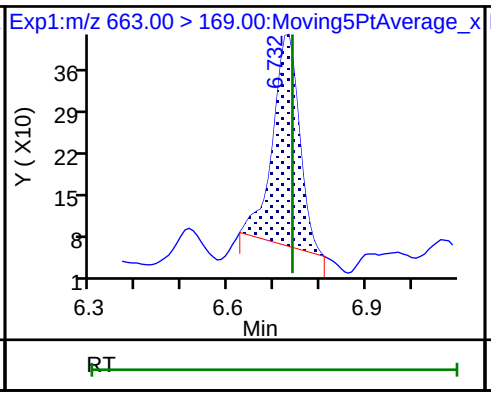
52 N-EtFOSE-M (ND)



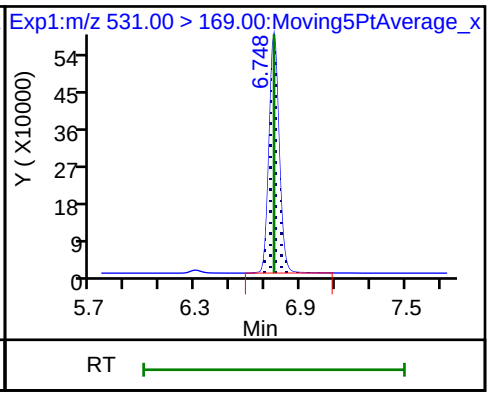
56 Perfluorotridecanoic acid



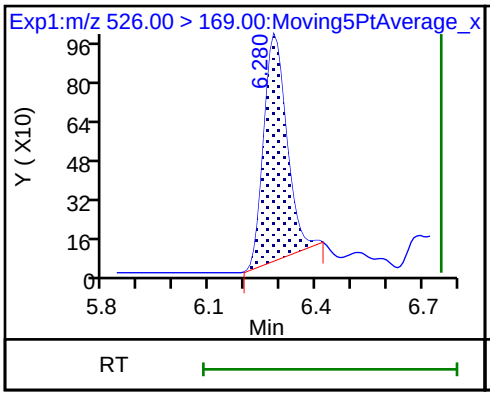
56 Perfluorotridecanoic acid



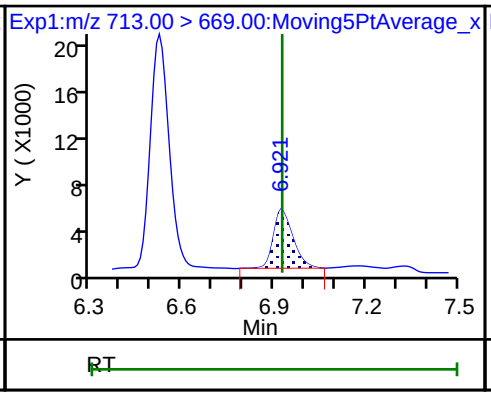
D 54 d5-NEtPFOSA



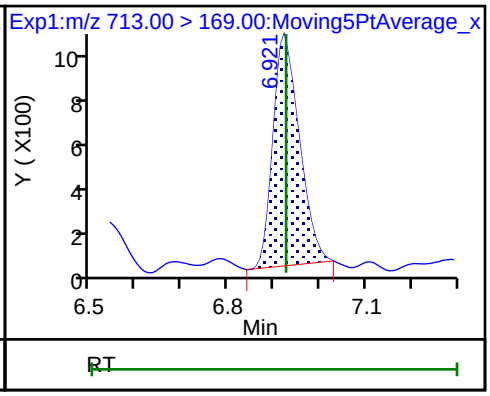
55 N-EtFOSA-M



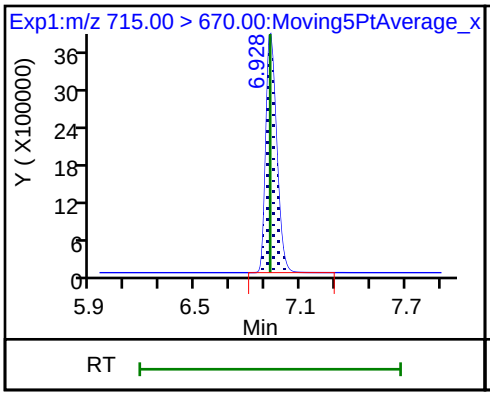
57 Perfluorotetradecanoic acid



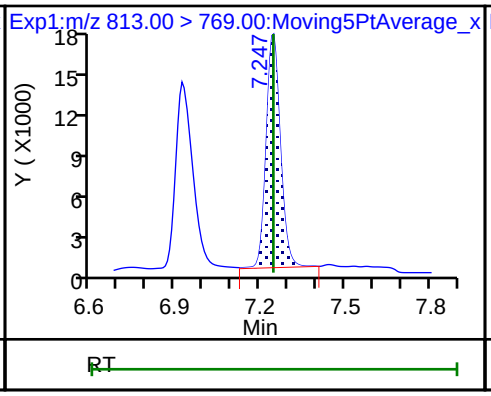
57 Perfluorotetradecanoic acid



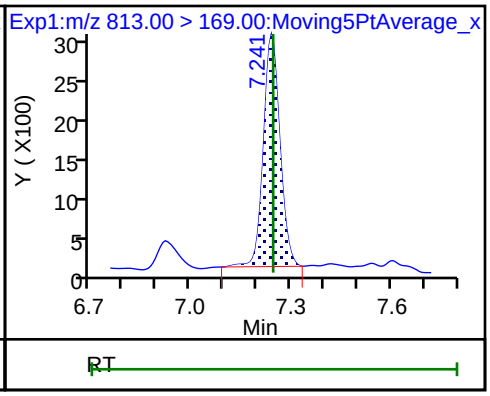
D 58 13C2 PFTeDA



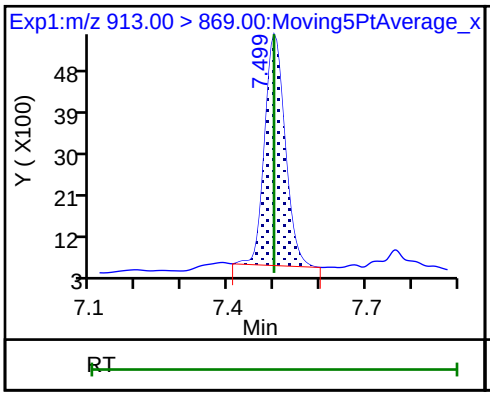
59 Perfluorohexadecanoic acid



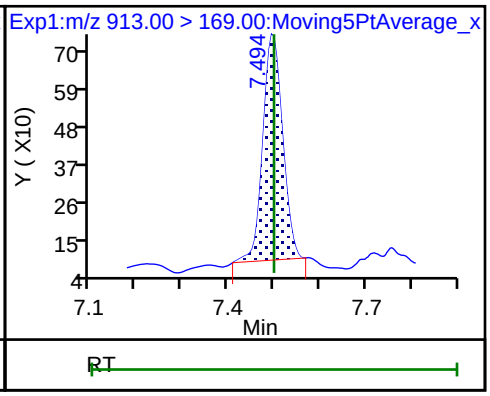
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

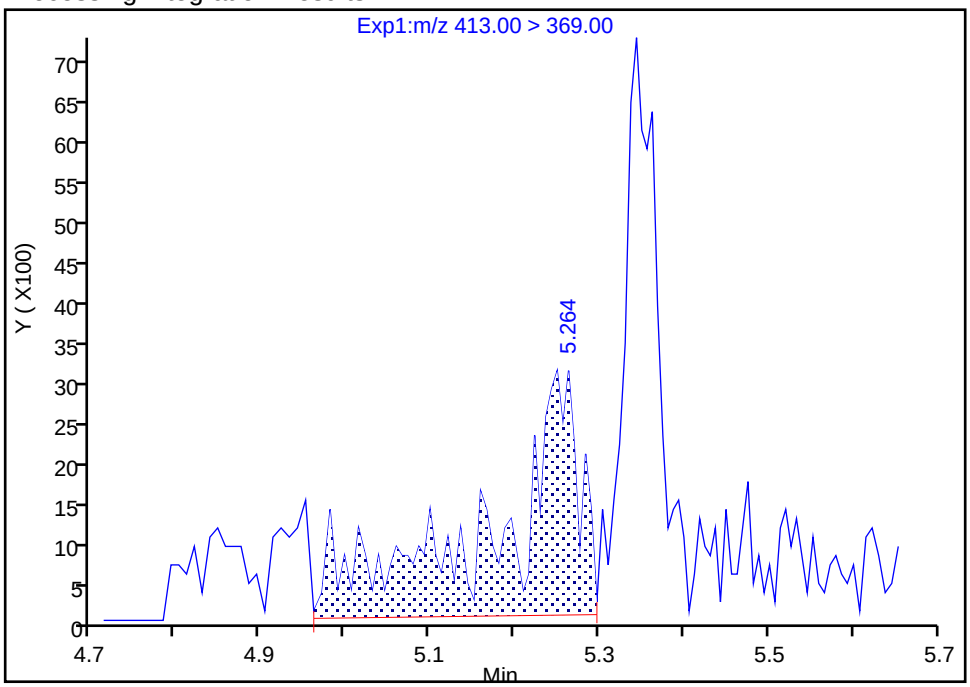
Data File:	\\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-48.d				
Injection Date:	03-Apr-2022 18:26:49	Instrument ID:	29347		
Lims ID:	ICB				
Client ID:					
Operator ID:	US19_USR_INS75556	ALS Bottle#:	20001	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_29347_QSM5.3	Limit Group:	LC - PFC_DOD5.3		
Column:		Detector	EXP1		

23 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

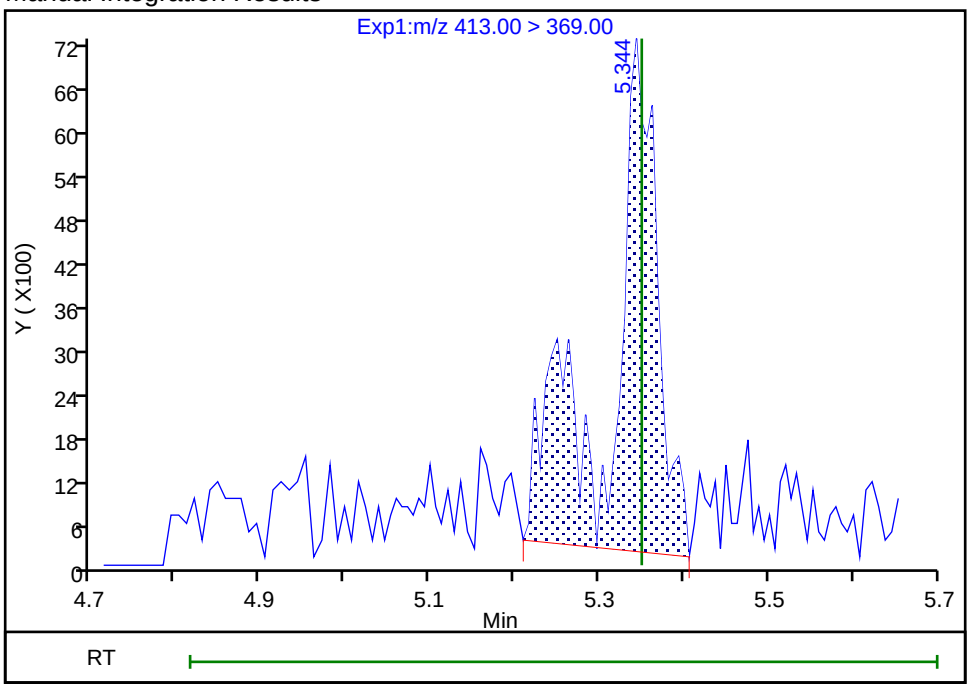
Processing Integration Results

RT: 5.26
Area: 20907
Amount: 0.016720
Amount Units: ng/ml



Manual Integration Results

RT: 5.34
Area: 27622
Amount: 0.021592
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:13:07
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

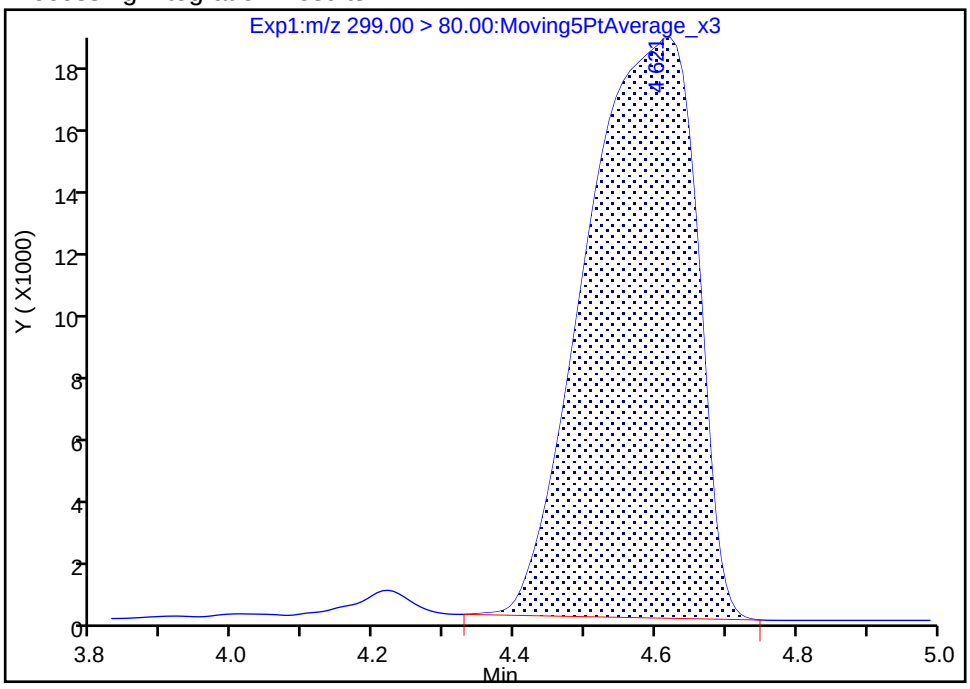
Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-48.d
Injection Date: 03-Apr-2022 18:26:49 Instrument ID: 29347
Lims ID: ICB
Client ID:
Operator ID: US19_USR_INS75556 ALS Bottle#: 20001 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

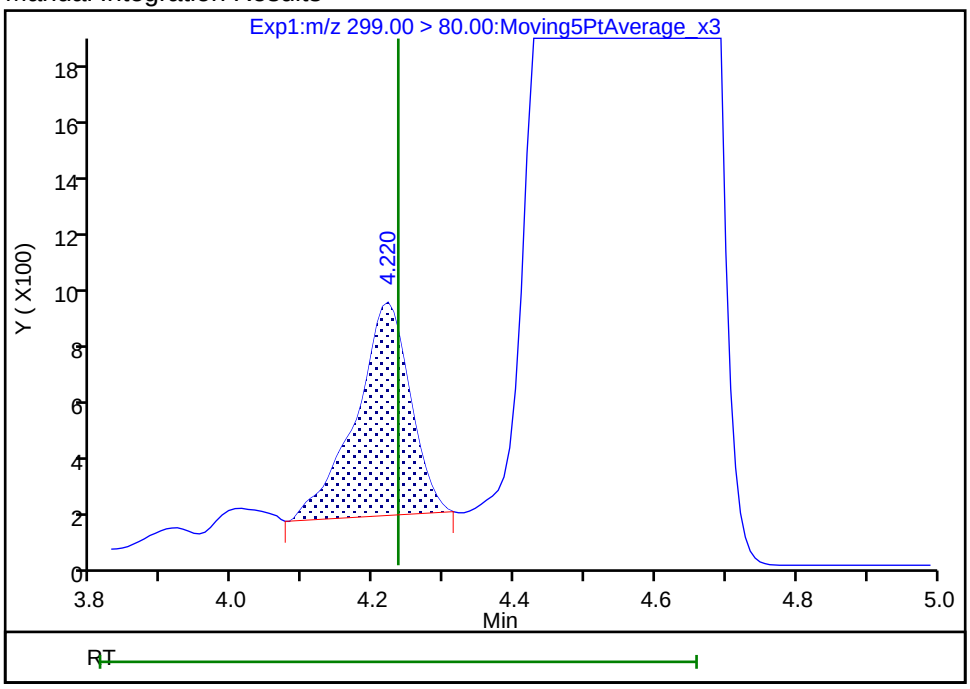
Processing Integration Results

RT: 4.62
Area: 198985
Amount: 0.163830
Amount Units: ng/ml



Manual Integration Results

RT: 4.22
Area: 4121
Amount: 0.003265
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:13:41
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

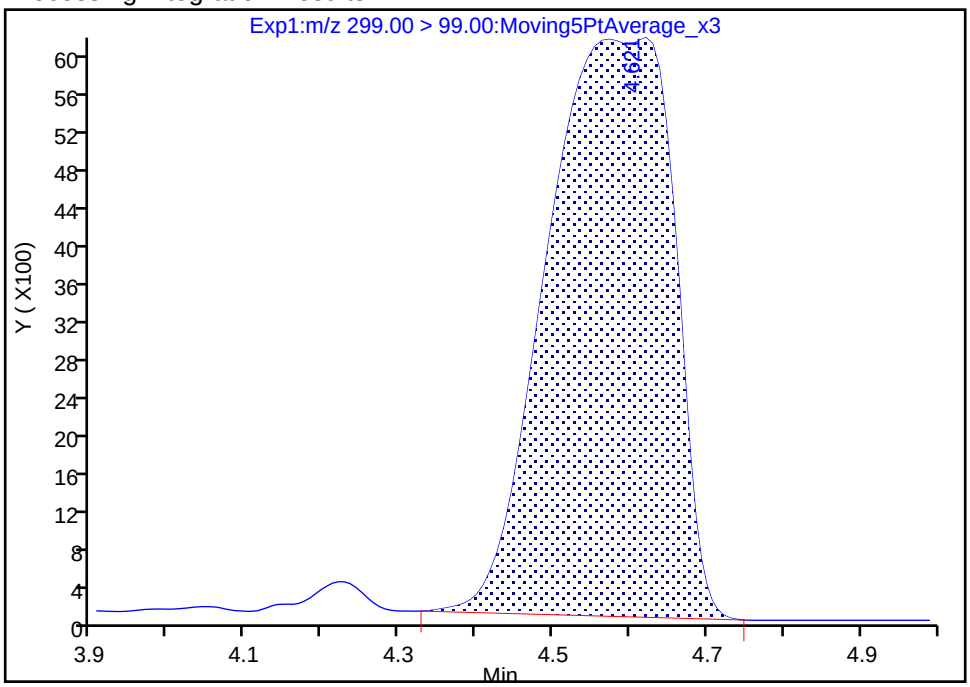
Data File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-48.d
Injection Date: 03-Apr-2022 18:26:49 Instrument ID: 29347
Lims ID: ICB
Client ID:
Operator ID: US19_USR_INS75556 ALS Bottle#: 20001 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

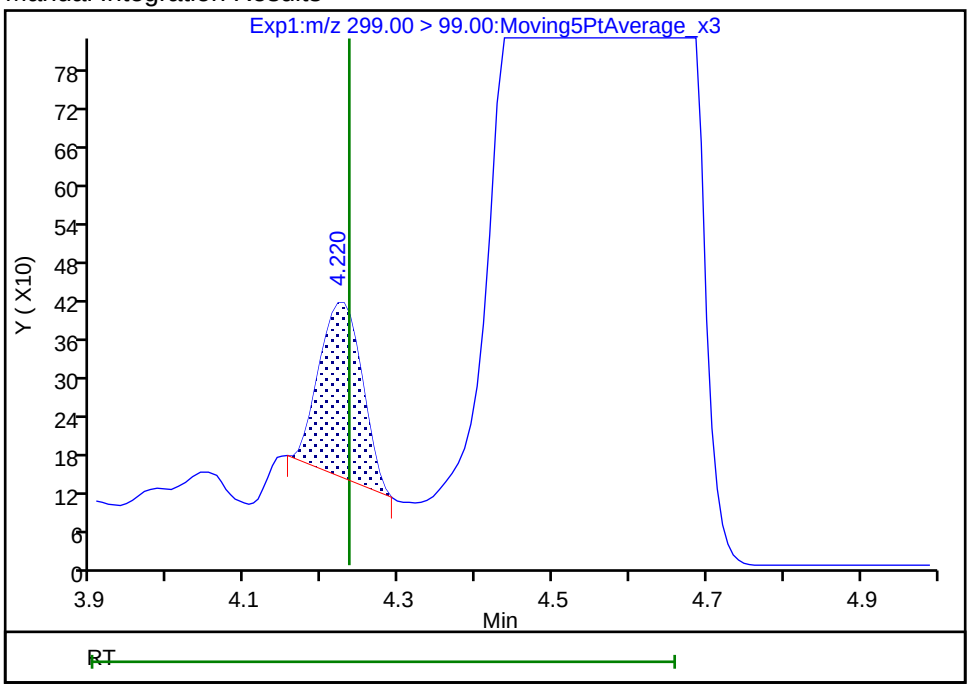
Processing Integration Results

RT: 4.62
Area: 70226
Amount: 0.163830
Amount Units: ng/ml



Manual Integration Results

RT: 4.22
Area: 1054
Amount: 0.003265
Amount Units: ng/ml



Reviewer: polaskia, 03-Apr-2022 21:13:48
Audit Action: Manually Integrated Audit Reason: Missed Peak

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: ICB 410-242022/8

Matrix: Water Lab File ID: 22APR07-26.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/07/2022 11:05

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242022 Units: ng/mL

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	0.25	U	0.50	0.25	0.13
375-85-9	Perfluoroheptanoic acid	0.25	U	0.50	0.25	0.13
335-67-1	Perfluorooctanoic acid	0.25	U	0.50	0.25	0.13
375-95-1	Perfluorononanoic acid	0.25	U	0.50	0.25	0.13
335-76-2	Perfluorodecanoic acid	0.25	U	0.50	0.25	0.13
72629-94-8	Perfluorotridecanoic acid	0.25	U	0.50	0.25	0.13
376-06-7	Perfluorotetradecanoic acid	0.25	U	0.50	0.25	0.13
375-73-5	Perfluorobutanesulfonic acid	0.25	U	0.50	0.25	0.13
355-46-4	Perfluorohexanesulfonic acid	0.25	U	0.50	0.25	0.13
1763-23-1	Perfluorooctanesulfonic acid	0.25	U	0.50	0.25	0.13
2991-50-6	NEtFOSAA	0.50	U	0.75	0.50	0.13
2355-31-9	NMeFOSAA	0.50	U	0.50	0.50	0.15
2706-91-4	Perfluoropentanesulfonic acid	0.25	U	0.50	0.25	0.13
375-92-8	Perfluoroheptanesulfonic acid	0.25	U	0.50	0.25	0.13
68259-12-1	Perfluorononanesulfonic acid	0.25	U	0.50	0.25	0.13
335-77-3	Perfluorodecanesulfonic acid	0.25	U	0.50	0.25	0.13
754-91-6	Perfluorooctanesulfonamide	0.25	U	0.50	0.25	0.13
375-22-4	Perfluorobutanoic acid	1.0	U	1.3	1.0	0.13
2706-90-3	Perfluoropentanoic acid	0.25	U	0.50	0.25	0.13
2058-94-8	Perfluoroundecanoic acid	0.25	U	0.50	0.25	0.13
307-55-1	Perfluorododecanoic acid	0.25	U	0.50	0.25	0.13
27619-97-2	6:2 Fluorotelomer sulfonic acid	1.0	U	1.3	1.0	0.13
39108-34-4	8:2 Fluorotelomer sulfonic acid	0.50	U	0.75	0.50	0.25
757124-72-4	4:2 Fluorotelomer sulfonic acid	0.25	U	0.50	0.25	0.13

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: ICB 410-242022/8

Matrix: Water Lab File ID: 22APR07-26.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: Date Extracted:

Sample wt/vol: 0(mL) Date Analyzed: 04/07/2022 11:05

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242022 Units: ng/mL

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	104		50-150
STL02280	M2-8:2 FTS	104		50-150
STL02279	M2-6:2 FTS	103		50-150
STL02577	13C5 PFHxA	100		50-150
STL01892	13C4 PFHpA	97		50-150
STL01052	13C8 PFOA	96		50-150
STL02578	13C9 PFNA	93		50-150
STL02579	13C6 PFDA	99		50-150
STL02580	13C7 PFUnA	99		50-150
STL02703	13C2-PFDoDA	94		50-150
STL02116	13C2 PFTeDA	96		50-150
STL02337	13C3 PFBS	95		50-150
STL02581	13C3 PFHxS	98		50-150
STL01054	13C8 PFOS	95		50-150
STL02118	d3-NMeFOSAA	103		50-150
STL02117	d5-NEtFOSAA	110		50-150
STL01056	13C8 FOSA	102		50-150
STL00992	13C4 PFBA	97		50-150
STL01893	13C5 PFPeA	96		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-26.d
Lims ID: ICB
Client ID:
Sample Type: ICB
Inject. Date: 07-Apr-2022 11:05:56 ALS Bottle#: 20001 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICB
Misc. Info.: Plate: 1 Rack: 1 410-0054309-008
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 11:45:40 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1653

First Level Reviewer: carpenterr Date: 07-Apr-2022 11:34:02
Ratio Calibration: Initial Calibration Level: 5

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00		3.656				ND				
D 2 13C4 PFBA										
217.00 > 172.00	3.656	3.663	-0.007		7836356	9.68		96.8	125257	
63 PFECA F										
229.00 > 85.00	3.893	3.890	0.003	0.931	3236	0.005984			140	
67 3:3 FTCA										
241.00 > 177.00		4.165				ND				
241.00 > 117.00		4.165								
3 Perfluoropentanoic acid										
263.00 > 219.00	4.183	4.172	0.011	1.000	5823	0.008324			17.5	
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.183	0.0		6683024	9.63		96.3	67036	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00		4.231				0				
299.00 > 99.00		4.231								
D 6 13C3 PFBS										
302.00 > 80.00	4.235	4.236	-0.001		8127982	8.81		94.7	357330	
64 PFECA A										
279.00 > 85.00		4.301				ND				
65 PES										
315.00 > 135.00		4.397				ND				
315.00 > 83.00		4.397								
68 PFECA B										
295.00 > 201.00		4.511				ND				
7 4:2 FTS										
327.00 > 307.00		4.540				ND				
327.00 > 81.00		4.540								

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.554	4.554	0.0		424300	9.72		104	13064	
10 Perfluorohexanoic acid										
313.00 > 269.00		4.579				ND				
313.00 > 119.00		4.579								
D 9 13C5 PFHxA										
318.00 > 273.00	4.593	4.594	-0.001		7949861	9.95		99.5	193629	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00		4.609				ND				
349.00 > 99.00		4.609								
12 HFPO-DA										
329.00 > 285.00		4.711				ND				
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.720	4.721	-0.001		896829	10.4		104	59668	
15 Perfluoroheptanoic acid										R
363.00 > 319.00	4.971	4.970	0.001	0.998	9780	0.0125	Target=3.12		40.6	R
363.00 > 169.00	4.971	4.970	0.001	0.998	998		9.80(1.56-4.68)		18.0	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00		4.979				ND				
399.00 > 99.00		4.979								
D 17 13C4 PFHpA										
367.00 > 322.00	4.981	4.982	-0.001		8174885	9.72		97.2	169678	
D 16 13C3 PFHxS										
402.00 > 80.00	4.981	4.982	-0.001		7678377	9.29		98.2	1655724	
18 DONA										
377.00 > 251.00	4.793	5.022	-0.229	0.962	1586	0.001197			9.3	
62 5:3 FTCA										
341.00 > 237.00		5.045				ND				
341.00 > 217.00		5.045								
19 6:2 FTS										
427.00 > 407.00		5.323				ND				
427.00 > 81.00		5.323								
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.331	0.0		284617	9.79		103	19604	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00		5.337				ND				
449.00 > 99.00		5.337								
23 Perfluorooctanoic acid										R
413.00 > 369.00	5.237	5.344	-0.107	0.979	11381	0.0144	Target=2.30		155	R
413.00 > 169.00	5.250	5.344	-0.094	0.981	12243		0.93(1.15-3.44)		847	
D 22 13C8 PFOA										
421.00 > 376.00	5.351	5.350	0.001		8791837	9.63		96.3	910923	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00		5.668				ND				
499.00 > 99.00		5.668								
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.677	0.0		6776659	9.08		95.0	967059	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00		5.692				ND				
463.00 > 169.00		5.692								
D 27 13C9 PFNA										
472.00 > 427.00	5.693	5.693	0.0		8730211	9.34		93.4	525747	
66 7:3 FTCA										
441.00 > 317.00		5.790				ND				
441.00 > 337.00		5.790								
28 9ClFOS										
531.00 > 351.00	5.850	5.856	-0.006	1.030	1307	0.000786			40.4	
29 Perfluorononanesulfonic acid										
549.00 > 80.00		5.981				ND				
549.00 > 99.00		5.981								
30 Perfluorodecanoic acid										R
513.00 > 469.00	5.872	6.005	-0.133	0.978	4152	0.004779	Target=8.85		21.9	R
513.00 > 169.00	5.887	6.005	-0.118	0.980	2424		1.71(4.42-13.27)		33.5	
33 8:2 FTS										
527.00 > 507.00		6.005				ND				
527.00 > 81.00		6.005								
D 32 13C6 PFDA										
519.00 > 474.00	6.006	6.006	0.0		10036570	9.93		99.3	398964	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.006	6.006	0.0		242166	9.97		104	14327	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.105	6.104	0.001	0.999	10840	0.008299			41.2	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.114	0.0		12609303	10.2		102	489622	
36 NMeFOSAA										
570.00 > 419.00	6.171	6.154	0.017	1.003	3548	0.0136	Target=1.85		138	
570.00 > 483.00	6.171	6.154	0.017	1.003	2522		1.41(0.92-2.77)		5.6	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.155	6.155	0.0		2977608	10.3		103	411027	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00		6.251				ND				
599.00 > 99.00		6.251								
39 Perfluoroundecanoic acid										
563.00 > 519.00		6.279				ND				
563.00 > 169.00		6.279								
D 40 13C7 PFUnA										
570.00 > 525.00	6.281	6.290	-0.009		10195341	9.92		99.2	175509	
42 NEtFOSAA										
584.00 > 419.00		6.298				ND				
584.00 > 526.00		6.298								
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.299	6.299	0.0		2442289	11.0		110	364311	
43 11ClFOS										
631.00 > 451.00	6.410	6.398	0.012	1.129	2056	0.001398			25.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										R
613.00 > 569.00	6.566	6.521	0.045	1.007	20992	0.0237	Target=5.47		148	R
613.00 > 169.00	6.513	6.521	-0.008	0.999	1199		17.51(2.74-8.21)		21.0	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.522	6.522	0.0		10037574	9.43		94.3	392117	
48 10:2 FTS										
627.00 > 607.00		6.539				ND				
627.00 > 81.00		6.539								
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.548	6.548	0.0		1200290	10.3		103	6976	
47 N-MeFOSE-M										
616.00 > 59.00		6.557				ND				
50 NMeFOSA										
512.00 > 169.00		6.566				ND				
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.574	0.0		1589199	10.1		101	11532	
53 PFDoS										
699.00 > 80.00	6.715	6.705	0.010	1.183	2516	0.003605			21.7	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.715	6.714	0.001		1394281	9.99		99.9	8583	
52 N-EtFOSE-M										
630.00 > 59.00		6.723				ND				
56 Perfluorotridecanoic acid										
663.00 > 619.00		6.731				ND				
663.00 > 169.00		6.731								
55 N-EtFOSA-M										
526.00 > 169.00	6.281	6.740	-0.459	0.932	2776	0.0179			70.6	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.740	0.0		1384955	9.84		98.4	9131	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.921	0.0	1.000	15505	0.0171	Target=5.67		29.6	
713.00 > 169.00	6.913	6.921	-0.008	0.999	2775		5.59(2.84-8.51)		98.9	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.921	0.0		10181463	9.59		95.9	301293	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.241	0.0	1.046	33112	0.0515	Target=6.17		102	
813.00 > 169.00	7.241	7.241	0.0	1.046	5892		5.62(3.08-9.25)		206	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.499	7.488	0.011	1.084	8552	0.0201	Target=7.20		65.0	
913.00 > 169.00	7.494	7.488	0.006	1.083	1198		7.14(3.60-10.79)		49.9	
S 61 Total PFOA and PFOS										R
216.00 > 172.00						0.0144				R

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

R - Failed Signal Ratio Test

Reagents:

PFC_SS_MODX_00228 Amount Added: 25.00 Units: uL

Report Date: 07-Apr-2022 11:45:49 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-26.d

Injection Date: 07-Apr-2022 11:05:56 Instrument ID: 29347

Lims ID: ICB

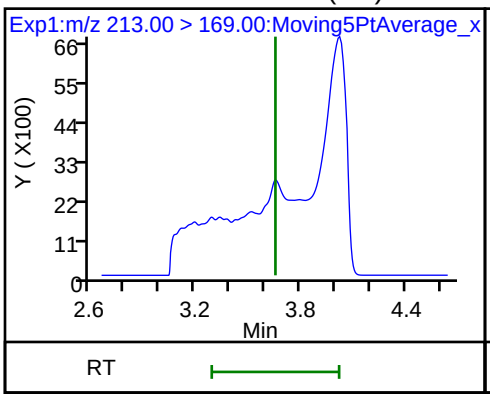
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 20001 Worklist Smp#: 8

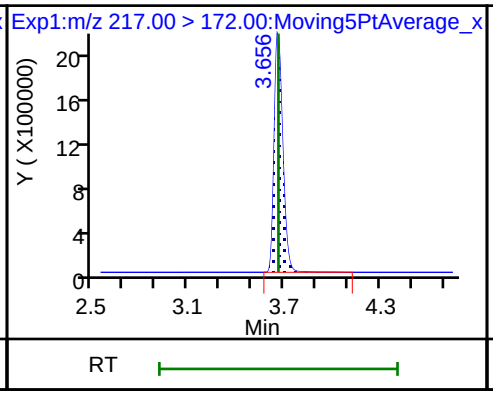
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

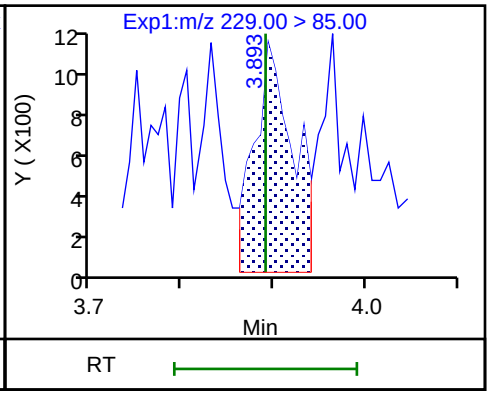
1 Perfluorobutanoic acid (ND)



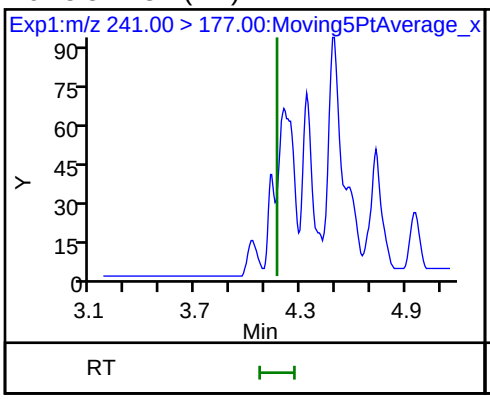
D 2 13C4 PFBA



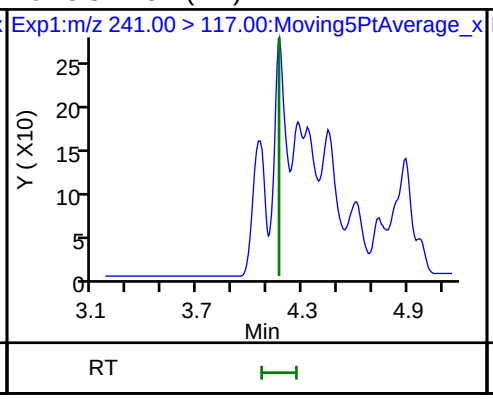
63 PFECA F



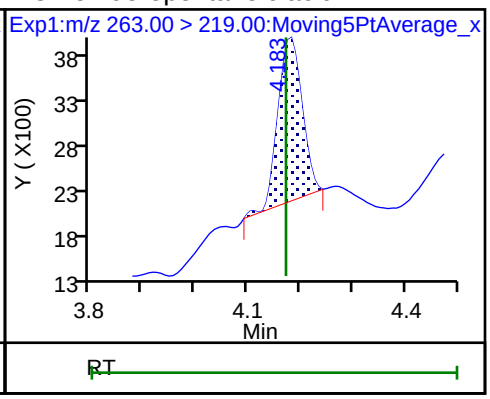
67 3:3 FTCA (ND)



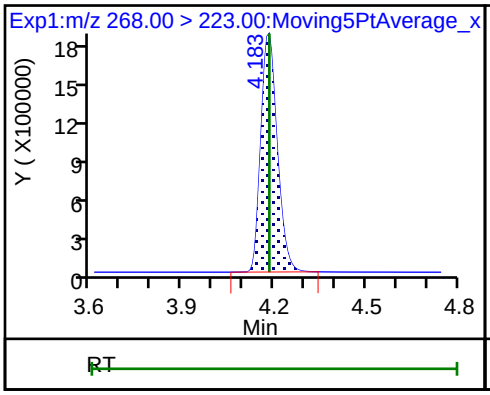
67 3:3 FTCA (ND)



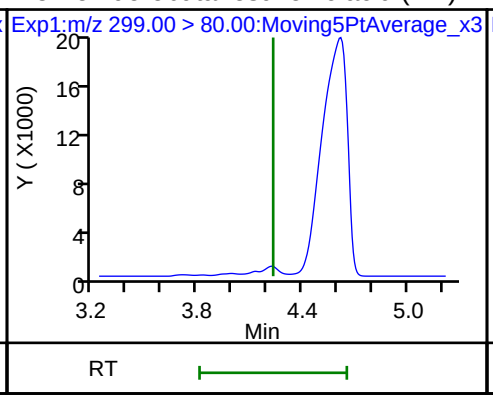
3 Perfluoropentanoic acid



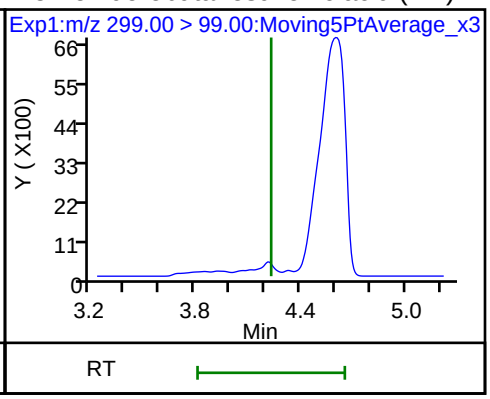
D 4 13C5 PFPeA



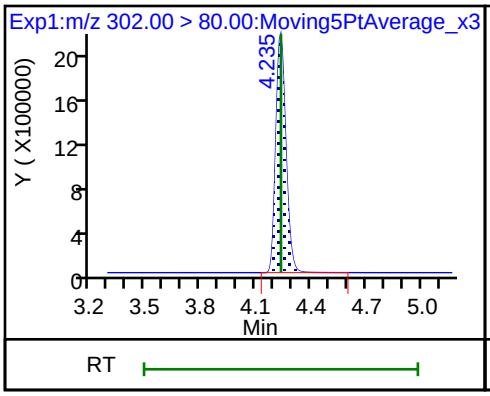
5 Perfluorobutanesulfonic acid (ND)



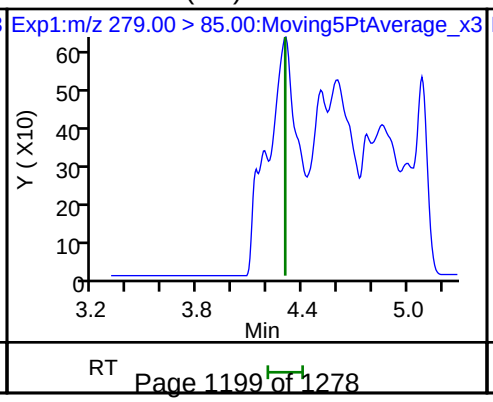
5 Perfluorobutanesulfonic acid (ND)



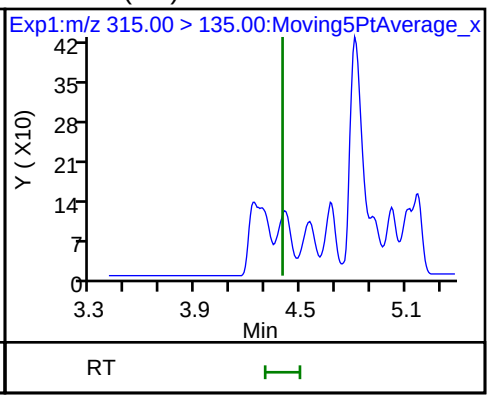
D 6 13C3 PFBS



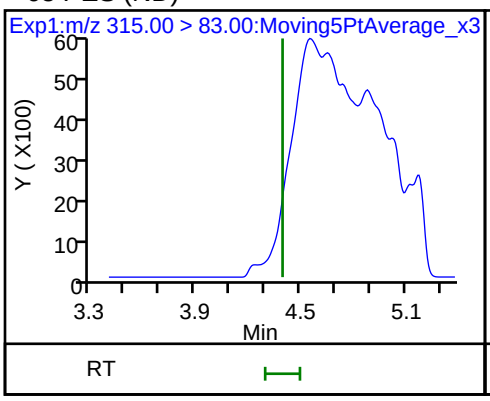
64 PFECA A (ND)



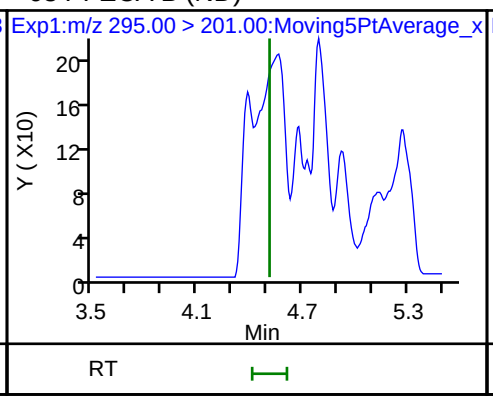
65 PES (ND)



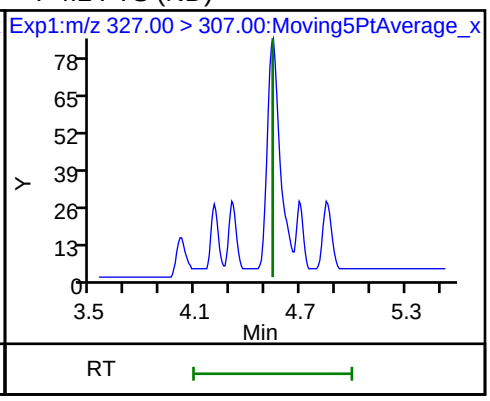
65 PES (ND)



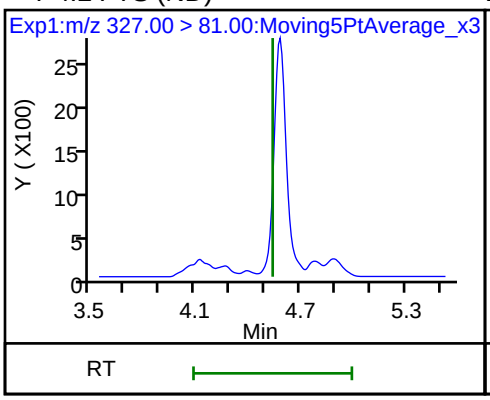
68 PFECA B (ND)



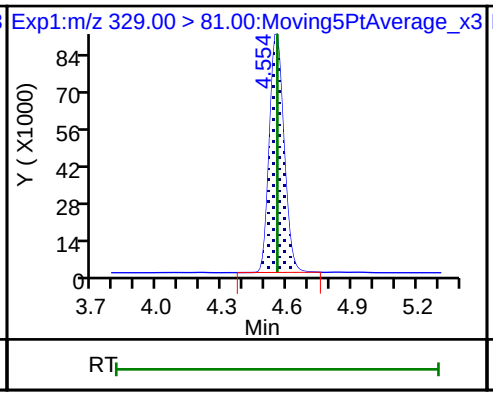
7 4:2 FTS (ND)



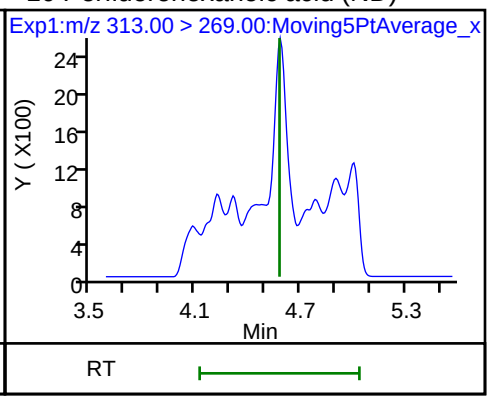
7 4:2 FTS (ND)



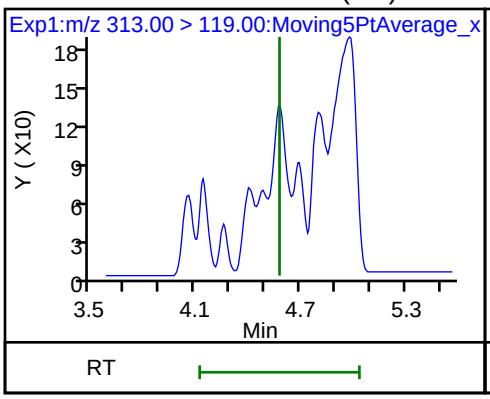
D 8 M2-4:2 FTS



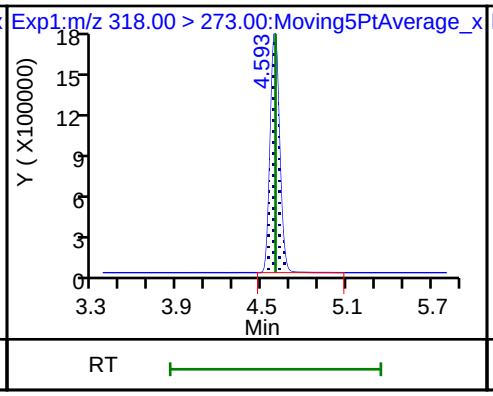
10 Perfluorohexanoic acid (ND)



