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NELAP Certification Number: CA00046
DoD-ELAP Certification Number 4064.01
State Certification Number:

January 13, 2023

Watson Tanji
AECOM Honolulu
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

RE: Red Hill AFFF Assessment Sampling
22L0177

Enclosed are the results of analyses for samples received by our laboratory on 12/28/2022. If you have any questions concerning this report, please feel free to contact me.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Sincerely,

Greg Salata For Gregory Salata
Project Manager

Table of Contents

Cover Letter	1
Case Narrative	4
Sample Results	6
QC Results	16
Notes and Definitions	21
Login Summary	22
Chain of Custody	23
Other Documents or Sub Lab Data	27
Fraction (PFAS)	28
Sample Data (EPA 1633)	29
Sample Results (22L0177-01RE2)	30
Sample Results (22L0177-01RE3)	39
Sample Results (22L0177-02RE2)	47
Sample Results (22L0177-02RE3)	56
Sample Results (22L0177-03RE2)	64
Sample Results (22L0177-03RE3)	73
Sample Results (22L0177-04RE2)	81
Sample Results (22L0177-04RE3)	90
Sample Results (22L0177-05RE2)	98
Sample Results (22L0177-05RE3)	107
Quality Control (EPA 1633)	115
Surrogate Summary (BCA0118)	116
Method Blank Summary (BCA0118)	124
Method Blank Results (BCA0118)	125
Laboratory Control Recovery (BCA0118)	127

Table of Contents (continued)

Calibration Summary (EPA 1633)	129
Calibration (SC00059)	138
Calibration (SC00101)	140
Initial Calibration Verification (SC00059)	197
Initial Calibration Verification (SC00101)	207
CCV (SC00069)	228
CCV (SC00125)	230
Quality Control Raw Data (EPA 1633)	310
QC Results (BCA0118)	311
Preparation Bench Sheet (BCA0118)	338
Injection Log (SC00059)	342
Injection Log (SC00069)	343
Injection Log (SC00101)	344
Injection Log (SC00125)	345
Standard Traceability	346

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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

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Data Validatable Report

Analysis Case Narrative

EPA 1633: Manual integrations were performed for this method in accordance with APPL's SOP. Chromatograms after manual integration are enclosed for specific samples and analytes. Abbreviated flags for technical justification are listed on the chromatogram. Some extracted internal standards recovered outside of control limits in some samples. These samples were diluted and recovered in control, unless stated otherwise.

The standard 23A0174's PFOS concentration was analytically derived through repeated analysis. All other analytes did not diverge from the expected spiked values in the original standard 22L0442. The BCA0105-BS1 and MRL1 spike value has been adjusted accordingly for PFOS.

The extracted internal standard D5-NEtFOSAA recovered above the upper control limit in sample 02 – AF-RHMW10-WGFD01LF-2212W4.

The extracted internal standard D5-NEtFOSAA recovered above the upper control limit in sample 03 – AF-HDMW225303-WGN01LF-2212W4.

The extracted internal standard D5-NEtFOSAA recovered above the upper control limit in sample 04 – AF-RHMW03-WGN01LF-2212W4.

The extracted internal standards 13C2-4:2FTS and D5-NEtFOSAA recovered above the upper control limit in BCA0118-BLK1.

The analytes PFDOS and 11CI-PF3OUdS and extracted internal standard 13C2-4:2FTS recovered above the upper control limit in BCA0118-BS1.

The analytes PFDOS, NEtFOSE, and 11CI-PF3OUdS recovered above the upper control limit in BCA0118-MRL1.

The analytes PFDOS and 11CI-PF3OUdS recovered above the upper control limit in SC00125-CCV1, SC00125-CCV2, and SC00125-CCV3.

The analytes PFTeDA, PFDOS, and 11CI-PF3OUdS recovered above the upper control limit in SC00125-LCV1. The analyte 7:3FTCA recovered below the lower control limit.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
22L0177-01	AF-RHMW10-WGN01LF-2212W4	Water	12/27/2022 14:50	12/28/2022
22L0177-02	AF-RHMW10-WGFD01LF-2212W4	Water	12/27/2022 14:50	12/28/2022
22L0177-03	AF-HDMW225303-WGN01LF-2212W4	Water	12/27/2022 11:10	12/28/2022
22L0177-04	AF-RHMW03-WGN01LF-2212W4	Water	12/27/2022 13:15	12/28/2022
22L0177-05	AF-RHMW02-WGN01LF-2212W4	Water	12/27/2022 11:45	12/28/2022

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Containers Received

Lab ID	Container Type	Count	Preservation Check
22L0177-01	500mL P	2	
22L0177-02	500mL P	2	
22L0177-03	500mL P	2	
22L0177-04	500mL P	2	
22L0177-05	500mL P	2	

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Sample Results

**Sample: AF-RHMW10-WGN01LF-2212W4
22L0177-01 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.71 U	1.4	0.71	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEA	0.097 J	0.71	0.35	0.057	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXA	0.058 J	0.35	0.18	0.049	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPA	0.18 U	0.35	0.18	0.036	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOA	0.18 U	0.35	0.18	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNA	0.18 U	0.35	0.18	0.072	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDA	0.18 U	0.35	0.18	0.090	ng/L	01/11/23	1	EPA 1633	BCA0118
PFUnA	0.18 U	0.35	0.18	0.14	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOA	0.18 U	0.35	0.18	0.099	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTRDA	0.27 U	0.35	0.27	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTEDA	0.18 U	0.35	0.18	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFBS	0.18 U	0.35	0.18	0.033	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEs	0.18 U	0.35	0.18	0.055	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXS	0.043 J	0.35	0.18	0.028	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPS	0.18 U	0.35	0.18	0.045	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOS	0.18 U	0.35	0.18	0.056	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNS	0.18 U	0.35	0.18	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDS	0.18 U	0.35	0.18	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOS	0.18 U	0.35	0.18	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
4:2FTS	0.71 U	1.4	0.71	0.26	ng/L	01/11/23	1	EPA 1633	BCA0118
6:2FTS	0.71 U	1.4	0.71	0.28	ng/L	01/11/23	1	EPA 1633	BCA0118
8:2FTS	0.71 U	1.4	0.71	0.073	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOSA	0.18 U	0.35	0.18	0.092	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSA	0.71 U	1.4	0.71	0.42	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSA	0.71 U	1.4	0.71	0.36	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSAA	0.18 U	0.35	0.18	0.094	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSAA	0.18 U	0.35	0.18	0.10	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSE	1.1 U	1.4	1.1	0.89	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSE	1.1 U	1.4	1.1	0.93	ng/L	01/11/23	1	EPA 1633	BCA0118
HFPO-DA	0.35 U	0.71	0.35	0.15	ng/L	01/11/23	1	EPA 1633	BCA0118
ADONA	0.35 U	0.71	0.35	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFEESA	0.35 U	0.71	0.35	0.096	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMPA	0.35 U	0.71	0.35	0.048	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMBA	0.35 U	0.71	0.35	0.080	ng/L	01/11/23	1	EPA 1633	BCA0118
NFDHA	0.35 U	0.71	0.35	0.27	ng/L	01/11/23	1	EPA 1633	BCA0118
9CL-PF3ONS	0.35 U	0.71	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
11CL-PF3OUDS	0.35 U	0.71	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
3:3FTCA	0.71 U	1.4	0.71	0.51	ng/L	01/11/23	1	EPA 1633	BCA0118
5:3FTCA	0.71 U	1.4	0.71	0.39	ng/L	01/11/23	1	EPA 1633	BCA0118
7:3FTCA	0.71 U	1.4	0.71	0.49	ng/L	01/11/23	1	EPA 1633	BCA0118
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Surrogate: 13C4-PFBA	97.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFPEA	104%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFHXA	111%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFHPA	109%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	104%		20-150			01/11/23	1	EPA 1633	BCA0118

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Sample Results (Continued)

Sample: AF-RHMW10-WGN01LF-2212W4 (Continued) 22L0177-01 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	110%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C6-PFDA	116%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C7-PFUnA	122%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFDOA	121%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFTEDA	80.4%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFBS	130%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFHXS	109%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOS	122%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	172% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	120%		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: 13C2-6:2FTS	95.7%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-8:2FTS	98.1%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOSA	123%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	53.3%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	48.8%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	158% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	109%		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: D5-NETFOA	183% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	149%		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: D7-NMEFOE	98.0%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D9-NETFOE	110%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-HFPO-DA	104%		20-150			01/11/23	1	EPA 1633	BCA0118

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Sample Results (Continued)

**Sample: AF-RHMW10-WGFD01LF-2212W4
22L0177-02 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.69 U	1.4	0.69	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEA	0.096 J	0.69	0.35	0.056	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXA	0.17 U	0.35	0.17	0.048	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPA	0.17 U	0.35	0.17	0.035	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOA	0.17 U	0.35	0.17	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNA	0.17 U	0.35	0.17	0.071	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDA	0.17 U	0.35	0.17	0.088	ng/L	01/11/23	1	EPA 1633	BCA0118
PFUnA	0.17 U	0.35	0.17	0.14	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOA	0.17 U	0.35	0.17	0.097	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTRDA	0.26 U	0.35	0.26	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTEDA	0.17 U	0.35	0.17	0.17	ng/L	01/11/23	1	EPA 1633	BCA0118
PFBS	0.17 U	0.35	0.17	0.032	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEs	0.17 U	0.35	0.17	0.054	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXS	0.17 U	0.35	0.17	0.027	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPS	0.17 U	0.35	0.17	0.044	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOS	0.063 J	0.35	0.17	0.055	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNS	0.17 U	0.35	0.17	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDS	0.17 U	0.35	0.17	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOS	0.17 U	0.35	0.17	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
4:2FTS	0.69 U	1.4	0.69	0.25	ng/L	01/11/23	1	EPA 1633	BCA0118
6:2FTS	0.69 U	1.4	0.69	0.27	ng/L	01/11/23	1	EPA 1633	BCA0118
8:2FTS	0.69 U	1.4	0.69	0.071	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOSA	0.17 U	0.35	0.17	0.090	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSA	0.69 U	1.4	0.69	0.41	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSA	0.69 U	1.4	0.69	0.36	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSAA	0.17 U	0.35	0.17	0.092	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSAA	0.17 U	0.35	0.17	0.099	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSE	1.0 U	1.4	1.0	0.88	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSE	1.0 U	1.4	1.0	0.91	ng/L	01/11/23	1	EPA 1633	BCA0118
HFPO-DA	0.35 U	0.69	0.35	0.15	ng/L	01/11/23	1	EPA 1633	BCA0118
ADONA	0.35 U	0.69	0.35	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFEESA	0.35 U	0.69	0.35	0.094	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMPA	0.35 U	0.69	0.35	0.047	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMBA	0.35 U	0.69	0.35	0.079	ng/L	01/11/23	1	EPA 1633	BCA0118
NFDHA	0.35 U	0.69	0.35	0.26	ng/L	01/11/23	1	EPA 1633	BCA0118
9CL-PF3ONS	0.35 U	0.69	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
11CL-PF3OUDS	0.35 U	0.69	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
3:3FTCA	0.69 U	1.4	0.69	0.50	ng/L	01/11/23	1	EPA 1633	BCA0118
5:3FTCA	0.69 U	1.4	0.69	0.38	ng/L	01/11/23	1	EPA 1633	BCA0118
7:3FTCA	0.69 U	1.4	0.69	0.48	ng/L	01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFBA	99.0%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFPEA	99.4%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFHXA	109%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFHPA	104%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	110%		20-150			01/11/23	1	EPA 1633	BCA0118

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Sample Results (Continued)

Sample: AF-RHMW10-WGFD01LF-2212W4 (Continued)
22L0177-02 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	109%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C6-PFDA	98.0%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C7-PFUnA	110%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFDOA	114%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFTEDA	85.0%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFBS	122%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFHXS	106%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOS	110%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	164% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	128%		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: 13C2-6:2FTS	94.9%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-8:2FTS	121%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	89.9%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	38.1%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	40.9%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	122%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	153% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	172% S2		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: D7-NMEFOE	81.1%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D9-NETFOE	87.8%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-HFPO-DA	102%		20-150			01/11/23	1	EPA 1633	BCA0118

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Sample Results (Continued)

**Sample: AF-HDMW225303-WGN01LF-2212W4
22L0177-03 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.71 U	1.4	0.71	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEA	0.35 U	0.71	0.35	0.057	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXA	0.18 U	0.35	0.18	0.049	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPA	0.18 U	0.35	0.18	0.036	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOA	0.18 U	0.35	0.18	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNA	0.18 U	0.35	0.18	0.072	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDA	0.18 U	0.35	0.18	0.090	ng/L	01/11/23	1	EPA 1633	BCA0118
PFUnA	0.18 U	0.35	0.18	0.14	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOA	0.18 U	0.35	0.18	0.099	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTRDA	0.27 U	0.35	0.27	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTEDA	0.18 U	0.35	0.18	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFBS	0.18 U	0.35	0.18	0.033	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEs	0.18 U	0.35	0.18	0.055	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXS	0.18 U	0.35	0.18	0.028	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPS	0.18 U	0.35	0.18	0.045	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOS	0.18 U	0.35	0.18	0.056	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNS	0.18 U	0.35	0.18	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDS	0.18 U	0.35	0.18	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOS	0.18 U	0.35	0.18	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
4:2FTS	0.71 U	1.4	0.71	0.26	ng/L	01/11/23	1	EPA 1633	BCA0118
6:2FTS	0.71 U	1.4	0.71	0.28	ng/L	01/11/23	1	EPA 1633	BCA0118
8:2FTS	0.71 U	1.4	0.71	0.073	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOSA	0.18 U	0.35	0.18	0.092	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSA	0.71 U	1.4	0.71	0.42	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSA	0.71 U	1.4	0.71	0.36	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSAA	0.18 U	0.35	0.18	0.094	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSAA	0.18 U	0.35	0.18	0.10	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSE	1.1 U	1.4	1.1	0.89	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSE	1.1 U	1.4	1.1	0.93	ng/L	01/11/23	1	EPA 1633	BCA0118
HFPO-DA	0.35 U	0.71	0.35	0.15	ng/L	01/11/23	1	EPA 1633	BCA0118
ADONA	0.35 U	0.71	0.35	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFEESA	0.35 U	0.71	0.35	0.096	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMPA	0.35 U	0.71	0.35	0.048	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMBA	0.35 U	0.71	0.35	0.080	ng/L	01/11/23	1	EPA 1633	BCA0118
NFDHA	0.35 U	0.71	0.35	0.27	ng/L	01/11/23	1	EPA 1633	BCA0118
9CL-PF3ONS	0.35 U	0.71	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
11CL-PF3OUDS	0.35 U	0.71	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
3:3FTCA	0.71 U	1.4	0.71	0.51	ng/L	01/11/23	1	EPA 1633	BCA0118
5:3FTCA	0.71 U	1.4	0.71	0.39	ng/L	01/11/23	1	EPA 1633	BCA0118
7:3FTCA	0.71 U	1.4	0.71	0.49	ng/L	01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFBA	104%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFPEA	95.7%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFHXA	98.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFHPA	97.9%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	106%		20-150			01/11/23	1	EPA 1633	BCA0118

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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Sample Results (Continued)

Sample: AF-HDMW225303-WGN01LF-2212W4 (Continued)
22L0177-03 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	110%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C6-PFDA	130%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C7-PFUnA	137%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFDOA	131%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFTEDA	79.0%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFBS	125%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFHXS	106%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOS	105%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	160% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	133%		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: 13C2-6:2FTS	99.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-8:2FTS	123%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	85.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	42.6%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	42.0%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	135%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	165% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	164% S2		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: D7-NMEFOE	94.1%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D9-NETFOE	109%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-HFPO-DA	94.1%		20-150			01/11/23	1	EPA 1633	BCA0118

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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Sample Results (Continued)

**Sample: AF-RHMW03-WGN01LF-2212W4
22L0177-04 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	1.0 J	1.5	0.73	0.19	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEA	1.5	0.73	0.36	0.059	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXA	0.77	0.36	0.18	0.050	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPA	0.65	0.36	0.18	0.037	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOA	0.23 J	0.36	0.18	0.14	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNA	0.10 J	0.36	0.18	0.074	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDA	0.18 U	0.36	0.18	0.092	ng/L	01/11/23	1	EPA 1633	BCA0118
PFUnA	0.18 U IR2,	0.36	0.18	0.15	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOA	0.18 U	0.36	0.18	0.10	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTRDA	0.27 U	0.36	0.27	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTEDA	0.18 U	0.36	0.18	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFBS	0.18 U	0.36	0.18	0.033	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEs	0.18 U	0.36	0.18	0.057	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXS	0.18 U	0.36	0.18	0.029	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPS	0.18 U	0.36	0.18	0.047	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOS	0.18 U	0.36	0.18	0.058	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNS	0.18 U	0.36	0.18	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDS	0.18 U	0.36	0.18	0.14	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOS	0.18 U	0.36	0.18	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
4:2FTS	0.73 U	1.5	0.73	0.26	ng/L	01/11/23	1	EPA 1633	BCA0118
6:2FTS	2.5	1.5	0.73	0.29	ng/L	01/11/23	1	EPA 1633	BCA0118
8:2FTS	0.73 U	1.5	0.73	0.075	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOSA	0.18 U	0.36	0.18	0.095	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSA	0.73 U	1.5	0.73	0.43	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSA	0.73 U	1.5	0.73	0.37	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSAA	0.18 U	0.36	0.18	0.096	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSAA	0.18 U	0.36	0.18	0.10	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSE	1.1 U	1.5	1.1	0.92	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSE	1.1 U	1.5	1.1	0.95	ng/L	01/11/23	1	EPA 1633	BCA0118
HFPO-DA	0.36 U	0.73	0.36	0.16	ng/L	01/11/23	1	EPA 1633	BCA0118
ADONA	0.36 U	0.73	0.36	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFEESA	0.36 U	0.73	0.36	0.099	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMPA	0.36 U	0.73	0.36	0.049	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMBA	0.36 U	0.73	0.36	0.082	ng/L	01/11/23	1	EPA 1633	BCA0118
NFDHA	0.36 U	0.73	0.36	0.27	ng/L	01/11/23	1	EPA 1633	BCA0118
9CL-PF3ONS	0.36 U	0.73	0.36	0.19	ng/L	01/11/23	1	EPA 1633	BCA0118
11CL-PF3OUDS	0.36 U	0.73	0.36	0.19	ng/L	01/11/23	1	EPA 1633	BCA0118
3:3FTCA	0.73 U	1.5	0.73	0.52	ng/L	01/11/23	1	EPA 1633	BCA0118
5:3FTCA	0.73 U	1.5	0.73	0.40	ng/L	01/11/23	1	EPA 1633	BCA0118
7:3FTCA	0.73 U	1.5	0.73	0.50	ng/L	01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFBA	87.3%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFPEA	84.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFHXA	103%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFHPA	99.2%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	106%		20-150			01/11/23	1	EPA 1633	BCA0118

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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Sample Results (Continued)

Sample: AF-RHMW03-WGN01LF-2212W4 (Continued)
22L0177-04 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	104%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C6-PFDA	108%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C7-PFUnA	118%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFDOA	111%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFTEDA	73.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFBS	115%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFHXS	100%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOS	117%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	127%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-6:2FTS	106%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-8:2FTS	120%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	85.8%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	53.2%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	50.8%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	129%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	156% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	173% S2		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: D7-NMEFOE	96.9%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D9-NETFOE	113%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-HFPO-DA	87.0%		20-150			01/11/23	1	EPA 1633	BCA0118

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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Sample Results (Continued)

**Sample: AF-RHMW02-WGN01LF-2212W4
22L0177-05 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.70 U	1.4	0.70	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEA	0.35 U	0.70	0.35	0.057	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXA	0.23 J IR2,	0.35	0.17	0.048	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPA	0.17 U	0.35	0.17	0.036	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOA	0.17 U	0.35	0.17	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNA	0.17 U	0.35	0.17	0.071	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDA	0.17 U	0.35	0.17	0.088	ng/L	01/11/23	1	EPA 1633	BCA0118
PFUnA	0.17 U	0.35	0.17	0.14	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOA	0.17 U	0.35	0.17	0.097	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTRDA	0.26 U	0.35	0.26	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
PFTEDA	0.17 U	0.35	0.17	0.17	ng/L	01/11/23	1	EPA 1633	BCA0118
PFBS	0.17 U	0.35	0.17	0.032	ng/L	01/11/23	1	EPA 1633	BCA0118
PFPEs	0.17 U	0.35	0.17	0.055	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHXS	0.17 U	0.35	0.17	0.028	ng/L	01/11/23	1	EPA 1633	BCA0118
PFHPS	0.17 U	0.35	0.17	0.045	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOS	0.17 U	0.35	0.17	0.055	ng/L	01/11/23	1	EPA 1633	BCA0118
PFNS	0.17 U	0.35	0.17	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDS	0.17 U	0.35	0.17	0.13	ng/L	01/11/23	1	EPA 1633	BCA0118
PFDOS	0.17 U	0.35	0.17	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
4:2FTS	0.70 U	1.4	0.70	0.25	ng/L	01/11/23	1	EPA 1633	BCA0118
6:2FTS	4.1	1.4	0.70	0.27	ng/L	01/11/23	1	EPA 1633	BCA0118
8:2FTS	0.70 U	1.4	0.70	0.071	ng/L	01/11/23	1	EPA 1633	BCA0118
PFOSA	0.17 U	0.35	0.17	0.091	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSA	0.70 U	1.4	0.70	0.41	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSA	0.70 U	1.4	0.70	0.36	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSAA	0.17 U	0.35	0.17	0.092	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSAA	0.17 U	0.35	0.17	0.10	ng/L	01/11/23	1	EPA 1633	BCA0118
NMeFOSE	1.0 U	1.4	1.0	0.88	ng/L	01/11/23	1	EPA 1633	BCA0118
NEtFOSE	1.0 U	1.4	1.0	0.91	ng/L	01/11/23	1	EPA 1633	BCA0118
HFPO-DA	0.35 U	0.70	0.35	0.15	ng/L	01/11/23	1	EPA 1633	BCA0118
ADONA	0.35 U	0.70	0.35	0.11	ng/L	01/11/23	1	EPA 1633	BCA0118
PFEESA	0.35 U	0.70	0.35	0.095	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMPA	0.35 U	0.70	0.35	0.047	ng/L	01/11/23	1	EPA 1633	BCA0118
PFMBA	0.35 U	0.70	0.35	0.079	ng/L	01/11/23	1	EPA 1633	BCA0118
NFDHA	0.35 U	0.70	0.35	0.26	ng/L	01/11/23	1	EPA 1633	BCA0118
9CL-PF3ONS	0.35 U	0.70	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
11CL-PF3OUDS	0.35 U	0.70	0.35	0.18	ng/L	01/11/23	1	EPA 1633	BCA0118
3:3FTCA	0.70 U	1.4	0.70	0.50	ng/L	01/11/23	1	EPA 1633	BCA0118
5:3FTCA	0.70 U	1.4	0.70	0.39	ng/L	01/11/23	1	EPA 1633	BCA0118
7:3FTCA	0.70 U	1.4	0.70	0.48	ng/L	01/11/23	1	EPA 1633	BCA0118
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Surrogate: 13C4-PFBA	70.8%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFPEA	69.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C5-PFHXA	100%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C4-PFHPA	120%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	105%		20-150			01/11/23	1	EPA 1633	BCA0118

AECOM Honolulu
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Sample Results (Continued)

Sample: AF-RHMW02-WGN01LF-2212W4 (Continued)
22L0177-05 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	102%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C6-PFDA	94.6%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C7-PFUnA	109%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFDOA	103%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-PFTEDA	48.4%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFBS	122%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-PFHXS	104%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOS	113%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-4:2FTS	96.2%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-6:2FTS	87.3%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C2-8:2FTS	134%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C8-PFOA	67.5%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	29.2%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	30.8%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D3-NMEFOA	130%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	172% S2		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D5-NETFOA	148%		20-150			01/11/23	10	EPA 1633	BCA0118
Surrogate: D7-NMEFOE	84.0%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: D9-NETFOE	88.7%		20-150			01/11/23	1	EPA 1633	BCA0118
Surrogate: 13C3-HFPO-DA	86.0%		20-150			01/11/23	1	EPA 1633	BCA0118

AECOM Honolulu
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Quality Control

Per- and Polyfluoroalkyl Substances

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BCA0118 - EPA 1633

Blank (BCA0118-BLK1)

Prepared: 01/09/23 16:01 Analyzed: 01/11/23 14:30

	ng/L			
PFBA	0.80 U	1.6	0.80	0.21
PFPEA	0.40 U	0.80	0.40	0.065
PFHXA	0.20 U	0.40	0.20	0.055
PFHPA	0.20 U	0.40	0.20	0.041
PFOA	0.20 U	0.40	0.20	0.15
PFNA	0.20 U	0.40	0.20	0.082
PFDA	0.20 U	0.40	0.20	0.10
PFUnA	0.20 U	0.40	0.20	0.16
PFDOA	0.20 U	0.40	0.20	0.11
PFTRDA	0.30 U	0.40	0.30	0.20
PFTEDA	0.20 U	0.40	0.20	0.20
PFBS	0.20 U	0.40	0.20	0.037
PFPEs	0.20 U	0.40	0.20	0.063
PFHXS	0.20 U	0.40	0.20	0.032
PFHPS	0.20 U	0.40	0.20	0.051
PFOS	0.20 U	0.40	0.20	0.064
PFNS	0.20 U	0.40	0.20	0.12
PFDS	0.20 U	0.40	0.20	0.15
PFDOS	0.20 U	0.40	0.20	0.12
4:2FTS	0.80 U	1.6	0.80	0.29
6:2FTS	0.80 U	1.6	0.80	0.31
8:2FTS	0.80 U	1.6	0.80	0.082
PFOSA	0.20 U	0.40	0.20	0.10
NMeFOSA	0.80 U	1.6	0.80	0.47
NEtFOSA	0.80 U	1.6	0.80	0.41
NMeFOSAA	0.20 U	0.40	0.20	0.11
NEtFOSAA	0.20 U	0.40	0.20	0.11
NMeFOSE	1.2 U	1.6	1.2	1.0
NEtFOSE	1.2 U	1.6	1.2	1.0
HFPO-DA	0.40 U	0.80	0.40	0.17
ADONA	0.40 U	0.80	0.40	0.12
PFEESA	0.40 U	0.80	0.40	0.11
PFMPA	0.40 U	0.80	0.40	0.054
PFMBA	0.40 U	0.80	0.40	0.091
NFDHA	0.40 U	0.80	0.40	0.30
9CL-PF3ONS	0.40 U	0.80	0.40	0.21
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21
3:3FTCA	0.80 U	1.6	0.80	0.57
5:3FTCA	0.80 U	1.6	0.80	0.44
7:3FTCA	0.80 U	1.6	0.80	0.55

Surrogates

13C4-PFBA	32.1	32.0	100	20-150
13C5-PFPEA	16.3	16.0	102	20-150
13C5-PFHXA	8.39	8.00	105	20-150
13C4-PFHPA	7.53	8.00	94.2	20-150
13C8-PFOA	8.41	8.00	105	20-150

AECOM Honolulu
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Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BCA0118 - EPA 1633 (Continued)

Blank (BCA0118-BLK1)

Prepared: 01/09/23 16:01 Analyzed: 01/11/23 14:30

		ng/L								
Surrogates										
13C9-PFNA	4.26				4.00		106	20-150		
13C6-PFDA	3.46				4.00		86.6	20-150		
13C7-PFUnA	4.56				4.00		114	20-150		
13C2-PFDOA	4.37				4.00		109	20-150		
13C2-PFTEDA	3.11				4.00		77.6	20-150		
13C3-PFBS	10.3				8.00		128	20-150		
13C3-PFHXS	7.96				8.00		99.5	20-150		
13C8-PFOS	9.14				8.00		114	20-150		
13C2-4:2FTS	27.6 S2				16.0		172	20-150		
13C2-6:2FTS	16.4				16.0		102	20-150		
13C2-8:2FTS	16.9				16.0		106	20-150		
13C8-PFOA	6.46				8.00		80.7	20-150		
D5-NETFOA	3.51				8.00		43.9	20-150		
D3-NMEFOA	3.34				8.00		41.8	20-150		
D3-NMEFOA	20.3				16.0		127	20-150		
D5-NETFOA	27.1 S2				16.0		169	20-150		
D7-NMEFOA	76.6				80.0		95.7	20-150		
D9-NETFOA	88.1				80.0		110	20-150		
13C3-HFOA-DA	30.4				32.0		95.1	20-150		

LCS (BCA0118-BS1)

Prepared: 01/09/23 16:01 Analyzed: 01/11/23 14:43

		ng/L								
PFBA	16.8				16.0		105	40-150		
PFPEA	8.22				8.00		103	40-150		
PFHXA	4.06				4.00		102	40-150		
PFHPA	4.53				4.00		113	40-150		
PFOA	4.31				4.00		108	40-150		
PFNA	4.35				4.00		109	40-150		
PFDA	3.93				4.00		98.2	40-150		
PFUnA	4.10				4.00		103	40-150		
PFDOA	3.95				4.00		98.8	40-150		
PFTRDA	3.36				4.00		83.9	40-150		
PFTEDA	4.46				4.00		112	40-150		
PFBS	3.64				3.54		103	40-150		
PFPEA	4.71				3.76		125	40-150		
PFHXS	4.67				3.66		128	40-150		
PFHPS	4.98				3.82		130	40-150		
PFOS	61.3				67.6		90.6	40-150		
PFNS	4.25				3.84		111	40-150		
PFDS	4.75				3.86		123	40-150		
PFDOS	8.27 BS2				3.88		213	40-150		
4:2FTS	18.2				15.0		122	40-150		
6:2FTS	17.1				15.2		113	40-150		
8:2FTS	19.0				15.4		124	40-150		
PFOA	4.38				4.00		110	40-150		

AECOM Honolulu 1001 Bishop Street, Suite 1600 Honolulu, HI 96813	Project: Red Hill AFFF Assessment Sampling Project Number: Red Hill AFFF Assessment Sampling Project Manager: Watson Tanji	Reported: 01/13/2023 14:08
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Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BCA0118 - EPA 1633 (Continued)

LCS (BCA0118-BS1)

Prepared: 01/09/23 16:01 Analyzed: 01/11/23 14:43

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
NMeFOSA	17.5				16.0		109	40-150		
NETFOSA	16.1				16.0		101	40-150		
NMeFOSAA	4.03				4.00		101	40-150		
NETFOSAA	4.30				4.00		107	40-150		
NMeFOSE	16.1				16.0		100	40-150		
NETFOSE	21.7				16.0		136	40-150		
HFPO-DA	8.90				8.00		111	40-150		
ADONA	8.13				7.56		108	40-150		
PFEESA	7.55				7.12		106	40-150		
PFMPA	6.27				8.00		78.4	40-150		
PFMBA	8.57				8.00		107	40-150		
NFDHA	7.93				8.00		99.1	40-150		
9CL-PF3ONS	8.18				7.48		109	40-150		
11CL-PF3OUDS	12.5 BS2				7.56		165	40-150		
3:3FTCA	13.9				16.0		86.9	40-150		
5:3FTCA	15.9				16.0		99.4	40-150		
7:3FTCA	10.0				16.0		62.6	40-150		

Surrogates

13C4-PFBA	32.9				32.0		103	20-150		
13C5-PFPEA	16.2				16.0		102	20-150		
13C5-PFHXA	8.63				8.00		108	20-150		
13C4-PFHXA	8.16				8.00		102	20-150		
13C8-PFOA	9.07				8.00		113	20-150		
13C9-PFNA	4.33				4.00		108	20-150		
13C6-PFDA	4.80				4.00		120	20-150		
13C7-PFUnA	5.51				4.00		138	20-150		
13C2-PFDOA	5.39				4.00		135	20-150		
13C2-PFTEDA	3.27				4.00		81.7	20-150		
13C3-PFBS	10.2				8.00		128	20-150		
13C3-PFHXS	8.50				8.00		106	20-150		
13C8-PFOS	8.76				8.00		109	20-150		
13C2-4:2FTS	24.5 S2				16.0		153	20-150		
13C2-6:2FTS	16.4				16.0		102	20-150		
13C2-8:2FTS	17.7				16.0		111	20-150		
13C8-PFOSA	6.19				8.00		77.4	20-150		
D5-NETFOSA	3.11				8.00		38.9	20-150		
D3-NMEFOSA	3.00				8.00		37.5	20-150		
D3-NMEFOSAA	20.5				16.0		128	20-150		
D5-NETFOSAA	20.2				16.0		126	20-150		
D7-NMEFOSE	68.0				80.0		85.0	20-150		
D9-NETFOSE	79.0				80.0		98.7	20-150		
13C3-HFPO-DA	32.9				32.0		103	20-150		

AECOM Honolulu
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BCA0118 - EPA 1633 (Continued)

MRL Check (BCA0118-MRL1)

Prepared: 01/09/23 16:01 Analyzed: 01/11/23 14:56

	ng/L							
PFBA	1.57 J			1.60		97.9	40-150	
PFPEA	0.721 J			0.800		90.2	40-150	
PFHXA	0.434			0.400		108	40-150	
PFHPA	0.457			0.400		114	40-150	
PFOA	0.469			0.400		117	40-150	
PFNA	0.465			0.400		116	40-150	
PFDA	0.457			0.400		114	40-150	
PFUnA	0.367 J IR1,			0.400		91.8	40-150	
PFDOA	0.388 J			0.400		97.1	40-150	
PFTRDA	0.347 J			0.400		86.8	40-150	
PFTEDA	0.389 J			0.400		97.1	40-150	
PFBS	0.343 J			0.354		96.9	40-150	
PFPEs	0.444			0.376		118	40-150	
PFHXS	0.459			0.366		125	40-150	
PFHPS	0.452			0.382		118	40-150	
PFOS	6.33			6.76		93.6	40-150	
PFNS	0.405			0.384		105	40-150	
PFDS	0.406			0.386		105	40-150	
PFDOS	0.947 BS2			0.388		244	40-150	
4:2FTS	1.54 J			1.50		103	40-150	
6:2FTS	1.97			1.52		130	40-150	
8:2FTS	1.73			1.54		113	40-150	
PFOSA	0.573			0.400		143	40-150	
NMeFOSA	1.49 J			1.60		93.2	40-150	
NEtFOSA	1.29 J			1.60		80.7	40-150	
NMeFOSAA	0.293 J			0.400		73.3	40-150	
NEtFOSAA	0.405			0.400		101	40-150	
NMeFOSE	1.34 J			1.60		84.0	40-150	
NEtFOSE	2.76 BS2			1.60		172	40-150	
HFPO-DA	0.796 J			0.800		99.6	40-150	
ADONA	0.742 J			0.756		98.2	40-150	
PFEESA	0.800			0.712		112	40-150	
PFMPA	0.584 J			0.800		73.0	40-150	
PFMBA	0.725 J			0.800		90.6	40-150	
NFDHA	0.712 J			0.800		89.1	40-150	
9CL-PF3ONS	0.816			0.748		109	40-150	
11CL-PF3OUDS	1.20 BS2			0.756		158	40-150	
3:3FTCA	1.10 J			1.60		69.0	40-150	
5:3FTCA	1.57 J			1.60		98.3	40-150	
7:3FTCA	1.21 J			1.60		75.7	40-150	

Surrogates

13C4-PFBA	33.1			32.0		104	20-150	
13C5-PFPEA	15.0			16.0		93.9	20-150	
13C5-PFHXA	7.82			8.00		97.7	20-150	
13C4-PFHPA	7.93			8.00		99.1	20-150	
13C8-PFOA	8.64			8.00		108	20-150	

AECOM Honolulu
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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BCA0118 - EPA 1633 (Continued)

MRL Check (BCA0118-MRL1)

Prepared: 01/09/23 16:01 Analyzed: 01/11/23 14:56

ng/L

Surrogates

13C9-PFNA	4.23				4.00		106	20-150		
13C6-PFDA	4.74				4.00		118	20-150		
13C7-PFUnA	4.83				4.00		121	20-150		
13C2-PFDOA	5.15				4.00		129	20-150		
13C2-PFTEDA	3.39				4.00		84.7	20-150		
13C3-PFBS	10.1				8.00		126	20-150		
13C3-PFHXS	8.36				8.00		105	20-150		
13C8-PFOS	8.64				8.00		108	20-150		
13C2-4:2FTS	26.3 S2				16.0		165	20-150		
13C2-6:2FTS	15.2				16.0		95.1	20-150		
13C2-8:2FTS	18.9				16.0		118	20-150		
13C8-PFOA	6.07				8.00		75.9	20-150		
D5-NETFOA	3.50				8.00		43.7	20-150		
D3-NMEFOA	3.20				8.00		40.0	20-150		
D3-NMEFOSAA	18.6				16.0		116	20-150		
D5-NETFOSAA	22.7				16.0		142	20-150		
D7-NMEFOSE	67.8				80.0		84.7	20-150		
D9-NETFOSE	76.2				80.0		95.3	20-150		
13C3-HFPO-DA	31.0				32.0		97.0	20-150		

AECOM Honolulu
1001 Bishop Street, Suite 1600
Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 01/13/2023 14:08

Notes and Definitions

Item	Definition
BS2	Blank spike recovered above the upper control limit
CV1	Calibration verification recovered below the lower control limit
CV2	Calibration verification recovered above the upper control limit
IR1	Ion ratio below the lower control limit
IR2	Ion ratio above the upper control limit
J	Estimated value
MI4	Manual integration, peak unsplit
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
DL	Dilution Factor
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
*	Value outside control limits
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated.



WORK ORDER

22L0177

Printed: 01/13/2023 2:08 pm

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Gregory Salata
PO Number: 60697810

Report To:

AECOM Honolulu
 Watson Tanji
 1001 Bishop Street, Suite 1600
 Honolulu, HI 96813
 Phone: (808) 954-4512
 Fax: (808) 523-8950

Invoice To:

AECOM Honolulu
 Watson Tanji
 1001 Bishop Street, Suite 1600
 Honolulu, HI 96813
 Phone: (808) 954-4512
 Fax: (808) 523-8950

Date Received: 12/28/2022 02:20 PM
 Date Due: 01/06/2023 (5.00 day TAT)

Logged In By: Megan Salata
 Received By: Lincoln Hooper

Analysis	Comments
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22L0177

Sample Receipt Log

Default Cooler

Samples Received at: **1.5°C**

Custody Seals	Yes	Were all containers sealed in separate bags?	Yes
Containers Intact	Yes	Did all containers arrive in good condition?	Yes
COC/Labels Agree	Yes	Correct containers/preserv. for tests indicated?	Yes
Preservation Confirmed	No	Sufficient volume sent for tests requested?	Yes
Received On Ice	Yes	Were bubbles absent in volatile samples?	No
Was a chain of custody received?	Yes	Sufficient remaining holding time for analyses?	Yes
COCs complete/signed in the appropriate places?	Yes	pH of non-VOA preserved containers documented?	No
Sample labels complete? Sample ID, date/time, etc.	Yes	Unpreserved vials received for VOA analysis?	No
Did all container labels agree with COCs?	Yes	If "yes", are unpreserved VOA vials noted on ARF?	No

CUSTODY SEAL

AECOM (808) 521-3051

Initials lf Date 12/27/22

PFAS

SAMPLE DATA

FORM I ANALYSIS DATA SHEET

AF-RHMW10-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-01RE2
		File ID:	S2023-01-11A (19)
Sampled:	12/27/22 14:50	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 15:09
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	565.56 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.71 U	1.4	0.71	0.18	
PFPEA	0.097 J	0.71	0.35	0.057	
PFHXA	0.058 J	0.35	0.18	0.049	
PFHPA	0.18 U	0.35	0.18	0.036	
PFOA	0.18 U	0.35	0.18	0.13	
PFNA	0.18 U	0.35	0.18	0.072	
PFDA	0.18 U	0.35	0.18	0.090	
PFUnA	0.18 U	0.35	0.18	0.14	
PFDOA	0.18 U	0.35	0.18	0.099	
PFTRDA	0.27 U	0.35	0.27	0.18	
PFTEDA	0.18 U	0.35	0.18	0.18	
PFBS	0.18 U	0.35	0.18	0.033	
PFPEs	0.18 U	0.35	0.18	0.055	
PFHXS	0.043 J	0.35	0.18	0.028	
PFHPS	0.18 U	0.35	0.18	0.045	
PFOS	0.18 U	0.35	0.18	0.056	
PFNS	0.18 U	0.35	0.18	0.11	
PFDS	0.18 U	0.35	0.18	0.13	
PFDOS	0.18 U	0.35	0.18	0.11	
4:2FTS	0.71 U	1.4	0.71	0.26	
6:2FTS	0.71 U	1.4	0.71	0.28	
8:2FTS	0.71 U	1.4	0.71	0.073	
PFOSA	0.18 U	0.35	0.18	0.092	
NMeFOSA	0.71 U	1.4	0.71	0.42	
NEtFOSA	0.71 U	1.4	0.71	0.36	
NMeFOSAA	0.18 U	0.35	0.18	0.094	
NEtFOSAA	0.18 U	0.35	0.18	0.10	
NMeFOSE	1.1 U	1.4	1.1	0.89	
NEtFOSE	1.1 U	1.4	1.1	0.93	
HFPO-DA	0.35 U	0.71	0.35	0.15	

FORM I ANALYSIS DATA SHEET

AF-RHMW10-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-01RE2
		File ID:	S2023-01-11A (19)
Sampled:	12/27/22 14:50	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 15:09
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	565.56 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.35 U	0.71	0.35	0.11	
PFEESA	0.35 U	0.71	0.35	0.096	
PFMPA	0.35 U	0.71	0.35	0.048	
PFMBA	0.35 U	0.71	0.35	0.080	
NFDHA	0.35 U	0.71	0.35	0.27	
9CL-PF3ONS	0.35 U	0.71	0.35	0.18	
11CL-PF3OUDS	0.35 U	0.71	0.35	0.18	
3:3FTCA	0.71 U	1.4	0.71	0.51	
5:3FTCA	0.71 U	1.4	0.71	0.39	
7:3FTCA	0.71 U	1.4	0.71	0.49	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-01RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (19)
 Acquired: 2023/01/11 - 15:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) 7889 (263.0 / 69.0) 177	(4.87, 1.00) (0.00, N/A, 1.9)	40.1 6.3	0.0225 206.8 193.0	0.0273	N/A			
PFHxA	(313.0 / 269.0) 6394 (313.0 / 119.0) 817	(5.98, 1.00) (0.00, N/A, 0.6)	17.8 6.1	0.1277 130.2 136.2	0.0163	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 14631 (413.0 / 169.0) 6970	(7.77, 1.00) (0.00, N/A, 0.8)	27.8 26.3	0.4764 149.2 138.3	0.0372	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-01RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (19)
 Acquired: 2023/01/11 - 15:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) 11630 (399.0 / 99.0) 4394	(7.86 , 1.00) (-0.01 , N/A , 0.5)	64.1 45.7	0.3778 114.5 112.9	0.0122	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-01RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (19)
 Acquired: 2023/01/11 - 15:09

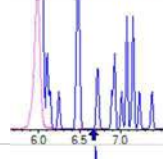
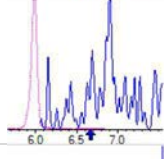
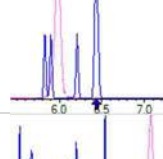
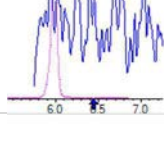
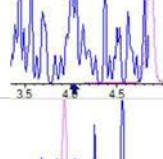
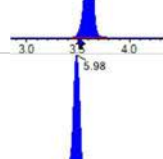
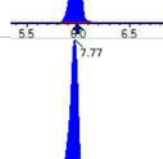
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

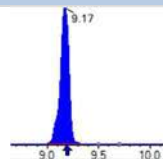
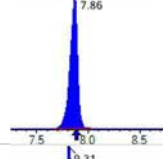
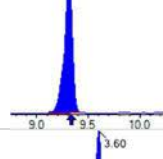
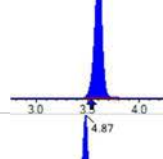
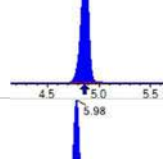
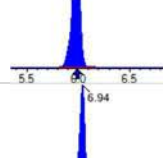
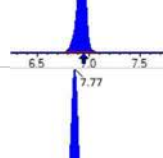
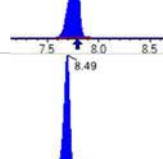
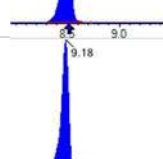
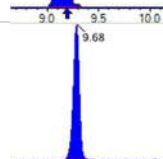
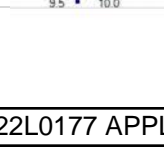


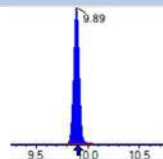
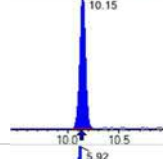
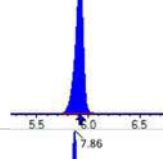
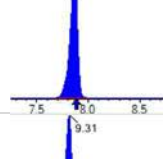
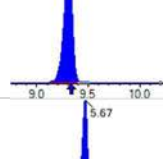
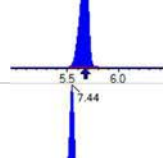
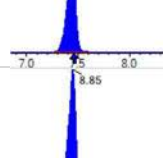
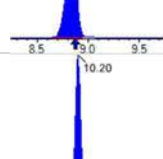
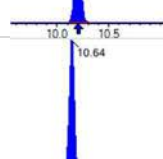
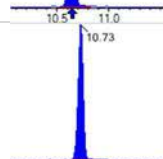

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

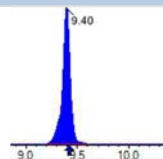
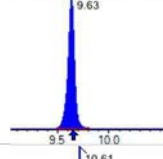
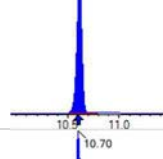
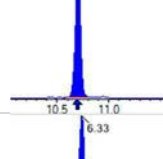
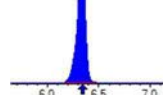
Sample I.D.: 22L0177-01RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (19)
 Acquired: 2023/01/11 - 15:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 172895	(3.61, N/A) (N/A, 0.09, N/A)	447.7	N/A	0.6826 [1.0000]	68.3% { 112.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 350527	(5.98, N/A) (N/A, -0.01, N/A)	473.1	N/A	0.9483 [1.0000]	94.8% { 94.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 356382	(7.77, N/A) (N/A, -0.01, N/A)	476.9	N/A	0.8113 [1.0000]	81.1% { 106.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 299071	(8.49, N/A) (N/A, -0.02, N/A)	437.1	N/A	0.7375 [1.0000]	73.7% { 106.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 379548	(9.17, N/A) (N/A, -0.02, N/A)	307.5	N/A	0.8787 [1.0000]	87.9% { 84.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 626161	(7.86, N/A) (N/A, -0.01, N/A)	574.4	N/A	0.8476 [1.0000]	84.8% { 100.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 590042	(9.31, N/A) (N/A, -0.02, N/A)	352.3	N/A	0.7653 [1.0000]	76.5% { 88.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1325511	(3.60, N/A) (N/A, 0.08, N/A)	600.8	N/A	7.8035 [8.0000]	97.5% { 112.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1188245	(4.87, N/A) (N/A, 0.01, N/A)	571.0	N/A	4.1419 [4.0000]	103.5% { 114.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 796850	(5.98, N/A) (N/A, -0.01, N/A)	498.1	N/A	2.2247 [2.0000]	111.2% { 106.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 745253	(6.94, N/A) (N/A, -0.01, N/A)	465.7	N/A	2.1889 [2.0000]	109.4% { 109.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 755294	(7.77, N/A) (N/A, -0.01, N/A)	545.7	N/A	2.0801 [2.0000]	104.0% { 111.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 325610	(8.49, N/A) (N/A, -0.02, N/A)	417.1	N/A	1.0970 [1.0000]	109.7% { 121.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 495283	(9.18, N/A) (N/A, -0.02, N/A)	318.0	N/A	1.1581 [1.0000]	115.8% { 107.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 646940	(9.68, N/A) (N/A, -0.01, N/A)	308.0	N/A	1.2234 [1.0000]	122.3% { 106.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 615203	(9.89, N/A) (N/A, -0.01, N/A)	401.7	N/A	1.2117 [1.0000]	121.2% { 117.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 326602	(10.15, N/A) (N/A, 0.00, N/A)	570.9	N/A	0.8036 [1.0000]	80.4% { 100.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2163148	(5.92, N/A) (N/A, 0.00, N/A)	558.1	N/A	2.5985 [2.0000]	129.9% { 117.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1139138	(7.86, N/A) (N/A, -0.01, N/A)	609.0	N/A	2.1836 [2.0000]	109.2% { 116.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1706061	(9.31, N/A) (N/A, -0.02, N/A)	379.4	N/A	2.4357 [2.0000]	121.8% { 103.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 1120134	(5.67, N/A) (N/A, 0.00, N/A)	667.1	N/A	6.8937 [4.0000]	172.3% { 148.4% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 917278	(7.44, N/A) (N/A, -0.01, N/A)	606.0	N/A	3.8272 [4.0000]	95.7% { 100.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 881568	(8.85, N/A) (N/A, -0.02, N/A)	442.9	N/A	3.9256 [4.0000]	98.1% { 82.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2278200	(10.20, N/A) (N/A, 0.00, N/A)	1116.3	N/A	2.4565 [2.0000]	122.8% { 143.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 162559	(10.64, N/A) (N/A, 0.01, N/A)	442.1	N/A	0.9762 [2.0000]	48.8% { 92.0% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 167465	(10.73, N/A) (N/A, 0.01, N/A)	576.6	N/A	1.0668 [2.0000]	53.3% { 86.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1390859	(9.40, N/A) (N/A, -0.02, N/A)	365.3	N/A	6.3360 [4.0000]	158.4% { 105.1% }			S2,
D5_EtFOSAA_EIS	(589.0 / 419.0) 1259998	(9.63, N/A) (N/A, -0.01, N/A)	908.9	N/A	7.3003 [4.0000]	182.5% { 102.4% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 500690	(10.61, N/A) (N/A, 0.01, N/A)	340.9	N/A	19.5952 [20.0000]	98.0% { 108.3% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 258066	(10.70, N/A) (N/A, 0.01, N/A)	317.5	N/A	21.9146 [20.0000]	109.6% { 103.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1569337	(6.33, N/A) (N/A, 0.00, N/A)	682.4	N/A	8.3492 [8.0000]	104.4% { 102.6% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW10-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	22L0177-01RE3	File ID:	S2023-01-11A (20)
Sampled:	12/27/22 14:50	Prepared:	01/09/23 16:01	Analyzed:	01/11/23 15:22
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	565.56 mL / 2 mL			Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125	Calibration:	2302005



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-01RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (20)
 Acquired: 2023/01/11 - 15:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-01RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (20)
 Acquired: 2023/01/11 - 15:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

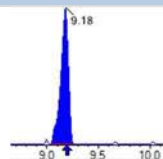
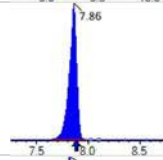
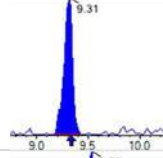
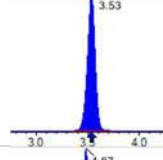
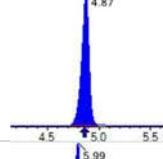
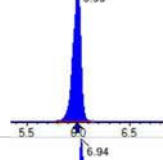
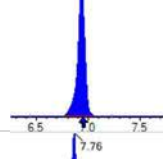
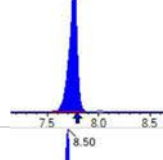
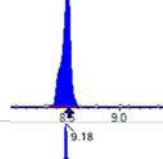
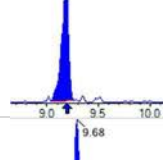
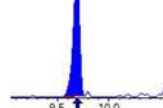


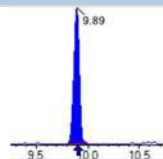
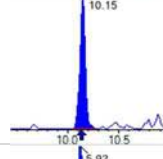
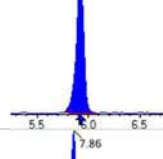
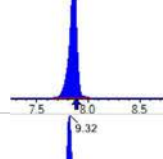
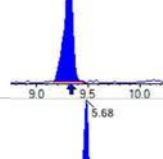
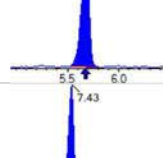
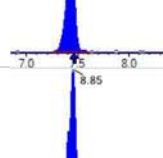
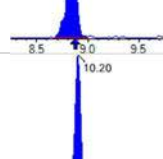
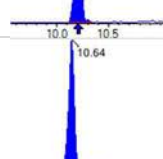
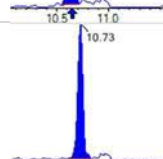

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

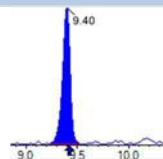
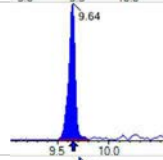
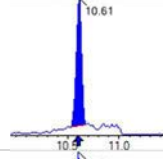
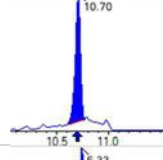
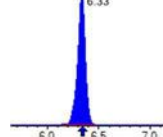
Sample I.D.: 22L0177-01RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (20)
 Acquired: 2023/01/11 - 15:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 16483	(3.53, N/A) (N/A, 0.01, N/A)	195.6	N/A	0.6508 [1.0000]	65.1% { 10.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 31927	(5.99, N/A) (N/A, 0.00, N/A)	289.6	N/A	0.8637 [1.0000]	86.4% { 8.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 33112	(7.76, N/A) (N/A, -0.02, N/A)	252.6	N/A	0.7538 [1.0000]	75.4% { 9.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 33362	(8.49, N/A) (N/A, -0.03, N/A)	189.9	N/A	0.8227 [1.0000]	82.3% { 11.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 34956	(9.18, N/A) (N/A, -0.02, N/A)	226.6	N/A	0.8093 [1.0000]	80.9% { 7.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 66204	(7.86, N/A) (N/A, -0.02, N/A)	412.5	N/A	0.8962 [1.0000]	89.6% { 10.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 72263	(9.31, N/A) (N/A, -0.02, N/A)	81.9	N/A	0.9372 [1.0000]	93.7% { 10.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 123757	(3.53, N/A) (N/A, 0.01, N/A)	589.7	N/A	0.7642 [0.8000]	95.5% { 10.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 112057	(4.87, N/A) (N/A, 0.01, N/A)	487.3	N/A	0.4288 [0.4000]	107.2% { 10.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 83685	(5.99, N/A) (N/A, 0.00, N/A)	460.7	N/A	0.2565 [0.2000]	128.3% { 11.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 70183	(6.94, N/A) (N/A, -0.01, N/A)	380.5	N/A	0.2263 [0.2000]	113.2% { 10.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 74243	(7.76, N/A) (N/A, -0.02, N/A)	501.6	N/A	0.2201 [0.2000]	110.0% { 11.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 35741	(8.50, N/A) (N/A, -0.01, N/A)	260.4	N/A	0.1079 [0.1000]	107.9% { 13.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 47871	(9.18, N/A) (N/A, -0.01, N/A)	125.6	N/A	0.1215 [0.1000]	121.5% { 10.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 52283	(9.68, N/A) (N/A, -0.01, N/A)	135.7	N/A	0.1074 [0.1000]	107.4% { 8.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 72130	(9.89, N/A) (N/A, -0.01, N/A)	236.9	N/A	0.1543 [0.1000]	154.3% {13.7%}			S2,
13C2_PFTeDA_EIS	(715.0 / 670.0) 32806	(10.15, N/A) (N/A, 0.01, N/A)	139.1	N/A	0.0876 [0.1000]	87.6% {10.1%}			
13C3_PFBs_EIS	(302.0 / 80.0) 190401	(5.92, N/A) (N/A, 0.00, N/A)	351.5	N/A	0.2163 [0.2000]	108.2% {10.3%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 106585	(7.86, N/A) (N/A, -0.02, N/A)	410.8	N/A	0.1932 [0.2000]	96.6% {10.9%}			
13C8_PFOS_EIS	(507.0 / 80.0) 178140	(9.32, N/A) (N/A, -0.01, N/A)	195.2	N/A	0.2077 [0.2000]	103.8% {10.8%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 82520	(5.68, N/A) (N/A, 0.01, N/A)	269.5	N/A	0.4803 [0.4000]	120.1% {10.9%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 88365	(7.43, N/A) (N/A, -0.02, N/A)	276.6	N/A	0.3487 [0.4000]	87.2% {9.7%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 92296	(8.85, N/A) (N/A, -0.02, N/A)	200.6	N/A	0.3887 [0.4000]	97.2% {8.6%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 205408	(10.20, N/A) (N/A, 0.00, N/A)	322.7	N/A	0.1809 [0.2000]	90.4% {13.0%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 18488	(10.64, N/A) (N/A, 0.01, N/A)	105.6	N/A	0.0907 [0.2000]	45.3% {10.5%}			
D5_NEtFOsa_EIS	(531.0 / 169.0) 20108	(10.73, N/A) (N/A, 0.00, N/A)	141.3	N/A	0.1046 [0.2000]	52.3% {10.4%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 117506	(9.40, N/A) (N/A, -0.02, N/A)	122.4	N/A	0.4371 [0.4000]	109.3% { 8.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 125673	(9.64, N/A) (N/A, 0.00, N/A)	191.1	N/A	0.5945 [0.4000]	148.6% { 10.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 47414	(10.61, N/A) (N/A, 0.00, N/A)	28.9	N/A	1.5152 [2.0000]	75.8% { 10.3% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 26642	(10.70, N/A) (N/A, 0.01, N/A)	25.2	N/A	1.8473 [2.0000]	92.4% { 10.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 157450	(6.33, N/A) (N/A, -0.01, N/A)	565.2	N/A	0.9197 [0.8000]	115.0% { 10.3% }			

FORM I ANALYSIS DATA SHEET

AF-RHMW10-WGFD01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-02RE2
		File ID:	S2023-01-11A (21)
Sampled:	12/27/22 14:50	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 15:35
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	577.6 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.69 U	1.4	0.69	0.18	
PFPEA	0.096 J	0.69	0.35	0.056	
PFHXA	0.17 U	0.35	0.17	0.048	
PFHPA	0.17 U	0.35	0.17	0.035	
PFOA	0.17 U	0.35	0.17	0.13	
PFNA	0.17 U	0.35	0.17	0.071	
PFDA	0.17 U	0.35	0.17	0.088	
PFUnA	0.17 U	0.35	0.17	0.14	
PFDOA	0.17 U	0.35	0.17	0.097	
PFTRDA	0.26 U	0.35	0.26	0.18	
PFTEDA	0.17 U	0.35	0.17	0.17	
PFBS	0.17 U	0.35	0.17	0.032	
PFPEs	0.17 U	0.35	0.17	0.054	
PFHXS	0.17 U	0.35	0.17	0.027	
PFHPS	0.17 U	0.35	0.17	0.044	
PFOS	0.063 J	0.35	0.17	0.055	
PFNS	0.17 U	0.35	0.17	0.11	
PFDS	0.17 U	0.35	0.17	0.13	
PFDOS	0.17 U	0.35	0.17	0.11	
4:2FTS	0.69 U	1.4	0.69	0.25	
6:2FTS	0.69 U	1.4	0.69	0.27	
8:2FTS	0.69 U	1.4	0.69	0.071	
PFOSA	0.17 U	0.35	0.17	0.090	
NMeFOSA	0.69 U	1.4	0.69	0.41	
NEtFOSA	0.69 U	1.4	0.69	0.36	
NMeFOSAA	0.17 U	0.35	0.17	0.092	
NEtFOSAA	0.17 U	0.35	0.17	0.099	
NMeFOSE	1.0 U	1.4	1.0	0.88	
NEtFOSE	1.0 U	1.4	1.0	0.91	
HFPO-DA	0.35 U	0.69	0.35	0.15	

FORM I ANALYSIS DATA SHEET

AF-RHMW10-WGFD01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-02RE2
		File ID:	S2023-01-11A (21)
Sampled:	12/27/22 14:50	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 15:35
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	577.6 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.35 U	0.69	0.35	0.11	
PFEESA	0.35 U	0.69	0.35	0.094	
PFMPA	0.35 U	0.69	0.35	0.047	
PFMBA	0.35 U	0.69	0.35	0.079	
NFDHA	0.35 U	0.69	0.35	0.26	
9CL-PF3ONS	0.35 U	0.69	0.35	0.18	
11CL-PF3OUDS	0.35 U	0.69	0.35	0.18	
3:3FTCA	0.69 U	1.4	0.69	0.50	
5:3FTCA	0.69 U	1.4	0.69	0.38	
7:3FTCA	0.69 U	1.4	0.69	0.48	



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0177-02RE2
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (21)
Acquired: 2023/01/11 - 15:35

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) 8601 (263.0 / 69.0) 104	(4.86, 1.00) (0.00, N/A, -1.7)	44.6 3.2	0.0121 111.4 103.9	0.0276	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 11497 (413.0 / 169.0) 5285	(7.75, 1.00) (-0.01, N/A, -0.4)	22.2 15.5	0.4596 144.0 133.4	0.0261	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0177-02RE2
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (21)
Acquired: 2023/01/11 - 15:35

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 85894 (499.0 / 99.0) 26005	(9.31 , 1.00) (0.00 , N/A , 0.0)	62.3 67.3	0.3028 133.2 137.7	0.0182	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (21)
 Acquired: 2023/01/11 - 15:35

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

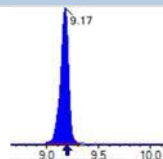
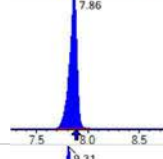
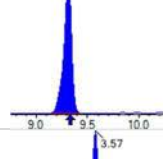
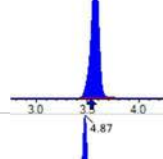
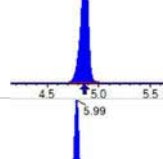
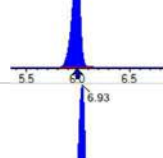
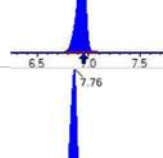
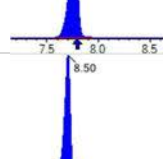
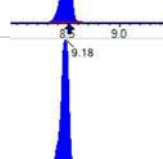
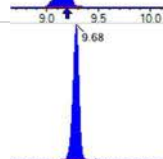
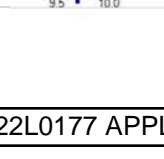


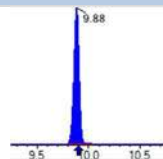
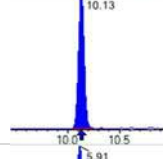
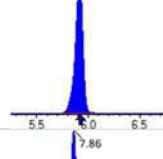
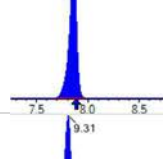
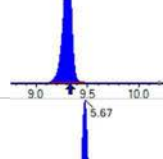
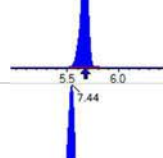
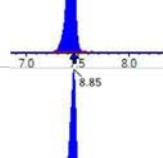
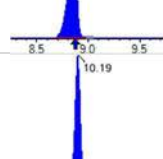
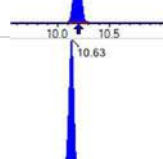
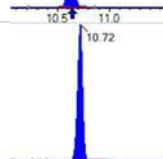
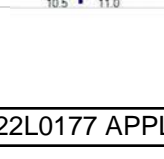
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (21)
 Acquired: 2023/01/11 - 15:35

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 183566	(3.58, N/A) (N/A, 0.06, N/A)	468.2	N/A	0.7247 [1.0000]	72.5% { 119.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 394592	(5.99, N/A) (N/A, 0.00, N/A)	484.1	N/A	1.0675 [1.0000]	106.7% { 106.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 377825	(7.76, N/A) (N/A, -0.02, N/A)	579.7	N/A	0.8601 [1.0000]	86.0% { 113.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 338256	(8.50, N/A) (N/A, -0.02, N/A)	397.8	N/A	0.8341 [1.0000]	83.4% { 120.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 463710	(9.17, N/A) (N/A, -0.02, N/A)	283.0	N/A	1.0735 [1.0000]	107.4% { 103.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 695982	(7.86, N/A) (N/A, -0.01, N/A)	722.4	N/A	0.9422 [1.0000]	94.2% { 112.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 780844	(9.31, N/A) (N/A, -0.02, N/A)	434.0	N/A	1.0127 [1.0000]	101.3% { 117.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1428609	(3.57, N/A) (N/A, 0.05, N/A)	620.2	N/A	7.9216 [8.0000]	99.0% { 120.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1283596	(4.87, N/A) (N/A, 0.00, N/A)	555.8	N/A	3.9746 [4.0000]	99.4% { 123.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 876694	(5.99, N/A) (N/A, -0.01, N/A)	646.9	N/A	2.1743 [2.0000]	108.7% { 117.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 794429	(6.93, N/A) (N/A, -0.01, N/A)	571.5	N/A	2.0727 [2.0000]	103.6% { 117.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 846161	(7.76, N/A) (N/A, -0.02, N/A)	553.1	N/A	2.1981 [2.0000]	109.9% { 124.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 364685	(8.50, N/A) (N/A, -0.01, N/A)	597.4	N/A	1.0863 [1.0000]	108.6% { 135.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 512096	(9.18, N/A) (N/A, -0.02, N/A)	327.4	N/A	0.9801 [1.0000]	98.0% { 111.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 709710	(9.68, N/A) (N/A, -0.01, N/A)	385.0	N/A	1.0986 [1.0000]	109.9% { 116.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 706749	(9.88, N/A) (N/A, -0.01, N/A)	530.6	N/A	1.1394 [1.0000]	113.9% { 134.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 422171	(10.13, N/A) (N/A, -0.01, N/A)	473.5	N/A	0.8502 [1.0000]	85.0% { 129.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2249936	(5.91, N/A) (N/A, 0.00, N/A)	525.6	N/A	2.4317 [2.0000]	121.6% { 121.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1232750	(7.86, N/A) (N/A, -0.02, N/A)	692.7	N/A	2.1260 [2.0000]	106.3% { 126.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2030905	(9.31, N/A) (N/A, -0.02, N/A)	374.4	N/A	2.1910 [2.0000]	109.5% { 122.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 1186048	(5.67, N/A) (N/A, 0.00, N/A)	593.7	N/A	6.5671 [4.0000]	164.2% { 157.1% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 1011388	(7.44, N/A) (N/A, -0.01, N/A)	701.6	N/A	3.7965 [4.0000]	94.9% { 110.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1210325	(8.85, N/A) (N/A, -0.01, N/A)	549.3	N/A	4.8489 [4.0000]	121.2% { 113.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2206955	(10.19, N/A) (N/A, -0.01, N/A)	1073.9	N/A	1.7982 [2.0000]	89.9% { 139.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 180251	(10.63, N/A) (N/A, 0.00, N/A)	644.8	N/A	0.8180 [2.0000]	40.9% { 102.0% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 158158	(10.72, N/A) (N/A, 0.00, N/A)	478.9	N/A	0.7613 [2.0000]	38.1% { 81.5% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-02RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (21)
 Acquired: 2023/01/11 - 15:35

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1420794	(9.40, N/A) (N/A, -0.02, N/A)	323.7	N/A	4.8908 [4.0000]	122.3% { 107.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1399038	(9.63, N/A) (N/A, -0.01, N/A)	689.6	N/A	6.1252 [4.0000]	153.1% { 113.7% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 548402	(10.60, N/A) (N/A, 0.00, N/A)	323.3	N/A	16.2181 [20.0000]	81.1% { 118.6% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 273728	(10.69, N/A) (N/A, 0.00, N/A)	293.8	N/A	17.5646 [20.0000]	87.8% { 110.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1731389	(6.33, N/A) (N/A, -0.01, N/A)	539.6	N/A	8.1827 [8.0000]	102.3% { 113.2% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW10-WGFD01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	22L0177-02RE3	File ID:	S2023-01-11A (22)
Sampled:	12/27/22 14:50	Prepared:	01/09/23 16:01	Analyzed:	01/11/23 15:47
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	577.6 mL / 2 mL			Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125	Calibration:	2302005



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-02RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (22)
 Acquired: 2023/01/11 - 15:47

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



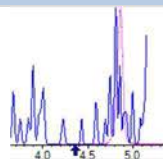
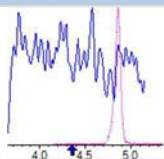
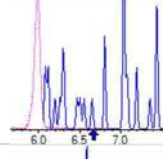
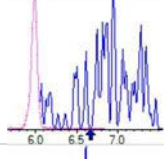
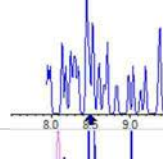
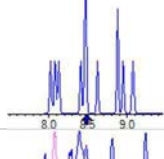
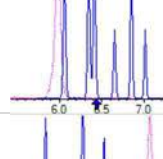
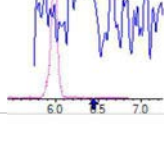
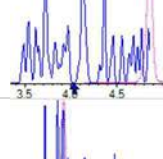
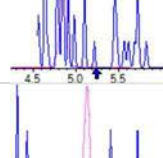
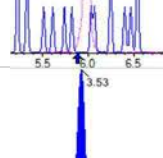
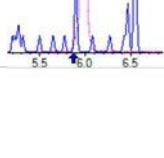
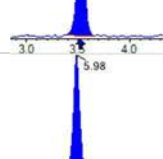
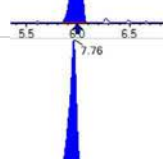
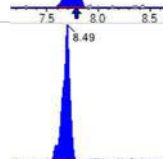

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

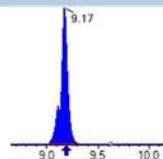
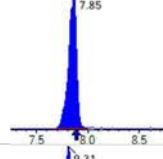
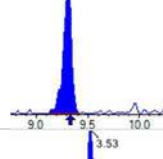
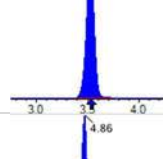
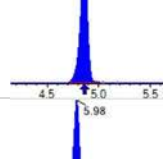
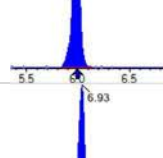
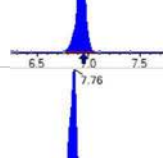
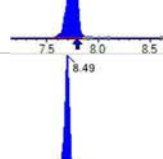
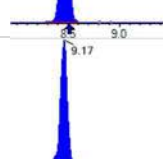
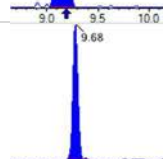
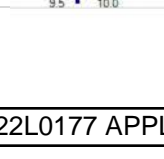
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 Acquisition Method: 1633 2023-01-09.dam

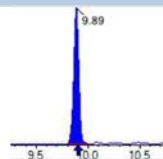
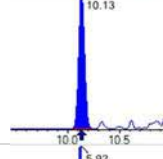
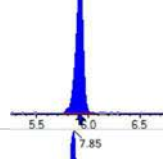
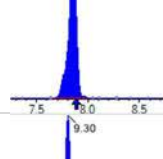
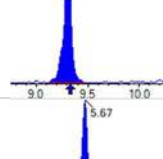
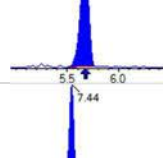
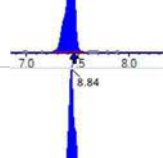
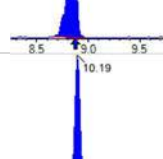
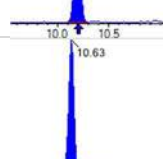
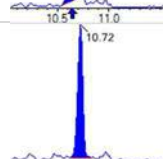

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 Path: S2023-01-11A (22)
 Acquired: 2023/01/11 - 15:47

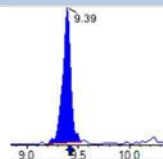
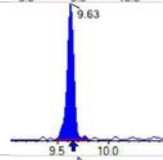
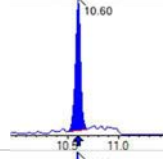
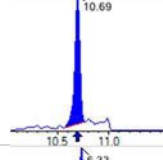
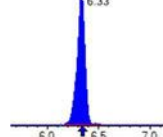
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 17130	(3.53, N/A) (N/A, 0.01, N/A)	210.8	N/A	0.6763 [1.0000]	67.6% { 11.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 38005	(5.98, N/A) (N/A, -0.01, N/A)	281.4	N/A	1.0281 [1.0000]	102.8% { 10.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 34202	(7.76, N/A) (N/A, -0.02, N/A)	286.1	N/A	0.7786 [1.0000]	77.9% { 10.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 35995	(8.49, N/A) (N/A, -0.03, N/A)	299.1	N/A	0.8876 [1.0000]	88.8% { 12.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 40256	(9.17, N/A) (N/A, -0.02, N/A)	235.8	N/A	0.9320 [1.0000]	93.2% { 9.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 64852	(7.85, N/A) (N/A, -0.02, N/A)	312.1	N/A	0.8779 [1.0000]	87.8% { 10.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 66940	(9.31, N/A) (N/A, -0.02, N/A)	94.3	N/A	0.8682 [1.0000]	86.8% { 10.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 131267	(3.53, N/A) (N/A, 0.01, N/A)	443.6	N/A	0.7800 [0.8000]	97.5% { 11.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 120402	(4.86, N/A) (N/A, 0.00, N/A)	574.3	N/A	0.3871 [0.4000]	96.8% { 11.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 81197	(5.98, N/A) (N/A, -0.01, N/A)	400.1	N/A	0.2091 [0.2000]	104.5% { 10.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 74519	(6.93, N/A) (N/A, -0.02, N/A)	325.6	N/A	0.2019 [0.2000]	100.9% { 11.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 80813	(7.76, N/A) (N/A, -0.02, N/A)	337.4	N/A	0.2319 [0.2000]	116.0% { 11.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 35744	(8.49, N/A) (N/A, -0.02, N/A)	363.1	N/A	0.1001 [0.1000]	100.1% { 13.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 50540	(9.17, N/A) (N/A, -0.03, N/A)	219.8	N/A	0.1114 [0.1000]	111.4% { 11.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 73410	(9.68, N/A) (N/A, -0.02, N/A)	276.9	N/A	0.1309 [0.1000]	130.9% { 12.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 83053	(9.89, N/A) (N/A, -0.01, N/A)	217.7	N/A	0.1542 [0.1000]	154.2% {15.8%}			S2,
13C2_PFTeDA_EIS	(715.0 / 670.0) 44476	(10.13, N/A) (N/A, -0.01, N/A)	146.2	N/A	0.1032 [0.1000]	103.2% {13.7%}			
13C3_PFBs_EIS	(302.0 / 80.0) 204206	(5.92, N/A) (N/A, 0.00, N/A)	400.1	N/A	0.2368 [0.2000]	118.4% {11.1%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 107158	(7.85, N/A) (N/A, -0.02, N/A)	328.9	N/A	0.1983 [0.2000]	99.2% {11.0%}			
13C8_PFOS_EIS	(507.0 / 80.0) 201955	(9.30, N/A) (N/A, -0.03, N/A)	173.7	N/A	0.2541 [0.2000]	127.1% {12.2%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 85943	(5.67, N/A) (N/A, 0.00, N/A)	237.9	N/A	0.5107 [0.4000]	127.7% {11.4%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 92744	(7.44, N/A) (N/A, -0.01, N/A)	378.8	N/A	0.3736 [0.4000]	93.4% {10.1%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 108909	(8.84, N/A) (N/A, -0.03, N/A)	226.8	N/A	0.4682 [0.4000]	117.1% {10.2%}			
13C8_PFOA_EIS	(506.0 / 78.0) 188770	(10.19, N/A) (N/A, -0.01, N/A)	354.2	N/A	0.1794 [0.2000]	89.7% {11.9%}			
D3_NMeFOA_EIS	(515.0 / 169.0) 15294	(10.63, N/A) (N/A, 0.00, N/A)	19.3	N/A	0.0810 [0.2000]	40.5% {8.7%}			
D5_NEtFOA_EIS	(531.0 / 169.0) 16773	(10.72, N/A) (N/A, 0.00, N/A)	117.0	N/A	0.0942 [0.2000]	47.1% {8.6%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 137961	(9.39, N/A) (N/A, -0.03, N/A)	123.5	N/A	0.5540 [0.4000]	138.5% { 10.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 134859	(9.63, N/A) (N/A, -0.02, N/A)	193.2	N/A	0.6887 [0.4000]	172.2% { 11.0% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 61798	(10.60, N/A) (N/A, 0.00, N/A)	123.0	N/A	2.1318 [2.0000]	106.6% { 13.4% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 33008	(10.69, N/A) (N/A, 0.00, N/A)	90.4	N/A	2.4707 [2.0000]	123.5% { 13.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 159892	(6.33, N/A) (N/A, -0.01, N/A)	422.1	N/A	0.7846 [0.8000]	98.1% { 10.5% }			

FORM I

ANALYSIS DATA SHEET

AF-HDMW225303-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-03RE2
		File ID:	S2023-01-11A (23)
Sampled:	12/27/22 11:10	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 16:00
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	565.54 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.71 U	1.4	0.71	0.18	
PFPEA	0.35 U	0.71	0.35	0.057	
PFHXA	0.18 U	0.35	0.18	0.049	
PFHPA	0.18 U	0.35	0.18	0.036	
PFOA	0.18 U	0.35	0.18	0.13	
PFNA	0.18 U	0.35	0.18	0.072	
PFDA	0.18 U	0.35	0.18	0.090	
PFUnA	0.18 U	0.35	0.18	0.14	
PFDOA	0.18 U	0.35	0.18	0.099	
PFTRDA	0.27 U	0.35	0.27	0.18	
PFTEDA	0.18 U	0.35	0.18	0.18	
PFBS	0.18 U	0.35	0.18	0.033	
PFPEs	0.18 U	0.35	0.18	0.055	
PFHXS	0.18 U	0.35	0.18	0.028	
PFHPS	0.18 U	0.35	0.18	0.045	
PFOS	0.18 U	0.35	0.18	0.056	
PFNS	0.18 U	0.35	0.18	0.11	
PFDS	0.18 U	0.35	0.18	0.13	
PFDOS	0.18 U	0.35	0.18	0.11	
4:2FTS	0.71 U	1.4	0.71	0.26	
6:2FTS	0.71 U	1.4	0.71	0.28	
8:2FTS	0.71 U	1.4	0.71	0.073	
PFOSA	0.18 U	0.35	0.18	0.092	
NMeFOSA	0.71 U	1.4	0.71	0.42	
NEtFOSA	0.71 U	1.4	0.71	0.36	
NMeFOSAA	0.18 U	0.35	0.18	0.094	
NEtFOSAA	0.18 U	0.35	0.18	0.10	
NMeFOSE	1.1 U	1.4	1.1	0.89	
NEtFOSE	1.1 U	1.4	1.1	0.93	
HFPO-DA	0.35 U	0.71	0.35	0.15	

FORM I ANALYSIS DATA SHEET

AF-HDMW225303-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-03RE2
		File ID:	S2023-01-11A (23)
Sampled:	12/27/22 11:10	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 16:00
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	565.54 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.35 U	0.71	0.35	0.11	
PFEESA	0.35 U	0.71	0.35	0.096	
PFMPA	0.35 U	0.71	0.35	0.048	
PFMBA	0.35 U	0.71	0.35	0.080	
NFDHA	0.35 U	0.71	0.35	0.27	
9CL-PF3ONS	0.35 U	0.71	0.35	0.18	
11CL-PF3OUDS	0.35 U	0.71	0.35	0.18	
3:3FTCA	0.71 U	1.4	0.71	0.51	
5:3FTCA	0.71 U	1.4	0.71	0.39	
7:3FTCA	0.71 U	1.4	0.71	0.49	



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0177-03RE2
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (23)
Acquired: 2023/01/11 - 16:00

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 10414 (413.0 / 169.0) 3691	(7.76, 1.00) (0.00, N/A, 0.1)	29.7 17.9	0.3544 111.0 102.8	0.0244	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) 834	(N/A , N/A) (N/A , N/A , N/A)	N/A 7.1	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

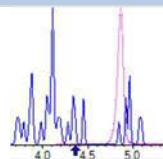
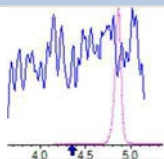
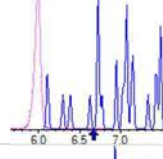
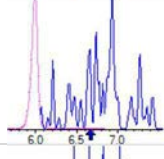
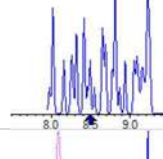
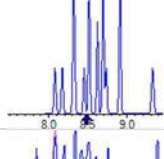
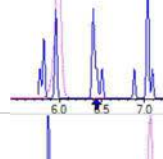
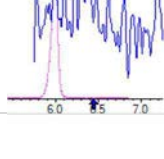
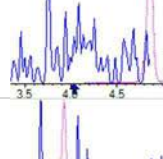
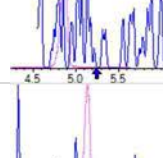
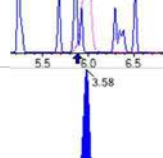
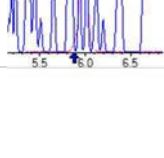
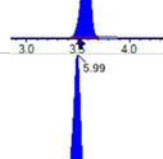
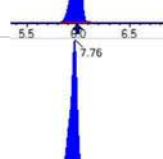
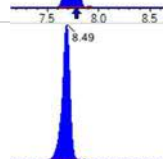



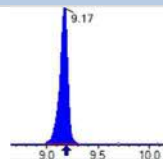
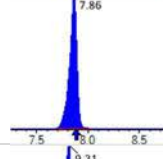
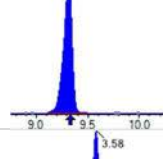
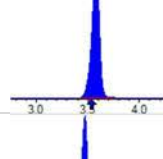
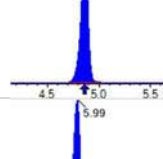
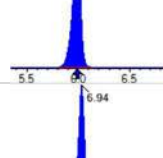
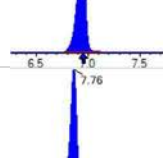
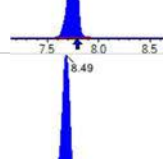
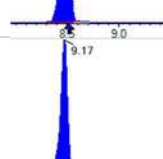
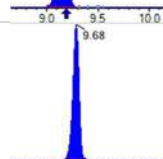
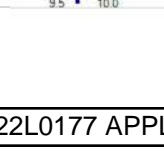
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

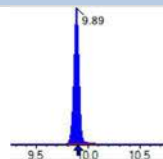
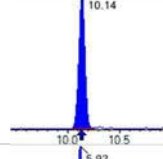
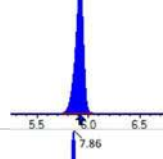
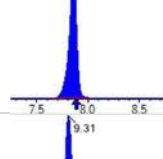
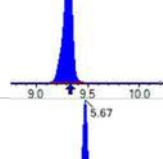
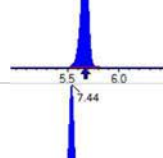
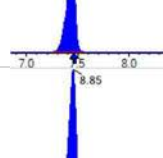
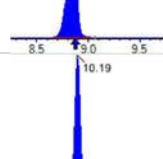
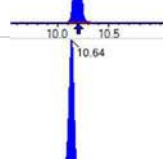
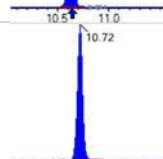
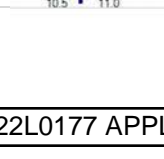
Sample I.D.: 22L0177-03RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (23)
 Acquired: 2023/01/11 - 16:00

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 185315	(3.58, N/A) (N/A, 0.06, N/A)	448.5	N/A	0.7316 [1.0000]	73.2% { 120.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 424243	(5.99, N/A) (N/A, 0.00, N/A)	548.1	N/A	1.1477 [1.0000]	114.8% { 114.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 381063	(7.76, N/A) (N/A, -0.01, N/A)	529.4	N/A	0.8675 [1.0000]	86.7% { 114.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 319393	(8.49, N/A) (N/A, -0.03, N/A)	433.9	N/A	0.7876 [1.0000]	78.8% { 113.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 411490	(9.17, N/A) (N/A, -0.02, N/A)	258.3	N/A	0.9526 [1.0000]	95.3% { 91.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 656980	(7.86, N/A) (N/A, -0.02, N/A)	630.6	N/A	0.8894 [1.0000]	88.9% { 105.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 744734	(9.31, N/A) (N/A, -0.02, N/A)	365.6	N/A	0.9659 [1.0000]	96.6% { 112.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1512721	(3.58, N/A) (N/A, 0.06, N/A)	574.6	N/A	8.3088 [8.0000]	103.9% { 127.8% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1329583	(4.86, N/A) (N/A, 0.00, N/A)	508.8	N/A	3.8292 [4.0000]	95.7% { 128.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 854218	(5.99, N/A) (N/A, 0.00, N/A)	518.3	N/A	1.9705 [2.0000]	98.5% { 114.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 806870	(6.94, N/A) (N/A, -0.01, N/A)	458.7	N/A	1.9581 [2.0000]	97.9% { 119.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 819349	(7.76, N/A) (N/A, -0.02, N/A)	528.3	N/A	2.1103 [2.0000]	105.5% { 120.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 348230	(8.49, N/A) (N/A, -0.02, N/A)	382.9	N/A	1.0985 [1.0000]	109.9% { 129.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 604017	(9.17, N/A) (N/A, -0.02, N/A)	404.0	N/A	1.3027 [1.0000]	130.3% { 131.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 783874	(9.68, N/A) (N/A, -0.01, N/A)	423.9	N/A	1.3673 [1.0000]	136.7% { 129.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 723689	(9.89, N/A) (N/A, -0.01, N/A)	464.1	N/A	1.3147 [1.0000]	131.5% { 137.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 348157	(10.14, N/A) (N/A, -0.01, N/A)	557.2	N/A	0.7901 [1.0000]	79.0% { 107.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2183460	(5.92, N/A) (N/A, 0.00, N/A)	586.9	N/A	2.4999 [2.0000]	125.0% { 118.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1163479	(7.86, N/A) (N/A, -0.02, N/A)	500.6	N/A	2.1257 [2.0000]	106.3% { 119.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1850788	(9.31, N/A) (N/A, -0.02, N/A)	528.7	N/A	2.0935 [2.0000]	104.7% { 111.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 1089800	(5.67, N/A) (N/A, 0.00, N/A)	693.7	N/A	6.3924 [4.0000]	159.8% { 144.4% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 1001154	(7.44, N/A) (N/A, -0.01, N/A)	680.8	N/A	3.9812 [4.0000]	99.5% { 109.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1159394	(8.85, N/A) (N/A, -0.02, N/A)	380.3	N/A	4.9206 [4.0000]	123.0% { 108.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2001625	(10.19, N/A) (N/A, -0.01, N/A)	806.7	N/A	1.7100 [2.0000]	85.5% { 126.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 176474	(10.64, N/A) (N/A, 0.00, N/A)	580.5	N/A	0.8396 [2.0000]	42.0% { 99.9% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 168994	(10.72, N/A) (N/A, 0.00, N/A)	511.0	N/A	0.8529 [2.0000]	42.6% { 87.1% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-03RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (23)
 Acquired: 2023/01/11 - 16:00

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1500933	(9.40, N/A) (N/A, -0.02, N/A)	405.7	N/A	5.4172 [4.0000]	135.4% { 113.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1441599	(9.63, N/A) (N/A, -0.01, N/A)	724.4	N/A	6.6175 [4.0000]	165.4% { 117.2% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 607132	(10.60, N/A) (N/A, 0.00, N/A)	419.9	N/A	18.8255 [20.0000]	94.1% { 131.3% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 324721	(10.70, N/A) (N/A, 0.00, N/A)	413.4	N/A	21.8470 [20.0000]	109.2% { 130.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1712200	(6.33, N/A) (N/A, -0.01, N/A)	659.3	N/A	7.5265 [8.0000]	94.1% { 112.0% }			

FORM I

ANALYSIS DATA SHEET

AF-HDMW225303-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	22L0177-03RE3	File ID:	S2023-01-11A (24)
Sampled:	12/27/22 11:10	Prepared:	01/09/23 16:01	Analyzed:	01/11/23 16:13
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	565.54 mL / 2 mL			Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125	Calibration:	2302005



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-03RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (24)
 Acquired: 2023/01/11 - 16:13

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



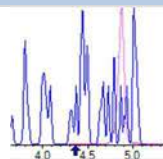
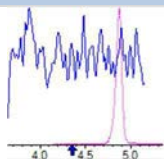
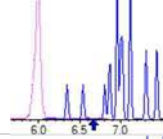
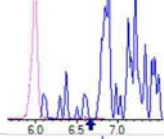
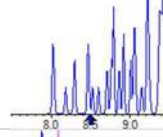
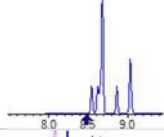
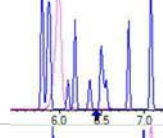
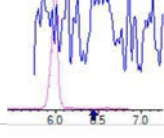
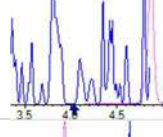
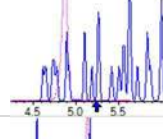
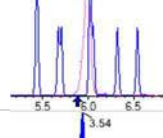
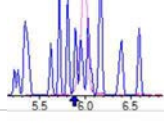
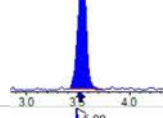
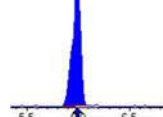
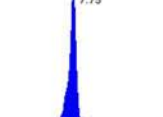

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

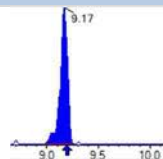
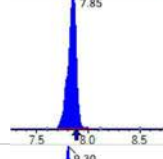
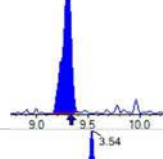
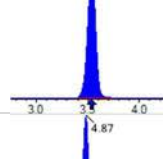
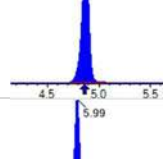
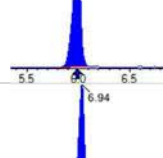
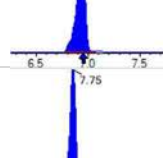
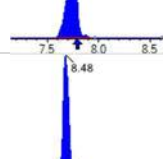
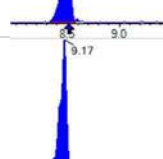
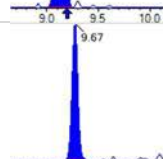
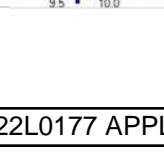
Sample I.D.: 22L0177-03RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

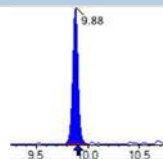
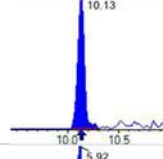
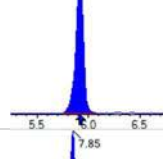
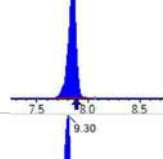
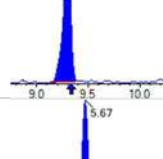
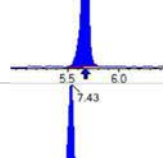
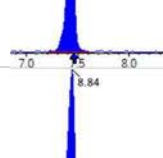
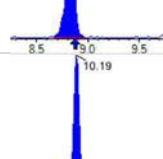
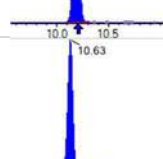
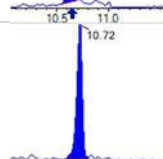

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (24)
 Acquired: 2023/01/11 - 16:13

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 16976	(3.54, N/A) (N/A, 0.02, N/A)	181.4	N/A	0.6702 [1.0000]	67.0% { 11.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 40385	(5.99, N/A) (N/A, 0.00, N/A)	281.1	N/A	1.0925 [1.0000]	109.2% { 10.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 37322	(7.75, N/A) (N/A, -0.02, N/A)	279.9	N/A	0.8496 [1.0000]	85.0% { 11.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 30349	(8.49, N/A) (N/A, -0.03, N/A)	364.5	N/A	0.7484 [1.0000]	74.8% { 10.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 38655	(9.17, N/A) (N/A, -0.02, N/A)	152.6	N/A	0.8949 [1.0000]	89.5% { 8.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 64894	(7.85, N/A) (N/A, -0.03, N/A)	305.3	N/A	0.8785 [1.0000]	87.8% { 10.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 73891	(9.30, N/A) (N/A, -0.03, N/A)	84.6	N/A	0.9583 [1.0000]	95.8% { 11.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 134813	(3.54, N/A) (N/A, 0.02, N/A)	773.3	N/A	0.8083 [0.8000]	101.0% { 11.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 117909	(4.87, N/A) (N/A, 0.01, N/A)	501.2	N/A	0.3567 [0.4000]	89.2% { 11.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 85396	(5.99, N/A) (N/A, 0.00, N/A)	288.9	N/A	0.2069 [0.2000]	103.5% { 11.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 74711	(6.94, N/A) (N/A, -0.01, N/A)	403.9	N/A	0.1905 [0.2000]	95.2% { 11.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 79424	(7.75, N/A) (N/A, -0.02, N/A)	283.4	N/A	0.2089 [0.2000]	104.4% { 11.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 37015	(8.48, N/A) (N/A, -0.03, N/A)	271.8	N/A	0.1229 [0.1000]	122.9% { 13.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 39429	(9.17, N/A) (N/A, -0.03, N/A)	140.8	N/A	0.0905 [0.1000]	90.5% { 8.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 66947	(9.67, N/A) (N/A, -0.02, N/A)	120.4	N/A	0.1243 [0.1000]	124.3% { 11.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 86831	(9.88, N/A) (N/A, -0.02, N/A)	212.2	N/A	0.1679 [0.1000]	167.9% {16.5%}			S2,
13C2_PFTeDA_EIS	(715.0 / 670.0) 41050	(10.13, N/A) (N/A, -0.01, N/A)	109.6	N/A	0.0992 [0.1000]	99.2% {12.6%}			
13C3_PFBs_EIS	(302.0 / 80.0) 219277	(5.92, N/A) (N/A, 0.00, N/A)	360.0	N/A	0.2542 [0.2000]	127.1% {11.9%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 110566	(7.85, N/A) (N/A, -0.03, N/A)	434.8	N/A	0.2045 [0.2000]	102.3% {11.3%}			
13C8_PFOS_EIS	(507.0 / 80.0) 196544	(9.30, N/A) (N/A, -0.03, N/A)	187.5	N/A	0.2241 [0.2000]	112.0% {11.9%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 89273	(5.67, N/A) (N/A, 0.00, N/A)	282.6	N/A	0.5301 [0.4000]	132.5% {11.8%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 100272	(7.43, N/A) (N/A, -0.02, N/A)	294.6	N/A	0.4037 [0.4000]	100.9% {11.0%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 116431	(8.84, N/A) (N/A, -0.03, N/A)	185.6	N/A	0.5003 [0.4000]	125.1% {10.9%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 224460	(10.19, N/A) (N/A, -0.01, N/A)	358.4	N/A	0.1933 [0.2000]	96.6% {14.2%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 17076	(10.63, N/A) (N/A, -0.01, N/A)	25.1	N/A	0.0819 [0.2000]	40.9% {9.7%}			
D5_NEtFOsa_EIS	(531.0 / 169.0) 18577	(10.72, N/A) (N/A, 0.00, N/A)	133.8	N/A	0.0945 [0.2000]	47.2% {9.6%}			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-03RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (24)
 Acquired: 2023/01/11 - 16:13

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 154089	(9.39, N/A) (N/A, -0.03, N/A)	176.3	N/A	0.5605 [0.4000]	140.1% { 11.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 141720	(9.62, N/A) (N/A, -0.03, N/A)	230.0	N/A	0.6557 [0.4000]	163.9% { 11.5% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 59789	(10.60, N/A) (N/A, -0.01, N/A)	91.1	N/A	1.8685 [2.0000]	93.4% { 12.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 38295	(10.69, N/A) (N/A, -0.01, N/A)	99.0	N/A	2.5968 [2.0000]	129.8% { 15.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 171833	(6.33, N/A) (N/A, -0.01, N/A)	499.3	N/A	0.7935 [0.8000]	99.2% { 11.2% }			

FORM I ANALYSIS DATA SHEET

AF-RHMW03-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-04RE2
		File ID:	S2023-01-11A (25)
Sampled:	12/27/22 13:15	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 16:26
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	550.8 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	1.0 J	1.5	0.73	0.19	
PFPEA	1.5	0.73	0.36	0.059	
PFHXA	0.77	0.36	0.18	0.050	
PFHPA	0.65	0.36	0.18	0.037	
PFOA	0.23 J	0.36	0.18	0.14	
PFNA	0.10 J	0.36	0.18	0.074	
PFDA	0.18 U	0.36	0.18	0.092	
PFUnA	0.18 U	0.36	0.18	0.15	IR2,
PFDOA	0.18 U	0.36	0.18	0.10	
PFTRDA	0.27 U	0.36	0.27	0.18	
PFTEDA	0.18 U	0.36	0.18	0.18	
PFBS	0.18 U	0.36	0.18	0.033	
PFPEs	0.18 U	0.36	0.18	0.057	
PFHXS	0.18 U	0.36	0.18	0.029	
PFHPS	0.18 U	0.36	0.18	0.047	
PFOS	0.18 U	0.36	0.18	0.058	
PFNS	0.18 U	0.36	0.18	0.11	
PFDS	0.18 U	0.36	0.18	0.14	
PFDOS	0.18 U	0.36	0.18	0.11	
4:2FTS	0.73 U	1.5	0.73	0.26	
6:2FTS	2.5	1.5	0.73	0.29	
8:2FTS	0.73 U	1.5	0.73	0.075	
PFOSA	0.18 U	0.36	0.18	0.095	
NMeFOSA	0.73 U	1.5	0.73	0.43	
NEtFOSA	0.73 U	1.5	0.73	0.37	
NMeFOSAA	0.18 U	0.36	0.18	0.096	
NEtFOSAA	0.18 U	0.36	0.18	0.10	
NMeFOSE	1.1 U	1.5	1.1	0.92	
NEtFOSE	1.1 U	1.5	1.1	0.95	
HFPO-DA	0.36 U	0.73	0.36	0.16	

FORM I ANALYSIS DATA SHEET

AF-RHMW03-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-04RE2
		File ID:	S2023-01-11A (25)
Sampled:	12/27/22 13:15	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 16:26
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	550.8 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.36 U	0.73	0.36	0.11	
PFEESA	0.36 U	0.73	0.36	0.099	
PFMPA	0.36 U	0.73	0.36	0.049	
PFMBA	0.36 U	0.73	0.36	0.082	
NFDHA	0.36 U	0.73	0.36	0.27	
9CL-PF3ONS	0.36 U	0.73	0.36	0.19	
11CL-PF3OUDS	0.36 U	0.73	0.36	0.19	
3:3FTCA	0.73 U	1.5	0.73	0.52	
5:3FTCA	0.73 U	1.5	0.73	0.40	
7:3FTCA	0.73 U	1.5	0.73	0.50	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (25)
 Acquired: 2023/01/11 - 16:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 22738	(3.57, 1.00) (0.00, N/A, 0.0)	66.9	N/A 0.0 0.0	0.2799	N/A			
PFPeA	(263.0 / 219.0) 104656 (263.0 / 69.0) 2098	(4.85, 1.00) (0.00, N/A, -0.8)	129.0 10.9	0.0200 184.7 172.3	0.4252	N/A			
PFHxA	(313.0 / 269.0) 80812 (313.0 / 119.0) 10153	(5.98, 1.00) (0.00, N/A, 0.5)	49.1 23.2	0.1256 128.0 133.9	0.2128	N/A			
PFHpA	(363.0 / 319.0) 63601 (363.0 / 169.0) 18782	(6.93, 1.00) (0.00, N/A, -0.2)	57.2 53.0	0.2953 103.8 100.3	0.1784	N/A			
PFOA	(413.0 / 369.0) 26013 (413.0 / 169.0) 8579	(7.75, 1.00) (-0.01, N/A, -0.5)	34.8 31.2	0.3298 103.3 95.7	0.0646	N/A			
PFNA	(463.0 / 419.0) 8565 (463.0 / 169.0) 2116	(8.49, 1.00) (0.01, N/A, 0.4)	25.7 19.7	0.2471 110.2 111.9	0.0279	N/A			
PFDA	(513.0 / 469.0) 9883 (513.0 / 169.0) 876	(9.17, 1.00) (0.01, N/A, -0.9)	22.7 57.2	0.0886 80.7 99.4	0.0191	N/A			
PFUnA	(563.0 / 519.0) 14713 (563.0 / 169.0) 5364	(9.67, 1.00) (0.00, N/A, -0.6)	25.1 18.2	0.3646 348.5 388.7	0.0239	N/A			IR2,
PFDoA	(613.0 / 569.0) 8391 (613.0 / 169.0) 1359	(9.88, 1.00) (0.00, N/A, 0.4)	17.2 13.3	0.1620 125.9 119.4	0.0146	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (25)
 Acquired: 2023/01/11 - 16:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) 275980 (427.0 / 81.0) 197597	(7.43 , 1.00) (0.00 , N/A , 0.0)	446.2 180.6	0.7160 93.5 108.0	0.6811	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (25)
 Acquired: 2023/01/11 - 16:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (25)
 Acquired: 2023/01/11 - 16:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 103577	(3.57, N/A) (N/A, 0.05, N/A)	492.8	N/A	0.4089 [1.0000]	40.9% { 67.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 366462	(5.99, N/A) (N/A, 0.00, N/A)	374.7	N/A	0.9914 [1.0000]	99.1% { 99.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 359221	(7.76, N/A) (N/A, -0.02, N/A)	574.2	N/A	0.8178 [1.0000]	81.8% { 107.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 310425	(8.49, N/A) (N/A, -0.03, N/A)	426.3	N/A	0.7655 [1.0000]	76.5% { 110.5% }			

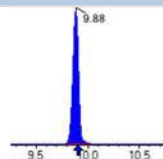
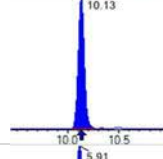
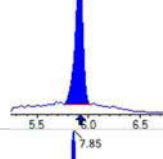
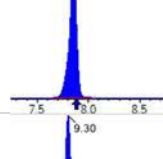
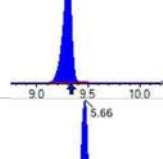
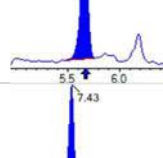
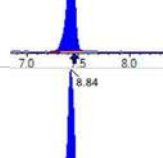
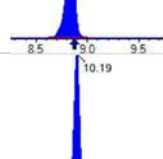
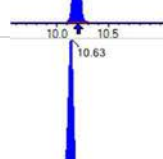
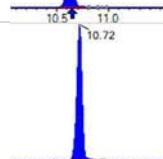



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (25)
 Acquired: 2023/01/11 - 16:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 413215	(9.17, N/A) (N/A, -0.03, N/A)	298.3	N/A	0.9566 [1.0000]	95.7% { 92.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 655999	(7.86, N/A) (N/A, -0.02, N/A)	559.1	N/A	0.8880 [1.0000]	88.8% { 105.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 701090	(9.30, N/A) (N/A, -0.03, N/A)	348.2	N/A	0.9093 [1.0000]	90.9% { 105.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 710387	(3.57, N/A) (N/A, 0.05, N/A)	538.8	N/A	6.9810 [8.0000]	87.3% { 60.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1013467	(4.86, N/A) (N/A, -0.01, N/A)	570.9	N/A	3.3790 [4.0000]	84.5% { 97.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 770776	(5.98, N/A) (N/A, -0.01, N/A)	526.2	N/A	2.0584 [2.0000]	102.9% { 102.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 706064	(6.94, N/A) (N/A, -0.01, N/A)	485.0	N/A	1.9836 [2.0000]	99.2% { 104.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 772636	(7.76, N/A) (N/A, -0.02, N/A)	552.4	N/A	2.1110 [2.0000]	105.6% { 114.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 319747	(8.48, N/A) (N/A, -0.03, N/A)	392.5	N/A	1.0378 [1.0000]	103.8% { 118.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 504301	(9.16, N/A) (N/A, -0.03, N/A)	378.3	N/A	1.0831 [1.0000]	108.3% { 109.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 677745	(9.67, N/A) (N/A, -0.02, N/A)	531.1	N/A	1.1773 [1.0000]	117.7% { 111.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 612650	(9.88, N/A) (N/A, -0.01, N/A)	526.0	N/A	1.1083 [1.0000]	110.8% { 116.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 325008	(10.13, N/A) (N/A, -0.01, N/A)	1038.6	N/A	0.7345 [1.0000]	73.5% { 99.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2014306	(5.91, N/A) (N/A, -0.01, N/A)	135.9	N/A	2.3097 [2.0000]	115.5% { 109.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1098311	(7.85, N/A) (N/A, -0.02, N/A)	499.2	N/A	2.0096 [2.0000]	100.5% { 112.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1939603	(9.30, N/A) (N/A, -0.03, N/A)	496.2	N/A	2.3305 [2.0000]	116.5% { 117.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 867471	(5.66, N/A) (N/A, -0.01, N/A)	99.4	N/A	5.0959 [4.0000]	127.4% { 114.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1060905	(7.43, N/A) (N/A, -0.02, N/A)	501.1	N/A	4.2251 [4.0000]	105.6% { 116.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1128574	(8.84, N/A) (N/A, -0.03, N/A)	410.0	N/A	4.7969 [4.0000]	119.9% { 105.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1891453	(10.19, N/A) (N/A, -0.01, N/A)	672.3	N/A	1.7165 [2.0000]	85.8% { 119.5% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 200970	(10.63, N/A) (N/A, 0.00, N/A)	415.3	N/A	1.0157 [2.0000]	50.8% { 113.7% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 198464	(10.72, N/A) (N/A, 0.00, N/A)	562.3	N/A	1.0640 [2.0000]	53.2% { 102.2% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (25)
 Acquired: 2023/01/11 - 16:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1341858	(9.39, N/A) (N/A, -0.03, N/A)	342.0	N/A	5.1445 [4.0000]	128.6% { 101.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1277560	(9.63, N/A) (N/A, -0.02, N/A)	739.6	N/A	6.2296 [4.0000]	155.7% { 103.9% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 588430	(10.60, N/A) (N/A, 0.00, N/A)	434.8	N/A	19.3814 [20.0000]	96.9% { 127.3% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 315326	(10.69, N/A) (N/A, 0.00, N/A)	302.7	N/A	22.5357 [20.0000]	112.7% { 126.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1367110	(6.33, N/A) (N/A, -0.01, N/A)	698.1	N/A	6.9571 [8.0000]	87.0% { 89.4% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW03-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	22L0177-04RE3	File ID:	S2023-01-11A (26)
Sampled:	12/27/22 13:15	Prepared:	01/09/23 16:01	Analyzed:	01/11/23 16:39
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	550.8 mL / 2 mL			Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125	Calibration:	2302005



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (26)
 Acquired: 2023/01/11 - 16:39

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-04RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (26)
 Acquired: 2023/01/11 - 16:39

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

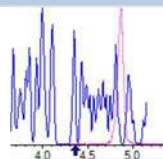
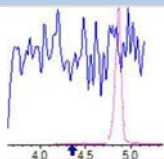
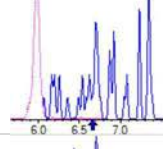
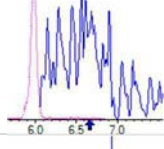
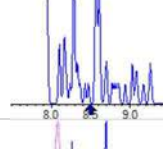
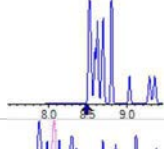
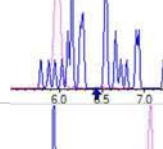
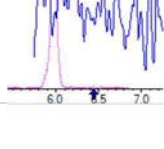
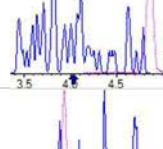
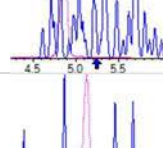
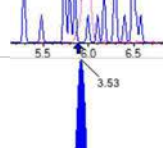
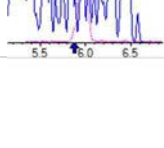
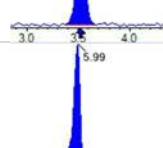
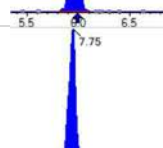
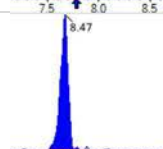



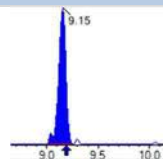
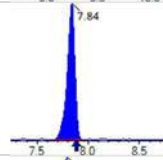
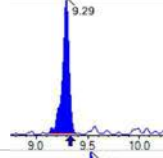
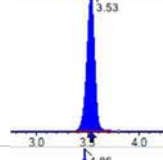
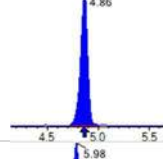
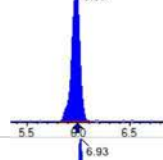
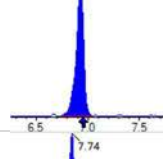
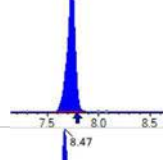
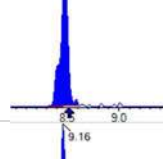
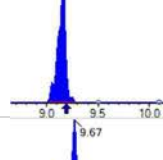
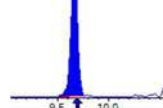
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

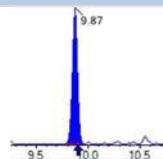
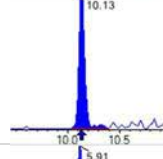
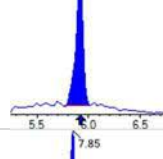
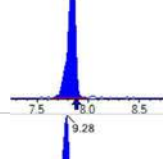
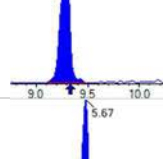
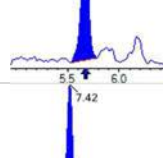
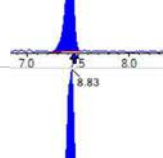
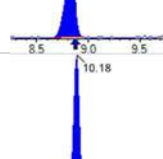
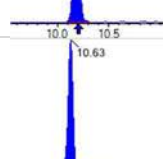
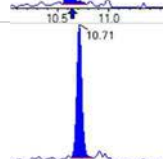
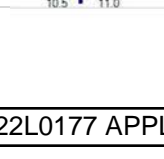
Sample I.D.: 22L0177-04RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

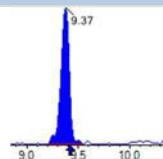
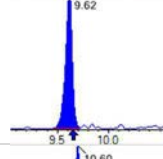
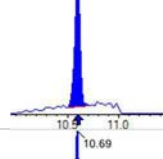
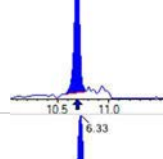
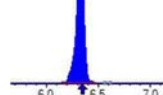
Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (26)
 Acquired: 2023/01/11 - 16:39