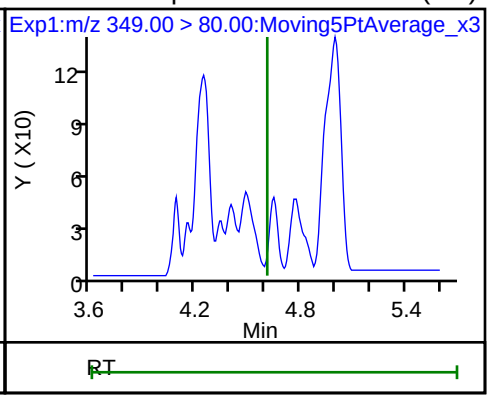
10 Perfluorohexanoic acid (ND)



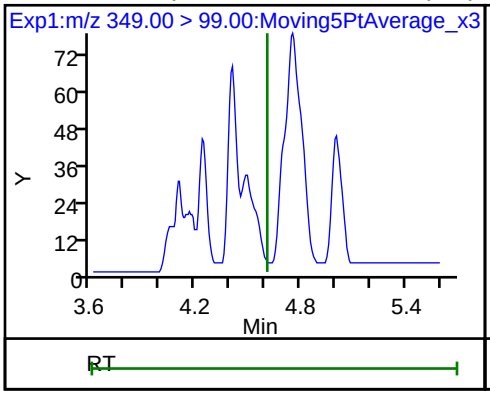
D 9 13C5 PFHxA



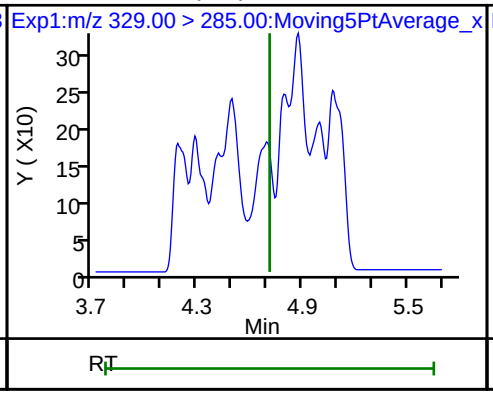
11 Perfluoropentanesulfonic acid (ND)



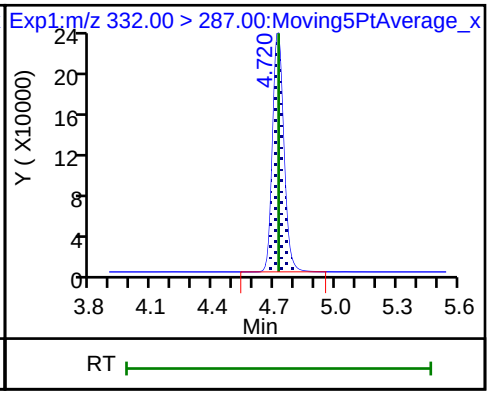
11 Perfluoropentanesulfonic acid (ND)



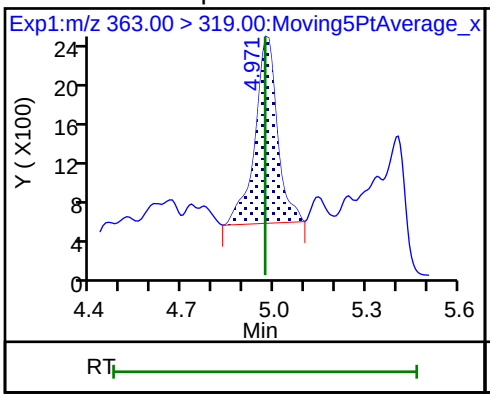
12 HFPO-DA (ND)



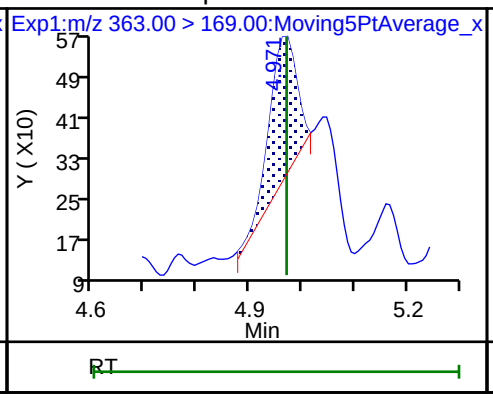
D 13 13C3 HFPO-DA



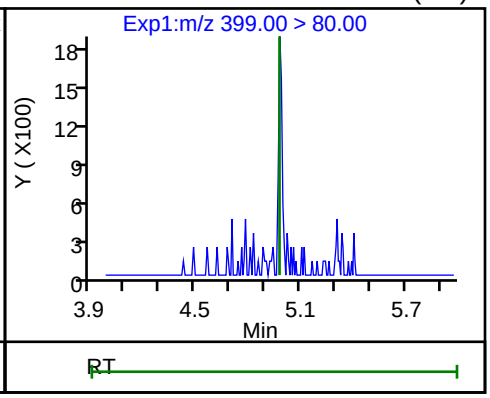
15 Perfluoroheptanoic acid



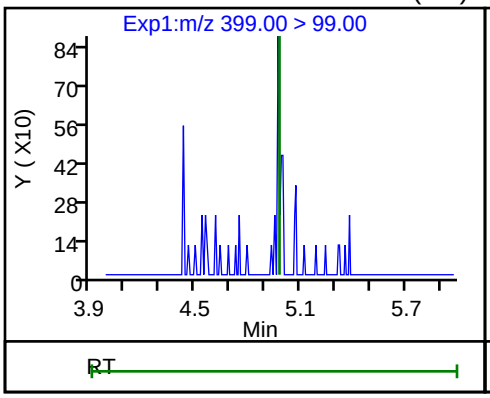
15 Perfluoroheptanoic acid



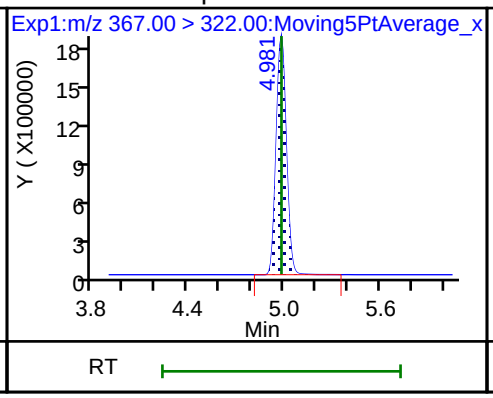
14 Perfluorohexanesulfonic acid (ND)



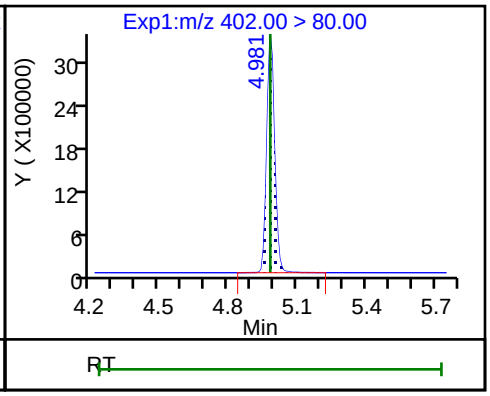
14 Perfluorohexanesulfonic acid (ND)



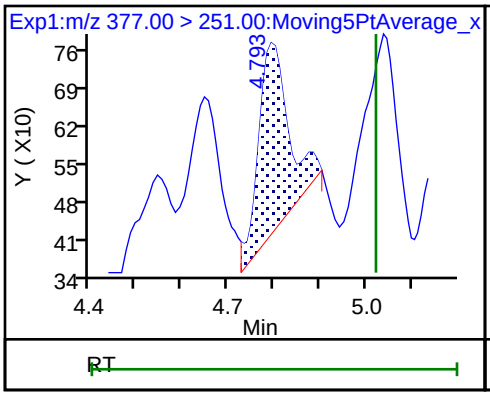
D 17 13C4 PFHpA



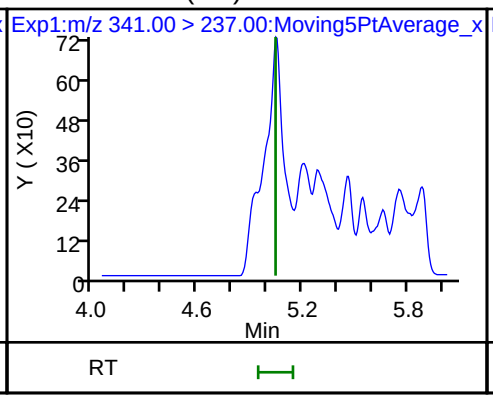
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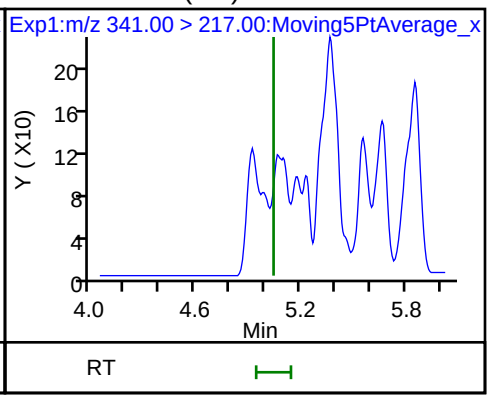
18 DONA



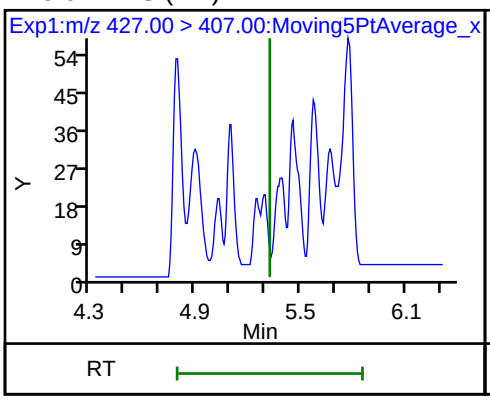
62 5:3 FTCA (ND)



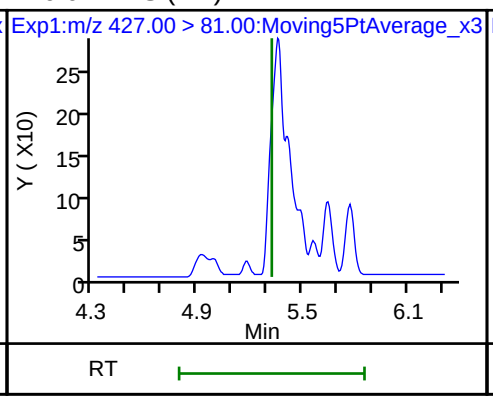
62 5:3 FTCA (ND)



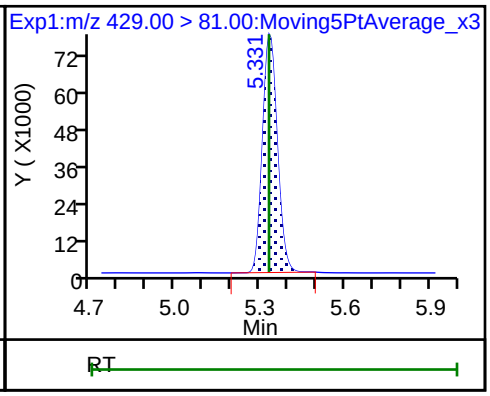
19 6:2 FTS (ND)



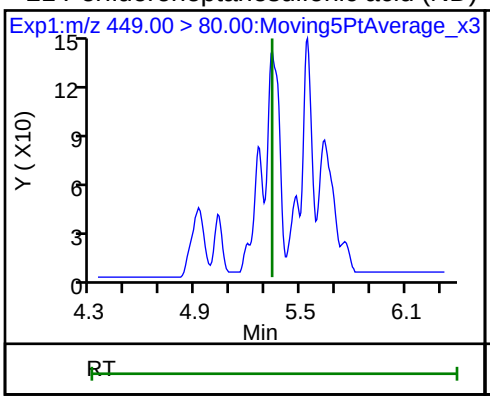
19 6:2 FTS (ND)



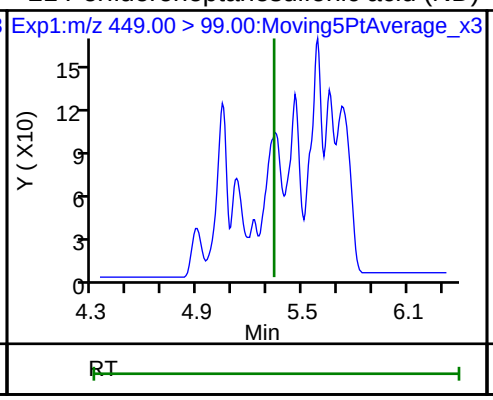
D 20 M2-6:2 FTS



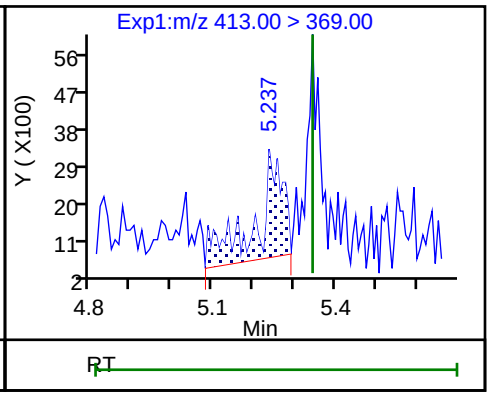
21 Perfluoroheptanesulfonic acid (ND)



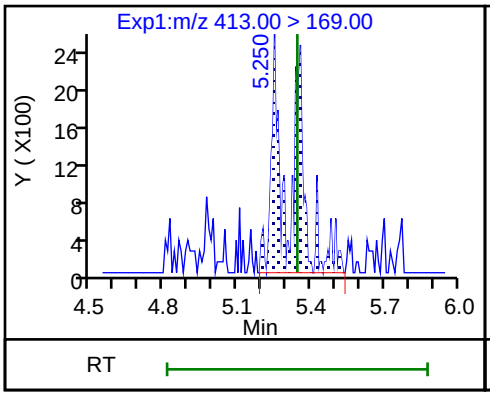
21 Perfluoroheptanesulfonic acid (ND)



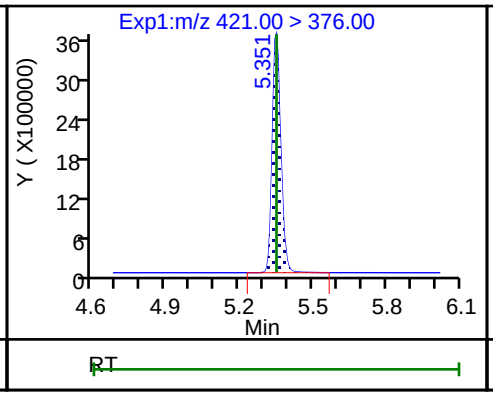
23 Perfluorooctanoic acid



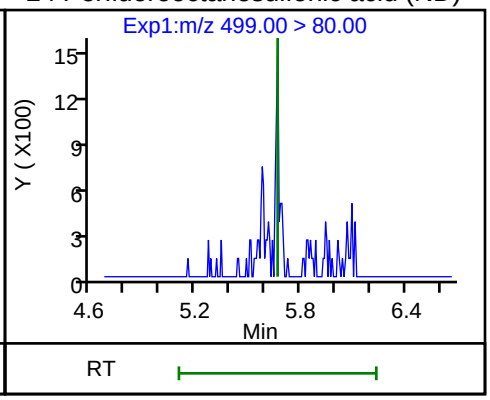
23 Perfluorooctanoic acid



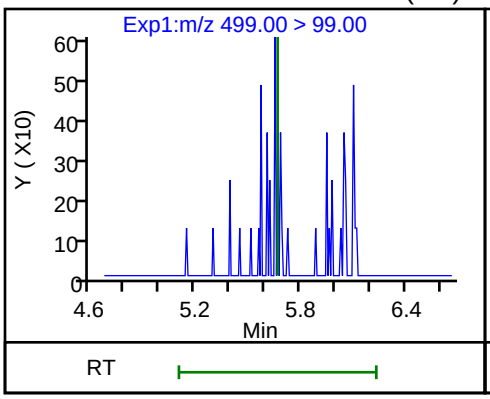
D 22 13C8 PFOA



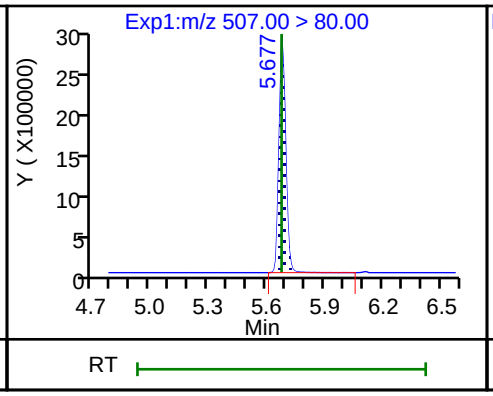
24 Perfluorooctanesulfonic acid (ND)



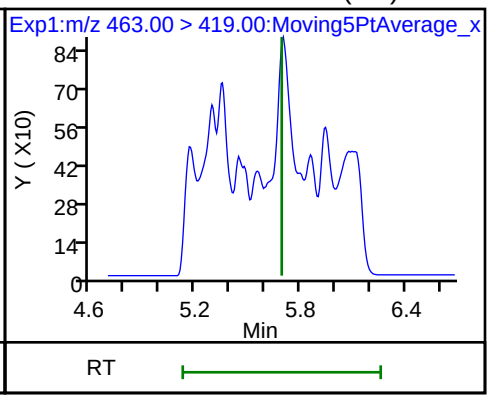
24 Perfluorooctanesulfonic acid (ND)



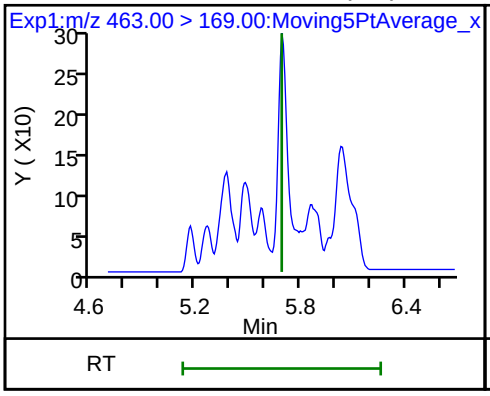
D 25 13C8 PFOS



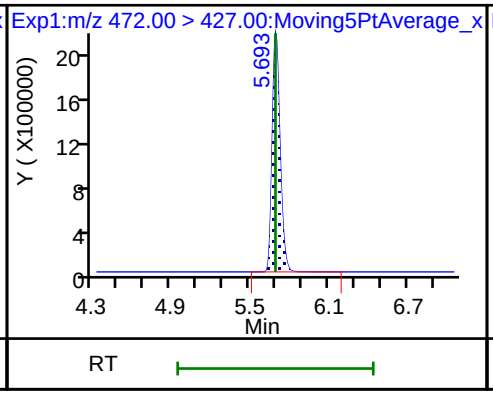
26 Perfluorononanoic acid (ND)



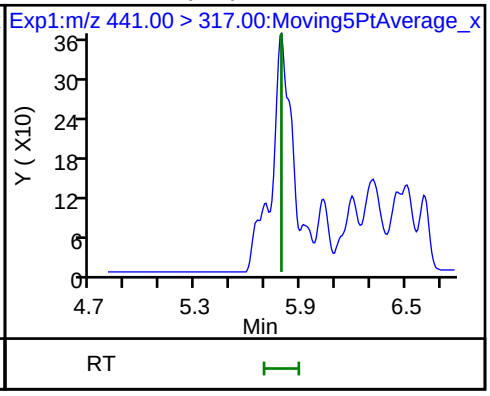
26 Perfluorononanoic acid (ND)



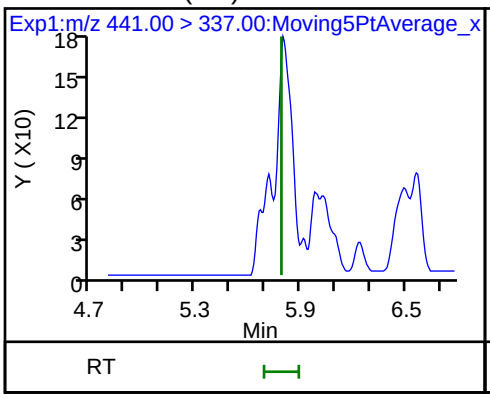
D 27 13C9 PFNA



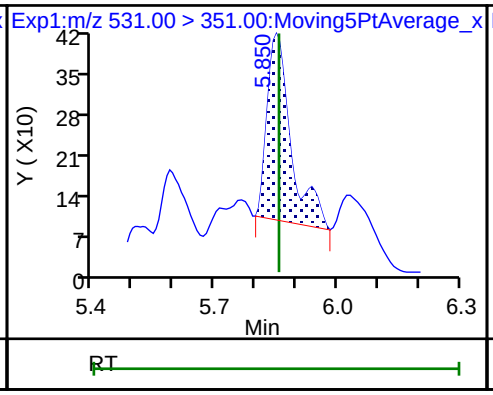
66 7:3 FTCA (ND)



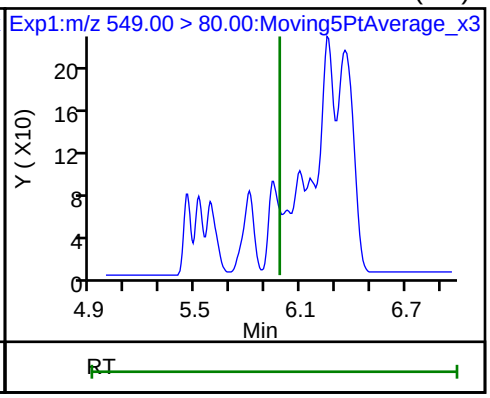
66 7:3 FTCA (ND)



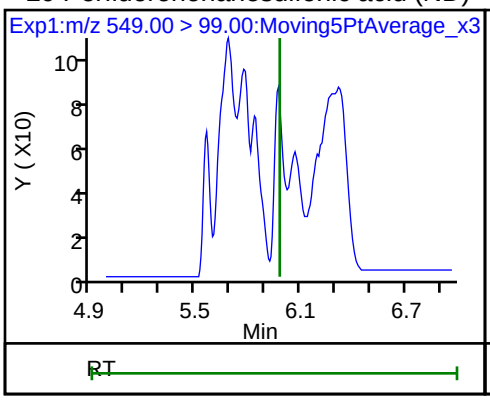
28 9ClFOS



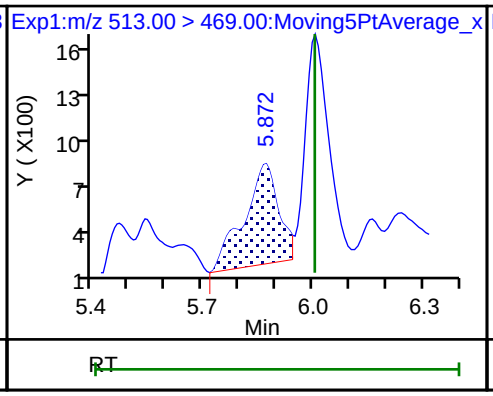
29 Perfluorononanesulfonic acid (ND)



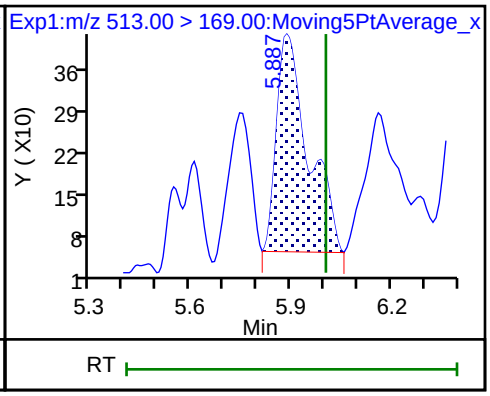
29 Perfluorononanesulfonic acid (ND)



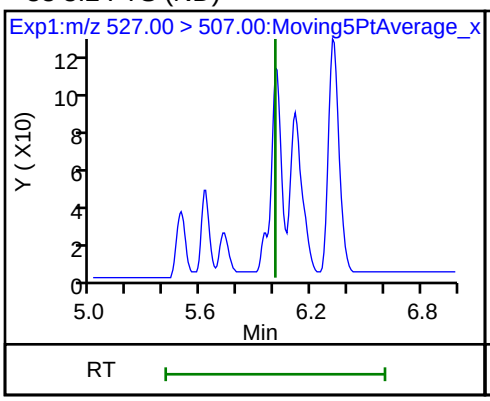
30 Perfluorodecanoic acid



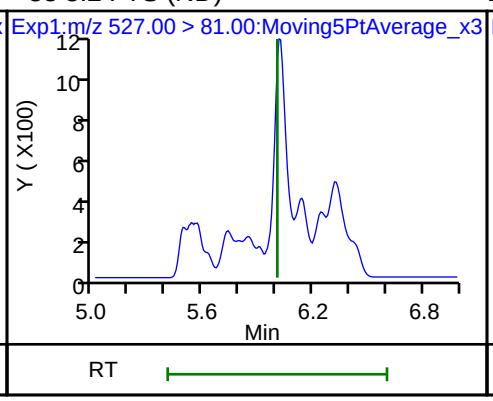
30 Perfluorodecanoic acid



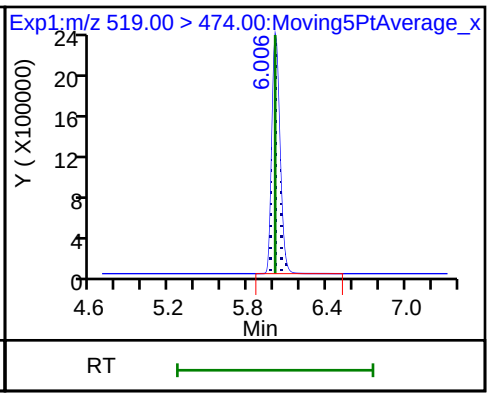
33 8:2 FTS (ND)



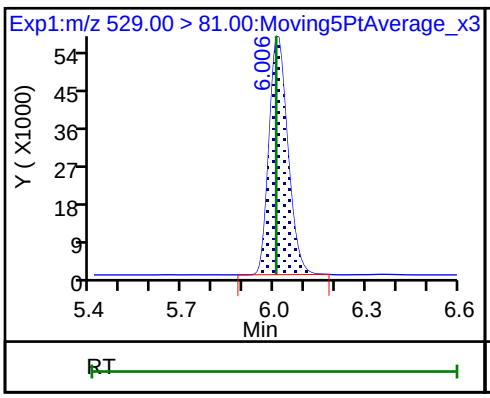
33 8:2 FTS (ND)



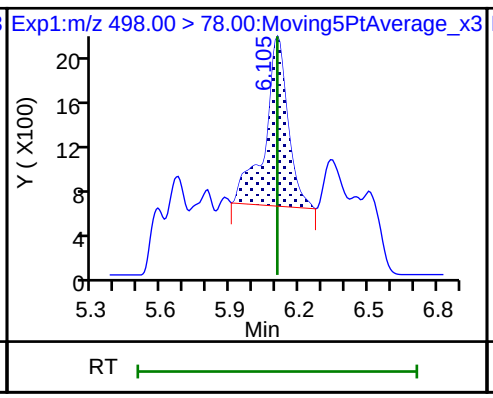
D 32 13C6 PFDA



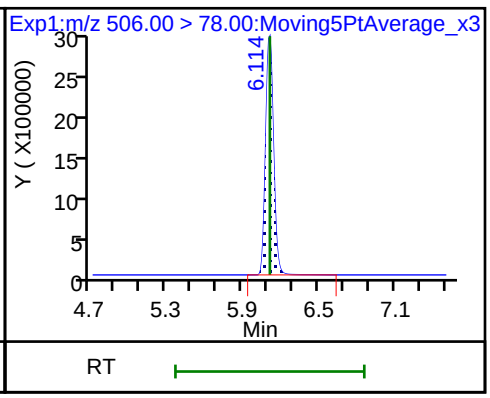
D 31 M2-8:2 FTS



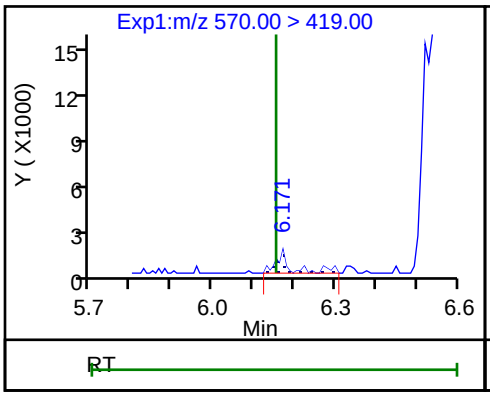
34 Perfluorooctanesulfonamide



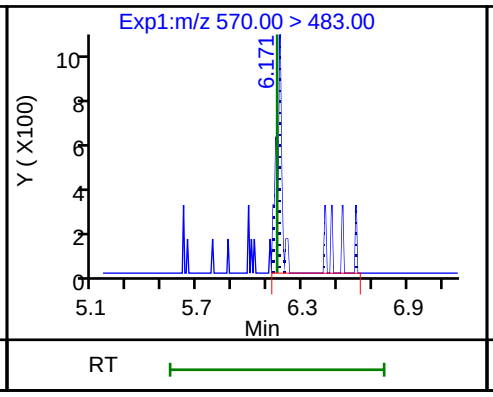
D 35 13C8 FOSA



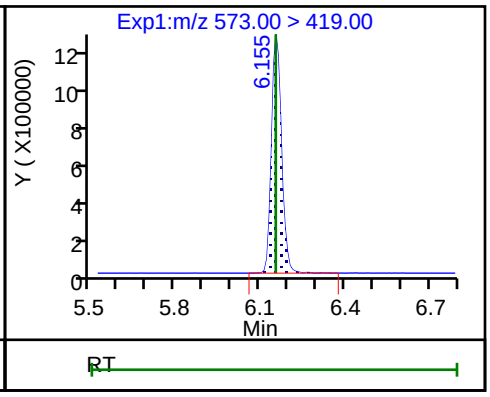
36 NMeFOSAA



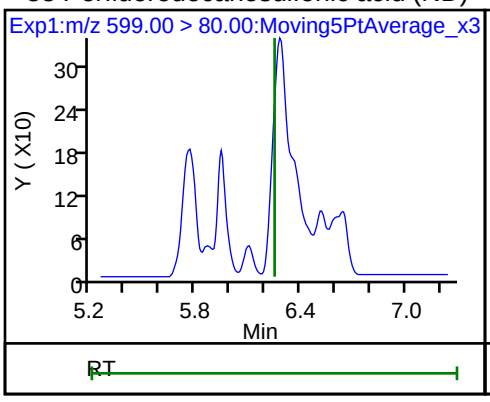
36 NMeFOSAA



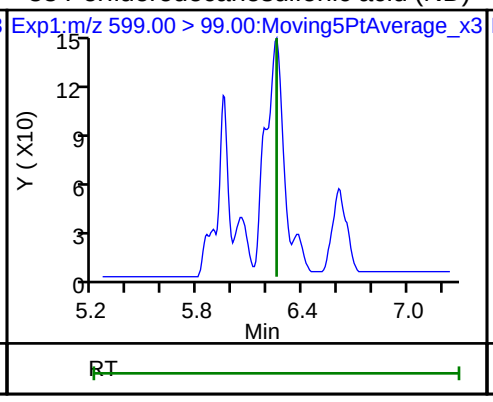
D 37 d3-NMeFOSAA



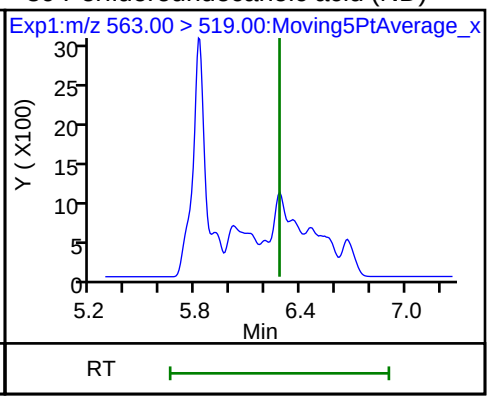
38 Perfluorodecanesulfonic acid (ND)



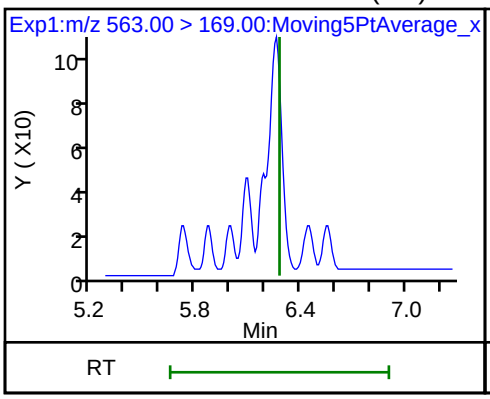
38 Perfluorodecanesulfonic acid (ND)



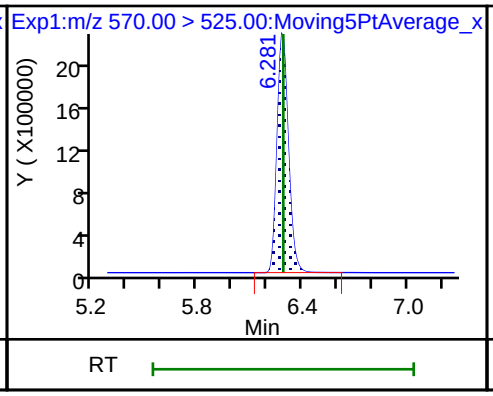
39 Perfluoroundecanoic acid (ND)



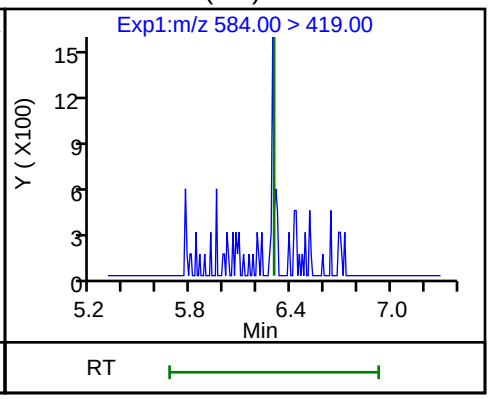
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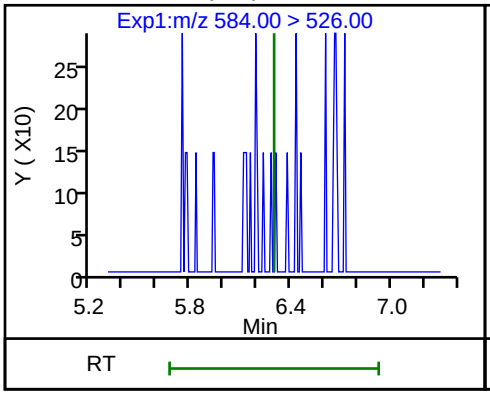
D 40 13C7 PFUnA



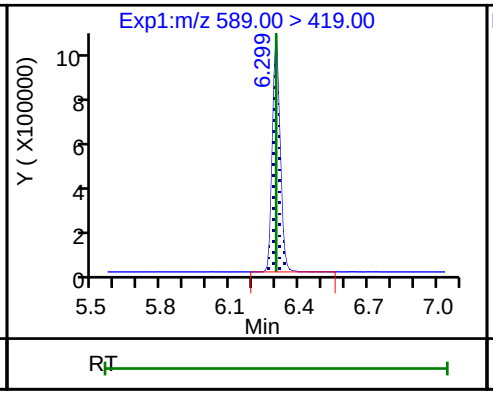
42 NEtFOSAA (ND)



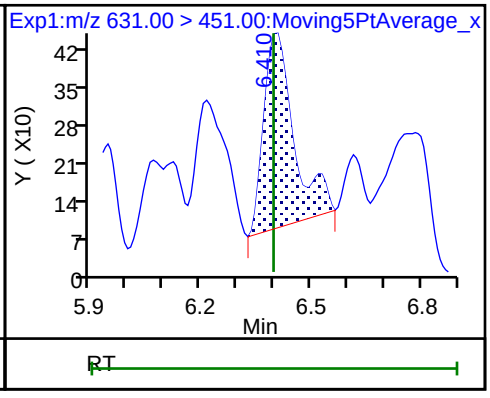
42 NEtFOSAA (ND)



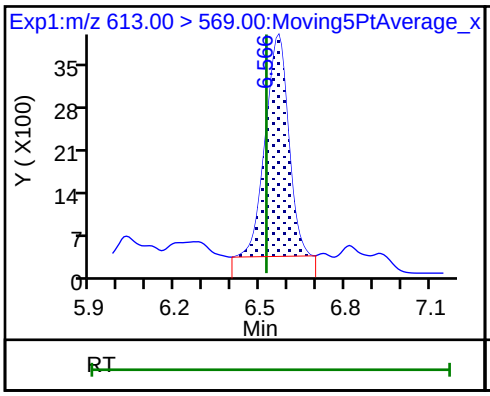
D 41 d5-NEtFOSAA



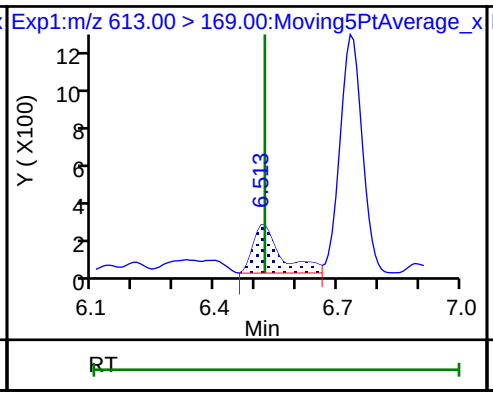
43 11ClFOS



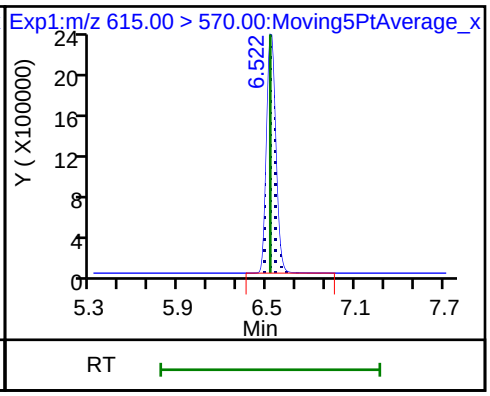
46 Perfluorododecanoic acid



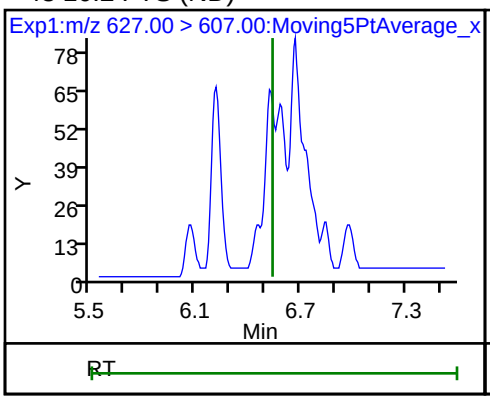
46 Perfluorododecanoic acid



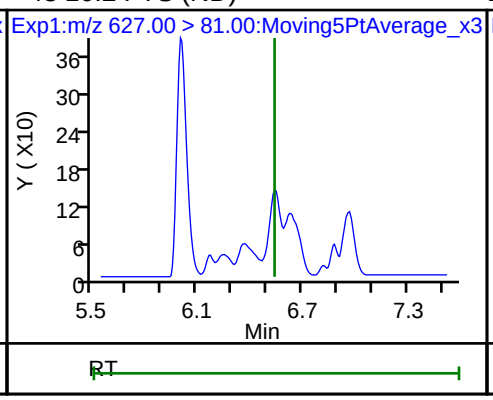
D 45 13C2-PFDoDA



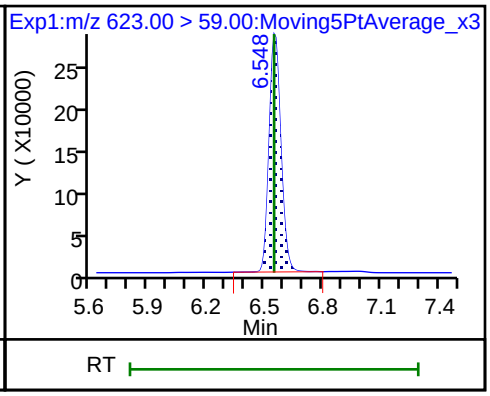
48 10:2 FTS (ND)



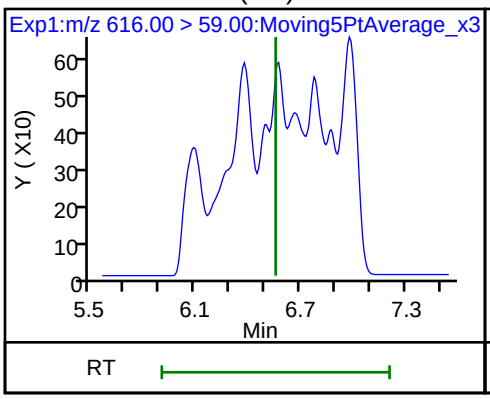
48 10:2 FTS (ND)



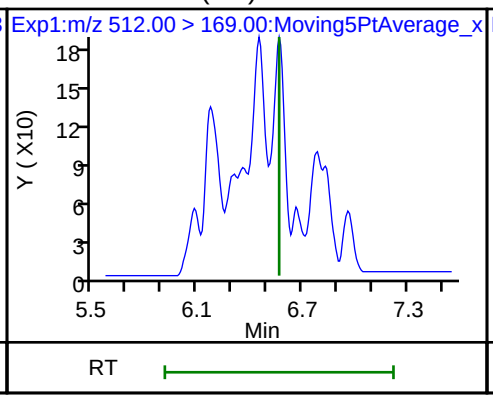
D 44 d7-N-MeFOSE-M



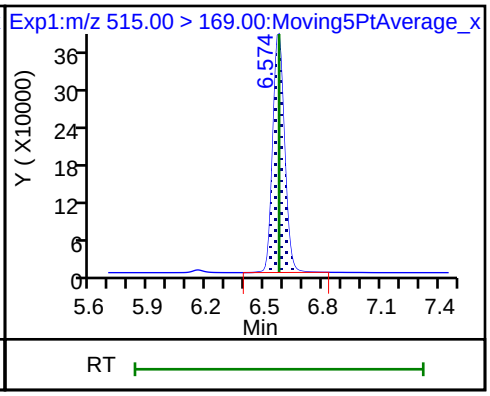
47 N-MeFOSE-M (ND)



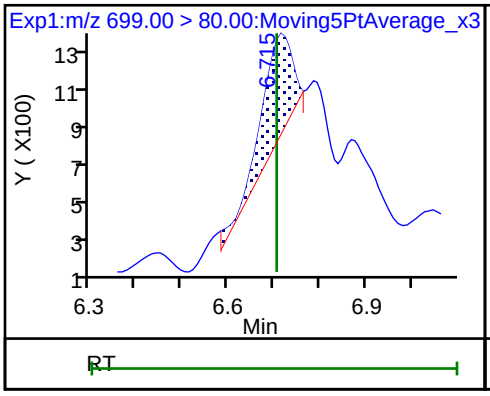
50 NMeFOSA (ND)



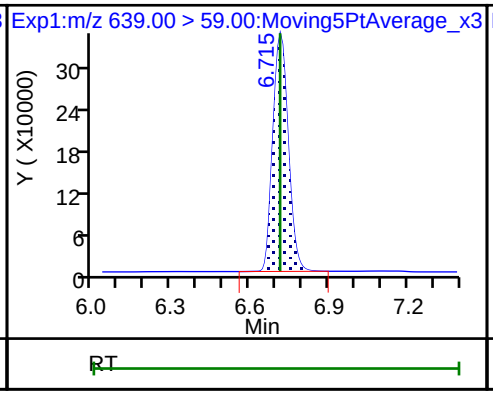
D 49 d3-NMePFOSA



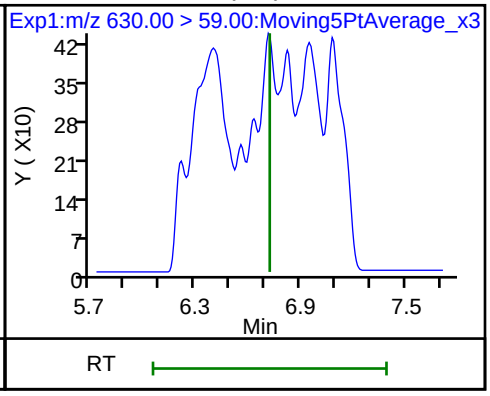
53 PFDoS



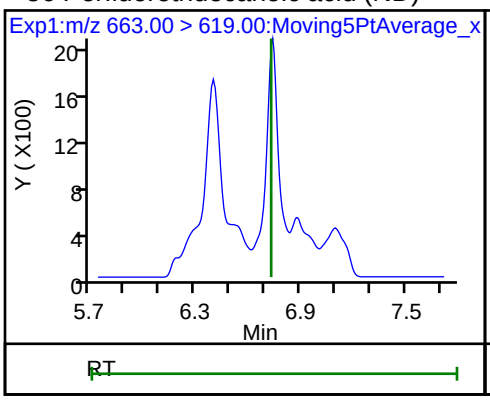
D 51 d9-N-EtFOSE-M



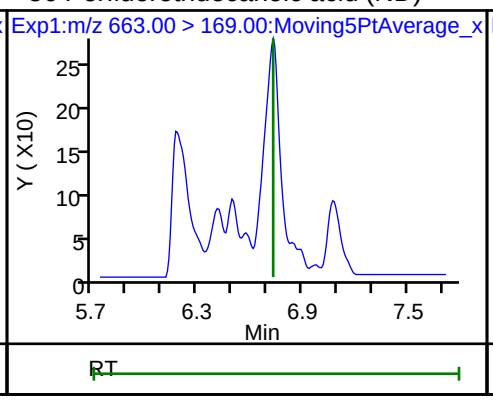
52 N-EtFOSE-M (ND)



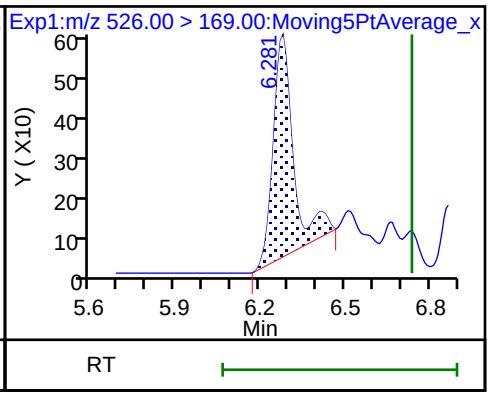
56 Perfluorotridecanoic acid (ND)