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 16358	(3.53, N/A) (N/A, 0.01, N/A)	178.0	N/A	0.6458 [1.0000]	64.6% { 10.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 41292	(5.99, N/A) (N/A, 0.00, N/A)	232.4	N/A	1.1170 [1.0000]	111.7% { 11.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 38591	(7.75, N/A) (N/A, -0.03, N/A)	594.9	N/A	0.8785 [1.0000]	87.9% { 11.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 33468	(8.47, N/A) (N/A, -0.05, N/A)	182.0	N/A	0.8253 [1.0000]	82.5% { 11.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 45814	(9.15, N/A) (N/A, -0.04, N/A)	222.4	N/A	1.0607 [1.0000]	106.1% { 10.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 56158	(7.84, N/A) (N/A, -0.04, N/A)	345.6	N/A	0.7602 [1.0000]	76.0% { 9.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 67215	(9.29, N/A) (N/A, -0.04, N/A)	85.0	N/A	0.8717 [1.0000]	87.2% { 10.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 113378	(3.53, N/A) (N/A, 0.01, N/A)	596.0	N/A	0.7055 [0.8000]	88.2% { 9.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 117693	(4.86, N/A) (N/A, 0.00, N/A)	525.8	N/A	0.3483 [0.4000]	87.1% { 11.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 78120	(5.98, N/A) (N/A, -0.01, N/A)	325.9	N/A	0.1852 [0.2000]	92.6% { 10.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 71840	(6.93, N/A) (N/A, -0.02, N/A)	215.7	N/A	0.1791 [0.2000]	89.6% { 10.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 80210	(7.74, N/A) (N/A, -0.04, N/A)	492.3	N/A	0.2040 [0.2000]	102.0% { 11.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 28914	(8.47, N/A) (N/A, -0.04, N/A)	126.4	N/A	0.0870 [0.1000]	87.0% { 10.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 36533	(9.16, N/A) (N/A, -0.04, N/A)	246.5	N/A	0.0708 [0.1000]	70.8% { 7.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 66605	(9.67, N/A) (N/A, -0.03, N/A)	164.4	N/A	0.1044 [0.1000]	104.3% { 11.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 64409	(9.87, N/A) (N/A, -0.02, N/A)	165.5	N/A	0.1051 [0.1000]	105.1% {12.3%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 35829	(10.13, N/A) (N/A, -0.01, N/A)	124.4	N/A	0.0730 [0.1000]	73.0% {11.0%}			
13C3_PFBs_EIS	(302.0 / 80.0) 197491	(5.91, N/A) (N/A, 0.00, N/A)	131.4	N/A	0.2645 [0.2000]	132.3% {10.7%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 103485	(7.85, N/A) (N/A, -0.03, N/A)	275.0	N/A	0.2212 [0.2000]	110.6% {10.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 184296	(9.28, N/A) (N/A, -0.05, N/A)	164.1	N/A	0.2310 [0.2000]	115.5% {11.1%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 95088	(5.67, N/A) (N/A, 0.00, N/A)	73.6	N/A	0.6525 [0.4000]	163.1% {12.6%}			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 92815	(7.42, N/A) (N/A, -0.03, N/A)	250.2	N/A	0.4318 [0.4000]	107.9% {10.1%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 116883	(8.83, N/A) (N/A, -0.04, N/A)	240.1	N/A	0.5803 [0.4000]	145.1% {10.9%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 205394	(10.18, N/A) (N/A, -0.01, N/A)	336.7	N/A	0.1944 [0.2000]	97.2% {13.0%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 18578	(10.63, N/A) (N/A, -0.01, N/A)	118.5	N/A	0.0979 [0.2000]	49.0% {10.5%}			
D5_NEtFOsa_EIS	(531.0 / 169.0) 19828	(10.71, N/A) (N/A, -0.01, N/A)	124.2	N/A	0.1109 [0.2000]	55.4% {10.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 152889	(9.37, N/A) (N/A, -0.04, N/A)	147.0	N/A	0.6114 [0.4000]	152.8% { 11.5% }			S2,
D5_EtFOSAA_EIS	(589.0 / 419.0) 136387	(9.62, N/A) (N/A, -0.03, N/A)	181.4	N/A	0.6937 [0.4000]	173.4% { 11.1% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 55430	(10.60, N/A) (N/A, -0.01, N/A)	121.8	N/A	1.9043 [2.0000]	95.2% { 12.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 28288	(10.69, N/A) (N/A, -0.01, N/A)	81.7	N/A	2.1087 [2.0000]	105.4% { 11.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 168334	(6.33, N/A) (N/A, -0.01, N/A)	382.3	N/A	0.7603 [0.8000]	95.0% { 11.0% }			

FORM I ANALYSIS DATA SHEET

AF-RHMW02-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-05RE2
		File ID:	S2023-01-11A (27)
Sampled:	12/27/22 11:45	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 16:52
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	574.78 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.70 U	1.4	0.70	0.18	
PFPEA	0.35 U	0.70	0.35	0.057	
PFHXA	0.23 J	0.35	0.17	0.048	IR2,
PFHPA	0.17 U	0.35	0.17	0.036	
PFOA	0.17 U	0.35	0.17	0.13	
PFNA	0.17 U	0.35	0.17	0.071	
PFDA	0.17 U	0.35	0.17	0.088	
PFUnA	0.17 U	0.35	0.17	0.14	
PFDOA	0.17 U	0.35	0.17	0.097	
PFTRDA	0.26 U	0.35	0.26	0.18	
PFTEDA	0.17 U	0.35	0.17	0.17	
PFBS	0.17 U	0.35	0.17	0.032	
PFPEs	0.17 U	0.35	0.17	0.055	
PFHXS	0.17 U	0.35	0.17	0.028	
PFHPS	0.17 U	0.35	0.17	0.045	
PFOS	0.17 U	0.35	0.17	0.055	
PFNS	0.17 U	0.35	0.17	0.11	
PFDS	0.17 U	0.35	0.17	0.13	
PFDOS	0.17 U	0.35	0.17	0.11	
4:2FTS	0.70 U	1.4	0.70	0.25	
6:2FTS	4.1	1.4	0.70	0.27	
8:2FTS	0.70 U	1.4	0.70	0.071	
PFOSA	0.17 U	0.35	0.17	0.091	
NMeFOSA	0.70 U	1.4	0.70	0.41	
NEtFOSA	0.70 U	1.4	0.70	0.36	
NMeFOSAA	0.17 U	0.35	0.17	0.092	
NEtFOSAA	0.17 U	0.35	0.17	0.10	
NMeFOSE	1.0 U	1.4	1.0	0.88	
NEtFOSE	1.0 U	1.4	1.0	0.91	
HFPO-DA	0.35 U	0.70	0.35	0.15	

FORM I ANALYSIS DATA SHEET

AF-RHMW02-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0177-05RE2
		File ID:	S2023-01-11A (27)
Sampled:	12/27/22 11:45	Prepared:	01/09/23 16:01
		Analyzed:	01/11/23 16:52
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	574.78 mL / 2 mL	Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125
		Calibration:	2302005

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.35 U	0.70	0.35	0.11	
PFEESA	0.35 U	0.70	0.35	0.095	
PFMPA	0.35 U	0.70	0.35	0.047	
PFMBA	0.35 U	0.70	0.35	0.079	
NFDHA	0.35 U	0.70	0.35	0.26	
9CL-PF3ONS	0.35 U	0.70	0.35	0.18	
11CL-PF3OUDS	0.35 U	0.70	0.35	0.18	
3:3FTCA	0.70 U	1.4	0.70	0.50	
5:3FTCA	0.70 U	1.4	0.70	0.39	
7:3FTCA	0.70 U	1.4	0.70	0.48	



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-05RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (27)
 Acquired: 2023/01/11 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) 17248 (313.0 / 119.0) 6301	(5.97, 1.00) (0.00, N/A, 1.4)	20.0 10.5	0.3653 372.2 389.5	0.0660	N/A			IR2,
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 10561 (413.0 / 169.0) 2978	(7.77, 1.00) (0.01, N/A, 2.3)	12.4 9.2	0.2820 88.3 81.8	0.0341	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0177-05RE2
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (27)
Acquired: 2023/01/11 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) 335180 (427.0 / 81.0) 227640	(7.43 , 1.00) (0.00 , N/A , 0.2)	522.2 235.3	0.6792 88.7 102.4	1.1832	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-05RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (27)
 Acquired: 2023/01/11 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

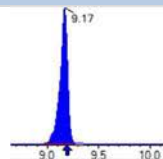
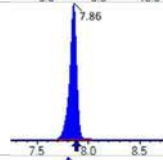
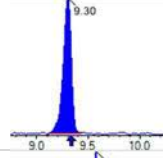
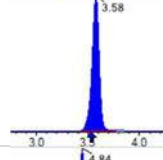
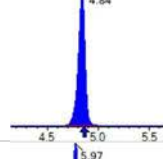
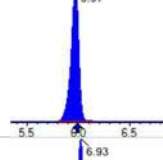
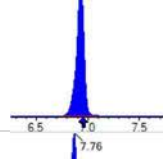
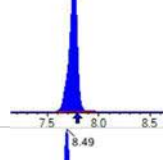
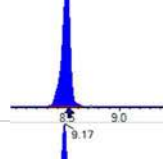
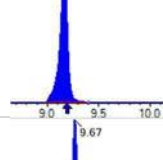
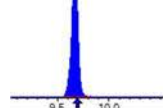


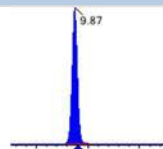
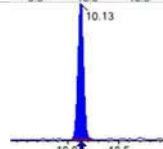
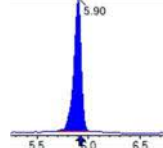
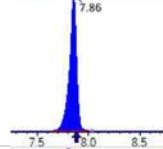
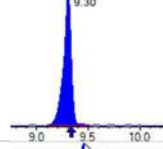
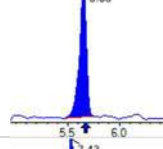
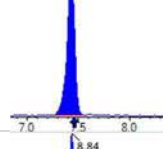
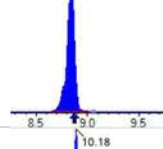
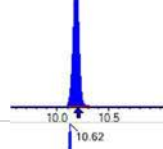
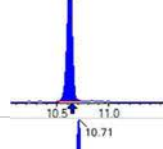
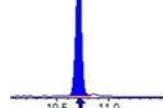
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-05RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (27)
 Acquired: 2023/01/11 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBa_IIS	(216.0 / 172.0) 75587	(3.58, N/A) (N/A, 0.06, N/A)	145.9	N/A	0.2984 [1.0000]	29.8% { 49.2% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 258309	(5.97, N/A) (N/A, -0.02, N/A)	383.1	N/A	0.6988 [1.0000]	69.9% { 69.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 277150	(7.76, N/A) (N/A, -0.02, N/A)	471.1	N/A	0.6309 [1.0000]	63.1% { 83.0% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 285735	(8.49, N/A) (N/A, -0.03, N/A)	484.8	N/A	0.7046 [1.0000]	70.5% { 101.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 388998	(9.17, N/A) (N/A, -0.02, N/A)	405.9	N/A	0.9006 [1.0000]	90.1% { 86.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 555102	(7.86, N/A) (N/A, -0.02, N/A)	573.0	N/A	0.7514 [1.0000]	75.1% { 89.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 614355	(9.30, N/A) (N/A, -0.03, N/A)	206.5	N/A	0.7968 [1.0000]	79.7% { 92.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 420647	(3.58, N/A) (N/A, 0.06, N/A)	544.4	N/A	5.6645 [8.0000]	70.8% { 35.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 587627	(4.84, N/A) (N/A, -0.02, N/A)	540.0	N/A	2.7796 [4.0000]	69.5% { 56.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 530028	(5.97, N/A) (N/A, -0.02, N/A)	533.9	N/A	2.0081 [2.0000]	100.4% { 70.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 602333	(6.93, N/A) (N/A, -0.02, N/A)	474.5	N/A	2.4007 [2.0000]	120.0% { 88.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 594344	(7.76, N/A) (N/A, -0.02, N/A)	473.6	N/A	2.1047 [2.0000]	105.2% { 87.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 289652	(8.49, N/A) (N/A, -0.02, N/A)	448.5	N/A	1.0214 [1.0000]	102.1% { 107.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 414549	(9.17, N/A) (N/A, -0.03, N/A)	240.1	N/A	0.9458 [1.0000]	94.6% { 90.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 588898	(9.67, N/A) (N/A, -0.02, N/A)	419.4	N/A	1.0866 [1.0000]	108.7% { 97.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 535954	(9.87, N/A) (N/A, -0.02, N/A)	358.9	N/A	1.0300 [1.0000]	103.0% { 102.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 201585	(10.13, N/A) (N/A, -0.02, N/A)	342.4	N/A	0.4840 [1.0000]	48.4% { 61.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1803770	(5.90, N/A) (N/A, -0.02, N/A)	229.4	N/A	2.4442 [2.0000]	122.2% { 97.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 959641	(7.86, N/A) (N/A, -0.02, N/A)	559.3	N/A	2.0750 [2.0000]	103.8% { 98.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1641152	(9.30, N/A) (N/A, -0.03, N/A)	361.0	N/A	2.2503 [2.0000]	112.5% { 99.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 554005	(5.65, N/A) (N/A, -0.02, N/A)	165.7	N/A	3.8460 [4.0000]	96.2% { 73.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 741673	(7.43, N/A) (N/A, -0.02, N/A)	390.4	N/A	3.4906 [4.0000]	87.3% { 81.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1067901	(8.84, N/A) (N/A, -0.03, N/A)	362.8	N/A	5.3641 [4.0000]	134.1% { 99.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1302890	(10.18, N/A) (N/A, -0.01, N/A)	784.6	N/A	1.3493 [2.0000]	67.5% { 82.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 106788	(10.62, N/A) (N/A, -0.01, N/A)	361.9	N/A	0.6159 [2.0000]	30.8% { 60.4% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 95294	(10.71, N/A) (N/A, -0.01, N/A)	329.9	N/A	0.5830 [2.0000]	29.2% { 49.1% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0177-05RE2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (27)
 Acquired: 2023/01/11 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1186561	(9.38, N/A) (N/A, -0.04, N/A)	335.2	N/A	5.1914 [4.0000]	129.8% { 89.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1233799	(9.62, N/A) (N/A, -0.03, N/A)	583.7	N/A	6.8656 [4.0000]	171.6% { 100.3% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 447173	(10.59, N/A) (N/A, -0.01, N/A)	321.5	N/A	16.8082 [20.0000]	84.0% { 96.7% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 217412	(10.69, N/A) (N/A, -0.01, N/A)	323.0	N/A	17.7316 [20.0000]	88.7% { 87.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 952805	(6.32, N/A) (N/A, -0.02, N/A)	651.2	N/A	6.8789 [8.0000]	86.0% { 62.3% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW02-WGN01LF-2212W4

Laboratory:	APPL, LLC	Work Order:	22L0177		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	22L0177-05RE3	File ID:	S2023-01-11A (28)
Sampled:	12/27/22 11:45	Prepared:	01/09/23 16:01	Analyzed:	01/11/23 17:05
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	574.78 mL / 2 mL			Instrument:	Saphira
Batch:	BCA0118	Sequence:	SC00125	Calibration:	2302005



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0177-05RE3@10
DF, IV: 1, 1.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (28)
Acquired: 2023/01/11 - 17:05

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0177-05RE3@10
DF, IV: 1, 1.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (28)
Acquired: 2023/01/11 - 17:05

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

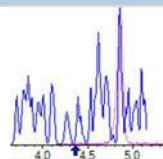
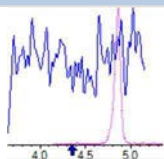
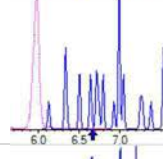
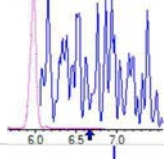
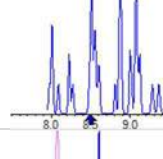
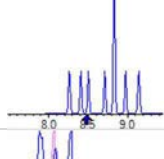
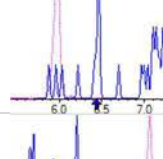
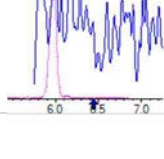
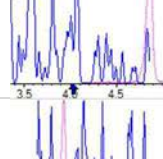
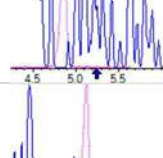
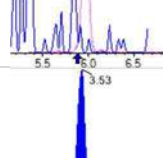
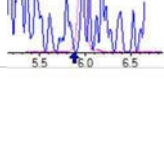
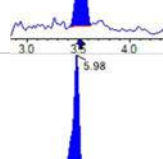
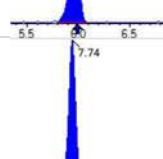
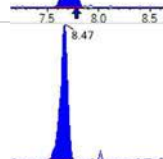



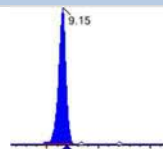
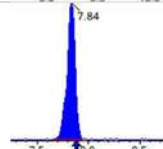
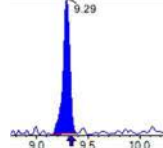
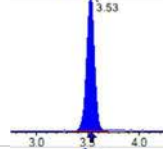
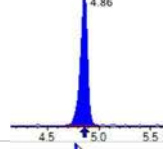
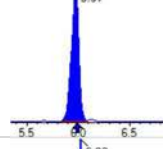
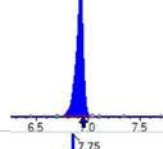
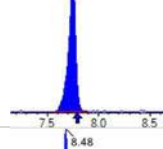
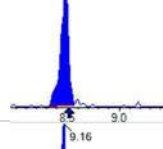
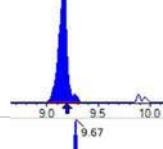
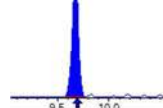
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 Instrument: Saphira
 Type: Sciex Q3 5500

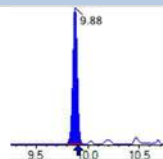
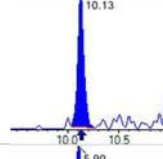
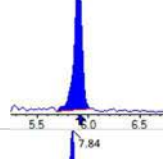
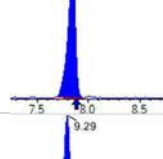
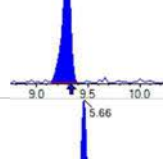
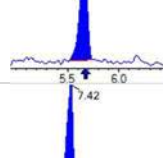
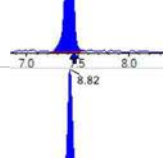
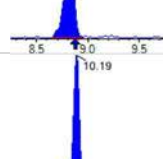
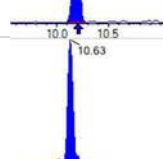
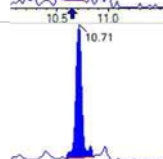

Sample I.D.: 22L0177-05RE3@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-01-09.dam

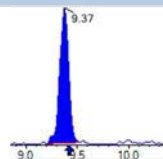
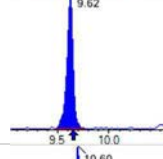
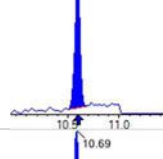
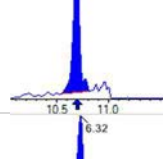
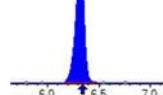
Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (28)
 Acquired: 2023/01/11 - 17:05

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 12584	(3.53, N/A) (N/A, 0.01, N/A)	76.7	N/A	0.4968 [1.0000]	49.7% { 8.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 34045	(5.98, N/A) (N/A, -0.01, N/A)	314.8	N/A	0.9210 [1.0000]	92.1% { 9.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 31856	(7.74, N/A) (N/A, -0.03, N/A)	316.8	N/A	0.7252 [1.0000]	72.5% { 9.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 26329	(8.47, N/A) (N/A, -0.05, N/A)	220.5	N/A	0.6492 [1.0000]	64.9% { 9.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 36591	(9.15, N/A) (N/A, -0.04, N/A)	219.8	N/A	0.8471 [1.0000]	84.7% { 8.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 53088	(7.84, N/A) (N/A, -0.04, N/A)	300.9	N/A	0.7187 [1.0000]	71.9% { 8.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 72357	(9.29, N/A) (N/A, -0.04, N/A)	74.2	N/A	0.9384 [1.0000]	93.8% { 10.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 76874	(3.53, N/A) (N/A, 0.01, N/A)	480.3	N/A	0.6218 [0.8000]	77.7% { 6.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 100319	(4.86, N/A) (N/A, 0.00, N/A)	448.4	N/A	0.3600 [0.4000]	90.0% { 9.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 65174	(5.97, N/A) (N/A, -0.02, N/A)	358.3	N/A	0.1873 [0.2000]	93.7% { 8.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 61574	(6.92, N/A) (N/A, -0.02, N/A)	379.6	N/A	0.1862 [0.2000]	93.1% { 9.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 66502	(7.75, N/A) (N/A, -0.03, N/A)	338.8	N/A	0.2049 [0.2000]	102.4% { 9.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 26334	(8.48, N/A) (N/A, -0.03, N/A)	153.7	N/A	0.1008 [0.1000]	100.8% { 9.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 45033	(9.16, N/A) (N/A, -0.03, N/A)	129.0	N/A	0.1092 [0.1000]	109.2% { 9.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 68667	(9.67, N/A) (N/A, -0.02, N/A)	153.1	N/A	0.1347 [0.1000]	134.7% { 11.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 46483	(9.88, N/A) (N/A, -0.02, N/A)	110.3	N/A	0.0950 [0.1000]	95.0% {8.8%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 19550	(10.13, N/A) (N/A, -0.02, N/A)	59.0	N/A	0.0499 [0.1000]	49.9% {6.0%}			
13C3_PFBs_EIS	(302.0 / 80.0) 179329	(5.90, N/A) (N/A, -0.01, N/A)	136.0	N/A	0.2541 [0.2000]	127.0% {9.7%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 93544	(7.84, N/A) (N/A, -0.03, N/A)	319.5	N/A	0.2115 [0.2000]	105.7% {9.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 156113	(9.29, N/A) (N/A, -0.04, N/A)	138.9	N/A	0.1818 [0.2000]	90.9% {9.4%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 73786	(5.66, N/A) (N/A, -0.01, N/A)	101.0	N/A	0.5356 [0.4000]	133.9% {9.8%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 82765	(7.42, N/A) (N/A, -0.03, N/A)	239.2	N/A	0.4073 [0.4000]	101.8% {9.0%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 95382	(8.82, N/A) (N/A, -0.04, N/A)	189.9	N/A	0.5010 [0.4000]	125.2% {8.9%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 154341	(10.19, N/A) (N/A, -0.01, N/A)	253.1	N/A	0.1357 [0.2000]	67.9% {9.7%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 9339	(10.63, N/A) (N/A, -0.01, N/A)	50.9	N/A	0.0457 [0.2000]	22.9% {5.3%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 11752	(10.71, N/A) (N/A, -0.01, N/A)	97.7	N/A	0.0610 [0.2000]	30.5% {6.1%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 116394	(9.37, N/A) (N/A, -0.05, N/A)	145.6	N/A	0.4324 [0.4000]	108.1% { 8.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 125356	(9.62, N/A) (N/A, -0.02, N/A)	344.3	N/A	0.5923 [0.4000]	148.1% { 10.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 48894	(10.60, N/A) (N/A, -0.01, N/A)	79.8	N/A	1.5604 [2.0000]	78.0% { 10.6% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 24650	(10.69, N/A) (N/A, -0.01, N/A)	64.0	N/A	1.7070 [2.0000]	85.3% { 9.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 142271	(6.32, N/A) (N/A, -0.02, N/A)	300.3	N/A	0.7793 [0.8000]	97.4% { 9.3% }			

QUALITY CONTROL

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW10-WGN01LF-2212W4 (22L0177-01RE2) ng/L		Lab File ID: S2023-01-11A (19)		Analyzed: 01/11/23 15:09
13C4-PFBA	28.3	97.5	20 - 150	
13C5-PFPEA	14.1	104	20 - 150	
13C5-PFHXA	7.07	111	20 - 150	
13C4-PFHPA	7.07	109	20 - 150	
13C8-PFOA	7.07	104	20 - 150	
13C9-PFNA	3.54	110	20 - 150	
13C6-PFDA	3.54	116	20 - 150	
13C7-PFUnA	3.54	122	20 - 150	
13C2-PFDOA	3.54	121	20 - 150	
13C2-PFTEDA	3.54	80.4	20 - 150	
13C3-PFBS	7.07	130	20 - 150	
13C3-PFHXS	7.07	109	20 - 150	
13C8-PFOS	7.07	122	20 - 150	
13C2-4:2FTS	14.1	172	20 - 150	*
13C2-6:2FTS	14.1	95.7	20 - 150	
13C2-8:2FTS	14.1	98.1	20 - 150	
13C8-PFOSA	7.07	123	20 - 150	
D5-NETFOSA	7.07	53.3	20 - 150	
D3-NMEFOSA	7.07	48.8	20 - 150	
D3-NMEFOSAA	14.1	158	20 - 150	*
D5-NETFOSAA	14.1	183	20 - 150	*
D7-NMEFOSE	70.7	98.0	20 - 150	
D9-NETFOSAE	70.7	110	20 - 150	
13C3-HFPO-DA	28.3	104	20 - 150	
AF-RHMW10-WGN01LF-2212W4 (22L0177-01RE3) ng/L		Lab File ID: S2023-01-11A (20)		Analyzed: 01/11/23 15:22
13C2-4:2FTS	14.1	120	20 - 150	
D3-NMEFOSAA	14.1	109	20 - 150	
D5-NETFOSAA	14.1	149	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW10-WGFD01LF-2212W4 (22L0177-02RE2) ng/l Lab File ID: S2023-01-11A (21)				Analyzed: 01/11/23 15:35
13C4-PFBA	27.7	99.0	20 - 150	
13C5-PFPEA	13.9	99.4	20 - 150	
13C5-PFHXA	6.93	109	20 - 150	
13C4-PFHFA	6.93	104	20 - 150	
13C8-PFOA	6.93	110	20 - 150	
13C9-PFNA	3.46	109	20 - 150	
13C6-PFDA	3.46	98.0	20 - 150	
13C7-PFUnA	3.46	110	20 - 150	
13C2-PFDOA	3.46	114	20 - 150	
13C2-PFTEDA	3.46	85.0	20 - 150	
13C3-PFBS	6.93	122	20 - 150	
13C3-PFHXS	6.93	106	20 - 150	
13C8-PFOS	6.93	110	20 - 150	
13C2-4:2FTS	13.9	164	20 - 150	*
13C2-6:2FTS	13.9	94.9	20 - 150	
13C2-8:2FTS	13.9	121	20 - 150	
13C8-PFOSA	6.93	89.9	20 - 150	
D5-NETFOSA	6.93	38.1	20 - 150	
D3-NMEFOSA	6.93	40.9	20 - 150	
D3-NMEFOSAA	13.9	122	20 - 150	
D5-NETFOSAA	13.9	153	20 - 150	*
D7-NMEFOSE	69.3	81.1	20 - 150	
D9-NETFOSSE	69.3	87.8	20 - 150	
13C3-HFPO-DA	27.7	102	20 - 150	
AF-RHMW10-WGFD01LF-2212W4 (22L0177-02RE3) ng/l Lab File ID: S2023-01-11A (22)				Analyzed: 01/11/23 15:47
13C2-4:2FTS	13.9	128	20 - 150	
D5-NETFOSAA	13.9	172	20 - 150	*

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-HDMW225303-WGN01LF-2212W4 (22L0177-03RE2) Lab File ID: S2023-01-11A (23)				Analyzed: 01/11/23 16:00
13C4-PFBA	28.3	104	20 - 150	
13C5-PFPEA	14.1	95.7	20 - 150	
13C5-PFHXA	7.07	98.5	20 - 150	
13C4-PFHPA	7.07	97.9	20 - 150	
13C8-PFOA	7.07	106	20 - 150	
13C9-PFNA	3.54	110	20 - 150	
13C6-PFDA	3.54	130	20 - 150	
13C7-PFUnA	3.54	137	20 - 150	
13C2-PFDOA	3.54	131	20 - 150	
13C2-PFTEDA	3.54	79.0	20 - 150	
13C3-PFBS	7.07	125	20 - 150	
13C3-PFHXS	7.07	106	20 - 150	
13C8-PFOS	7.07	105	20 - 150	
13C2-4:2FTS	14.1	160	20 - 150	*
13C2-6:2FTS	14.1	99.5	20 - 150	
13C2-8:2FTS	14.1	123	20 - 150	
13C8-PFOSA	7.07	85.5	20 - 150	
D5-NETFOSA	7.07	42.6	20 - 150	
D3-NMEFOSA	7.07	42.0	20 - 150	
D3-NMEFOSAA	14.1	135	20 - 150	
D5-NETFOSAA	14.1	165	20 - 150	*
D7-NMEFOSE	70.7	94.1	20 - 150	
D9-NETFOSSE	70.7	109	20 - 150	
13C3-HFPO-DA	28.3	94.1	20 - 150	
AF-HDMW225303-WGN01LF-2212W4 (22L0177-03RE3) Lab File ID: S2023-01-11A (24)				Analyzed: 01/11/23 16:13
13C2-4:2FTS	14.1	133	20 - 150	
D5-NETFOSAA	14.1	164	20 - 150	*

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW03-WGN01LF-2212W4 (22L0177-04RE2) ng/L				Lab File ID: S2023-01-11A (25)
				Analyzed: 01/11/23 16:26
13C4-PFBA	29.0	87.3	20 - 150	
13C5-PFPEA	14.5	84.5	20 - 150	
13C5-PFHXA	7.26	103	20 - 150	
13C4-PFHPA	7.26	99.2	20 - 150	
13C8-PFOA	7.26	106	20 - 150	
13C9-PFNA	3.63	104	20 - 150	
13C6-PFDA	3.63	108	20 - 150	
13C7-PFUnA	3.63	118	20 - 150	
13C2-PFDOA	3.63	111	20 - 150	
13C2-PFTEDA	3.63	73.5	20 - 150	
13C3-PFBS	7.26	115	20 - 150	
13C3-PFHXS	7.26	100	20 - 150	
13C8-PFOS	7.26	117	20 - 150	
13C2-4:2FTS	14.5	127	20 - 150	
13C2-6:2FTS	14.5	106	20 - 150	
13C2-8:2FTS	14.5	120	20 - 150	
13C8-PFOSA	7.26	85.8	20 - 150	
D5-NETFOSA	7.26	53.2	20 - 150	
D3-NMEFOSA	7.26	50.8	20 - 150	
D3-NMEFOSAA	14.5	129	20 - 150	
D5-NETFOSAA	14.5	156	20 - 150	*
D7-NMEFOSE	72.6	96.9	20 - 150	
D9-NETFOSAE	72.6	113	20 - 150	
13C3-HFPO-DA	29.0	87.0	20 - 150	
AF-RHMW03-WGN01LF-2212W4 (22L0177-04RE3) ng/L				Lab File ID: S2023-01-11A (26)
				Analyzed: 01/11/23 16:39
D5-NETFOSAA	14.5	173	20 - 150	*

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW02-WGN01LF-2212W4 (22L0177-05RE2) ng/L				Lab File ID: S2023-01-11A (27)
				Analyzed: 01/11/23 16:52
13C4-PFBA	27.8	70.8	20 - 150	
13C5-PFPEA	13.9	69.5	20 - 150	
13C5-PFHXA	6.96	100	20 - 150	
13C4-PFHPA	6.96	120	20 - 150	
13C8-PFOA	6.96	105	20 - 150	
13C9-PFNA	3.48	102	20 - 150	
13C6-PFDA	3.48	94.6	20 - 150	
13C7-PFUnA	3.48	109	20 - 150	
13C2-PFDOA	3.48	103	20 - 150	
13C2-PFTEDA	3.48	48.4	20 - 150	
13C3-PFBS	6.96	122	20 - 150	
13C3-PFHXS	6.96	104	20 - 150	
13C8-PFOS	6.96	113	20 - 150	
13C2-4:2FTS	13.9	96.2	20 - 150	
13C2-6:2FTS	13.9	87.3	20 - 150	
13C2-8:2FTS	13.9	134	20 - 150	
13C8-PFOSA	6.96	67.5	20 - 150	
D5-NETFOSA	6.96	29.2	20 - 150	
D3-NMEFOSA	6.96	30.8	20 - 150	
D3-NMEFOSAA	13.9	130	20 - 150	
D5-NETFOSAA	13.9	172	20 - 150	*
D7-NMEFOSE	69.6	84.0	20 - 150	
D9-NETFOSSE	69.6	88.7	20 - 150	
13C3-HFPO-DA	27.8	86.0	20 - 150	
AF-RHMW02-WGN01LF-2212W4 (22L0177-05RE3) ng/L				Lab File ID: S2023-01-11A (28)
				Analyzed: 01/11/23 17:05
D5-NETFOSAA	13.9	148	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
Blank (BCA0118-BLK1) . ng/L				
	Lab File ID: S2023-01-11A (16)			Analyzed: 01/11/23 14:30
13C4-PFBA	32.0	100	20 - 150	
13C5-PFPEA	16.0	102	20 - 150	
13C5-PFHXA	8.00	105	20 - 150	
13C4-PFHPA	8.00	94.2	20 - 150	
13C8-PFOA	8.00	105	20 - 150	
13C9-PFNA	4.00	106	20 - 150	
13C6-PFDA	4.00	86.6	20 - 150	
13C7-PFUnA	4.00	114	20 - 150	
13C2-PFDOA	4.00	109	20 - 150	
13C2-PFTEDA	4.00	77.6	20 - 150	
13C3-PFBS	8.00	128	20 - 150	
13C3-PFHXS	8.00	99.5	20 - 150	
13C8-PFOS	8.00	114	20 - 150	
13C2-4:2FTS	16.0	172	20 - 150	*
13C2-6:2FTS	16.0	102	20 - 150	
13C2-8:2FTS	16.0	106	20 - 150	
13C8-PFOSA	8.00	80.7	20 - 150	
D5-NETFOSA	8.00	43.9	20 - 150	
D3-NMEFOSA	8.00	41.8	20 - 150	
D3-NMEFOSAA	16.0	127	20 - 150	
D5-NETFOSAA	16.0	169	20 - 150	*
D7-NMEFOSE	80.0	95.7	20 - 150	
D9-NETFOSE	80.0	110	20 - 150	
13C3-HFPO-DA	32.0	95.1	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (BCA0118-BS1) . ng/L	Lab File ID: S2023-01-11A (17)		Analyzed: 01/11/23 14:43	
13C4-PFBA	32.0	103	20 - 150	
13C5-PFPEA	16.0	102	20 - 150	
13C5-PFHXA	8.00	108	20 - 150	
13C4-PFHPA	8.00	102	20 - 150	
13C8-PFOA	8.00	113	20 - 150	
13C9-PFNA	4.00	108	20 - 150	
13C6-PFDA	4.00	120	20 - 150	
13C7-PFUnA	4.00	138	20 - 150	
13C2-PFDOA	4.00	135	20 - 150	
13C2-PFTEDA	4.00	81.7	20 - 150	
13C3-PFBS	8.00	128	20 - 150	
13C3-PFHXS	8.00	106	20 - 150	
13C8-PFOS	8.00	109	20 - 150	
13C2-4:2FTS	16.0	153	20 - 150	*
13C2-6:2FTS	16.0	102	20 - 150	
13C2-8:2FTS	16.0	111	20 - 150	
13C8-PFOSA	8.00	77.4	20 - 150	
D5-NETFOSA	8.00	38.9	20 - 150	
D3-NMEFOSA	8.00	37.5	20 - 150	
D3-NMEFOSAA	16.0	128	20 - 150	
D5-NETFOSAA	16.0	126	20 - 150	
D7-NMEFOSE	80.0	85.0	20 - 150	
D9-NETFOSE	80.0	98.7	20 - 150	
13C3-HFPO-DA	32.0	103	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
MRL Check (BCA0118-MRL1) . ng/L	Lab File ID: S2023-01-11A (18)			Analyzed: 01/11/23 14:56
13C4-PFBA	32.0	104	20 - 150	
13C5-PFPEA	16.0	93.9	20 - 150	
13C5-PFHXA	8.00	97.7	20 - 150	
13C4-PFHPA	8.00	99.1	20 - 150	
13C8-PFOA	8.00	108	20 - 150	
13C9-PFNA	4.00	106	20 - 150	
13C6-PFDA	4.00	118	20 - 150	
13C7-PFUnA	4.00	121	20 - 150	
13C2-PFDOA	4.00	129	20 - 150	
13C2-PFTEDA	4.00	84.7	20 - 150	
13C3-PFBS	8.00	126	20 - 150	
13C3-PFHXS	8.00	105	20 - 150	
13C8-PFOS	8.00	108	20 - 150	
13C2-4:2FTS	16.0	165	20 - 150	*
13C2-6:2FTS	16.0	95.1	20 - 150	
13C2-8:2FTS	16.0	118	20 - 150	
13C8-PFOSA	8.00	75.9	20 - 150	
D5-NETFOSA	8.00	43.7	20 - 150	
D3-NMEFOSA	8.00	40.0	20 - 150	
D3-NMEFOSAA	16.0	116	20 - 150	
D5-NETFOSAA	16.0	142	20 - 150	
D7-NMEFOSE	80.0	84.7	20 - 150	
D9-NETFOSE	80.0	95.3	20 - 150	
13C3-HFPO-DA	32.0	97.0	20 - 150	

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-BLK1
Sampled:		Prepared:	01/09/23 16:01
Solids:		Preparation:	EPA 1633
Batch:	BCA0118	Sequence:	SC00125
Column:	1	Calibration:	2302005
		Instrument:	Saphira
		File ID:	S2023-01-11A (16)
		Analyzed:	01/11/23 14:30
		Dilution:	1

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.20 U	0.40	0.20	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.20 U	0.40	0.20	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.20 U	0.40	0.20	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.20 U	0.40	0.20	0.064	U
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.20 U	0.40	0.20	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-BLK1
Sampled:		Prepared:	01/09/23 16:01
Solids:		Preparation:	EPA 1633
Batch:	BCA0118	Sequence:	SC00125
Column:	1	Calibration:	2302005
			Instrument: Saphira
			File ID: S2023-01-11A (16)
			Analyzed: 01/11/23 14:30
			Dilution: 1

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.40 U	0.80	0.40	0.12	U
PFEESA	0.40 U	0.80	0.40	0.11	U
PFMPA	0.40 U	0.80	0.40	0.054	U
PFMBA	0.40 U	0.80	0.40	0.091	U
NFDHA	0.40 U	0.80	0.40	0.30	U
9CL-PF3ONS	0.40 U	0.80	0.40	0.21	U
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21	U
3:3FTCA	0.80 U	1.6	0.80	0.57	U
5:3FTCA	0.80 U	1.6	0.80	0.44	U
7:3FTCA	0.80 U	1.6	0.80	0.55	U

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory: APPL, LLC

Work Order: 22L0177

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: EPA 1633

Batch: BCA0118

Laboratory ID: BCA0118-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
PFBA	16.0	16.8	105	40 - 150
PFPEA	8.00	8.22	103	40 - 150
PFHXA	4.00	4.06	102	40 - 150
PFHPA	4.00	4.53	113	40 - 150
PFOA	4.00	4.31	108	40 - 150
PFNA	4.00	4.35	109	40 - 150
PFDA	4.00	3.93	98.2	40 - 150
PFUnA	4.00	4.10	103	40 - 150
PFDOA	4.00	3.95	98.8	40 - 150
PFTRDA	4.00	3.36	83.9	40 - 150
PFTEDA	4.00	4.46	112	40 - 150
PFBS	3.54	3.64	103	40 - 150
PFPEs	3.76	4.71	125	40 - 150
PFHXS	3.66	4.67	128	40 - 150
PFHPS	3.82	4.98	130	40 - 150
PFOS	67.6	61.3	90.6	40 - 150
PFNS	3.84	4.25	111	40 - 150
PFDS	3.86	4.75	123	40 - 150
PFDOS	3.88	8.27	213	40 - 150
4:2FTS	15.0	18.2	122	40 - 150
6:2FTS	15.2	17.1	113	40 - 150
8:2FTS	15.4	19.0	124	40 - 150
PFOSA	4.00	4.38	110	40 - 150
NMeFOSA	16.0	17.5	109	40 - 150
NEtFOSA	16.0	16.1	101	40 - 150
NMeFOSAA	4.00	4.03	101	40 - 150
NEtFOSAA	4.00	4.30	107	40 - 150
NMeFOSE	16.0	16.1	100	40 - 150
NEtFOSE	16.0	21.7	136	40 - 150
HFPO-DA	8.00	8.90	111	40 - 150
ADONA	7.56	8.13	108	40 - 150
PFEESA	7.12	7.55	106	40 - 150
PFMPA	8.00	6.27	78.4	40 - 150
PFMBA	8.00	8.57	107	40 - 150

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory: APPL, LLC

Work Order: 22L0177

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: EPA 1633

Batch: BCA0118

Laboratory ID: BCA0118-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
NFDHA	8.00	7.93	99.1	40 - 150
9CL-PF3ONS	7.48	8.18	109	40 - 150
11CL-PF3OUDS	7.56	12.5	165 *	40 - 150
3:3FTCA	16.0	13.9	86.9	40 - 150
5:3FTCA	16.0	15.9	99.4	40 - 150
7:3FTCA	16.0	10.0	62.6	40 - 150

CALIBRATION SUMMARY

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(213.0 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.45883 x (std. dev. = 0.02841) (weighting: None)	%RSE=6.2
PFPeA	(263.0 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.47083 x (std. dev. = 0.02466) (weighting: None)	%RSE=5.2
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.49110 x (std. dev. = 0.03239) (weighting: None)	%RSE=6.6
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.51147 x (std. dev. = 0.04568) (weighting: None)	%RSE=8.9
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.52760 x (std. dev. = 0.03430) (weighting: None)	%RSE=6.5
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.97684 x (std. dev. = 0.09296) (weighting: None)	%RSE=9.5
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 1.03364 x (std. dev. = 0.07910) (weighting: None)	%RSE=7.7
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.89631 x (std. dev. = 0.10687) (weighting: None)	%RSE=11.9
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.91228 x (std. dev. = 0.10581) (weighting: None)	%RSE=11.6
PFTTrDA	(663.0 / 619.0)	13C2_PFTTrDA_EIS	1.0000	1.0000	y = 0.86644 x (std. dev. = 0.07486) (weighting: None)	%RSE=8.6
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.99627 x (std. dev. = 0.15175) (weighting: None)	%RSE=15.2
PFBS	(299.0 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.27994 x (std. dev. = 0.01563) (weighting: None)	%RSE=5.6
PFPeS	(349.0 / 80.0)	13C3_PFPeS_EIS	1.0000	0.9384	y = 0.85685 x (std. dev. = 0.06272) (weighting: None)	%RSE=7.3
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.76673 x (std. dev. = 0.03363) (weighting: None)	%RSE=4.4
PFHpS	(449.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9514	y = 0.45836 x (std. dev. = 0.03372) (weighting: None)	%RSE=7.4
PFOS	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9275	y = 0.54214 x + 0.02710 (r = 0.99874) (weighting: 1 / x)	%RSE=12.6
PFNS	(549.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9599	y = 0.62342 x (std. dev. = 0.07887) (weighting: None)	%RSE=12.7
PFDS	(599.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9631	y = 0.67958 x (std. dev. = 0.08102) (weighting: None)	%RSE=11.9
PFDoS	(699.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9696	y = 0.28801 x (std. dev. = 0.02001) (weighting: None)	%RSE=6.9
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 3.23076 x (std. dev. = 0.31899) (weighting: None)	%RSE=9.9
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.52524 x (std. dev. = 0.14699) (weighting: None)	%RSE=9.6
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.44949 x (std. dev. = 0.18187) (weighting: None)	%RSE=12.5
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.55403 x (std. dev. = 0.05358) (weighting: None)	%RSE=9.7
NMeFOSA	(512.0 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.83459 x (std. dev. = 0.22263) (weighting: None)	%RSE=12.1
NEiFOSA	(526.0 / 219.0)	D5_NEiFOSA_EIS	4.0000	1.0000	y = 2.00378 x (std. dev. = 0.09806) (weighting: None)	%RSE=4.9
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.23288 x (std. dev. = 0.01871) (weighting: None)	%RSE=8.0
NEiFOSAA	(584.0 / 419.0)	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.22405 x (std. dev. = 0.02385) (weighting: None)	%RSE=10.6
NMeFOSE	(616.0 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.24896 x (std. dev. = 0.01440) (weighting: None)	%RSE=5.8
NEiFOSE	(630.0 / 59.0)	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.10589 x (std. dev. = 0.01202) (weighting: None)	%RSE=11.4
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.15092 x (std. dev. = 0.00779) (weighting: None)	%RSE=5.2
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.76205 x (std. dev. = 0.05288) (weighting: None)	%RSE=6.9
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = -0.01692 x ² + 2.09001 x + 0.00781 (r = 0.99877) (weighting: 1 / x ²)	%RSE=6.9
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.01004 x (std. dev. = 0.10439) (weighting: None)	%RSE=10.3
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.02760 x (std. dev. = 0.00283) (weighting: None)	%RSE=10.3
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.30570 x (std. dev. = 0.02781) (weighting: None)	%RSE=9.1
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.42963 x (std. dev. = 0.02560) (weighting: None)	%RSE=6.0
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.84210 x (std. dev. = 0.05179) (weighting: None)	%RSE=6.2
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.11833 x (std. dev. = 0.00861) (weighting: None)	%RSE=7.3
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.35617 x (std. dev. = 0.03125) (weighting: None)	%RSE=8.8
NFDHA	(295.0 / 201.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.43871 x (std. dev. = 0.01879) (weighting: None)	%RSE=4.3
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 169027.3775 x	%RSD=12.3
13C2_PFHxA_IIS	(315.0 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 298675.7056 x	%RSD=6.0
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 330824.0115 x	%RSD=7.2
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 278799.1949 x	%RSD=7.4
13C2_PFDA_IIS	(515.0 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 312695.4030 x	%RSD=11.7
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 587298.8261 x	%RSD=6.0
13C4_PFOS_IIS	(503.0 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 590322.5364 x	%RSD=6.1

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFBa_EIS	(217.0 / 172.0)	13C3_PFBa_IIS	8.0000	1.0000	y = 7.9685 x	%RSD=2.6
13C5_PFPaA_EIS	(268.0 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 3.2360 x	%RSD=10.0
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.0938 x	%RSD=5.6
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 1.8750 x	%RSD=8.5
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 1.9815 x	%RSD=7.6
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 0.9928 x	%RSD=5.3
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1733 x	%RSD=5.8
13C7_PFUaA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.5520 x	%RSD=16.0
13C2_PFDaA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.5720 x	%RSD=16.0
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1248 x	%RSD=15.5
13C3_PFBs_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.7835 x	%RSD=7.0
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.6552 x	%RSD=4.4
13C8_PFOs_EIS	(507.0 / 80.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 2.4560 x	%RSD=8.8
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.9435 x	%RSD=11.4
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 1.3158 x	%RSD=7.1
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 1.3431 x	%RSD=8.8
13C8_PFOsA_EIS	(506.0 / 78.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 2.7372 x	%RSD=13.5
D3_NMeFOSA_EIS	(515.0 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 0.6048 x	%RSD=9.3
D5_NeIFOSA_EIS	(531.0 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 0.5502 x	%RSD=12.0
D3_MeFOSAA_EIS	(573.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.7043 x	%RSD=11.4
D5_EiFOSAA_EIS	(589.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.4786 x	%RSD=16.8
D7_NMeFOSE_EIS	(623.0 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 0.9743 x	%RSD=14.2
D9_NeIFOSE_EIS	(639.0 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 0.4442 x	%RSD=12.0
13C3_HFPODA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 4.6143 x	%RSD=4.5

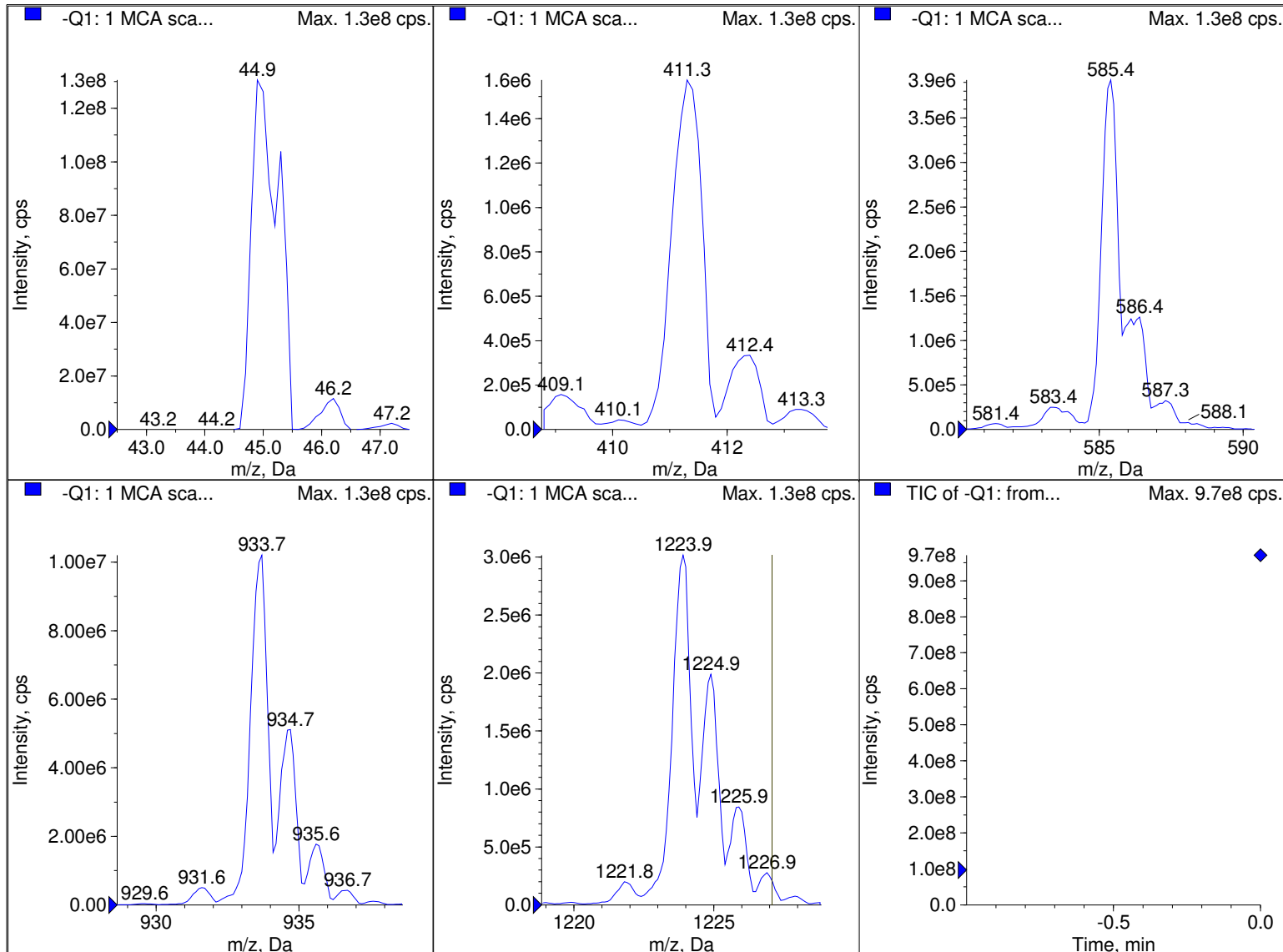
x=Concentration Analyte

$$y = \text{Area Ratio} = \frac{\text{Area Analyte}}{\text{Area Internal Standard}}$$

$$\text{Acid Factor} = \frac{\text{Molecular weight Acid}}{\text{Molecular weight Salt}}$$

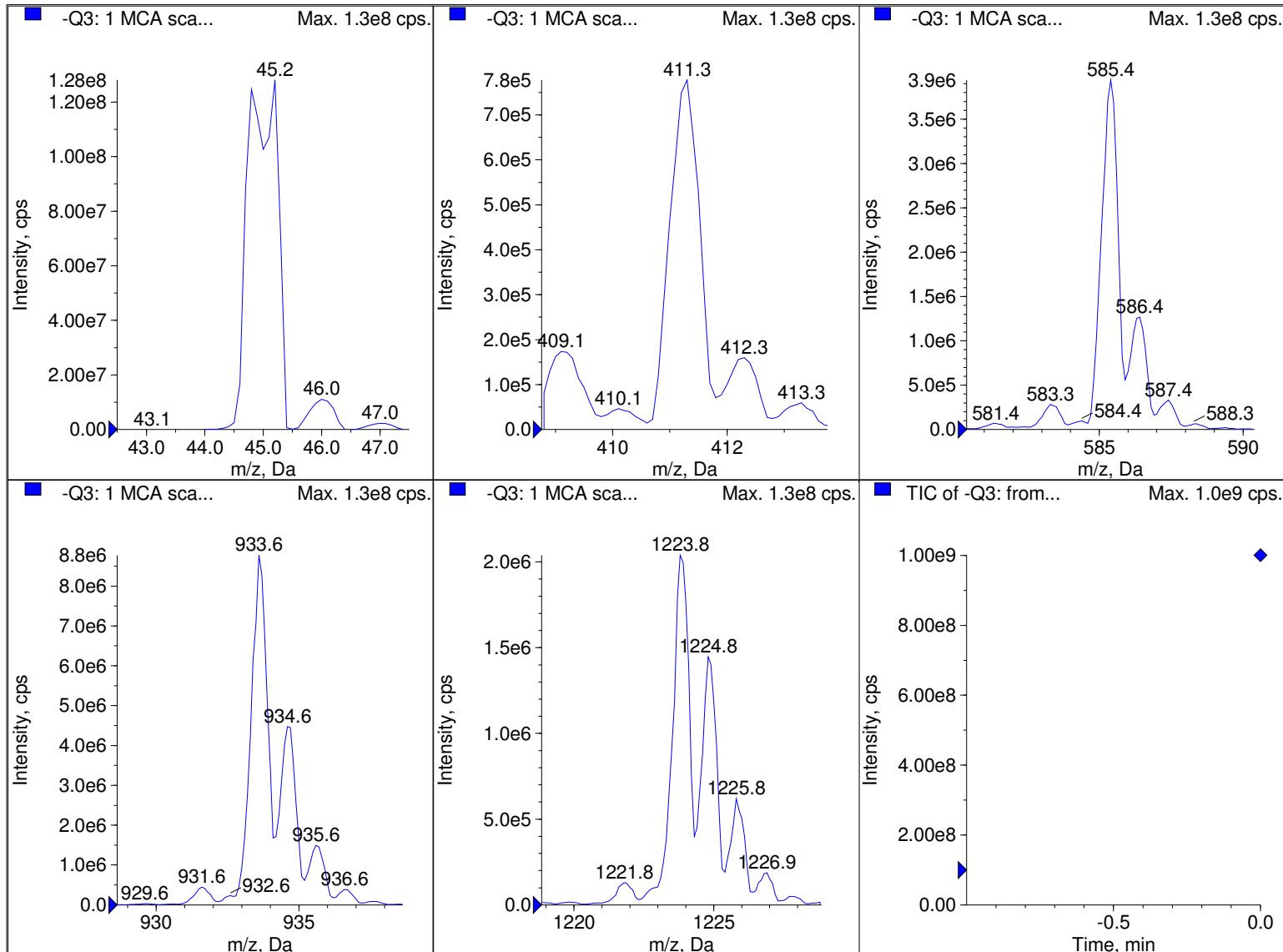
$$\text{Multiplier} = \frac{\text{Concentration of Analyte}}{\text{Concentration of PFOA}} \text{ in curve standard mix}$$

$$\text{Result} \left(\frac{\text{ng}}{\text{ml}} \right) = x * \text{Multiplier} * \text{Acid Factor}$$



Peak List for "-Q1: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142838.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0305	1.3061e8	0.6158	-0.0325
2	411.2590	411.3148	1.5745e6	0.6085	-0.0558
3	585.3850	585.3651	3.9270e6	0.6307	0.0199
4	933.6360	933.6197	1.0205e7	0.6552	0.0163
5	1223.8450	1223.8627	3.0170e6	0.6967	-0.0177
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: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142403.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9799	1.2814e8	0.6414	0.0181
2	411.2590	411.2677	7.7810e5	0.6076	-8.6898e-3
3	585.3850	585.3784	3.9438e6	0.6511	6.5868e-3
4	933.6360	933.6279	8.7759e6	0.6302	8.0526e-3
5	1223.8450	1223.8609	2.0397e6	0.6225	-0.0159
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

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(213.0 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.45737 x (std. dev. = 0.02404) (weighting: None)	%RSE=5.3
PFPeA	(263.0 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.48574 x (std. dev. = 0.01155) (weighting: None)	%RSE=2.4
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.49274 x (std. dev. = 0.03156) (weighting: None)	%RSE=6.4
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.50489 x (std. dev. = 0.02115) (weighting: None)	%RSE=4.2
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.52097 x (std. dev. = 0.02123) (weighting: None)	%RSE=4.1
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.96009 x (std. dev. = 0.05426) (weighting: None)	%RSE=5.7
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 1.02523 x (std. dev. = 0.09672) (weighting: None)	%RSE=9.4
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.90887 x (std. dev. = 0.07626) (weighting: None)	%RSE=8.4
PFDaA	(613.0 / 569.0)	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.93616 x (std. dev. = 0.10920) (weighting: None)	%RSE=11.7
PFTrDA	(663.0 / 619.0)	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.92253 x (std. dev. = 0.08735) (weighting: None)	%RSE=9.5
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.95259 x (std. dev. = 0.04309) (weighting: None)	%RSE=4.5
PFBS	(299.0 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.28858 x (std. dev. = 0.01700) (weighting: None)	%RSE=5.9
PFPeS	(349.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9384	y = 0.80278 x (std. dev. = 0.04729) (weighting: None)	%RSE=5.9
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.76131 x (std. dev. = 0.03039) (weighting: None)	%RSE=4.0
PFHpS	(449.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9514	y = 0.48884 x (std. dev. = 0.02646) (weighting: None)	%RSE=5.4
PFOS	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9275	y = 0.56340 x + 0.03124 (r = 0.99836) (weighting: 1 / x^2)	%RSE=5.8
PFNS	(549.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9599	y = 0.59821 x (std. dev. = 0.05543) (weighting: None)	%RSE=9.3
PFDS	(599.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9631	y = 0.66341 x (std. dev. = 0.07257) (weighting: None)	%RSE=10.9
PFDoS	(699.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9696	y = 0.28368 x (std. dev. = 0.02092) (weighting: None)	%RSE=7.4
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 3.00361 x (std. dev. = 0.33150) (weighting: None)	%RSE=11.0
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.44997 x (std. dev. = 0.10161) (weighting: None)	%RSE=7.0
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.39768 x (std. dev. = 0.18756) (weighting: None)	%RSE=13.4
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.53271 x (std. dev. = 0.04293) (weighting: None)	%RSE=8.1
NMeFOSA	(512.0 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.89740 x (std. dev. = 0.21556) (weighting: None)	%RSE=11.4
NEiFOSA	(526.0 / 219.0)	D5_NEiFOSA_EIS	4.0000	1.0000	y = 1.99225 x (std. dev. = 0.11051) (weighting: None)	%RSE=5.5
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.22459 x (std. dev. = 0.02677) (weighting: None)	%RSE=11.9
NEiFOSAA	(584.0 / 419.0)	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.23908 x (std. dev. = 0.02916) (weighting: None)	%RSE=12.2
NMeFOSE	(616.0 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.25632 x (std. dev. = 0.00858) (weighting: None)	%RSE=3.3
NEiFOSE	(630.0 / 59.0)	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.11214 x (std. dev. = 0.01379) (weighting: None)	%RSE=12.3
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.15857 x (std. dev. = 0.01221) (weighting: None)	%RSE=7.7
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.78135 x (std. dev. = 0.04584) (weighting: None)	%RSE=5.9
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = -0.01924 x^2 + 2.27172 x + -0.02336 (r = 0.99912) (weighting: 1 / x)	%RSE=5.6
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.04362 x (std. dev. = 0.09904) (weighting: None)	%RSE=9.5
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.02788 x (std. dev. = 0.00203) (weighting: None)	%RSE=7.3
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.29992 x (std. dev. = 0.02125) (weighting: None)	%RSE=7.1
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.45138 x (std. dev. = 0.02892) (weighting: None)	%RSE=6.4
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.86653 x (std. dev. = 0.06094) (weighting: None)	%RSE=7.0
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.14524 x (std. dev. = 0.00736) (weighting: None)	%RSE=5.1
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.36689 x (std. dev. = 0.01994) (weighting: None)	%RSE=5.4
NFDHA	(295.0 / 201.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.40988 x (std. dev. = 0.04096) (weighting: None)	%RSE=10.0
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 253293.3115 x	%RSD=6.5
13C2_PFHxA_IIS	(315.0 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 369654.4917 x	%RSD=2.9
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 439276.0695 x	%RSD=4.8
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 405543.5169 x	%RSD=4.8
13C2_PFDA_IIS	(515.0 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 431944.9318 x	%RSD=3.7
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 738710.0515 x	%RSD=2.5
13C4_PFOS_IIS	(503.0 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 771042.3446 x	%RSD=7.1

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFBa_EIS	(217.0 / 172.0)	13C3_PFBa_IIS	8.0000	1.0000	y = 7.8596 x	%RSD=2.8
13C5_PFPaA_EIS	(268.0 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 3.2738 x	%RSD=4.5
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.0437 x	%RSD=6.7
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 1.9426 x	%RSD=5.5
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 2.0378 x	%RSD=4.2
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 0.9925 x	%RSD=3.1
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1268 x	%RSD=9.2
13C7_PFUaA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3932 x	%RSD=15.3
13C2_PFDaA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3377 x	%RSD=5.5
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0708 x	%RSD=7.5
13C3_PFBs_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.6589 x	%RSD=7.0
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.6663 x	%RSD=4.3
13C8_PFOs_EIS	(507.0 / 80.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 2.3742 x	%RSD=6.1
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 1.0380 x	%RSD=11.6
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 1.5311 x	%RSD=10.4
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 1.4346 x	%RSD=8.0
13C8_PFOsA_EIS	(506.0 / 78.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 3.1435 x	%RSD=5.5
D3_NMeFOsA_EIS	(515.0 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 0.5644 x	%RSD=11.1
D5_NEtFOsA_EIS	(531.0 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 0.5321 x	%RSD=2.9
D3_MeFOsAA_EIS	(573.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.4881 x	%RSD=6.0
D5_EtFOsAA_EIS	(589.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.1701 x	%RSD=14.7
D7_NMeFOsE_EIS	(623.0 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 0.8661 x	%RSD=6.1
D9_NEtFOsE_EIS	(639.0 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 0.3992 x	%RSD=5.0
13C3_HFOpDA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 4.2898 x	%RSD=4.5

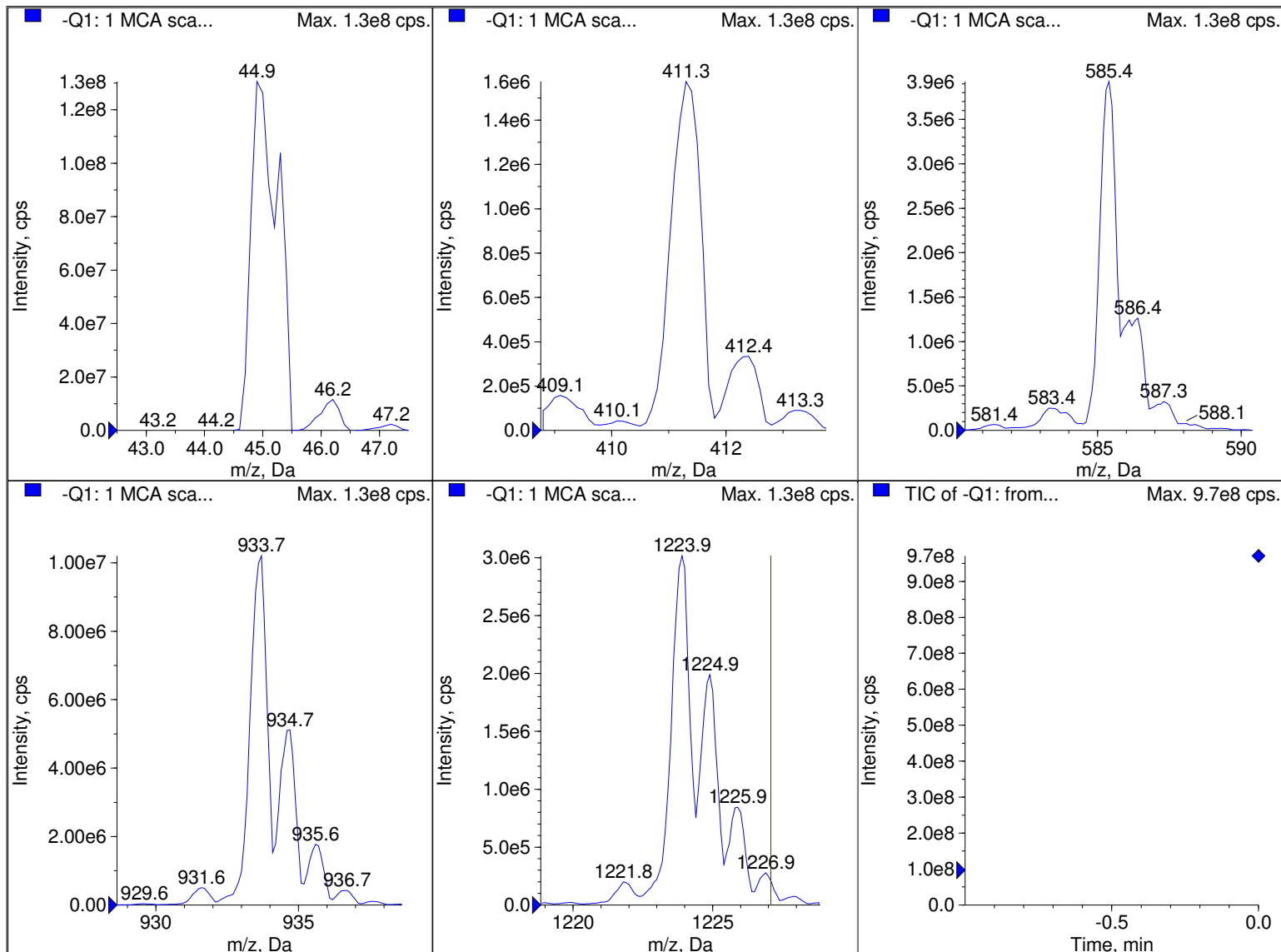
x= Concentration Analyte

$$y = \text{Area Ratio} = \frac{\text{Area Analyte}}{\text{Area Internal Standard}}$$

$$\text{Acid Factor} = \frac{\text{Molecular weight Acid}}{\text{Molecular weight Salt}}$$

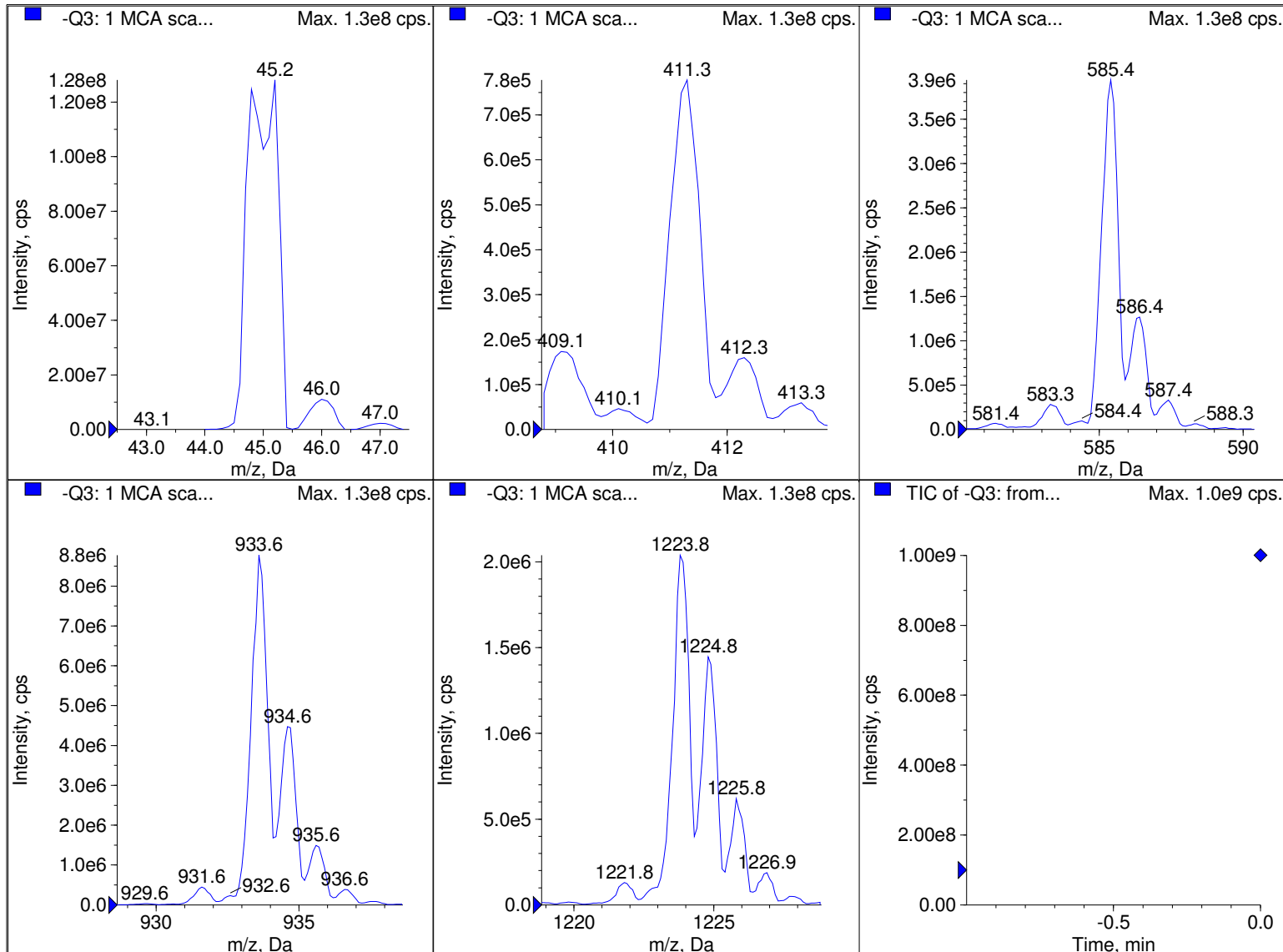
$$\text{Multiplier} = \frac{\text{Concentration of Analyte}}{\text{Concentration of PFOA}} \text{ in curve standard mix}$$

$$\text{Result} \left(\frac{\text{ng}}{\text{ml}} \right) = x * \text{Multiplier} * \text{Acid Factor}$$



Peak List for "-Q1: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142838.wiff (Turbo Spray)"

	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	45.0305	1.3061e8	0.6158	-0.0325
2	411.2590	411.3148	1.5745e6	0.6085	-0.0558
3	585.3850	585.3651	3.9270e6	0.6307	0.0199
4	933.6360	933.6197	1.0205e7	0.6552	0.0163
5	1223.8450	1223.8627	3.0170e6	0.6967	-0.0177
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



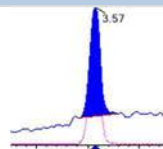
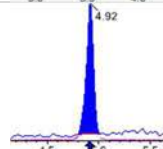
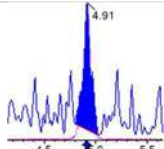
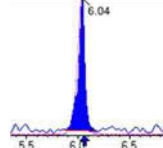
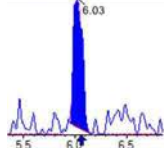
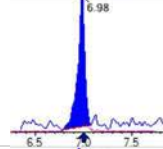
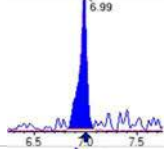
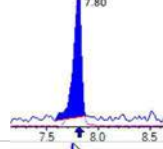
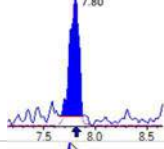
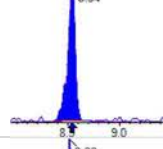
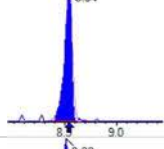
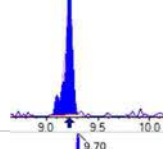
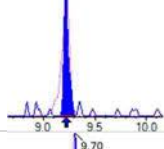
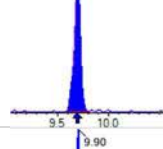
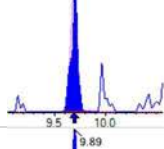
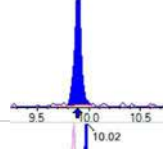
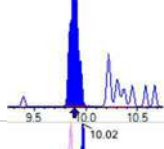
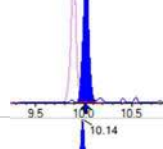
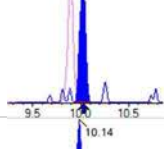
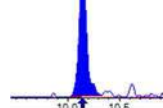
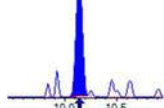
Peak List for "-Q3: 1 MCA scans from Sample 1 (TuneSampleID) of MT20221111142403.wiff (Turbo Spray)"

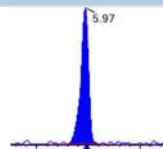
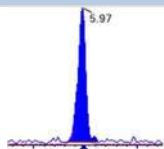
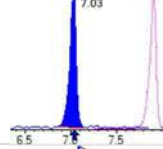
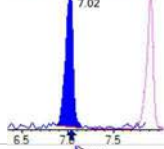
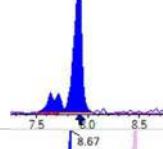
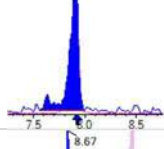
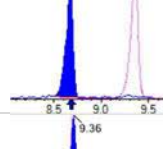
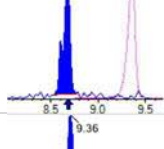
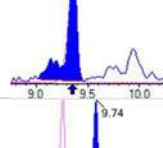
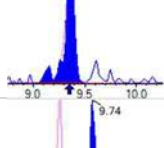
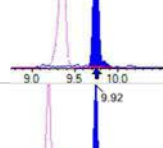
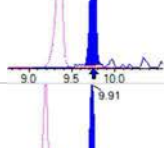
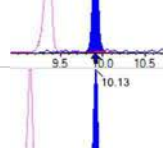
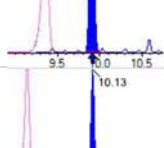
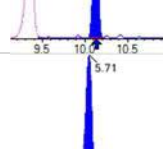
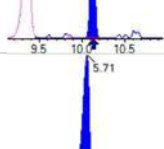
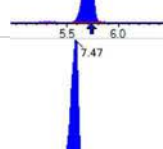
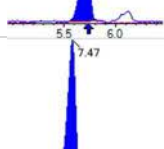
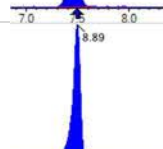
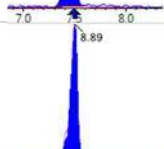

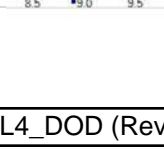
	Target Mass (Da)	Found At (Da)	Intensity (cps)	Width (Da)	Mass Shift (Da)
1	44.9980	44.9799	1.2814e8	0.6414	0.0181
2	411.2590	411.2677	7.7810e5	0.6076	-8.6898e-3
3	585.3850	585.3784	3.9438e6	0.6511	6.5868e-3
4	933.6360	933.6279	8.7759e6	0.6302	8.0526e-3
5	1223.8450	1223.8609	2.0397e6	0.6225	-0.0159
6	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

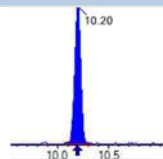
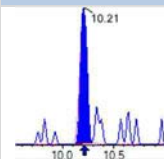
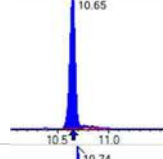
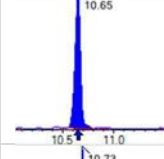
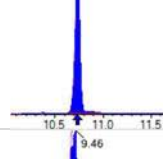
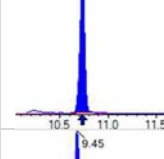
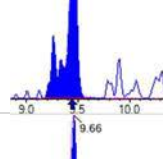
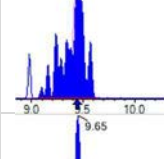
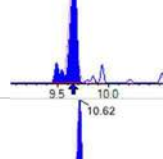
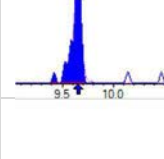
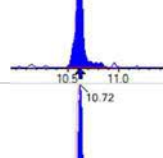
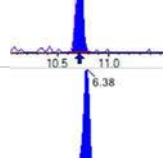
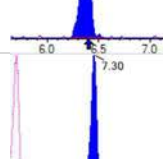
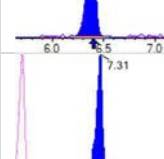
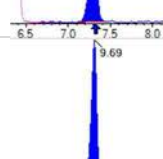
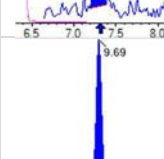
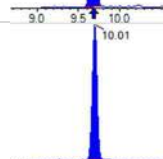
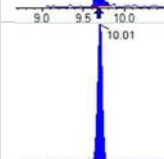
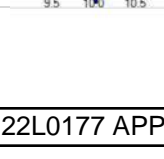
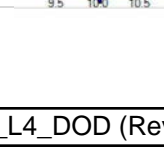
Initial Calibration:

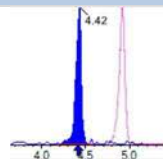
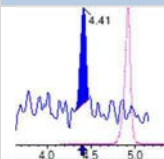
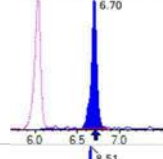
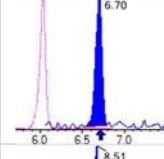
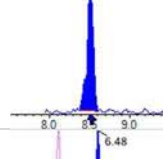
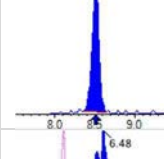
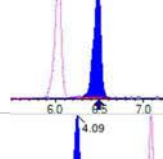
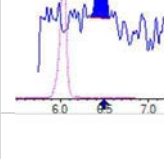
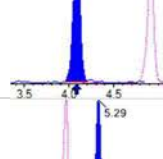
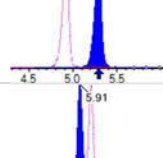
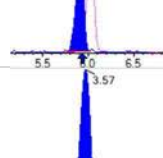
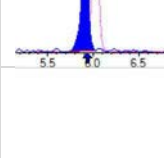
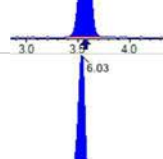
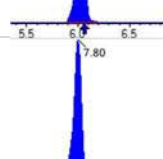
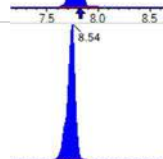

EPA 1633

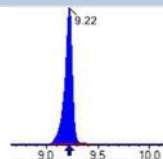
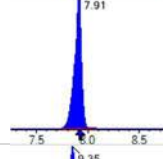
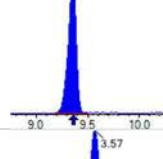
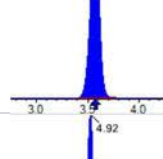
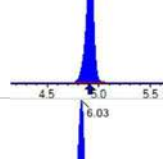
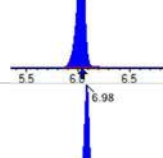
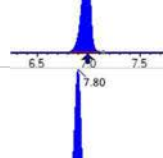
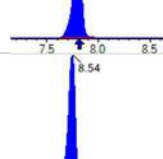
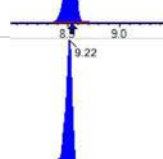
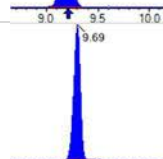

Initial Calibration: SC00101

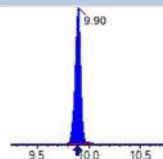
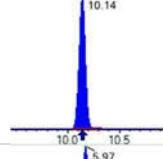
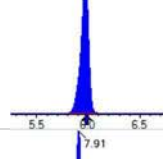
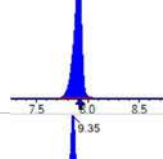
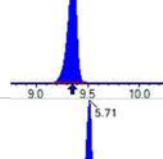
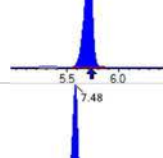
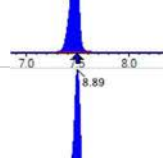
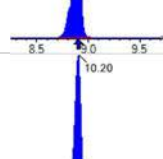
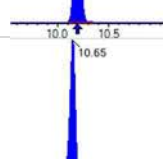
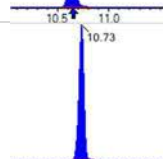
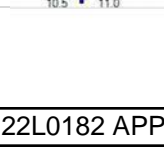
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 92092	(3.57, 1.00) (0.00, N/A, 0.0)	118.3	N/A 0.0 0.0	0.3689 [0.4000]	92.2%			
PFPeA	(263.0 / 219.0) 60389 (263.0 / 69.0) 1090	(4.92, 1.00) (0.00, N/A, 0.1)	140.5 14.2	0.0181 166.3 166.3	0.1961 [0.2000]	98.0%			
PFHxA	(313.0 / 269.0) 38694 (313.0 / 119.0) 4907	(6.04, 1.00) (0.01, N/A, 0.8)	86.0 21.8	0.1268 129.2 129.2	0.0938 [0.1000]	93.8%			
PFHpA	(363.0 / 319.0) 35857 (363.0 / 169.0) 10152	(6.98, 1.00) (0.00, N/A, -0.1)	64.9 40.2	0.2831 99.5 99.5	0.0931 [0.1000]	93.1%			
PFOA	(413.0 / 369.0) 49841 (413.0 / 169.0) 15782	(7.80, 1.00) (0.00, N/A, 0.2)	82.4 45.4	0.3167 99.2 99.2	0.0983 [0.1000]	98.3%			
PFNA	(463.0 / 419.0) 37398 (463.0 / 169.0) 9847	(8.54, 1.00) (0.00, N/A, 0.2)	117.8 181.5	0.2633 117.4 117.4	0.0926 [0.1000]	92.6%			
PFDA	(513.0 / 469.0) 57340 (513.0 / 169.0) 6863	(9.22, 1.00) (0.00, N/A, 0.4)	93.3 50.4	0.1197 109.0 109.0	0.1120 [0.1000]	112.0%			
PFUnA	(563.0 / 519.0) 64511 (563.0 / 169.0) 8639	(9.70, 1.00) (0.01, N/A, -0.2)	187.6 38.0	0.1339 128.0 128.0	0.1124 [0.1000]	112.4%			
PFDoA	(613.0 / 569.0) 52270 (613.0 / 169.0) 9172	(9.90, 1.00) (0.00, N/A, 0.5)	112.1 24.2	0.1755 136.4 136.4	0.0874 [0.1000]	87.4%			
PFTrDA	(663.0 / 619.0) 56000 (663.0 / 169.0) 10487	(10.02, 1.01) (N/A, 0.00, 0.1)	122.9 52.0	0.1873 92.9 92.9	0.0950 [0.1000]	95.0%			
PFTeDA	(713.0 / 669.0) 46298 (713.0 / 169.0) 10778	(10.14, 1.00) (0.00, N/A, 0.3)	82.7 47.7	0.2328 119.1 119.1	0.1026 [0.1000]	102.6%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 57580 (299.0 / 99.0) 41168	(5.97, 1.00) (0.00, N/A, -0.1)	173.2 102.6	0.7150 109.6 109.6	0.0809 [0.0885]	91.5%			
PFPeS	(349.0 / 80.0) 97882 (349.0 / 99.0) 34391	(7.03, 0.89) (N/A, -0.01, 0.4)	227.7 92.7	0.3513 95.1 95.1	0.0875 [0.0938]	93.2%			
PFHxS	(399.0 / 80.0) 102005 (399.0 / 99.0) 30334	(7.91, 1.00) (0.00, N/A, 0.1)	155.5 101.1	0.2974 90.1 90.1	0.0933 [0.0911]	102.4%			
PFHpS	(449.0 / 80.0) 89740 (449.0 / 99.0) 22834	(8.67, 0.93) (N/A, -0.01, -0.1)	224.3 79.4	0.2544 92.6 92.6	0.0868 [0.0951]	91.2%			
PFOS	(499.0 / 80.0) 178057 (499.0 / 99.0) 51057	(9.36, 1.00) (0.00, N/A, -0.2)	94.6 102.6	0.2867 126.2 126.2	0.0942 [0.0927]	101.6%			
PFNS	(549.0 / 80.0) 120371 (549.0 / 99.0) 23382	(9.74, 1.04) (N/A, 0.00, 0.0)	197.4 74.1	0.1943 83.4 83.4	0.0960 [0.0960]	100.0%			
PFDS	(599.0 / 80.0) 111278 (599.0 / 99.0) 41280	(9.92, 1.06) (N/A, 0.00, 0.5)	132.7 112.2	0.3710 162.5 162.5	0.0803 [0.0963]	83.3%			IR2,
PFDoS	(699.0 / 80.0) 54142 (699.0 / 99.0) 17882	(10.13, 1.08) (N/A, 0.00, 0.0)	281.5 132.6	0.3303 159.3 159.3	0.0919 [0.0970]	94.8%			IR2,
4:2FTS	(327.0 / 307.0) 271683 (327.0 / 81.0) 151143	(5.71, 1.00) (0.00, N/A, -0.3)	535.9 161.8	0.5563 88.4 88.4	0.3867 [0.3738]	103.5%			
6:2FTS	(427.0 / 407.0) 194511 (427.0 / 81.0) 123812	(7.47, 1.00) (0.00, N/A, 0.0)	393.7 222.6	0.6365 83.1 83.1	0.3874 [0.3796]	102.1%			
8:2FTS	(527.0 / 507.0) 170434 (527.0 / 81.0) 120246	(8.89, 1.00) (0.00, N/A, -0.2)	309.0 234.0	0.7055 93.0 93.0	0.3942 [0.3833]	102.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 140486 (498.0 / 478.0) 4970	(10.20, 1.00) (0.00, N/A, -0.6)	298.6 24.0	0.0354 187.6 187.6	0.1069 [0.1000]	106.9%			
NMeFOSA	(512.0 / 219.0) 78285 (512.0 / 169.0) 53076	(10.65, 1.00) (0.00, N/A, -0.2)	287.0 329.7	0.6780 95.0 95.0	0.3931 [0.4000]	98.3%			
NEIFOSA	(526.0 / 219.0) 79752 (526.0 / 169.0) 82856	(10.74, 1.00) (0.00, N/A, 0.2)	508.9 463.9	1.0389 98.2 98.2	0.3792 [0.4000]	94.8%			
NMeFOSAA	(570.0 / 419.0) 33369 (570.0 / 483.0) 15869	(9.46, 1.00) (0.02, N/A, 0.0)	37.3 107.0	0.4756 93.5 93.5	0.1230 [0.1000]	123.0%			
NEIFOSAA	(584.0 / 419.0) 21068 (584.0 / 526.0) 17326	(9.66, 1.00) (0.01, N/A, 0.6)	199.5 3079.4	0.8224 132.2 132.2	0.0787 [0.1000]	78.7%			
NMeFOSE	(616.0 / 59.0) 19821	(10.62, 1.00) (0.01, N/A, 0.0)	121.1	N/A 0.0 0.0	0.4174 [0.4000]	104.3%			
NEtFOSE	(630.0 / 59.0) 4408	(10.72, 1.00) (0.02, N/A, 0.0)	140.1	N/A 0.0 0.0	0.5070 [0.4000]	126.7%			
HFPO-DA	(285.0 / 169.0) 23328 (285.0 / 185.0) 70316	(6.38, 1.00) (0.00, N/A, -0.1)	245.7 193.9	3.0142 112.4 112.4	0.1778 [0.2000]	88.9%			
ADONA	(377.0 / 85.0) 117566 (377.0 / 251.0) 11395	(7.30, 1.14) (N/A, -0.01, -0.3)	280.2 36.1	0.0969 83.3 83.3	0.1714 [0.1885]	90.9%			
9CI-Pf3ONS	(531.0 / 351.0) 345516 (533.0 / 353.0) 109310	(9.69, 1.52) (N/A, 0.00, 0.2)	298.2 157.4	0.3164 101.9 101.9	0.1909 [0.1867]	102.3%			
11CI-PF3OUDS	(631.0 / 451.0) 192407 (633.0 / 453.0) 44286	(10.01, 1.57) (N/A, 0.00, -0.2)	367.5 7815296.9	0.2302 67.0 67.0	0.2102 [0.1886]	111.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 3445 (241.0 / 117.0) 3764	(4.42, 0.90) (N/A, 0.02, 0.7)	120.8 20.8	1.0924 74.3 74.3	0.3897 [0.4000]	97.4%			
5:3FTCA	(341.0 / 236.7) 25064 (341.0 / 217.0) 33829	(6.70, 1.11) (N/A, -0.01, 0.2)	212.1 76.8	1.3497 80.8 80.8	0.3993 [0.4000]	99.8%			
7:3FTCA	(441.0 / 317.0) 34347 (441.0 / 337.0) 24460	(8.51, 1.41) (N/A, -0.01, 0.0)	121.1 156.6	0.7122 82.6 82.6	0.3636 [0.4000]	90.9%			
PFEESA	(315.0 / 135.0) 65800 (315.0 / 83.0) 18530	(6.48, 1.07) (N/A, -0.01, 0.2)	278.7 10.1	0.2816 92.1 92.1	0.1619 [0.1785]	90.7%			
PFMPA	(229.0 / 85.0) 17691	(4.09, 0.83) (N/A, 0.01, 0.0)	263.6	N/A 0.0 0.0	0.1921 [0.2000]	96.0%			
PFMBA	(279.0 / 85.0) 43877	(5.29, 1.08) (N/A, 0.00, 0.0)	340.7	N/A 0.0 0.0	0.1886 [0.2000]	94.3%			
NFDHA	(295.0 / 201.0) 29539 (295.0 / 85.0) 26212	(5.91, 0.98) (N/A, -0.01, -0.2)	273.7 146.5	0.8874 96.5 96.5	0.1722 [0.2000]	86.1%			
13C3_PFBa_IIS	(216.0 / 172.0) 268330	(3.57, N/A) (N/A, 0.00, N/A)	503.6	N/A	1.0594 [1.0000]	105.9% {103.9%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 385426	(6.03, N/A) (N/A, -0.02, N/A)	579.7	N/A	1.0427 [1.0000]	104.3% {104.6%}			
13C4_PFOA_IIS	(417.0 / 372.0) 453387	(7.80, N/A) (N/A, -0.01, N/A)	475.1	N/A	1.0321 [1.0000]	103.2% {97.0%}			
13C5_PFNxA_IIS	(468.0 / 423.0) 408043	(8.54, N/A) (N/A, 0.00, N/A)	629.9	N/A	1.0062 [1.0000]	100.6% {94.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 453069	(9.22, N/A) (N/A, 0.01, N/A)	394.3	N/A	1.0489 [1.0000]	104.9% {106.0%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 734524	(7.91, N/A) (N/A, 0.00, N/A)	728.7	N/A	0.9943 [1.0000]	99.4% {98.4%}			
13C4_PFOS_IIS	(503.0 / 79.9) 776273	(9.35, N/A) (N/A, 0.00, N/A)	401.6	N/A	1.0068 [1.0000]	100.7% {94.9%}			
13C4_PFBA_EIS	(217.0 / 172.0) 2183221	(3.57, N/A) (N/A, 0.00, N/A)	659.8	N/A	8.2817 [8.0000]	103.5% {106.9%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 1268192	(4.92, N/A) (N/A, 0.01, N/A)	592.9	N/A	4.0203 [4.0000]	100.5% {103.4%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 837108	(6.03, N/A) (N/A, -0.02, N/A)	423.3	N/A	2.1255 [2.0000]	106.3% {102.5%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 763114	(6.98, N/A) (N/A, -0.01, N/A)	584.4	N/A	2.0384 [2.0000]	101.9% {106.1%}			
13C8_PFOA_EIS	(421.0 / 376.0) 973164	(7.80, N/A) (N/A, -0.01, N/A)	534.0	N/A	2.1067 [2.0000]	105.3% {105.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 420570	(8.54, N/A) (N/A, 0.00, N/A)	505.6	N/A	1.0385 [1.0000]	103.8% {102.0%}			
13C6_PFDA_EIS	(519.0 / 474.0) 499544	(9.22, N/A) (N/A, 0.01, N/A)	419.3	N/A	0.9785 [1.0000]	97.9% {113.3%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 631353	(9.69, N/A) (N/A, 0.00, N/A)	369.9	N/A	1.0002 [1.0000]	100.0% {97.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 638826	(9.90, N/A) (N/A, 0.00, N/A)	416.4	N/A	1.0540 [1.0000]	105.4% {103.5%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 473743	(10.14, N/A) (N/A, 0.00, N/A)	820.4	N/A	0.9765 [1.0000]	97.6% {102.5%}			
13C3_PFBs_EIS	(302.0 / 80.0) 2180901	(5.97, N/A) (N/A, -0.01, N/A)	651.9	N/A	2.2334 [2.0000]	111.7% {110.2%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 1307852	(7.91, N/A) (N/A, 0.00, N/A)	600.3	N/A	2.1372 [2.0000]	106.9% {108.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 2012752	(9.35, N/A) (N/A, 0.00, N/A)	552.8	N/A	2.1842 [2.0000]	109.2% {105.8%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 874349	(5.71, N/A) (N/A, -0.01, N/A)	424.0	N/A	4.5872 [4.0000]	114.7% {120.9%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1314442	(7.48, N/A) (N/A, -0.01, N/A)	529.2	N/A	4.6752 [4.0000]	116.9% {114.2%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1185860	(8.89, N/A) (N/A, 0.00, N/A)	408.0	N/A	4.5016 [4.0000]	112.5% {123.4%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 2466757	(10.20, N/A) (N/A, 0.00, N/A)	901.8	N/A	2.0217 [2.0000]	101.1% {98.1%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 419868	(10.65, N/A) (N/A, 0.00, N/A)	729.8	N/A	1.9165 [2.0000]	95.8% {97.3%}			
D5_NEtFOSA_EIS	(531.0 / 169.0) 422310	(10.73, N/A) (N/A, 0.00, N/A)	774.3	N/A	2.0448 [2.0000]	102.2% {96.6%}			

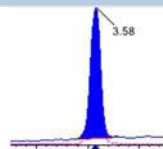
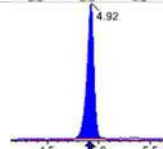
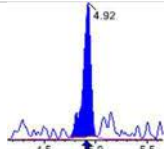
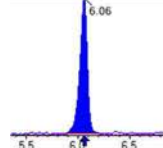
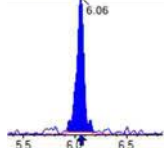
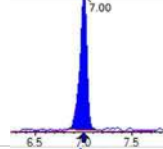
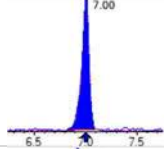
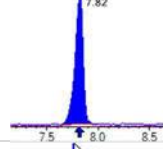
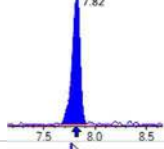
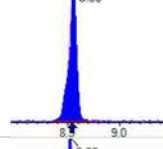
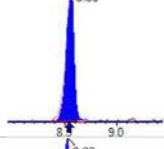
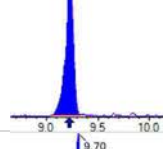
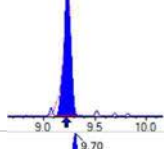
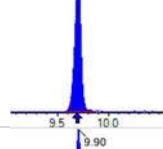
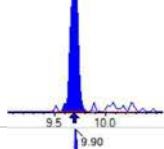
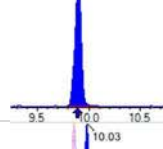
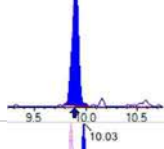
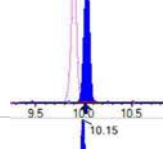
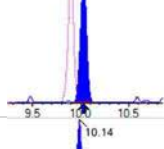
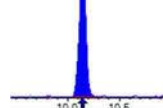
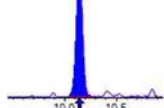


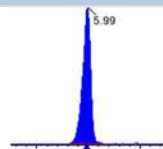
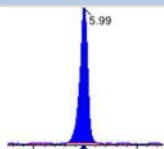
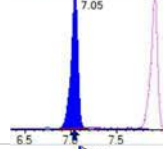
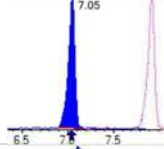
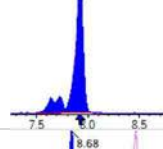
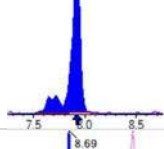
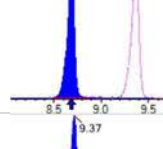
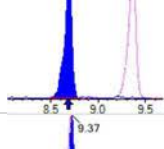
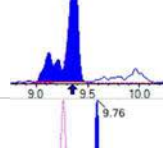
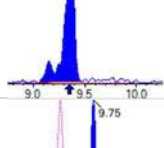
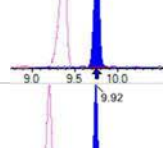
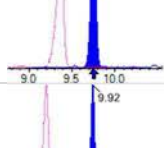
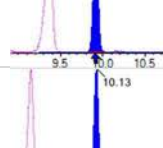
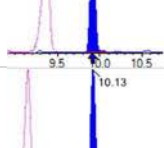
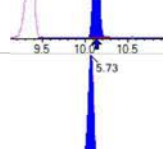
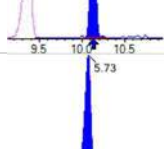
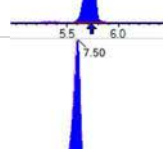
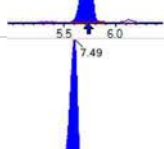
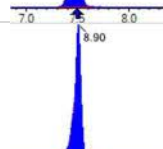
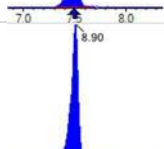

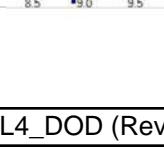
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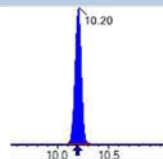
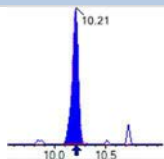
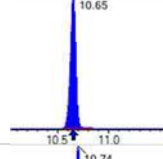
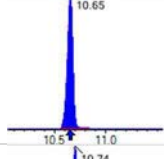
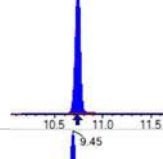
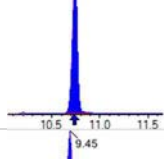
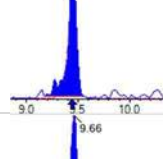
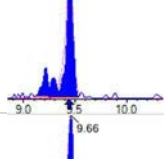
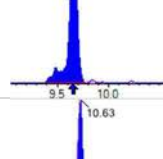
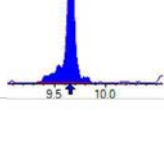
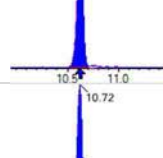
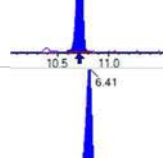
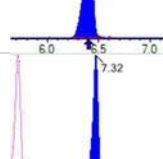
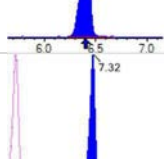
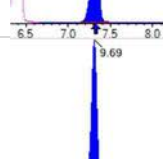
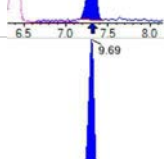
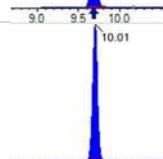
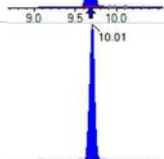
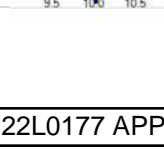
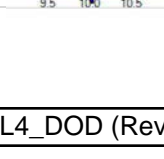
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 Acquisition Method: 1633 2023-01-09.dam

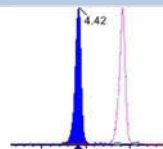
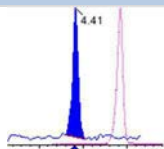
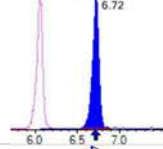
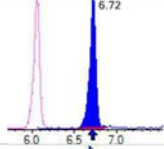
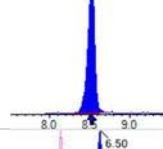
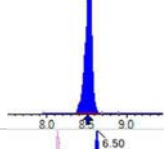
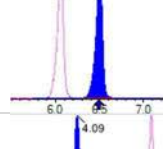
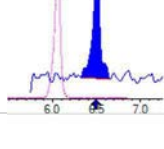
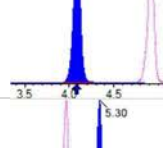
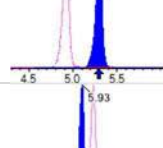
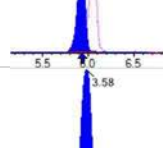
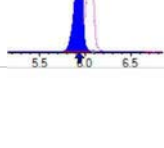
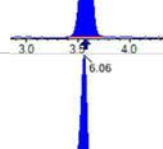
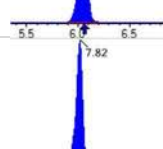
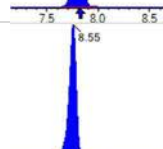

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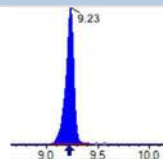
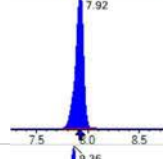
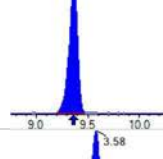
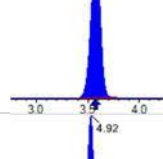
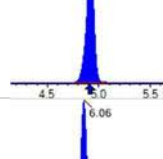
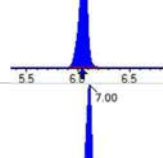
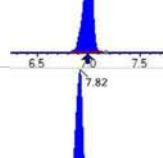
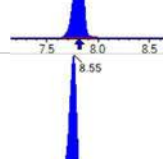
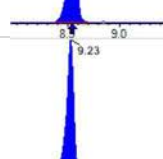
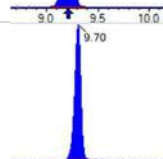

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1208317	(9.44, N/A) (N/A, 0.01, N/A)	315.4	N/A	4.1839 [4.0000]	104.6% {103.2%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1119981	(9.65, N/A) (N/A, 0.00, N/A)	33.0	N/A	4.9323 [4.0000]	123.3% {131.2%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 741073	(10.61, N/A) (N/A, 0.00, N/A)	1141.3	N/A	22.0450 [20.0000]	110.2% {109.0%}			
D9_NEtFOSE_EIS	(639.0 / 58.9) 310111	(10.71, N/A) (N/A, 0.00, N/A)	759.4	N/A	20.0164 [20.0000]	100.1% {95.9%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1654858	(6.38, N/A) (N/A, -0.01, N/A)	606.7	N/A	8.0070 [8.0000]	100.1% {103.5%}			

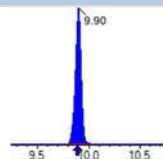
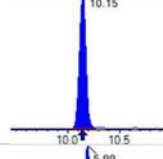
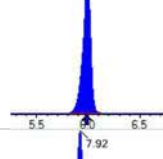
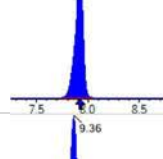
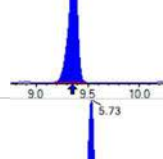
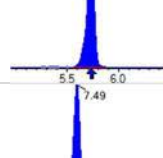
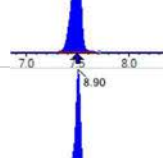
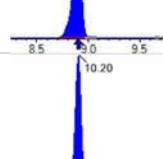
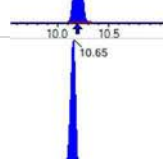
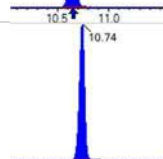

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 454938	(3.58, 1.00) (0.00, N/A, 0.0)	307.8	N/A 0.0 0.0	1.8603 [2.0000]	93.0%			
PFPeA	(263.0 / 219.0) 294869 (263.0 / 69.0) 3045	(4.92, 1.00) (0.00, N/A, 0.1)	392.5 34.2	0.0103 95.1 95.1	0.9646 [1.0000]	96.5%			
PFHxA	(313.0 / 269.0) 181548 (313.0 / 119.0) 15539	(6.06, 1.00) (0.00, N/A, 0.1)	238.4 75.3	0.0856 87.2 87.2	0.4688 [0.5000]	93.8%			
PFHpA	(363.0 / 319.0) 182802 (363.0 / 169.0) 52682	(7.00, 1.00) (0.00, N/A, 0.1)	220.4 189.5	0.2882 101.3 101.3	0.5165 [0.5000]	103.3%			
PFOA	(413.0 / 369.0) 240041 (413.0 / 169.0) 73829	(7.82, 1.00) (0.00, N/A, 0.0)	321.7 153.4	0.3076 96.3 96.3	0.5130 [0.5000]	102.6%			
PFNA	(463.0 / 419.0) 184974 (463.0 / 169.0) 42826	(8.55, 1.00) (0.00, N/A, 0.0)	277.8 270.8	0.2315 103.2 103.2	0.4683 [0.5000]	93.7%			
PFDA	(513.0 / 469.0) 225617 (513.0 / 169.0) 26260	(9.23, 1.00) (-0.01, N/A, -0.2)	196.3 157.3	0.1164 106.0 106.0	0.4019 [0.5000]	80.4%			
PFUnA	(563.0 / 519.0) 274360 (563.0 / 169.0) 31245	(9.70, 1.00) (0.00, N/A, 0.3)	368.4 55.5	0.1139 108.9 108.9	0.5067 [0.5000]	101.3%			
PFDoA	(613.0 / 569.0) 249585 (613.0 / 169.0) 41395	(9.90, 1.00) (0.00, N/A, -0.3)	290.5 136.0	0.1659 128.9 128.9	0.4702 [0.5000]	94.0%			
PFTrDA	(663.0 / 619.0) 269001 (663.0 / 169.0) 46732	(10.03, 1.01) (N/A, 0.01, 0.1)	388.1 181.8	0.1737 86.1 86.1	0.5143 [0.5000]	102.9%			
PFTeDA	(713.0 / 669.0) 228474 (713.0 / 169.0) 46487	(10.15, 1.00) (0.00, N/A, 0.4)	422.8 132.6	0.2035 104.1 104.1	0.4910 [0.5000]	98.2%			

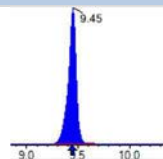
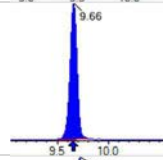
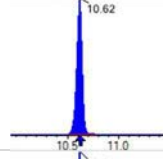
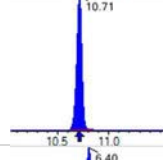
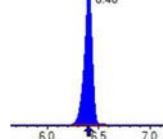
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 266463 (299.0 / 99.0) 180284	(5.99, 1.00) (0.00, N/A, 0.0)	369.1 344.0	0.6766 103.7 103.7	0.4053 [0.4424]	91.6%			
PFPeS	(349.0 / 80.0) 482715 (349.0 / 99.0) 163194	(7.05, 0.89) (N/A, 0.01, -0.1)	522.9 372.7	0.3381 91.5 91.5	0.4477 [0.4692]	95.4%			
PFHxS	(399.0 / 80.0) 439314 (399.0 / 99.0) 145992	(7.92, 1.00) (0.00, N/A, 0.1)	460.7 305.6	0.3323 100.7 100.7	0.4171 [0.4555]	91.6%			
PFHpS	(449.0 / 80.0) 415688 (449.0 / 99.0) 117524	(8.68, 0.93) (N/A, 0.01, -0.3)	362.0 282.4	0.2827 102.9 102.9	0.4480 [0.4757]	94.2%			
PFOS	(499.0 / 80.0) 524927 (499.0 / 99.0) 107006	(9.37, 1.00) (0.00, N/A, 0.0)	157.0 174.7	0.2038 89.7 89.7	0.4271 [0.4637]	92.1%			
PFNS	(549.0 / 80.0) 503372 (549.0 / 99.0) 120086	(9.76, 1.04) (N/A, 0.01, 0.3)	329.9 285.1	0.2386 102.4 102.4	0.4473 [0.4799]	93.2%			
PFDS	(599.0 / 80.0) 578443 (599.0 / 99.0) 142125	(9.92, 1.06) (N/A, 0.01, 0.0)	445.1 271.1	0.2457 107.6 107.6	0.4650 [0.4816]	96.6%			
PFDoS	(699.0 / 80.0) 238022 (699.0 / 99.0) 55980	(10.13, 1.08) (N/A, 0.01, 0.2)	471.3 197.2	0.2352 113.4 113.4	0.4505 [0.4848]	92.9%			
4:2FTS	(327.0 / 307.0) 1200866 (327.0 / 81.0) 696991	(5.73, 1.00) (0.00, N/A, 0.0)	776.5 375.1	0.5804 92.2 92.2	1.7851 [1.8691]	95.5%			
6:2FTS	(427.0 / 407.0) 829938 (427.0 / 81.0) 630204	(7.50, 1.00) (0.00, N/A, 0.2)	795.4 550.2	0.7593 99.1 99.1	1.8246 [1.8981]	96.1%			
8:2FTS	(527.0 / 507.0) 827532 (527.0 / 81.0) 557146	(8.90, 1.00) (0.00, N/A, 0.0)	427.3 413.3	0.6733 88.7 88.7	2.1114 [1.9166]	110.2%			