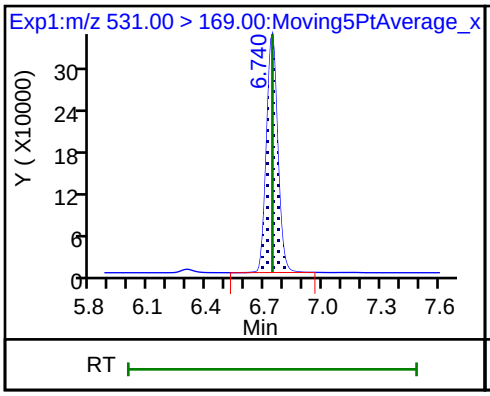
56 Perfluorotridecanoic acid (ND)



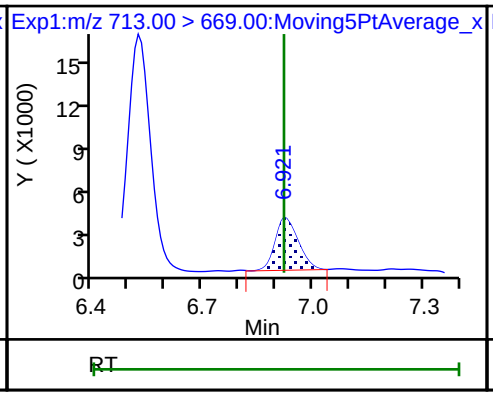
55 N-EtFOSA-M



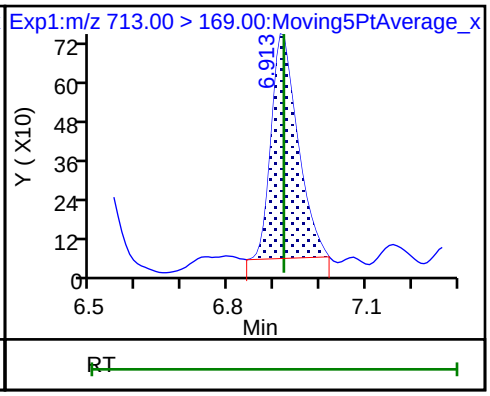
D 54 d5-NEtPFOSA



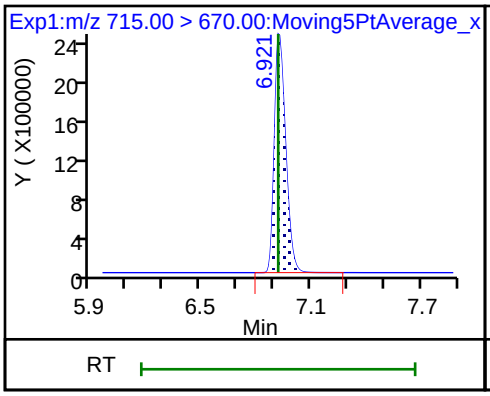
57 Perfluorotetradecanoic acid



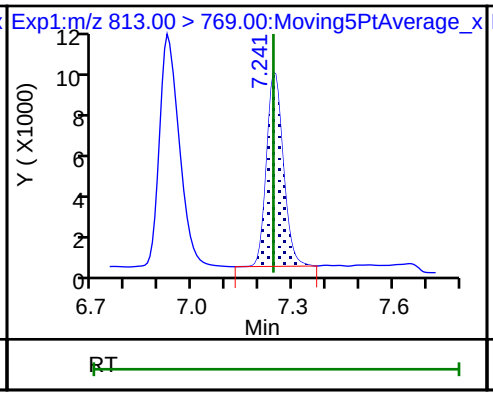
57 Perfluorotetradecanoic acid



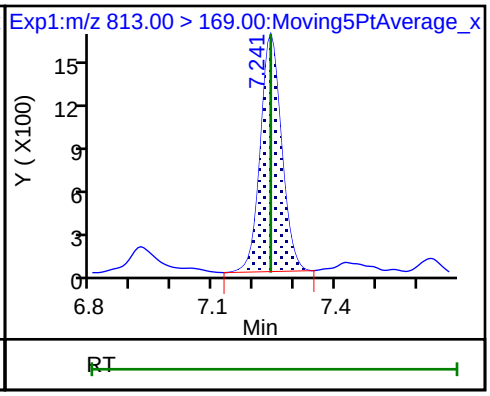
D 58 13C2 PFTeDA



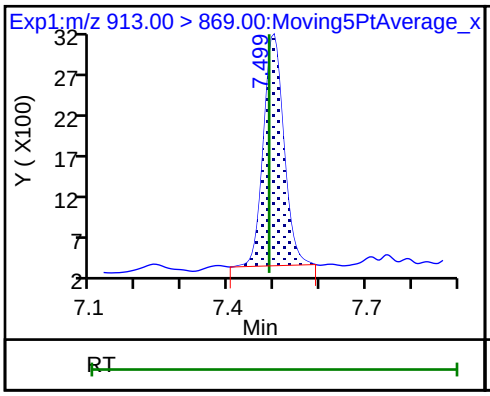
59 Perfluorohexadecanoic acid



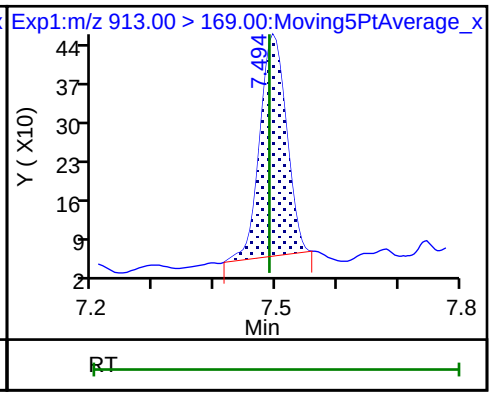
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 410-239491/2-A

Matrix: Water Lab File ID: 22APR04-04.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 03/31/2022 06:58

Sample wt/vol: 250(mL) Date Analyzed: 04/04/2022 08:05

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	21.3		2.0	1.0	0.50
375-85-9	Perfluoroheptanoic acid	21.7		2.0	1.0	0.50
335-67-1	Perfluorooctanoic acid	21.9		2.0	1.0	0.50
375-95-1	Perfluorononanoic acid	21.8		2.0	1.0	0.50
335-76-2	Perfluorodecanoic acid	21.2		2.0	1.0	0.50
72629-94-8	Perfluorotridecanoic acid	22.7		2.0	1.0	0.50
376-06-7	Perfluorotetradecanoic acid	21.5		2.0	1.0	0.50
375-73-5	Perfluorobutanesulfonic acid	19.9		2.0	1.0	0.50
355-46-4	Perfluorohexanesulfonic acid	19.3		2.0	1.0	0.50
1763-23-1	Perfluorooctanesulfonic acid	20.5		2.0	1.0	0.50
2991-50-6	NEtFOSAA	18.2		3.0	1.0	0.50
2355-31-9	NMeFOSAA	18.2		2.0	1.2	0.60
2706-91-4	Perfluoropentanesulfonic acid	20.2		2.0	1.0	0.50
375-92-8	Perfluoroheptanesulfonic acid	19.4		2.0	1.0	0.50
68259-12-1	Perfluorononanesulfonic acid	19.4		2.0	1.0	0.50
335-77-3	Perfluorodecanesulfonic acid	19.1		2.0	1.0	0.50
754-91-6	Perfluorooctanesulfonamide	21.3		2.0	1.0	0.50
375-22-4	Perfluorobutanoic acid	21.0		5.0	4.0	2.0
2706-90-3	Perfluoropentanoic acid	18.1		2.0	1.0	0.50
2058-94-8	Perfluoroundecanoic acid	21.0		2.0	1.0	0.50
307-55-1	Perfluorododecanoic acid	22.8		2.0	1.0	0.50
27619-97-2	6:2 Fluorotelomer sulfonic acid	18.0		5.0	4.0	2.0
39108-34-4	8:2 Fluorotelomer sulfonic acid	16.9		3.0	2.0	1.0
757124-72-4	4:2 Fluorotelomer sulfonic acid	16.5		2.0	1.0	0.50

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 410-239491/2-A

Matrix: Water Lab File ID: 22APR04-04.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 03/31/2022 06:58

Sample wt/vol: 250(mL) Date Analyzed: 04/04/2022 08:05

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 240466 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	168	*5+	50-150
STL02280	M2-8:2 FTS	172	*5+	50-150
STL02279	M2-6:2 FTS	163	*5+	50-150
STL02577	13C5 PFHxA	143		50-150
STL01892	13C4 PFHpA	137		50-150
STL01052	13C8 PFOA	139		50-150
STL02578	13C9 PFNA	140		50-150
STL02579	13C6 PFDA	143		50-150
STL02580	13C7 PFUnA	140		50-150
STL02703	13C2-PFDoDA	127		50-150
STL02116	13C2 PFTeDA	116		50-150
STL02337	13C3 PFBS	137		50-150
STL02581	13C3 PFHxS	141		50-150
STL01054	13C8 PFOS	137		50-150
STL02118	d3-NMeFOSAA	145		50-150
STL02117	d5-NEtFOSAA	145		50-150
STL01056	13C8 FOSA	114		50-150
STL00992	13C4 PFBA	133		50-150
STL01893	13C5 PFPeA	140		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-04.d
Lims ID: LCS 410-239491/2-A
Client ID:
Sample Type: LCS
Inject. Date: 04-Apr-2022 08:05:56 ALS Bottle#: 2 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 410-239491/2-A
Misc. Info.: Plate: 2 Rack: 1 410-0053975-004
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 04-Apr-2022 14:39:06 Calib Date: 03-Apr-2022 18:16:12
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220401-53897.b\22APR03DCAL-47.d

Column 1 : Det: EXP1
Process Host: CTX1662

First Level Reviewer: matthewsl Date: 04-Apr-2022 19:13:45
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-01.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.663	3.671	-0.008	1.000	5051354	5.24		81.9	9719	
D 2 13C4 PFBA										
217.00 > 172.00	3.663	3.671	-0.008		11552077	13.3		133	160634	
63 PFECA F										
229.00 > 85.00	3.890	3.898	-0.008	0.929	4732190	5.73		89.6	10600	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.180	-0.008	0.997	333180	5.52	Target=1.30	86.3	17801	
241.00 > 117.00	4.172	4.180	-0.008	0.997	252335		1.32(0.65-1.95)		7350	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.179	4.187	-0.008	0.998	4723166	4.52		70.7	20571	
D 4 13C5 PFPeA										
268.00 > 223.00	4.187	4.187	0.0		10142371	14.0		140	75203	
D 6 13C3 PFBS										
302.00 > 80.00	4.239	4.239	0.0		11975856	12.7		137	777422	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.239	-0.008	0.998	6167028	4.98	Target=2.92	88.0	7191	
299.00 > 99.00	4.231	4.239	-0.008	0.998	2075774		2.97(1.46-4.38)		6523	
64 PFECA A										
279.00 > 85.00	4.301	4.309	-0.008	1.027	4368688	5.20		81.3	69446	
65 PES										
315.00 > 135.00	4.397	4.397	0.0	0.958	18527826	4.29	Target=11.12	75.4	210033	
315.00 > 83.00	4.397	4.397	0.0	0.958	1235571		15.00(5.56-16.68)		1618	
68 PFECA B										
295.00 > 201.00	4.521	4.521	0.0	0.985	1838052	5.14		80.3	49752	
7 4:2 FTS										
327.00 > 307.00	4.550	4.551	-0.001	1.000	1060056	4.12	Target=1.56	68.9	77016	
327.00 > 81.00	4.550	4.551	-0.001	1.000	585210		1.81(0.78-2.33)		8408	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.550	4.560	-0.010		635838	15.7		168	15458	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.590	4.590	0.0	1.000	5902599	5.34	Target=13.98	83.4	76340	
313.00 > 119.00	4.590	4.590	0.0	1.000	404547		14.59(6.99-20.97)		14936	
D 9 13C5 PFHxA										
318.00 > 273.00	4.590	4.600	-0.010		12646944	14.3		143	199208	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.609	4.618	-0.009	1.087	5758133	5.06	Target=3.09	84.3	263905	
349.00 > 99.00	4.609	4.618	-0.009	1.087	1862224		3.09(1.55-4.64)		60675	
12 HFPO-DA										
329.00 > 285.00	4.718	4.726	-0.008	0.999	1730265	4.84		75.7	41491	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.725	4.726	-0.001		1685739	15.3		153	89096	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.979	4.989	-0.010	0.998	6300011	5.42	Target=3.24	84.7	49011	
363.00 > 169.00	4.979	4.989	-0.010	0.998	1985521		3.17(1.62-4.86)		44675	
D 17 13C4 PFHpA										
367.00 > 322.00	4.989	4.989	0.0		12166105	13.7		137	211371	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.989	4.989	0.0	1.000	5552093	4.83	Target=3.24	82.8	949855	
399.00 > 99.00	4.979	4.989	-0.010	0.998	1795554		3.09(1.62-4.86)		618502	
D 16 13C3 PFHxS										
402.00 > 80.00	4.989	4.989	0.0		11170916	13.3		141	2416704	
18 DONA										
377.00 > 251.00	5.031	5.031	0.0	1.008	10646889	5.33		88.1	381425	
62 5:3 FTCA										
341.00 > 237.00	5.053	5.053	0.0	1.101	1211700	4.98	Target=3.42	77.8	14885	
341.00 > 217.00	5.053	5.053	0.0	1.101	392094		3.09(1.71-5.12)		8494	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.337	5.338	-0.001		394609	15.4		163	13481	
19 6:2 FTS										
427.00 > 407.00	5.337	5.338	-0.001	1.000	975373	4.50	Target=1.58	74.2	52602	
427.00 > 81.00	5.331	5.338	-0.007	0.999	609439		1.60(0.79-2.38)		1054	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.344	5.344	0.0	1.071	5583678	4.86	Target=3.08	79.8	196016	
449.00 > 99.00	5.344	5.344	0.0	1.071	1733242		3.22(1.54-4.62)		160962	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.357	5.357	0.0	1.000	6665031	5.47	Target=2.41	85.5	343595	
413.00 > 169.00	5.350	5.357	-0.007	0.999	2787870		2.39(1.20-3.61)		567826	
D 22 13C8 PFOA										
421.00 > 376.00	5.357	5.357	0.0		13600807	13.9		139	613309	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.685	5.685	0.0	1.000	6116175	5.11	Target=3.80	86.3	16012	
499.00 > 99.00	5.685	5.685	0.0	1.000	1696313		3.61(1.90-5.70)		5067	
D 25 13C8 PFOS										
507.00 > 80.00	5.685	5.685	0.0		10644095	13.1		137	558481	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.701	5.701	0.0	1.000	6633529	5.46	Target=4.84	85.3	83438	
463.00 > 169.00	5.701	5.701	0.0	1.000	1454068		4.56(2.42-7.26)		50120	
D 27 13C9 PFNA										
472.00 > 427.00	5.701	5.701	0.0		14269278	14.0		140	568264	
66 7:3 FTCA										
441.00 > 317.00	5.798	5.799	-0.001	1.263	605662	4.78	Target=12.92	74.7	18316	
441.00 > 337.00	5.798	5.799	-0.001	1.263	57135		10.60(6.46-19.38)		2769	
28 9ClFOS										
531.00 > 351.00	5.865	5.865	-0.001	1.032	12767066	4.80		80.7	671952	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.989	5.990	-0.001	1.054	5075173	4.86	Target=3.28	79.1	105229	
549.00 > 99.00	5.989	5.990	-0.001	1.054	1448589		3.50(1.64-4.92)		60492	
33 8:2 FTS										
527.00 > 507.00	6.014	6.014	0.0	1.000	1214574	4.22	Target=2.05	68.8	71418	
527.00 > 81.00	6.014	6.014	0.0	1.000	614855		1.98(1.03-3.08)		7531	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.014	6.014	0.0	1.000	7122408	5.29	Target=8.57	82.7	140773	
513.00 > 169.00	6.006	6.014	-0.008	0.999	764954		9.31(4.29-12.86)		13974	
D 32 13C6 PFDA										
519.00 > 474.00	6.014	6.014	0.0		15485191	14.3		143	521456	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.014	6.014	0.0		367965	16.4		172	12239	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.114	6.115	-0.001	1.000	7896995	5.33		83.3	124616	
D 35 13C8 FOSA										
506.00 > 78.00	6.114	6.115	-0.001		14733778	11.4		114	432533	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.162	6.163	-0.001		4094458	14.5		145	96705	
36 NMeFOSAA										
570.00 > 419.00	6.162	6.171	-0.009	1.000	1643287	4.55	Target=1.79	71.1	43740	
570.00 > 483.00	6.162	6.171	-0.009	1.000	930071		1.77(0.89-2.68)		987	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.261	6.262	-0.001	1.101	5613601	4.77	Target=3.67	77.3	142082	
599.00 > 99.00	6.261	6.262	-0.001	1.101	1468853		3.82(1.83-5.50)		66171	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.290	6.290	0.0	1.000	6820713	5.25	Target=7.86	82.1	41071	
563.00 > 169.00	6.280	6.290	-0.010	0.999	833599		8.18(3.93-11.79)		46697	
D 40 13C7 PFUnA										
570.00 > 525.00	6.290	6.290	0.0		15785871	14.0		140	707518	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.308	6.309	-0.001		3165763	14.5		145	635534	
42 NEtFOSAA										
584.00 > 419.00	6.308	6.309	-0.001	1.000	1367220	4.55	Target=1.58	71.1	2059	
584.00 > 526.00	6.299	6.309	-0.010	0.999	844953		1.62(0.79-2.38)		681	
43 11ClFOS										
631.00 > 451.00	6.409	6.410	-0.001	1.127	10750997	4.79		80.4	282806	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										
613.00 > 569.00	6.531	6.531	0.0	1.000	7605842	5.71	Target=6.12	89.2	90054	
613.00 > 169.00	6.531	6.531	0.0	1.000	1213842		6.27(3.06-9.17)		40555	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.531	6.531	0.0		15143656	12.7		127	358654	
48 10:2 FTS										
627.00 > 607.00	6.549	6.549	0.0	1.089	1450024	4.04	Target=1.69	65.4	86102	
627.00 > 81.00	6.540	6.549	-0.009	1.087	784776		1.85(0.84-2.53)		16917	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.558	-0.001		1583720	11.6		116	6862	
47 N-MeFOSE-M										
616.00 > 59.00	6.566	6.566	0.0	1.001	898273	5.71		89.2	9843	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.575	6.575	0.0		1731834	10.1		101	9594	
50 NMeFOSA										
512.00 > 169.00	6.575	6.575	0.0	1.000	949528	5.42		84.6	6950	
53 PFDoS										
699.00 > 80.00	6.714	6.715	-0.001	1.181	5078938	4.42		71.4	208316	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.723	6.724	-0.001		1856260	11.3		113	8014	
52 N-EtFOSE-M										
630.00 > 59.00	6.732	6.732	0.0	1.001	928653	5.44		85.0	11022	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.740	0.0	1.032	7566218	5.69	Target=5.77	88.9	95542	
663.00 > 169.00	6.740	6.740	0.0	1.032	1290196		5.86(2.89-8.66)		46810	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.748	6.740	0.008		1665635	10.6		106	9051	
55 N-EtFOSA-M										
526.00 > 169.00	6.748	6.748	0.0	1.000	898271	4.93		77.1	6777	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.928	6.928	0.0	1.000	6527988	5.37	Target=6.00	83.9	13174	
713.00 > 169.00	6.928	6.928	0.0	1.000	1023090		6.38(3.00-9.00)		40111	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.928	6.928	0.0		14020888	11.6		116	813004	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.248	7.248	0.0	1.046	4235654	4.67	Target=5.95	72.9	14033	
813.00 > 169.00	7.248	7.248	0.0	1.046	676478		6.26(2.98-8.93)		24878	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.505	7.505	0.0	1.083	2181414	3.54	Target=7.43	55.3	32118	
913.00 > 169.00	7.499	7.505	-0.006	1.082	297504		7.33(3.72-11.15)		16709	

QC Flag Legend

Processing Flags

Report Date: 04-Apr-2022 19:13:46 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220404-53975.b\22APR04-04.d

Injection Date: 04-Apr-2022 08:05:56 Instrument ID: 29347

Lims ID: LCS 410-239491/2-A

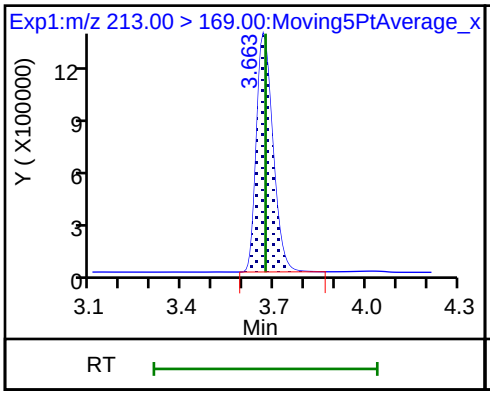
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 2 Worklist Smp#: 4

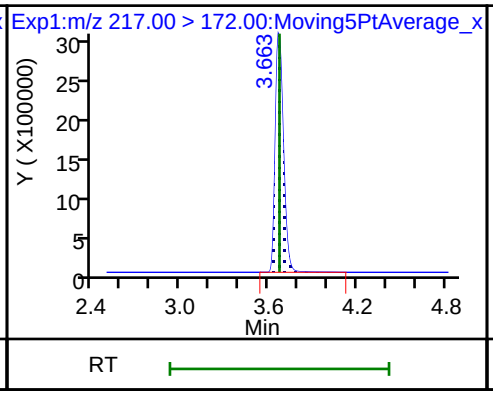
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

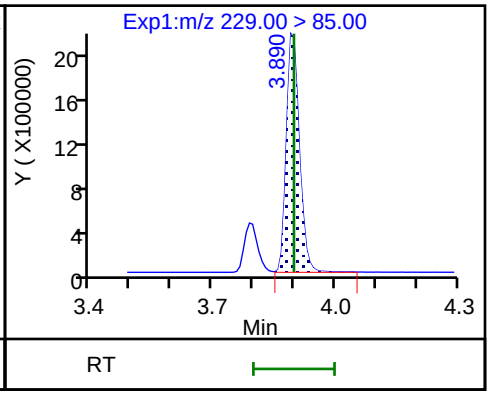
1 Perfluorobutanoic acid



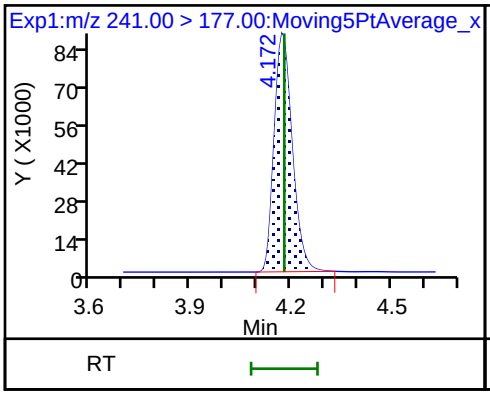
D 2 13C4 PFBA



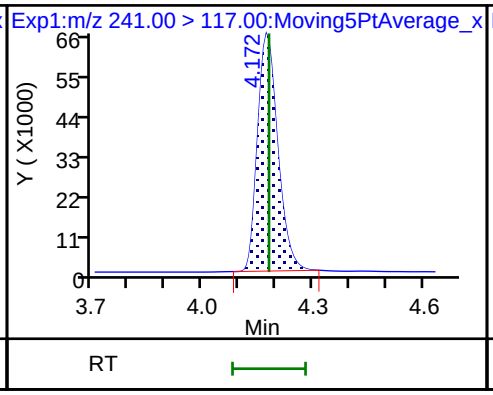
63 PFECA F



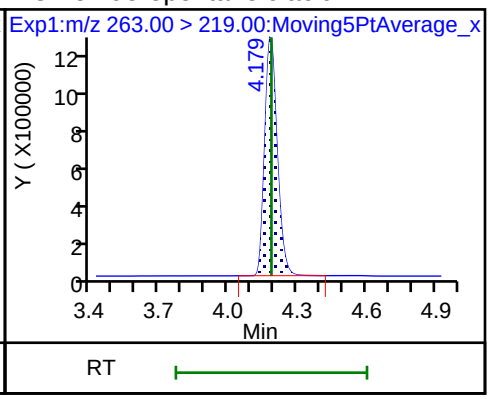
67 3:3 FTCA



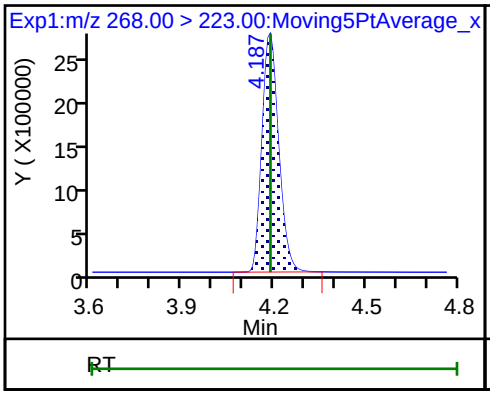
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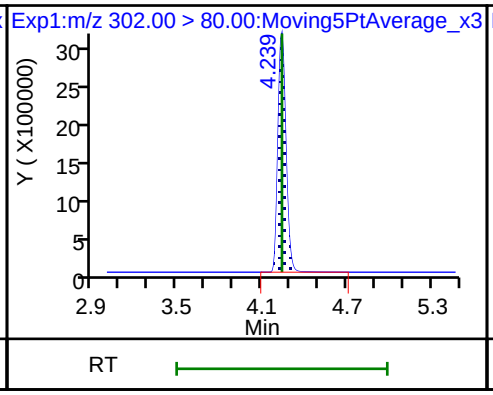
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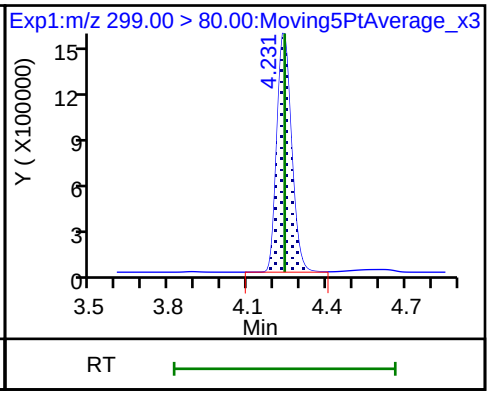
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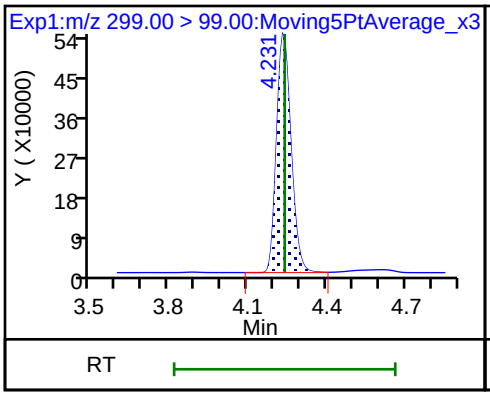
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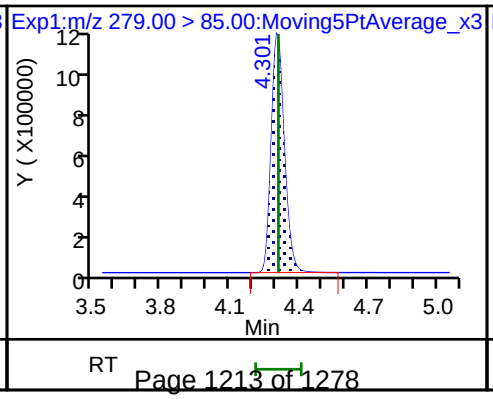
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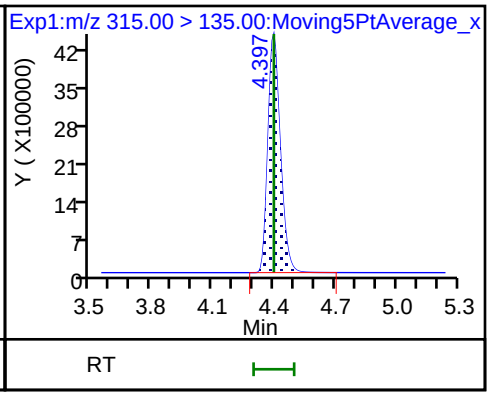
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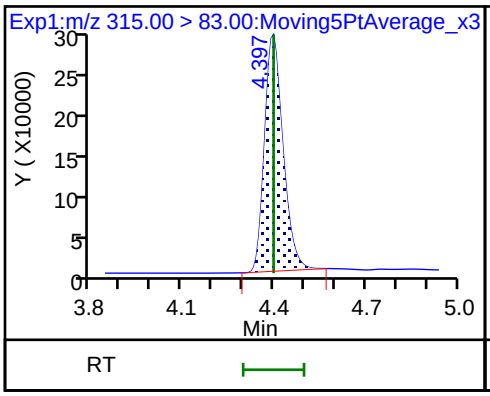
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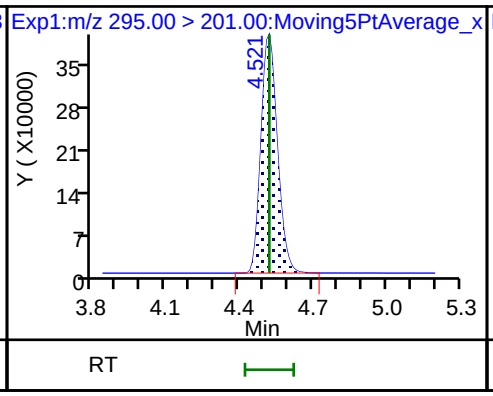
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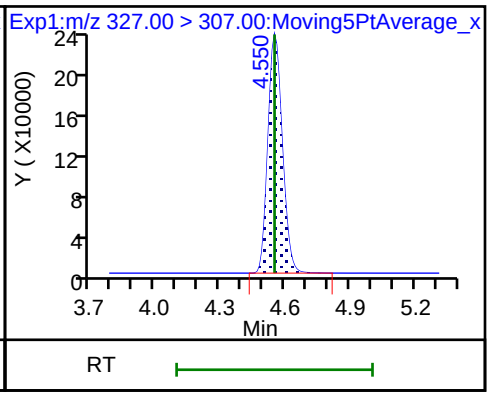
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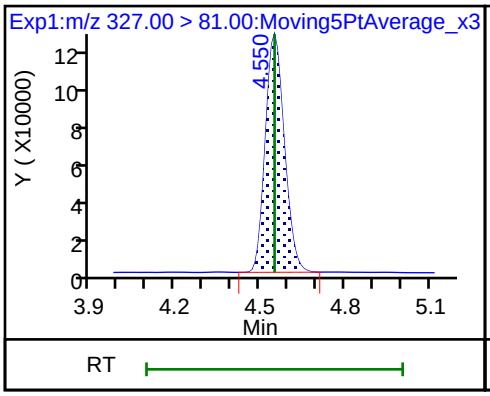
68 PFECA B



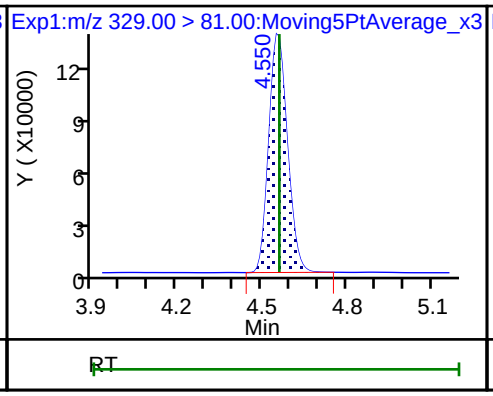
7 4:2 FTS



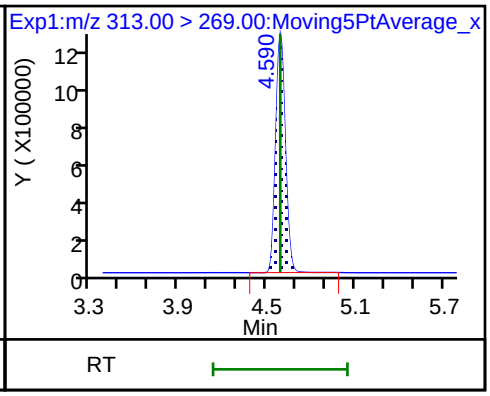
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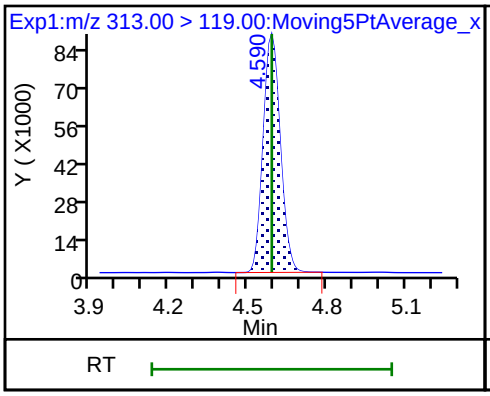
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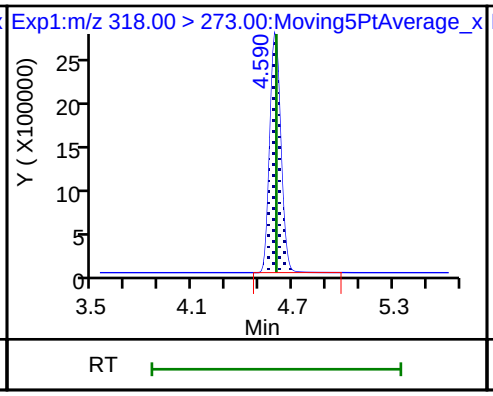
10 Perfluorohexanoic acid



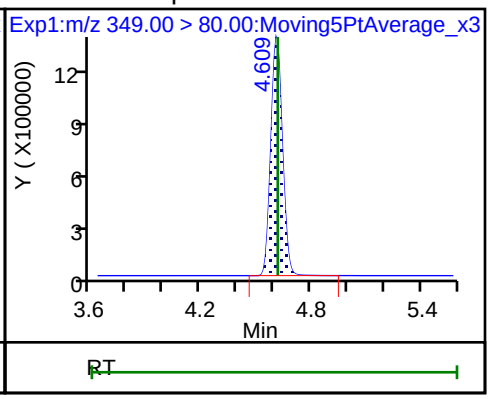
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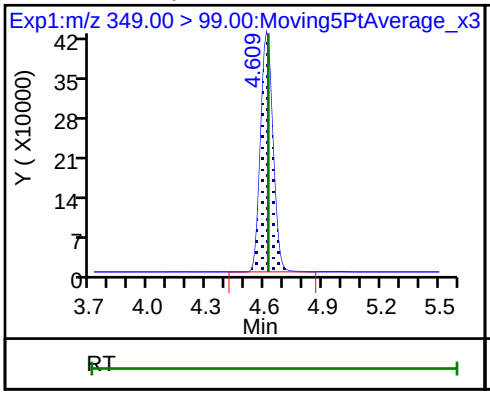
D 9 13C5 PFHxA



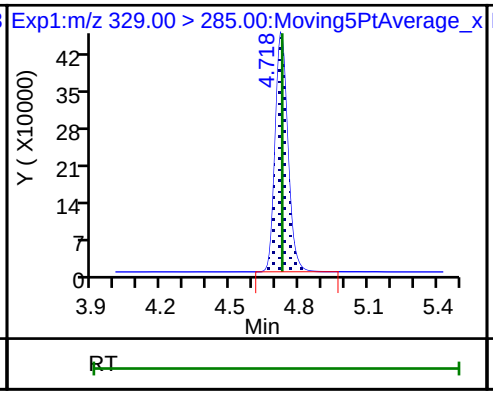
11 Perfluoropentanesulfonic acid



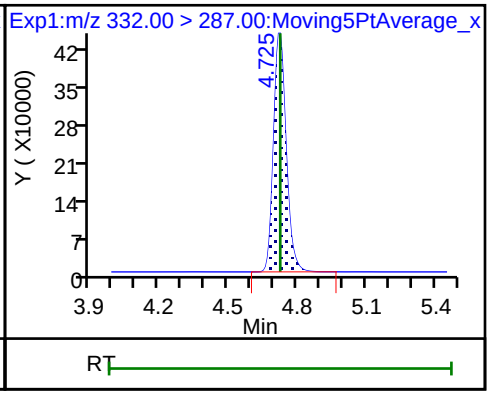
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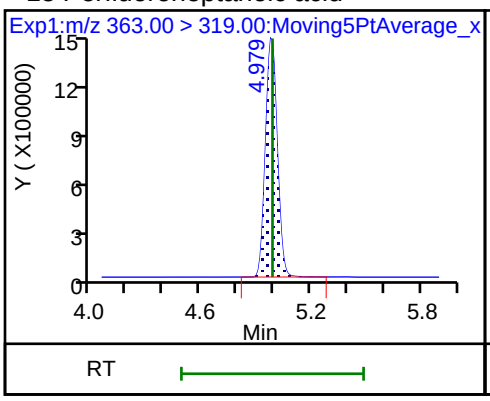
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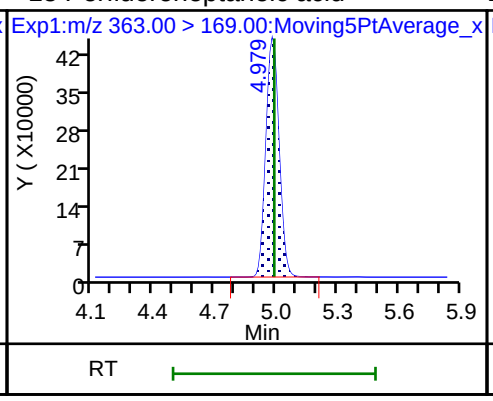
D 13 13C3 HFPO-DA



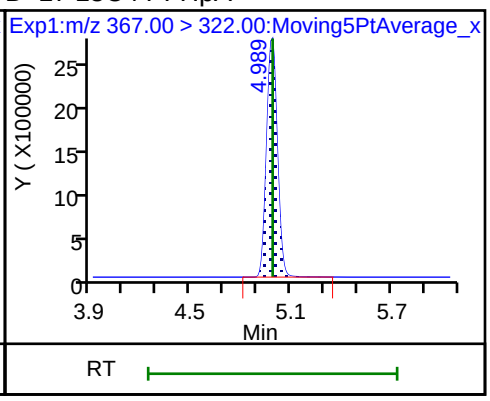
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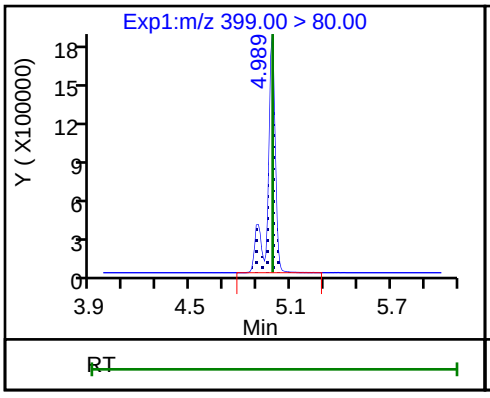
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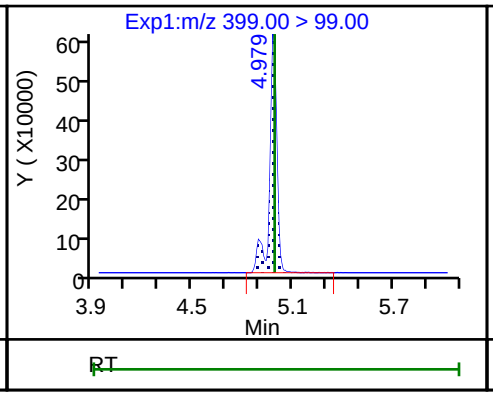
D 17 13C4 PFHpA



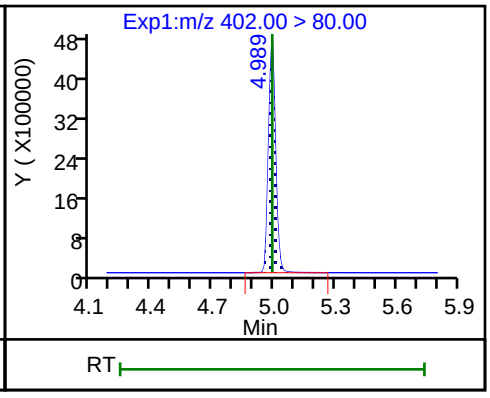
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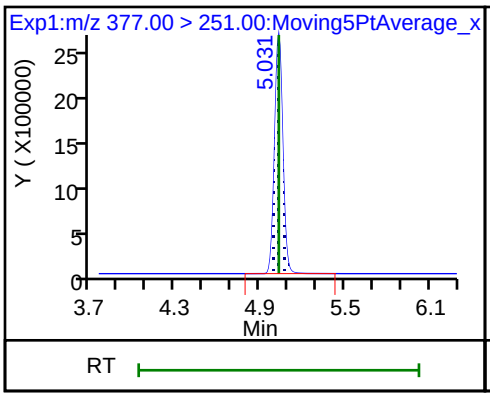
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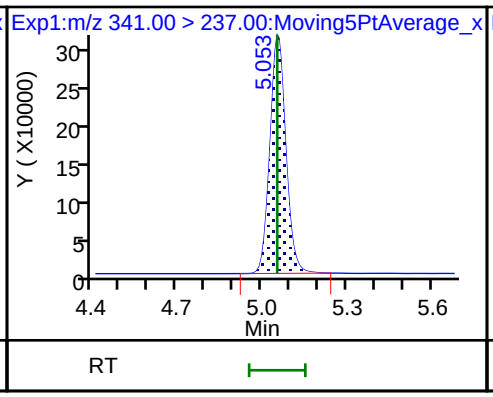
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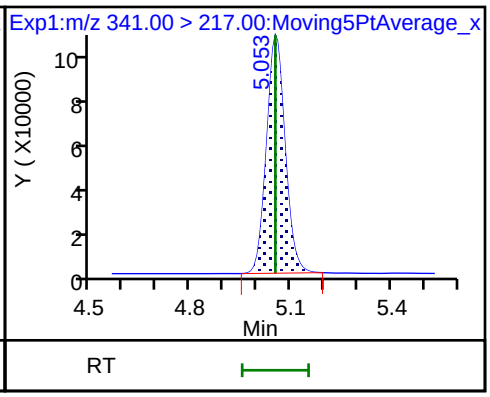
18 DONA



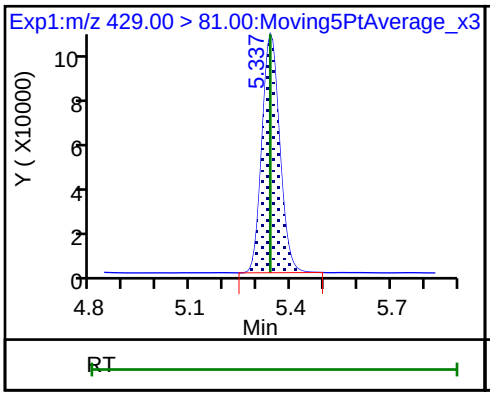
62 5:3 FTCA



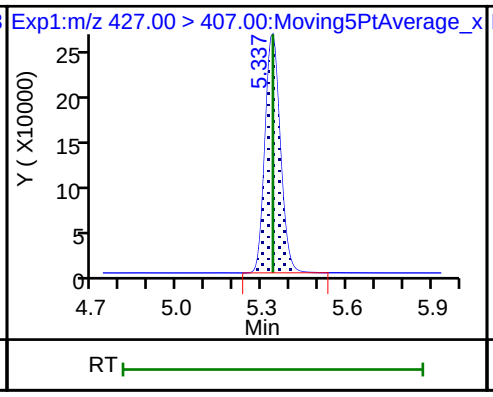
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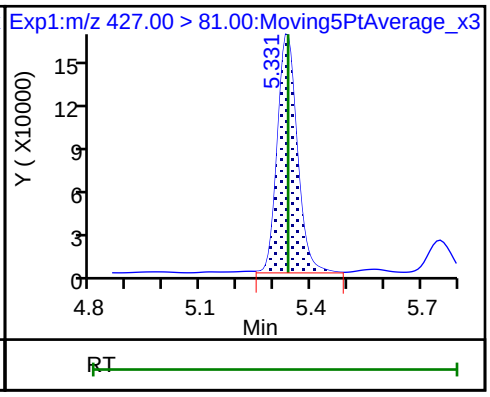
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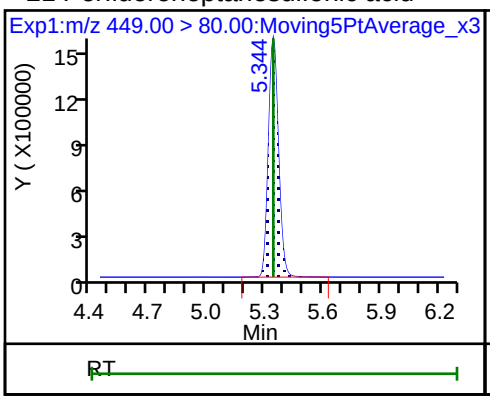
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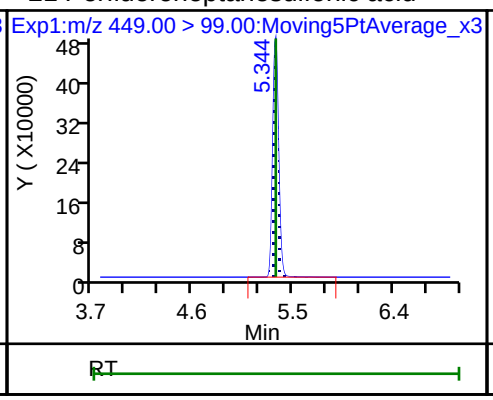
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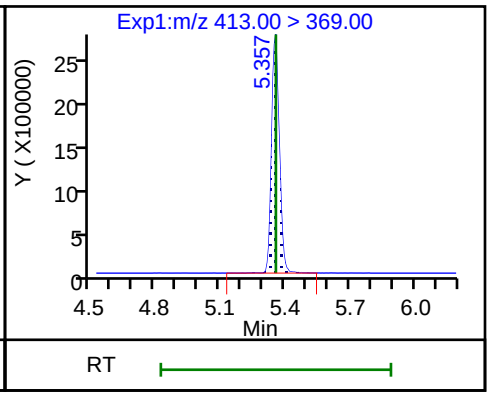
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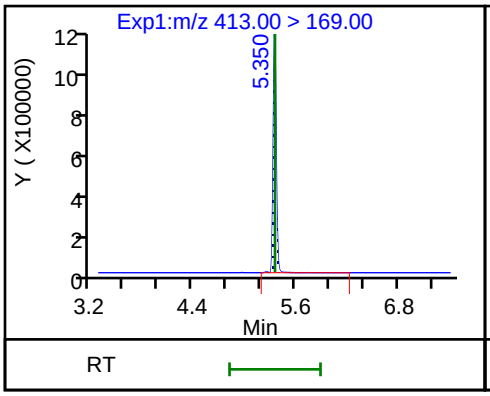
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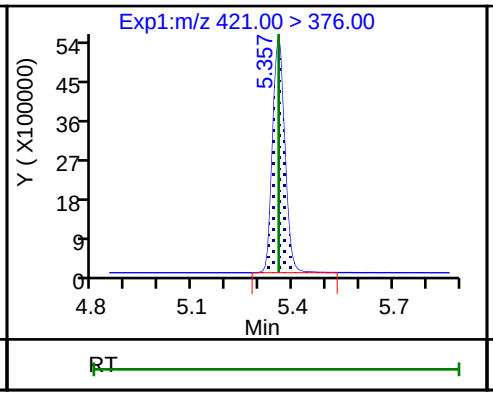
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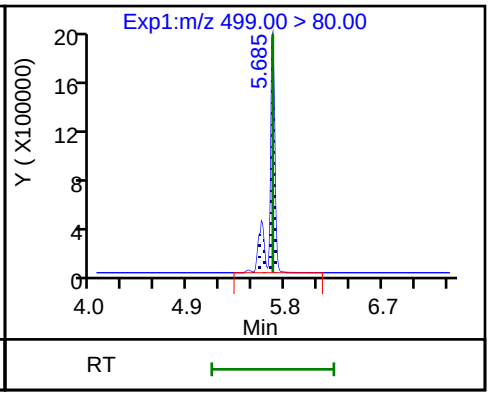
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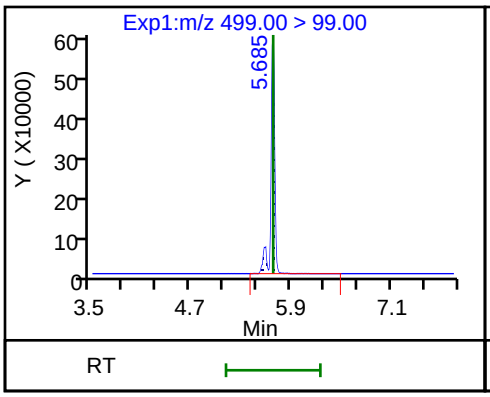
D 22 13C8 PFOA



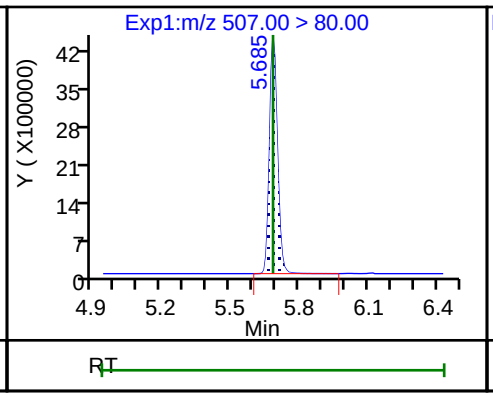
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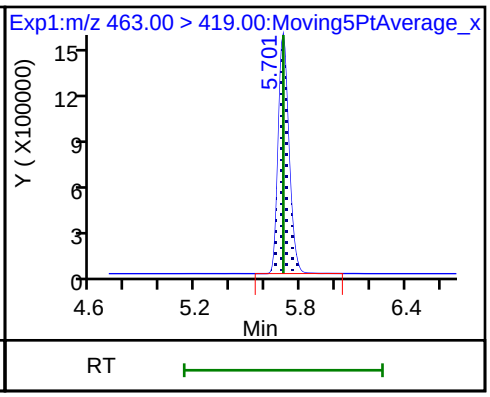
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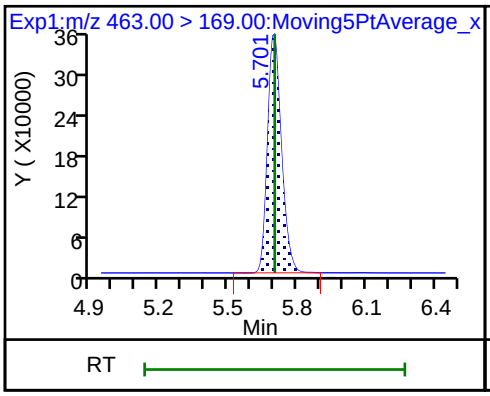
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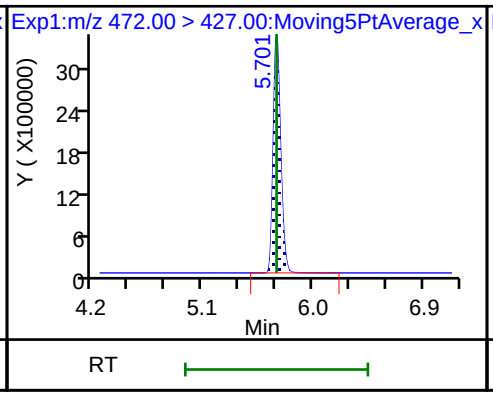
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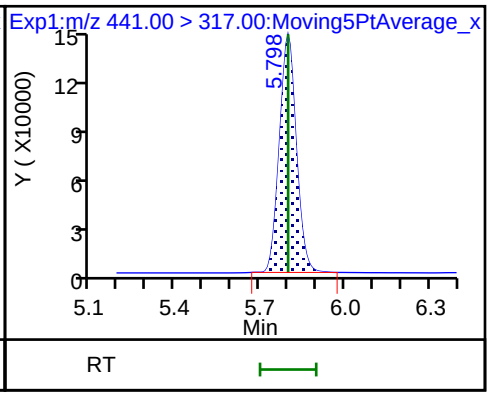
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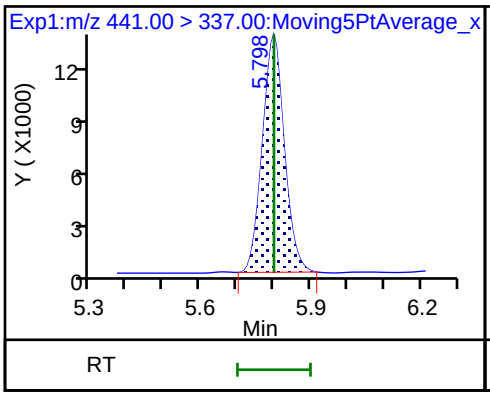
D 27 13C9 PFNA



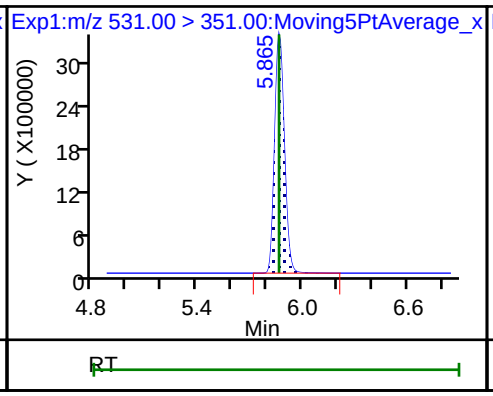
66 7:3 FTCA



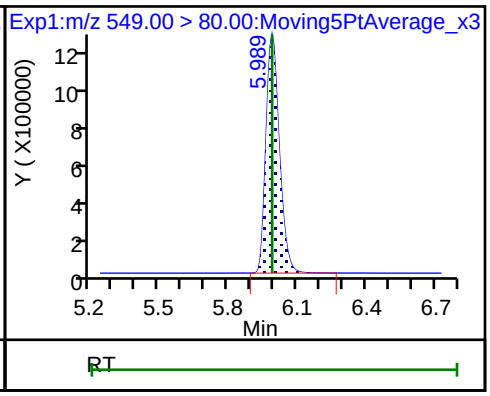
66 7:3 FTCA



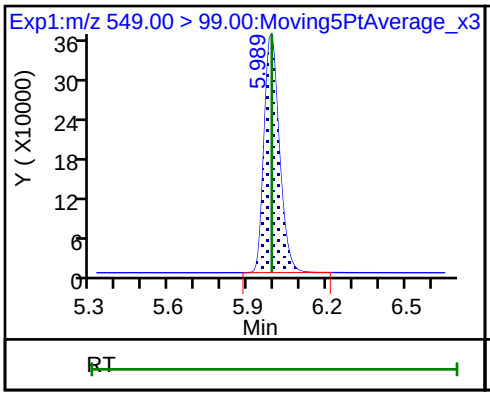
28 9ClFOS



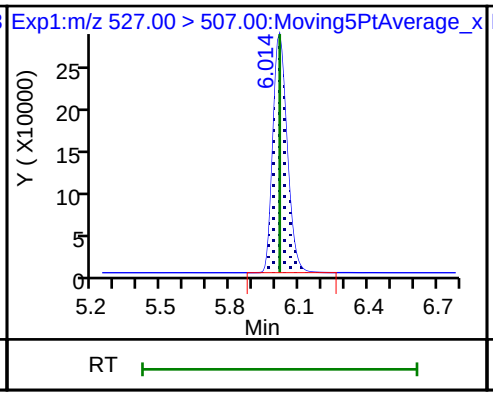
29 Perfluorononanesulfonic acid



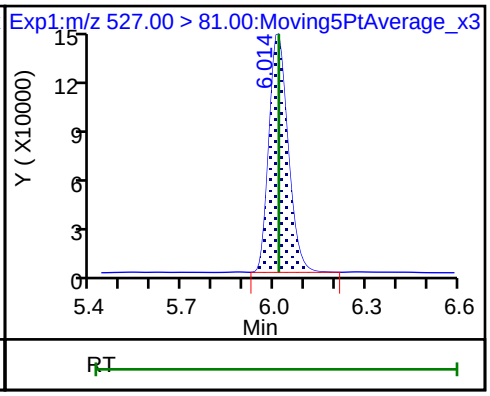
29 Perfluorononanesulfonic acid



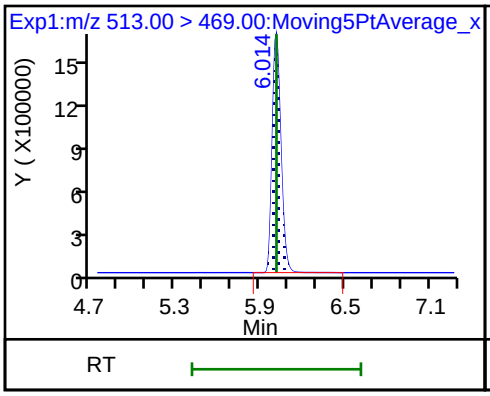
33 8:2 FTS



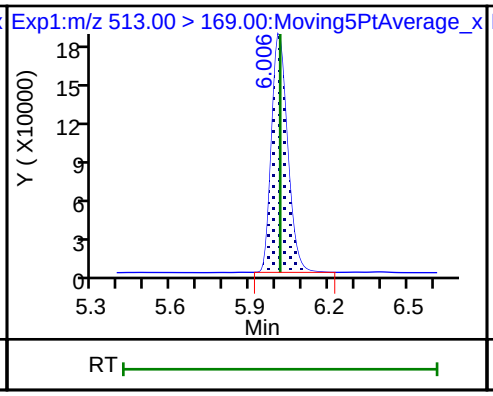
33 8:2 FTS



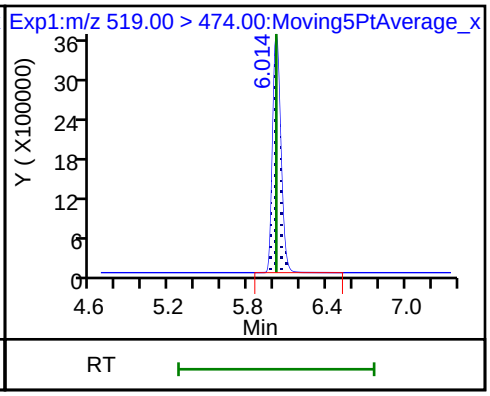
30 Perfluorodecanoic acid



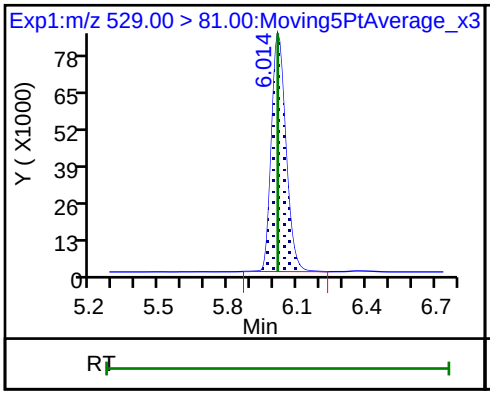
30 Perfluorodecanoic acid



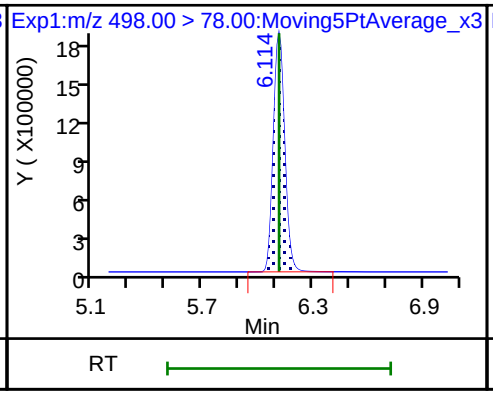
D 32 13C6 PFDA



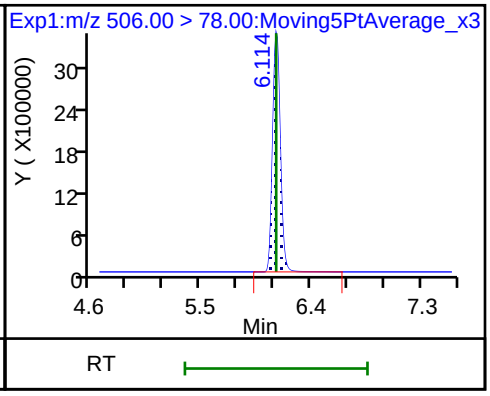
D 31 M2-8:2 FTS



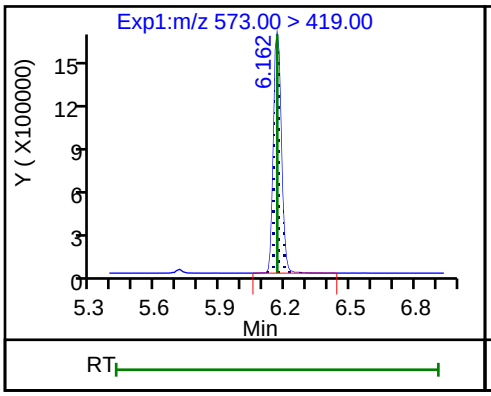
34 Perfluorooctanesulfonamide



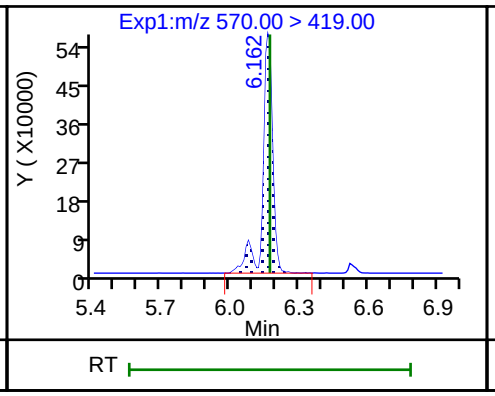
D 35 13C8 FOSA



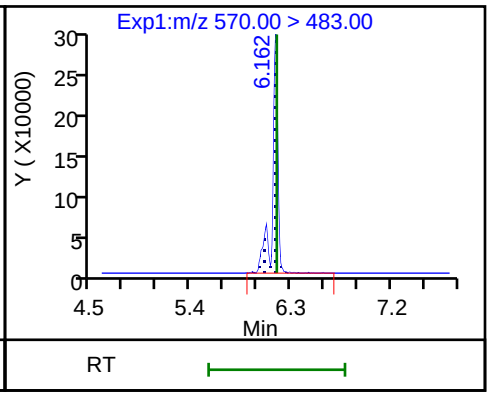
D 37 d3-NMeFOSAA



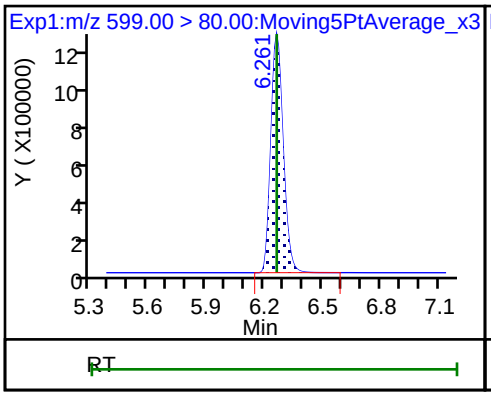
36 NMeFOSAA



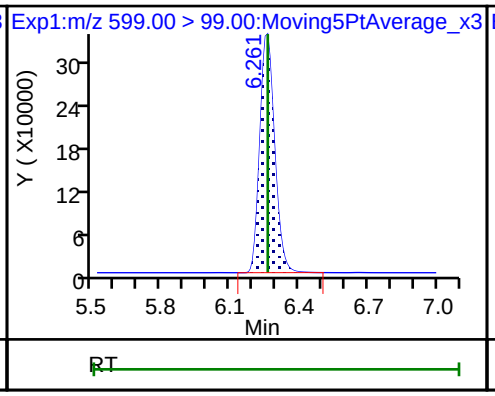
36 NMeFOSAA



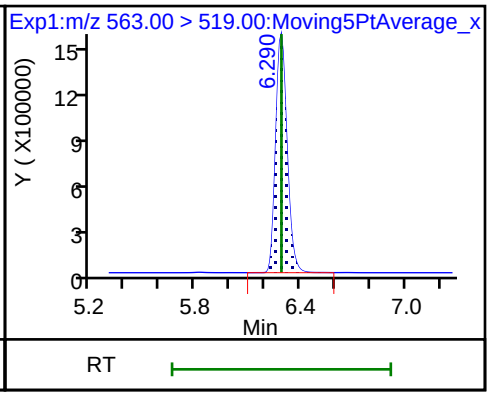
38 Perfluorodecanesulfonic acid



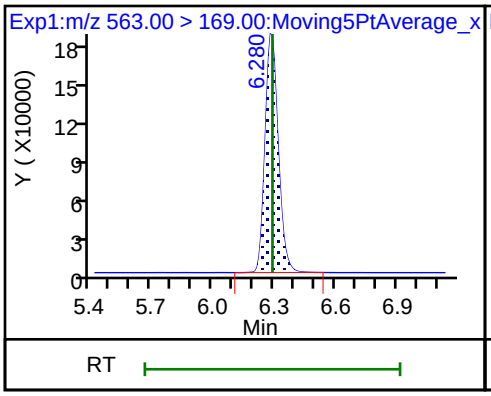
38 Perfluorodecanesulfonic acid



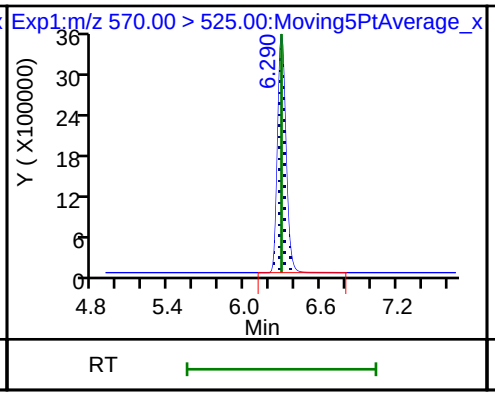
39 Perfluoroundecanoic acid



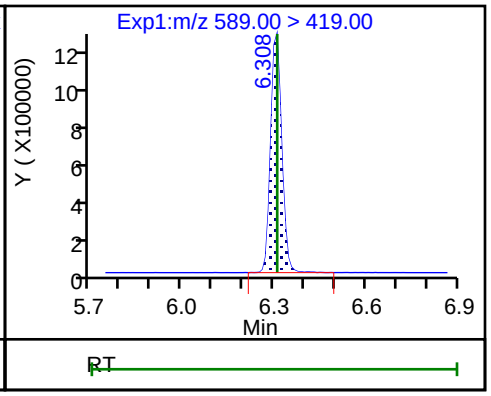
39 Perfluoroundecanoic acid



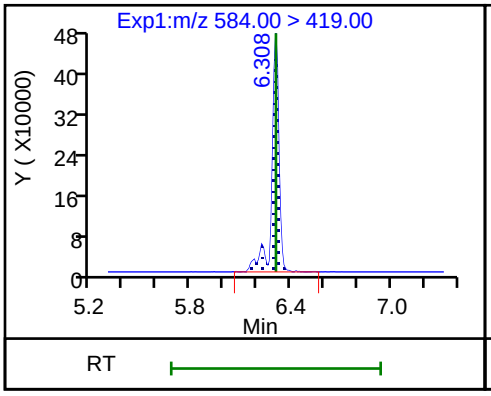
D 40 13C7 PFUnA



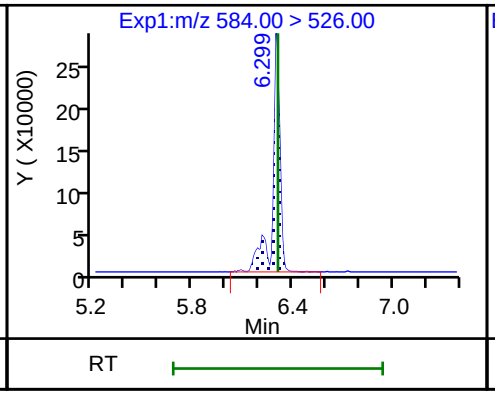
D 41 d5-NEtFOSAA



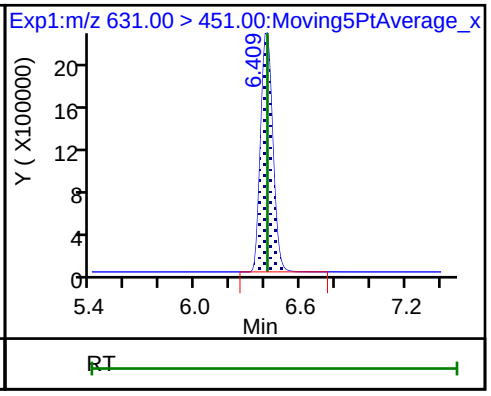
42 NEtFOSAA



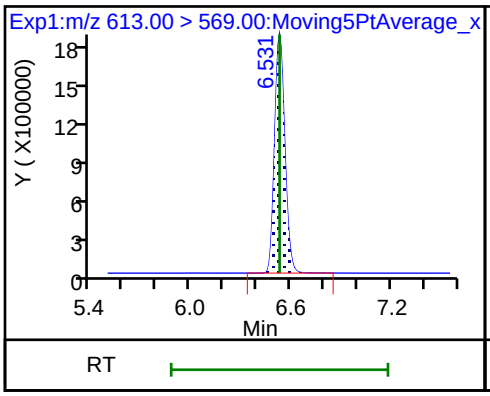
42 NEtFOSAA



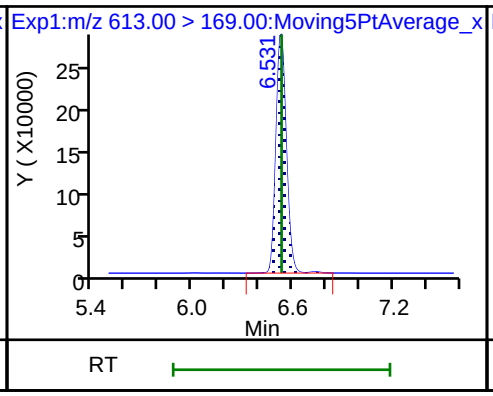
43 11ClFOS



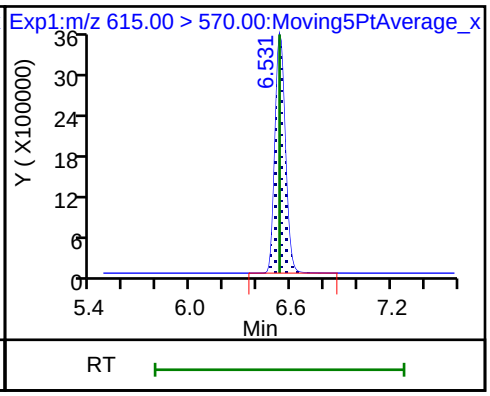
46 Perfluorododecanoic acid



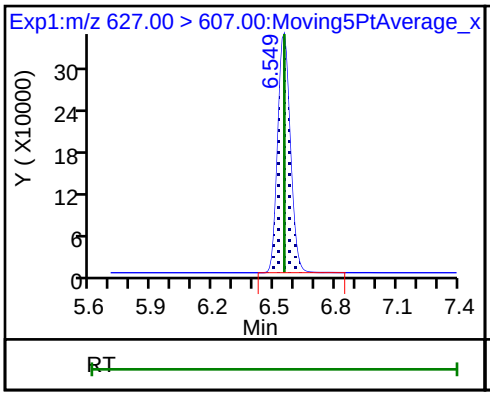
46 Perfluorododecanoic acid



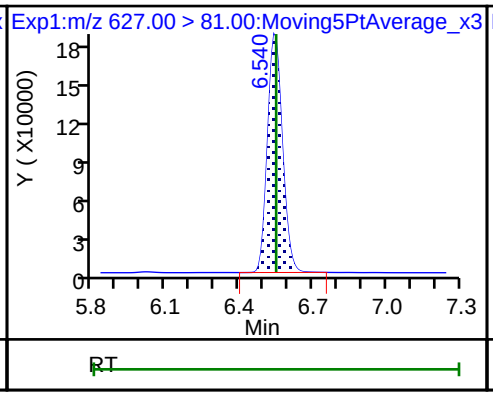
D 45 13C2-PFDoDA



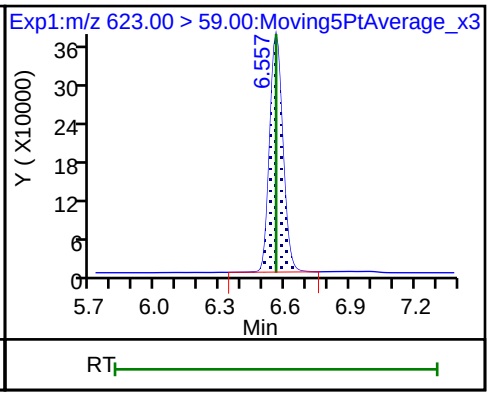
48 10:2 FTS



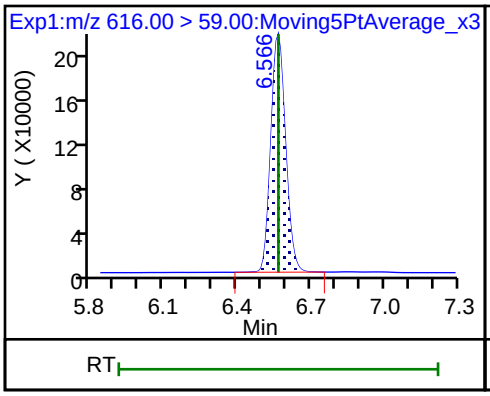
48 10:2 FTS



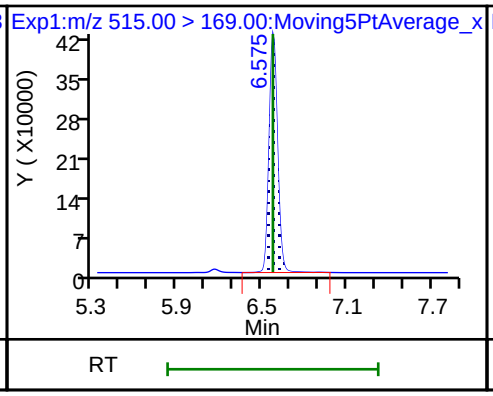
D 44 d7-N-MeFOSE-M



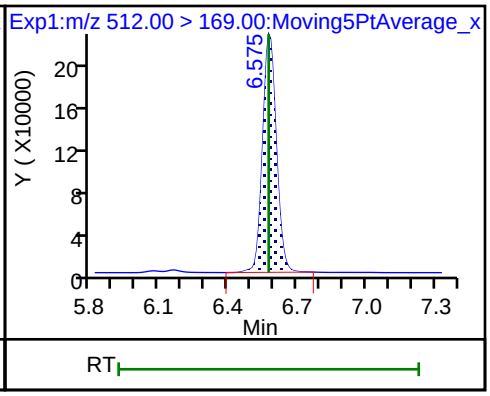
47 N-MeFOSE-M



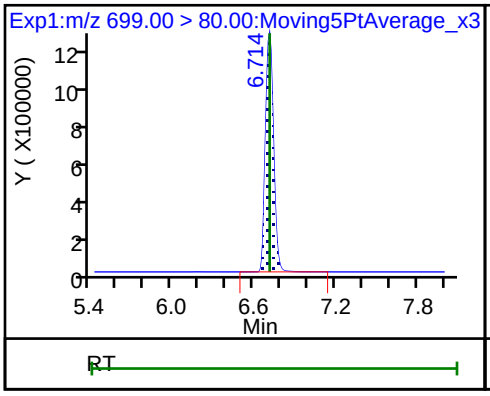
D 49 d3-NMePFOSA



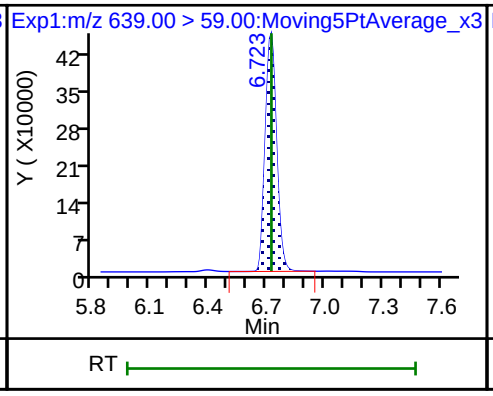
50 NMeFOSA



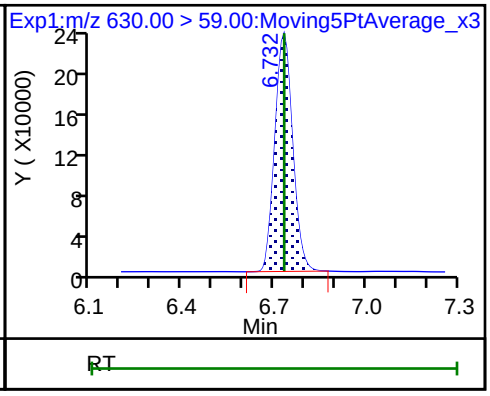
53 PFDoS



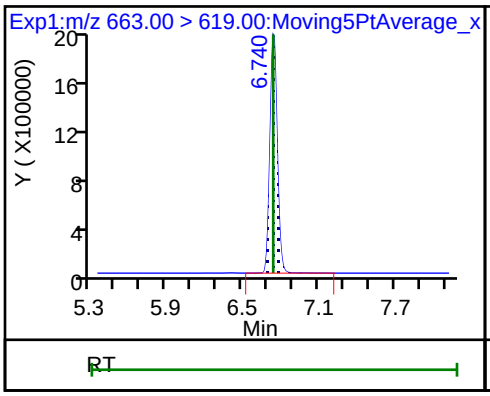
D 51 d9-N-EtFOSE-M



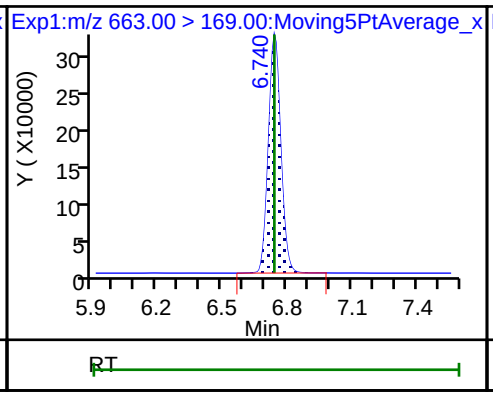
52 N-EtFOSE-M



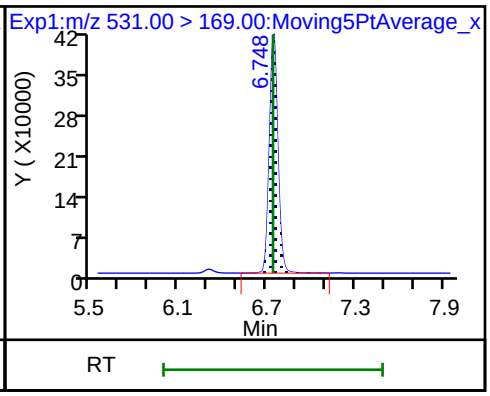
56 Perfluorotridecanoic acid



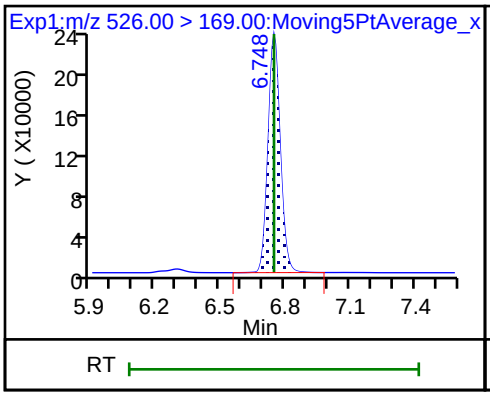
56 Perfluorotridecanoic acid



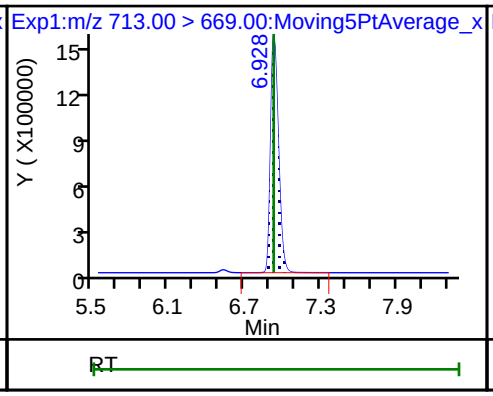
D 54 d5-NEtPFOSA



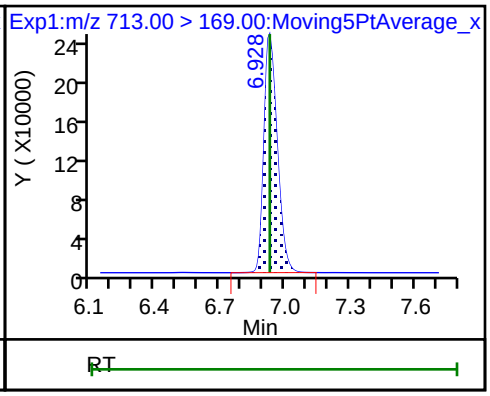
55 N-EtFOSA-M



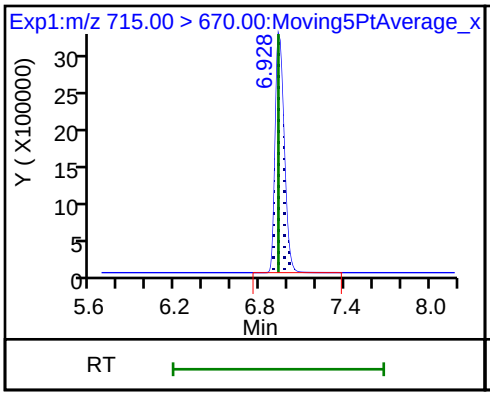
57 Perfluorotetradecanoic acid



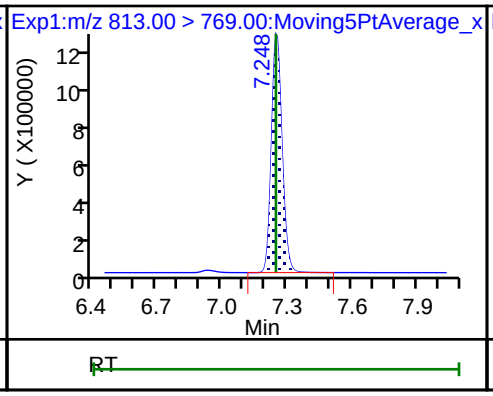
57 Perfluorotetradecanoic acid



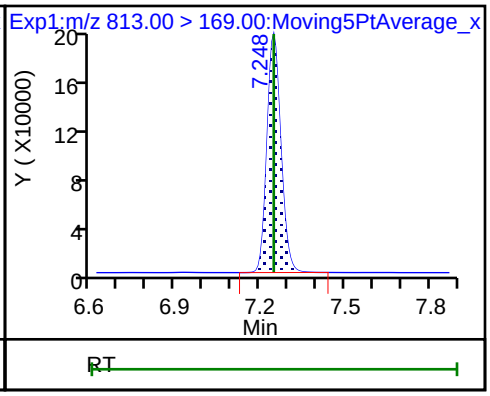
D 58 13C2 PFTeDA



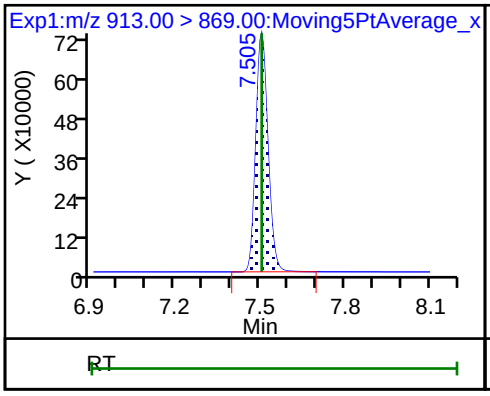
59 Perfluorohexadecanoic acid



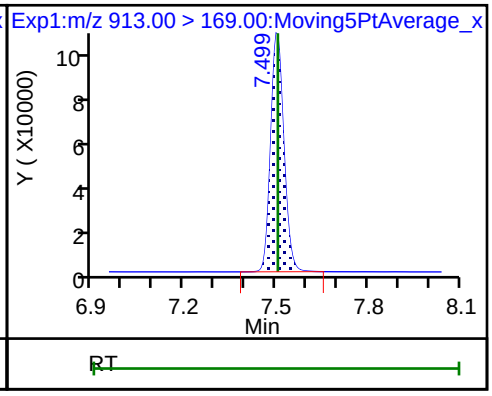
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 410-241437/3-A

Matrix: Water Lab File ID: 22APR07-66.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 250(mL) Date Analyzed: 04/07/2022 18:10

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	28.2		2.0	1.0	0.50
375-85-9	Perfluoroheptanoic acid	27.1		2.0	1.0	0.50
335-67-1	Perfluorooctanoic acid	28.1		2.0	1.0	0.50
375-95-1	Perfluorononanoic acid	27.5		2.0	1.0	0.50
335-76-2	Perfluorodecanoic acid	28.1		2.0	1.0	0.50
72629-94-8	Perfluorotridecanoic acid	26.7		2.0	1.0	0.50
376-06-7	Perfluorotetradecanoic acid	26.4		2.0	1.0	0.50
375-73-5	Perfluorobutanesulfonic acid	24.9		2.0	1.0	0.50
355-46-4	Perfluorohexanesulfonic acid	25.0		2.0	1.0	0.50
1763-23-1	Perfluorooctanesulfonic acid	25.2		2.0	1.0	0.50
2991-50-6	NEtFOSAA	24.4		3.0	1.0	0.50
2355-31-9	NMeFOSAA	24.5		2.0	1.2	0.60
2706-91-4	Perfluoropentanesulfonic acid	25.5		2.0	1.0	0.50
375-92-8	Perfluoroheptanesulfonic acid	24.3		2.0	1.0	0.50
68259-12-1	Perfluorononanesulfonic acid	25.0		2.0	1.0	0.50
335-77-3	Perfluorodecanesulfonic acid	24.3		2.0	1.0	0.50
754-91-6	Perfluorooctanesulfonamide	27.2		2.0	1.0	0.50
375-22-4	Perfluorobutanoic acid	27.0		5.0	4.0	2.0
2706-90-3	Perfluoropentanoic acid	23.2		2.0	1.0	0.50
2058-94-8	Perfluoroundecanoic acid	28.5		2.0	1.0	0.50
307-55-1	Perfluorododecanoic acid	27.6		2.0	1.0	0.50
27619-97-2	6:2 Fluorotelomer sulfonic acid	23.1		5.0	4.0	2.0
39108-34-4	8:2 Fluorotelomer sulfonic acid	23.8		3.0	2.0	1.0
757124-72-4	4:2 Fluorotelomer sulfonic acid	23.0		2.0	1.0	0.50

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 410-241437/3-A

Matrix: Water Lab File ID: 22APR07-66.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 250(mL) Date Analyzed: 04/07/2022 18:10