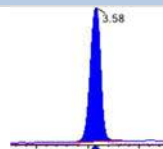
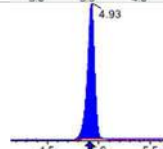
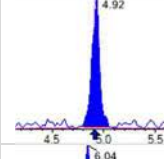
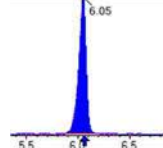
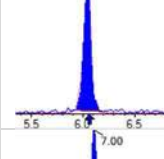
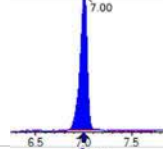
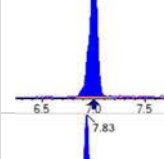
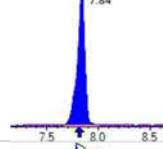
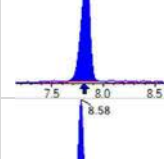
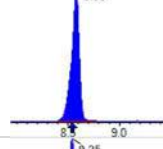
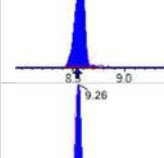
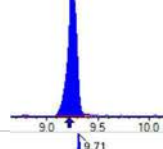
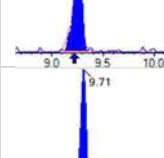
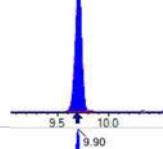
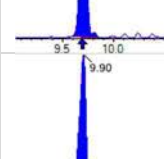
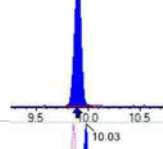
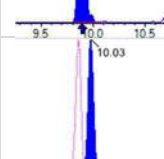
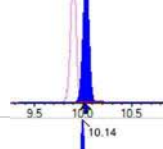
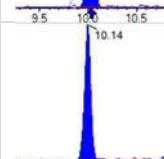
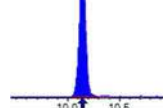
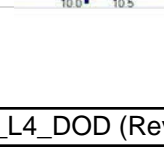
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 617858 (498.0 / 478.0) 13790	(10.20, 1.00) (0.00, N/A, -0.3)	809.7 125.7	0.0223 118.4 118.4	0.4404 [0.5000]	88.1%			
NMeFOSA	(512.0 / 219.0) 386262 (512.0 / 169.0) 273558	(10.65, 1.00) (0.00, N/A, 0.0)	750.2 800.8	0.7082 99.3 99.3	1.9527 [2.0000]	97.6%			
NEIFOSA	(526.0 / 219.0) 397674 (526.0 / 169.0) 413321	(10.74, 1.00) (0.00, N/A, 0.0)	1016.4 759.5	1.0393 98.3 98.3	1.9550 [2.0000]	97.8%			
NMeFOSAA	(570.0 / 419.0) 111640 (570.0 / 483.0) 50862	(9.45, 1.00) (0.00, N/A, 0.0)	112.0 95.7	0.4556 89.6 89.6	0.4148 [0.5000]	83.0%			
NEIFOSAA	(584.0 / 419.0) 108405 (584.0 / 526.0) 76156	(9.66, 1.00) (0.00, N/A, 0.1)	607.5 193.3	0.7025 113.0 113.0	0.4545 [0.5000]	90.9%			
NMeFOSE	(616.0 / 59.0) 84096	(10.63, 1.00) (0.01, N/A, 0.0)	329.9	N/A 0.0 0.0	1.9876 [2.0000]	99.4%			
NEtFOSE	(630.0 / 59.0) 15236	(10.72, 1.00) (0.00, N/A, 0.0)	306.1	N/A 0.0 0.0	1.6850 [2.0000]	84.2%			
HFPO-DA	(285.0 / 169.0) 112549 (285.0 / 185.0) 319431	(6.41, 1.00) (0.00, N/A, 0.0)	488.2 422.7	2.8381 105.8 105.8	0.8730 [1.0000]	87.3%			
ADONA	(377.0 / 85.0) 653540 (377.0 / 251.0) 71405	(7.32, 1.14) (N/A, 0.01, 0.3)	670.2 187.5	0.1093 93.9 93.9	0.9698 [0.9427]	102.9%			
9CI-Pf3ONS	(531.0 / 351.0) 1748582 (533.0 / 353.0) 547819	(9.69, 1.51) (N/A, 0.01, -0.2)	521.8 271.2	0.3133 100.9 100.9	0.9064 [0.9333]	97.1%			
11CI-PF3OUDS	(631.0 / 451.0) 820373 (633.0 / 453.0) 248932	(10.01, 1.56) (N/A, 0.01, -0.1)	748.7 432.5	0.3034 88.4 88.4	0.9119 [0.9432]	96.7%			

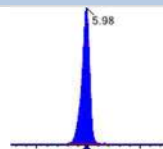
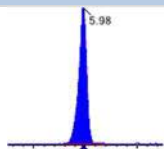
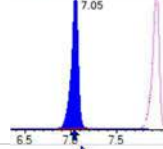
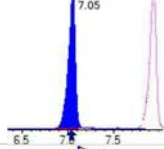
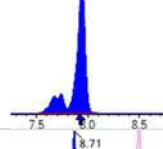
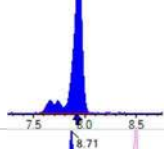
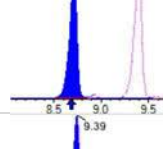
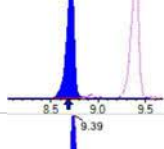
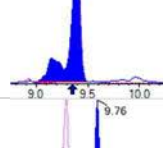
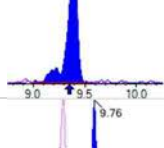
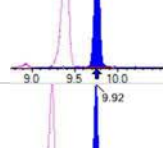
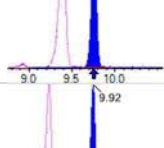
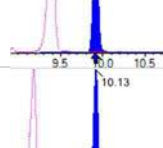
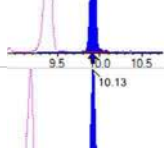
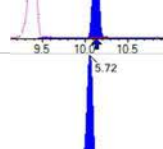
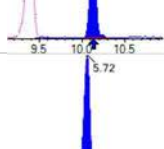
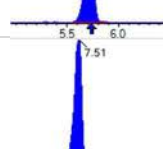
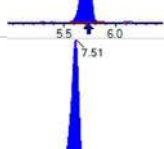
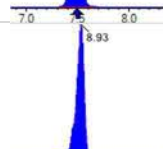
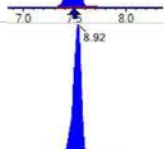

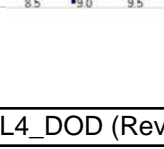
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 16141 (241.0 / 117.0) 25421	(4.42, 0.90) (N/A, 0.01, 0.1)	268.7 118.7	1.5749 107.1 107.1	1.8397 [2.0000]	92.0%			
5:3FTCA	(341.0 / 236.7) 104619 (341.0 / 217.0) 161569	(6.72, 1.11) (N/A, 0.01, -0.1)	329.8 219.7	1.5444 92.5 92.5	1.7754 [2.0000]	88.8%			
7:3FTCA	(441.0 / 317.0) 165326 (441.0 / 337.0) 128252	(8.53, 1.41) (N/A, 0.01, -0.1)	252.3 414.1	0.7757 90.0 90.0	1.8643 [2.0000]	93.2%			
PFEESA	(315.0 / 135.0) 317181 (315.0 / 83.0) 113717	(6.50, 1.07) (N/A, 0.01, 0.0)	527.0 60.4	0.3585 117.3 117.3	0.8314 [0.8925]	93.2%			
PFMPA	(229.0 / 85.0) 82793	(4.09, 0.83) (N/A, 0.01, 0.0)	638.0	N/A 0.0 0.0	0.9058 [1.0000]	90.6%			
PFMBA	(279.0 / 85.0) 211291	(5.30, 1.08) (N/A, 0.01, 0.0)	624.4	N/A 0.0 0.0	0.9151 [1.0000]	91.5%			
NFDHA	(295.0 / 201.0) 136156 (295.0 / 85.0) 142708	(5.93, 0.98) (N/A, 0.01, -0.3)	482.7 441.0	1.0481 114.0 114.0	0.8454 [1.0000]	84.5%			
13C3_PFBA_IIS	(216.0 / 172.0) 267944	(3.58, N/A) (N/A, 0.01, N/A)	402.8	N/A	1.0578 [1.0000]	105.8% { 103.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 381216	(6.06, N/A) (N/A, 0.01, N/A)	476.1	N/A	1.0313 [1.0000]	103.1% { 103.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 438308	(7.82, N/A) (N/A, 0.01, N/A)	579.1	N/A	0.9978 [1.0000]	99.8% { 93.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 404036	(8.55, N/A) (N/A, 0.01, N/A)	519.1	N/A	0.9963 [1.0000]	99.6% { 93.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 410913	(9.23, N/A) (N/A, 0.02, N/A)	414.1	N/A	0.9513 [1.0000]	95.1% { 96.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 713999	(7.92, N/A) (N/A, 0.01, N/A)	560.7	N/A	0.9665 [1.0000]	96.7% { 95.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 740328	(9.36, N/A) (N/A, 0.01, N/A)	333.2	N/A	0.9602 [1.0000]	96.0% { 90.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2138754	(3.58, N/A) (N/A, 0.01, N/A)	628.6	N/A	8.1247 [8.0000]	101.6% { 104.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1258629	(4.92, N/A) (N/A, 0.01, N/A)	603.9	N/A	4.0340 [4.0000]	100.9% { 102.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 785869	(6.06, N/A) (N/A, 0.01, N/A)	529.6	N/A	2.0174 [2.0000]	100.9% { 96.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 701047	(7.00, N/A) (N/A, 0.01, N/A)	419.0	N/A	1.8933 [2.0000]	94.7% { 97.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 898198	(7.82, N/A) (N/A, 0.01, N/A)	416.9	N/A	2.0113 [2.0000]	100.6% { 97.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 411436	(8.55, N/A) (N/A, 0.01, N/A)	583.5	N/A	1.0260 [1.0000]	102.6% { 99.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 547503	(9.23, N/A) (N/A, 0.02, N/A)	424.8	N/A	1.1825 [1.0000]	118.2% { 124.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 595757	(9.70, N/A) (N/A, 0.01, N/A)	286.7	N/A	1.0407 [1.0000]	104.1% { 91.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 567004	(9.90, N/A) (N/A, 0.01, N/A)	573.7	N/A	1.0315 [1.0000]	103.2% { 91.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 488453	(10.15, N/A) (N/A, 0.00, N/A)	649.3	N/A	1.1101 [1.0000]	111.0% { 105.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2015704	(5.99, N/A) (N/A, 0.01, N/A)	524.3	N/A	2.1235 [2.0000]	106.2% { 101.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1260214	(7.92, N/A) (N/A, 0.01, N/A)	730.1	N/A	2.1185 [2.0000]	105.9% { 104.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1805885	(9.36, N/A) (N/A, 0.01, N/A)	356.2	N/A	2.0549 [2.0000]	102.7% { 94.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 837225	(5.73, N/A) (N/A, 0.01, N/A)	525.6	N/A	4.5187 [4.0000]	113.0% { 115.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1190891	(7.49, N/A) (N/A, 0.01, N/A)	541.3	N/A	4.3575 [4.0000]	108.9% { 103.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1074881	(8.90, N/A) (N/A, 0.01, N/A)	442.4	N/A	4.1976 [4.0000]	104.9% { 111.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2633619	(10.20, N/A) (N/A, 0.00, N/A)	801.8	N/A	2.2633 [2.0000]	113.2% { 104.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 417015	(10.65, N/A) (N/A, 0.01, N/A)	753.3	N/A	1.9959 [2.0000]	99.8% { 96.6% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 408405	(10.74, N/A) (N/A, 0.01, N/A)	684.4	N/A	2.0735 [2.0000]	103.7% { 93.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1198243	(9.45, N/A) (N/A, 0.02, N/A)	389.2	N/A	4.3505 [4.0000]	108.8% { 102.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 997681	(9.66, N/A) (N/A, 0.01, N/A)	97.0	N/A	4.6070 [4.0000]	115.2% { 116.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 660274	(10.62, N/A) (N/A, 0.00, N/A)	1007.9	N/A	20.5951 [20.0000]	103.0% { 97.1% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 322529	(10.71, N/A) (N/A, 0.01, N/A)	703.3	N/A	21.8288 [20.0000]	109.1% { 99.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1626089	(6.40, N/A) (N/A, 0.01, N/A)	580.9	N/A	7.9547 [8.0000]	99.4% { 101.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 908616	(3.58, 1.00) (0.00, N/A, 0.0)	303.9	N/A 0.0 0.0	3.9353 [4.0000]	98.4%			
PFPeA	(263.0 / 219.0) 577960 (263.0 / 69.0) 6875	(4.93, 1.00) (0.00, N/A, 0.2)	515.1 77.5	0.0119 109.6 109.6	1.9745 [2.0000]	98.7%			
PFHxA	(313.0 / 269.0) 348762 (313.0 / 119.0) 30911	(6.05, 1.00) (0.00, N/A, 0.3)	338.1 137.7	0.0886 90.3 90.3	0.9626 [1.0000]	96.3%			
PFHpA	(363.0 / 319.0) 363851 (363.0 / 169.0) 103130	(7.00, 1.00) (0.00, N/A, 0.1)	304.2 265.4	0.2834 99.6 99.6	0.9759 [1.0000]	97.6%			
PFOA	(413.0 / 369.0) 455205 (413.0 / 169.0) 142202	(7.84, 1.00) (0.00, N/A, 0.2)	356.8 317.9	0.3124 97.8 97.8	0.9457 [1.0000]	94.6%			
PFNA	(463.0 / 419.0) 388371 (463.0 / 169.0) 80861	(8.58, 1.00) (0.00, N/A, 0.1)	475.3 350.5	0.2082 92.8 92.8	0.9741 [1.0000]	97.4%			
PFDA	(513.0 / 469.0) 512272 (513.0 / 169.0) 48039	(9.25, 1.00) (0.00, N/A, -0.5)	294.0 134.0	0.0938 85.4 85.4	0.9940 [1.0000]	99.4%			
PFUnA	(563.0 / 519.0) 548757 (563.0 / 169.0) 59470	(9.71, 1.00) (0.00, N/A, 0.1)	392.7 125.2	0.1084 103.6 103.6	0.9023 [1.0000]	90.2%			
PFDoA	(613.0 / 569.0) 494064 (613.0 / 169.0) 69248	(9.90, 1.00) (0.00, N/A, -0.2)	349.8 199.2	0.1402 108.9 108.9	0.9147 [1.0000]	91.5%			
PFTTrDA	(663.0 / 619.0) 555074 (663.0 / 169.0) 110816	(10.03, 1.01) (N/A, 0.01, 0.2)	609.5 211.0	0.1996 99.0 99.0	1.0429 [1.0000]	104.3%			
PFTeDA	(713.0 / 669.0) 456888 (713.0 / 169.0) 82131	(10.14, 1.00) (0.00, N/A, -0.1)	503.5 148.4	0.1798 92.0 92.0	1.0471 [1.0000]	104.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 561239 (299.0 / 99.0) 359503	(5.98, 1.00) (0.00, N/A, 0.0)	485.9 376.4	0.6406 98.2 98.2	0.9006 [0.8847]	101.8%			
PFPeS	(349.0 / 80.0) 930216 (349.0 / 99.0) 355048	(7.05, 0.89) (N/A, 0.01, 0.0)	568.6 464.7	0.3817 103.3 103.3	0.8819 [0.9384]	94.0%			
PFHxS	(399.0 / 80.0) 919045 (399.0 / 99.0) 298355	(7.94, 1.00) (0.00, N/A, 0.2)	696.6 507.4	0.3246 98.4 98.4	0.8919 [0.9110]	97.9%			
PFHpS	(449.0 / 80.0) 898310 (449.0 / 99.0) 247914	(8.71, 0.93) (N/A, 0.03, -0.2)	489.0 354.1	0.2760 100.4 100.4	0.9967 [0.9514]	104.8%			
PFOS	(499.0 / 80.0) 1069836 (499.0 / 99.0) 221593	(9.39, 1.00) (-0.01, N/A, 0.1)	266.2 335.7	0.2071 91.2 91.2	0.9526 [0.9275]	102.7%			
PFNS	(549.0 / 80.0) 1153067 (549.0 / 99.0) 296108	(9.76, 1.04) (N/A, 0.01, 0.0)	467.5 499.2	0.2568 110.3 110.3	1.0548 [0.9599]	109.9%			
PFDS	(599.0 / 80.0) 1288314 (599.0 / 99.0) 275733	(9.92, 1.06) (N/A, 0.01, -0.1)	631.2 430.6	0.2140 93.7 93.7	1.0663 [0.9631]	110.7%			
PFDoS	(699.0 / 80.0) 532473 (699.0 / 99.0) 117655	(10.13, 1.08) (N/A, 0.00, -0.1)	613.8 286.5	0.2210 106.6 106.6	1.0375 [0.9696]	107.0%			
4:2FTS	(327.0 / 307.0) 2530590 (327.0 / 81.0) 1521518	(5.72, 1.00) (0.00, N/A, -0.1)	599.8 514.1	0.6013 95.5 95.5	3.7876 [3.7381]	101.3%			
6:2FTS	(427.0 / 407.0) 1664581 (427.0 / 81.0) 1215337	(7.51, 1.00) (0.00, N/A, -0.1)	680.4 549.0	0.7301 95.3 95.3	3.7368 [3.7962]	98.4%			
8:2FTS	(527.0 / 507.0) 1392138 (527.0 / 81.0) 1016965	(8.93, 1.00) (0.00, N/A, 0.2)	446.6 410.5	0.7305 96.3 96.3	3.6117 [3.8332]	94.2%			

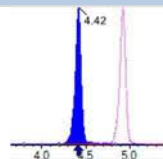
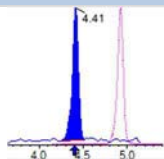
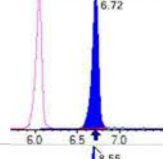
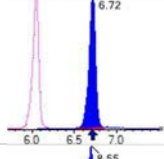
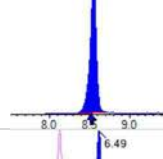
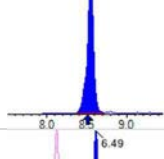
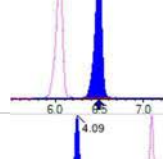
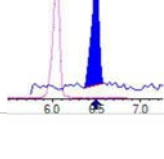
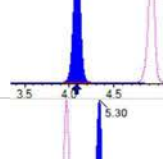
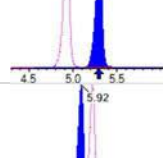
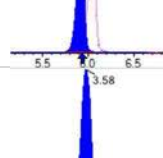
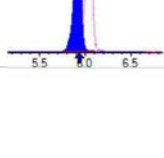
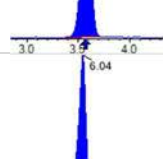
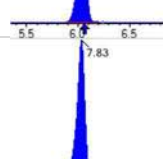
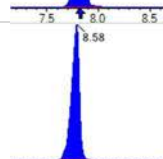



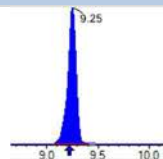
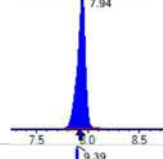
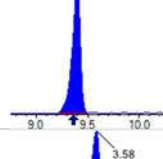
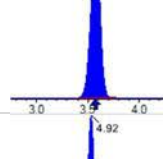
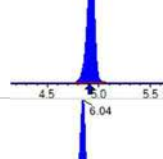
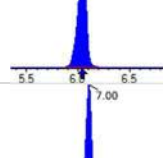
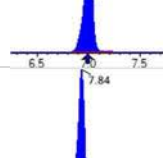
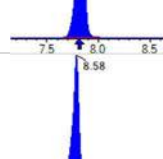
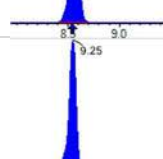
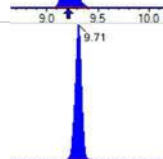
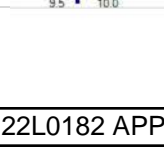
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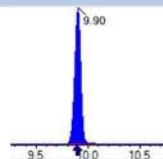
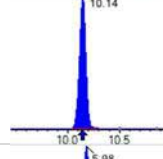
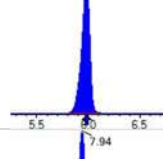
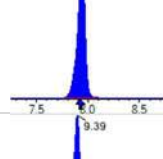
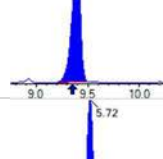
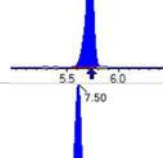
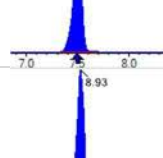
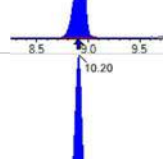
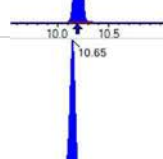
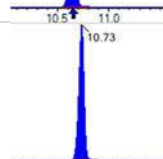

Sample I.D.: SC00101-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (3)
 Acquired: 2023/01/09 - 15:29

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1345149 (498.0 / 478.0) 28483	(10.20 , 1.00) (0.00 , N/A , 0.1)	900.5 204.6	0.0212 112.3 112.3	1.0124 [1.0000]	101.2%			
NMeFOSA	(512.0 / 219.0) 853826 (512.0 / 169.0) 585402	(10.65 , 1.00) (0.00 , N/A , 0.0)	647.0 859.5	0.6856 96.1 96.1	4.1623 [4.0000]	104.1%			
NEIFOSA	(526.0 / 219.0) 842917 (526.0 / 169.0) 918914	(10.74 , 1.00) (0.00 , N/A , 0.0)	1108.2 1097.8	1.0902 103.1 103.1	3.9920 [4.0000]	99.8%			
NMeFOSAA	(570.0 / 419.0) 278219 (570.0 / 483.0) 115683	(9.48 , 1.00) (0.01 , N/A , 0.2)	207.4 333.4	0.4158 81.8 81.8	1.0720 [1.0000]	107.2%			
NEIFOSAA	(584.0 / 419.0) 227342 (584.0 / 526.0) 154057	(9.68 , 1.00) (0.01 , N/A , 0.0)	356.0 298.9	0.6776 109.0 109.0	0.9452 [1.0000]	94.5%			
NMeFOSE	(616.0 / 59.0) 170864	(10.62 , 1.00) (0.00 , N/A , 0.0)	393.7	N/A 0.0 0.0	3.8812 [4.0000]	97.0%			
NEtFOSE	(630.0 / 59.0) 32417	(10.71 , 1.00) (0.01 , N/A , 0.0)	563.0	N/A 0.0 0.0	3.6396 [4.0000]	91.0%			
HFPO-DA	(285.0 / 169.0) 266094 (285.0 / 185.0) 676144	(6.40 , 1.00) (0.00 , N/A , -0.1)	501.9 527.0	2.5410 94.7 94.7	2.1718 [2.0000]	108.6%			
ADONA	(377.0 / 85.0) 1229115 (377.0 / 251.0) 149376	(7.33 , 1.15) (N/A , 0.02 , 0.0)	638.7 264.6	0.1215 104.4 104.4	1.9192 [1.8854]	101.8%			
9CI-Pf3ONS	(531.0 / 351.0) 3335905 (533.0 / 353.0) 1048337	(9.70 , 1.52) (N/A , 0.02 , 0.2)	505.9 558.3	0.3143 101.2 101.2	1.8077 [1.8665]	96.8%			
11CI-PF3OUDS	(631.0 / 451.0) 1657511 (633.0 / 453.0) 607351	(10.01 , 1.57) (N/A , 0.01 , 0.1)	721.9 479.8	0.3664 106.7 106.7	1.9388 [1.8864]	102.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 29889 (241.0 / 117.0) 51313	(4.42, 0.90) (N/A, 0.01, 0.1)	332.4 171.4	1.7168 116.7 116.7	3.5576 [4.0000]	88.9%			
5:3FTCA	(341.0 / 236.7) 220233 (341.0 / 217.0) 355542	(6.72, 1.11) (N/A, 0.01, 0.0)	434.6 336.6	1.6144 96.7 96.7	3.9944 [4.0000]	99.9%			
7:3FTCA	(441.0 / 317.0) 333758 (441.0 / 337.0) 289169	(8.55, 1.41) (N/A, 0.03, 0.1)	344.1 326.5	0.8664 100.5 100.5	4.0222 [4.0000]	100.6%			
PFEESA	(315.0 / 135.0) 662665 (315.0 / 83.0) 188290	(6.49, 1.07) (N/A, 0.00, -0.1)	519.6 107.3	0.2841 92.9 92.9	1.8563 [1.7849]	104.0%			
PFMPA	(229.0 / 85.0) 170523	(4.09, 0.83) (N/A, 0.01, 0.0)	894.2	N/A 0.0 0.0	1.9484 [2.0000]	97.4%			
PFMBA	(279.0 / 85.0) 434307	(5.30, 1.08) (N/A, 0.01, 0.0)	652.0	N/A 0.0 0.0	1.9644 [2.0000]	98.2%			
NFDHA	(295.0 / 201.0) 313907 (295.0 / 85.0) 299532	(5.92, 0.98) (N/A, 0.00, 0.0)	508.4 457.8	0.9542 103.8 103.8	2.0830 [2.0000]	104.2%			
13C3_PFBa_IIS	(216.0 / 172.0) 251639	(3.58, N/A) (N/A, 0.01, N/A)	505.1	N/A	0.9935 [1.0000]	99.3% { 97.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 363755	(6.04, N/A) (N/A, -0.01, N/A)	440.7	N/A	0.9840 [1.0000]	98.4% { 98.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 424921	(7.83, N/A) (N/A, 0.02, N/A)	479.8	N/A	0.9673 [1.0000]	96.7% { 90.9% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 413773	(8.58, N/A) (N/A, 0.04, N/A)	497.6	N/A	1.0203 [1.0000]	102.0% { 95.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 436761	(9.25, N/A) (N/A, 0.04, N/A)	369.7	N/A	1.0112 [1.0000]	101.1% { 102.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 732317	(7.94, N/A) (N/A, 0.03, N/A)	640.2	N/A	0.9913 [1.0000]	99.1% { 98.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 825866	(9.39, N/A) (N/A, 0.04, N/A)	360.3	N/A	1.0711 [1.0000]	107.1% { 101.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2019297	(3.58, N/A) (N/A, 0.01, N/A)	567.2	N/A	8.1679 [8.0000]	102.1% { 98.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1205200	(4.92, N/A) (N/A, 0.01, N/A)	553.1	N/A	4.0482 [4.0000]	101.2% { 98.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 735329	(6.04, N/A) (N/A, 0.00, N/A)	522.8	N/A	1.9783 [2.0000]	98.9% { 90.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 738483	(7.00, N/A) (N/A, 0.01, N/A)	499.2	N/A	2.0901 [2.0000]	104.5% { 102.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 923940	(7.84, N/A) (N/A, 0.03, N/A)	510.2	N/A	2.1341 [2.0000]	106.7% { 100.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 415267	(8.58, N/A) (N/A, 0.04, N/A)	730.8	N/A	1.0112 [1.0000]	101.1% { 100.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 502659	(9.25, N/A) (N/A, 0.05, N/A)	540.6	N/A	1.0214 [1.0000]	102.1% { 114.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 669137	(9.71, N/A) (N/A, 0.02, N/A)	421.0	N/A	1.0997 [1.0000]	110.0% { 103.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 576947	(9.90, N/A) (N/A, 0.01, N/A)	473.0	N/A	0.9875 [1.0000]	98.7% { 93.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 458038	(10.14, N/A) (N/A, 0.00, N/A)	692.4	N/A	0.9794 [1.0000]	97.9% { 99.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1910548	(5.98, N/A) (N/A, 0.00, N/A)	541.7	N/A	1.9624 [2.0000]	98.1% { 96.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1233006	(7.94, N/A) (N/A, 0.03, N/A)	533.2	N/A	2.0209 [2.0000]	101.0% { 102.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1754066	(9.39, N/A) (N/A, 0.04, N/A)	286.4	N/A	1.7892 [2.0000]	89.5% { 92.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 831498	(5.72, N/A) (N/A, 0.00, N/A)	461.8	N/A	4.3756 [4.0000]	109.4% { 115.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1166262	(7.50, N/A) (N/A, 0.02, N/A)	569.1	N/A	4.1607 [4.0000]	104.0% { 101.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1057116	(8.93, N/A) (N/A, 0.04, N/A)	418.1	N/A	4.0250 [4.0000]	100.6% { 110.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2494313	(10.20, N/A) (N/A, 0.01, N/A)	838.6	N/A	1.9216 [2.0000]	96.1% { 99.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 432450	(10.65, N/A) (N/A, 0.00, N/A)	723.0	N/A	1.8554 [2.0000]	92.8% { 100.2% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 423942	(10.73, N/A) (N/A, 0.00, N/A)	828.9	N/A	1.9294 [2.0000]	96.5% { 97.0% }			

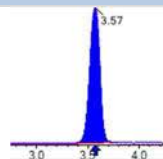
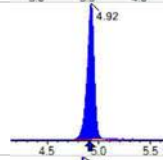
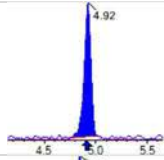
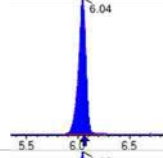
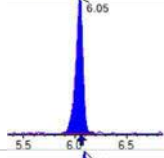
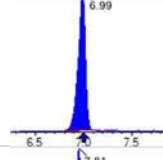
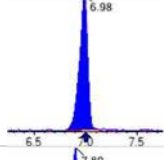
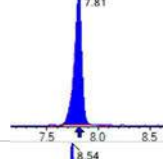
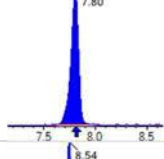
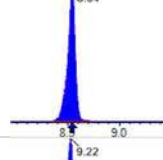
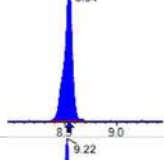
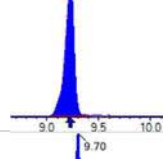
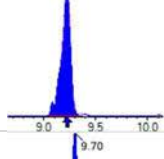
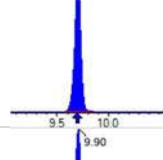
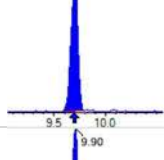
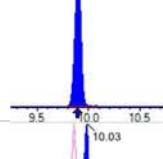
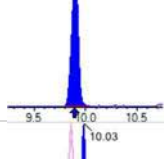
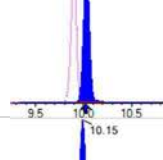
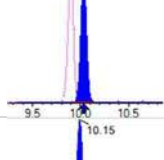
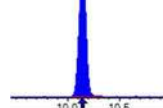
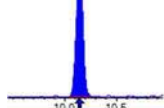


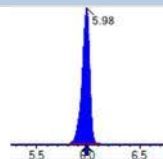
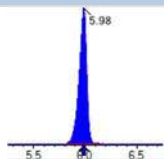
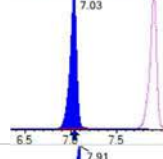
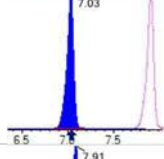
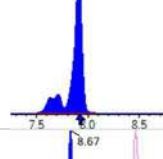
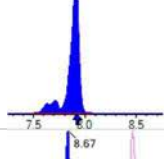
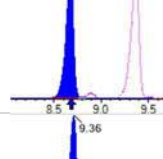
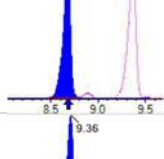
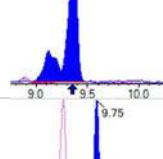
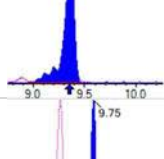
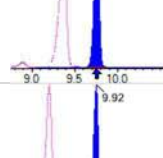
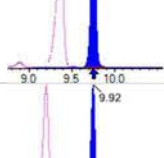
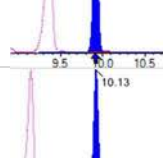
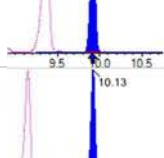
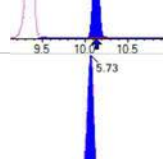
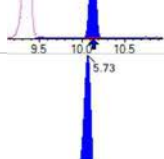
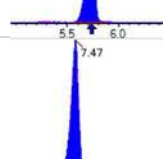
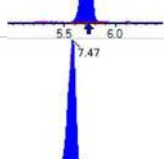
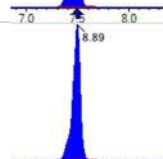
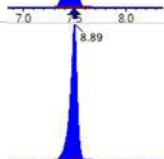
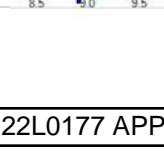
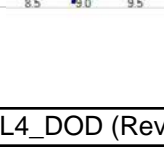
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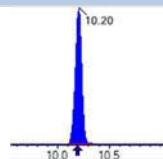
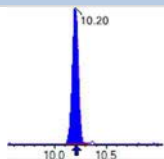
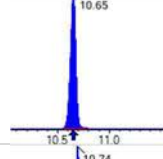
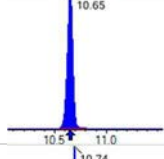
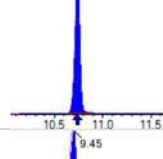
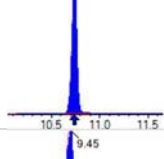
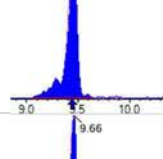
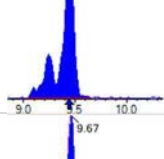
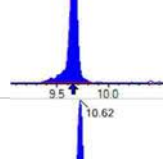
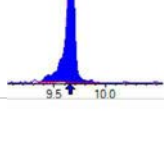
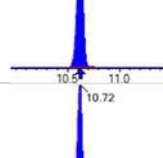
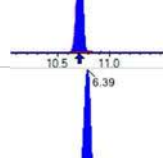
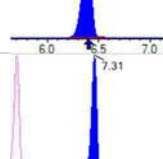
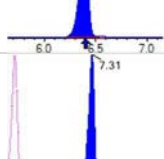
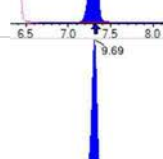
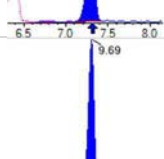
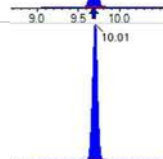
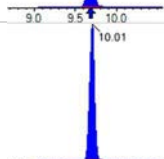
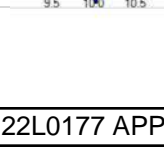
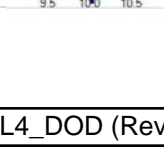
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 Acquisition Method: 1633 2023-01-09.dam

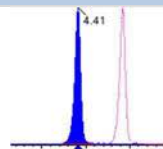
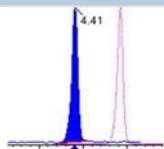
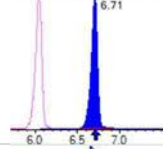
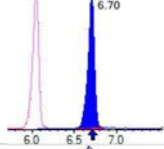
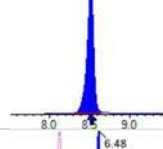
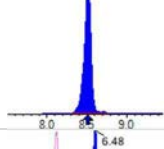
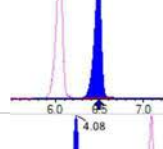
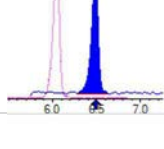
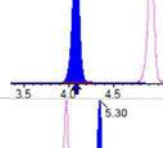
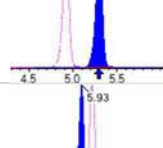
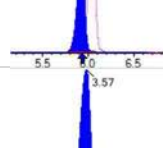
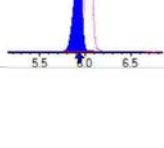
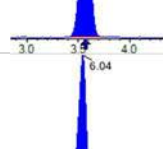
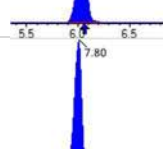
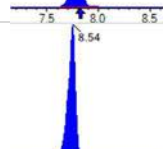

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 Path: S2023-01-09B (3)
 Acquired: 2023/01/09 - 15:29

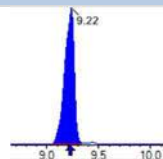
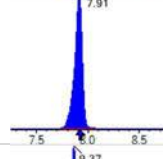
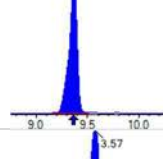
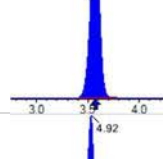
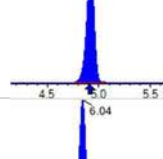
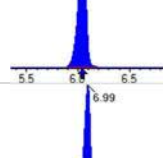
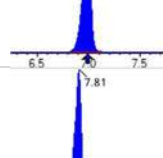
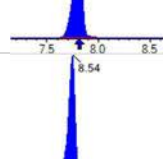
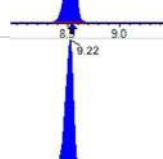
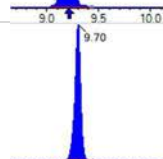

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1155571	(9.47, N/A) (N/A, 0.04, N/A)	355.7	N/A	3.7610 [4.0000]	94.0% { 98.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1006013	(9.67, N/A) (N/A, 0.02, N/A)	88.8	N/A	4.1643 [4.0000]	104.1% { 117.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 687012	(10.61, N/A) (N/A, 0.00, N/A)	858.9	N/A	19.2096 [20.0000]	96.0% { 101.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 317697	(10.71, N/A) (N/A, 0.00, N/A)	891.1	N/A	19.2747 [20.0000]	96.4% { 98.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1545341	(6.40, N/A) (N/A, 0.00, N/A)	534.4	N/A	7.9226 [8.0000]	99.0% { 96.6% }			

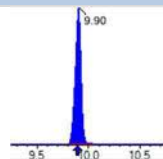
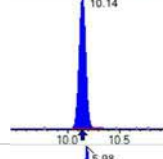
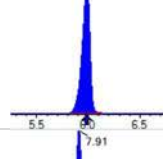
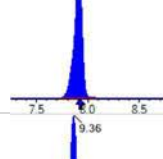
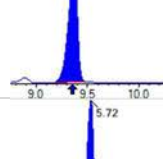
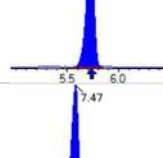
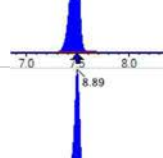
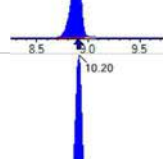
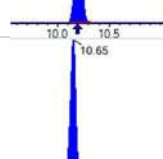
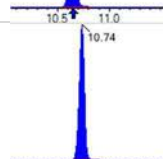

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1911524	(3.57, 1.00) (0.00, N/A, 0.0)	423.7	N/A 0.0 0.0	8.0770 [8.0000]	101.0%			
PFPeA	(263.0 / 219.0) 1217823 (263.0 / 69.0) 11889	(4.92, 1.00) (0.00, N/A, 0.1)	528.5 134.7	0.0098 89.9 89.9	3.9766 [4.0000]	99.4%			
PFHxA	(313.0 / 269.0) 763611 (313.0 / 119.0) 71646	(6.04, 1.00) (0.00, N/A, -0.2)	405.0 232.0	0.0938 95.6 95.6	2.0713 [2.0000]	103.6%			
PFHpA	(363.0 / 319.0) 761692 (363.0 / 169.0) 196075	(6.99, 1.00) (0.00, N/A, 0.1)	428.9 279.5	0.2574 90.5 90.5	2.0051 [2.0000]	100.3%			
PFOA	(413.0 / 369.0) 986504 (413.0 / 169.0) 297571	(7.81, 1.00) (0.00, N/A, 0.3)	438.0 361.0	0.3016 94.5 94.5	2.0657 [2.0000]	103.3%			
PFNA	(463.0 / 419.0) 807628 (463.0 / 169.0) 169923	(8.54, 1.00) (0.00, N/A, 0.0)	520.8 326.4	0.2104 93.8 93.8	2.0416 [2.0000]	102.1%			
PFDA	(513.0 / 469.0) 987517 (513.0 / 169.0) 95441	(9.22, 1.00) (0.01, N/A, 0.2)	359.8 245.8	0.0966 88.0 88.0	2.0356 [2.0000]	101.8%			
PFUnA	(563.0 / 519.0) 1264324 (563.0 / 169.0) 118650	(9.70, 1.00) (0.00, N/A, 0.2)	522.1 250.6	0.0938 89.7 89.7	1.9384 [2.0000]	96.9%			
PFDoA	(613.0 / 569.0) 1258321 (613.0 / 169.0) 128689	(9.90, 1.00) (0.00, N/A, 0.0)	564.1 252.7	0.1023 79.5 79.5	2.3269 [2.0000]	116.3%			
PFTTrDA	(663.0 / 619.0) 1104209 (663.0 / 169.0) 221284	(10.03, 1.01) (N/A, 0.01, 0.0)	701.3 386.0	0.2004 99.4 99.4	2.0721 [2.0000]	103.6%			
PFTeDA	(713.0 / 669.0) 890067 (713.0 / 169.0) 165900	(10.15, 1.00) (0.00, N/A, -0.1)	667.0 289.7	0.1864 95.3 95.3	1.9567 [2.0000]	97.8%			

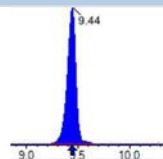
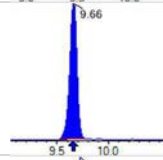
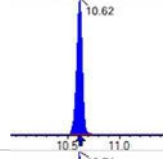
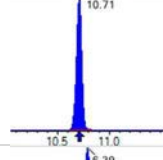
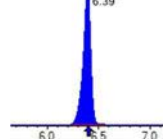
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 1242866 (299.0 / 99.0) 757803	(5.98, 1.00) (0.00, N/A, 0.0)	572.4 502.1	0.6097 93.5 93.5	1.8274 [1.7695]	103.3%			
PFPeS	(349.0 / 80.0) 2063631 (349.0 / 99.0) 712713	(7.03, 0.89) (N/A, -0.01, 0.0)	557.5 544.2	0.3454 93.4 93.4	1.8891 [1.8768]	100.7%			
PFHxS	(399.0 / 80.0) 1971489 (399.0 / 99.0) 654593	(7.91, 1.00) (0.00, N/A, 0.1)	655.8 771.2	0.3320 100.6 100.6	1.8475 [1.8220]	101.4%			
PFHpS	(449.0 / 80.0) 1872197 (449.0 / 99.0) 538891	(8.67, 0.93) (N/A, -0.01, -0.2)	534.8 459.6	0.2878 104.7 104.7	1.9035 [1.9028]	100.0%			
PFOS	(499.0 / 80.0) 2074744 (499.0 / 99.0) 466255	(9.36, 1.00) (0.00, N/A, 0.0)	276.4 576.8	0.2247 98.9 98.9	1.7328 [1.8550]	93.4%			
PFNS	(549.0 / 80.0) 2477175 (549.0 / 99.0) 567970	(9.75, 1.04) (N/A, 0.01, 0.1)	704.7 650.0	0.2293 98.4 98.4	2.0765 [1.9198]	108.2%			
PFDS	(599.0 / 80.0) 2688276 (599.0 / 99.0) 637352	(9.92, 1.06) (N/A, 0.01, 0.0)	610.6 478.0	0.2371 103.8 103.8	2.0388 [1.9262]	105.8%			
PFDoS	(699.0 / 80.0) 1191018 (699.0 / 99.0) 242048	(10.13, 1.08) (N/A, 0.00, 0.0)	941.9 562.7	0.2032 98.0 98.0	2.1265 [1.9391]	109.7%			
4:2FTS	(327.0 / 307.0) 5337176 (327.0 / 81.0) 2912348	(5.73, 1.00) (0.00, N/A, 0.0)	687.5 550.0	0.5457 86.7 86.7	8.6127 [7.4762]	115.2%			
6:2FTS	(427.0 / 407.0) 3487816 (427.0 / 81.0) 2616625	(7.47, 1.00) (0.00, N/A, 0.0)	645.9 610.0	0.7502 97.9 97.9	7.8629 [7.5923]	103.6%			
8:2FTS	(527.0 / 507.0) 3324448 (527.0 / 81.0) 2528288	(8.89, 1.00) (0.00, N/A, -0.1)	403.6 495.2	0.7605 100.2 100.2	7.9939 [7.6663]	104.3%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 2800740 (498.0 / 478.0) 69181	(10.20, 1.00) (0.00, N/A, 0.2)	975.5 357.2	0.0247 131.0 131.0	2.0679 [2.0000]	103.4%			
NMeFOSA	(512.0 / 219.0) 1791267 (512.0 / 169.0) 1227472	(10.65, 1.00) (0.00, N/A, 0.0)	905.6 727.2	0.6853 96.1 96.1	8.9176 [8.0000]	111.5%			
NEIFOSA	(526.0 / 219.0) 1739142 (526.0 / 169.0) 1869171	(10.74, 1.00) (0.00, N/A, 0.1)	1210.7 1215.2	1.0748 101.6 101.6	8.3636 [8.0000]	104.5%			
NMeFOSAA	(570.0 / 419.0) 518975 (570.0 / 483.0) 249456	(9.45, 1.00) (0.01, N/A, 0.4)	262.4 229.5	0.4807 94.5 94.5	2.0475 [2.0000]	102.4%			
NEIFOSAA	(584.0 / 419.0) 472522 (584.0 / 526.0) 284116	(9.66, 1.00) (0.00, N/A, -0.2)	551.2 238.9	0.6013 96.7 96.7	1.9335 [2.0000]	96.7%			
NMeFOSE	(616.0 / 59.0) 353463	(10.62, 1.00) (0.01, N/A, 0.0)	668.1	N/A 0.0 0.0	7.7816 [8.0000]	97.3%			
NEtFOSE	(630.0 / 59.0) 73494	(10.72, 1.00) (0.01, N/A, 0.0)	633.2	N/A 0.0 0.0	8.0121 [8.0000]	100.2%			
HFPO-DA	(285.0 / 169.0) 534614 (285.0 / 185.0) 1429738	(6.39, 1.00) (0.00, N/A, -0.1)	544.4 568.1	2.6743 99.7 99.7	4.1440 [4.0000]	103.6%			
ADONA	(377.0 / 85.0) 2634581 (377.0 / 251.0) 303333	(7.31, 1.14) (N/A, -0.01, -0.1)	645.3 428.9	0.1151 98.9 98.9	3.9069 [3.7708]	103.6%			
9CI-Pf3ONS	(531.0 / 351.0) 7312562 (533.0 / 353.0) 2449095	(9.69, 1.52) (N/A, 0.01, 0.0)	607.9 574.2	0.3349 107.9 107.9	3.7763 [3.7330]	101.2%			
11CI-PF3OUDS	(631.0 / 451.0) 3695375 (633.0 / 453.0) 1232132	(10.01, 1.57) (N/A, 0.01, 0.0)	1424.2 591.3	0.3334 97.1 97.1	4.1050 [3.7728]	108.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 68729 (241.0 / 117.0) 104895	(4.41, 0.90) (N/A, 0.00, 0.2)	376.3 241.2	1.5262 103.8 103.8	7.8188 [8.0000]	97.7%			
5:3FTCA	(341.0 / 236.7) 468844 (341.0 / 217.0) 744103	(6.71, 1.11) (N/A, -0.01, 0.1)	439.3 483.9	1.5871 95.0 95.0	8.3572 [8.0000]	104.5%			
7:3FTCA	(441.0 / 317.0) 729470 (441.0 / 337.0) 595107	(8.52, 1.41) (N/A, 0.00, 0.1)	368.2 363.6	0.8158 94.6 94.6	8.6399 [8.0000]	108.0%			
PFEESA	(315.0 / 135.0) 1338162 (315.0 / 83.0) 442441	(6.48, 1.07) (N/A, 0.00, 0.1)	562.4 166.7	0.3306 108.2 108.2	3.6841 [3.5698]	103.2%			
PFMPA	(229.0 / 85.0) 364469	(4.08, 0.83) (N/A, 0.00, 0.0)	746.0	N/A 0.0 0.0	3.9802 [4.0000]	99.5%			
PFMBA	(279.0 / 85.0) 918146	(5.30, 1.08) (N/A, 0.01, 0.0)	656.0	N/A 0.0 0.0	3.9692 [4.0000]	99.2%			
NFDHA	(295.0 / 201.0) 651812 (295.0 / 85.0) 629071	(5.93, 0.98) (N/A, 0.00, 0.1)	593.9 433.8	0.9651 104.9 104.9	4.2509 [4.0000]	106.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 258381	(3.57, N/A) (N/A, 0.00, N/A)	476.4	N/A	1.0201 [1.0000]	102.0% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 356458	(6.04, N/A) (N/A, -0.01, N/A)	442.4	N/A	0.9643 [1.0000]	96.4% { 96.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 456002	(7.80, N/A) (N/A, -0.01, N/A)	429.8	N/A	1.0381 [1.0000]	103.8% { 97.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 422786	(8.54, N/A) (N/A, 0.00, N/A)	529.5	N/A	1.0425 [1.0000]	104.3% { 97.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 432254	(9.22, N/A) (N/A, 0.01, N/A)	295.4	N/A	1.0007 [1.0000]	100.1% { 101.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 775592	(7.91, N/A) (N/A, 0.00, N/A)	658.9	N/A	1.0499 [1.0000]	105.0% { 103.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 823368	(9.37, N/A) (N/A, 0.01, N/A)	396.2	N/A	1.0679 [1.0000]	106.8% { 100.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2069771	(3.57, N/A) (N/A, 0.00, N/A)	609.7	N/A	8.1536 [8.0000]	101.9% { 101.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1260966	(4.92, N/A) (N/A, 0.01, N/A)	563.9	N/A	4.3222 [4.0000]	108.1% { 102.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 748196	(6.04, N/A) (N/A, 0.00, N/A)	589.5	N/A	2.0541 [2.0000]	102.7% { 91.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 752411	(6.99, N/A) (N/A, 0.00, N/A)	486.3	N/A	2.1731 [2.0000]	108.7% { 104.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 916665	(7.81, N/A) (N/A, 0.00, N/A)	480.9	N/A	1.9730 [2.0000]	98.6% { 99.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 412034	(8.54, N/A) (N/A, 0.00, N/A)	562.4	N/A	0.9819 [1.0000]	98.2% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 473197	(9.22, N/A) (N/A, 0.01, N/A)	326.0	N/A	0.9715 [1.0000]	97.2% { 107.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 717654	(9.70, N/A) (N/A, 0.01, N/A)	391.6	N/A	1.1917 [1.0000]	119.2% { 110.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 577648	(9.90, N/A) (N/A, 0.01, N/A)	600.4	N/A	0.9990 [1.0000]	99.9% { 93.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 477530	(10.14, N/A) (N/A, 0.00, N/A)	555.3	N/A	1.0317 [1.0000]	103.2% { 103.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2085124	(5.98, N/A) (N/A, 0.00, N/A)	563.1	N/A	2.0222 [2.0000]	101.1% { 105.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1276926	(7.91, N/A) (N/A, 0.00, N/A)	652.5	N/A	1.9761 [2.0000]	98.8% { 106.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1914252	(9.36, N/A) (N/A, 0.01, N/A)	215.2	N/A	1.9585 [2.0000]	97.9% { 100.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 771227	(5.72, N/A) (N/A, 0.00, N/A)	456.8	N/A	3.8319 [4.0000]	95.8% { 106.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1161329	(7.47, N/A) (N/A, -0.01, N/A)	516.0	N/A	3.9119 [4.0000]	97.8% { 100.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1140538	(8.89, N/A) (N/A, 0.00, N/A)	405.4	N/A	4.1003 [4.0000]	102.5% { 118.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2542481	(10.20, N/A) (N/A, 0.01, N/A)	1234.1	N/A	1.9646 [2.0000]	98.2% { 101.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 423463	(10.65, N/A) (N/A, 0.00, N/A)	715.0	N/A	1.8224 [2.0000]	91.1% { 98.1% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 417502	(10.74, N/A) (N/A, 0.00, N/A)	693.2	N/A	1.9059 [2.0000]	95.3% { 95.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1128587	(9.44, N/A) (N/A, 0.01, N/A)	283.1	N/A	3.6843 [4.0000]	92.1% { 96.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1022245	(9.66, N/A) (N/A, 0.01, N/A)	87.9	N/A	4.2444 [4.0000]	106.1% { 119.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 708849	(10.62, N/A) (N/A, 0.00, N/A)	688.6	N/A	19.8804 [20.0000]	99.4% { 104.2% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 327190	(10.71, N/A) (N/A, 0.00, N/A)	891.1	N/A	19.9108 [20.0000]	99.6% { 101.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1627178	(6.39, N/A) (N/A, 0.00, N/A)	614.9	N/A	8.5129 [8.0000]	106.4% { 101.8% }			



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SC00101-CAL5
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-09B (5)
Acquired: 2023/01/09 - 15:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 4714265	(3.57, 1.00) (0.00, N/A, 0.0)	500.6	N/A 0.0 0.0	20.1879 [20.0000]	100.9%			
PFPeA	(263.0 / 219.0) 3044805 (263.0 / 69.0) 33054	(4.91, 1.00) (0.00, N/A, 0.1)	530.0 220.5	0.0109 100.0 100.0	10.2232 [10.0000]	102.2%			
PFHxA	(313.0 / 269.0) 1872972 (313.0 / 119.0) 183823	(6.05, 1.00) (0.00, N/A, -0.2)	472.1 298.6	0.0981 100.0 100.0	4.6547 [5.0000]	93.1%			
PFHpA	(363.0 / 319.0) 1890528 (363.0 / 169.0) 537973	(6.99, 1.00) (0.00, N/A, 0.1)	476.5 349.0	0.2846 100.0 100.0	5.2044 [5.0000]	104.1%			
PFOA	(413.0 / 369.0) 2367813 (413.0 / 169.0) 755993	(7.81, 1.00) (0.00, N/A, 0.1)	539.1 500.1	0.3193 100.0 100.0	4.9423 [5.0000]	98.8%			
PFNA	(463.0 / 419.0) 1952864 (463.0 / 169.0) 437970	(8.54, 1.00) (0.00, N/A, 0.1)	486.7 476.8	0.2243 100.0 100.0	4.9352 [5.0000]	98.7%			
PFDA	(513.0 / 469.0) 2425099 (513.0 / 169.0) 266315	(9.21, 1.00) (0.00, N/A, -0.1)	477.9 328.2	0.1098 100.0 100.0	5.3639 [5.0000]	107.3%			
PFUnA	(563.0 / 519.0) 2689405 (563.0 / 169.0) 281377	(9.69, 1.00) (0.00, N/A, 0.1)	462.4 412.6	0.1046 100.0 100.0	4.5573 [5.0000]	91.1%			
PFDoA	(613.0 / 569.0) 2655991 (613.0 / 169.0) 341740	(9.89, 1.00) (0.00, N/A, 0.1)	426.5 477.2	0.1287 100.0 100.0	4.5958 [5.0000]	91.9%			
PFTrDA	(663.0 / 619.0) 2676821 (663.0 / 169.0) 539853	(10.02, 1.01) (N/A, 0.00, -0.1)	1125.0 561.7	0.2017 100.0 100.0	4.7003 [5.0000]	94.0%			
PFTeDA	(713.0 / 669.0) 2334196 (713.0 / 169.0) 456327	(10.14, 1.00) (0.00, N/A, 0.1)	669.0 491.0	0.1955 100.0 100.0	5.3037 [5.0000]	106.1%			

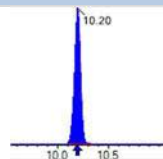
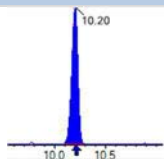
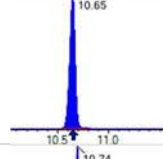
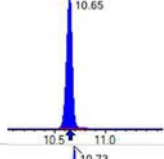
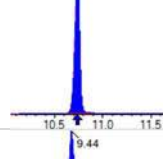
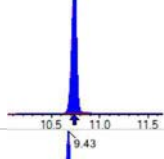
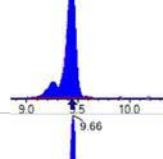
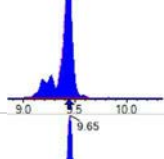
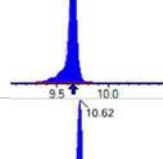
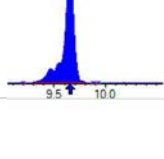
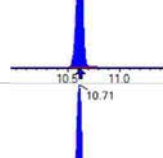
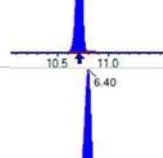
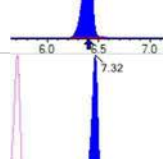
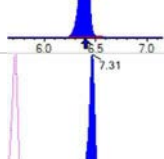
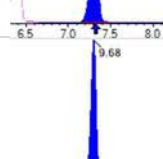
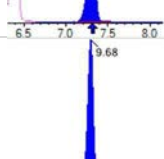
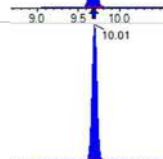
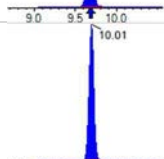
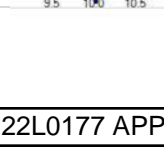
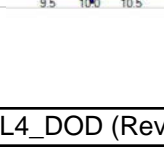


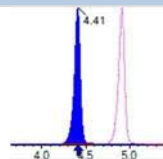
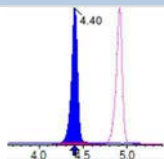
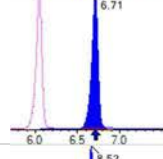
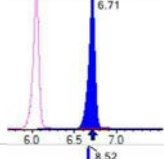
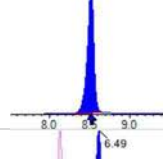
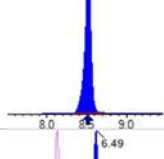
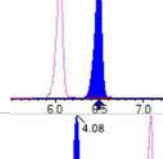
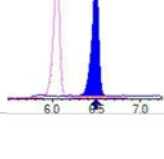
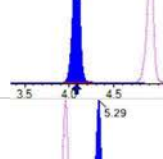
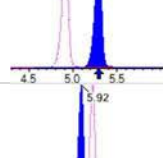
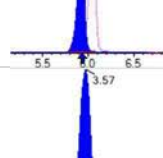
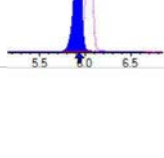
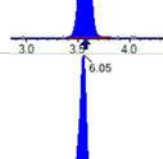
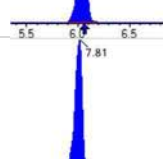
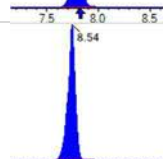

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

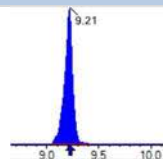
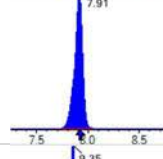
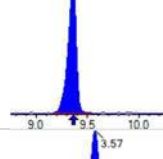
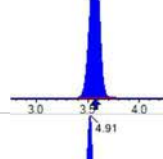
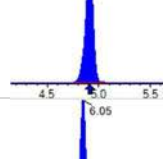
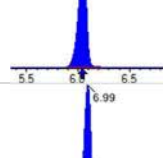
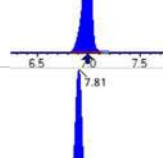
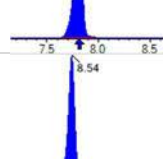
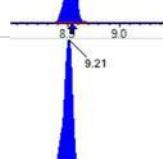
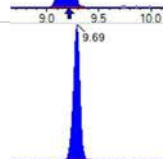

Sample I.D.: SC00101-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

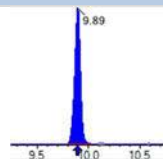
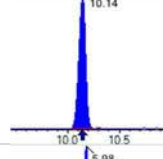
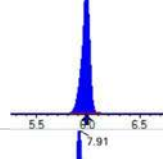
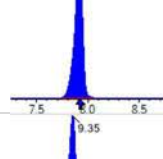
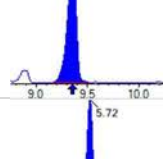
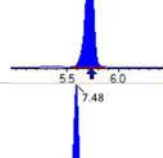
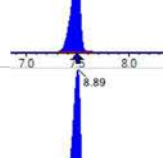
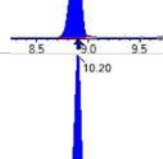
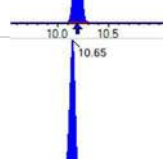
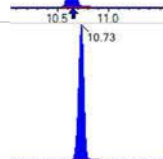

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (5)
 Acquired: 2023/01/09 - 15:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2862669 (299.0 / 99.0) 1867077	(5.98 , 1.00) (0.00 , N/A , 0.1)	631.8 585.6	0.6522 100.0 100.0	4.4346 [4.4237]	100.2%			
PFPeS	(349.0 / 80.0) 5097584 (349.0 / 99.0) 1884046	(7.04 , 0.89) (N/A , 0.00 , 0.1)	617.0 667.4	0.3696 100.0 100.0	4.9476 [4.6919]	105.4%			
PFHxS	(399.0 / 80.0) 4750874 (399.0 / 99.0) 1567508	(7.91 , 1.00) (0.00 , N/A , 0.1)	748.6 746.0	0.3299 100.0 100.0	4.7203 [4.5549]	103.6%			
PFHpS	(449.0 / 80.0) 4640909 (449.0 / 99.0) 1275587	(8.68 , 0.93) (N/A , 0.00 , 0.1)	586.3 537.6	0.2749 100.0 100.0	4.7489 [4.7570]	99.8%			
PFOS	(499.0 / 80.0) 5432827 (499.0 / 99.0) 1234469	(9.35 , 1.00) (0.00 , N/A , 0.1)	455.7 1078.5	0.2272 100.0 100.0	4.6508 [4.6375]	100.3%			
PFNS	(549.0 / 80.0) 5903446 (549.0 / 99.0) 1374871	(9.75 , 1.04) (N/A , 0.00 , 0.1)	690.0 559.2	0.2329 100.0 100.0	4.9803 [4.7994]	103.8%			
PFDS	(599.0 / 80.0) 6573410 (599.0 / 99.0) 1500795	(9.91 , 1.06) (N/A , 0.00 , -0.2)	748.9 598.4	0.2283 100.0 100.0	5.0173 [4.8155]	104.2%			
PFDoS	(699.0 / 80.0) 2635748 (699.0 / 99.0) 546458	(10.13 , 1.08) (N/A , 0.00 , 0.1)	1024.3 641.8	0.2073 100.0 100.0	4.7362 [4.8478]	97.7%			
4:2FTS	(327.0 / 307.0) 12072530 (327.0 / 81.0) 7596722	(5.72 , 1.00) (0.00 , N/A , 0.0)	623.3 650.8	0.6293 100.0 100.0	20.7813 [18.6906]	111.2%			
6:2FTS	(427.0 / 407.0) 8830075 (427.0 / 81.0) 6763574	(7.48 , 1.00) (0.00 , N/A , 0.2)	635.6 634.2	0.7660 100.0 100.0	20.0853 [18.9808]	105.8%			
8:2FTS	(527.0 / 507.0) 7411558 (527.0 / 81.0) 5622849	(8.89 , 1.00) (0.00 , N/A , 0.5)	528.3 429.2	0.7587 100.0 100.0	21.1560 [19.1658]	110.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7125080 (498.0 / 478.0) 134343	(10.20, 1.00) (0.00, N/A, -0.3)	1204.7 543.5	0.0189 100.0 100.0	5.3206 [5.0000]	106.4%			
NMeFOSA	(512.0 / 219.0) 4389114 (512.0 / 169.0) 3131103	(10.65, 1.00) (0.00, N/A, 0.1)	901.9 977.0	0.7134 100.0 100.0	21.4377 [20.0000]	107.2%			
NEIFOSA	(526.0 / 219.0) 4449264 (526.0 / 169.0) 4706386	(10.74, 1.00) (0.01, N/A, 0.1)	1168.2 1291.8	1.0578 100.0 100.0	20.4403 [20.0000]	102.2%			
NMeFOSAA	(570.0 / 419.0) 1284056 (570.0 / 483.0) 652840	(9.44, 1.00) (0.00, N/A, 0.1)	394.6 383.0	0.5084 100.0 100.0	4.8834 [5.0000]	97.7%			
NEIFOSAA	(584.0 / 419.0) 1143746 (584.0 / 526.0) 711235	(9.66, 1.00) (0.01, N/A, 0.1)	635.1 395.8	0.6218 100.0 100.0	5.6036 [5.0000]	112.1%			
NMeFOSE	(616.0 / 59.0) 907078	(10.62, 1.00) (0.00, N/A, 0.0)	571.5	N/A 0.0 0.0	20.8155 [20.0000]	104.1%			
NEtFOSE	(630.0 / 59.0) 179289	(10.71, 1.00) (0.01, N/A, 0.0)	998.1	N/A 0.0 0.0	19.7834 [20.0000]	98.9%			
HFPO-DA	(285.0 / 169.0) 1337208 (285.0 / 185.0) 3587049	(6.40, 1.00) (0.00, N/A, 0.0)	626.7 597.9	2.6825 100.0 100.0	10.5473 [10.0000]	105.5%			
ADONA	(377.0 / 85.0) 6614600 (377.0 / 251.0) 769779	(7.32, 1.14) (N/A, 0.00, 0.1)	635.2 494.6	0.1164 100.0 100.0	9.9813 [9.4270]	105.9%			
9CI-Pf3ONS	(531.0 / 351.0) 18697936 (533.0 / 353.0) 5805453	(9.68, 1.51) (N/A, 0.00, 0.1)	706.3 544.9	0.3105 100.0 100.0	10.0880 [9.3325]	108.1%			
11CI-PF3OUDS	(631.0 / 451.0) 8582211 (633.0 / 453.0) 2947530	(10.01, 1.57) (N/A, 0.00, 0.1)	777.4 708.8	0.3434 100.0 100.0	9.7010 [9.4321]	102.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 175297 (241.0 / 117.0) 257860	(4.41, 0.90) (N/A, 0.00, 0.1)	439.4 356.2	1.4710 100.0 100.0	20.5059 [20.0000]	102.5%			
5:3FTCA	(341.0 / 236.7) 1148880 (341.0 / 217.0) 1918879	(6.71, 1.11) (N/A, 0.00, -0.1)	423.9 475.4	1.6702 100.0 100.0	18.7630 [20.0000]	93.8%			
7:3FTCA	(441.0 / 317.0) 1765298 (441.0 / 337.0) 1521762	(8.52, 1.41) (N/A, 0.00, 0.1)	451.1 449.0	0.8620 100.0 100.0	19.1564 [20.0000]	95.8%			
PFEESA	(315.0 / 135.0) 3255068 (315.0 / 83.0) 995107	(6.49, 1.07) (N/A, 0.00, -0.1)	562.7 261.3	0.3057 100.0 100.0	8.2106 [8.9246]	92.0%			
PFMPA	(229.0 / 85.0) 920844	(4.08, 0.83) (N/A, 0.00, 0.0)	863.2	N/A 0.0 0.0	10.3404 [10.0000]	103.4%			
PFMBA	(279.0 / 85.0) 2359269	(5.29, 1.08) (N/A, 0.00, 0.0)	636.4	N/A 0.0 0.0	10.4876 [10.0000]	104.9%			
NFDHA	(295.0 / 201.0) 1624142 (295.0 / 85.0) 1493702	(5.92, 0.98) (N/A, 0.00, 0.0)	509.0 549.3	0.9197 100.0 100.0	9.7046 [10.0000]	97.0%			
13C3_PFBa_IIS	(216.0 / 172.0) 258324	(3.57, N/A) (N/A, 0.00, N/A)	448.3	N/A	1.0199 [1.0000]	102.0% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 368593	(6.05, N/A) (N/A, 0.00, N/A)	533.2	N/A	0.9971 [1.0000]	99.7% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 467479	(7.81, N/A) (N/A, 0.00, N/A)	461.0	N/A	1.0642 [1.0000]	106.4% { 100.0% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 433350	(8.54, N/A) (N/A, 0.00, N/A)	497.3	N/A	1.0686 [1.0000]	106.9% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 427392	(9.21, N/A) (N/A, 0.00, N/A)	349.4	N/A	0.9895 [1.0000]	98.9% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 746546	(7.91, N/A) (N/A, 0.00, N/A)	682.4	N/A	1.0106 [1.0000]	101.1% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 817658	(9.35, N/A) (N/A, 0.00, N/A)	295.5	N/A	1.0605 [1.0000]	106.0% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2042281	(3.57, N/A) (N/A, 0.00, N/A)	631.8	N/A	8.0471 [8.0000]	100.6% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1226312	(4.91, N/A) (N/A, 0.00, N/A)	580.0	N/A	4.0651 [4.0000]	101.6% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 816622	(6.05, N/A) (N/A, 0.00, N/A)	562.0	N/A	2.1682 [2.0000]	108.4% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 719482	(6.99, N/A) (N/A, 0.00, N/A)	489.7	N/A	2.0096 [2.0000]	100.5% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 919625	(7.81, N/A) (N/A, 0.00, N/A)	517.3	N/A	1.9308 [2.0000]	96.5% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 412148	(8.54, N/A) (N/A, 0.00, N/A)	556.9	N/A	0.9583 [1.0000]	95.8% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 440992	(9.21, N/A) (N/A, 0.00, N/A)	293.7	N/A	0.9157 [1.0000]	91.6% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 649310	(9.69, N/A) (N/A, 0.00, N/A)	314.1	N/A	1.0905 [1.0000]	109.0% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 617325	(9.89, N/A) (N/A, 0.00, N/A)	295.4	N/A	1.0798 [1.0000]	108.0% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 462005	(10.14, N/A) (N/A, 0.00, N/A)	858.1	N/A	1.0095 [1.0000]	101.0% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1979054	(5.98, N/A) (N/A, 0.00, N/A)	565.3	N/A	1.9940 [2.0000]	99.7% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1204352	(7.91, N/A) (N/A, 0.00, N/A)	517.3	N/A	1.9363 [2.0000]	96.8% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1902011	(9.35, N/A) (N/A, 0.00, N/A)	151.2	N/A	1.9596 [2.0000]	98.0% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 722995	(5.72, N/A) (N/A, 0.00, N/A)	528.6	N/A	3.7321 [4.0000]	93.3% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1150994	(7.48, N/A) (N/A, 0.00, N/A)	656.1	N/A	4.0279 [4.0000]	100.7% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 960784	(8.89, N/A) (N/A, 0.00, N/A)	368.2	N/A	3.5884 [4.0000]	89.7% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2513853	(10.20, N/A) (N/A, 0.00, N/A)	1055.9	N/A	1.9561 [2.0000]	97.8% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 431620	(10.65, N/A) (N/A, 0.00, N/A)	864.3	N/A	1.8705 [2.0000]	93.5% { 100.0% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 437037	(10.73, N/A) (N/A, 0.00, N/A)	691.1	N/A	2.0090 [2.0000]	100.4% { 100.0% }			

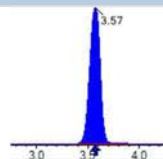
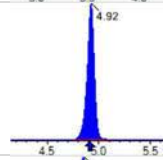
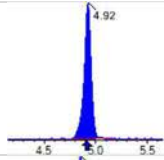
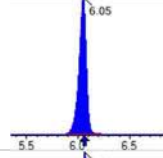
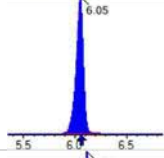
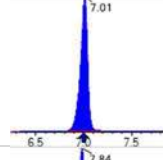
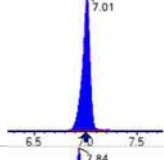
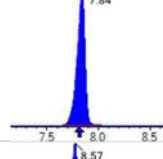
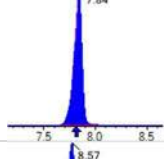
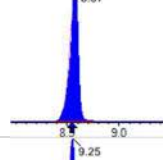
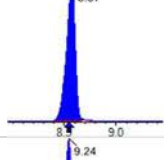
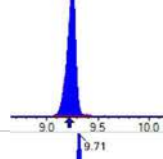
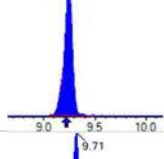
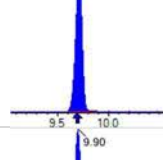
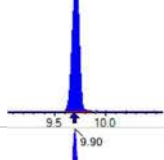
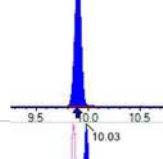
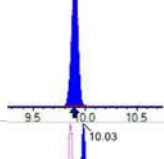
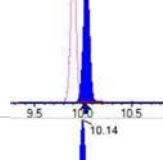
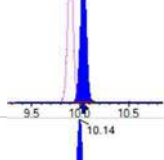
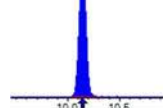
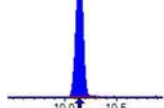


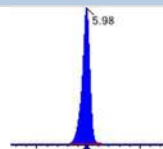
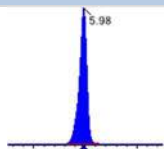
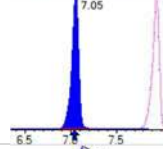
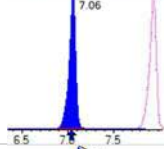
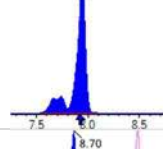
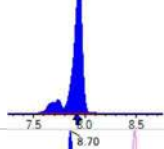
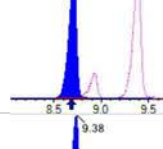
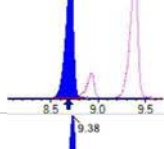
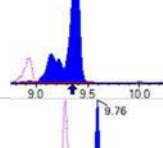
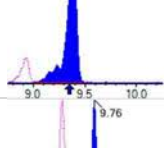
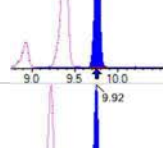
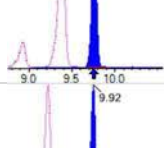
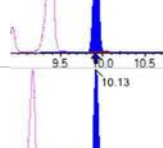
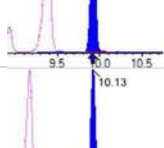
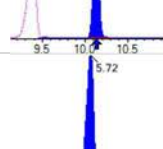
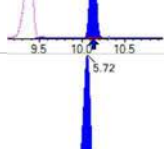
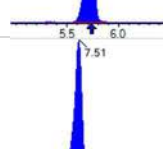
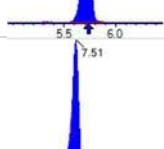
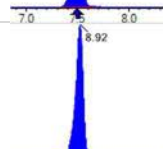
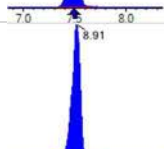

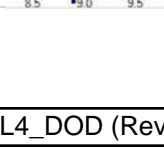
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00101-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (5)
 Acquired: 2023/01/09 - 15:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1170774	(9.43, N/A) (N/A, 0.00, N/A)	339.5	N/A	3.8487 [4.0000]	96.2% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 853746	(9.65, N/A) (N/A, 0.00, N/A)	72.0	N/A	3.5695 [4.0000]	89.2% { 100.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 680047	(10.61, N/A) (N/A, 0.00, N/A)	988.0	N/A	19.2058 [20.0000]	96.0% { 100.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 323257	(10.71, N/A) (N/A, 0.00, N/A)	938.0	N/A	19.8089 [20.0000]	99.0% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1599094	(6.39, N/A) (N/A, 0.00, N/A)	574.2	N/A	8.0906 [8.0000]	101.1% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 9619357	(3.57, 1.00) (0.00, N/A, 0.0)	564.5	N/A 0.0 0.0	42.3971 [40.0000]	106.0%			
PFPeA	(263.0 / 219.0) 6117679 (263.0 / 69.0) 65616	(4.92, 1.00) (0.00, N/A, 0.1)	572.0 342.4	0.0107 98.8 98.8	20.3981 [20.0000]	102.0%			
PFHxA	(313.0 / 269.0) 3942087 (313.0 / 119.0) 364027	(6.05, 1.00) (0.00, N/A, -0.1)	544.6 397.2	0.0923 94.1 94.1	10.5675 [10.0000]	105.7%			
PFHpA	(363.0 / 319.0) 3701015 (363.0 / 169.0) 1083302	(7.01, 1.00) (0.00, N/A, -0.1)	619.1 475.7	0.2927 102.9 102.9	9.9016 [10.0000]	99.0%			
PFOA	(413.0 / 369.0) 4815156 (413.0 / 169.0) 1457327	(7.84, 1.00) (0.00, N/A, 0.0)	541.7 548.2	0.3027 94.8 94.8	10.6592 [10.0000]	106.6%			
PFNA	(463.0 / 419.0) 4054226 (463.0 / 169.0) 788574	(8.57, 1.00) (0.01, N/A, 0.3)	512.4 432.9	0.1945 86.7 86.7	10.2703 [10.0000]	102.7%			
PFDA	(513.0 / 469.0) 5058536 (513.0 / 169.0) 526911	(9.25, 1.00) (0.00, N/A, 0.2)	500.0 378.7	0.1042 94.9 94.9	10.2869 [10.0000]	102.9%			
PFUnA	(563.0 / 519.0) 5322193 (563.0 / 169.0) 551755	(9.71, 1.00) (0.00, N/A, 0.0)	480.3 530.7	0.1037 99.1 99.1	10.3230 [10.0000]	103.2%			
PFDoA	(613.0 / 569.0) 5849218 (613.0 / 169.0) 723391	(9.90, 1.00) (0.00, N/A, 0.1)	668.3 442.0	0.1237 96.1 96.1	11.3486 [10.0000]	113.5%			
PFTrDA	(663.0 / 619.0) 5489480 (663.0 / 169.0) 1101391	(10.03, 1.01) (N/A, 0.01, 0.0)	802.1 764.6	0.2006 99.5 99.5	10.8080 [10.0000]	108.1%			
PFTeDA	(713.0 / 669.0) 4476434 (713.0 / 169.0) 840408	(10.14, 1.00) (0.00, N/A, 0.0)	828.3 558.2	0.1877 96.0 96.0	10.2017 [10.0000]	102.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 5885875 (299.0 / 99.0) 3612746	(5.98, 1.00) (0.00, N/A, -0.1)	569.6 559.4	0.6138 94.1 94.1	8.9738 [8.8473]	101.4%			
PFPeS	(349.0 / 80.0) 10461749 (349.0 / 99.0) 3816732	(7.05, 0.89) (N/A, 0.01, -0.2)	576.1 593.6	0.3648 98.7 98.7	9.9837 [9.3838]	106.4%			
PFHxS	(399.0 / 80.0) 9641367 (399.0 / 99.0) 3015124	(7.94, 1.00) (0.00, N/A, 0.2)	818.6 920.9	0.3127 94.8 94.8	9.4187 [9.1098]	103.4%			
PFHpS	(449.0 / 80.0) 9362808 (449.0 / 99.0) 2487718	(8.70, 0.93) (N/A, 0.03, 0.1)	546.7 504.2	0.2657 96.7 96.7	10.1480 [9.5141]	106.7%			
PFOS	(499.0 / 80.0) 10513597 (499.0 / 99.0) 2198697	(9.38, 1.00) (0.00, N/A, 0.1)	559.8 1473.6	0.2091 92.0 92.0	9.5872 [9.2749]	103.4%			
PFNS	(549.0 / 80.0) 11444147 (549.0 / 99.0) 2770846	(9.76, 1.04) (N/A, 0.01, 0.1)	594.2 633.5	0.2421 104.0 104.0	10.2263 [9.5989]	106.5%			
PFDS	(599.0 / 80.0) 13163826 (599.0 / 99.0) 2954665	(9.92, 1.06) (N/A, 0.01, 0.0)	747.0 682.1	0.2245 98.3 98.3	10.6426 [9.6311]	110.5%			
PFDoS	(699.0 / 80.0) 5231642 (699.0 / 99.0) 1068718	(10.13, 1.08) (N/A, 0.00, 0.0)	1028.6 555.0	0.2043 98.5 98.5	9.9575 [9.6956]	102.7%			
4:2FTS	(327.0 / 307.0) 22401909 (327.0 / 81.0) 15268334	(5.72, 1.00) (0.00, N/A, 0.1)	621.6 641.2	0.6816 108.3 108.3	35.6709 [37.3811]	95.4%			
6:2FTS	(427.0 / 407.0) 16871179 (427.0 / 81.0) 13414429	(7.51, 1.00) (0.00, N/A, -0.1)	589.3 660.7	0.7951 103.8 103.8	39.0669 [37.9617]	102.9%			
8:2FTS	(527.0 / 507.0) 15004026 (527.0 / 81.0) 10762647	(8.92, 1.00) (0.00, N/A, 0.1)	444.4 460.0	0.7173 94.6 94.6	43.9053 [38.3315]	114.5%			

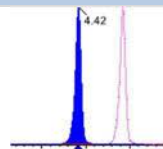
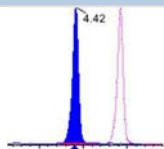
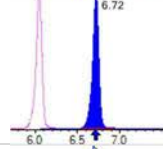
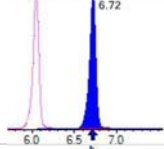
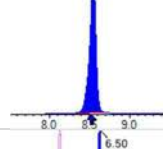
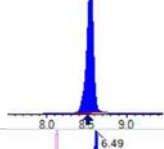
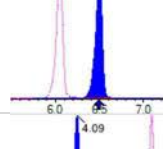
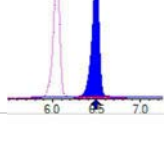
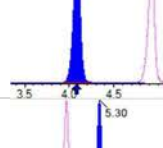
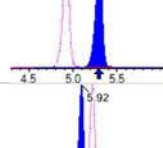
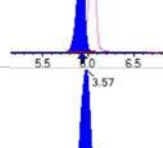
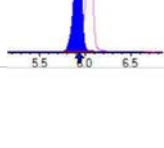
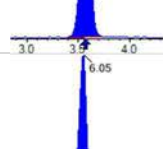
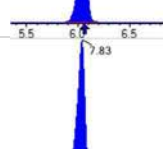
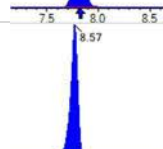



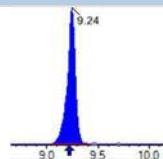
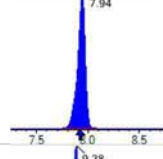
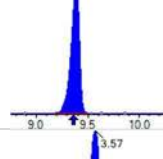
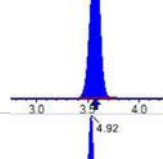
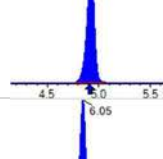
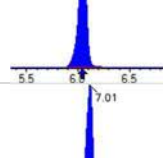
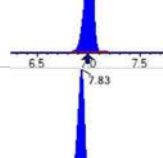
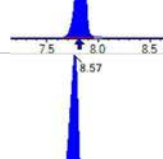
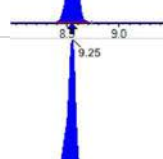
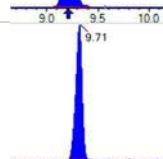

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

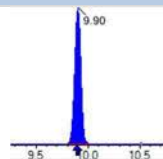
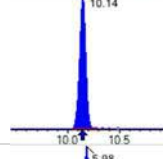
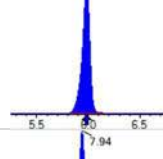
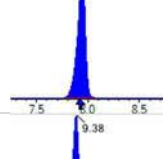
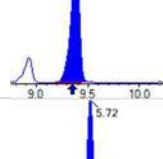
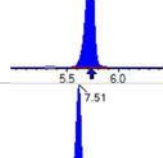
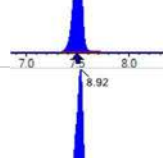
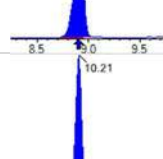
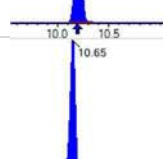
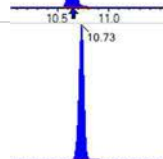

Sample I.D.: SC00101-CAL6
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

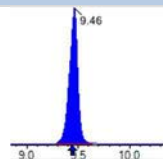
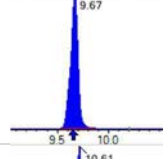
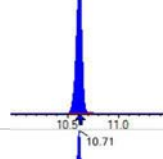
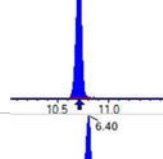
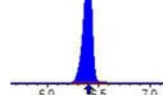
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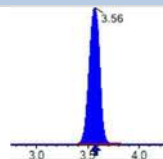
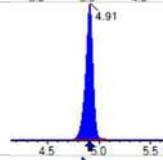
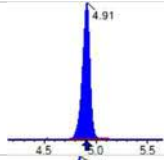
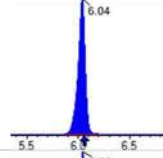
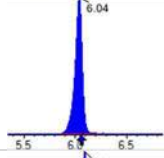
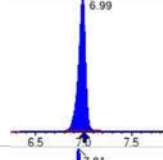
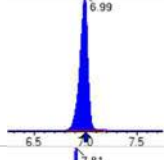
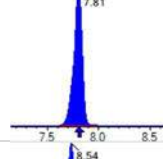
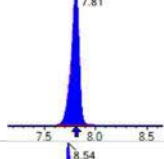
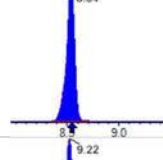
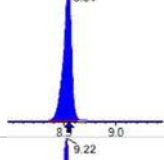
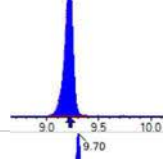
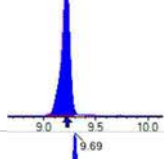
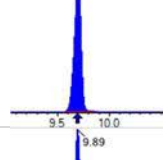
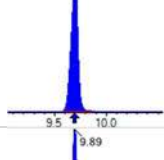
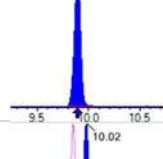
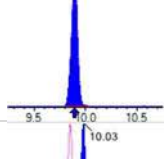
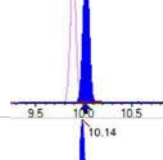
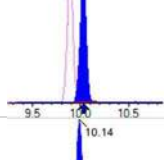
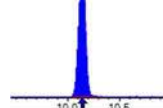
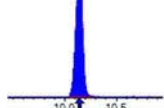
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 13427153 (498.0 / 478.0) 292685	(10.20, 1.00) (0.00, N/A, 0.0)	1048.3 471.7	0.0218 115.6 115.6	10.3954 [10.0000]	104.0%			
NMeFOSA	(512.0 / 219.0) 8724261 (512.0 / 169.0) 6266744	(10.65, 1.00) (0.00, N/A, 0.0)	1018.9 850.0	0.7183 100.7 100.7	42.9966 [40.0000]	107.5%			
NEIFOSA	(526.0 / 219.0) 8549286 (526.0 / 169.0) 8961702	(10.74, 1.00) (0.00, N/A, 0.0)	993.6 1252.1	1.0482 99.1 99.1	41.1405 [40.0000]	102.9%			
NMeFOSAA	(570.0 / 419.0) 2422144 (570.0 / 483.0) 1321636	(9.47, 1.00) (0.01, N/A, -0.2)	559.7 332.2	0.5456 107.3 107.3	9.0925 [10.0000]	90.9%			
NEIFOSAA	(584.0 / 419.0) 2292168 (584.0 / 526.0) 1314257	(9.68, 1.00) (0.01, N/A, 0.3)	719.9 511.6	0.5734 92.2 92.2	11.4104 [10.0000]	114.1%			
NMeFOSE	(616.0 / 59.0) 1731231	(10.62, 1.00) (0.01, N/A, 0.0)	945.7	N/A 0.0 0.0	38.6491 [40.0000]	96.6%			
NEtFOSE	(630.0 / 59.0) 366105	(10.71, 1.00) (0.01, N/A, 0.0)	1396.4	N/A 0.0 0.0	40.3672 [40.0000]	100.9%			
HFPO-DA	(285.0 / 169.0) 2731327 (285.0 / 185.0) 7052570	(6.40, 1.00) (0.00, N/A, 0.1)	524.4 515.3	2.5821 96.3 96.3	20.2383 [20.0000]	101.2%			
ADONA	(377.0 / 85.0) 13293499 (377.0 / 251.0) 1494624	(7.34, 1.15) (N/A, 0.02, 0.0)	800.7 676.4	0.1124 96.6 96.6	18.8443 [18.8540]	99.9%			
9CI-Pf3ONS	(531.0 / 351.0) 32869230 (533.0 / 353.0) 11688641	(9.70, 1.52) (N/A, 0.02, 0.1)	623.5 773.0	0.3556 114.5 114.5	17.2315 [18.6651]	92.3%			
11CI-PF3OUDS	(631.0 / 451.0) 17556144 (633.0 / 453.0) 5235930	(10.01, 1.57) (N/A, 0.01, -0.1)	1229.1 940.6	0.2982 86.8 86.8	18.6426 [18.8642]	98.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 361478 (241.0 / 117.0) 525768	(4.42, 0.90) (N/A, 0.01, 0.0)	428.5 417.7	1.4545 98.9 98.9	41.9918 [40.0000]	105.0%			
5:3FTCA	(341.0 / 236.7) 2298650 (341.0 / 217.0) 3767411	(6.72, 1.11) (N/A, 0.01, 0.0)	495.2 496.2	1.6390 98.1 98.1	40.4934 [40.0000]	101.2%			
7:3FTCA	(441.0 / 317.0) 3464141 (441.0 / 337.0) 2993788	(8.55, 1.41) (N/A, 0.03, 0.1)	451.5 431.3	0.8642 100.3 100.3	40.5484 [40.0000]	101.4%			
PFEESA	(315.0 / 135.0) 7165453 (315.0 / 83.0) 1990128	(6.50, 1.07) (N/A, 0.01, 0.2)	735.8 372.4	0.2777 90.9 90.9	19.4958 [17.8492]	109.2%			
PFMPA	(229.0 / 85.0) 1874514	(4.09, 0.83) (N/A, 0.01, 0.0)	704.4	N/A 0.0 0.0	20.9034 [20.0000]	104.5%			
PFMBA	(279.0 / 85.0) 4747672	(5.30, 1.08) (N/A, 0.01, 0.0)	628.2	N/A 0.0 0.0	20.9583 [20.0000]	104.8%			
NFDHA	(295.0 / 201.0) 3424789 (295.0 / 85.0) 3055552	(5.92, 0.98) (N/A, 0.00, -0.1)	588.2 594.9	0.8922 97.0 97.0	22.0735 [20.0000]	110.4%			
13C3_PFBA_IIS	(216.0 / 172.0) 259082	(3.57, N/A) (N/A, 0.00, N/A)	422.7	N/A	1.0229 [1.0000]	102.3% { 100.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 378757	(6.05, N/A) (N/A, 0.00, N/A)	479.6	N/A	1.0246 [1.0000]	102.5% { 102.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 447496	(7.83, N/A) (N/A, 0.02, N/A)	506.1	N/A	1.0187 [1.0000]	101.9% { 95.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 400987	(8.57, N/A) (N/A, 0.03, N/A)	451.7	N/A	0.9888 [1.0000]	98.9% { 92.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 413244	(9.24, N/A) (N/A, 0.03, N/A)	341.7	N/A	0.9567 [1.0000]	95.7% { 96.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 746486	(7.94, N/A) (N/A, 0.03, N/A)	582.3	N/A	1.0105 [1.0000]	101.1% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 780536	(9.38, N/A) (N/A, 0.03, N/A)	449.1	N/A	1.0123 [1.0000]	101.2% { 95.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1984274	(3.57, N/A) (N/A, 0.00, N/A)	584.0	N/A	7.7957 [8.0000]	97.4% { 97.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1234874	(4.92, N/A) (N/A, 0.01, N/A)	570.9	N/A	3.9836 [4.0000]	99.6% { 100.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 757074	(6.05, N/A) (N/A, 0.00, N/A)	516.2	N/A	1.9561 [2.0000]	97.8% { 92.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 740320	(7.01, N/A) (N/A, 0.02, N/A)	515.3	N/A	2.0123 [2.0000]	100.6% { 102.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 867114	(7.83, N/A) (N/A, 0.02, N/A)	461.8	N/A	1.9018 [2.0000]	95.1% { 94.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 411161	(8.57, N/A) (N/A, 0.03, N/A)	399.1	N/A	1.0331 [1.0000]	103.3% { 99.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 479646	(9.25, N/A) (N/A, 0.04, N/A)	362.4	N/A	1.0301 [1.0000]	103.0% { 108.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 567262	(9.71, N/A) (N/A, 0.02, N/A)	463.6	N/A	0.9853 [1.0000]	98.5% { 87.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 550558	(9.90, N/A) (N/A, 0.01, N/A)	535.6	N/A	0.9960 [1.0000]	99.6% { 89.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 460629	(10.14, N/A) (N/A, 0.00, N/A)	895.6	N/A	1.0410 [1.0000]	104.1% { 99.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2010813	(5.98, N/A) (N/A, 0.00, N/A)	524.1	N/A	2.0262 [2.0000]	101.3% { 101.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1224886	(7.94, N/A) (N/A, 0.03, N/A)	810.5	N/A	1.9695 [2.0000]	98.5% { 101.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1795679	(9.38, N/A) (N/A, 0.03, N/A)	111.6	N/A	1.9380 [2.0000]	96.9% { 94.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 781591	(5.72, N/A) (N/A, 0.00, N/A)	456.8	N/A	4.0349 [4.0000]	100.9% { 108.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1130637	(7.51, N/A) (N/A, 0.02, N/A)	609.4	N/A	3.9570 [4.0000]	98.9% { 98.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 937218	(8.92, N/A) (N/A, 0.03, N/A)	385.2	N/A	3.5007 [4.0000]	87.5% { 97.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2424676	(10.21, N/A) (N/A, 0.01, N/A)	1043.1	N/A	1.9764 [2.0000]	98.8% { 96.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 427756	(10.65, N/A) (N/A, 0.00, N/A)	945.5	N/A	1.9419 [2.0000]	97.1% { 99.1% }			
D5_NEtFOsa_EIS	(531.0 / 169.0) 417232	(10.73, N/A) (N/A, 0.00, N/A)	836.5	N/A	2.0092 [2.0000]	100.5% { 95.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1186133	(9.46, N/A) (N/A, 0.03, N/A)	340.3	N/A	4.0846 [4.0000]	102.1% { 101.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 840254	(9.67, N/A) (N/A, 0.02, N/A)	76.9	N/A	3.6802 [4.0000]	92.0% { 98.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 699031	(10.61, N/A) (N/A, 0.00, N/A)	1057.4	N/A	20.6808 [20.0000]	103.4% { 102.8% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 323500	(10.71, N/A) (N/A, 0.00, N/A)	953.4	N/A	20.7666 [20.0000]	103.8% { 100.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1702218	(6.40, N/A) (N/A, 0.00, N/A)	557.8	N/A	8.3812 [8.0000]	104.8% { 106.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 18107338	(3.56, 1.00) (0.00, N/A, 0.0)	628.5	N/A 0.0 0.0	84.9790 [80.0000]	106.2%			
PFPeA	(263.0 / 219.0) 11386165 (263.0 / 69.0) 127731	(4.91, 1.00) (0.00, N/A, 0.0)	576.8 394.2	0.0112 103.3 103.3	41.3951 [40.0000]	103.5%			
PFHxA	(313.0 / 269.0) 7549774 (313.0 / 119.0) 678703	(6.04, 1.00) (0.00, N/A, 0.0)	560.4 545.7	0.0899 91.6 91.6	20.9864 [20.0000]	104.9%			
PFHpA	(363.0 / 319.0) 6760319 (363.0 / 169.0) 1997423	(6.99, 1.00) (0.00, N/A, 0.1)	547.9 515.6	0.2955 103.8 103.8	19.4137 [20.0000]	97.1%			
PFOA	(413.0 / 369.0) 8718859 (413.0 / 169.0) 3068155	(7.81, 1.00) (0.00, N/A, -0.2)	550.2 611.4	0.3519 110.2 110.2	20.0847 [20.0000]	100.4%			
PFNA	(463.0 / 419.0) 8005375 (463.0 / 169.0) 1613497	(8.54, 1.00) (0.00, N/A, 0.0)	549.9 491.1	0.2016 89.9 89.9	22.0113 [20.0000]	110.1%			
PFDA	(513.0 / 469.0) 10288283 (513.0 / 169.0) 966626	(9.22, 1.00) (0.00, N/A, -0.1)	452.5 425.9	0.0940 85.6 85.6	20.3231 [20.0000]	101.6%			
PFUnA	(563.0 / 519.0) 10839333 (563.0 / 169.0) 991691	(9.70, 1.00) (0.00, N/A, 0.2)	563.6 533.3	0.0915 87.4 87.4	22.0944 [20.0000]	110.5%			
PFDoA	(613.0 / 569.0) 11053146 (613.0 / 169.0) 1380962	(9.89, 1.00) (0.00, N/A, -0.1)	608.3 500.7	0.1249 97.1 97.1	22.3048 [20.0000]	111.5%			
PFTrDA	(663.0 / 619.0) 10817393 (663.0 / 169.0) 2165867	(10.02, 1.01) (N/A, 0.00, -0.1)	808.4 706.7	0.2002 99.3 99.3	22.1516 [20.0000]	110.8%			
PFTeDA	(713.0 / 669.0) 8265771 (713.0 / 169.0) 1699269	(10.14, 1.00) (0.00, N/A, -0.1)	827.5 803.3	0.2056 105.2 105.2	18.8641 [20.0000]	94.3%			

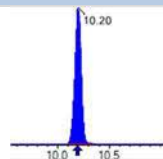
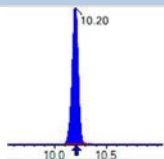
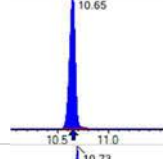
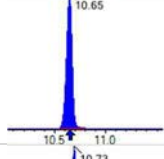
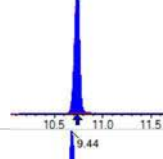
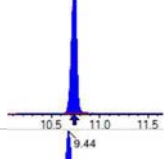
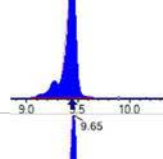
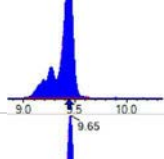
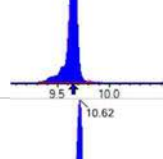
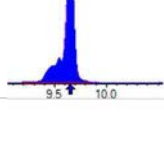
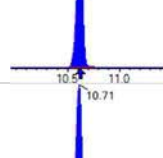
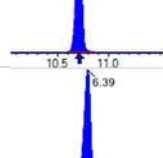
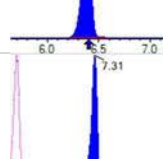
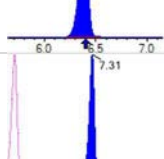
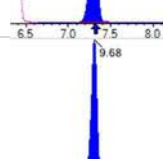
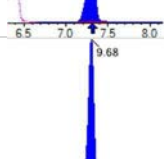
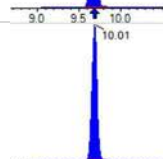
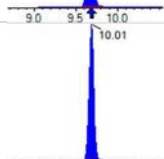
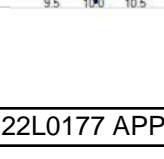
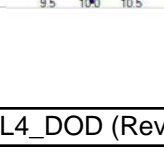


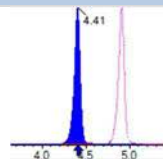
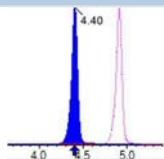
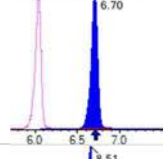
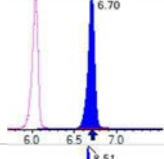
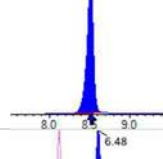
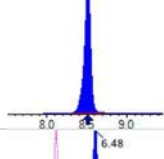
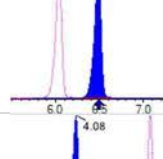
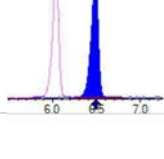
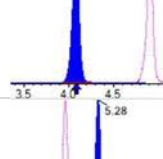
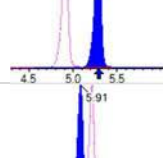
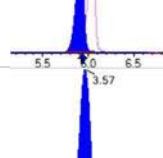
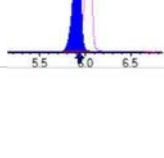
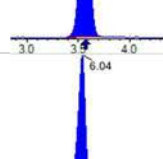
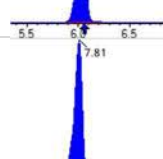
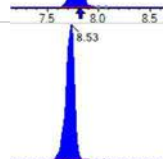

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

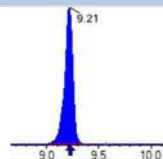
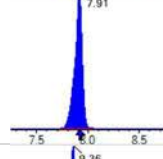
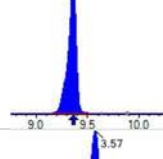
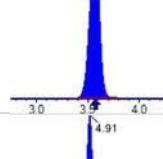
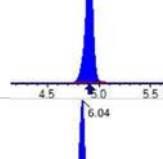
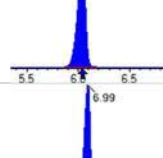
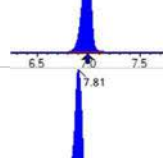
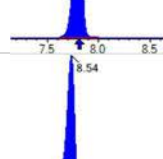
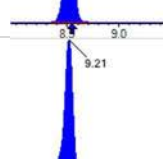
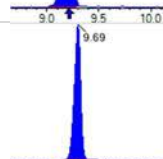
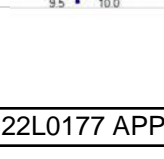
Sample I.D.: SC00101-CAL7
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

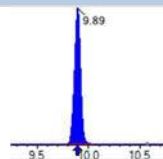
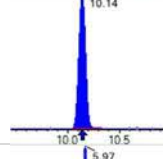
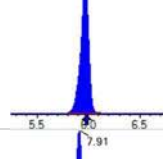
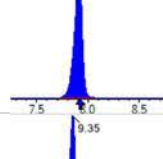
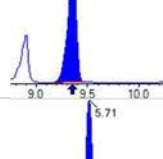
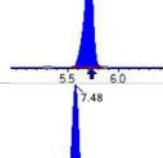
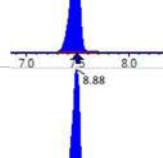
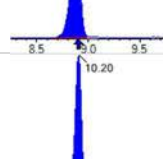
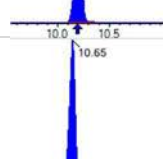
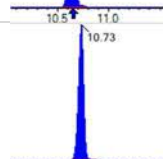

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 Path: S2023-01-09B (7)
 Acquired: 2023/01/09 - 16:21

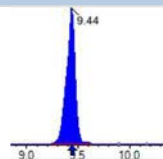
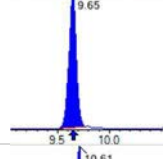
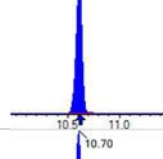
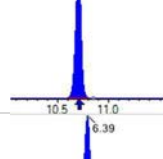
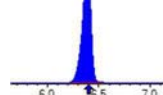
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 11171234 (299.0 / 99.0) 7178575	(5.97, 1.00) (0.00, N/A, 0.0)	643.0 604.1	0.6426 98.5 98.5	19.3081 [17.6947]	109.1%			
PFPeS	(349.0 / 80.0) 20295053 (349.0 / 99.0) 7410196	(7.03, 0.89) (N/A, -0.01, 0.1)	679.1 634.7	0.3651 98.8 98.8	20.2268 [18.7676]	107.8%			
PFHxS	(399.0 / 80.0) 18065957 (399.0 / 99.0) 6312599	(7.91, 1.00) (0.00, N/A, 0.0)	764.7 999.8	0.3494 105.9 105.9	18.4316 [18.2197]	101.2%			
PFHpS	(449.0 / 80.0) 17865904 (449.0 / 99.0) 5103472	(8.67, 0.93) (N/A, -0.01, 0.0)	577.5 594.6	0.2857 103.9 103.9	19.9631 [19.0281]	104.9%			
PFOS	(499.0 / 80.0) 21345437 (499.0 / 99.0) 4720069	(9.36, 1.00) (0.00, N/A, 0.1)	718.8 1423.2	0.2211 97.3 97.3	20.1229 [18.5499]	108.5%			
PFNS	(549.0 / 80.0) 20084043 (549.0 / 99.0) 5492596	(9.75, 1.04) (N/A, 0.00, 0.2)	532.0 843.0	0.2735 117.4 117.4	18.5019 [19.1977]	96.4%			
PFDS	(599.0 / 80.0) 24185549 (599.0 / 99.0) 5574973	(9.91, 1.06) (N/A, 0.00, 0.0)	733.5 752.4	0.2305 101.0 101.0	20.1582 [19.2621]	104.7%			
PFDoS	(699.0 / 80.0) 10462502 (699.0 / 99.0) 2390659	(10.12, 1.08) (N/A, 0.00, -0.2)	1131.6 807.6	0.2285 110.2 110.2	20.5295 [19.3913]	105.9%			
4:2FTS	(327.0 / 307.0) 40787902 (327.0 / 81.0) 25823570	(5.71, 1.00) (0.00, N/A, 0.1)	627.3 607.1	0.6331 100.6 100.6	73.9339 [74.7622]	98.9%			
6:2FTS	(427.0 / 407.0) 29757840 (427.0 / 81.0) 22830202	(7.47, 1.00) (0.00, N/A, -0.1)	623.6 714.1	0.7672 100.2 100.2	80.6345 [75.9234]	106.2%			
8:2FTS	(527.0 / 507.0) 26083513 (527.0 / 81.0) 19837596	(8.89, 1.00) (0.00, N/A, 0.1)	493.1 512.2	0.7605 100.2 100.2	68.5239 [76.6631]	89.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 25054509 (498.0 / 478.0) 587289	(10.20, 1.00) (0.00, N/A, -0.1)	928.4 820.3	0.0234 124.3 124.3	20.7059 [20.0000]	103.5%			
NMeFOFA	(512.0 / 219.0) 16359713 (512.0 / 169.0) 11858900	(10.65, 1.00) (0.00, N/A, 0.1)	1074.5 1155.1	0.7249 101.6 101.6	79.3260 [80.0000]	99.2%			
NEFOFA	(526.0 / 219.0) 16700147 (526.0 / 169.0) 17684918	(10.73, 1.00) (0.00, N/A, 0.0)	1443.4 1446.7	1.0590 100.1 100.1	86.0972 [80.0000]	107.6%			
NMeFOSAA	(570.0 / 419.0) 4513388 (570.0 / 483.0) 2458658	(9.44, 1.00) (0.01, N/A, 0.2)	557.0 382.6	0.5447 107.1 107.1	18.9075 [20.0000]	94.5%			
NEIFOSAA	(584.0 / 419.0) 4136327 (584.0 / 526.0) 2382412	(9.65, 1.00) (0.01, N/A, 0.1)	721.9 454.8	0.5760 92.6 92.6	22.1176 [20.0000]	110.6%			
NMeFOSE	(616.0 / 59.0) 3276307	(10.62, 1.00) (0.00, N/A, 0.0)	1175.1	N/A 0.0 0.0	78.3874 [80.0000]	98.0%			
NEtFOSE	(630.0 / 59.0) 639072	(10.71, 1.00) (0.01, N/A, 0.0)	860.5	N/A 0.0 0.0	77.4156 [80.0000]	96.8%			
HFPO-DA	(285.0 / 169.0) 4888890 (285.0 / 185.0) 13847698	(6.39, 1.00) (0.00, N/A, 0.1)	635.0 629.3	2.8325 105.6 105.6	40.8008 [40.0000]	102.0%			
ADONA	(377.0 / 85.0) 24579922 (377.0 / 251.0) 3047977	(7.31, 1.14) (N/A, -0.01, 0.0)	716.7 614.9	0.1240 106.6 106.6	39.2445 [37.7080]	104.1%			
9CI-Pf3ONS	(531.0 / 351.0) 58163793 (533.0 / 353.0) 21495855	(9.68, 1.52) (N/A, 0.00, 0.0)	621.6 659.8	0.3696 119.0 119.0	38.2911 [37.3302]	102.6%			
11CI-PF3OUDS	(631.0 / 451.0) 31057129 (633.0 / 453.0) 10998895	(10.01, 1.57) (N/A, 0.00, 0.0)	910.5 1139.8	0.3542 103.1 103.1	37.1447 [37.7283]	98.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 672289 (241.0 / 117.0) 1040480	(4.41, 0.90) (N/A, 0.00, 0.0)	508.8 481.4	1.5477 105.2 105.2	85.1541 [80.0000]	106.4%			
5:3FTCA	(341.0 / 236.7) 4343479 (341.0 / 217.0) 7300751	(6.70, 1.11) (N/A, -0.01, 0.0)	456.1 471.6	1.6809 100.6 100.6	79.3425 [80.0000]	99.2%			
7:3FTCA	(441.0 / 317.0) 6704537 (441.0 / 337.0) 5904713	(8.51, 1.41) (N/A, -0.01, 0.0)	443.3 410.7	0.8807 102.2 102.2	81.3773 [80.0000]	101.7%			
PFEESA	(315.0 / 135.0) 13394758 (315.0 / 83.0) 3777533	(6.48, 1.07) (N/A, -0.01, 0.0)	717.7 483.2	0.2820 92.2 92.2	37.7910 [35.6984]	105.9%			
PFMPA	(229.0 / 85.0) 3439376	(4.08, 0.83) (N/A, 0.00, 0.0)	764.0	N/A 0.0 0.0	41.8191 [40.0000]	104.5%			
PFMBA	(279.0 / 85.0) 8908778	(5.28, 1.08) (N/A, -0.01, 0.0)	673.3	N/A 0.0 0.0	42.8807 [40.0000]	107.2%			
NFDHA	(295.0 / 201.0) 6108921 (295.0 / 85.0) 5936524	(5.91, 0.98) (N/A, -0.01, 0.0)	628.8 705.8	0.9718 105.7 105.7	40.8281 [40.0000]	102.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 245308	(3.57, N/A) (N/A, 0.00, N/A)	470.7	N/A	0.9685 [1.0000]	96.8% { 95.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 361902	(6.04, N/A) (N/A, -0.01, N/A)	434.6	N/A	0.9790 [1.0000]	97.9% { 98.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 423945	(7.81, N/A) (N/A, 0.00, N/A)	444.6	N/A	0.9651 [1.0000]	96.5% { 90.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 391531	(8.53, N/A) (N/A, -0.01, N/A)	485.9	N/A	0.9654 [1.0000]	96.5% { 90.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 427778	(9.21, N/A) (N/A, 0.00, N/A)	440.1	N/A	0.9904 [1.0000]	99.0% { 100.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 724995	(7.91, N/A) (N/A, 0.00, N/A)	623.4	N/A	0.9814 [1.0000]	98.1% { 97.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 738144	(9.36, N/A) (N/A, 0.00, N/A)	407.6	N/A	0.9573 [1.0000]	95.7% { 90.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1863525	(3.57, N/A) (N/A, 0.00, N/A)	556.5	N/A	7.7324 [8.0000]	96.7% { 91.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1132545	(4.91, N/A) (N/A, 0.00, N/A)	544.2	N/A	3.8236 [4.0000]	95.6% { 92.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 730099	(6.04, N/A) (N/A, -0.01, N/A)	552.0	N/A	1.9743 [2.0000]	98.7% { 89.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 689704	(6.99, N/A) (N/A, 0.00, N/A)	456.2	N/A	1.9621 [2.0000]	98.1% { 95.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 833264	(7.81, N/A) (N/A, 0.00, N/A)	444.8	N/A	1.9291 [2.0000]	96.5% { 90.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 378812	(8.54, N/A) (N/A, 0.00, N/A)	533.4	N/A	0.9748 [1.0000]	97.5% { 91.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 493780	(9.21, N/A) (N/A, 0.00, N/A)	362.2	N/A	1.0244 [1.0000]	102.4% { 112.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 539785	(9.69, N/A) (N/A, 0.00, N/A)	270.8	N/A	0.9057 [1.0000]	90.6% { 83.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 529343	(9.89, N/A) (N/A, 0.00, N/A)	453.7	N/A	0.9250 [1.0000]	92.5% { 85.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 459980	(10.14, N/A) (N/A, 0.00, N/A)	538.5	N/A	1.0042 [1.0000]	100.4% { 99.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1773781	(5.97, N/A) (N/A, -0.01, N/A)	499.8	N/A	1.8403 [2.0000]	92.0% { 89.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1172859	(7.91, N/A) (N/A, 0.00, N/A)	549.5	N/A	1.9418 [2.0000]	97.1% { 97.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1741806	(9.35, N/A) (N/A, 0.00, N/A)	87.1	N/A	1.9878 [2.0000]	99.4% { 91.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 686589	(5.71, N/A) (N/A, -0.01, N/A)	477.7	N/A	3.6495 [4.0000]	91.2% { 95.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 966199	(7.48, N/A) (N/A, -0.01, N/A)	515.7	N/A	3.4818 [4.0000]	87.0% { 83.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1043937	(8.88, N/A) (N/A, -0.01, N/A)	331.4	N/A	4.0149 [4.0000]	100.4% { 108.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2271453	(10.20, N/A) (N/A, 0.00, N/A)	718.4	N/A	1.9578 [2.0000]	97.9% { 90.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 434772	(10.65, N/A) (N/A, 0.00, N/A)	981.1	N/A	2.0871 [2.0000]	104.4% { 100.7% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 389447	(10.73, N/A) (N/A, 0.00, N/A)	671.5	N/A	1.9831 [2.0000]	99.2% { 89.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1062879	(9.44, N/A) (N/A, 0.00, N/A)	301.1	N/A	3.8704 [4.0000]	96.8% { 90.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 782246	(9.65, N/A) (N/A, 0.00, N/A)	92.1	N/A	3.6229 [4.0000]	90.6% { 91.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 652259	(10.61, N/A) (N/A, 0.00, N/A)	776.1	N/A	20.4053 [20.0000]	102.0% { 95.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 294454	(10.70, N/A) (N/A, 0.00, N/A)	790.5	N/A	19.9876 [20.0000]	99.9% { 91.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1511323	(6.39, N/A) (N/A, -0.01, N/A)	585.6	N/A	7.7879 [8.0000]	97.3% { 94.5% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00101-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (8)
 Acquired: 2023/01/09 - 16:34