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	123		50-150
STL02280	M2-8:2 FTS	111		50-150
STL02279	M2-6:2 FTS	115		50-150
STL02577	13C5 PFHxA	110		50-150
STL01892	13C4 PFHpA	106		50-150
STL01052	13C8 PFOA	103		50-150
STL02578	13C9 PFNA	102		50-150
STL02579	13C6 PFDA	108		50-150
STL02580	13C7 PFUnA	106		50-150
STL02703	13C2-PFDoDA	101		50-150
STL02116	13C2 PFTeDA	93		50-150
STL02337	13C3 PFBS	105		50-150
STL02581	13C3 PFHxS	106		50-150
STL01054	13C8 PFOS	107		50-150
STL02118	d3-NMeFOSAA	109		50-150
STL02117	d5-NEtFOSAA	111		50-150
STL01056	13C8 FOSA	95		50-150
STL00992	13C4 PFBA	110		50-150
STL01893	13C5 PFPeA	106		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-66.d
Lims ID: LCS 410-241437/3-A
Client ID:
Sample Type: LCS
Inject. Date: 07-Apr-2022 18:10:48 ALS Bottle#: 30 Worklist Smp#: 35
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 410-241437/3-A
Misc. Info.: Plate: 1 Rack: 1 410-0054325-035
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 20:33:31 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: matthewsl Date: 07-Apr-2022 19:54:26
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-61.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.656	3.649	0.007	1.000	4943538	6.74		105	7891	
D 2 13C4 PFBA										
217.00 > 172.00	3.656	3.649	0.007		8918124	11.0		110	142761	
63 PFECA F										
229.00 > 85.00	3.890	3.881	0.009	0.931	4409778	7.40		116	12516	
67 3:3 FTCA										
241.00 > 177.00	4.172	4.161	0.011	0.998	305169	6.88	Target=1.37	108	13674	
241.00 > 117.00	4.172	4.161	0.011	0.998	234120		1.30(0.68-2.05)		6858	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.179	4.168	0.011	1.000	4463285	5.79		90.5	22406	
D 4 13C5 PFPeA										
268.00 > 223.00	4.179	4.168	0.011		7359833	10.6		106	68831	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.231	4.220	0.011	1.000	5800487	6.23	Target=2.91	110	6761	
299.00 > 99.00	4.231	4.220	0.011	1.000	1940107		2.99(1.46-4.37)		6327	
D 6 13C3 PFBS										
302.00 > 80.00	4.231	4.227	0.004		9042081	9.80		105	475394	
64 PFECA A										
279.00 > 85.00	4.301	4.289	0.012	1.029	4055231	6.86		107	75067	
65 PES										
315.00 > 135.00	4.388	4.384	0.004	0.956	17050275	5.59	Target=14.36	98.2	271907	
315.00 > 83.00	4.388	4.384	0.004	0.956	1109107		15.37(7.18-21.54)		1356	
68 PFECA B										
295.00 > 201.00	4.510	4.504	0.006	0.983	1659426	6.46		101	44905	
7 4:2 FTS										
327.00 > 307.00	4.549	4.534	0.015	1.000	1181778	5.76	Target=1.81	96.3	64664	
327.00 > 81.00	4.549	4.534	0.015	1.000	642207		1.84(0.91-2.72)		9165	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.549	4.544	0.005		499794	11.5		123	15571	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.588	4.573	0.015	1.000	5298622	7.04	Target=14.20	110	72954	
313.00 > 119.00	4.588	4.573	0.015	1.000	359548		14.74(7.10-21.30)		9861	
D 9 13C5 PFHxA										
318.00 > 273.00	4.588	4.583	0.005		8817644	11.0		110	216747	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.608	4.603	0.005	1.089	5549552	6.37	Target=3.15	106	318032	
349.00 > 99.00	4.608	4.603	0.005	1.089	1773556		3.13(1.58-4.73)		80597	
12 HFPO-DA										
329.00 > 285.00	4.717	4.706	0.011	1.000	1406503	5.73		89.6	46775	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.717	4.706	0.011		1001149	11.6		116	67660	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.976	4.971	0.005	1.000	5783518	6.78	Target=3.24	106	37519	
363.00 > 169.00	4.976	4.971	0.005	1.000	1857724		3.11(1.62-4.87)		38005	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.976	4.971	0.005	0.998	5344908	6.24	Target=3.16	107	1782096	
399.00 > 99.00	4.976	4.971	0.005	0.998	1727859		3.09(1.58-4.73)		4211	
D 17 13C4 PFHpA										
367.00 > 322.00	4.976	4.971	0.005		8905523	10.6		106	201946	
D 16 13C3 PFHxS										
402.00 > 80.00	4.986	4.971	0.015		8308385	10.1		106	1641913	
18 DONA										
377.00 > 251.00	5.028	5.015	0.013	1.010	9873374	6.84		113	115775	
62 5:3 FTCA										
341.00 > 237.00	5.051	5.038	0.013	1.101	1125960	6.47	Target=3.17	101	13782	
341.00 > 217.00	5.051	5.038	0.013	1.101	353875		3.18(1.58-4.75)		9042	
19 6:2 FTS										
427.00 > 407.00	5.328	5.317	0.011	1.000	1013354	5.77	Target=1.74	95.1	69510	
427.00 > 81.00	5.328	5.317	0.011	1.000	607871		1.67(0.87-2.61)		8313	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.328	5.324	0.004		316979	10.9		115	12478	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.335	5.330	0.005	1.070	5169549	6.08	Target=3.31	99.8	240976	
449.00 > 99.00	5.335	5.330	0.005	1.070	1575790		3.28(1.65-4.96)		110375	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.348	5.337	0.011	0.999	5964301	7.03	Target=2.25	110	271502	
413.00 > 169.00	5.348	5.337	0.011	0.999	2497376		2.39(1.13-3.38)		1038797	
D 22 13C8 PFOA										
421.00 > 376.00	5.354	5.337	0.017		9404163	10.3		103	959198	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.681	5.669	0.011	1.000	5591638	6.30	Target=3.77	106	1781104	
499.00 > 99.00	5.673	5.669	0.004	0.999	1495982		3.74(1.89-5.66)		2959	
D 25 13C8 PFOS										
507.00 > 80.00	5.681	5.669	0.011		7627331	10.2		107	275566	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.688	5.684	0.004	0.999	5930900	6.87	Target=4.65	107	89186	
463.00 > 169.00	5.688	5.684	0.004	0.999	1350026		4.39(2.33-6.98)		66041	
D 27 13C9 PFNA										
472.00 > 427.00	5.696	5.684	0.012		9583277	10.2		102	381358	
66 7:3 FTCA										
441.00 > 317.00	5.795	5.782	0.013	1.263	530782	5.74	Target=10.04	89.7	13752	
441.00 > 337.00	5.795	5.782	0.013	1.263	52929		10.03(5.02-15.05)		2027	
28 9ClFOS										
531.00 > 351.00	5.854	5.849	0.005	1.031	12306670	6.57		110	645511	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.978	5.972	0.006	1.052	4672413	6.25	Target=3.33	102	393466	
549.00 > 99.00	5.978	5.972	0.006	1.052	1314034		3.56(1.67-5.00)		112585	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.003	5.997	0.006	1.000	6635881	7.03	Target=8.88	110	89961	
513.00 > 169.00	6.003	5.997	0.006	1.000	709678		9.35(4.44-13.32)		17249	
33 8:2 FTS										
527.00 > 507.00	6.003	5.997	0.006	0.999	1254301	5.94	Target=1.93	96.8	74787	
527.00 > 81.00	6.003	5.997	0.006	0.999	678102		1.85(0.96-2.89)		10836	
D 32 13C6 PFDA										
519.00 > 474.00	6.003	5.997	0.006		10904698	10.8		108	519297	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.011	5.997	0.014		257709	10.6		111	10065	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.110	6.095	0.015	1.000	8304977	6.81		106	324927	
D 35 13C8 FOSA										
506.00 > 78.00	6.110	6.104	0.006		11775208	9.48		94.8	306413	
36 NMeFOSAA										
570.00 > 419.00	6.152	6.146	0.006	1.000	1684763	6.13	Target=1.74	95.8	63616	
570.00 > 483.00	6.152	6.146	0.006	1.000	932227		1.81(0.87-2.61)		1649	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.152	6.146	0.006		3148028	10.9		109	101822	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.257	6.242	0.015	1.102	5026301	6.07	Target=3.59	98.4	285269	
599.00 > 99.00	6.248	6.242	0.006	1.100	1394808		3.60(1.80-5.39)		63867	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.276	6.270	0.006	0.999	6381090	7.11	Target=8.19	111	37451	
563.00 > 169.00	6.276	6.270	0.006	0.999	730040		8.74(4.09-12.28)		32602	
D 40 13C7 PFUnA										
570.00 > 525.00	6.285	6.270	0.015		10930401	10.6		106	242661	
42 NEtFOSAA										
584.00 > 419.00	6.304	6.289	0.015	1.001	1413409	6.10	Target=1.71	95.3	513854	
584.00 > 526.00	6.295	6.289	0.006	1.000	841789		1.68(0.86-2.57)		1097	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.295	6.289	0.006		2465530	11.1		111	347117	
43 11ClFOS										
631.00 > 451.00	6.393	6.387	0.006	1.125	10456510	6.32		106	445324	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										
613.00 > 569.00	6.517	6.512	0.005	0.999	6546095	6.89	Target=5.85	108	70411	
613.00 > 169.00	6.517	6.512	0.005	0.999	1167081		5.61(2.92-8.77)		46007	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.526	6.512	0.014		10790549	10.1		101	232777	
48 10:2 FTS										
627.00 > 607.00	6.535	6.530	0.005	1.087	1353234	5.65	Target=1.84	91.6	80134	
627.00 > 81.00	6.535	6.530	0.005	1.087	806648		1.68(0.92-2.76)		27486	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.553	6.539	0.014		1056590	9.10		91.0	6387	
47 N-MeFOSE-M										
616.00 > 59.00	6.562	6.548	0.014	1.001	737515	6.65		104	7709	
50 NMeFOSA										
512.00 > 169.00	6.570	6.566	0.004	1.000	704418	6.60		103	5906	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.570	6.566	0.004		1030545	6.57		65.7	6242	
53 PFDoS										
699.00 > 80.00	6.702	6.696	0.006	1.180	4638303	5.90		95.3	228373	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.711	6.705	0.006		1133173	8.12		81.2	4716	
52 N-EtFOSE-M										
630.00 > 59.00	6.728	6.714	0.014	1.003	735750	6.87		107	8196	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.736	6.724	0.012	1.032	6361698	6.68	Target=5.54	104	76285	
663.00 > 169.00	6.728	6.724	0.004	1.031	1135291		5.60(2.77-8.31)		70211	
55 N-EtFOSA-M										
526.00 > 169.00	6.745	6.732	0.013	1.001	610203	6.26		97.9	5102	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.736	6.732	0.004		871336	6.19		61.9	6076	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.918	6.909	0.009	0.999	5782296	6.61	Target=6.07	103	12191	
713.00 > 169.00	6.918	6.909	0.009	0.999	993303		5.82(3.04-9.11)		40280	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.925	6.916	0.009		9824177	9.26		92.6	460154	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.239	7.232	0.007	1.045	3288611	5.30	Target=6.20	82.8	13270	
813.00 > 169.00	7.239	7.232	0.007	1.045	541324		6.08(3.10-9.30)		26543	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.493	7.482	0.011	1.082	1587934	3.86	Target=7.23	60.4	25679	
913.00 > 169.00	7.488	7.482	0.006	1.081	222896		7.12(3.62-10.85)		15186	

QC Flag Legend

Processing Flags

Report Date: 07-Apr-2022 20:34:08 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-66.d

Injection Date: 07-Apr-2022 18:10:48 Instrument ID: 29347

Lims ID: LCS 410-241437/3-A

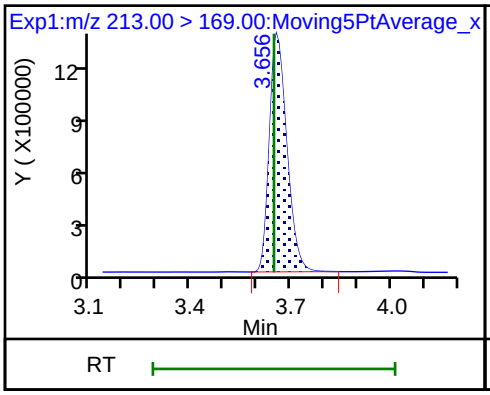
Client ID:

Operator ID: US19_USR_INS75556 ALS Bottle#: 30 Worklist Smp#: 35

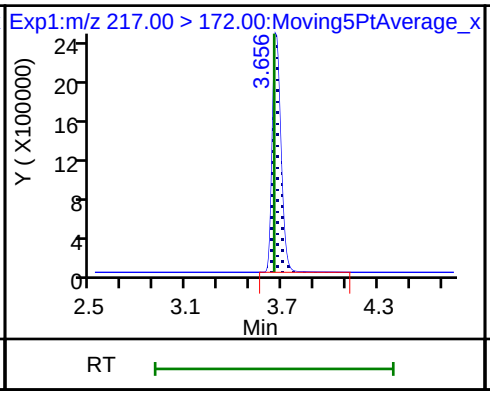
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

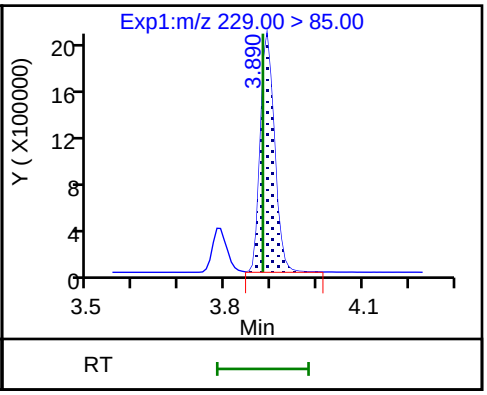
1 Perfluorobutanoic acid



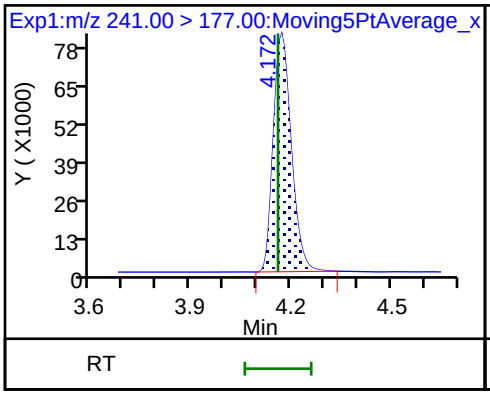
D 2 13C4 PFBA



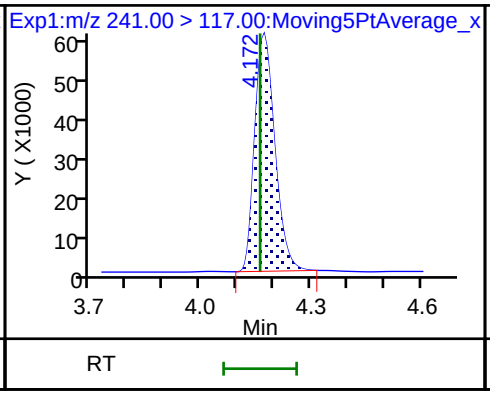
63 PFECA F



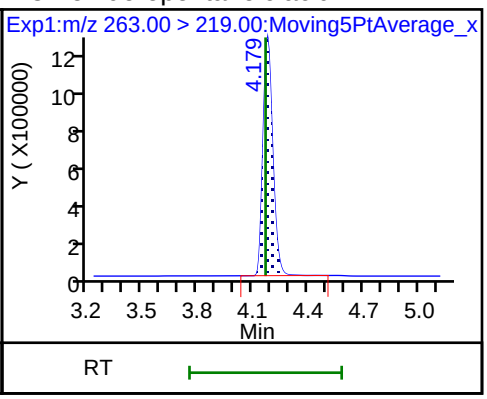
67 3:3 FTCA



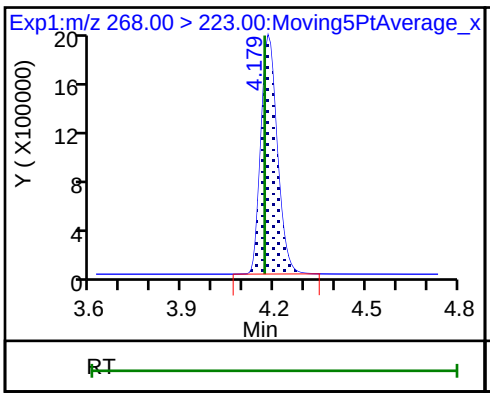
67 3:3 FTCA



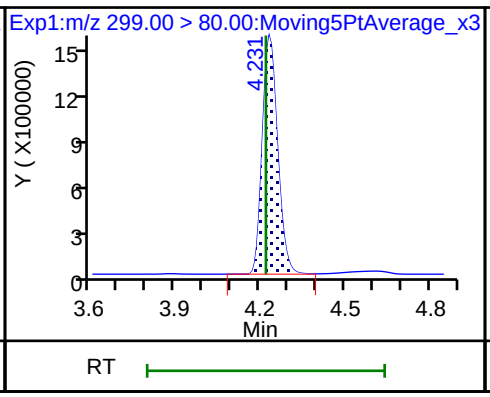
3 Perfluoropentanoic acid



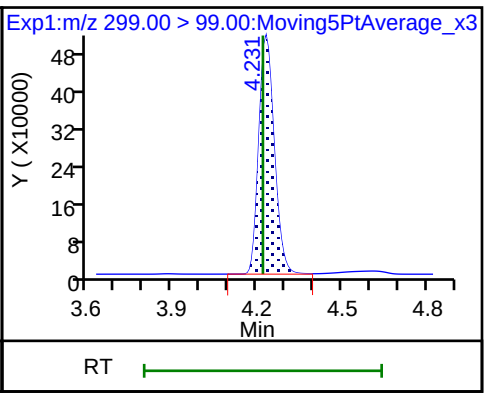
D 4 13C5 PFPeA



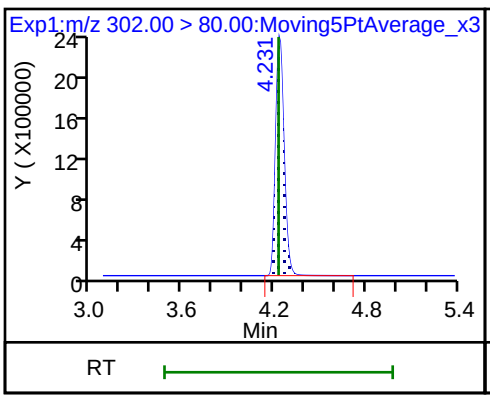
5 Perfluorobutanesulfonic acid



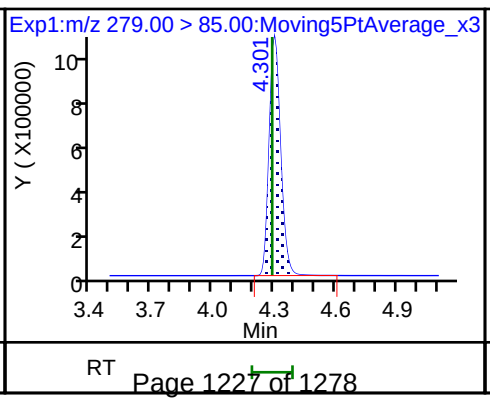
5 Perfluorobutanesulfonic acid



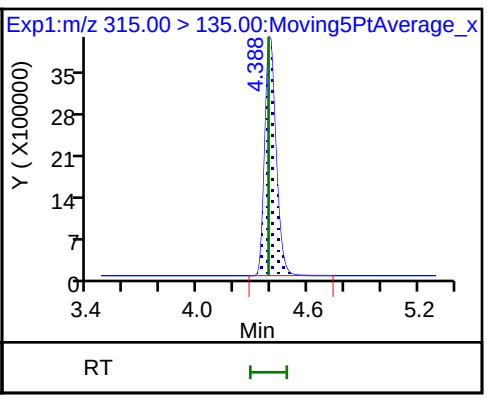
D 6 13C3 PFBS



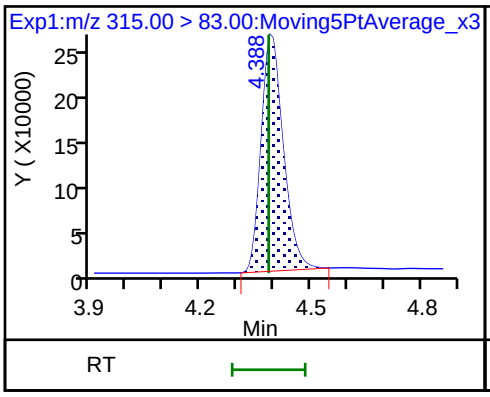
64 PFECA A



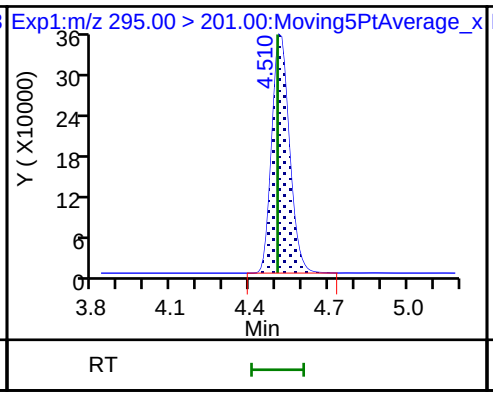
65 PES



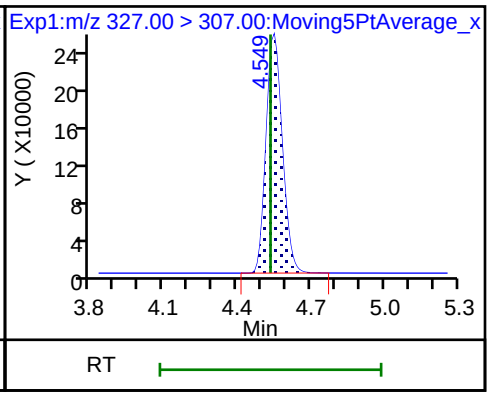
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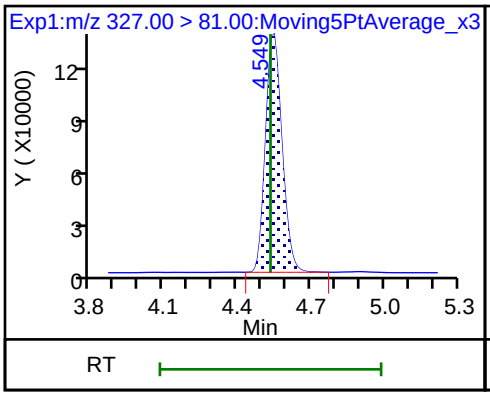
68 PFECA B



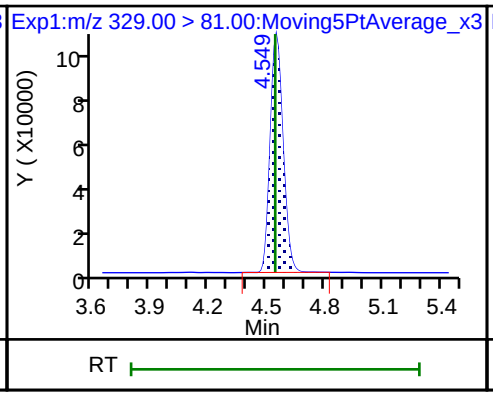
7 4:2 FTS



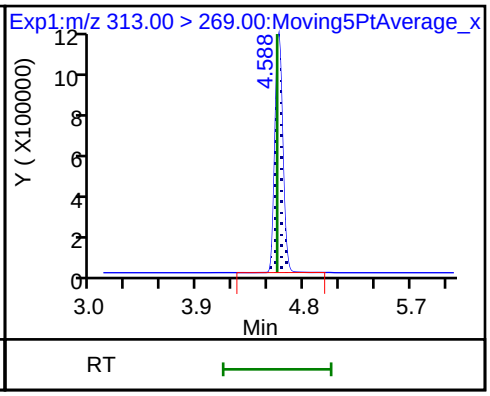
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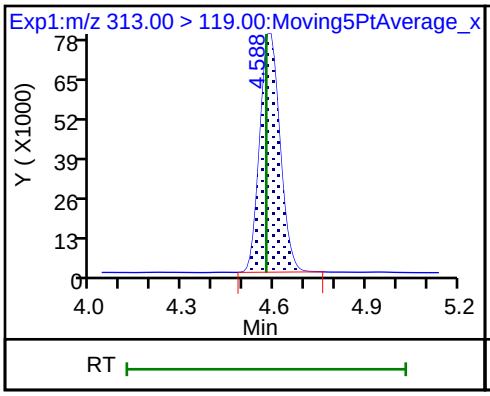
D 8 M2-4:2 FTS



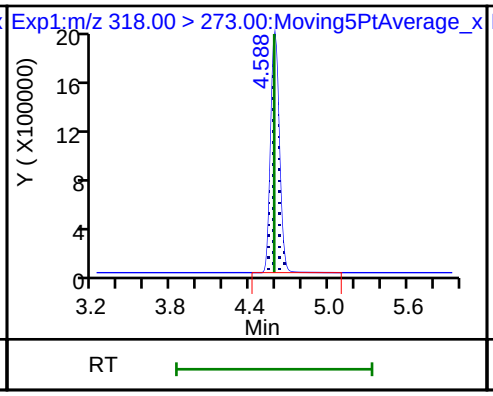
10 Perfluorohexanoic acid



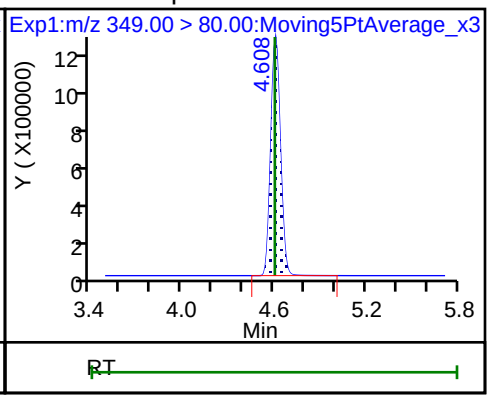
10 Perfluorohexanoic acid



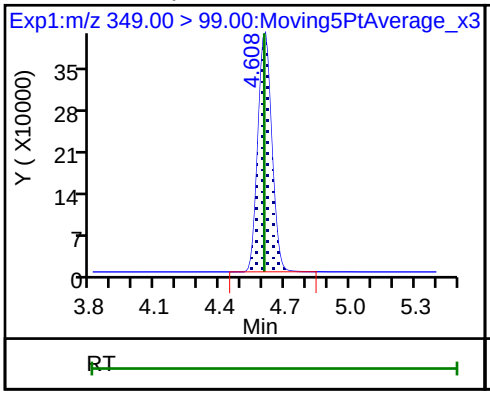
D 9 13C5 PFHxA



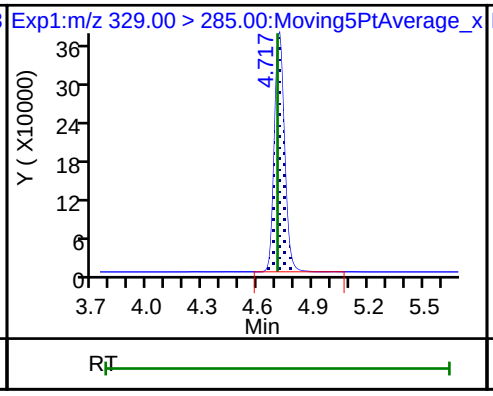
11 Perfluoropentanesulfonic acid



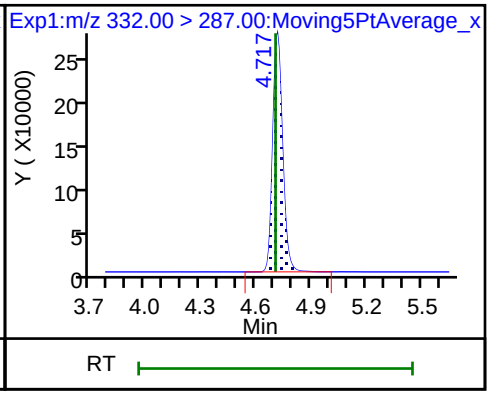
11 Perfluoropentanesulfonic acid



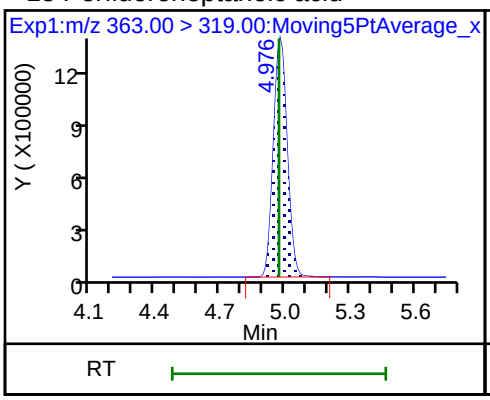
12 HFPO-DA



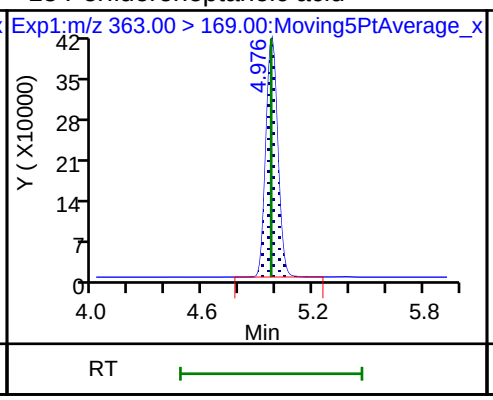
D 13 13C3 HFPO-DA



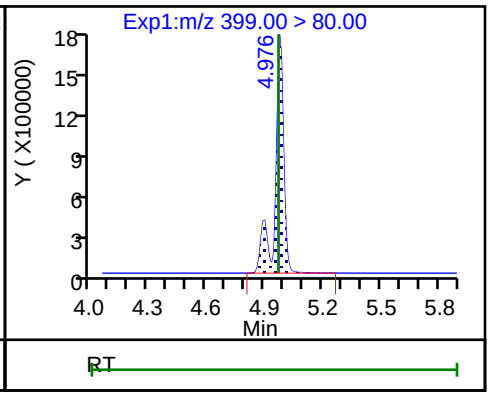
15 Perfluoroheptanoic acid



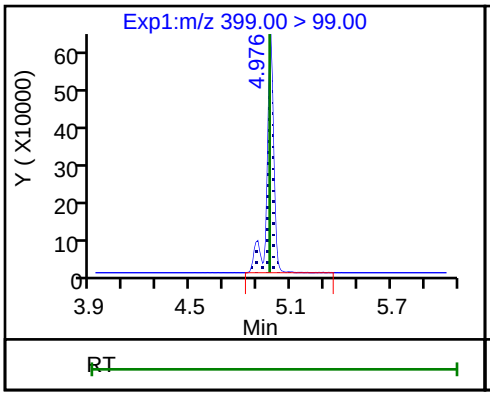
15 Perfluoroheptanoic acid



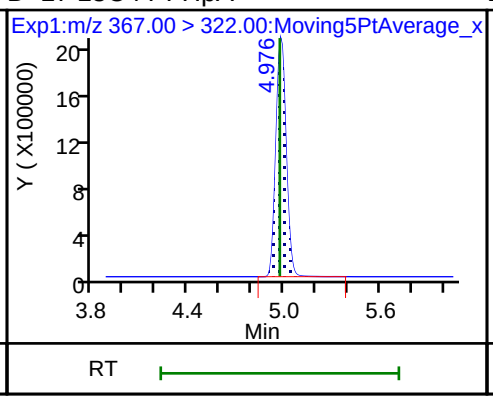
14 Perfluorohexanesulfonic acid



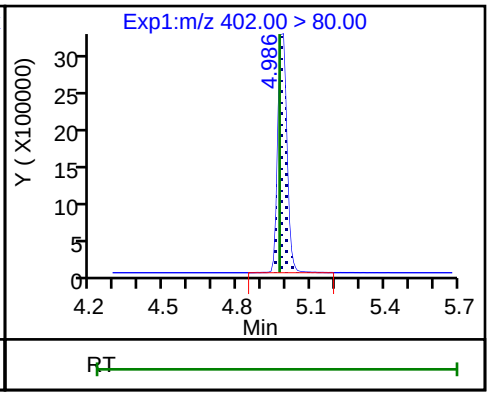
14 Perfluorohexanesulfonic acid



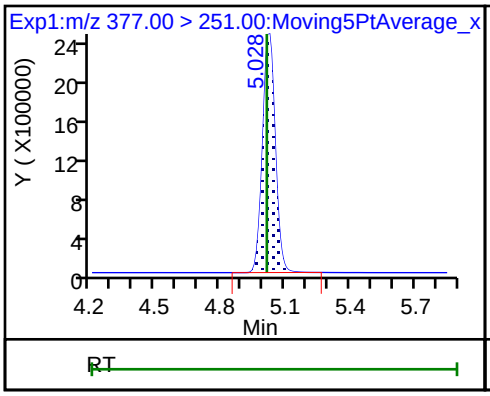
D 17 13C4 PFHpA



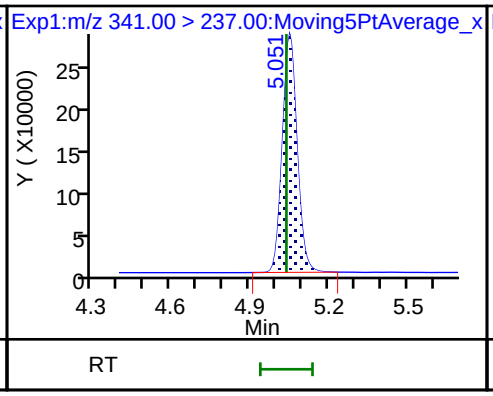
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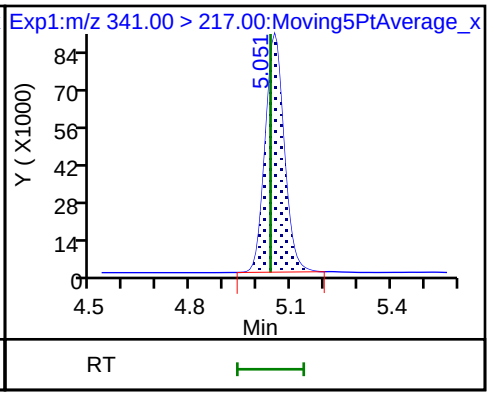
18 DONA



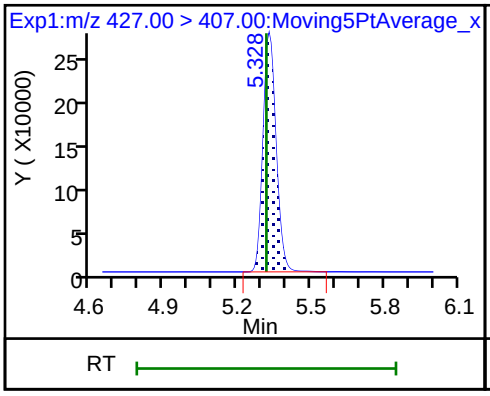
62 5:3 FTCA



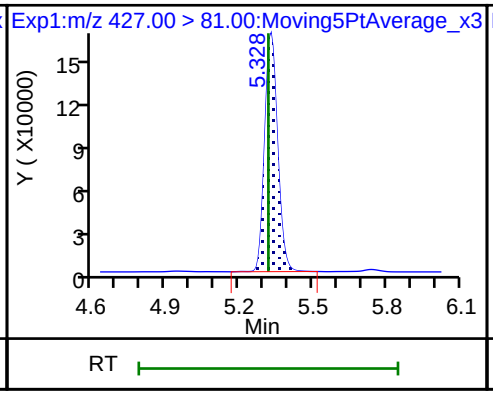
62 5:3 FTCA



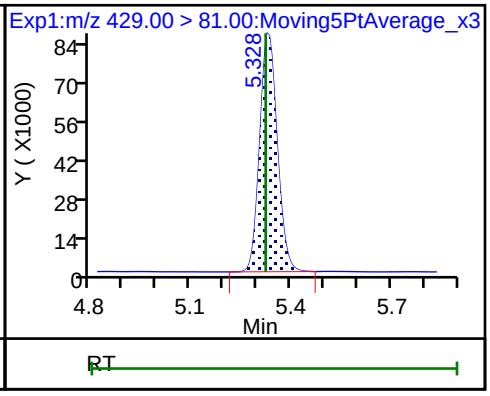
19 6:2 FTS



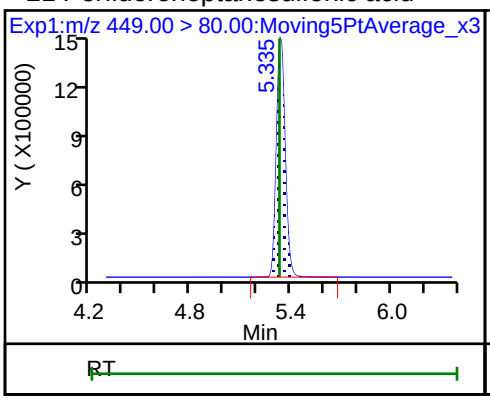
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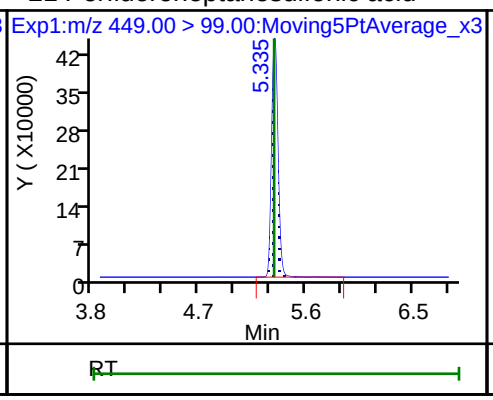
D 20 M2-6:2 FTS



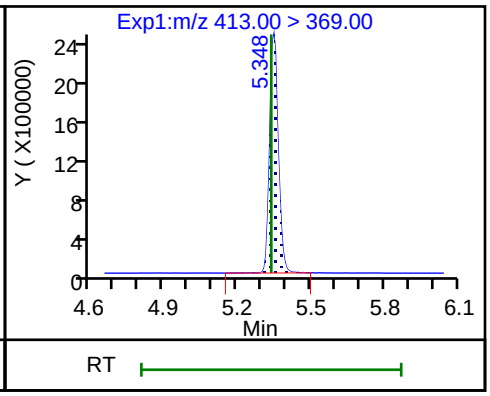
21 Perfluoroheptanesulfonic acid



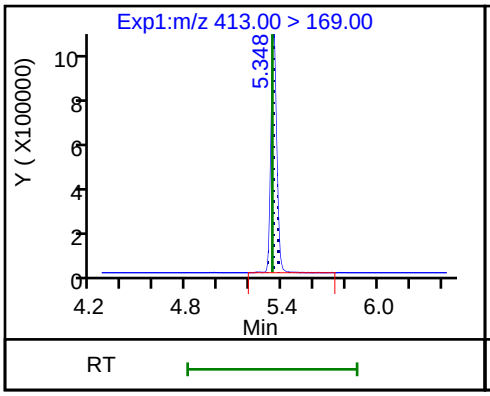
21 Perfluoroheptanesulfonic acid



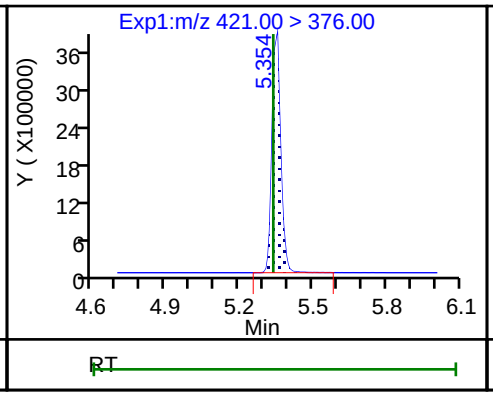
23 Perfluorooctanoic acid



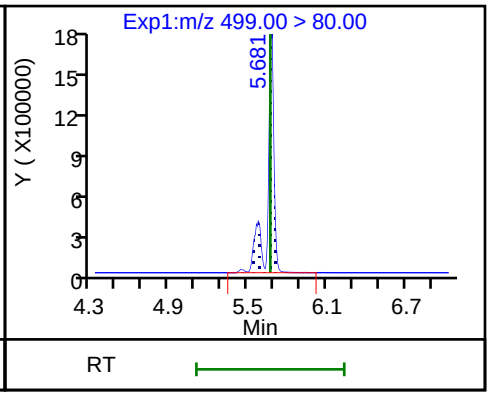
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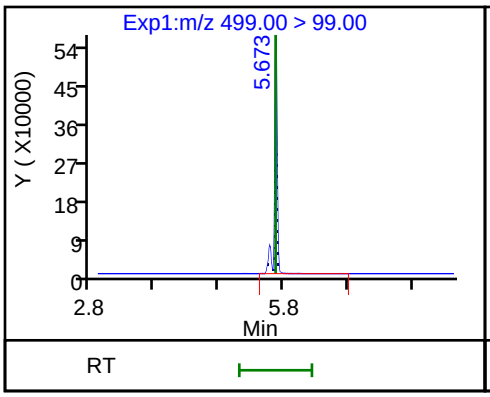
D 22 13C8 PFOA



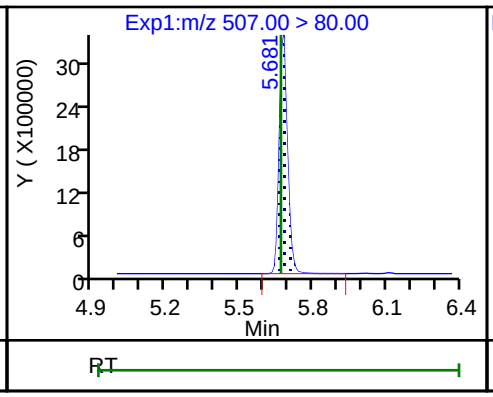
24 Perfluorooctanesulfonic acid



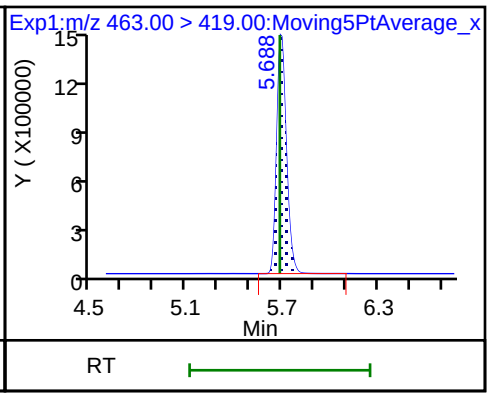
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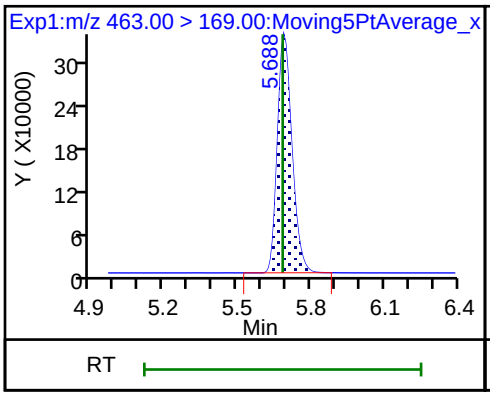
D 25 13C8 PFOS



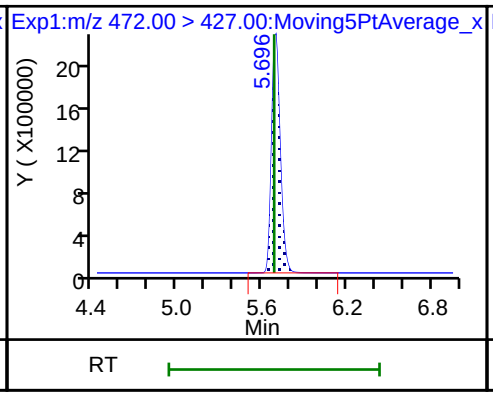
26 Perfluorononanoic acid



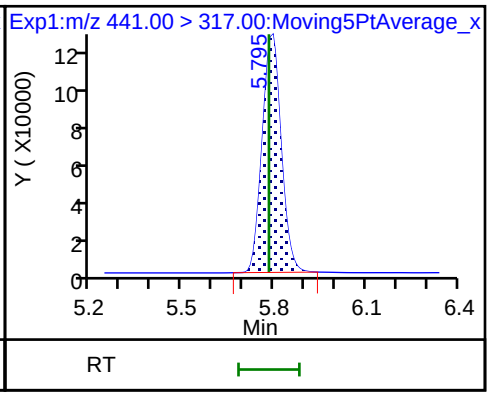
26 Perfluorononanoic acid



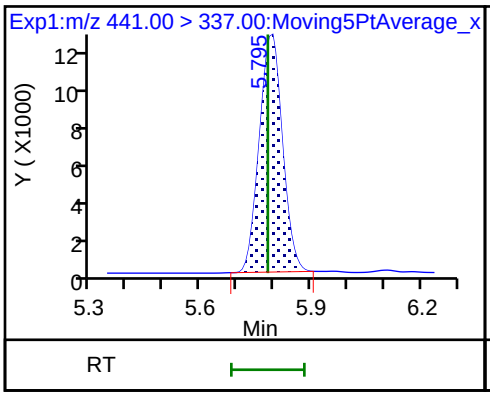
D 27 13C9 PFNA



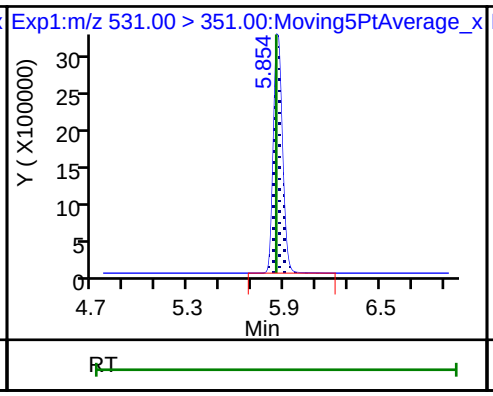
66 7:3 FTCA



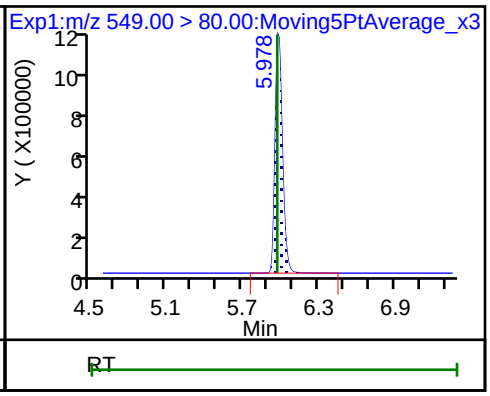
66 7:3 FTCA



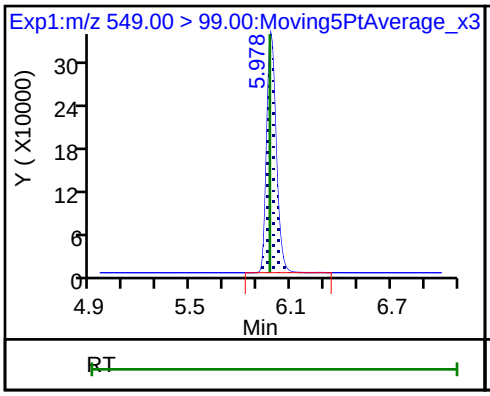
28 9ClFOS



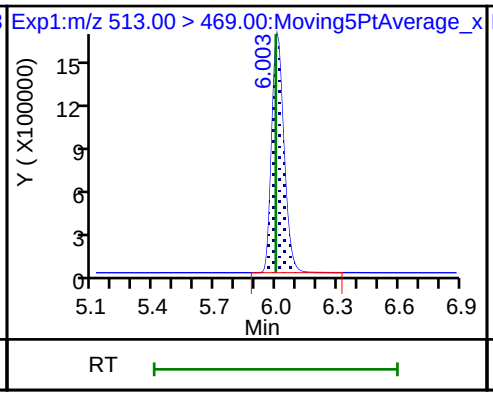
29 Perfluorononanesulfonic acid



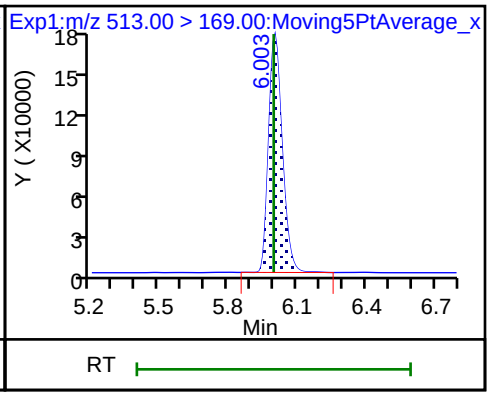
29 Perfluorononanesulfonic acid



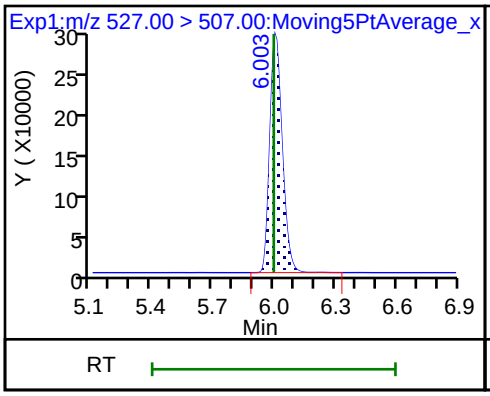
30 Perfluorodecanoic acid



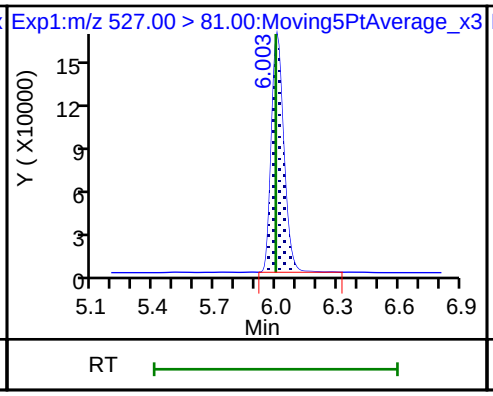
30 Perfluorodecanoic acid



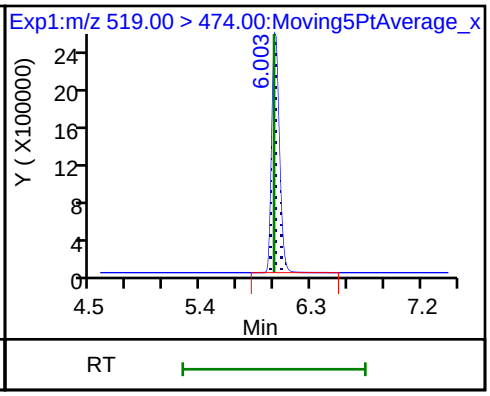
33 8:2 FTS



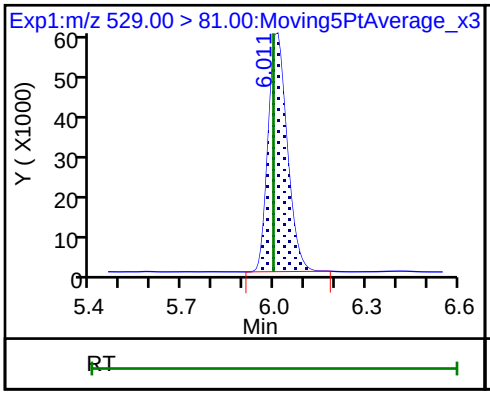
33 8:2 FTS



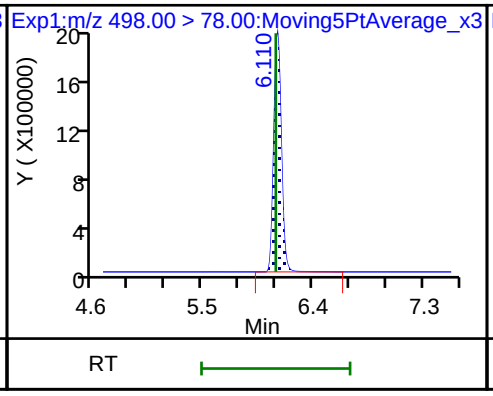
D 32 13C6 PFDA



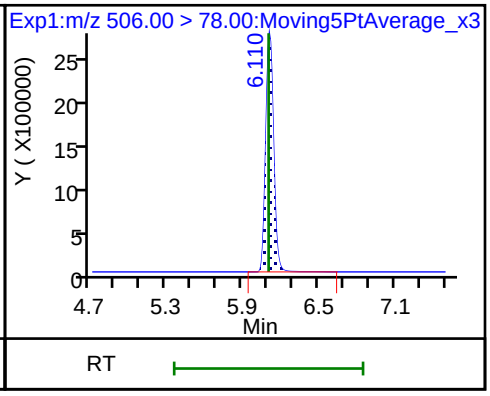
D 31 M2-8:2 FTS



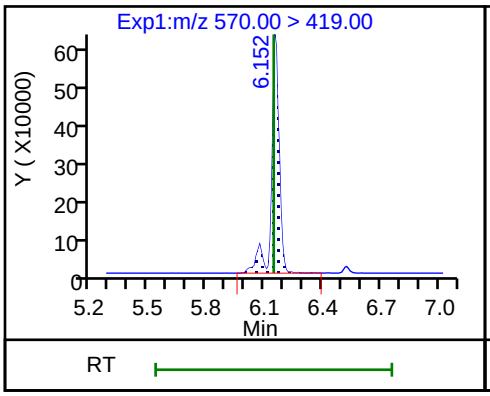
34 Perfluorooctanesulfonamide



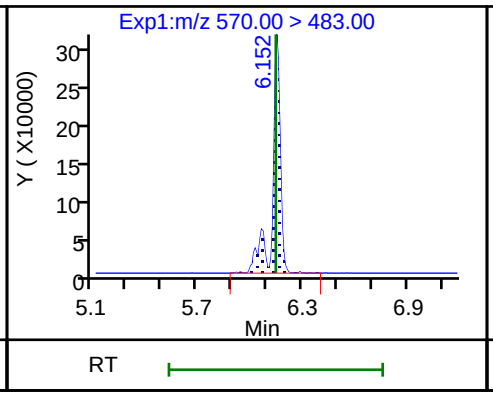
D 35 13C8 FOSA



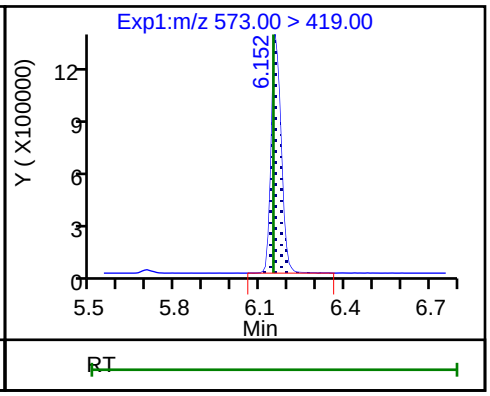
36 NMeFOSAA



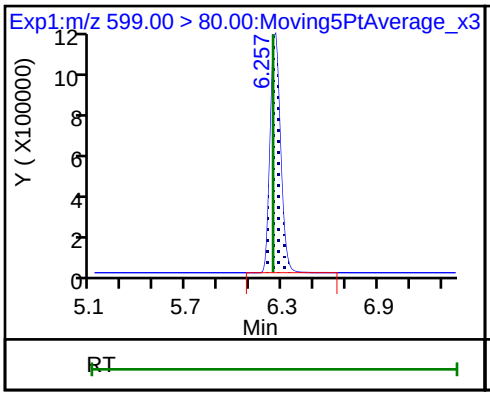
36 NMeFOSAA



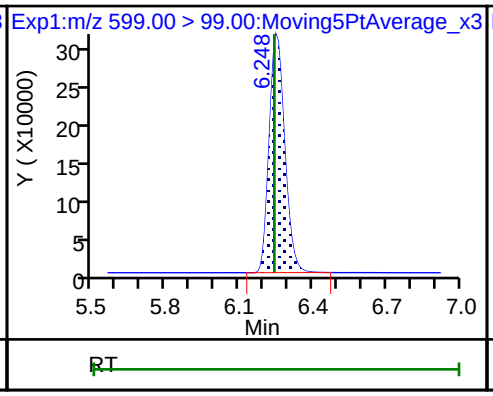
D 37 d3-NMeFOSAA



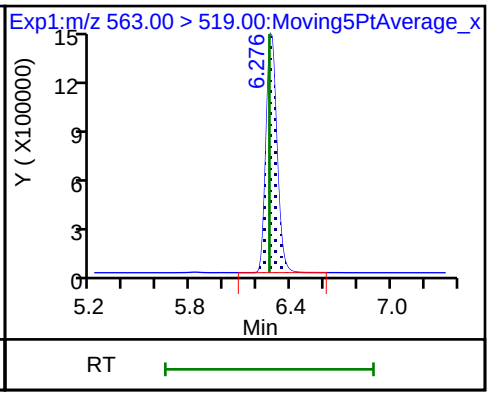
38 Perfluorodecanesulfonic acid



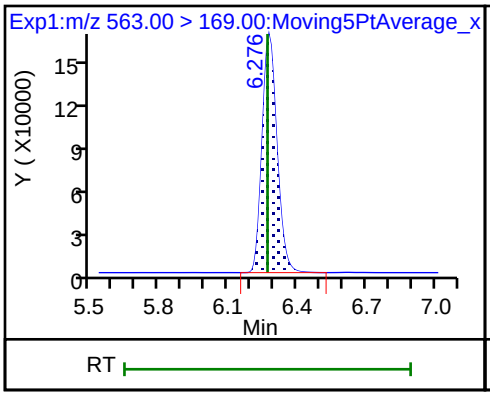
38 Perfluorodecanesulfonic acid



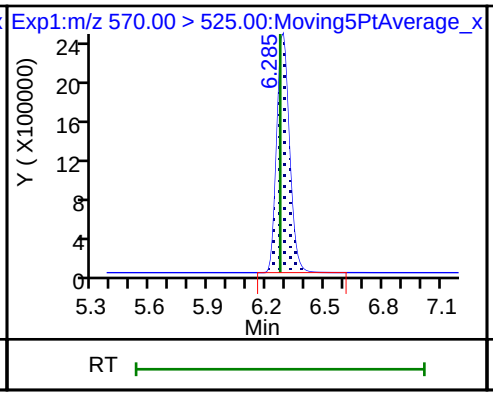
39 Perfluoroundecanoic acid



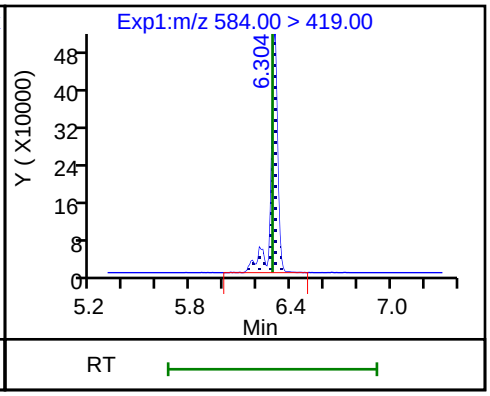
39 Perfluoroundecanoic acid



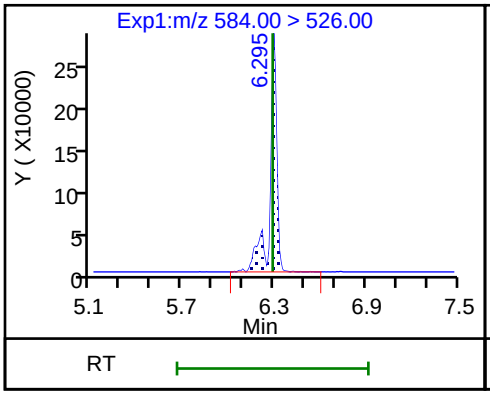
D 40 13C7 PFUnA



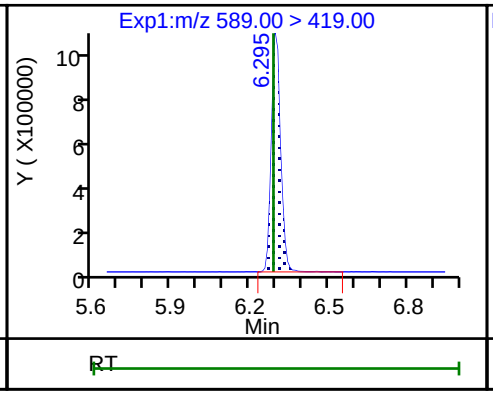
42 NEtFOSAA



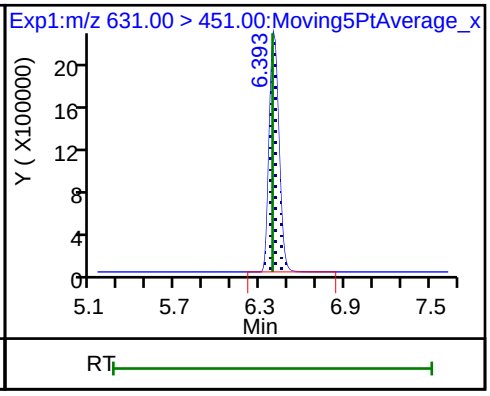
42 NEtFOSAA



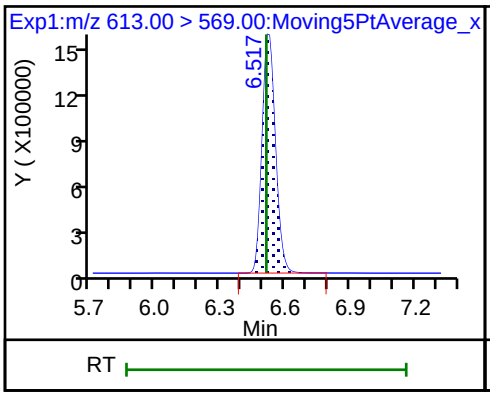
D 41 d5-NEtFOSAA



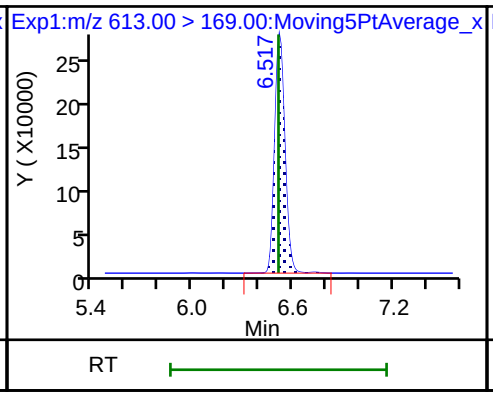
43 11ClFOS



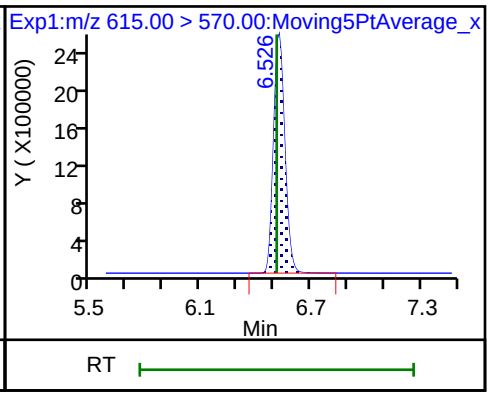
46 Perfluorododecanoic acid



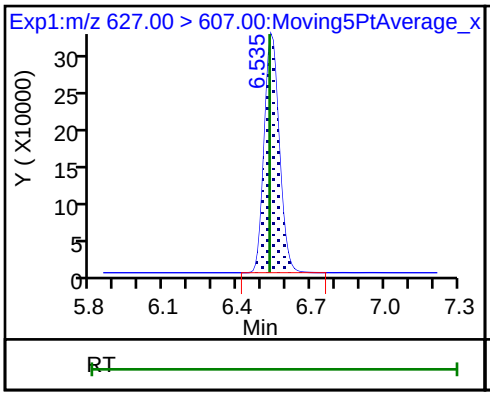
46 Perfluorododecanoic acid



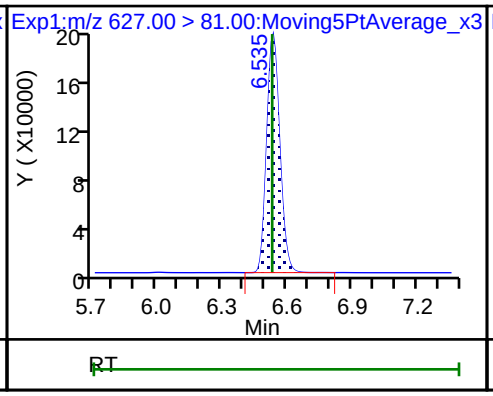
D 45 13C2-PFDoDA



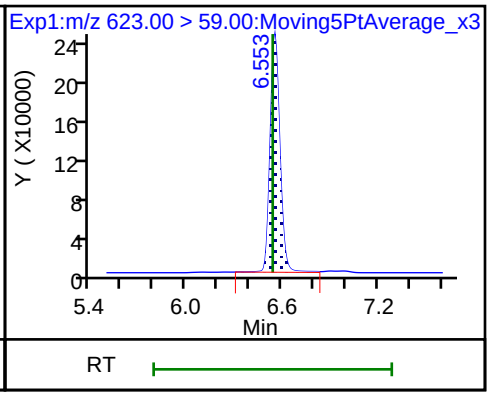
48 10:2 FTS



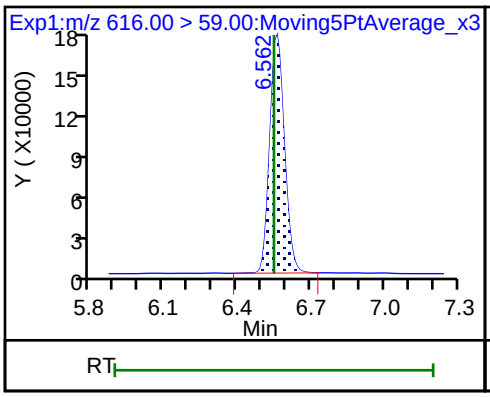
48 10:2 FTS



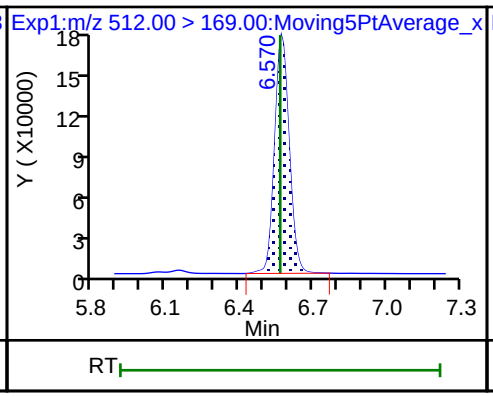
D 44 d7-N-MeFOSE-M



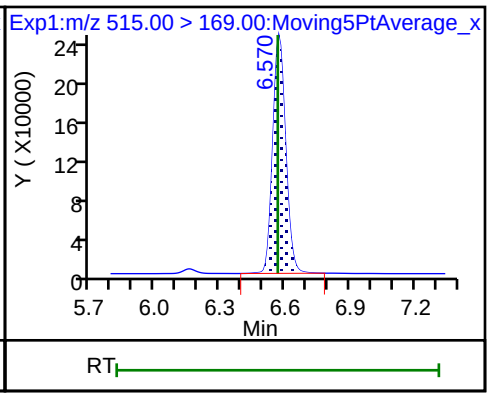
47 N-MeFOSE-M



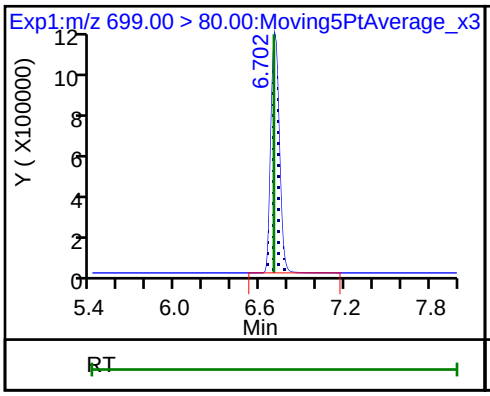
50 NMeFOSA



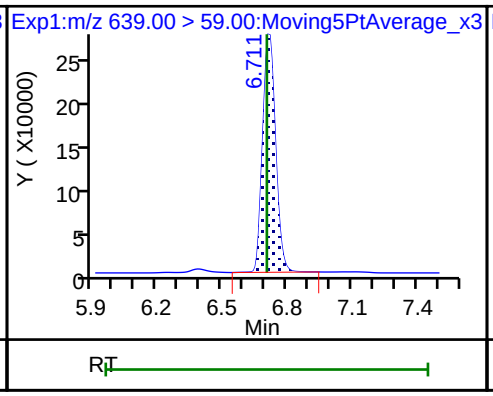
D 49 d3-NMePFOSA



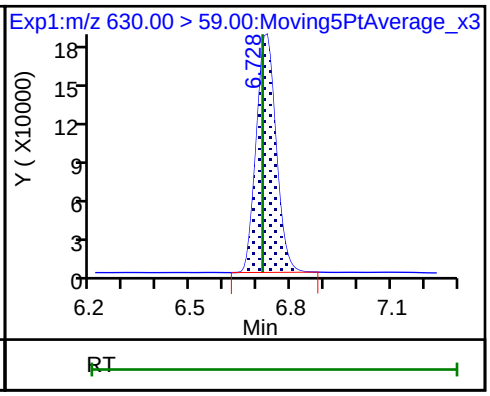
53 PFDoS



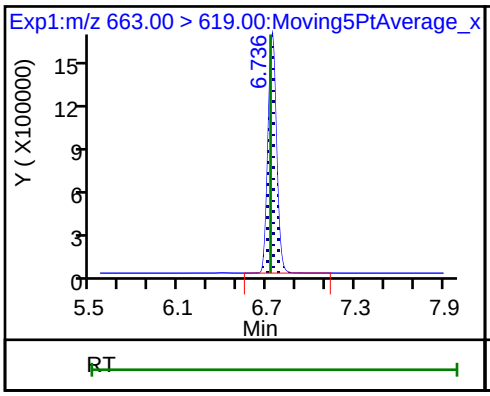
D 51 d9-N-EtFOSE-M



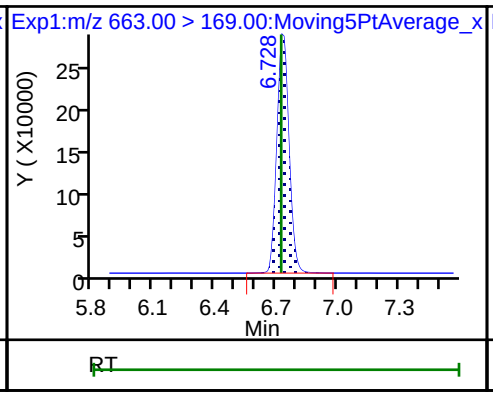
52 N-EtFOSE-M



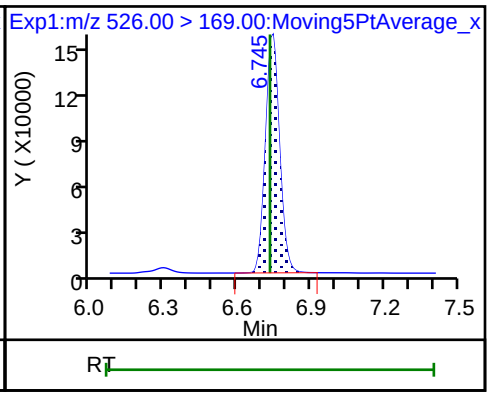
56 Perfluorotridecanoic acid



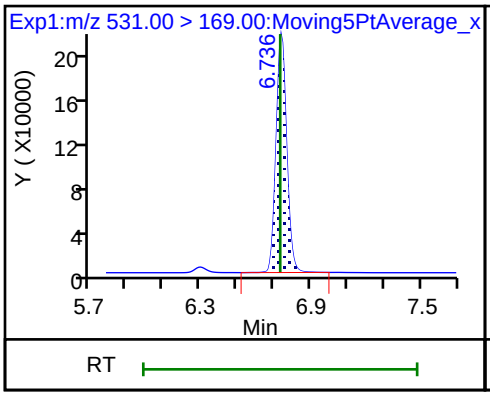
56 Perfluorotridecanoic acid



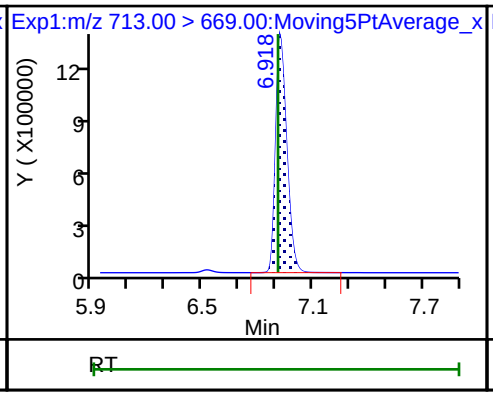
55 N-EtFOSA-M



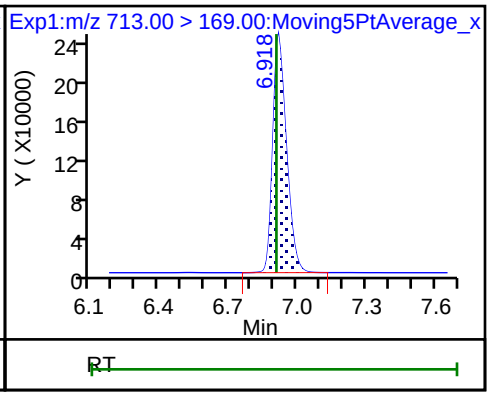
D 54 d5-NEtPFOSA



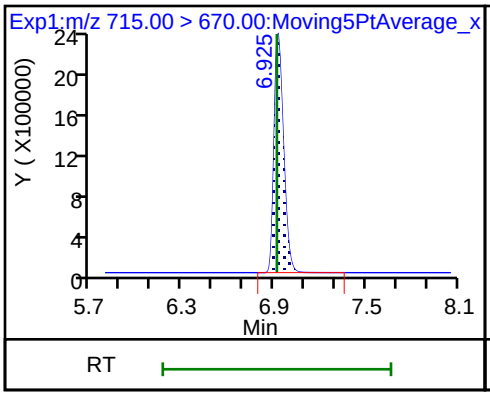
57 Perfluorotetradecanoic acid



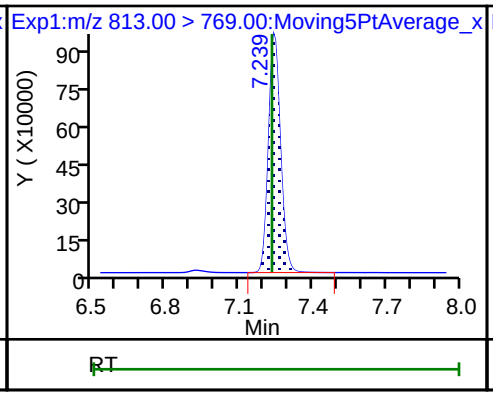
57 Perfluorotetradecanoic acid



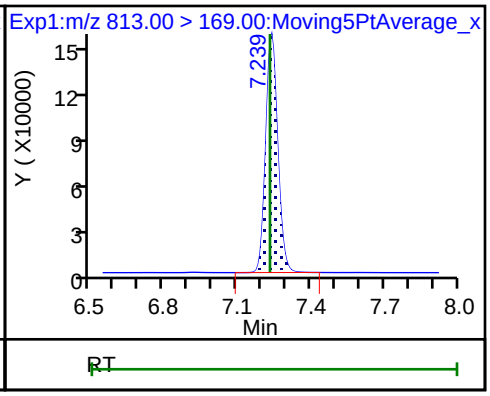
D 58 13C2 PFTeDA



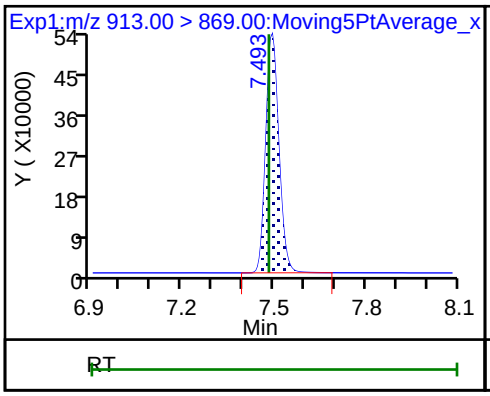
59 Perfluorohexadecanoic acid



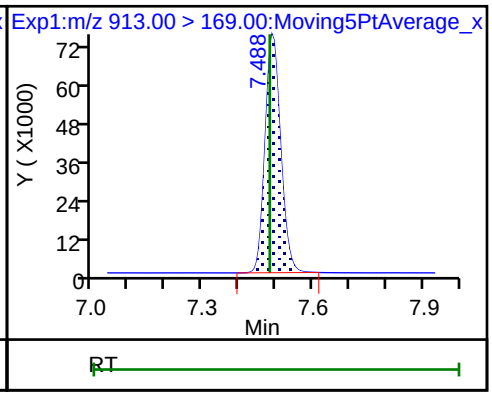
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 410-241437/4-A

Matrix: Water Lab File ID: 22APR07-67.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 250(mL) Date Analyzed: 04/07/2022 18:21

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
307-24-4	Perfluorohexanoic acid	27.5		2.0	1.0	0.50
375-85-9	Perfluoroheptanoic acid	27.5		2.0	1.0	0.50
335-67-1	Perfluorooctanoic acid	27.5		2.0	1.0	0.50
375-95-1	Perfluorononanoic acid	28.5		2.0	1.0	0.50
335-76-2	Perfluorodecanoic acid	26.3		2.0	1.0	0.50
72629-94-8	Perfluorotridecanoic acid	27.5		2.0	1.0	0.50
376-06-7	Perfluorotetradecanoic acid	26.3		2.0	1.0	0.50
375-73-5	Perfluorobutanesulfonic acid	25.1		2.0	1.0	0.50
355-46-4	Perfluorohexanesulfonic acid	25.8		2.0	1.0	0.50
1763-23-1	Perfluorooctanesulfonic acid	26.4		2.0	1.0	0.50
2991-50-6	NEtFOSAA	24.6		3.0	1.0	0.50
2355-31-9	NMeFOSAA	24.5		2.0	1.2	0.60
2706-91-4	Perfluoropentanesulfonic acid	26.2		2.0	1.0	0.50
375-92-8	Perfluoroheptanesulfonic acid	25.2		2.0	1.0	0.50
68259-12-1	Perfluorononanesulfonic acid	25.3		2.0	1.0	0.50
335-77-3	Perfluorodecanesulfonic acid	24.2		2.0	1.0	0.50
754-91-6	Perfluorooctanesulfonamide	26.3		2.0	1.0	0.50
375-22-4	Perfluorobutanoic acid	27.9		5.0	4.0	2.0
2706-90-3	Perfluoropentanoic acid	23.7		2.0	1.0	0.50
2058-94-8	Perfluoroundecanoic acid	26.9		2.0	1.0	0.50
307-55-1	Perfluorododecanoic acid	28.1		2.0	1.0	0.50
27619-97-2	6:2 Fluorotelomer sulfonic acid	22.5		5.0	4.0	2.0
39108-34-4	8:2 Fluorotelomer sulfonic acid	23.9		3.0	2.0	1.0
757124-72-4	4:2 Fluorotelomer sulfonic acid	21.7		2.0	1.0	0.50

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-78012-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 410-241437/4-A

Matrix: Water Lab File ID: 22APR07-67.d

Analysis Method: EPA 537(Mod) Date Collected:

Extraction Method: PFAS by QSM B15 Date Extracted: 04/06/2022 07:05

Sample wt/vol: 250(mL) Date Analyzed: 04/07/2022 18:21

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

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

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

Analysis Batch No.: 242084 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02395	M2-4:2 FTS	126		50-150
STL02280	M2-8:2 FTS	113		50-150
STL02279	M2-6:2 FTS	120		50-150
STL02577	13C5 PFHxA	115		50-150
STL01892	13C4 PFHpA	110		50-150
STL01052	13C8 PFOA	107		50-150
STL02578	13C9 PFNA	105		50-150
STL02579	13C6 PFDA	110		50-150
STL02580	13C7 PFUnA	106		50-150
STL02703	13C2-PFDoDA	100		50-150
STL02116	13C2 PFTeDA	95		50-150
STL02337	13C3 PFBS	103		50-150
STL02581	13C3 PFHxS	107		50-150
STL01054	13C8 PFOS	107		50-150
STL02118	d3-NMeFOSAA	109		50-150
STL02117	d5-NEtFOSAA	111		50-150
STL01056	13C8 FOSA	97		50-150
STL00992	13C4 PFBA	107		50-150
STL01893	13C5 PFPeA	106		50-150

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-67.d
Lims ID: LCSD 410-241437/4-A
Client ID:
Sample Type: LCSD
Inject. Date: 07-Apr-2022 18:21:29 ALS Bottle#: 31 Worklist Smp#: 36
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 410-241437/4-A
Misc. Info.: Plate: 1 Rack: 1 410-0054325-036
Operator ID: US19_USR_INS75556 Instrument ID: 29347

Method: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\PFAS_29347_QSM5.3.m
Limit Group: LC - PFC_DOD5.3
Last Update: 07-Apr-2022 20:33:31 Calib Date: 07-Apr-2022 10:55:23
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\29347\20220407-54309.b\22APR07-25.d

Column 1 : Det: EXP1
Process Host: CTX1628

First Level Reviewer: matthewsl Date: 07-Apr-2022 19:55:44
Ratio Calibration: CCV Sample: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-61.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
1 Perfluorobutanoic acid										
213.00 > 169.00	3.655	3.649	0.006	0.998	4972703	6.98		109	8811	
D 2 13C4 PFBA										
217.00 > 172.00	3.662	3.649	0.013		8662221	10.7		107	130125	
63 PFECA F										
229.00 > 85.00	3.889	3.881	0.008	0.930	4374090	7.32		114	10567	
67 3:3 FTCA										
241.00 > 177.00	4.175	4.161	0.014	0.998	310261	6.97	Target=1.37	109	13691	
241.00 > 117.00	4.175	4.161	0.014	0.998	242319		1.28(0.68-2.05)		7011	
3 Perfluoropentanoic acid										
263.00 > 219.00	4.183	4.168	0.014	1.000	4583665	5.93		92.6	16477	
D 4 13C5 PFPeA										
268.00 > 223.00	4.183	4.168	0.014		7386421	10.6		106	68589	
5 Perfluorobutanesulfonic acid										
299.00 > 80.00	4.235	4.220	0.015	1.000	5742024	6.28	Target=2.91	111	6446	
299.00 > 99.00	4.235	4.220	0.015	1.000	1945729		2.95(1.46-4.37)		6216	
D 6 13C3 PFBS										
302.00 > 80.00	4.235	4.227	0.008		8872286	9.61		103	333077	
64 PFECA A										
279.00 > 85.00	4.304	4.289	0.015	1.029	3984834	6.71		105	56626	
65 PES										
315.00 > 135.00	4.392	4.384	0.008	0.956	17940093	5.67	Target=14.36	99.5	229232	
315.00 > 83.00	4.392	4.384	0.008	0.956	1155892		15.52(7.18-21.54)		1562	
68 PFECA B										
295.00 > 201.00	4.514	4.504	0.010	0.983	1656753	6.21		97.0	33049	
7 4:2 FTS										
327.00 > 307.00	4.553	4.534	0.019	1.000	1150391	5.43	Target=1.81	90.9	62275	
327.00 > 81.00	4.544	4.534	0.010	0.998	653336		1.76(0.91-2.72)		9385	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 8 M2-4:2 FTS										
329.00 > 81.00	4.553	4.544	0.009		515426	11.8		126	11292	
10 Perfluorohexanoic acid										
313.00 > 269.00	4.593	4.573	0.020	1.000	5382923	6.88	Target=14.20	108	51529	
313.00 > 119.00	4.583	4.573	0.010	0.998	400153		13.45(7.10-21.30)		14900	
D 9 13C5 PFHxA										
318.00 > 273.00	4.593	4.583	0.010		9159515	11.5		115	157089	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	4.611	4.603	0.008	1.089	5599394	6.55	Target=3.15	109	214398	
349.00 > 99.00	4.603	4.603	0.0	1.087	1788310		3.13(1.58-4.73)		67521	
12 HFPO-DA										
329.00 > 285.00	4.720	4.706	0.014	1.000	1438521	5.95		92.9	38408	
D 13 13C3 HFPO-DA										
332.00 > 287.00	4.720	4.706	0.014		987187	11.4		114	87358	
15 Perfluoroheptanoic acid										
363.00 > 319.00	4.981	4.971	0.010	1.000	6060332	6.87	Target=3.24	107	46212	
363.00 > 169.00	4.981	4.971	0.010	1.000	1923837		3.15(1.62-4.87)		43234	
14 Perfluorohexanesulfonic acid										
399.00 > 80.00	4.981	4.971	0.010	1.000	5550132	6.44	Target=3.16	110	954948	
399.00 > 99.00	4.981	4.971	0.010	1.000	1791390		3.10(1.58-4.73)		3557	
D 17 13C4 PFHpA										
367.00 > 322.00	4.981	4.971	0.010		9219968	11.0		110	264050	
D 16 13C3 PFHxS										
402.00 > 80.00	4.981	4.971	0.010		8359055	10.1		107	1744548	
18 DONA										
377.00 > 251.00	5.023	5.015	0.008	1.009	9881782	6.61		109	176393	
62 5:3 FTCA										
341.00 > 237.00	5.053	5.038	0.015	1.100	1246720	6.89	Target=3.17	108	17929	
341.00 > 217.00	5.053	5.038	0.015	1.100	391228		3.19(1.58-4.75)		9313	
19 6:2 FTS										
427.00 > 407.00	5.331	5.317	0.014	1.000	1035881	5.64	Target=1.74	92.9	40526	
427.00 > 81.00	5.331	5.317	0.014	1.000	650439		1.59(0.87-2.61)		9400	
D 20 M2-6:2 FTS										
429.00 > 81.00	5.331	5.324	0.007		331740	11.4		120	13173	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	5.337	5.330	0.007	1.072	5380060	6.29	Target=3.31	103	302224	
449.00 > 99.00	5.337	5.330	0.007	1.072	1661156		3.24(1.65-4.96)		94067	
23 Perfluorooctanoic acid										
413.00 > 369.00	5.350	5.337	0.013	1.000	6080020	6.87	Target=2.25	107	183021	
413.00 > 169.00	5.350	5.337	0.013	1.000	2601714		2.34(1.13-3.38)		526479	
D 22 13C8 PFOA										
421.00 > 376.00	5.350	5.337	0.013		9805290	10.7		107	563838	
24 Perfluorooctanesulfonic acid										
499.00 > 80.00	5.677	5.669	0.008	1.000	5856577	6.60	Target=3.77	111	2010058	
499.00 > 99.00	5.677	5.669	0.008	1.000	1593820		3.67(1.89-5.66)		2349	
D 25 13C8 PFOS										
507.00 > 80.00	5.677	5.669	0.008		7632267	10.2		107	397049	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorononanoic acid										
463.00 > 419.00	5.692	5.684	0.008	1.000	6292066	7.13	Target=4.65	111	60888	
463.00 > 169.00	5.692	5.684	0.008	1.000	1356811		4.64(2.33-6.98)		66267	
D 27 13C9 PFNA										
472.00 > 427.00	5.692	5.684	0.008		9801455	10.5		105	123359	
66 7:3 FTCA										
441.00 > 317.00	5.791	5.782	0.009	1.261	609466	6.35	Target=10.04	99.2	15945	
441.00 > 337.00	5.791	5.782	0.009	1.261	59439		10.25(5.02-15.05)		3598	
28 9ClFOS										
531.00 > 351.00	5.857	5.849	0.008	1.032	12107637	6.46		109	633107	
29 Perfluorononanesulfonic acid										
549.00 > 80.00	5.981	5.972	0.009	1.054	4728926	6.33	Target=3.33	103	168468	
549.00 > 99.00	5.981	5.972	0.009	1.054	1345537		3.51(1.67-5.00)		48734	
30 Perfluorodecanoic acid										
513.00 > 469.00	6.005	5.997	0.008	1.000	6348220	6.57	Target=8.88	103	84478	
513.00 > 169.00	6.005	5.997	0.008	1.000	728895		8.71(4.44-13.32)		12564	
33 8:2 FTS										
527.00 > 507.00	6.005	5.997	0.008	0.999	1282278	5.97	Target=1.93	97.4	60525	
527.00 > 81.00	6.005	5.997	0.008	0.999	678595		1.89(0.96-2.89)		9520	
D 32 13C6 PFDA										
519.00 > 474.00	6.005	5.997	0.008		11170349	11.0		110	220628	
D 31 M2-8:2 FTS										
529.00 > 81.00	6.013	5.997	0.016		262022	10.8		113	15374	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	6.113	6.095	0.018	1.000	8189294	6.57		103	321661	
D 35 13C8 FOSA										
506.00 > 78.00	6.113	6.104	0.009		12037605	9.69		96.9	354794	
36 NMeFOSAA										
570.00 > 419.00	6.154	6.146	0.008	1.000	1678380	6.11	Target=1.74	95.5	64039	
570.00 > 483.00	6.154	6.146	0.008	1.000	960122		1.75(0.87-2.61)		2108	
D 37 d3-NMeFOSAA										
573.00 > 419.00	6.154	6.146	0.008		3144260	10.9		109	122366	
38 Perfluorodecanesulfonic acid										
599.00 > 80.00	6.251	6.242	0.009	1.101	5012236	6.05	Target=3.59	98.1	141835	
599.00 > 99.00	6.251	6.242	0.009	1.101	1417618		3.54(1.80-5.39)		64581	
39 Perfluoroundecanoic acid										
563.00 > 519.00	6.279	6.270	0.009	0.999	6032839	6.72	Target=8.19	105	29830	
563.00 > 169.00	6.279	6.270	0.009	0.999	773684		7.80(4.09-12.28)		29244	
D 40 13C7 PFUnA										
570.00 > 525.00	6.289	6.270	0.019		10939899	10.6		106	406818	
42 NEtFOSAA										
584.00 > 419.00	6.308	6.289	0.019	1.001	1420880	6.15	Target=1.71	96.1	515606	
584.00 > 526.00	6.298	6.289	0.009	1.000	848415		1.67(0.86-2.57)		1121	
D 41 d5-NEtFOSAA										
589.00 > 419.00	6.298	6.289	0.009		2458606	11.1		111	467834	
43 11ClFOS										
631.00 > 451.00	6.398	6.387	0.011	1.127	10357926	6.25		105	146386	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorododecanoic acid										
613.00 > 569.00	6.522	6.512	0.010	0.999	6585683	7.03	Target=5.85	110	81723	
613.00 > 169.00	6.522	6.512	0.010	0.999	1157909		5.69(2.92-8.77)		21308	
D 45 13C2-PFDoDA										
615.00 > 570.00	6.530	6.512	0.018		10631917	9.98		99.8	227072	
48 10:2 FTS										
627.00 > 607.00	6.539	6.530	0.009	1.087	1385740	5.69	Target=1.84	92.3	110028	
627.00 > 81.00	6.539	6.530	0.009	1.087	800978		1.73(0.92-2.76)		20931	
D 44 d7-N-MeFOSE-M										
623.00 > 59.00	6.557	6.539	0.018		1073177	9.24		92.4	5541	
47 N-MeFOSE-M										
616.00 > 59.00	6.557	6.548	0.009	1.000	766454	6.81		106	7315	
50 NMeFOSA										
512.00 > 169.00	6.574	6.566	0.008	1.000	920139	6.50		102	7913	
D 49 d3-NMePFOSA										
515.00 > 169.00	6.574	6.566	0.008		1365668	8.71		87.1	8297	
53 PFDoS										
699.00 > 80.00	6.706	6.696	0.010	1.181	4608876	5.86		94.6	126411	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	6.715	6.705	0.010		1231716	8.82		88.2	6358	
52 N-EtFOSE-M										
630.00 > 59.00	6.724	6.714	0.010	1.001	782415	6.72		105	10631	
56 Perfluorotridecanoic acid										
663.00 > 619.00	6.740	6.724	0.016	1.032	6445871	6.87	Target=5.54	107	69696	
663.00 > 169.00	6.732	6.724	0.008	1.031	1140967		5.65(2.77-8.31)		47170	
55 N-EtFOSA-M										
526.00 > 169.00	6.740	6.732	0.008	1.000	894745	6.46		101	7036	
D 54 d5-NEtPFOSA										
531.00 > 169.00	6.740	6.732	0.008		1239389	8.81		88.1	7593	
57 Perfluorotetradecanoic acid										
713.00 > 669.00	6.921	6.909	0.012	1.000	5931150	6.58	Target=6.07	103	12617	
713.00 > 169.00	6.921	6.909	0.012	1.000	1006471		5.89(3.04-9.11)		40847	
D 58 13C2 PFTeDA										
715.00 > 670.00	6.921	6.916	0.005		10124803	9.54		95.4	266501	
59 Perfluorohexadecanoic acid										
813.00 > 769.00	7.241	7.232	0.009	1.046	3562411	5.57	Target=6.20	87.1	13322	
813.00 > 169.00	7.241	7.232	0.009	1.046	592452		6.01(3.10-9.30)		29026	
60 Perfluorooctadecanoic acid										
913.00 > 869.00	7.494	7.482	0.012	1.083	1937703	4.58	Target=7.23	71.5	28639	
913.00 > 169.00	7.488	7.482	0.006	1.082	272261		7.12(3.62-10.85)		15321	

QC Flag Legend

Processing Flags

Report Date: 07-Apr-2022 20:34:14 Chrom Revision: 2.3 18-Mar-2022 09:07:22

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\29347\20220407-54325.b\22APR07-67.d

Injection Date: 07-Apr-2022 18:21:29 Instrument ID: 29347

Lims ID: LCSD 410-241437/4-A

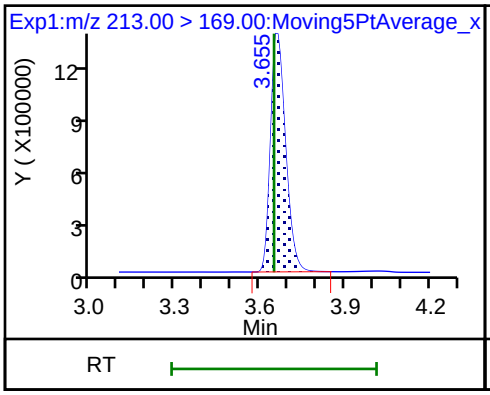
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Operator ID: US19_USR_INS75556 ALS Bottle#: 31 Worklist Smp#: 36

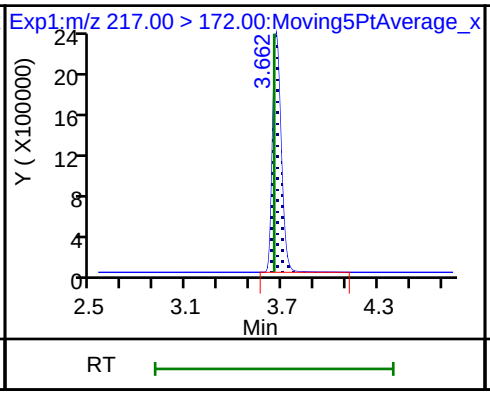
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: PFAS_29347_QSM5.3 Limit Group: LC - PFC_DOD5.3

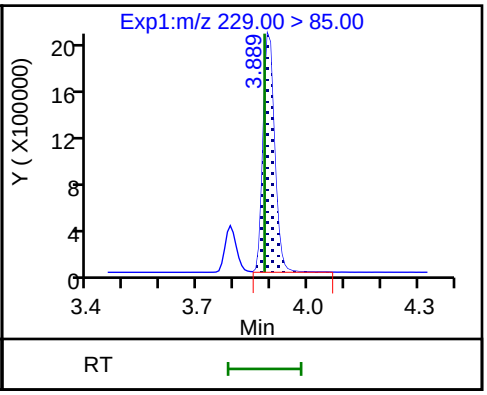
1 Perfluorobutanoic acid



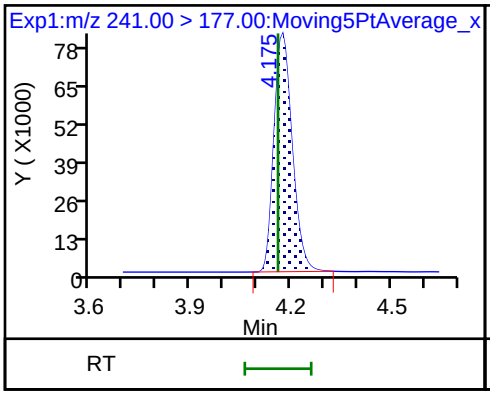
D 2 13C4 PFBA



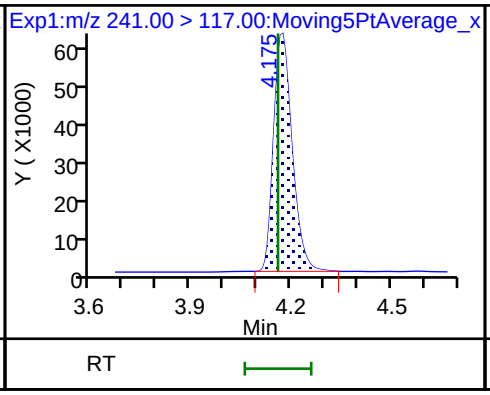
63 PFECA F



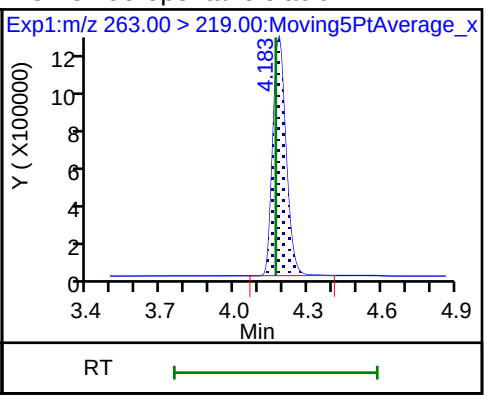
67 3:3 FTCA



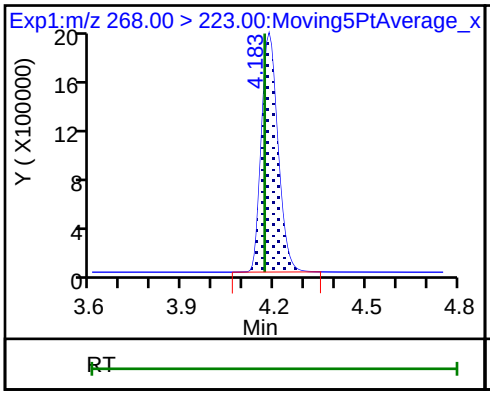
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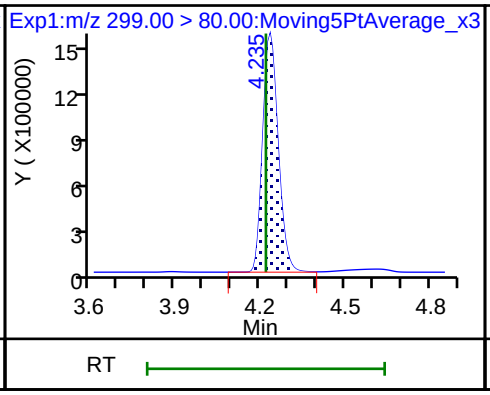
3 Perfluoropentanoic acid