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 38432778	(3.57, 1.00) (0.00, N/A, 0.0)	473.9	N/A 0.0 0.0	204.5174 [200.0000]	102.3%			
PFPeA	(263.0 / 219.0) 26489104 (263.0 / 69.0) 272171	(4.92, 1.00) (0.00, N/A, 0.0)	560.8 443.1	0.0103 94.6 94.6	99.6541 [100.0000]	99.7%			
PFHxA	(313.0 / 269.0) 17087554 (313.0 / 119.0) 1580166	(6.04, 1.00) (0.00, N/A, 0.1)	483.8 501.8	0.0925 94.2 94.2	54.4490 [50.0000]	108.9%			
PFHpA	(363.0 / 319.0) 17034498 (363.0 / 169.0) 4819720	(7.00, 1.00) (0.00, N/A, -0.2)	481.2 499.3	0.2829 99.4 99.4	52.8168 [50.0000]	105.6%			
PFOA	(413.0 / 369.0) 20522353 (413.0 / 169.0) 7023861	(7.83, 1.00) (0.00, N/A, 0.0)	554.9 560.8	0.3423 107.2 107.2	47.6892 [50.0000]	95.4%			
PFNA	(463.0 / 419.0) 17678743 (463.0 / 169.0) 3859569	(8.57, 1.00) (0.00, N/A, 0.2)	481.8 462.5	0.2183 97.3 97.3	51.3865 [50.0000]	102.8%			
PFDA	(513.0 / 469.0) 21757449 (513.0 / 169.0) 2098616	(9.24, 1.00) (0.00, N/A, -0.3)	509.8 464.4	0.0965 87.8 87.8	47.3525 [50.0000]	94.7%			
PFUnA	(563.0 / 519.0) 18595582 (563.0 / 169.0) 2079058	(9.70, 1.00) (0.00, N/A, 0.0)	440.2 622.2	0.1118 106.9 106.9	47.1176 [50.0000]	94.2%			
PFDoA	(613.0 / 569.0) 24735678 (613.0 / 169.0) 3231582	(9.89, 1.00) (0.00, N/A, -0.1)	846.2 723.9	0.1306 101.5 101.5	46.9075 [50.0000]	93.8%			
PFTrDA	(663.0 / 619.0) 21147017 (663.0 / 169.0) 4876149	(10.03, 1.01) (N/A, 0.00, 0.0)	742.1 446.0	0.2306 114.3 114.3	40.6946 [50.0000]	81.4%			
PFTeDA	(713.0 / 669.0) 18505308 (713.0 / 169.0) 3876642	(10.14, 1.00) (0.00, N/A, 0.0)	791.7 846.7	0.2095 107.2 107.2	47.1223 [50.0000]	94.2%			

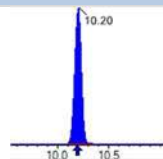
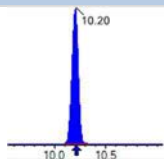
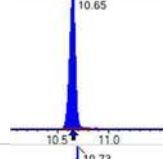
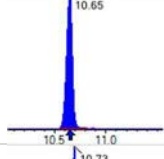
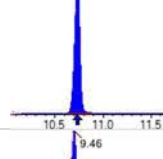
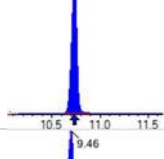
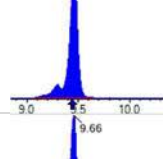
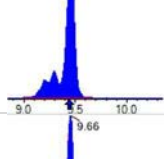
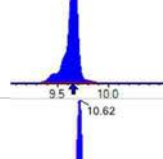
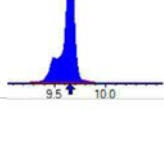
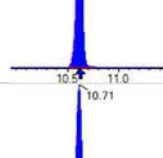
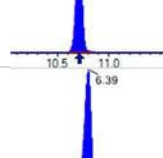
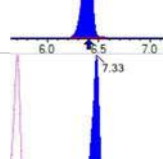
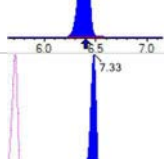
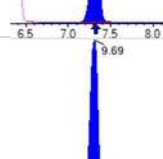
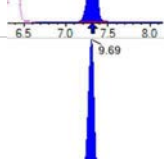
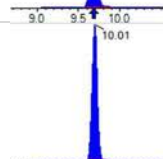
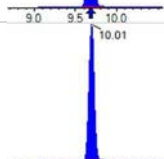
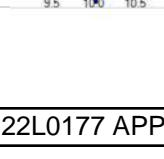
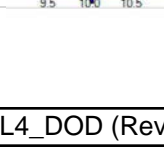


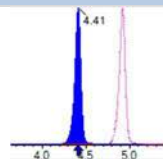
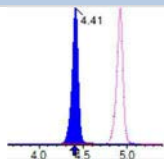
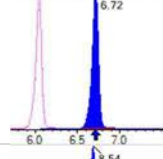
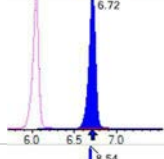
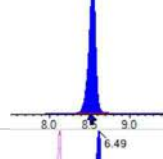
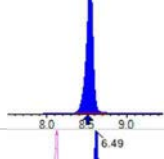
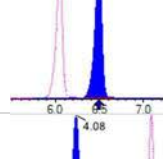
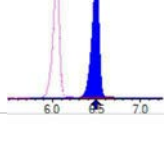
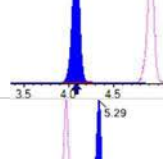
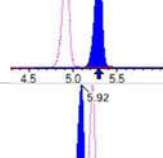
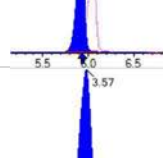
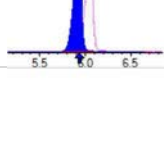
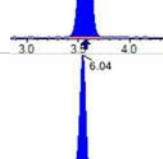
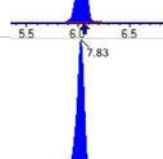
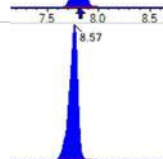

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

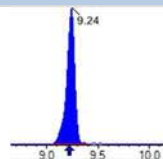
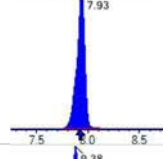
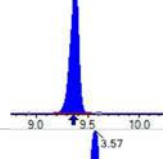
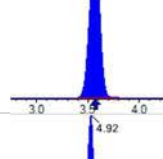
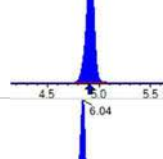
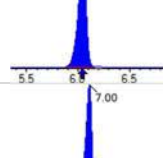
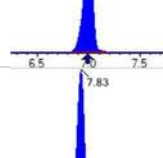
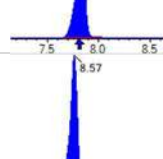
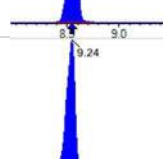
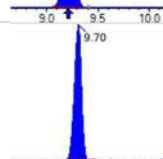

Sample I.D.: SC00101-CAL8
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

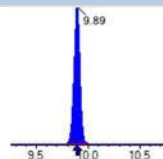
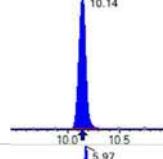
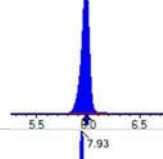
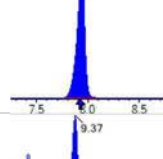
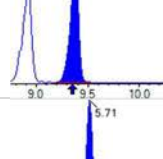
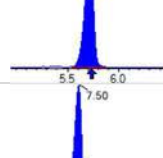
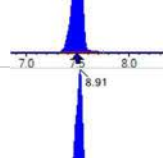
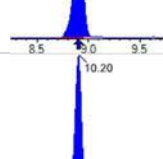
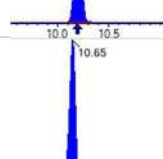
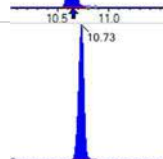

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Acquired: 2023/01/09 - 16:34

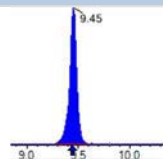
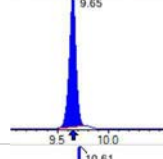
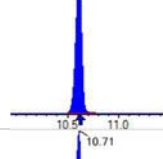
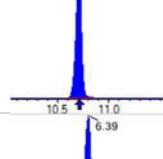
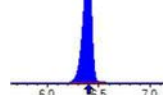
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 25619798 (299.0 / 99.0) 16873654	(5.98, 1.00) (0.00, N/A, 0.0)	525.8 545.4	0.6586 101.0 101.0	44.6949 [44.2367]	101.0%			
PFPeS	(349.0 / 80.0) 45345739 (349.0 / 99.0) 17073832	(7.05, 0.89) (N/A, 0.01, -0.1)	530.0 634.2	0.3765 101.9 101.9	45.5541 [46.9191]	97.1%			
PFHxS	(399.0 / 80.0) 43620135 (399.0 / 99.0) 15017236	(7.93, 1.00) (0.00, N/A, 0.0)	630.4 918.7	0.3443 104.3 104.3	44.8583 [45.5491]	98.5%			
PFHpS	(449.0 / 80.0) 40475469 (449.0 / 99.0) 12252721	(8.70, 0.93) (N/A, 0.02, 0.0)	604.0 589.5	0.3027 110.1 110.1	46.8140 [47.5703]	98.4%			
PFOS	(499.0 / 80.0) 46546981 (499.0 / 99.0) 10519414	(9.38, 1.00) (0.00, N/A, 0.0)	830.7 1810.6	0.2260 99.5 99.5	45.4859 [46.3746]	98.1%			
PFNS	(549.0 / 80.0) 41325312 (549.0 / 99.0) 11743295	(9.75, 1.04) (N/A, 0.01, 0.1)	679.2 814.9	0.2842 122.0 122.0	39.4061 [47.9943]	82.1%			
PFDS	(599.0 / 80.0) 46995456 (599.0 / 99.0) 12810810	(9.91, 1.06) (N/A, 0.00, 0.0)	717.9 923.4	0.2726 119.4 119.4	40.5446 [48.1553]	84.2%			
PFDoS	(699.0 / 80.0) 21317962 (699.0 / 99.0) 4756077	(10.13, 1.08) (N/A, 0.00, 0.0)	1257.3 1381.6	0.2231 107.6 107.6	43.2983 [48.4781]	89.3%			
4:2FTS	(327.0 / 307.0) 74031925 (327.0 / 81.0) 47699345	(5.72, 1.00) (0.00, N/A, 0.0)	521.6 491.5	0.6443 102.4 102.4	147.6780 [186.9055]	79.0%			
6:2FTS	(427.0 / 407.0) 59365393 (427.0 / 81.0) 43991825	(7.50, 1.00) (-0.01, N/A, 0.0)	539.1 612.7	0.7410 96.7 96.7	161.1132 [189.8085]	84.9%			
8:2FTS	(527.0 / 507.0) 55670103 (527.0 / 81.0) 39851986	(8.91, 1.00) (0.00, N/A, 0.1)	419.0 394.5	0.7159 94.4 94.4	142.2110 [191.6577]	74.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 46754283 (498.0 / 478.0) 1240537	(10.20, 1.00) (0.00, N/A, 0.0)	943.5 845.5	0.0265 140.7 140.7	43.2430 [50.0000]	86.5%			
NMeFOSA	(512.0 / 219.0) 33461375 (512.0 / 169.0) 24168953	(10.65, 1.00) (0.00, N/A, 0.0)	805.3 826.6	0.7223 101.2 101.2	149.4682 [200.0000]	74.7%			
NEIFOSA	(526.0 / 219.0) 32655791 (526.0 / 169.0) 33776520	(10.73, 1.00) (0.00, N/A, 0.0)	1166.5 1169.6	1.0343 97.8 97.8	180.8744 [200.0000]	90.4%			
NMeFOSAA	(570.0 / 419.0) 11894792 (570.0 / 483.0) 5559292	(9.46, 1.00) (0.01, N/A, 0.2)	676.8 398.2	0.4674 91.9 91.9	50.6799 [50.0000]	101.4%			
NEIFOSAA	(584.0 / 419.0) 7587816 (584.0 / 526.0) 4756064	(9.66, 1.00) (0.01, N/A, 0.3)	817.3 487.7	0.6268 100.8 100.8	51.2289 [50.0000]	102.5%			
NMeFOSE	(616.0 / 59.0) 6865084	(10.62, 1.00) (0.01, N/A, 0.0)	598.4	N/A 0.0 0.0	206.5695 [200.0000]	103.3%			
NEtFOSE	(630.0 / 59.0) 1389369	(10.71, 1.00) (0.00, N/A, 0.0)	605.7	N/A 0.0 0.0	202.5120 [200.0000]	101.3%			
HFPO-DA	(285.0 / 169.0) 11605288 (285.0 / 185.0) 29802942	(6.39, 1.00) (0.00, N/A, 0.1)	585.9 554.1	2.5680 95.7 95.7	102.9408 [100.0000]	102.9%			
ADONA	(377.0 / 85.0) 50495361 (377.0 / 251.0) 6746417	(7.33, 1.15) (N/A, 0.01, 0.1)	674.6 643.7	0.1336 114.8 114.8	85.6885 [94.2700]	90.9%			
9CI-Pf3ONS	(531.0 / 351.0) 92960754 (533.0 / 353.0) 42759603	(9.69, 1.52) (N/A, 0.00, -0.2)	453.2 535.0	0.4600 148.1 148.1	92.8009 [93.3254]	99.4%			
11CI-PF3OUDS	(631.0 / 451.0) 59506157 (633.0 / 453.0) 21260473	(10.01, 1.57) (N/A, 0.00, 0.1)	870.4 668.9	0.3573 104.0 104.0	75.6433 [94.3208]	80.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 1677859 (241.0 / 117.0) 2528167	(4.41, 0.90) (N/A, 0.01, 0.0)	500.6 450.6	1.5068 102.4 102.4	219.9187 [200.0000]	110.0%			
5:3FTCA	(341.0 / 236.7) 10778038 (341.0 / 217.0) 18135212	(6.72, 1.11) (N/A, 0.01, 0.0)	448.8 471.4	1.6826 100.7 100.7	225.6913 [200.0000]	112.8%			
7:3FTCA	(441.0 / 317.0) 15590127 (441.0 / 337.0) 13554549	(8.54, 1.41) (N/A, 0.02, 0.0)	457.9 479.3	0.8694 100.9 100.9	216.9160 [200.0000]	108.5%			
PFEESA	(315.0 / 135.0) 28104594 (315.0 / 83.0) 8886057	(6.49, 1.07) (N/A, 0.00, -0.3)	596.1 578.1	0.3162 103.4 103.4	90.8946 [89.2459]	101.8%			
PFMPA	(229.0 / 85.0) 8263727	(4.08, 0.83) (N/A, 0.00, 0.0)	776.4	N/A 0.0 0.0	103.9747 [100.0000]	104.0%			
PFMBA	(279.0 / 85.0) 20049566	(5.29, 1.08) (N/A, 0.00, 0.0)	656.3	N/A 0.0 0.0	99.8632 [100.0000]	99.9%			
NFDHA	(295.0 / 201.0) 14287362 (295.0 / 85.0) 12905070	(5.92, 0.98) (N/A, 0.00, -0.1)	492.9 514.2	0.9033 98.2 98.2	109.4597 [100.0000]	109.5%			
13C3_PFBA_IIS	(216.0 / 172.0) 217338	(3.57, N/A) (N/A, 0.00, N/A)	479.0	N/A	0.8580 [1.0000]	85.8% {84.1%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 361129	(6.04, N/A) (N/A, -0.01, N/A)	481.6	N/A	0.9769 [1.0000]	97.7% {98.0%}			
13C4_PFOA_IIS	(417.0 / 372.0) 402671	(7.83, N/A) (N/A, 0.02, N/A)	647.1	N/A	0.9167 [1.0000]	91.7% {86.1%}			
13C5_PFNA_IIS	(468.0 / 423.0) 369841	(8.57, N/A) (N/A, 0.03, N/A)	510.1	N/A	0.9120 [1.0000]	91.2% {85.3%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 454149	(9.24, N/A) (N/A, 0.02, N/A)	374.3	N/A	1.0514 [1.0000]	105.1% { 106.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 735221	(7.93, N/A) (N/A, 0.02, N/A)	515.5	N/A	0.9953 [1.0000]	99.5% { 98.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 666166	(9.38, N/A) (N/A, 0.02, N/A)	370.9	N/A	0.8640 [1.0000]	86.4% { 81.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1643478	(3.57, N/A) (N/A, 0.00, N/A)	509.0	N/A	7.6969 [8.0000]	96.2% { 80.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1094456	(4.92, N/A) (N/A, 0.01, N/A)	519.2	N/A	3.7030 [4.0000]	92.6% { 89.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 636905	(6.04, N/A) (N/A, 0.00, N/A)	464.2	N/A	1.7260 [2.0000]	86.3% { 78.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 638794	(7.00, N/A) (N/A, 0.01, N/A)	412.1	N/A	1.8211 [2.0000]	91.1% { 88.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 826030	(7.83, N/A) (N/A, 0.02, N/A)	574.7	N/A	2.0134 [2.0000]	100.7% { 89.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 358336	(8.57, N/A) (N/A, 0.03, N/A)	468.7	N/A	0.9762 [1.0000]	97.6% { 86.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 448173	(9.24, N/A) (N/A, 0.03, N/A)	513.0	N/A	0.8758 [1.0000]	87.6% { 101.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 434236	(9.70, N/A) (N/A, 0.01, N/A)	289.5	N/A	0.6863 [1.0000]	68.6% { 66.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 563288	(9.89, N/A) (N/A, 0.00, N/A)	747.2	N/A	0.9272 [1.0000]	92.7% { 91.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 412251	(10.14, N/A) (N/A, 0.00, N/A)	688.4	N/A	0.8477 [1.0000]	84.8% { 89.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1757345	(5.97, N/A) (N/A, -0.01, N/A)	558.8	N/A	1.7979 [2.0000]	89.9% { 88.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1163569	(7.93, N/A) (N/A, 0.02, N/A)	707.1	N/A	1.8996 [2.0000]	95.0% { 96.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1682742	(9.37, N/A) (N/A, 0.02, N/A)	49.3	N/A	2.1279 [2.0000]	106.4% { 88.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 623896	(5.71, N/A) (N/A, -0.01, N/A)	484.0	N/A	3.2701 [4.0000]	81.8% { 86.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 964692	(7.50, N/A) (N/A, 0.02, N/A)	551.4	N/A	3.4280 [4.0000]	85.7% { 83.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1073591	(8.91, N/A) (N/A, 0.02, N/A)	401.5	N/A	4.0715 [4.0000]	101.8% { 111.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2029630	(10.20, N/A) (N/A, 0.00, N/A)	958.2	N/A	1.9384 [2.0000]	96.9% { 80.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 471951	(10.65, N/A) (N/A, 0.00, N/A)	549.0	N/A	2.5103 [2.0000]	125.5% { 109.3% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 362493	(10.73, N/A) (N/A, 0.00, N/A)	786.4	N/A	2.0453 [2.0000]	102.3% { 82.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1045047	(9.45, N/A) (N/A, 0.02, N/A)	442.9	N/A	4.2166 [4.0000]	105.4% { 89.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 619537	(9.65, N/A) (N/A, 0.00, N/A)	84.8	N/A	3.1793 [4.0000]	79.5% { 72.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 518634	(10.61, N/A) (N/A, 0.00, N/A)	811.6	N/A	17.9780 [20.0000]	89.9% { 76.3% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 244716	(10.71, N/A) (N/A, 0.00, N/A)	733.7	N/A	18.4062 [20.0000]	92.0% { 75.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1421951	(6.39, N/A) (N/A, 0.00, N/A)	570.3	N/A	7.3430 [8.0000]	91.8% { 88.9% }			

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2302001**Laboratory ID:** SC00059-SCV1**Sequence:** SC00059**Standard ID:** 22L0452

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	8.07	0.9	30.00
PFPEA	4.00	4.01	0.4	30.00
PFHXA	2.00	1.95	-2.5	30.00
PFHPA	2.00	2.06	2.8	30.00
PFOA	2.00	2.07	3.5	30.00
PFNA	2.00	2.01	0.4	30.00
PFDA	2.00	1.96	-2.0	30.00
PFUnA	2.00	2.34	17.0	30.00
PFDOA	2.00	2.09	4.4	30.00
PFTRDA	2.00	2.01	0.5	30.00
PFTEDA	2.00	2.20	10.0	30.00
PFBS	1.77	1.77	-0.3	30.00
PFPEs	1.88	1.86	-0.8	30.00
PFHXS	1.83	1.73	-5.6	30.00
PFHPS	1.91	1.74	-8.8	30.00
PFOS	1.86	1.79	-3.7	30.00
PFNS	1.92	2.04	6.0	30.00
PFDS	1.93	1.91	-1.2	30.00
PFDOS	1.94	1.87	-3.8	30.00
4:2FTS	7.50	7.70	2.7	30.00
6:2FTS	7.60	7.97	4.9	30.00
8:2FTS	7.68	8.53	11.1	30.00
PFOSA	2.00	2.10	4.9	30.00
NMeFOSA	8.00	8.24	3.0	30.00
NEtFOSA	8.00	7.61	-4.9	30.00
NMeFOSAA	2.00	2.07	3.7	30.00
NEtFOSAA	2.00	1.65	-17.4	30.00

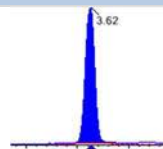
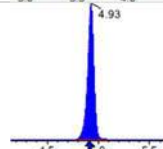
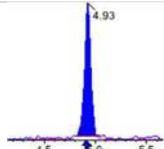
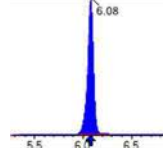
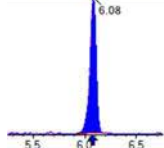
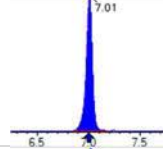
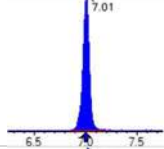
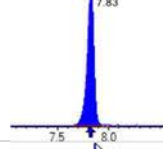
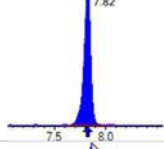
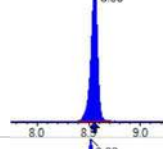
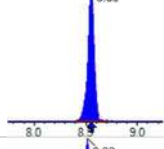
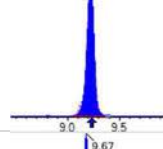
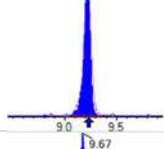
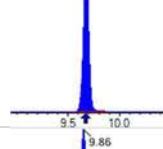
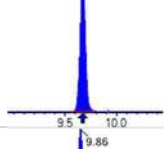
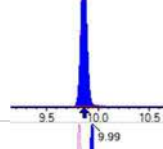
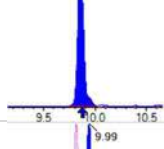
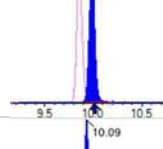
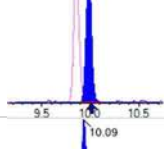
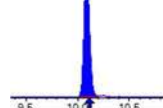
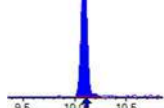
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2302001**Laboratory ID:** SC00059-SCV1**Sequence:** SC00059**Standard ID:** 22L0452

NMeFOSE	8.00	7.51	-6.1	30.00
NEtFOSE	8.00	8.76	9.5	30.00
HFPO-DA	4.00	3.89	-2.9	30.00
ADONA	3.78	3.63	-4.0	30.00
PFEESA	3.56	3.70	3.9	30.00
PFMPA	4.00	4.04	1.1	30.00
PFMBA	4.00	3.98	-0.4	30.00
NFDHA	4.00	4.01	0.2	30.00
9CL-PF3ONS	3.74	3.66	-2.0	30.00
11CL-PF3OUDS	3.78	3.97	4.9	30.00
3:3FTCA	8.00	7.16	-10.5	30.00
5:3FTCA	8.00	8.07	0.8	30.00
7:3FTCA	8.00	8.08	1.0	30.00
13C4-PFBA	8.00	7.82	-2.3	30.00
13C5-PFPEA	4.00	4.24	6.1	30.00
13C5-PFHXA	2.00	2.04	2.2	30.00
13C4-PFHPA	2.00	2.06	3.1	30.00
13C8-PFOA	2.00	1.87	-6.4	30.00
13C9-PFNA	1.00	1.03	3.0	30.00
13C6-PFDA	1.00	1.11	11.0	30.00
13C7-PFUnA	1.00	1.09	9.0	30.00
13C2-PFDOA	1.00	1.07	6.5	30.00
13C2-PFTEDA	1.00	1.10	10.3	30.00
13C3-PFBS	2.00	2.14	7.2	30.00
13C3-PFHXS	2.00	2.06	3.1	30.00
13C8-PFOS	2.00	2.04	2.0	30.00
13C2-4:2FTS	4.00	4.17	4.3	30.00
13C2-6:2FTS	4.00	4.17	4.2	30.00
13C2-8:2FTS	4.00	3.89	-2.9	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2302001**Laboratory ID:** SC00059-SCV1**Sequence:** SC00059**Standard ID:** 22L0452

13C8-PFOSA	2.00	2.04	2.2	30.00
D5-NETFOSA	2.00	2.06	2.9	30.00
D3-NMEFOSA	2.00	1.96	-2.2	30.00
D3-NMEFOSAA	4.00	4.01	0.3	30.00
D5-NETFOSAA	4.00	4.97	24.2	30.00
D7-NMEFOSE	20.0	21.7	8.5	30.00
D9-NETFOSAE	20.0	19.8	-1.1	30.00
13C3-HFPO-DA	8.00	8.39	4.8	30.00

* Values outside of QC limits

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1193507	(3.62, 1.00) (0.00, N/A, 0.0)	447.5	N/A 0.0 0.0	8.0702 [8.0000]	100.9%			
PFPeA	(263.0 / 219.0) 920720 (263.0 / 69.0) 10262	(4.93, 1.00) (0.00, N/A, 0.1)	535.3 155.5	0.0111 91.8 91.8	4.0143 [4.0000]	100.4%			
PFHxA	(313.0 / 269.0) 581020 (313.0 / 119.0) 63162	(6.08, 1.00) (0.00, N/A, -0.1)	462.2 277.4	0.1087 108.9 108.9	1.9491 [2.0000]	97.5%			
PFHpA	(363.0 / 319.0) 576990 (363.0 / 169.0) 179689	(7.01, 1.00) (0.00, N/A, 0.2)	567.0 409.9	0.3114 104.5 104.5	2.0569 [2.0000]	102.8%			
PFOA	(413.0 / 369.0) 658790 (413.0 / 169.0) 225472	(7.83, 1.00) (0.01, N/A, 0.2)	572.5 477.4	0.3423 103.3 103.3	2.0707 [2.0000]	103.5%			
PFNA	(463.0 / 419.0) 562849 (463.0 / 169.0) 114742	(8.56, 1.00) (0.00, N/A, 0.2)	566.6 566.2	0.2039 88.8 88.8	2.0077 [2.0000]	100.4%			
PFDA	(513.0 / 469.0) 717800 (513.0 / 169.0) 76395	(9.22, 1.00) (0.00, N/A, 0.1)	434.4 221.8	0.1064 111.4 111.4	1.9594 [2.0000]	98.0%			
PFUnA	(563.0 / 519.0) 965437 (563.0 / 169.0) 88712	(9.67, 1.00) (0.00, N/A, 0.2)	507.9 1838.9	0.0919 91.9 91.9	2.3393 [2.0000]	117.0%			
PFDoA	(613.0 / 569.0) 867667 (613.0 / 169.0) 94565	(9.86, 1.00) (0.00, N/A, 0.0)	822.2 223.9	0.1090 88.8 88.8	2.0871 [2.0000]	104.4%			
PFTrDA	(663.0 / 619.0) 793765 (663.0 / 169.0) 169863	(9.99, 1.01) (N/A, -0.01, 0.1)	403.4 252.2	0.2140 109.5 109.5	2.0104 [2.0000]	100.5%			
PFTeDA	(713.0 / 669.0) 739865 (713.0 / 169.0) 132923	(10.09, 1.00) (0.00, N/A, -0.3)	440.1 238.1	0.1797 94.4 94.4	2.1996 [2.0000]	110.0%			

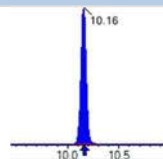
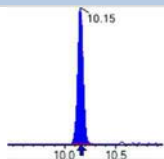
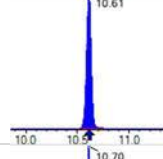
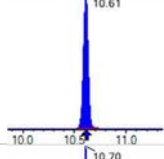
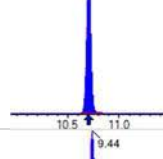
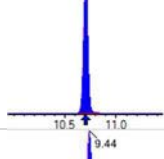
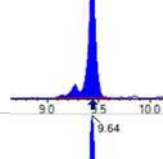
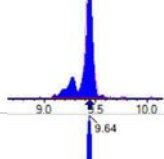
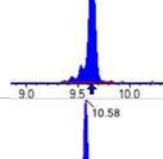
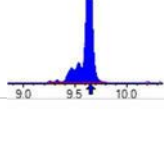
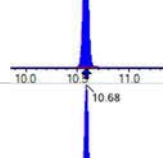
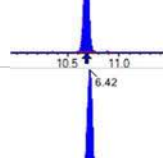
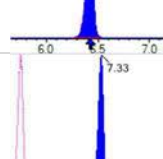
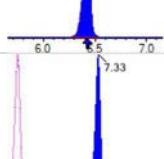
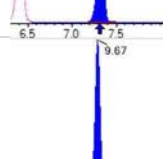
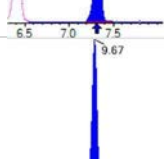
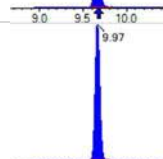
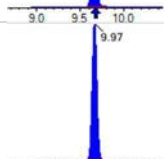
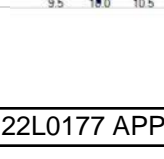
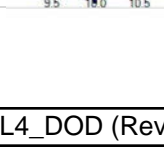


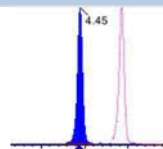
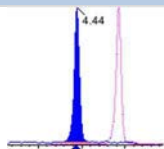
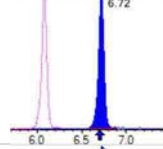
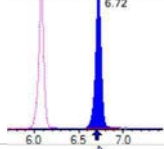
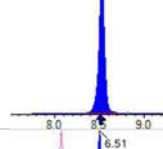
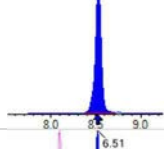
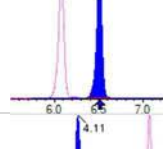
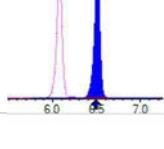
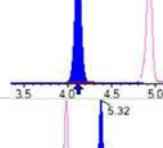
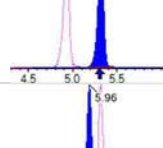
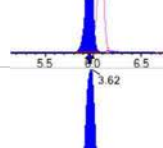
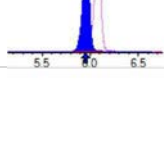
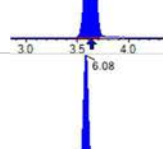
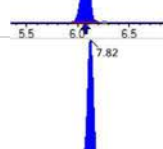
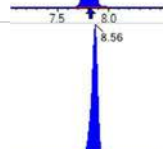

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SC00059-SCV1
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-05.dam

Quant Method: 1633 - S2023-01-05B
Path: S2023-01-05B (10)
Acquired: 2023/01/05 - 20:16

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 947210 (299.0 / 99.0) 587055	(6.01, 1.00) (0.00, N/A, 0.0)	639.6 541.8	0.6198 95.1 95.1	1.7650 [1.7695]	99.7%			
PFPeS	(349.0 / 80.0) 1651987 (349.0 / 99.0) 612256	(7.05, 0.89) (N/A, -0.01, 0.1)	620.2 580.8	0.3706 100.8 100.8	1.8649 [1.8768]	99.4%			
PFHxS	(399.0 / 80.0) 1411225 (399.0 / 99.0) 484730	(7.92, 1.00) (0.00, N/A, 0.1)	582.0 727.6	0.3435 99.6 99.6	1.7284 [1.8220]	94.9%			
PFHpS	(449.0 / 80.0) 1184951 (449.0 / 99.0) 367233	(8.69, 0.93) (N/A, -0.01, -0.2)	590.0 544.7	0.3099 110.8 110.8	1.7414 [1.9028]	91.5%			
PFOS	(499.0 / 80.0) 1517009 (499.0 / 99.0) 358182	(9.36, 1.00) (0.00, N/A, 0.4)	217.8 485.0	0.2361 105.1 105.1	1.7911 [1.8550]	96.6%			
PFNS	(549.0 / 80.0) 1867056 (549.0 / 99.0) 430333	(9.72, 1.04) (N/A, 0.00, 0.0)	735.9 892.8	0.2305 91.2 91.2	2.0353 [1.9198]	106.0%			
PFDS	(599.0 / 80.0) 1900191 (599.0 / 99.0) 425496	(9.88, 1.06) (N/A, 0.00, 0.1)	964.6 680.0	0.2239 96.6 96.6	1.9066 [1.9262]	99.0%			
PFDoS	(699.0 / 80.0) 782677 (699.0 / 99.0) 195127	(10.08, 1.08) (N/A, -0.01, -0.2)	773.9 308.6	0.2493 107.4 107.4	1.8655 [1.9391]	96.2%			
4:2FTS	(327.0 / 307.0) 3723062 (327.0 / 81.0) 2206743	(5.75, 1.00) (0.00, N/A, -0.3)	556.1 498.1	0.5927 108.0 108.0	7.7028 [7.4762]	103.0%			
6:2FTS	(427.0 / 407.0) 2496581 (427.0 / 81.0) 1784251	(7.50, 1.00) (0.00, N/A, 0.2)	700.5 750.2	0.7147 98.4 98.4	7.9742 [7.5923]	105.0%			
8:2FTS	(527.0 / 507.0) 2391877 (527.0 / 81.0) 1449406	(8.90, 1.00) (0.00, N/A, -0.1)	423.2 673.2	0.6060 90.8 90.8	8.5303 [7.6663]	111.3%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1834198 (498.0 / 478.0) 38088	(10.16, 1.00) (0.00, N/A, 0.1)	890.4 226.6	0.0208 87.6 87.6	2.0976 [2.0000]	104.9%			
NMeFOSA	(512.0 / 219.0) 1261082 (512.0 / 169.0) 860554	(10.61, 1.00) (0.00, N/A, 0.0)	1008.1 1104.5	0.6824 95.2 95.2	8.2433 [8.0000]	103.0%			
NEIFOSA	(526.0 / 219.0) 1217446 (526.0 / 169.0) 1336797	(10.70, 1.00) (0.00, N/A, 0.0)	1310.1 1570.9	1.0980 102.0 102.0	7.6109 [8.0000]	95.1%			
NMeFOSAA	(570.0 / 419.0) 465357 (570.0 / 483.0) 242729	(9.44, 1.00) (0.01, N/A, -0.1)	368.6 334.1	0.5216 109.3 109.3	2.0731 [2.0000]	103.7%			
NEIFOSAA	(584.0 / 419.0) 383295 (584.0 / 526.0) 263053	(9.64, 1.00) (0.00, N/A, -0.1)	396.5 344.0	0.6863 108.0 108.0	1.6522 [2.0000]	82.6%			
NMeFOSE	(616.0 / 59.0) 278883	(10.58, 1.00) (0.01, N/A, 0.0)	1314.2	N/A 0.0 0.0	7.5142 [8.0000]	93.9%			
NEtFOSE	(630.0 / 59.0) 57498	(10.68, 1.00) (0.01, N/A, 0.0)	838.2	N/A 0.0 0.0	8.7635 [8.0000]	109.5%			
HFPO-DA	(285.0 / 169.0) 402335 (285.0 / 185.0) 1333626	(6.42, 1.00) (0.00, N/A, 0.1)	558.5 588.0	3.3147 102.9 102.9	3.8853 [4.0000]	97.1%			
ADONA	(377.0 / 85.0) 2012614 (377.0 / 251.0) 263033	(7.33, 1.14) (N/A, -0.01, 0.0)	572.2 463.0	0.1307 104.6 104.6	3.6286 [3.7708]	96.2%			
9CI-Pf3ONS	(531.0 / 351.0) 5551565 (533.0 / 353.0) 1856431	(9.67, 1.51) (N/A, 0.00, 0.0)	748.0 1114.0	0.3344 110.4 110.4	3.6641 [3.7330]	98.2%			
11CI-PF3OUDS	(631.0 / 451.0) 2913629 (633.0 / 453.0) 997576	(9.97, 1.55) (N/A, -0.01, -0.1)	985.6 1092.8	0.3424 119.1 119.1	3.9654 [3.7728]	105.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 48107 (241.0 / 117.0) 79811	(4.45, 0.90) (N/A, 0.01, 0.1)	433.3 281.5	1.6590 106.3 106.3	7.1568 [8.0000]	89.5%			
5:3FTCA	(341.0 / 236.7) 374235 (341.0 / 217.0) 633860	(6.72, 1.11) (N/A, 0.00, -0.1)	412.4 442.1	1.6937 91.2 91.2	8.0670 [8.0000]	100.8%			
7:3FTCA	(441.0 / 317.0) 526527 (441.0 / 337.0) 431688	(8.53, 1.40) (N/A, -0.01, 0.0)	464.3 493.0	0.8199 102.2 102.2	8.0760 [8.0000]	101.0%			
PFEESA	(315.0 / 135.0) 1059224 (315.0 / 83.0) 331081	(6.51, 1.07) (N/A, 0.00, -0.1)	652.2 586.7	0.3126 99.3 99.3	3.6987 [3.5698]	103.6%			
PFMPA	(229.0 / 85.0) 233103	(4.11, 0.83) (N/A, 0.00, 0.0)	907.9	N/A 0.0 0.0	4.0439 [4.0000]	101.1%			
PFMBA	(279.0 / 85.0) 691163	(5.32, 1.08) (N/A, 0.00, 0.0)	768.7	N/A 0.0 0.0	3.9836 [4.0000]	99.6%			
NFDHA	(295.0 / 201.0) 533864 (295.0 / 85.0) 511650	(5.96, 0.98) (N/A, 0.00, 0.0)	488.2 537.2	0.9584 98.8 98.8	4.0095 [4.0000]	100.2%			
13C3_PFBA_IIS	(216.0 / 172.0) 165547	(3.62, N/A) (N/A, 0.00, N/A)	514.6	N/A	0.9794 [1.0000]	97.9% { 93.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 283723	(6.08, N/A) (N/A, -0.01, N/A)	481.3	N/A	0.9499 [1.0000]	95.0% { 87.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 325005	(7.82, N/A) (N/A, -0.02, N/A)	730.4	N/A	0.9824 [1.0000]	98.2% { 90.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 280556	(8.56, N/A) (N/A, -0.01, N/A)	373.5	N/A	1.0063 [1.0000]	100.6% { 93.8% }			

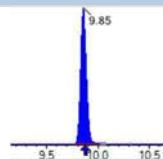
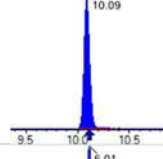
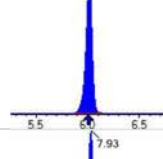
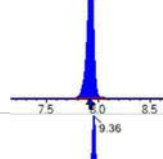
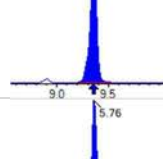
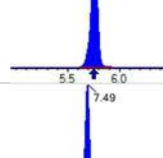
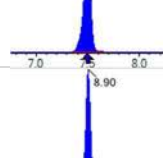
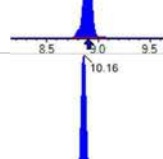
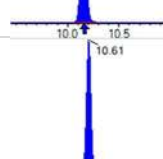
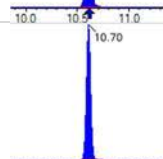
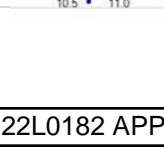


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00059-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-05.dam

Quant Method: 1633 - S2023-01-05B
 Path: S2023-01-05B (10)
 Acquired: 2023/01/05 - 20:16

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 272148	(9.22, N/A) (N/A, -0.01, N/A)	337.6	N/A	0.8703 [1.0000]	87.0% { 69.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 568351	(7.93, N/A) (N/A, -0.01, N/A)	891.9	N/A	0.9677 [1.0000]	96.8% { 99.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 564008	(9.36, N/A) (N/A, -0.01, N/A)	514.7	N/A	0.9554 [1.0000]	95.5% { 87.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1289292	(3.62, N/A) (N/A, 0.00, N/A)	676.6	N/A	7.8189 [8.0000]	97.7% { 90.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 974277	(4.93, N/A) (N/A, 0.00, N/A)	537.2	N/A	4.2446 [4.0000]	106.1% { 96.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 607002	(6.08, N/A) (N/A, 0.00, N/A)	483.0	N/A	2.0436 [2.0000]	102.2% { 92.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 548456	(7.01, N/A) (N/A, -0.01, N/A)	688.1	N/A	2.0620 [2.0000]	103.1% { 98.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 602993	(7.82, N/A) (N/A, -0.01, N/A)	654.1	N/A	1.8727 [2.0000]	93.6% { 91.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 286997	(8.55, N/A) (N/A, -0.01, N/A)	605.6	N/A	1.0303 [1.0000]	103.0% { 97.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 354407	(9.22, N/A) (N/A, -0.01, N/A)	304.0	N/A	1.1099 [1.0000]	111.0% { 81.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 460453	(9.67, N/A) (N/A, 0.00, N/A)	494.8	N/A	1.0901 [1.0000]	109.0% { 94.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 455693	(9.85, N/A) (N/A, -0.01, N/A)	385.7	N/A	1.0651 [1.0000]	106.5% { 86.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 337629	(10.09, N/A) (N/A, -0.01, N/A)	689.1	N/A	1.1030 [1.0000]	110.3% { 98.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1696110	(6.01, N/A) (N/A, 0.00, N/A)	749.4	N/A	2.1443 [2.0000]	107.2% { 102.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 970120	(7.93, N/A) (N/A, -0.01, N/A)	707.2	N/A	2.0624 [2.0000]	103.1% { 93.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1412432	(9.36, N/A) (N/A, 0.00, N/A)	312.6	N/A	2.0393 [2.0000]	102.0% { 95.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 559239	(5.76, N/A) (N/A, 0.00, N/A)	551.3	N/A	4.1717 [4.0000]	104.3% { 99.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 779229	(7.49, N/A) (N/A, -0.01, N/A)	632.3	N/A	4.1680 [4.0000]	104.2% { 95.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 741507	(8.90, N/A) (N/A, -0.01, N/A)	543.8	N/A	3.8857 [4.0000]	97.1% { 92.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1578320	(10.16, N/A) (N/A, -0.01, N/A)	870.7	N/A	2.0447 [2.0000]	102.2% { 87.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 333552	(10.61, N/A) (N/A, 0.00, N/A)	1029.9	N/A	1.9556 [2.0000]	97.8% { 96.7% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 319317	(10.70, N/A) (N/A, 0.00, N/A)	912.4	N/A	2.0580 [2.0000]	102.9% { 94.2% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00059-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-05.dam

Quant Method: 1633 - S2023-01-05B
 Path: S2023-01-05B (10)
 Acquired: 2023/01/05 - 20:16

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 963931	(9.43, N/A) (N/A, 0.00, N/A)	260.0	N/A	4.0112 [4.0000]	100.3% { 98.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1035393	(9.63, N/A) (N/A, 0.00, N/A)	119.9	N/A	4.9663 [4.0000]	124.2% { 109.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 596298	(10.57, N/A) (N/A, 0.00, N/A)	730.0	N/A	21.7018 [20.0000]	108.5% { 101.5% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 247851	(10.68, N/A) (N/A, 0.00, N/A)	1272.0	N/A	19.7877 [20.0000]	98.9% { 84.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1372285	(6.42, N/A) (N/A, 0.00, N/A)	587.4	N/A	8.3857 [8.0000]	104.8% { 94.0% }			

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2302005**Laboratory ID:** SC00101-SCV1**Sequence:** SC00101**Standard ID:** 22L0452

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	8.18	2.2	30.00
PFPEA	4.00	3.99	-0.2	30.00
PFHXA	2.00	2.02	1.1	30.00
PFHPA	2.00	2.06	2.9	30.00
PFOA	2.00	2.03	1.3	30.00
PFNA	2.00	2.27	13.5	30.00
PFDA	2.00	2.01	0.6	30.00
PFUnA	2.00	1.93	-3.4	30.00
PFDOA	2.00	2.12	5.8	30.00
PFTRDA	2.00	2.26	12.8	30.00
PFTEDA	2.00	2.04	2.0	30.00
PFBS	1.77	1.76	-0.5	30.00
PFPEs	1.88	2.06	9.4	30.00
PFHXS	1.83	1.83	-0.02	30.00
PFHPS	1.91	1.81	-5.1	30.00
PFOS	1.86	1.75	-6.0	30.00
PFNS	1.92	2.00	4.2	30.00
PFDS	1.93	2.18	12.9	30.00
PFDOS	1.94	2.05	5.7	30.00
4:2FTS	7.50	8.16	8.8	30.00
6:2FTS	7.60	7.37	-3.1	30.00
8:2FTS	7.68	8.52	11.0	30.00
PFOSA	2.00	2.04	2.0	30.00
NMeFOSA	8.00	7.88	-1.5	30.00
NEtFOSA	8.00	7.81	-2.4	30.00
NMeFOSAA	2.00	1.82	-8.8	30.00
NEtFOSAA	2.00	2.22	11.0	30.00

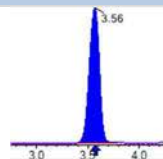
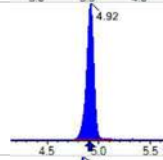
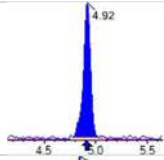
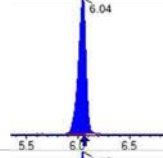
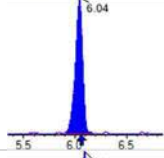
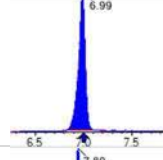
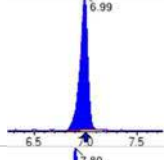
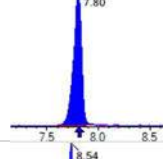
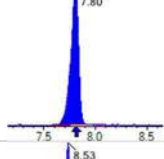
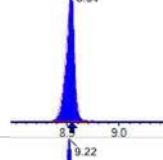
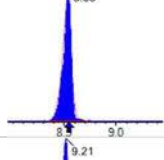
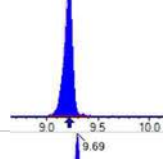
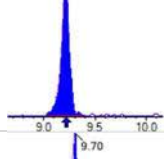
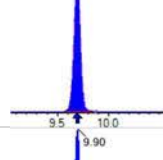
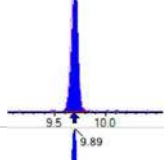
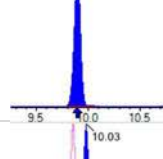
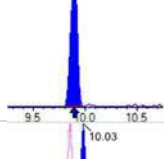
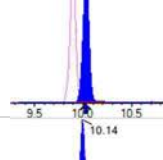
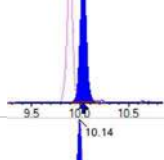
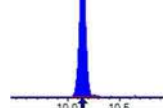
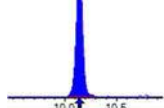
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2302005**Laboratory ID:** SC00101-SCV1**Sequence:** SC00101**Standard ID:** 22L0452

NMeFOSE	8.00	7.50	-6.2	30.00
NEtFOSE	8.00	7.11	-11.1	30.00
HFPO-DA	4.00	3.98	-0.4	30.00
ADONA	3.78	3.74	-1.1	30.00
PFEESA	3.56	3.51	-1.5	30.00
PFMPA	4.00	3.82	-4.6	30.00
PFMBA	4.00	3.65	-8.9	30.00
NFDHA	4.00	4.19	4.8	30.00
9CL-PF3ONS	3.74	3.78	1.1	30.00
11CL-PF3OUDS	3.78	3.85	1.8	30.00
3:3FTCA	8.00	7.43	-7.1	30.00
5:3FTCA	8.00	7.40	-7.5	30.00
7:3FTCA	8.00	7.50	-6.2	30.00
13C4-PFBA	8.00	8.05	0.7	30.00
13C5-PFPEA	4.00	4.07	1.6	30.00
13C5-PFHXA	2.00	1.99	-0.7	30.00
13C4-PFHPA	2.00	1.90	-5.1	30.00
13C8-PFOA	2.00	2.10	5.1	30.00
13C9-PFNA	1.00	1.03	2.7	30.00
13C6-PFDA	1.00	1.00	0.4	30.00
13C7-PFUnA	1.00	0.968	-3.2	30.00
13C2-PFDOA	1.00	0.997	-0.3	30.00
13C2-PFTEDA	1.00	1.01	1.4	30.00
13C3-PFBS	2.00	2.06	2.8	30.00
13C3-PFHXS	2.00	1.96	-2.1	30.00
13C8-PFOS	2.00	1.96	-2.2	30.00
13C2-4:2FTS	4.00	3.99	-0.3	30.00
13C2-6:2FTS	4.00	4.08	2.1	30.00
13C2-8:2FTS	4.00	4.04	1.0	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2302005**Laboratory ID:** SC00101-SCV1**Sequence:** SC00101**Standard ID:** 22L0452

13C8-PFOSA	2.00	1.95	-2.3	30.00
D5-NETFOSA	2.00	2.04	1.9	30.00
D3-NMEFOSA	2.00	1.96	-2.0	30.00
D3-NMEFOSAA	4.00	3.94	-1.5	30.00
D5-NETFOSAA	4.00	4.01	0.2	30.00
D7-NMEFOSE	20.0	19.7	-1.6	30.00
D9-NETFOSAE	20.0	21.4	7.0	30.00
13C3-HFPO-DA	8.00	8.16	2.0	30.00

* Values outside of QC limits

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1946051	(3.56, 1.00) (0.00, N/A, 0.0)	454.3	N/A 0.0 0.0	8.1779 [8.0000]	102.2%			
PFPeA	(263.0 / 219.0) 1209665 (263.0 / 69.0) 12730	(4.92, 1.00) (0.00, N/A, 0.1)	564.7 146.8	0.0105 96.9 96.9	3.9915 [4.0000]	99.8%			
PFHxA	(313.0 / 269.0) 758653 (313.0 / 119.0) 74329	(6.04, 1.00) (0.00, N/A, 0.1)	432.4 253.2	0.0980 99.8 99.8	2.0228 [2.0000]	101.1%			
PFHpA	(363.0 / 319.0) 718480 (363.0 / 169.0) 208782	(6.99, 1.00) (0.00, N/A, -0.1)	443.1 410.5	0.2906 102.1 102.1	2.0577 [2.0000]	102.9%			
PFOA	(413.0 / 369.0) 969628 (413.0 / 169.0) 320395	(7.80, 1.00) (0.00, N/A, -0.1)	408.9 431.7	0.3304 103.5 103.5	2.0252 [2.0000]	101.3%			
PFNA	(463.0 / 419.0) 806903 (463.0 / 169.0) 167023	(8.54, 1.00) (0.01, N/A, 0.0)	459.3 353.7	0.2070 92.3 92.3	2.2703 [2.0000]	113.5%			
PFDA	(513.0 / 469.0) 1031261 (513.0 / 169.0) 102533	(9.22, 1.00) (0.01, N/A, 0.3)	399.1 169.4	0.0994 90.5 90.5	2.0114 [2.0000]	100.6%			
PFUnA	(563.0 / 519.0) 1046153 (563.0 / 169.0) 119926	(9.69, 1.00) (0.00, N/A, -0.5)	473.3 291.4	0.1146 109.6 109.6	1.9312 [2.0000]	96.6%			
PFDoA	(613.0 / 569.0) 1167559 (613.0 / 169.0) 146123	(9.90, 1.00) (0.00, N/A, 0.2)	551.6 194.0	0.1252 97.3 97.3	2.1152 [2.0000]	105.8%			
PFTTrDA	(663.0 / 619.0) 1227488 (663.0 / 169.0) 220871	(10.03, 1.01) (N/A, 0.01, -0.1)	458.6 267.3	0.1799 89.2 89.2	2.2567 [2.0000]	112.8%			
PFTeDA	(713.0 / 669.0) 933304 (713.0 / 169.0) 165837	(10.14, 1.00) (0.00, N/A, 0.0)	568.3 461.3	0.1777 90.9 90.9	2.0408 [2.0000]	102.0%			

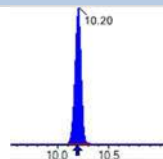
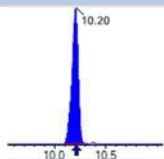
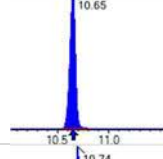
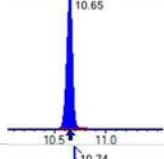
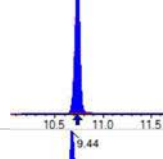
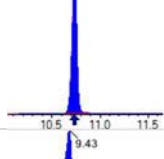
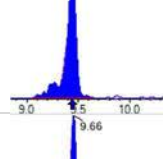
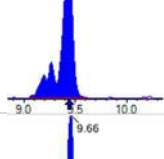
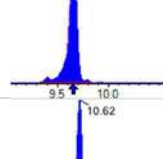
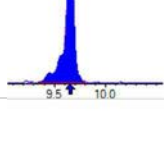
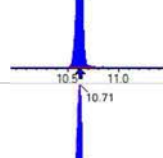
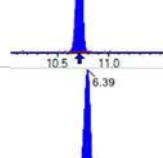
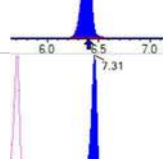
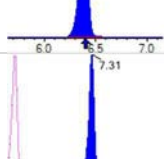
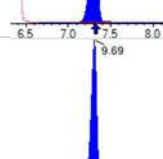
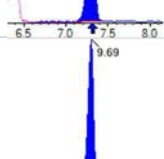
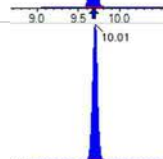
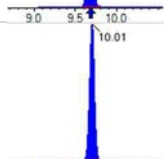
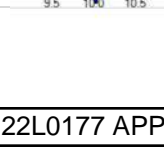
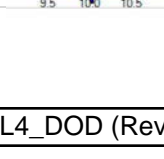