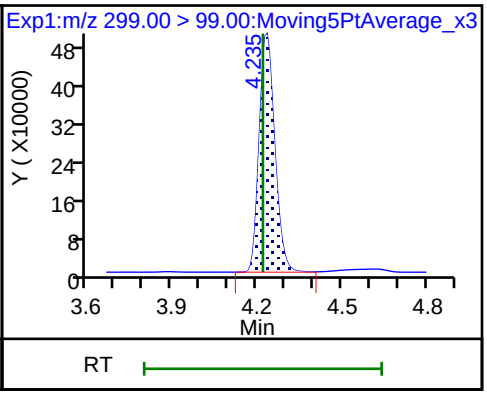
D 4 13C5 PFPeA



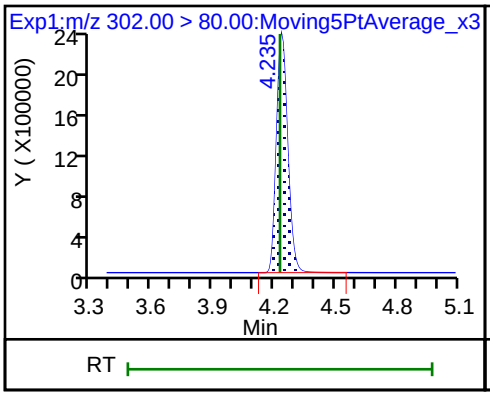
5 Perfluorobutanesulfonic acid



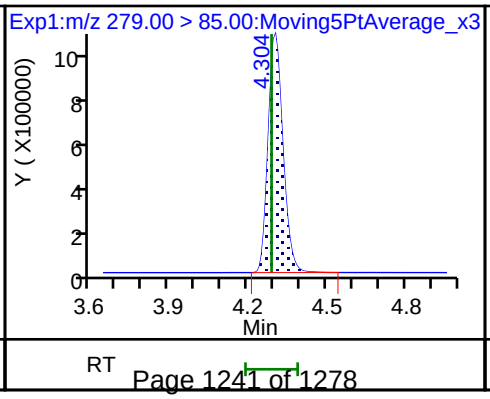
5 Perfluorobutanesulfonic acid



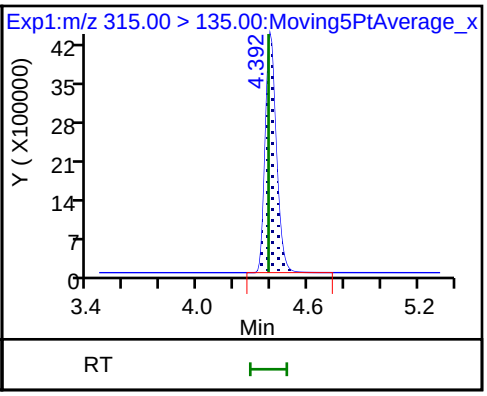
D 6 13C3 PFBS



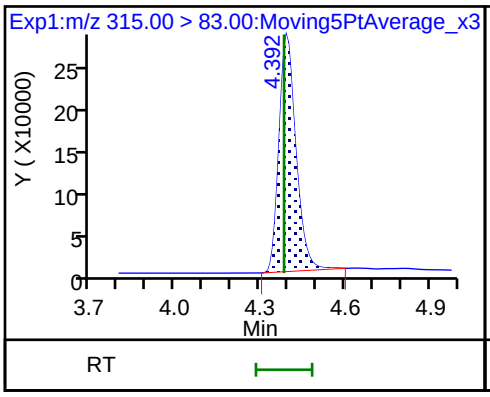
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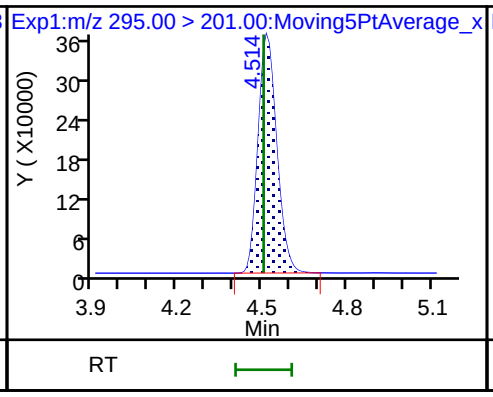
65 PES



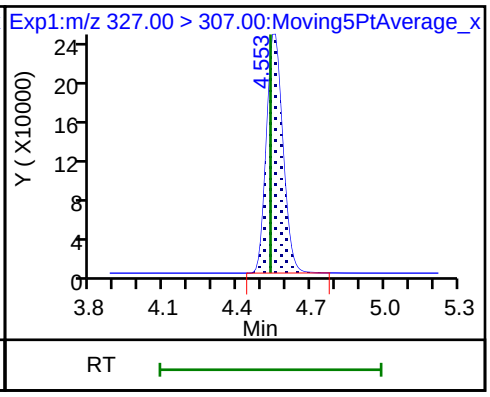
65 PES



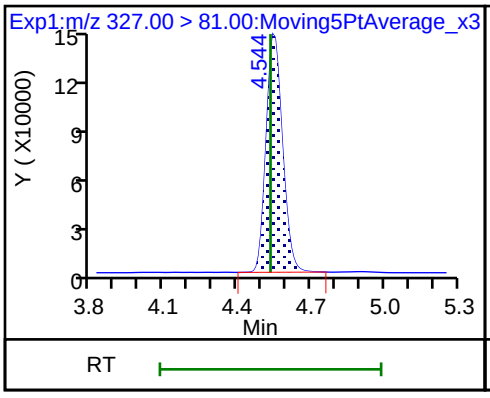
68 PFECA B



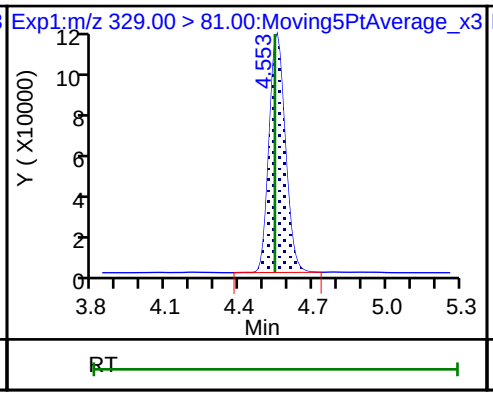
7 4:2 FTS



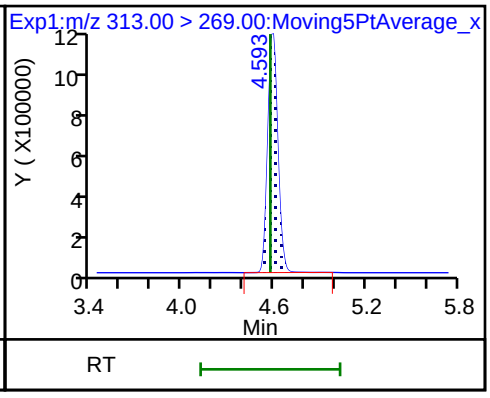
7 4:2 FTS



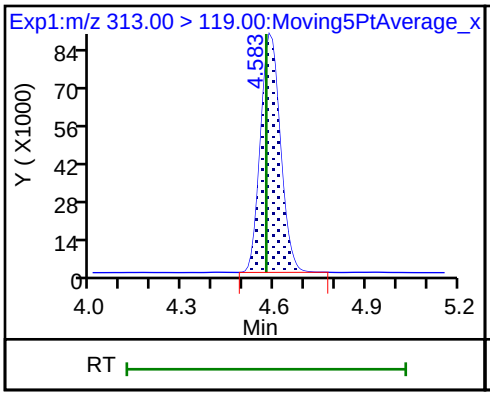
D 8 M2-4:2 FTS



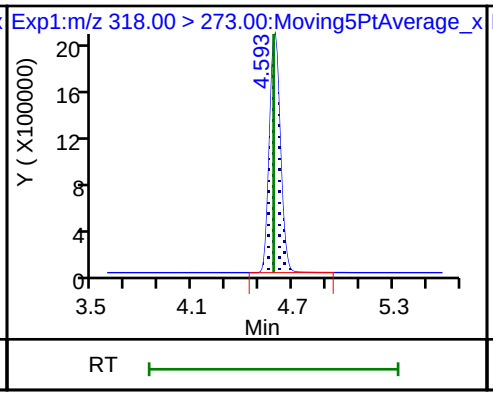
10 Perfluorohexanoic acid



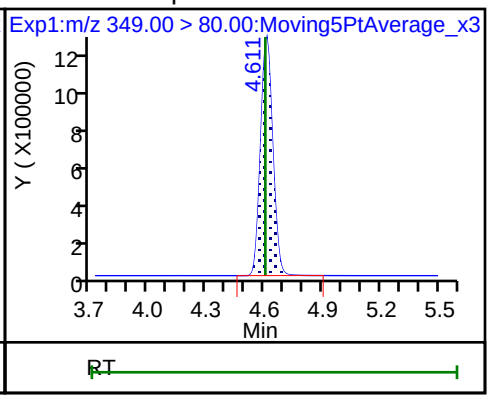
10 Perfluorohexanoic acid



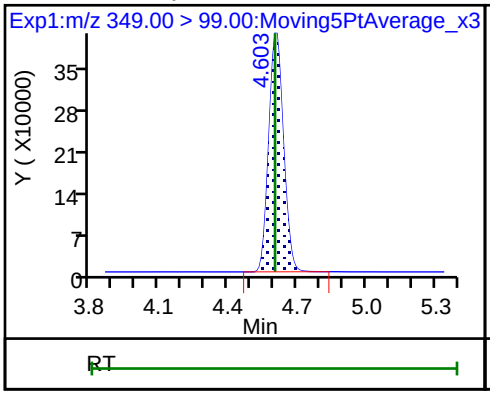
D 9 13C5 PFHxA



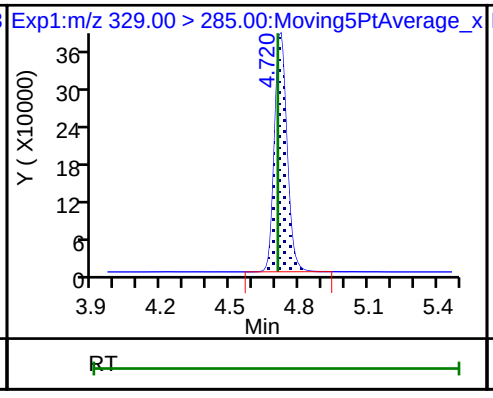
11 Perfluoropentanesulfonic acid



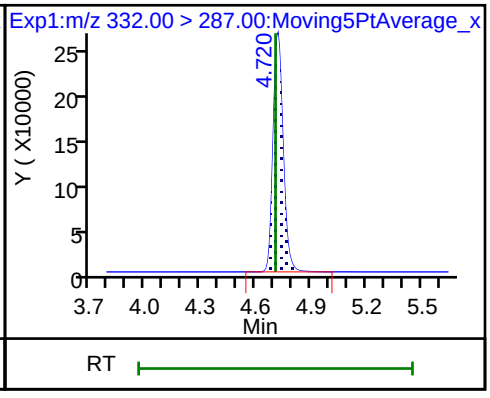
11 Perfluoropentanesulfonic acid



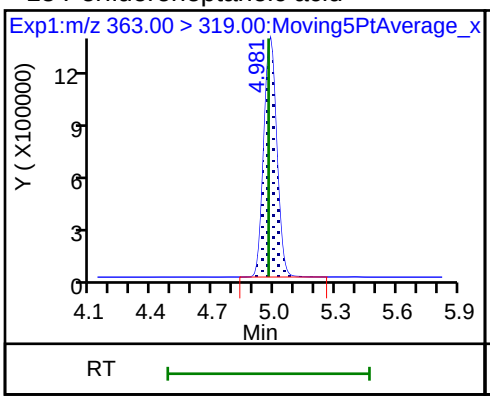
12 HFPO-DA



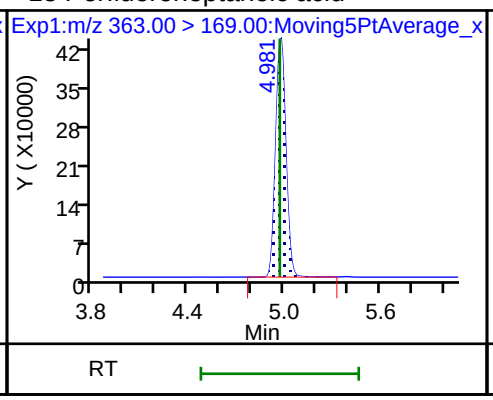
D 13 13C3 HFPO-DA



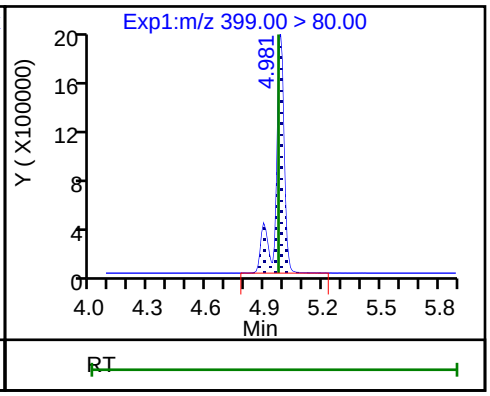
15 Perfluoroheptanoic acid



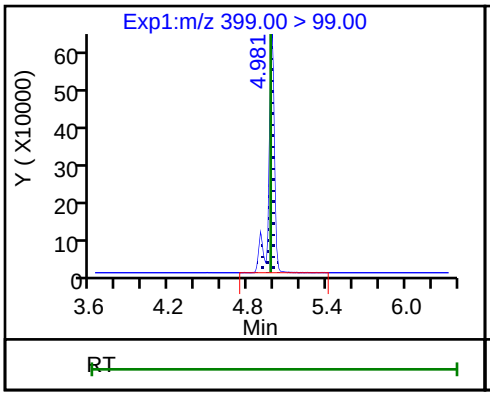
15 Perfluoroheptanoic acid



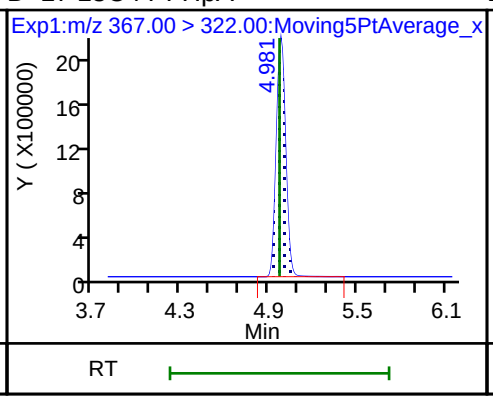
14 Perfluorohexanesulfonic acid



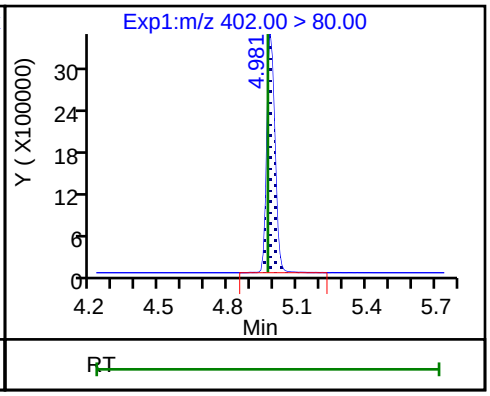
14 Perfluorohexanesulfonic acid



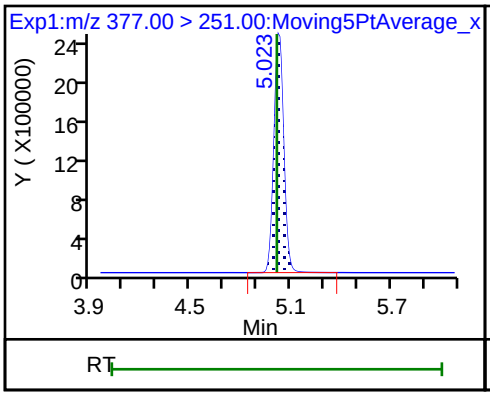
D 17 13C4 PFHpA



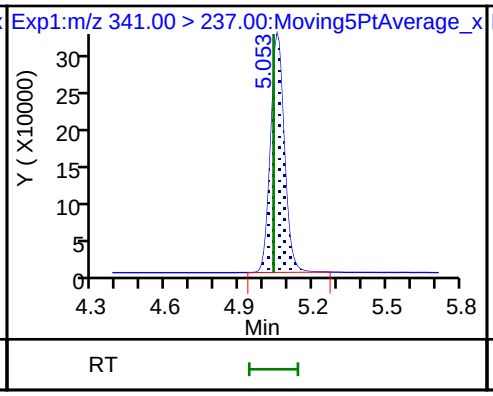
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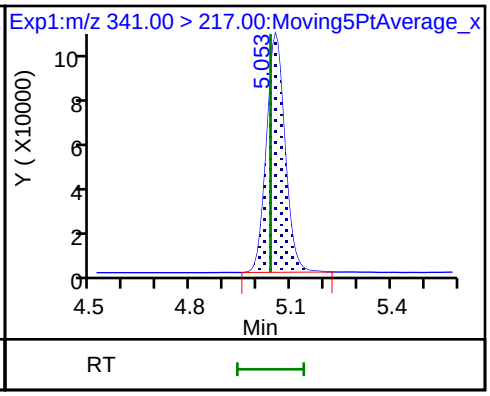
18 DONA



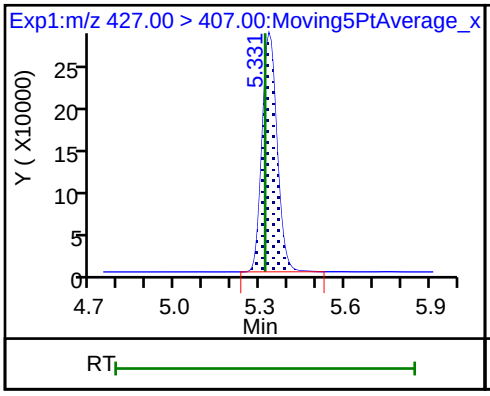
62 5:3 FTCA



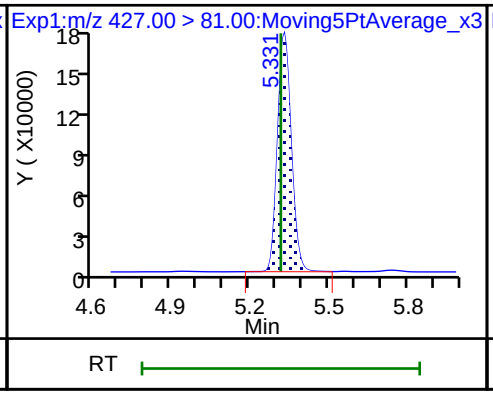
62 5:3 FTCA



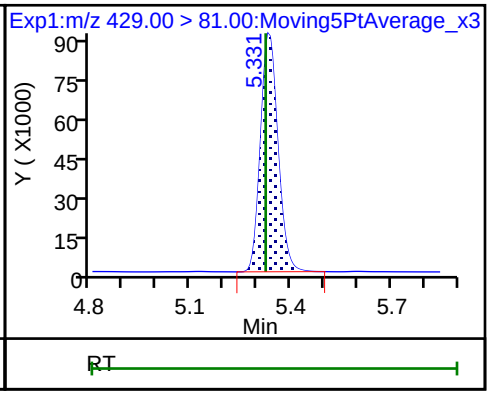
19 6:2 FTS



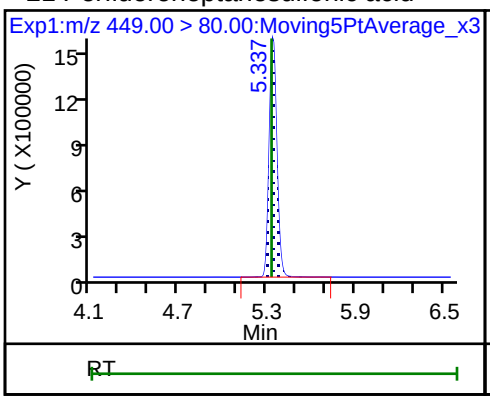
19 6:2 FTS



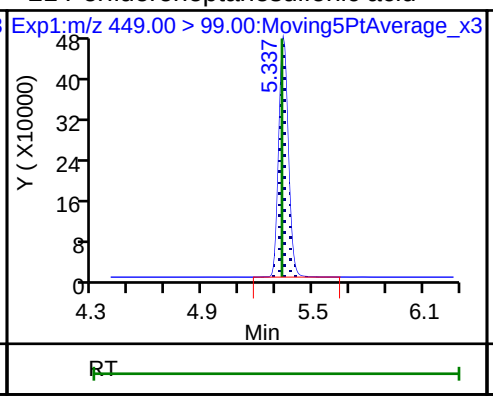
D 20 M2-6:2 FTS



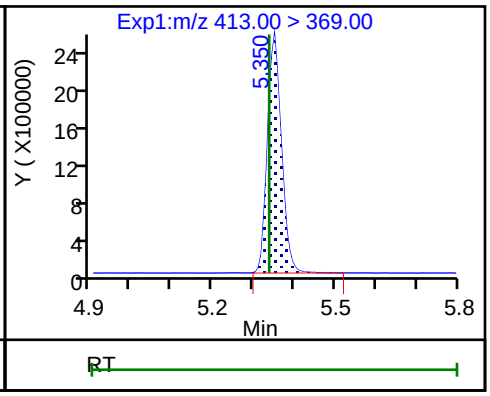
21 Perfluoroheptanesulfonic acid



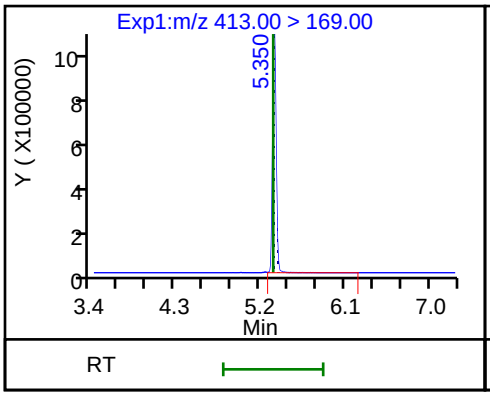
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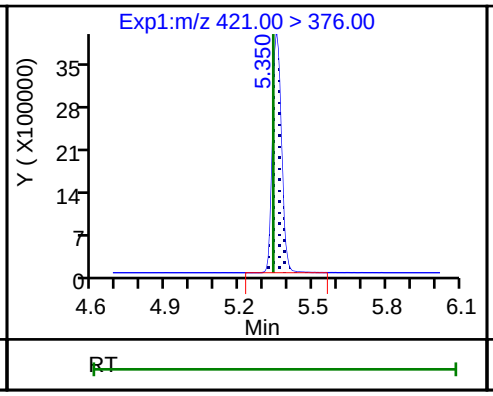
23 Perfluorooctanoic acid



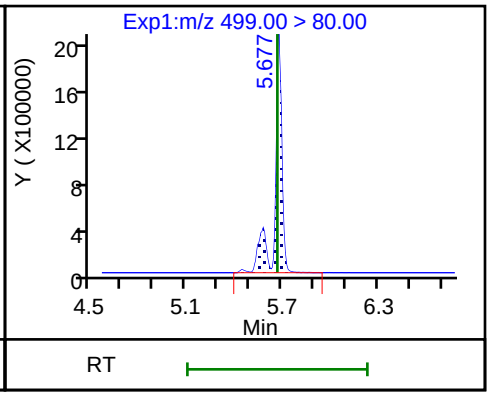
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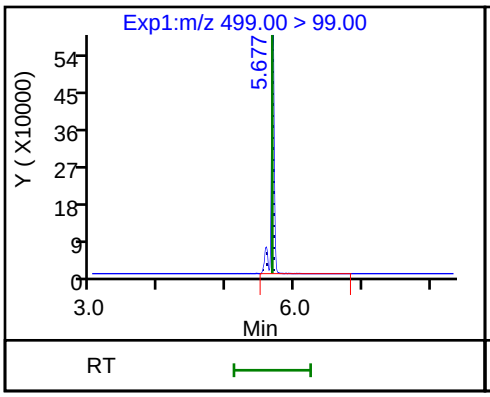
D 22 13C8 PFOA



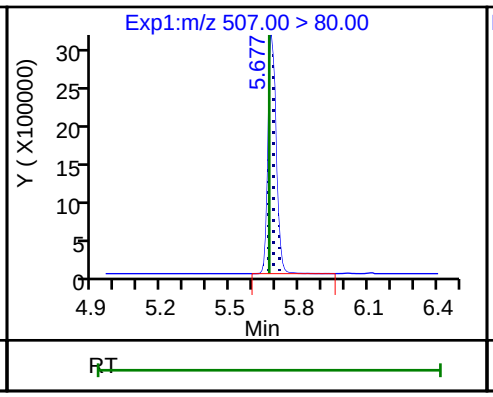
24 Perfluorooctanesulfonic acid



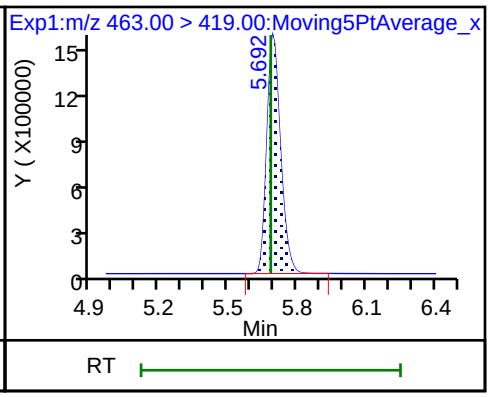
24 Perfluorooctanesulfonic acid



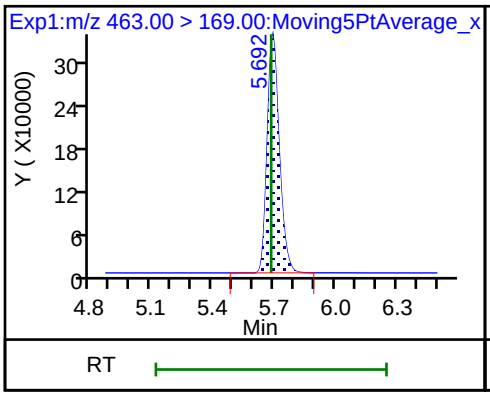
D 25 13C8 PFOS



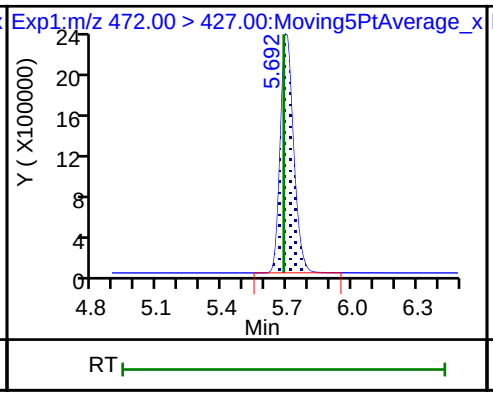
26 Perfluorononanoic acid



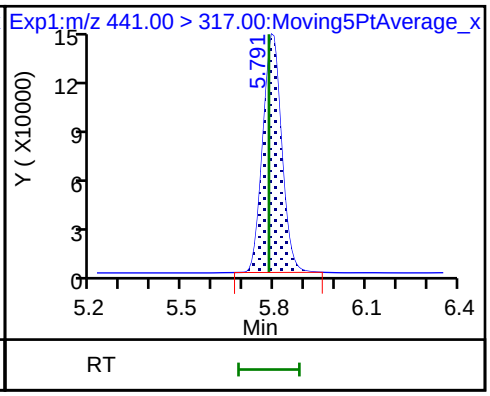
26 Perfluorononanoic acid



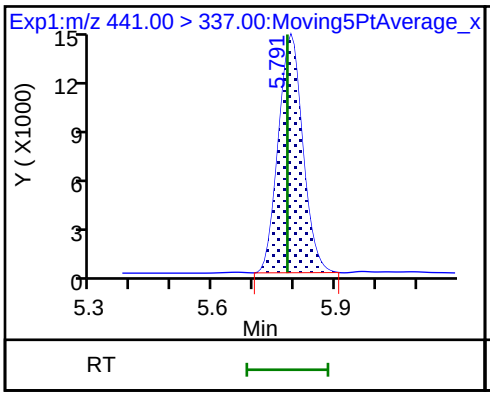
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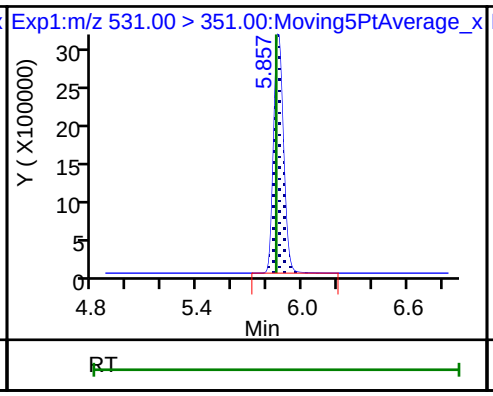
66 7:3 FTCA



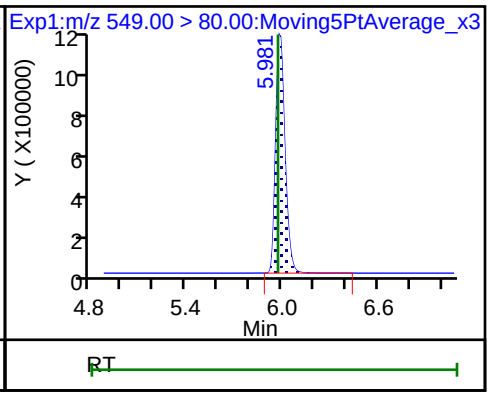
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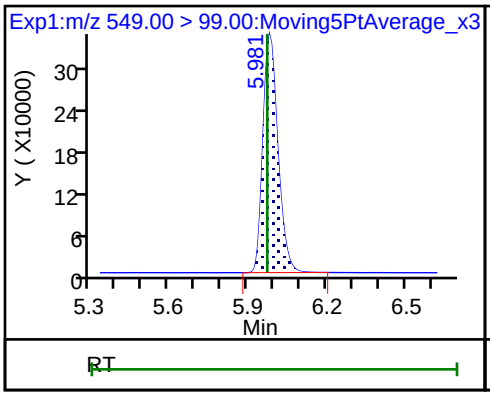
28 9ClFOS



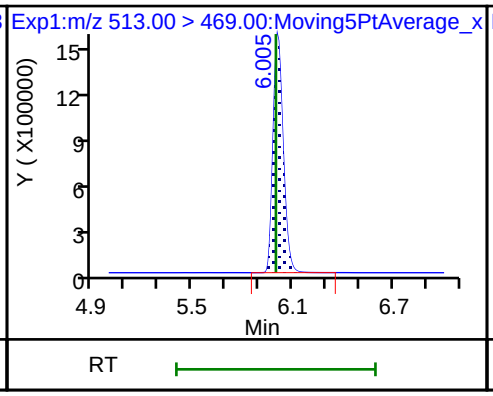
29 Perfluorononanesulfonic acid



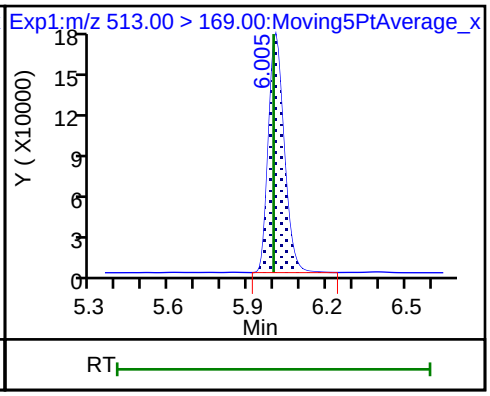
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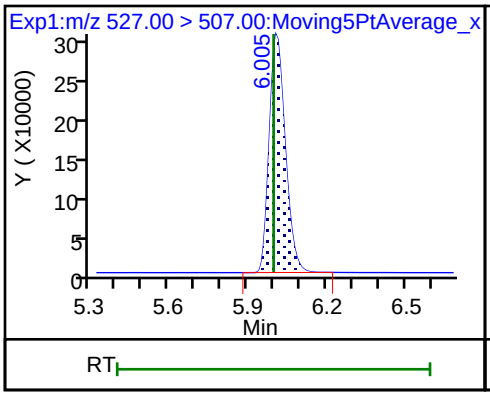
30 Perfluorodecanoic acid



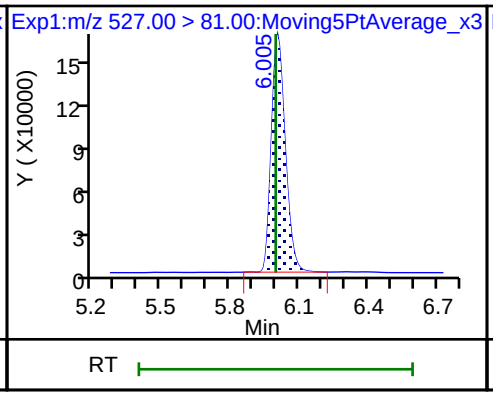
30 Perfluorodecanoic acid



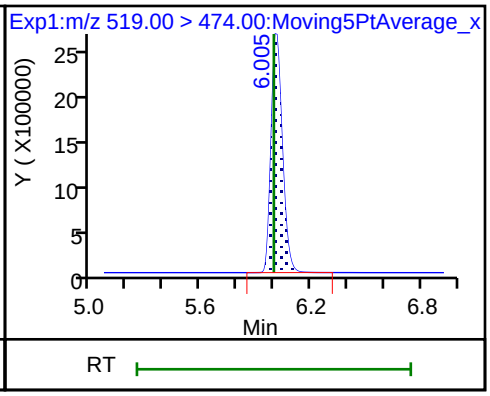
33 8:2 FTS



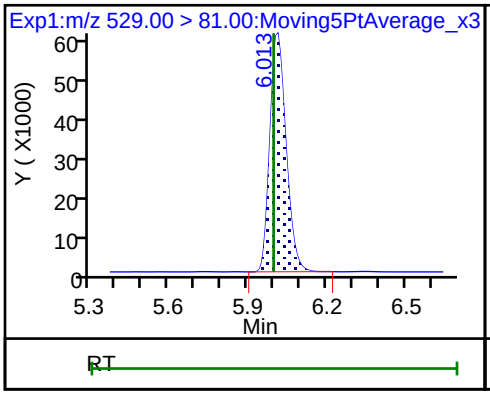
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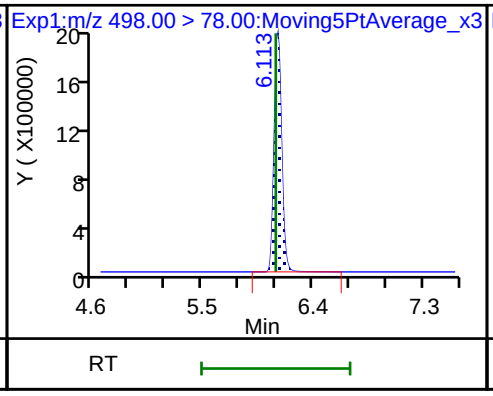
D 32 13C6 PFDA



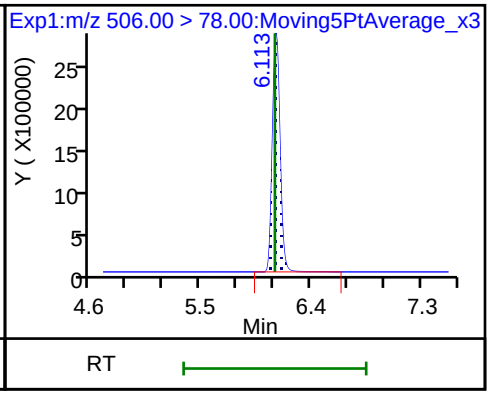
D 31 M2-8:2 FTS



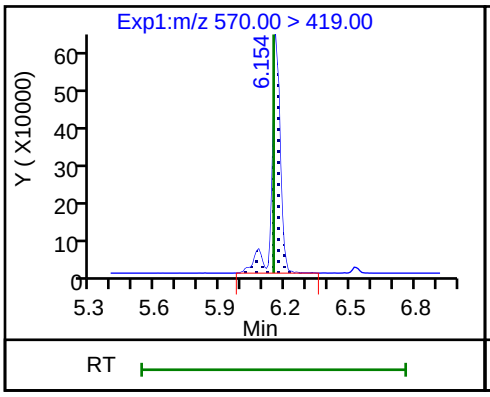
34 Perfluorooctanesulfonamide



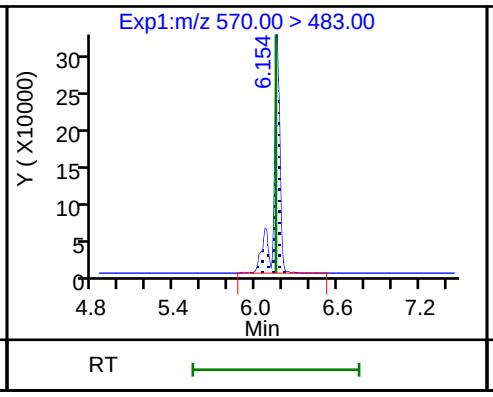
D 35 13C8 FOSA



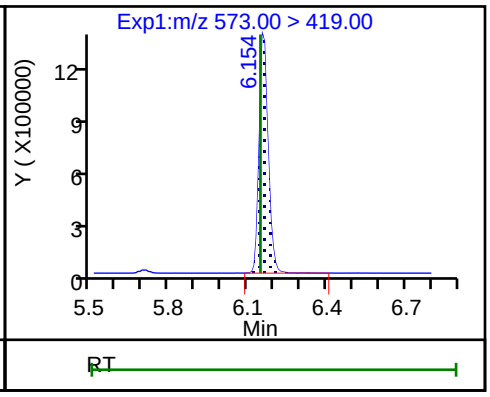
36 NMeFOSAA



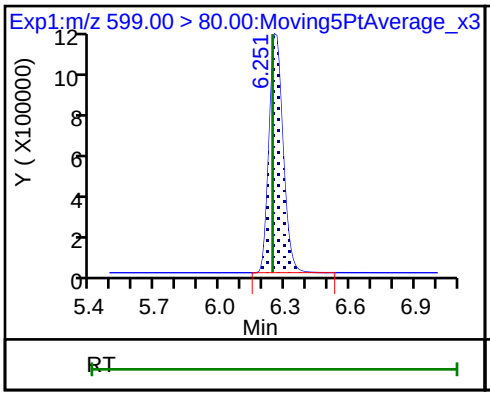
36 NMeFOSAA



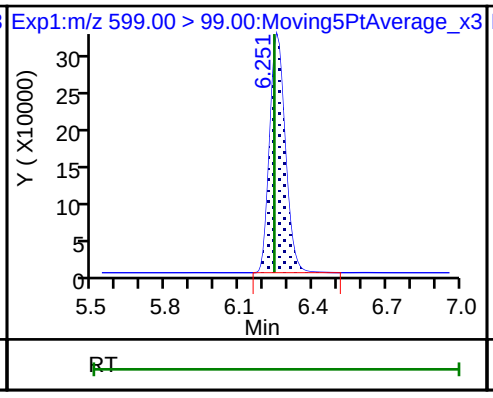
D 37 d3-NMeFOSAA



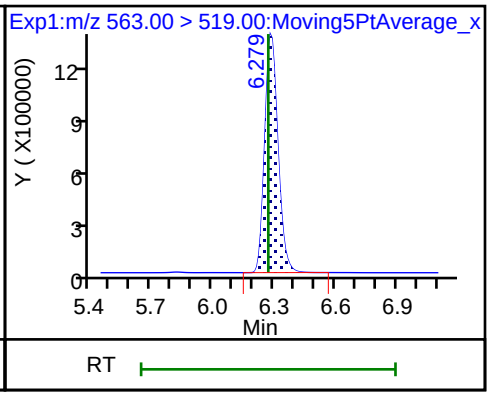
38 Perfluorodecanesulfonic acid



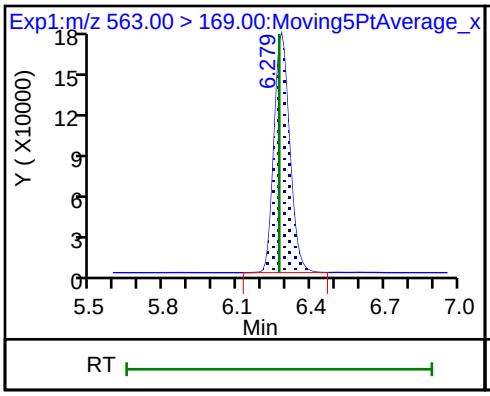
38 Perfluorodecanesulfonic acid



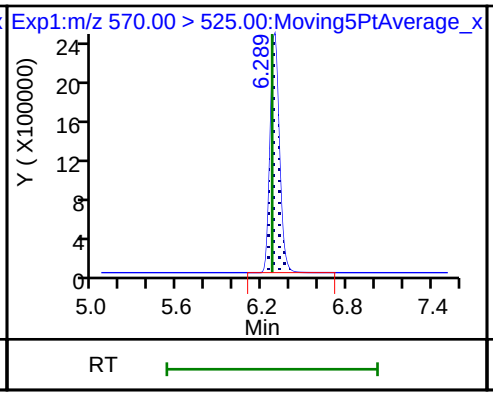
39 Perfluoroundecanoic acid



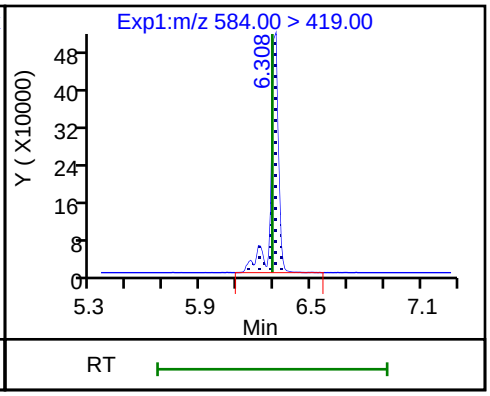
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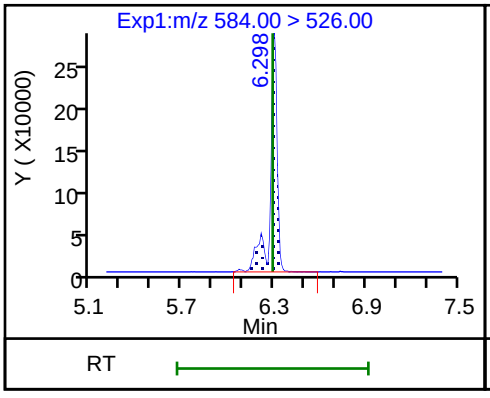
D 40 13C7 PFUnA



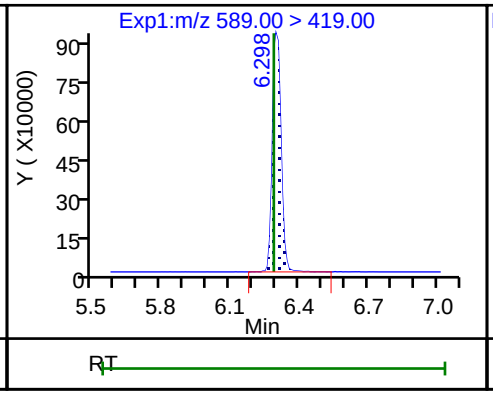
42 NEtFOSAA



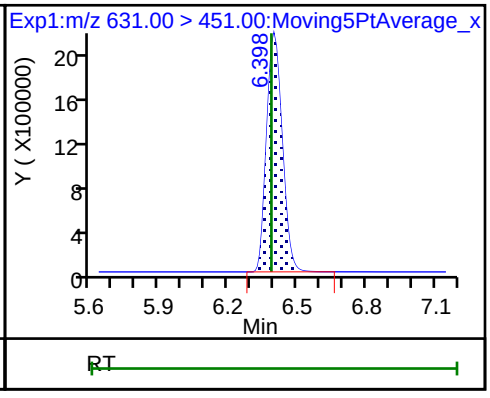
42 NEtFOSAA



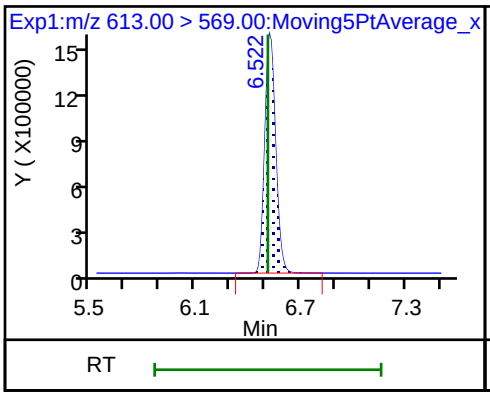
D 41 d5-NEtFOSAA



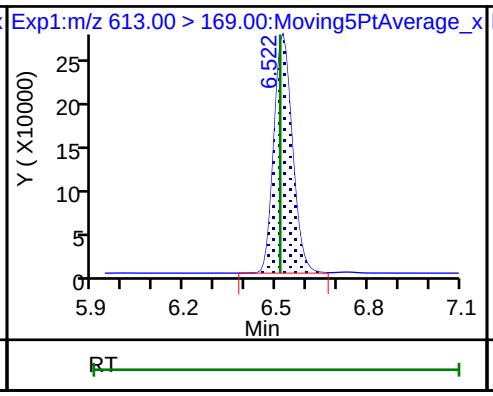
43 11ClFOS



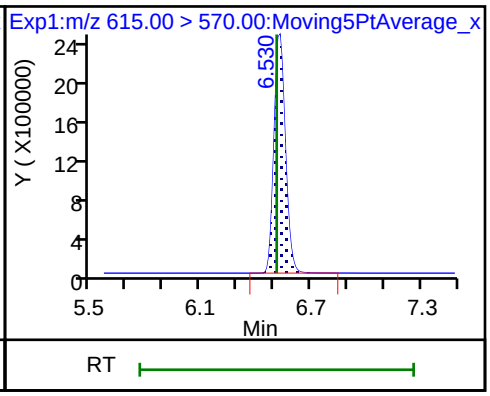
46 Perfluorododecanoic acid



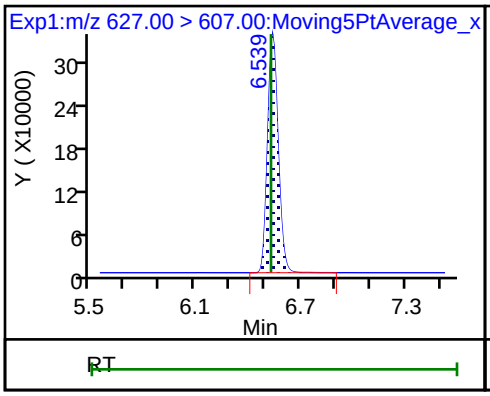
46 Perfluorododecanoic acid



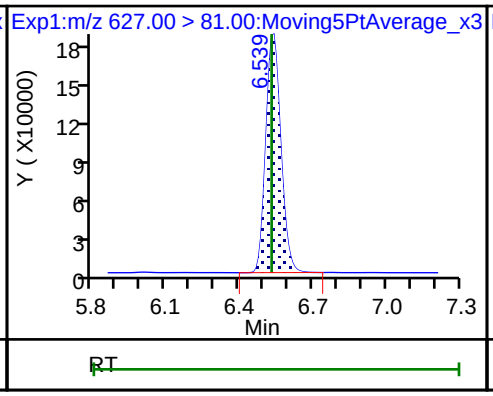
D 45 13C2-PFDoDA



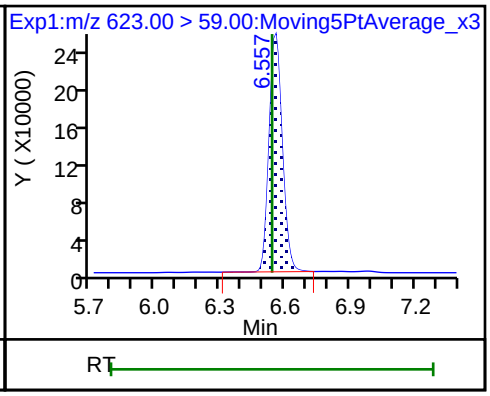
48 10:2 FTS



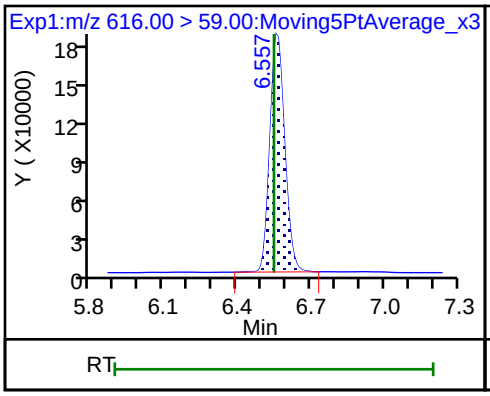
48 10:2 FTS



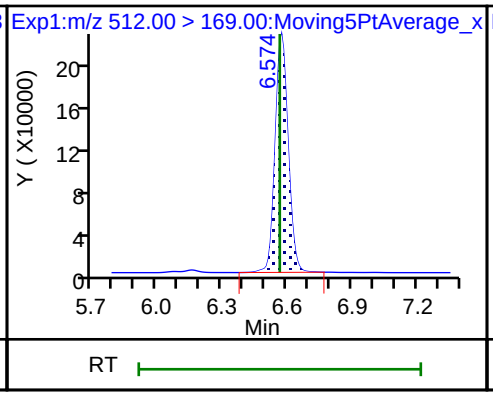
D 44 d7-N-MeFOSE-M



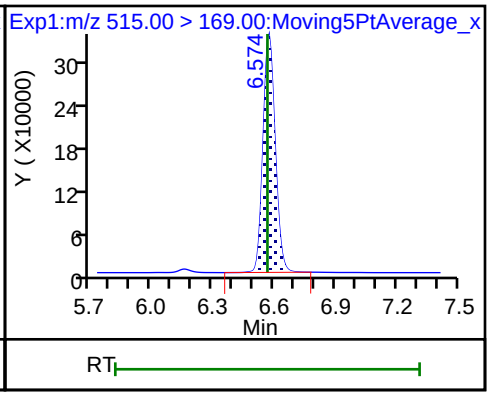
47 N-MeFOSE-M



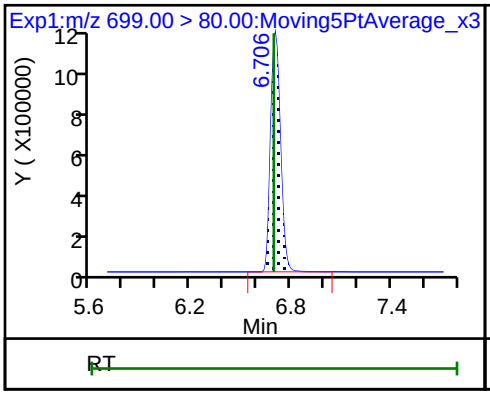
50 NMeFOSA



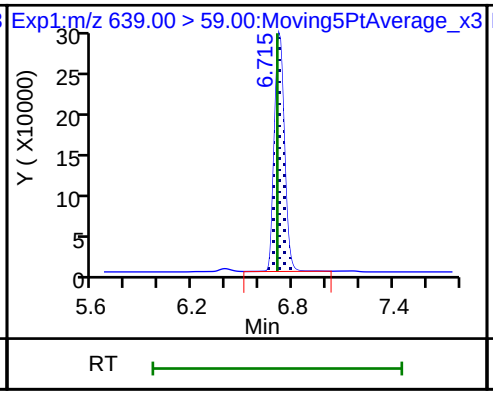
D 49 d3-NMePFOSA



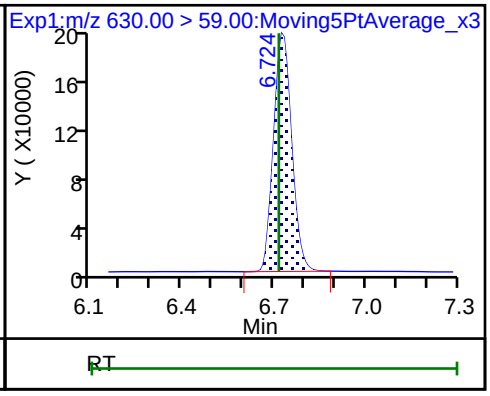
53 PFDoS



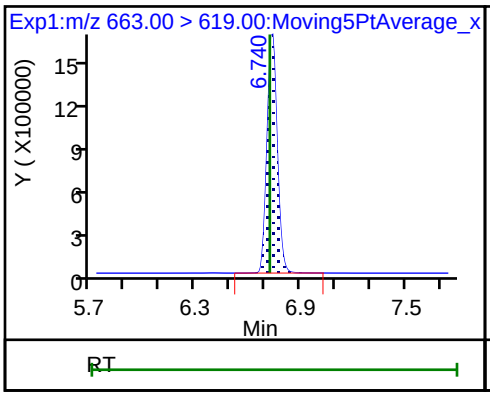
D 51 d9-N-EtFOSE-M



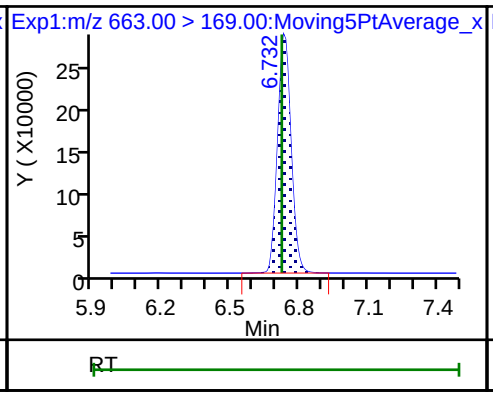
52 N-EtFOSE-M



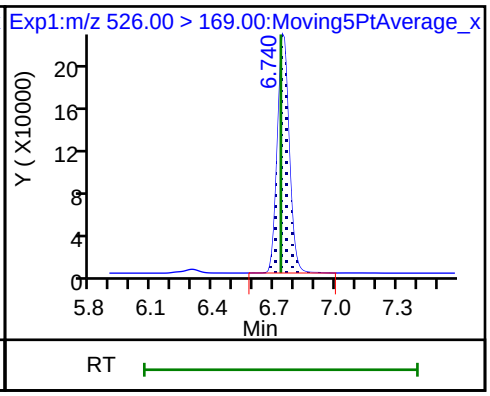
56 Perfluorotridecanoic acid



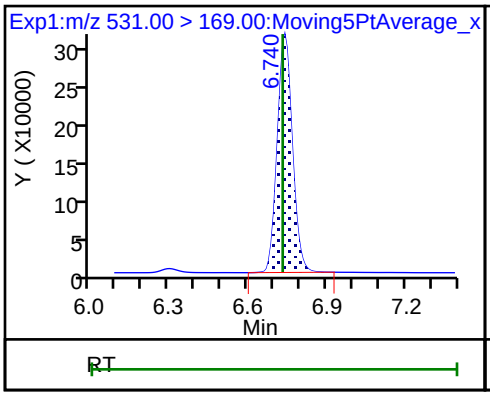
56 Perfluorotridecanoic acid



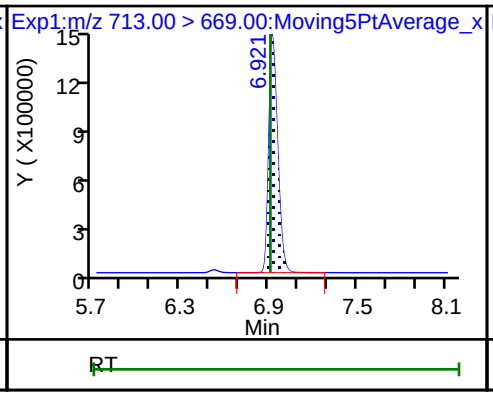
55 N-EtFOSA-M



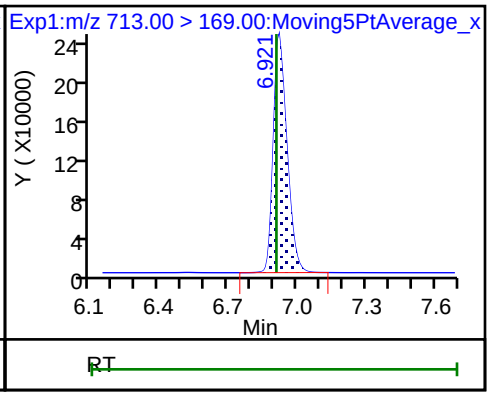
D 54 d5-NEtPFOSA



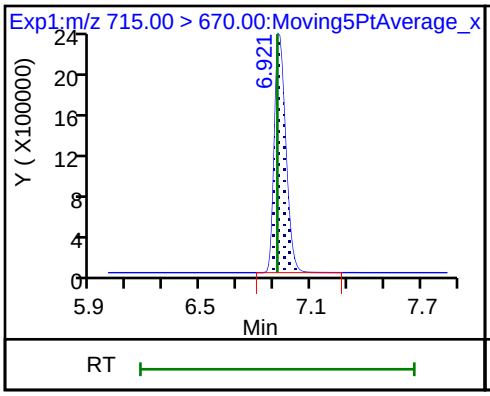
57 Perfluorotetradecanoic acid



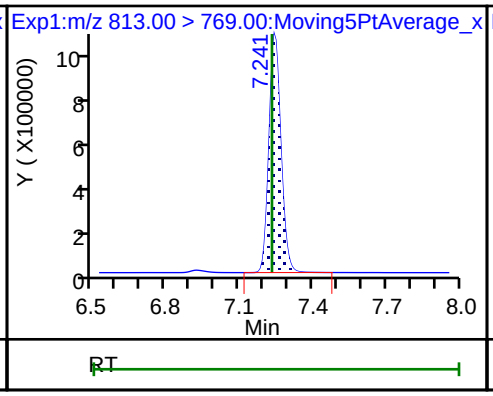
57 Perfluorotetradecanoic acid



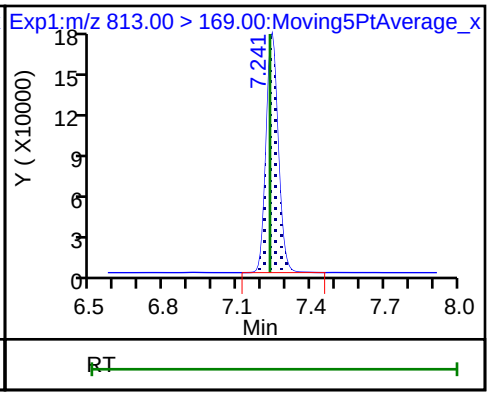
D 58 13C2 PFTeDA



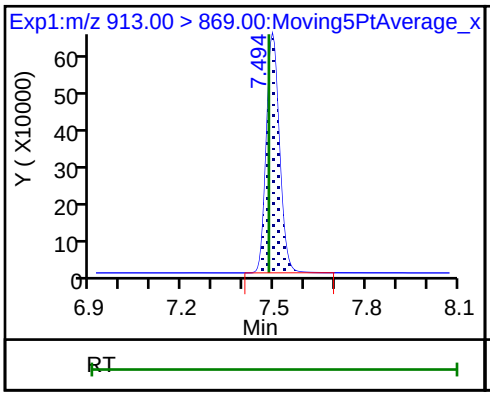
59 Perfluorohexadecanoic acid



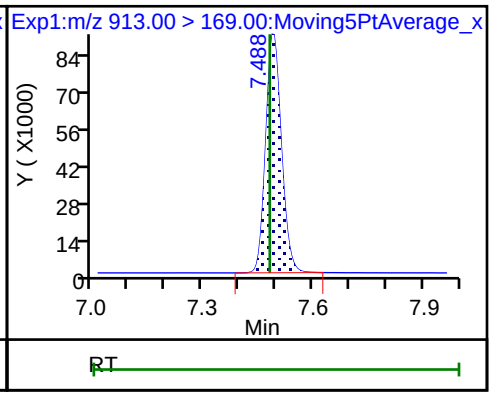
59 Perfluorohexadecanoic acid



60 Perfluorooctadecanoic acid



60 Perfluorooctadecanoic acid



PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/03/2022 17:12

Analysis Batch Number: 240108 End Date: 04/03/2022 18:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 410-240108/1		04/03/2022 17:12	1	22APR03DCAL-41.d	Gemini C18 50mm 3(mm)
IC 410-240108/2		04/03/2022 17:23	1	22APR03DCAL-42.d	Gemini C18 50mm 3(mm)
ICIS 410-240108/3		04/03/2022 17:33	1	22APR03DCAL-43.d	Gemini C18 50mm 3(mm)
IC 410-240108/4		04/03/2022 17:44	1	22APR03DCAL-44.d	Gemini C18 50mm 3(mm)
IC 410-240108/5		04/03/2022 17:55	1	22APR03DCAL-45.d	Gemini C18 50mm 3(mm)
IC 410-240108/6		04/03/2022 18:05	1	22APR03DCAL-46.d	Gemini C18 50mm 3(mm)
IC 410-240108/7		04/03/2022 18:16	1	22APR03DCAL-47.d	Gemini C18 50mm 3(mm)
ICB 410-240108/8		04/03/2022 18:26	1	22APR03DCAL-48.d	Gemini C18 50mm 3(mm)
ICV 410-240108/9		04/03/2022 18:37	1	22APR03DCAL-49.d	Gemini C18 50mm 3(mm)
WDM 410-240108/10		04/03/2022 18:47	1	22APR03DCAL-50.d	Gemini C18 50mm 3(mm)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/04/2022 07:32

Analysis Batch Number: 240466 End Date: 04/05/2022 07:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVIS 410-240466/1		04/04/2022 07:32	1	22APR04-01.d	Gemini C18 50mm 3(mm)
CCB 410-240466/2		04/04/2022 07:43	1	22APR04-02.d	Gemini C18 50mm 3(mm)
MB 410-239491/1-A		04/04/2022 07:54	1	22APR04-03.d	Gemini C18 50mm 3(mm)
LCS 410-239491/2-A		04/04/2022 08:05	1	22APR04-04.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 08:16	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 08:27	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 08:37	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 08:48	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 08:58	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 09:09	10		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 09:20	100		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 09:30	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 09:41	10		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 09:51	100		Gemini C18 50mm 3(mm)
CCV 410-240466/15		04/04/2022 10:02	1	22APR04-15.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 10:13	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 10:23	10		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 10:34	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 10:44	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 10:55	10		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 11:06	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 11:16	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 11:27	1		Gemini C18 50mm 3(mm)
410-78012-1 RE	AOI01-04-GW RE	04/04/2022 11:37	1	22APR04-24.d	Gemini C18 50mm 3(mm)
CCV 410-240466/26		04/04/2022 11:59	1	22APR04-26.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 12:09	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 12:21	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 12:32	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 12:42	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 12:53	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 13:03	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 13:14	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 13:25	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 13:35	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 13:46	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 13:56	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 14:07	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 14:18	1		Gemini C18 50mm 3(mm)
CCV 410-240466/40		04/04/2022 14:28	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 14:39	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 14:49	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 15:00	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 15:10	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 15:21	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 15:32	1		Gemini C18 50mm 3(mm)

EPA 537(Mod)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/04/2022 07:32

Analysis Batch Number: 240466 End Date: 04/05/2022 07:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/04/2022 15:42	1		Gemini C18 50mm 3(mm)
CCV 410-240466/49		04/04/2022 16:03	1		Gemini C18 50mm 3(mm)
CCV 410-240466/60		04/04/2022 18:00	1		Gemini C18 50mm 3(mm)
CCB 410-240466/72		04/04/2022 20:37	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 20:48	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 20:59	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 21:10	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 21:20	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 21:31	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 21:41	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 21:52	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 22:03	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 22:13	1		Gemini C18 50mm 3(mm)
CCV 410-240466/71		04/04/2022 22:34	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 22:45	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 23:08	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 23:18	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 23:30	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 23:40	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/04/2022 23:51	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 00:02	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 00:12	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 00:23	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 00:33	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 00:44	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 00:54	1		Gemini C18 50mm 3(mm)
CCV 410-240466/86		04/05/2022 01:05	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 01:16	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 01:26	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 01:37	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 01:47	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 01:58	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 02:09	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 02:19	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 02:30	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 02:40	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 03:02	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 03:12	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 03:23	1		Gemini C18 50mm 3(mm)
CCV 410-240466/100		04/05/2022 03:33	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 03:44	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 03:54	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 04:05	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 04:16	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 04:26	1		Gemini C18 50mm 3(mm)

EPA 537(Mod)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/04/2022 07:32

Analysis Batch Number: 240466 End Date: 04/05/2022 07:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/05/2022 04:37	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 04:47	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 04:58	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 05:09	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 05:19	1		Gemini C18 50mm 3(mm)
CCV 410-240466/111		04/05/2022 05:30	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 05:40	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 05:51	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 06:02	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 06:33	100		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 06:44	10		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 06:55	100		Gemini C18 50mm 3(mm)
ZZZZZ		04/05/2022 07:05	10		Gemini C18 50mm 3(mm)
CCV 410-240466/121		04/05/2022 07:16	1		Gemini C18 50mm 3(mm)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/07/2022 09:52

Analysis Batch Number: 242022 End Date: 04/07/2022 11:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 410-242022/1		04/07/2022 09:52	1	22APR07-19.d	Gemini C18 50mm 3(mm)
IC 410-242022/2		04/07/2022 10:02	1	22APR07-20.d	Gemini C18 50mm 3(mm)
ICIS 410-242022/3		04/07/2022 10:13	1	22APR07-21.d	Gemini C18 50mm 3(mm)
IC 410-242022/4		04/07/2022 10:23	1	22APR07-22.d	Gemini C18 50mm 3(mm)
IC 410-242022/5		04/07/2022 10:34	1	22APR07-23.d	Gemini C18 50mm 3(mm)
IC 410-242022/6		04/07/2022 10:44	1	22APR07-24.d	Gemini C18 50mm 3(mm)
IC 410-242022/7		04/07/2022 10:55	1	22APR07-25.d	Gemini C18 50mm 3(mm)
ICB 410-242022/8		04/07/2022 11:05	1	22APR07-26.d	Gemini C18 50mm 3(mm)
ICV 410-242022/9		04/07/2022 11:16	1	22APR07-27.d	Gemini C18 50mm 3(mm)
WDM 410-242022/10		04/07/2022 11:27	1	22APR07-28.d	Gemini C18 50mm 3(mm)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/07/2022 12:09

Analysis Batch Number: 242084 End Date: 04/08/2022 11:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVIS 410-242084/1		04/07/2022 12:09	1	22APR07-32.d	Gemini C18 50mm 3(mm)
CCB 410-242084/2		04/07/2022 12:20	1	22APR07-33.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 12:30	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 12:42	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 12:52	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 13:03	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 13:14	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 13:24	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 13:35	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 13:45	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 13:56	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 14:07	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 14:17	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 14:28	1		Gemini C18 50mm 3(mm)
CCV 410-242084/15		04/07/2022 14:38	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 14:49	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 15:00	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 15:10	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 15:31	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 15:53	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 16:03	10		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 16:14	100		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 16:24	10		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 16:35	100		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 16:46	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 16:56	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 17:07	1		Gemini C18 50mm 3(mm)
CCV 410-242084/30		04/07/2022 17:17	1	22APR07-61.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 17:28	1		Gemini C18 50mm 3(mm)
MB 410-241437/1-A		04/07/2022 17:49	1	22APR07-64.d	Gemini C18 50mm 3(mm)
LCS 410-241437/3-A		04/07/2022 18:10	1	22APR07-66.d	Gemini C18 50mm 3(mm)
LCSD 410-241437/4-A		04/07/2022 18:21	1	22APR07-67.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 18:32	1		Gemini C18 50mm 3(mm)
410-78012-1	AOI01-04-GW	04/07/2022 18:42	1	22APR07-69.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 18:53	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 19:03	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 19:14	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 19:25	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 19:35	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 19:46	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 19:56	1		Gemini C18 50mm 3(mm)
CCV 410-242084/46		04/07/2022 20:07	1	22APR07-77.d	Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 20:18	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 20:39	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 20:51	1		Gemini C18 50mm 3(mm)

EPA 537(Mod)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/07/2022 12:09

Analysis Batch Number: 242084 End Date: 04/08/2022 11:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/07/2022 21:01	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 21:12	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 21:44	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 21:54	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 22:05	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 22:15	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 22:26	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 22:37	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 22:47	1		Gemini C18 50mm 3(mm)
CCV 410-242084/64		04/07/2022 23:19	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 23:29	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 23:40	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/07/2022 23:51	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 00:01	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 00:12	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 00:22	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 00:33	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 00:44	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 00:54	1		Gemini C18 50mm 3(mm)
CCV 410-242084/76		04/08/2022 01:26	1		Gemini C18 50mm 3(mm)
CCB 410-242084/77		04/08/2022 01:36	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 01:47	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 01:59	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 02:09	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 02:20	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 02:31	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 02:41	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 02:52	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 03:02	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 03:13	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 03:24	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 03:34	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 03:45	1		Gemini C18 50mm 3(mm)
CCV 410-242084/90		04/08/2022 04:06	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 04:16	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 04:27	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 04:38	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 04:48	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 04:59	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 05:09	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 05:20	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 05:31	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 05:41	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 05:52	1		Gemini C18 50mm 3(mm)
CCV 410-242084/102		04/08/2022 06:13	1		Gemini C18 50mm 3(mm)

EPA 537(Mod)

PFAS ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Envi Job No.: 410-78012-1

SDG No.:

Instrument ID: 29347 Start Date: 04/07/2022 12:09

Analysis Batch Number: 242084 End Date: 04/08/2022 11:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/08/2022 06:24	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 06:34	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 06:45	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 06:55	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 07:06	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 07:17	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 07:27	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 07:38	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 07:48	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 07:59	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 08:10	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 08:20	1		Gemini C18 50mm 3(mm)
CCV 410-242084/117		04/08/2022 08:41	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 08:52	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 09:03	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 09:13	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 09:24	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 09:34	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 09:45	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 09:56	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 10:06	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 10:17	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 10:27	1		Gemini C18 50mm 3(mm)
CCV 410-242084/129		04/08/2022 10:49	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 10:59	1		Gemini C18 50mm 3(mm)
ZZZZZ		04/08/2022 11:10	1		Gemini C18 50mm 3(mm)
CCV 410-242084/133		04/08/2022 11:31	1		Gemini C18 50mm 3(mm)

PFAS BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-78012-1

SDG No.:

Batch Number: 239491 Batch Start Date: 03/31/22 06:58 Batch Analyst: Bacilio-Guerrero, Elizabe

Batch Method: PFAS by QSM B15 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	PFC_MS_MODWX 00129
MB 410-239491/1		PFAS by QSM B15, EPA 537(Mod)		300 g	50 g	250 mL	1 mL	N/A SU	
LCS 410-239491/2		PFAS by QSM B15, EPA 537(Mod)		300 g	50 g	250 mL	1 mL	N/A SU	40 uL
410-78012-A-1	AOI01-04-GW	PFAS by QSM B15, EPA 537(Mod)	T	323.35 g	28.45 g	294.9 mL	1 mL	N/A SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	PFC_SS_MODX 00231	AnalysisComment				
MB 410-239491/1		PFAS by QSM B15, EPA 537(Mod)		25 uL					
LCS 410-239491/2		PFAS by QSM B15, EPA 537(Mod)		25 uL					
410-78012-A-1	AOI01-04-GW	PFAS by QSM B15, EPA 537(Mod)	T	25 uL	Discolored. Particulate. Vacuum was applied. MOD WAX cartridge was used, sample will need to be treated with envi carb/push through				

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.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-78012-1

SDG No.:

Batch Number: 239491 Batch Start Date: 03/31/22 06:58 Batch Analyst: Bacilio-Guerrero, Elizabe

Batch Method: PFAS by QSM B15 Batch End Date:

Batch Notes	
Manifold ID	4, 15
SPE Cartridge Lot ID	6602051-01
Balance ID	C125996498
Pipette/Syringe/Dispenser ID	P10-8, PFAS 6, 7
Methanol ID	EC884-US
H2O ID	House A372
Solvent Name	.3% NH4OH in MeOH, 1:1 ACN:MeOH
Solvent Lot #	4072603292233B, 2009403312233A
Analyst ID - Reagent Drop	EBG 20094
Analyst ID - IS Reagent Drop Witness	ABP 30938
Collection Tube Witness	LB 44841
Centrifuge Tube ID	518584
QC Bottle Lot ID	0222101G

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.

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491 Analyst: Bacilio-Guerrero, Elizabeth Batch Open: 3/31/2022 6:58:00AM

Method Code: 410-3535_PFC-410 Batch End:

4/12, 4/18, 4/11, 4/14
RX RX

B410-239491
DOD

Solid-Phase Extraction (SPE)

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~410-239491/1 N/A	N/A	300 g / 50 g	250 mL / 1 mL	N/A			N/A	N/A	N/A		MB 410-239491/1-A
2	LCS~410-239491/2 N/A	N/A	300 g / 50 g	250 mL / 1 mL	N/A			N/A	N/A	N/A		LCS 410-239491/2-A
3	410-77655-B-8 (PFC_IDA_D5.3)	N/A (410-77655-1)	310.96 g / 28.15 g	282.8 mL / 1 mL	N/A			3/31/22	11_Days	4	Discolored. Particulate. Vacuum was applied. MOD WAX cartridge was used, sample will need to be treated with envi carb/push through	410-77655-B-8-A
4	410-77655-B-9 (PFC_IDA_D5.3)	N/A (410-77655-1)	338.02 g / 27.73 g	310.3 mL / 1 mL	N/A			3/31/22	11_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through	410-77655-B-9-A
5	410-77655-B-10 (PFC_IDA_D5.3)	N/A (410-77655-1)	339.10 g / 27.78 g	311.3 mL / 1 mL	N/A			3/31/22	11_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through	410-77655-B-10-A

N-EVAP A 40°C
DN40726 3/31

Reextracted by
DN40726 3/31

Eurofins Lancaster Laboratories Env, LLC

envicarb lot #153732
DCU1900 ~~030~~ DCU1900 04/01/22 DCU1900 04/01/22

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491 Analyst: Bacilio-Guerrero, Elizabeth Batch Open: 3/31/2022 6:58:00AM

Method Code: 410-3535_PFC-410 Batch End:

6	410-77655-B-11 (PFC_IDA_D5.3)	N/A (410-77655-1)	325.13 g 27.85 g	297.3 mL 1 mL	N/A			3/31/22	11_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
7	410-77656-B-4 (PFC_IDA_D5.3)	N/A (410-77656-1)	289.96 g 29.90 g	260.1 mL 1 mL	N/A			3/31/22	7_Days	4	Discolored. Dissipating foam Vacuum was applied. MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
8	410-77656-B-8 (PFC_IDA_D5.3)	N/A (410-77656-1)	268.81 g 28.60 g	240.2 mL 1 mL	N/A			3/31/22	7_Days	4	Limited Sample was given. Discolored. Dissipating foam Vacuum was applied. MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
9	410-77656-B-11 (PFC_IDA_D5.3)	N/A (410-77656-1)	339.93 g 27.53 g	312.4 mL 1 mL	N/A			3/31/22	7_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491 Analyst: Bacilio-Guerrero, Elizabeth Batch Open: 3/31/2022 6:58:00AM

Method Code: 410-3535_PFC-410 Batch End:

10	410-77656-B-12 (PFC_IDA_D5.3)	N/A (410-77656-1)	332.48 g 27.61 g	304.9 mL 1 mL	N/A			3/31/22	7_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
11	410-77656-B-15 (PFC_IDA_D5.3)	N/A (410-77656-1)	287.00 g 27.26 g	259.7 mL 1 mL	N/A			3/31/22	7_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
12	410-78002-A-1 (PFC_IDA_D5.3)	N/A (410-78002-1)	302.30 g 28.36 g	273.9 mL 1 mL	N/A			4/4/22	7_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
13	410-78002-A-1~MS (PFC_IDA_D5.3)	N/A (410-78002-1)	306.33 g 28.13 g	278.2 mL 1 mL	N/A			4/4/22	7_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
14	410-78002-A-1~MSD (PFC_IDA_D5.3)	N/A (410-78002-1)	305.88 g 27.66 g	278.2 mL 1 mL	N/A			4/4/22	7_Days	4	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491

Analyst: Bacilio-Guerrero, Elizabeth

Batch Open: 3/31/2022 6:58:00AM

Method Code: 410-3535_PFC-410

Batch End:

15	410-78012-A-1 (PFC_IDA_D5.3)	N/A (410-78012-1)	323.35 g 28.45 g	294.9 mL 1 mL	N/A			4/5/22	11_Days	4	Discolored. Particulate. Vacuum was applied. MOD WAX cartridge was used, sample will need to be treated with envi carb/push through
16	MB~410-239491/16 N/A	N/A	300 g 50 g	250 mL 1 mL	N/A			N/A	N/A	N/A	Concentration Blank

Page 1262 of 1278

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491
Method Code: 410-3535_PFC-410

Analyst: Bacilio-Guerrero, Elizabeth

Batch Open: 3/31/2022 6:58:00AM
Batch End:

Batch Notes

pH Indicator ID	
Manifold ID	4, 15
First Start time	
First End time	
SPE Cartridge Type	
SPE Cartridge Lot ID	6602051-01
SPE Disk Type	
Solid Phase Extraction Disk ID	
Balance ID	C125996498
Pipette/Syringe/Dispenser ID	P10-8, PFAS 6, 7
Na2SO4 ID	
Methanol ID	EC884-US
Hexane ID	N/A
Sodium Hydroxide ID	N/A
H2O ID	House A372
Solvent Name	.3% NH4OH in MeOH, 1:1 ACN:MeOH
Solvent Lot #	4072603292233B, 2009403312233A
Rinse Solvent Name	
Rinse Solvent Lot	
Acid Name	
Acid ID	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491

Analyst: Bacilio-Guerrero, Elizabeth

Batch Open: 3/31/2022 6:58:00AM

Method Code: 410-3535_PFC-410

Batch End:

Analyst ID - Reagent Drop	EBG 20094
Analyst ID - IS Reagent Drop	N/A
Analyst ID - IS Reagent Drop Witness	ABP 30938
Collection Tube Witness	LB 44841
Centrifuge Tube ID	518584
QC Bottle Lot ID	0222101G
Batch Comment	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491

Method Code: 410-3535_PFC-410

Analyst: Bacilio-Guerrero, Elizabeth

Batch Open: 3/31/2022 6:58:00AM

Batch End:

Comments

410-77655-B-8	Rework Comments:	fts oos, pfos contamination
410-77655-B-9	Rework Comments:	MB contamination
410-77655-B-10	Rework Comments:	MB contamination
410-77655-B-11	Rework Comments:	MB contamination
410-77656-B-4	Rework Comments:	QC OOS, SS OOS, run str/DL10/DL100
410-77656-B-8	Rework Comments:	QC OOS, SS OOS, run str/DL10/DL100
410-77656-B-11	Rework Comments:	QC OOS, SS OOS, run str/DL10
410-77656-B-12	Rework Comments:	QC and sample SS OOS
410-77656-B-15	Rework Comments:	QC OOS, SS OOS, run str/DL10
Login Comments for Job 78002:		PM: requested SEDD EDD answers from client 3/30/22 dfb 17508
410-78002-A-1	Method Comments:	Sample P1 or WT - may be high in PFAS
410-78002-A-1~MS	Method Comments:	Sample P1 or WT - may be high in PFAS
410-78002-A-1~MSD	Method Comments:	Sample P1 or WT - may be high in PFAS

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491

Method Code: 410-3535_PFC-410

Analyst: Bacilio-Guerrero, Elizabeth

Batch Open: 3/31/2022 6:58:00AM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 410-239491/1	PFC_SS_MODX_00231	25 uL	1 mL		
LCS 410-239491/2	PFC_MS_MODWX_00129	40 uL	1 mL		
LCS 410-239491/2	PFC_SS_MODX_00231	25 uL	1 mL		
410-77655-B-8	PFC_SS_MODX_00231	25 uL	1 mL		
410-77655-B-9	PFC_SS_MODX_00231	25 uL	1 mL		
410-77655-B-10	PFC_SS_MODX_00231	25 uL	1 mL		
410-77655-B-11	PFC_SS_MODX_00231	25 uL	1 mL		
410-77656-B-4	PFC_SS_MODX_00231	25 uL	1 mL		
410-77656-B-8	PFC_SS_MODX_00231	25 uL	1 mL		
410-77656-B-11	PFC_SS_MODX_00231	25 uL	1 mL		
410-77656-B-12	PFC_SS_MODX_00231	25 uL	1 mL		
410-77656-B-15	PFC_SS_MODX_00231	25 uL	1 mL		
410-78002-A-1	PFC_SS_MODX_00231	25 uL	1 mL		
410-78002-A-1 MS	PFC_MS_MODWX_00129	40 uL	1 mL		
410-78002-A-1 MS	PFC_SS_MODX_00231	25 uL	1 mL		
410-78002-A-1 MSD	PFC_MS_MODWX_00129	40 uL	1 mL		
410-78002-A-1 MSD	PFC_SS_MODX_00231	25 uL	1 mL		
410-78012-A-1	PFC_SS_MODX_00231	25 uL	1 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-239491

Analyst: Bacilio-Guerrero, Elizabeth

Batch Open: 3/31/2022 6:58:00AM

Method Code: 410-3535_PFC-410

Batch End:

MB 410-239491/16	PFC_SS_MODX_00231	25 uL	1 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

PFAS BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-78012-1

SDG No.:

Batch Number: 241437 Batch Start Date: 04/06/22 07:05 Batch Analyst: Catchings, Donovan

Batch Method: PFAS by QSM B15 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	PFC_MS_MODWX 00129	PFC_SS_MODX 00232
MB 410-241437/1		PFAS by QSM B15, EPA 537(Mod)		300 g	50 g	250 mL	1 mL		25 uL
LCS 410-241437/3		PFAS by QSM B15, EPA 537(Mod)		300 g	50 g	250 mL	1 mL	40 uL	25 uL
LCSD 410-241437/4		PFAS by QSM B15, EPA 537(Mod)		300 g	50 g	250 mL	1 mL	40 uL	25 uL
410-78012-B-1	AOI01-04-GW	PFAS by QSM B15, EPA 537(Mod)	T	207.76 g	28.53 g	179.2 mL	1 mL		25 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 410-241437/1		PFAS by QSM B15, EPA 537(Mod)							
LCS 410-241437/3		PFAS by QSM B15, EPA 537(Mod)							
LCSD 410-241437/4		PFAS by QSM B15, EPA 537(Mod)							
410-78012-B-1	AOI01-04-GW	PFAS by QSM B15, EPA 537(Mod)	T	particulate, discolored, centrifuged, limited sample					

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.

PFAS BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-78012-1

SDG No.:

Batch Number: 241437 Batch Start Date: 04/06/22 07:05 Batch Analyst: Catchings, Donovan

Batch Method: PFAS by QSM B15 Batch End Date:

Batch Notes	
Manifold ID	13, 20
SPE Cartridge Lot ID	6666672-01
Balance ID	B629764122
Pipette/Syringe/Dispenser ID	PFAS 6,7, P10-5
Methanol ID	214340
H2O ID	House A372
Solvent Name	.3% NH4OH in MeOH, 1:1 ACN:MeOH
Solvent Lot #	4422104062233A, 3128604052233A
Analyst ID - Reagent Drop	DC 20115
Analyst ID - IS Reagent Drop Witness	PC 44221
Collection Tube Witness	PC 44221
Centrifuge Tube ID	519011
QC Bottle Lot ID	0222101G
Batch Comment	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through

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.

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-241437 Analyst: Catchings, Donovan Batch Open: 4/6/2022 7:05:00AM

Method Code: 410-3535_PFC-410 Batch End: B410-241437

4/11 RX, 4/14 RX, 4/14, 4/20

Solid-Phase Extraction (SPE)

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~410-241437/1 N/A	N/A	300 g 50 g	250 mL 1 mL				N/A	N/A	N/A		MB 410-241437/1-A
2	MB~410-241437/2 N/A	N/A	300 g 50 g	250 mL 1 mL				N/A	N/A	N/A	concentration blank	MB 410-241437/2-A
3	LCS~410-241437/3 N/A	N/A	300 g 50 g	250 mL 1 mL				N/A	N/A	N/A		LCS 410-241437/3-A
4	LCSD~410-241437/4 N/A	N/A	300 g 50 g	250 mL 1 mL				N/A	N/A	N/A		LCSD 410-241437/4-A
5	410-77655-B-58 (PFC_IDA_D5.3)	N/A (410-77655-1)	347.68 g 29.45 g	318.2 mL 1 mL				3/31/22	11_Days	4	particulate, discolored, centrifuged, vacuum applied, Second cartridge used	410-77655-B-58-A
6	410-78012-B-1 (PFC_IDA_D5.3)	N/A (410-78012-1)	207.76 g 28.53 g	179.2 mL 1 mL				4/5/22	11_Days	4	particulate, discolored, centrifuged, limited sample	410-78012-B-1-A
7	410-78648-A-32 (PFC_IDA_D5.3)	N/A (410-78648-1)	321.60 g 26.25 g	295.4 mL 1 mL				4/11/22	11_Days	4		410-78648-A-32-A
8	410-78648-A-33 (PFC_IDA_D5.3)	N/A (410-78648-1)	317.74 g 26.23 g	291.5 mL 1 mL				4/11/22	11_Days	4		410-78648-A-33-A
9	410-78648-A-34 (PFC_IDA_D5.3)	N/A (410-78648-1)	317.95 g 27.18 g	290.8 mL 1 mL				4/11/22	11_Days	4		410-78648-A-34-A

N-evap D@40C

Recon. by IDX# 312860 04/06/22

envicarb lot#: 153732 RC34437 4/7/22

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-241437 Analyst: Catchings, Donovan Batch Open: 4/6/2022 7:05:00AM

Method Code: 410-3535_PFC-410 Batch End:

10	410-78648-A-50 (PFC_IDA_D5.3)	N/A (410-78648-1)	322.13 g 26.89 g	295.2 mL 1 mL				4/11/22	11_Days	4		
11	410-78755-A-1 (PFC_IDA_D5.3)	N/A (410-78755-1)	316.11 g 26.63 g	289.5 mL 1 mL				4/8/22	7_Days	4		
12	410-78755-A-2 (PFC_IDA_D5.3)	N/A (410-78755-1)	322.98 g 26.33 g	296.7 mL 1 mL				4/8/22	7_Days	4		
13	410-78755-A-3 (PFC_IDA_D5.3)	N/A (410-78755-1)	326.15 g 26.42 g	299.7 mL 1 mL				4/8/22	7_Days	4		
14	410-78755-A-4 (PFC_IDA_D5.3)	N/A (410-78755-1)	314.39 g 26.82 g	287.6 mL 1 mL				4/8/22	7_Days	4	vacuum applied	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-241437
Method Code: 410-3535_PFC-410

Analyst: Catchings, Donovan

Batch Open: 4/6/2022 7:05:00AM
Batch End:

Batch Notes

pH Indicator ID	
Manifold ID	13, 20
First Start time	
First End time	
SPE Cartridge Type	
SPE Cartridge Lot ID	6666672-01
SPE Disk Type	
Solid Phase Extraction Disk ID	
Balance ID	B629764122
Pipette/Syringe/Dispenser ID	PFAS 6,7, P10-5
Na2SO4 ID	
Methanol ID	214340
Hexane ID	NA
Sodium Hydroxide ID	NA
H2O ID	House A372
Solvent Name	.3% NH4OH in MeOH, 1:1 ACN:MeOH
Solvent Lot #	4422104062233A, 3128604052233A
Rinse Solvent Name	
Rinse Solvent Lot	
Acid Name	
Acid ID	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-241437 Analyst: Catchings, Donovan Batch Open: 4/6/2022 7:05:00AM

Method Code: 410-3535_PFC-410 Batch End:

Analyst ID - Reagent Drop	DC 20115
Analyst ID - IS Reagent Drop	NA
Analyst ID - IS Reagent Drop Witness	PC 44221
Collection Tube Witness	PC 44221
Centrifuge Tube ID	519011
QC Bottle Lot ID	0222101G
Batch Comment	MOD WAX cartridge was used, sample will need to be treated with envi carb/push through

Comments

410-77655-B-58	Rework Comments:	MB contamination, not 10x
410-78012-B-1	Rework Comments:	SS AND QC OOS

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-241437
Analyst: Catchings, Donovan
Batch Open: 4/6/2022 7:05:00AM

Method Code: 410-3535_PFC-410
Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 410-241437/1	PFC_SS_MODX_00232	25 uL	1 mL		
MB 410-241437/2	PFC_SS_MODX_00232	25 uL	1 mL		
LCS 410-241437/3	PFC_MS_MODWX_00129	40 uL	1 mL		
LCS 410-241437/3	PFC_SS_MODX_00232	25 uL	1 mL		
LCSD 410-241437/4	PFC_MS_MODWX_00129	40 uL	1 mL		
LCSD 410-241437/4	PFC_SS_MODX_00232	25 uL	1 mL		
410-77655-B-58	PFC_SS_MODX_00232	25 uL	1 mL		
410-78012-B-1	PFC_SS_MODX_00232	25 uL	1 mL		
410-78648-A-32	PFC_SS_MODX_00232	25 uL	1 mL		
410-78648-A-33	PFC_SS_MODX_00232	25 uL	1 mL		
410-78648-A-34	PFC_SS_MODX_00232	25 uL	1 mL		
410-78648-A-50	PFC_SS_MODX_00232	25 uL	1 mL		
410-78755-A-1	PFC_SS_MODX_00232	25 uL	1 mL		
410-78755-A-2	PFC_SS_MODX_00232	25 uL	1 mL		
410-78755-A-3	PFC_SS_MODX_00232	25 uL	1 mL		
410-78755-A-4	PFC_SS_MODX_00232	25 uL	1 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 410-241437 Analyst: Catchings, Donovan Batch Open: 4/6/2022 7:05:00AM

Method Code: 410-3535_PFC-410 Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

Shipping and Receiving Documents

>> Select a Laboratory or Service Center <<

#N/A
#N/A
#N/A
##

Chain of

410-78012 Chain of Custody

eurofins | Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Mike Kepner	Site Contact: Mike Wright	Date: 3/28/22	COC No:
EA Engineering Science & Technology	Email: mkepner@eaest.com	Lab Contact: Badman, Venessa	Carrier:	____ of ____ COCs
225 Schilling Circle Suite 400	Tel/Fax:			TALS Project #:
Hunt Valley, MD 21031	Analysis Turnaround Time			Sampler: MW
410-771-4950	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
tlamond@eaest	TAT if different from Below ____			Walk-in Client:
Project Name: USACE ANG SI Rochester: PFAS	☑ 2 weeks			Lab Sampling:
Site: Rochester AASF #2	☐ 1 week			Job / SDG No.:
P O # 21322	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	PFC-IDAD5.3-DoD List of 24	Sample Specific Notes:
AOI01-04-GW	3/25/2022	705	G	W	2	N	N	x	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammabl ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ | Therm ID No.:____

Relinquished by:	Company: EA	Date/Time: 3/28/22 1600	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: ELLE	Date/Time: 3-30-22 7244

Login Sample Receipt Checklist

Client: EA Engineering, Science, and Technology

Job Number: 410-78012-1

Login Number: 78012
List Number: 1
Creator: Hartlove, Katie M

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
Sample custody seals are intact.	N/A	