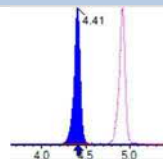
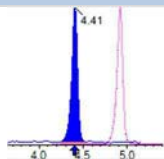
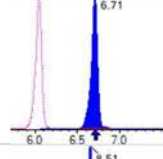
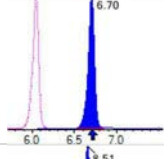
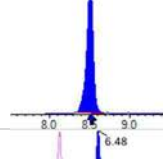
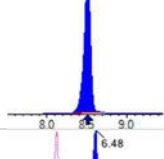
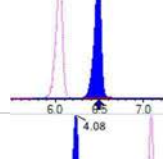
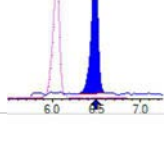
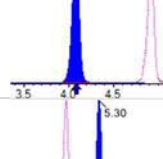
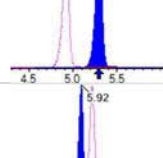
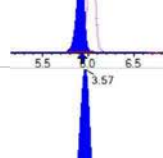
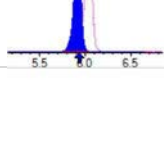
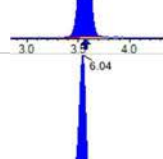
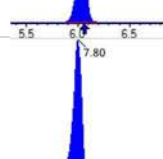
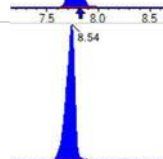

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00101-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (10)
 Acquired: 2023/01/09 - 16:59

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 115870 (299.0 / 99.0) 740542	(5.98, 1.00) (0.00, N/A, -0.1)	464.4 481.3	0.6407 98.2 98.2	1.7611 [1.7695]	99.5%			
PFPeS	(349.0 / 80.0) 2113954 (349.0 / 99.0) 743655	(7.03, 0.89) (N/A, -0.01, -0.2)	564.6 642.2	0.3518 95.2 95.2	2.0575 [1.8768]	109.6%			
PFHxS	(399.0 / 80.0) 1836239 (399.0 / 99.0) 588746	(7.91, 1.00) (0.00, N/A, 0.1)	743.5 662.9	0.3206 97.2 97.2	1.8296 [1.8220]	100.4%			
PFHpS	(449.0 / 80.0) 1711164 (449.0 / 99.0) 490586	(8.67, 0.93) (N/A, -0.01, -0.1)	581.5 370.7	0.2867 104.3 104.3	1.8126 [1.9028]	95.3%			
PFOS	(499.0 / 80.0) 2008126 (499.0 / 99.0) 404588	(9.35, 1.00) (0.00, N/A, 0.5)	311.5 534.9	0.2015 88.7 88.7	1.7478 [1.8550]	94.2%			
PFNS	(549.0 / 80.0) 2290601 (549.0 / 99.0) 530507	(9.75, 1.04) (N/A, 0.00, -0.1)	428.9 524.0	0.2316 99.4 99.4	2.0005 [1.9198]	104.2%			
PFDS	(599.0 / 80.0) 2757022 (599.0 / 99.0) 626459	(9.91, 1.06) (N/A, 0.00, -0.2)	953.6 527.6	0.2272 99.5 99.5	2.1785 [1.9262]	113.1%			
PFDoS	(699.0 / 80.0) 1101903 (699.0 / 99.0) 228847	(10.13, 1.08) (N/A, 0.00, 0.2)	823.2 392.0	0.2077 100.2 100.2	2.0497 [1.9391]	105.7%			
4:2FTS	(327.0 / 307.0) 4997715 (327.0 / 81.0) 2819504	(5.72, 1.00) (0.00, N/A, 0.1)	627.3 643.7	0.5642 89.7 89.7	8.1596 [7.4762]	109.1%			
6:2FTS	(427.0 / 407.0) 3237942 (427.0 / 81.0) 2704459	(7.47, 1.00) (0.00, N/A, -0.2)	668.5 658.1	0.8352 109.0 109.0	7.3659 [7.5923]	97.0%			
8:2FTS	(527.0 / 507.0) 3314893 (527.0 / 81.0) 1987319	(8.88, 1.00) (0.00, N/A, -0.6)	348.8 406.1	0.5995 79.0 79.0	8.5220 [7.6663]	111.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 2639068 (498.0 / 478.0) 61145	(10.20, 1.00) (0.00, N/A, -0.2)	1032.4 6600.1	0.0232 122.9 122.9	2.0395 [2.0000]	102.0%			
NMeFOSA	(512.0 / 219.0) 1635317 (512.0 / 169.0) 1139868	(10.65, 1.00) (0.00, N/A, 0.0)	813.1 680.4	0.6970 97.7 97.7	7.8802 [8.0000]	98.5%			
NEFOSA	(526.0 / 219.0) 1668821 (526.0 / 169.0) 1801983	(10.74, 1.00) (0.00, N/A, 0.0)	972.3 1168.6	1.0798 102.1 102.1	7.8101 [8.0000]	97.6%			
NMeFOSAA	(570.0 / 419.0) 475397 (570.0 / 483.0) 287144	(9.44, 1.00) (0.00, N/A, 0.6)	243.9 290.8	0.6040 118.8 118.8	1.8249 [2.0000]	91.2%			
NEIFOSAA	(584.0 / 419.0) 492227 (584.0 / 526.0) 280029	(9.66, 1.00) (0.00, N/A, 0.1)	637.3 459.8	0.5689 91.5 91.5	2.2192 [2.0000]	111.0%			
NMeFOSE	(616.0 / 59.0) 323954	(10.62, 1.00) (0.00, N/A, 0.0)	618.1	N/A 0.0 0.0	7.5032 [8.0000]	93.8%			
NEtFOSE	(630.0 / 59.0) 67382	(10.71, 1.00) (0.01, N/A, 0.0)	412.5	N/A 0.0 0.0	7.1145 [8.0000]	88.9%			
HFPO-DA	(285.0 / 169.0) 518252 (285.0 / 185.0) 1385503	(6.39, 1.00) (0.00, N/A, 0.0)	613.8 529.9	2.6734 99.7 99.7	3.9829 [4.0000]	99.6%			
ADONA	(377.0 / 85.0) 2541992 (377.0 / 251.0) 286992	(7.31, 1.14) (N/A, -0.01, 0.0)	599.8 364.3	0.1129 97.0 97.0	3.7374 [3.7708]	99.1%			
9CI-Pf3ONS	(531.0 / 351.0) 7384200 (533.0 / 353.0) 2138987	(9.69, 1.52) (N/A, 0.00, 0.1)	565.4 619.5	0.2897 93.3 93.3	3.7808 [3.7330]	101.3%			
11CI-PF3OUDS	(631.0 / 451.0) 3492361 (633.0 / 453.0) 1236984	(10.01, 1.57) (N/A, 0.00, 0.0)	734.2 740.2	0.3542 103.1 103.1	3.8464 [3.7728]	101.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 64664 (241.0 / 117.0) 100687	(4.41, 0.90) (N/A, 0.00, 0.0)	528.4 253.0	1.5571 105.9 105.9	7.4337 [8.0000]	92.9%			
5:3FTCA	(341.0 / 236.7) 422302 (341.0 / 217.0) 681800	(6.71, 1.11) (N/A, 0.00, 0.1)	353.0 441.7	1.6145 96.7 96.7	7.3993 [8.0000]	92.5%			
7:3FTCA	(441.0 / 317.0) 644304 (441.0 / 337.0) 555781	(8.51, 1.41) (N/A, -0.01, 0.0)	336.9 331.0	0.8626 100.1 100.1	7.5011 [8.0000]	93.8%			
PFEESA	(315.0 / 135.0) 1295510 (315.0 / 83.0) 396146	(6.48, 1.07) (N/A, -0.01, 0.0)	581.7 186.4	0.3058 100.0 100.0	3.5059 [3.5698]	98.2%			
PFMPA	(229.0 / 85.0) 345711	(4.08, 0.83) (N/A, 0.00, 0.0)	773.0	N/A 0.0 0.0	3.8151 [4.0000]	95.4%			
PFMBA	(279.0 / 85.0) 834564	(5.30, 1.08) (N/A, 0.01, 0.0)	570.4	N/A 0.0 0.0	3.6459 [4.0000]	91.1%			
NFDHA	(295.0 / 201.0) 654112 (295.0 / 85.0) 622547	(5.92, 0.98) (N/A, 0.00, 0.1)	626.2 705.9	0.9517 103.5 103.5	4.1932 [4.0000]	104.8%			
13C3_PFBA_IIS	(216.0 / 172.0) 263071	(3.57, N/A) (N/A, 0.00, N/A)	423.3	N/A	1.0386 [1.0000]	103.9% { 101.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 374979	(6.04, N/A) (N/A, -0.01, N/A)	473.4	N/A	1.0144 [1.0000]	101.4% { 101.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 429239	(7.80, N/A) (N/A, -0.01, N/A)	497.5	N/A	0.9772 [1.0000]	97.7% { 91.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 363341	(8.54, N/A) (N/A, 0.00, N/A)	397.1	N/A	0.8959 [1.0000]	89.6% { 83.8% }			

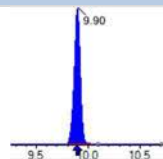
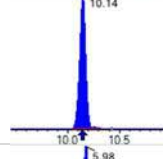
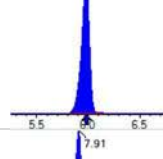
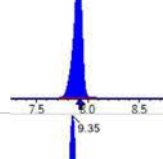
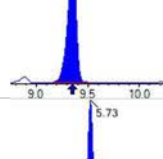
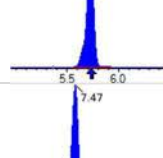
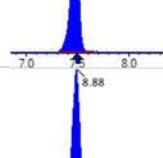
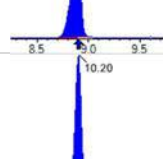
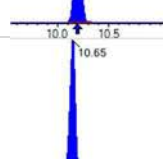
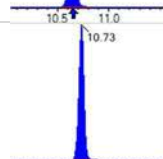



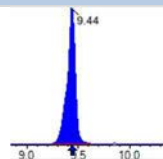
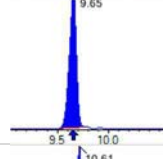
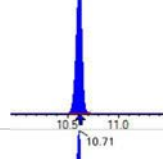
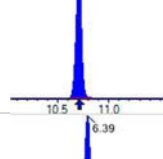
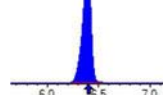
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00101-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (10)
 Acquired: 2023/01/09 - 16:59

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 442101	(9.21, N/A) (N/A, 0.00, N/A)	372.3	N/A	1.0235 [1.0000]	102.4% { 103.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 736442	(7.91, N/A) (N/A, -0.01, N/A)	595.1	N/A	0.9969 [1.0000]	99.7% { 98.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 791000	(9.35, N/A) (N/A, 0.00, N/A)	378.7	N/A	1.0259 [1.0000]	102.6% { 96.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2081152	(3.56, N/A) (N/A, 0.00, N/A)	579.8	N/A	8.0523 [8.0000]	100.7% { 101.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1247841	(4.92, N/A) (N/A, 0.01, N/A)	575.7	N/A	4.0660 [4.0000]	101.6% { 101.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 761167	(6.04, N/A) (N/A, 0.00, N/A)	595.3	N/A	1.9865 [2.0000]	99.3% { 93.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 691573	(6.99, N/A) (N/A, 0.00, N/A)	423.3	N/A	1.8988 [2.0000]	94.9% { 96.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 919038	(7.80, N/A) (N/A, -0.01, N/A)	553.5	N/A	2.1014 [2.0000]	105.1% { 99.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 370195	(8.53, N/A) (N/A, 0.00, N/A)	532.8	N/A	1.0266 [1.0000]	102.7% { 89.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 500093	(9.21, N/A) (N/A, 0.00, N/A)	244.0	N/A	1.0039 [1.0000]	100.4% { 113.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 596018	(9.69, N/A) (N/A, 0.00, N/A)	443.1	N/A	0.9677 [1.0000]	96.8% { 91.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 589618	(9.90, N/A) (N/A, 0.00, N/A)	286.5	N/A	0.9970 [1.0000]	99.7% { 95.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 480072	(10.14, N/A) (N/A, 0.00, N/A)	1373.0	N/A	1.0141 [1.0000]	101.4% { 103.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2012191	(5.98, N/A) (N/A, -0.01, N/A)	535.1	N/A	2.0552 [2.0000]	102.8% { 101.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1200970	(7.91, N/A) (N/A, -0.01, N/A)	610.3	N/A	1.9574 [2.0000]	97.9% { 99.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1837328	(9.35, N/A) (N/A, 0.00, N/A)	213.3	N/A	1.9567 [2.0000]	97.8% { 96.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 762278	(5.73, N/A) (N/A, 0.01, N/A)	623.9	N/A	3.9888 [4.0000]	99.7% { 105.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1150873	(7.47, N/A) (N/A, -0.01, N/A)	593.5	N/A	4.0828 [4.0000]	102.1% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1066794	(8.88, N/A) (N/A, -0.01, N/A)	403.5	N/A	4.0391 [4.0000]	101.0% { 111.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2429092	(10.20, N/A) (N/A, 0.00, N/A)	1033.2	N/A	1.9538 [2.0000]	97.7% { 96.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 437490	(10.65, N/A) (N/A, 0.00, N/A)	704.1	N/A	1.9598 [2.0000]	98.0% { 101.4% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 429014	(10.73, N/A) (N/A, 0.00, N/A)	922.0	N/A	2.0386 [2.0000]	101.9% { 98.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1159943	(9.44, N/A) (N/A, 0.01, N/A)	316.7	N/A	3.9416 [4.0000]	98.5% { 99.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 927760	(9.65, N/A) (N/A, 0.01, N/A)	84.1	N/A	4.0097 [4.0000]	100.2% { 108.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 673783	(10.61, N/A) (N/A, 0.00, N/A)	629.3	N/A	19.6702 [20.0000]	98.4% { 99.1% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 337832	(10.71, N/A) (N/A, 0.00, N/A)	1115.3	N/A	21.3997 [20.0000]	107.0% { 104.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1641201	(6.39, N/A) (N/A, 0.00, N/A)	681.4	N/A	8.1622 [8.0000]	102.0% { 102.6% }			

LOW-CONCENTRATION CALIBRATION VERIFICATION

Laboratory:

SDG:

Client:

Project:

Calibration:

Laboratory ID:

Sequence:

Standard ID:

ANALYTE	EXPECTED	FOUND	% DRIFT	QC LIMIT

* Values outside of QC limits

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC

SDG:
Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Calibration: 2302005

Laboratory ID: SC00125-LCV1

Sequence: SC00125

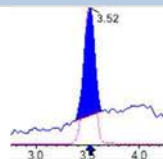
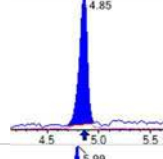
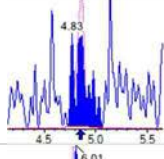
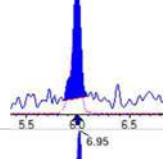
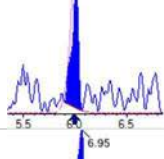
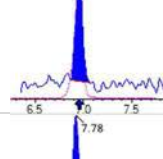
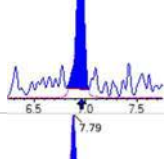
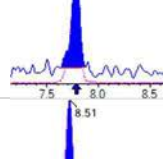
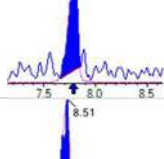
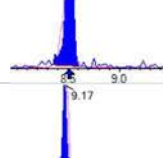
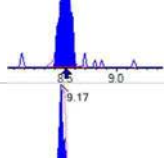
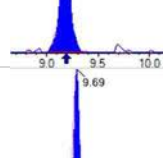
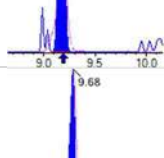
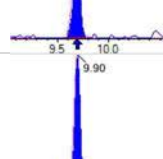
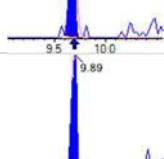
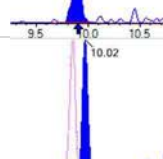
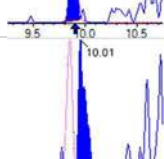
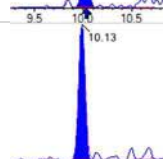
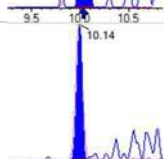
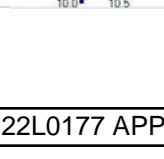
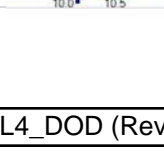
Standard ID: 22L0444

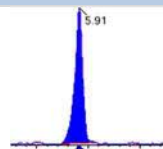
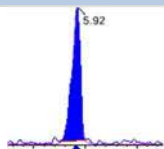
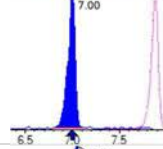
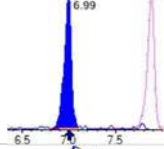
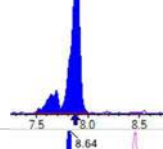
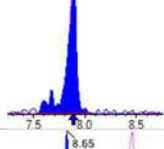
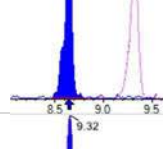
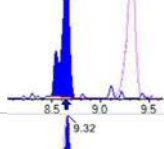
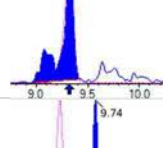
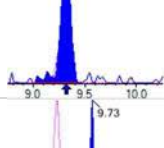
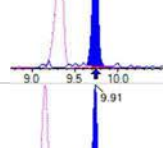
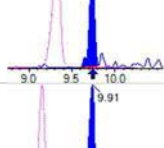
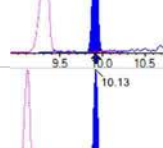
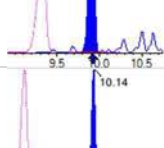
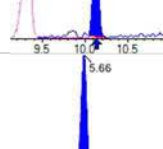
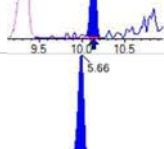
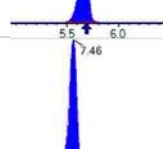
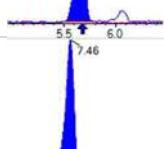
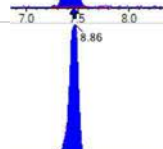
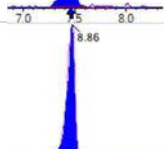

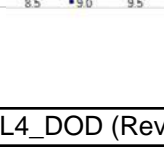
ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.346	-13.5	30.00
PFPEA	0.200	0.182	-9.0	30.00
PFHXA	0.100	0.0906	-9.4	30.00
PFHPA	0.100	0.0851	-14.9	30.00
PFOA	0.100	0.0880	-12.0	30.00
PFNA	0.100	0.102	2.4	30.00
PFDA	0.100	0.0921	-7.9	30.00
PFUnA	0.100	0.102	1.7	30.00
PFDOA	0.100	0.101	0.6	30.00
PFTRDA	0.100	0.0834	-16.6	30.00
PFTEDA	0.100	0.148	48.0 *	30.00
PFBS	0.0885	0.0829	-6.4	30.00
PFPEs	0.0940	0.0969	3.0	30.00
PFHXS	0.0915	0.0891	-2.6	30.00
PFHPS	0.0955	0.0808	-15.4	30.00
PFOS	0.0930	0.113	21.3	30.00
PFNS	0.0960	0.101	5.7	30.00
PFDS	0.0965	0.116	19.8	30.00
PFDOS	0.0970	0.204	111 *	30.00
4:2FTS	0.375	0.403	7.5	30.00
6:2FTS	0.380	0.413	8.8	30.00
8:2FTS	0.384	0.448	16.6	30.00
PFOSA	0.100	0.105	5.5	30.00
NMeFOSA	0.400	0.409	2.3	30.00
NEtFOSA	0.400	0.357	-10.8	30.00
NMeFOSAA	0.100	0.100	0.3	30.00
NEtFOSAA	0.100	0.0828	-17.2	30.00
NMeFOSE	0.400	0.405	1.3	30.00

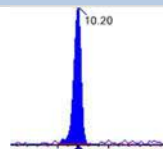
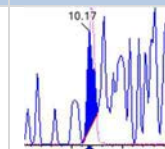
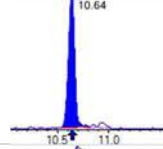
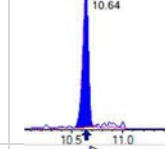
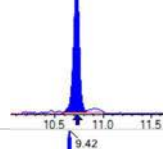
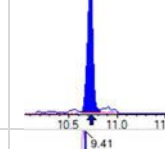
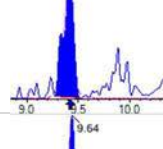
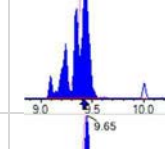
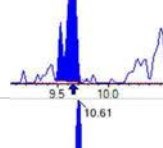
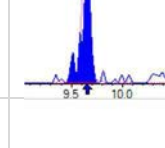
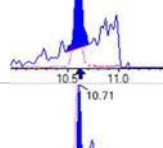
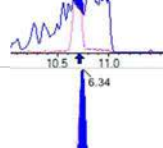
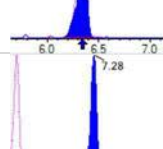
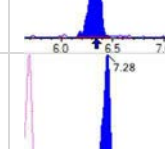
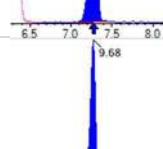
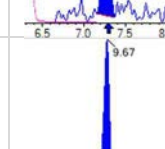
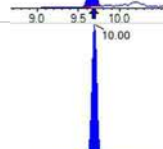
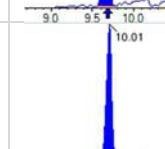

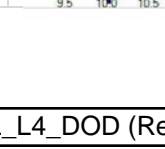
LOW-CONCENTRATION CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2302005**Laboratory ID:** SC00125-LCV1**Sequence:** SC00125**Standard ID:** 22L0444

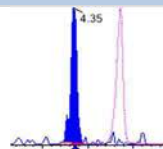
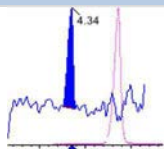
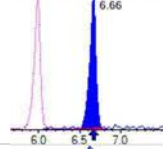
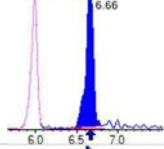
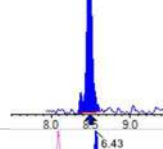
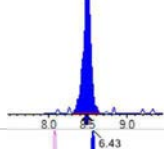
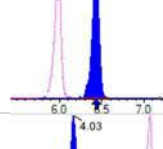
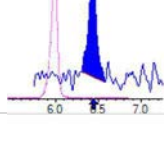
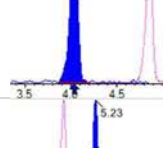
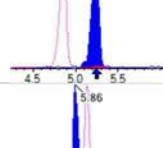
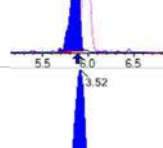
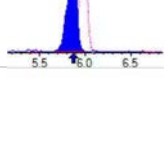
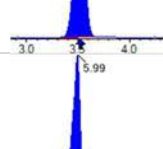
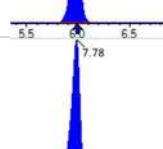
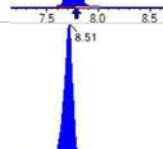

NEFOSE	0.400	0.441	10.4	30.00
HFPO-DA	0.200	0.184	-8.2	30.00
ADONA	0.189	0.174	-7.7	30.00
PFEESA	0.178	0.167	-6.2	30.00
PFMPA	0.200	0.144	-28.0	30.00
PFMBA	0.200	0.198	-0.9	30.00
NFDHA	0.200	0.165	-17.5	30.00
9CL-PF3ONS	0.187	0.204	9.3	30.00
11CL-PF3OUDS	0.189	0.305	61.3 *	30.00
3:3FTCA	0.400	0.280	-30.0	30.00
5:3FTCA	0.400	0.372	-6.9	30.00
7:3FTCA	0.400	0.259	-35.2 *	30.00

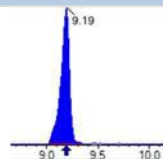
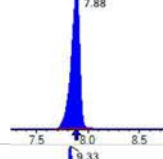
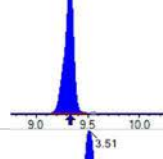
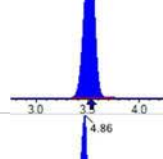
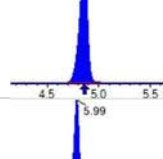
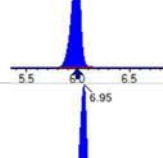
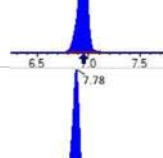
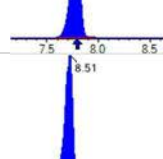
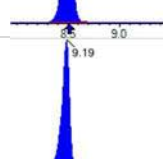
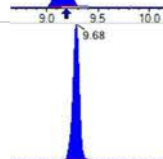

* Values outside of QC limits

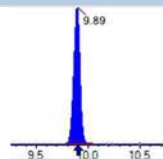
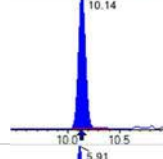
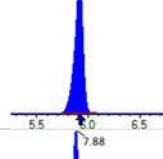
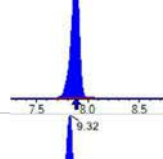
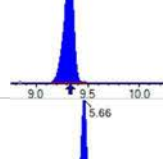
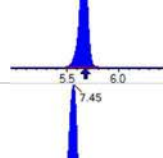
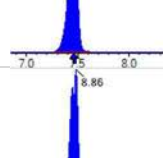
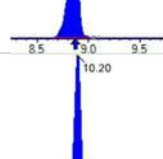
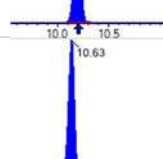
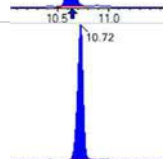

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 48964	(3.52, 1.00) (0.00, N/A, 0.0)	78.1	N/A 0.0 0.0	0.3458 [0.4000]	86.5%			
PFPeA	(263.0 / 219.0) 46544 (263.0 / 69.0) 518	(4.85, 1.00) (0.00, N/A, 1.3)	138.0 16.6	0.0111 102.4 95.6	0.1820 [0.2000]	91.0%			
PFHxA	(313.0 / 269.0) 34130 (313.0 / 119.0) 3058	(5.99, 1.00) (0.00, N/A, -1.2)	34.9 16.5	0.0896 91.3 95.5	0.0906 [0.1000]	90.6%			
PFHpA	(363.0 / 319.0) 29575 (363.0 / 169.0) 10596	(6.95, 1.00) (0.01, N/A, 0.2)	50.6 23.3	0.3583 125.9 121.7	0.0851 [0.1000]	85.1%			
PFOA	(413.0 / 369.0) 32421 (413.0 / 169.0) 10715	(7.78, 1.00) (0.00, N/A, -0.4)	50.1 33.5	0.3305 103.5 95.9	0.0880 [0.1000]	88.0%			
PFNA	(463.0 / 419.0) 28496 (463.0 / 169.0) 5459	(8.51, 1.00) (0.00, N/A, 0.5)	86.1 88.7	0.1916 85.4 86.8	0.1024 [0.1000]	102.4%			
PFDA	(513.0 / 469.0) 42003 (513.0 / 169.0) 5901	(9.17, 1.00) (-0.01, N/A, 0.2)	117.2 45.4	0.1405 127.9 157.6	0.0921 [0.1000]	92.1%			IR2,
PFUnA	(563.0 / 519.0) 62886 (563.0 / 169.0) 9802	(9.69, 1.00) (0.01, N/A, 0.6)	117.9 51.6	0.1559 149.0 166.2	0.1017 [0.1000]	101.7%			IR2,
PFDoA	(613.0 / 569.0) 46016 (613.0 / 169.0) 10660	(9.90, 1.00) (0.01, N/A, 0.1)	83.6 33.4	0.2316 180.0 170.7	0.1006 [0.1000]	100.6%			IR2,
PFTrDA	(663.0 / 619.0) 37595 (663.0 / 169.0) 6256	(10.02, 1.01) (N/A, -0.01, 0.6)	62.1 16.1	0.1664 82.5 85.6	0.0834 [0.1000]	83.4%			
PFTeDA	(713.0 / 669.0) 41493 (713.0 / 169.0) 13893	(10.13, 1.00) (0.00, N/A, -0.5)	76.4 27.5	0.3348 171.3 184.2	0.1480 [0.1000]	148.0%			QC,IR2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 52667 (299.0 / 99.0) 33549	(5.91, 1.00) (0.00, N/A, -0.6)	196.1 100.5	0.6370 97.7 100.6	0.0829 [0.0885]	93.7%			
PFPeS	(349.0 / 80.0) 89596 (349.0 / 99.0) 30046	(7.00, 0.89) (N/A, 0.01, 0.4)	240.4 144.6	0.3353 90.7 93.1	0.0969 [0.0938]	103.2%			
PFHxS	(399.0 / 80.0) 80506 (399.0 / 99.0) 27250	(7.88, 1.00) (0.00, N/A, 0.0)	275.6 110.3	0.3385 102.6 101.2	0.0891 [0.0911]	97.8%			
PFHpS	(449.0 / 80.0) 66039 (449.0 / 99.0) 15938	(8.64, 0.93) (N/A, 0.00, -0.3)	130.0 80.7	0.2413 87.8 86.0	0.0808 [0.0951]	84.9%			
PFOS	(499.0 / 80.0) 158753 (499.0 / 99.0) 34220	(9.32, 1.00) (0.00, N/A, 0.2)	71.1 169.0	0.2156 94.9 98.0	0.1128 [0.0927]	121.6%			M14 ABK 1/11/23
PFNS	(549.0 / 80.0) 100601 (549.0 / 99.0) 30371	(9.74, 1.04) (N/A, -0.01, 0.2)	105.5 70.2	0.3019 129.6 127.0	0.1014 [0.0960]	105.7%			
PFDS	(599.0 / 80.0) 126675 (599.0 / 99.0) 32040	(9.91, 1.06) (N/A, 0.00, 0.1)	130.7 50.1	0.2529 110.8 113.4	0.1156 [0.0963]	120.0%			
PFDoS	(699.0 / 80.0) 95149 (699.0 / 99.0) 24712	(10.13, 1.09) (N/A, 0.00, -0.6)	99.7 42.4	0.2597 125.3 111.1	0.2044 [0.0970]	210.8%			QC,
4:2FTS	(327.0 / 307.0) 250256 (327.0 / 81.0) 139152	(5.66, 1.00) (0.00, N/A, -0.1)	639.9 172.2	0.5560 88.4 89.8	0.4032 [0.3738]	107.9%			
6:2FTS	(427.0 / 407.0) 142169 (427.0 / 81.0) 111262	(7.46, 1.00) (0.00, N/A, 0.0)	349.4 223.9	0.7826 102.2 118.0	0.4133 [0.3796]	108.9%			
8:2FTS	(527.0 / 507.0) 160356 (527.0 / 81.0) 101780	(8.86, 1.00) (0.00, N/A, -0.3)	201.8 178.4	0.6347 83.7 91.8	0.4478 [0.3833]	116.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 80796 (498.0 / 478.0) 1124	(10.20, 1.00) (0.00, N/A, 1.3)	126.7 6.3	0.0139 73.8 69.2	0.1055 [0.1000]	105.5%			
NMeFOSA	(512.0 / 219.0) 32001 (512.0 / 169.0) 25746	(10.64, 1.00) (0.00, N/A, -0.1)	175.3 105.5	0.8045 112.8 108.7	0.4091 [0.4000]	102.3%			
NEIFOSA	(526.0 / 219.0) 34518 (526.0 / 169.0) 37483	(10.73, 1.00) (0.00, N/A, 0.2)	214.2 183.4	1.0859 102.7 96.9	0.3570 [0.4000]	89.2%			
NMeFOSAA	(570.0 / 419.0) 29987 (570.0 / 483.0) 18474	(9.42, 1.00) (0.01, N/A, 0.2)	39.8 1731.1	0.6161 121.2 115.5	0.1003 [0.1000]	100.3%			
NEIFOSAA	(584.0 / 419.0) 26385 (584.0 / 526.0) 23952	(9.64, 1.00) (0.01, N/A, -0.6)	38.4 58.4	0.9078 146.0 136.1	0.0828 [0.1000]	82.8%			
NMeFOSE	(616.0 / 59.0) 9354	(10.61, 1.00) (0.00, N/A, 0.0)	25.3	N/A 0.0 0.0	0.4050 [0.4000]	101.3%			
NEIFOSE	(630.0 / 59.0) 2260	(10.71, 1.00) (0.02, N/A, 0.0)	8.1	N/A 0.0 0.0	0.4414 [0.4000]	110.4%			
HFPO-DA	(285.0 / 169.0) 21528 (285.0 / 185.0) 65695	(6.34, 1.00) (0.00, N/A, 0.5)	277.8 205.8	3.0516 113.8 110.6	0.1836 [0.2000]	91.8%			
ADONA	(377.0 / 85.0) 106938 (377.0 / 251.0) 11453	(7.28, 1.15) (N/A, 0.00, -0.1)	255.4 36.4	0.1071 92.0 88.5	0.1745 [0.1885]	92.5%			
9CI-Pf3ONS	(531.0 / 351.0) 333131 (533.0 / 353.0) 110578	(9.68, 1.53) (N/A, -0.01, 0.1)	138.8 91.0	0.3319 106.9 102.2	0.2045 [0.1867]	109.5%			
11CI-PF3OUDS	(631.0 / 451.0) 249450 (633.0 / 453.0) 79842	(10.00, 1.58) (N/A, -0.01, -0.6)	255.4 137.2	0.3201 93.2 96.5	0.3049 [0.1886]	161.6%			QC,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 2053 (241.0 / 117.0) 3512	(4.35, 0.89) (N/A, 0.00, 0.4)	65.9 29.8	1.7101 116.3 113.7	0.2798 [0.4000]	70.0%			QC,
5:3FTCA	(341.0 / 236.7) 21361 (341.0 / 217.0) 37613	(6.66, 1.11) (N/A, 0.01, 0.2)	133.3 84.2	1.7608 105.4 109.2	0.3724 [0.4000]	93.1%			
7:3FTCA	(441.0 / 317.0) 22367 (441.0 / 337.0) 19254	(8.48, 1.42) (N/A, 0.00, -0.6)	102.5 116.2	0.8608 99.9 99.9	0.2591 [0.4000]	64.8%			QC,
PFEESA	(315.0 / 135.0) 61999 (315.0 / 83.0) 22685	(6.43, 1.07) (N/A, 0.00, -0.2)	370.5 31.0	0.3659 119.7 121.6	0.1670 [0.1785]	93.5%			
PFMPA	(229.0 / 85.0) 11011	(4.03, 0.83) (N/A, 0.00, 0.0)	173.3	N/A 0.0 0.0	0.1440 [0.2000]	72.0%			
PFMBA	(279.0 / 85.0) 38284	(5.23, 1.08) (N/A, 0.00, 0.0)	303.9	N/A 0.0 0.0	0.1982 [0.2000]	99.1%			
NFDHA	(295.0 / 201.0) 25871 (295.0 / 85.0) 27323	(5.86, 0.98) (N/A, -0.01, -0.1)	200.4 216.2	1.0561 114.8 108.0	0.1650 [0.2000]	82.5%			
13C3_PFBa_IIS	(216.0 / 172.0) 152502	(3.52, N/A) (N/A, 0.00, N/A)	492.4	N/A	0.6021 [1.0000]	60.2% {99.2%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 355603	(5.99, N/A) (N/A, 0.00, N/A)	598.5	N/A	0.9620 [1.0000]	96.2% {96.1%}			
13C4_PFOA_IIS	(417.0 / 372.0) 322772	(7.78, N/A) (N/A, 0.01, N/A)	457.4	N/A	0.7348 [1.0000]	73.5% {96.7%}			
13C5_PFNA_IIS	(468.0 / 423.0) 273704	(8.51, N/A) (N/A, -0.01, N/A)	437.3	N/A	0.6749 [1.0000]	67.5% {97.4%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 347637	(9.19, N/A) (N/A, -0.01, N/A)	307.0	N/A	0.8048 [1.0000]	80.5% { 77.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 604617	(7.88, N/A) (N/A, 0.01, N/A)	515.6	N/A	0.8185 [1.0000]	81.8% { 97.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 641970	(9.33, N/A) (N/A, -0.01, N/A)	396.5	N/A	0.8326 [1.0000]	83.3% { 96.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1238201	(3.51, N/A) (N/A, -0.01, N/A)	473.3	N/A	8.2643 [8.0000]	103.3% { 104.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1052771	(4.86, N/A) (N/A, 0.00, N/A)	532.6	N/A	3.6173 [4.0000]	90.4% { 101.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 764927	(5.99, N/A) (N/A, 0.00, N/A)	515.5	N/A	2.1051 [2.0000]	105.3% { 102.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 688080	(6.95, N/A) (N/A, 0.00, N/A)	444.3	N/A	1.9921 [2.0000]	99.6% { 101.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 707467	(7.78, N/A) (N/A, 0.01, N/A)	546.4	N/A	2.1512 [2.0000]	107.6% { 104.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 289891	(8.51, N/A) (N/A, 0.00, N/A)	376.5	N/A	1.0671 [1.0000]	106.7% { 107.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 444867	(9.19, N/A) (N/A, 0.00, N/A)	330.6	N/A	1.1357 [1.0000]	113.6% { 96.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 680301	(9.68, N/A) (N/A, -0.01, N/A)	411.8	N/A	1.4046 [1.0000]	140.5% { 112.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 488763	(9.89, N/A) (N/A, 0.00, N/A)	410.0	N/A	1.0510 [1.0000]	105.1% { 93.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 294323	(10.14, N/A) (N/A, -0.01, N/A)	359.6	N/A	0.7907 [1.0000]	79.1% { 90.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1948171	(5.91, N/A) (N/A, 0.00, N/A)	587.5	N/A	2.4237 [2.0000]	121.2% { 105.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1081299	(7.88, N/A) (N/A, 0.00, N/A)	552.6	N/A	2.1466 [2.0000]	107.3% { 111.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1591298	(9.32, N/A) (N/A, -0.01, N/A)	378.2	N/A	2.0881 [2.0000]	104.4% { 96.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 772487	(5.66, N/A) (N/A, -0.01, N/A)	691.6	N/A	4.9236 [4.0000]	123.1% { 102.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 900651	(7.45, N/A) (N/A, 0.00, N/A)	588.4	N/A	3.8917 [4.0000]	97.3% { 98.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 982037	(8.86, N/A) (N/A, 0.00, N/A)	268.6	N/A	4.5288 [4.0000]	113.2% { 91.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1437955	(10.20, N/A) (N/A, 0.00, N/A)	658.2	N/A	1.4251 [2.0000]	71.3% { 90.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 164890	(10.63, N/A) (N/A, 0.00, N/A)	512.9	N/A	0.9101 [2.0000]	45.5% { 93.3% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 194155	(10.72, N/A) (N/A, 0.00, N/A)	425.7	N/A	1.1367 [2.0000]	56.8% { 100.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-LCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (2)
 Acquired: 2023/01/11 - 11:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1330930	(9.41, N/A) (N/A, -0.01, N/A)	308.9	N/A	5.5726 [4.0000]	139.3% { 100.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1332393	(9.64, N/A) (N/A, -0.01, N/A)	829.2	N/A	7.0953 [4.0000]	177.4% { 108.3% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 360386	(10.60, N/A) (N/A, 0.00, N/A)	342.2	N/A	12.9633 [20.0000]	64.8% { 78.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 182658	(10.69, N/A) (N/A, 0.00, N/A)	239.7	N/A	14.2563 [20.0000]	71.3% { 73.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1478855	(6.34, N/A) (N/A, 0.00, N/A)	636.6	N/A	7.7556 [8.0000]	96.9% { 96.7% }			

INITIAL AND CONTINUING CALIBRATION CHECK

Laboratory:

Work Order:

Client:

Project:

Instrument ID:

Calibration:

Standard ID:

Sequence:

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
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+/- %

INITIAL AND CONTINUING CALIBRATION CHECK

Laboratory:

Client:

Instrument ID:

Standard ID:

Work Order:

Project:

Calibration:

Sequence:

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0448

Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2302005
 Sequence: SC00125

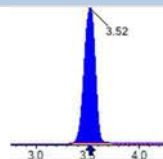
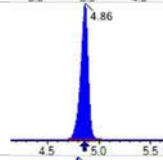
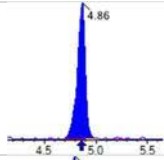
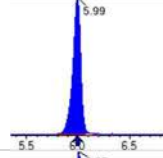
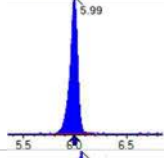
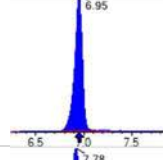
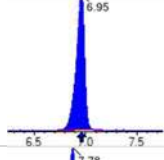
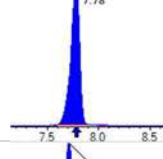
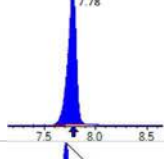
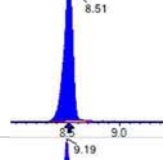
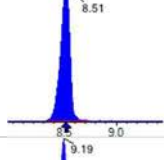
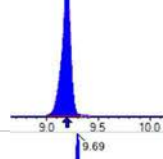
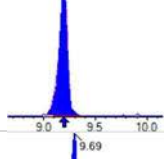
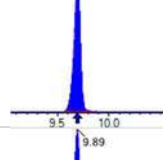
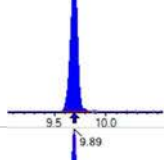
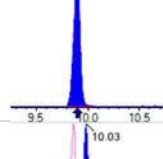
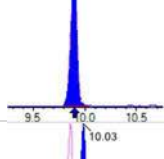
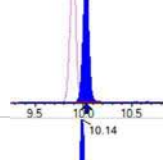
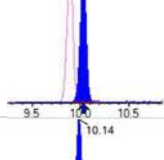
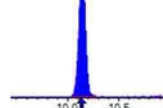
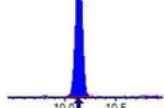
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC00125-CCV1	PFBA	20.0	20.9	105	ng/mL	+/- 30.00%
	PFPEA	10.0	10.0	100	ng/mL	+/- 30.00%
	PFHXA	5.00	5.21	104	ng/mL	+/- 30.00%
	PFHPA	5.00	5.22	104	ng/mL	+/- 30.00%
	PFOA	5.00	5.15	103	ng/mL	+/- 30.00%
	PFNA	5.00	5.42	108	ng/mL	+/- 30.00%
	PFDA	5.00	4.82	96.4	ng/mL	+/- 30.00%
	PFUnA	5.00	5.70	114	ng/mL	+/- 30.00%
	PFDOA	5.00	5.34	107	ng/mL	+/- 30.00%
	PFTRDA	5.00	5.21	104	ng/mL	+/- 30.00%
	PFTEDA	5.00	5.45	109	ng/mL	+/- 30.00%
	PFBS	4.42	4.61	104	ng/mL	+/- 30.00%
	PFPEs	4.70	6.04	129	ng/mL	+/- 30.00%
	PFHXS	4.58	4.92	108	ng/mL	+/- 30.00%
	PFHPS	4.78	4.19	87.7	ng/mL	+/- 30.00%
	PFOS	4.65	4.38	94.1	ng/mL	+/- 30.00%
	PFNS	4.80	5.65	118	ng/mL	+/- 30.00%
	PFDS	4.82	6.02	125	ng/mL	+/- 30.00%
	PFDOS	4.85	11.7	241	ng/mL	+/- 30.00%
	4:2FTS	18.8	20.0	106	ng/mL	+/- 30.00%
	6:2FTS	19.0	23.3	123	ng/mL	+/- 30.00%
	8:2FTS	19.2	19.7	103	ng/mL	+/- 30.00%
	PFOSA	5.00	5.44	109	ng/mL	+/- 30.00%
	NMeFOSA	20.0	24.8	124	ng/mL	+/- 30.00%
	NEtFOSA	20.0	21.0	105	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.87	97.4	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.96	99.1	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.0	95.1	ng/mL	+/- 30.00%
	NEtFOSE	20.0	25.7	128	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.3	103	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2302005
Standard ID:	22L0448	Sequence:	SC00125

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC00125-CCV1	ADONA	9.45	9.37	99.1	ng/mL	+/- 30.00%
	PFEESA	8.90	9.42	106	ng/mL	+/- 30.00%
	PFMPA	10.0	7.91	79.1	ng/mL	+/- 30.00%
	PFMBA	10.0	11.3	113	ng/mL	+/- 30.00%
	NFDHA	10.0	9.42	94.2	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	10.6	113	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	16.3	173	ng/mL	+/- 30.00%
	3:3FTCA	20.0	17.4	87.1	ng/mL	+/- 30.00%
	5:3FTCA	20.0	20.4	102	ng/mL	+/- 30.00%
	7:3FTCA	20.0	14.3	71.4	ng/mL	+/- 30.00%

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2830054	(3.52, 1.00) (0.00, N/A, 0.0)	416.1	N/A 0.0 0.0	20.9147 [20.0000]	104.6%			
PFPeA	(263.0 / 219.0) 2528451 (263.0 / 69.0) 29421	(4.86, 1.00) (0.00, N/A, 0.1)	537.5 242.8	0.0116 107.2 100.0	10.0421 [10.0000]	100.4%			
PFHxA	(313.0 / 269.0) 1924295 (313.0 / 119.0) 180492	(5.99, 1.00) (0.00, N/A, 0.0)	434.0 305.3	0.0938 95.6 100.0	5.2126 [5.0000]	104.3%			
PFHpA	(363.0 / 319.0) 1788697 (363.0 / 169.0) 526625	(6.95, 1.00) (0.00, N/A, -0.2)	471.5 391.6	0.2944 103.5 100.0	5.2240 [5.0000]	104.5%			
PFOA	(413.0 / 369.0) 1816420 (413.0 / 169.0) 625936	(7.78, 1.00) (0.00, N/A, 0.0)	489.9 406.9	0.3446 107.9 100.0	5.1459 [5.0000]	102.9%			
PFNA	(463.0 / 419.0) 1400633 (463.0 / 169.0) 309191	(8.51, 1.00) (0.00, N/A, 0.1)	456.9 358.6	0.2208 98.4 100.0	5.4247 [5.0000]	108.5%			
PFDA	(513.0 / 469.0) 2272961 (513.0 / 169.0) 202669	(9.19, 1.00) (0.00, N/A, 0.1)	356.0 257.2	0.0892 81.2 100.0	4.8179 [5.0000]	96.4%			
PFUnA	(563.0 / 519.0) 3147423 (563.0 / 169.0) 295191	(9.69, 1.00) (0.00, N/A, 0.2)	481.0 318.7	0.0938 89.6 100.0	5.7013 [5.0000]	114.0%			
PFDoA	(613.0 / 569.0) 2626418 (613.0 / 169.0) 356431	(9.89, 1.00) (0.00, N/A, 0.1)	735.7 280.8	0.1357 105.5 100.0	5.3388 [5.0000]	106.8%			
PFTrDA	(663.0 / 619.0) 2523647 (663.0 / 169.0) 490461	(10.03, 1.01) (N/A, 0.00, -0.3)	781.0 411.2	0.1943 96.4 100.0	5.2057 [5.0000]	104.1%			
PFTeDA	(713.0 / 669.0) 1690787 (713.0 / 169.0) 307371	(10.14, 1.00) (0.00, N/A, 0.1)	674.5 367.4	0.1818 93.0 100.0	5.4531 [5.0000]	109.1%			

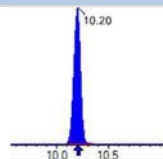
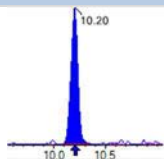
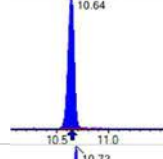
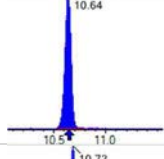
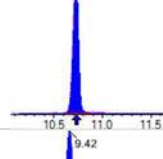
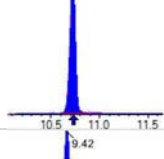
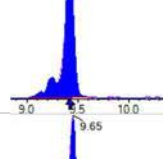
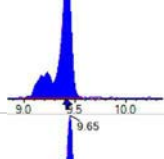
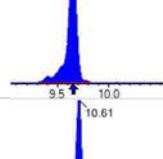
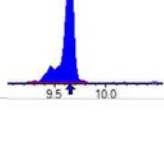
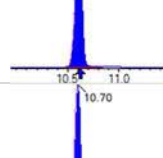
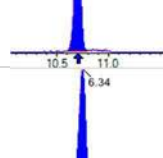
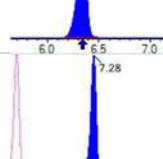
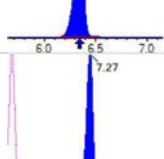
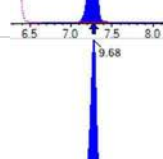
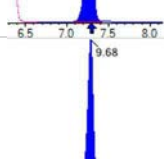
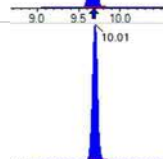
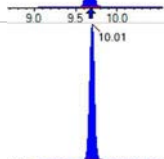
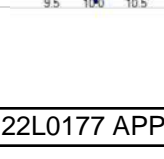
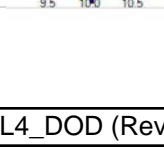


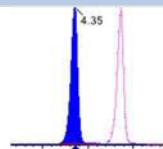
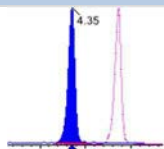
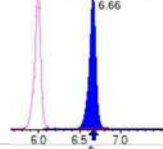
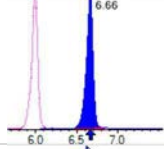
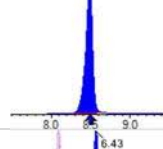
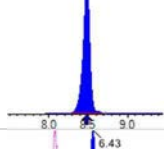
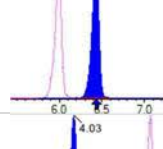
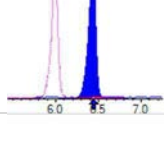
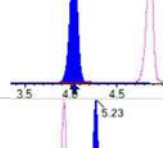
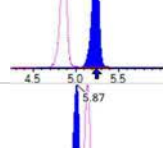
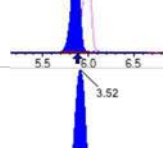
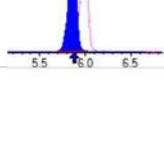
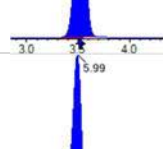
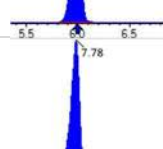
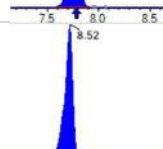

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (3)
 Acquired: 2023/01/11 - 11:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2775405 (299.0 / 99.0) 1757268	(5.92, 1.00) (0.00, N/A, 0.1)	529.2 544.6	0.6332 97.1 100.0	4.6078 [4.4237]	104.2%			
PFPeS	(349.0 / 80.0) 5035012 (349.0 / 99.0) 1813367	(6.99, 0.89) (N/A, 0.00, 0.0)	569.4 591.7	0.3602 97.4 100.0	6.0399 [4.6919]	128.7%			
PFHxS	(399.0 / 80.0) 4010226 (399.0 / 99.0) 1341688	(7.87, 1.00) (0.00, N/A, 0.1)	716.1 926.0	0.3346 101.4 100.0	4.9245 [4.5549]	108.1%			
PFHpS	(449.0 / 80.0) 3566667 (449.0 / 99.0) 1000781	(8.64, 0.93) (N/A, 0.00, -0.3)	563.4 389.0	0.2806 102.1 100.0	4.1904 [4.7570]	88.1%			
PFOS	(499.0 / 80.0) 4454496 (499.0 / 99.0) 979350	(9.33, 1.00) (0.00, N/A, 0.0)	509.5 998.6	0.2199 96.8 100.0	4.3753 [4.6375]	94.3%			
PFNS	(549.0 / 80.0) 5837341 (549.0 / 99.0) 1387888	(9.74, 1.04) (N/A, 0.00, 0.2)	585.8 519.5	0.2378 102.1 100.0	5.6542 [4.7994]	117.8%			
PFDS	(599.0 / 80.0) 6864792 (599.0 / 99.0) 1530891	(9.92, 1.06) (N/A, 0.00, 0.0)	618.9 704.9	0.2230 97.7 100.0	6.0161 [4.8155]	124.9%			
PFDoS	(699.0 / 80.0) 5669186 (699.0 / 99.0) 1324859	(10.13, 1.09) (N/A, 0.00, 0.1)	974.3 520.4	0.2337 112.7 100.0	11.6965 [4.8478]	241.3%			QC,
4:2FTS	(327.0 / 307.0) 12111453 (327.0 / 81.0) 7501169	(5.67, 1.00) (0.00, N/A, 0.2)	640.0 657.9	0.6193 98.4 100.0	19.9682 [18.6906]	106.8%			
6:2FTS	(427.0 / 407.0) 8150298 (427.0 / 81.0) 5403514	(7.45, 1.00) (0.00, N/A, -0.1)	618.0 716.1	0.6630 86.6 100.0	23.3283 [18.9808]	122.9%			
8:2FTS	(527.0 / 507.0) 7684962 (527.0 / 81.0) 5314423	(8.87, 1.00) (0.00, N/A, -0.1)	338.1 359.8	0.6915 91.2 100.0	19.6883 [19.1658]	102.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 4587246 (498.0 / 478.0) 92176	(10.20, 1.00) (0.00, N/A, -0.2)	926.5 141.5	0.0201 106.6 100.0	5.4397 [5.0000]	108.8%			
NMeFOSA	(512.0 / 219.0) 2075144 (512.0 / 169.0) 1536497	(10.64, 1.00) (0.00, N/A, 0.1)	949.9 908.3	0.7404 103.8 100.0	24.7546 [20.0000]	123.8%			
NEiFOSA	(526.0 / 219.0) 2026880 (526.0 / 169.0) 2271930	(10.72, 1.00) (0.00, N/A, 0.0)	1048.2 1301.2	1.1209 106.0 100.0	20.9629 [20.0000]	104.8%			
NMeFOSAA	(570.0 / 419.0) 1447568 (570.0 / 483.0) 772156	(9.42, 1.00) (0.00, N/A, -0.2)	359.1 329.2	0.5334 104.9 100.0	4.8687 [5.0000]	97.4%			
NEiFOSAA	(584.0 / 419.0) 1457119 (584.0 / 526.0) 971715	(9.65, 1.00) (0.00, N/A, -0.1)	640.0 427.2	0.6669 107.2 100.0	4.9553 [5.0000]	99.1%			
NMeFOSE	(616.0 / 59.0) 563375	(10.61, 1.00) (0.00, N/A, 0.0)	521.7	N/A 0.0 0.0	19.0180 [20.0000]	95.1%			
NEiFOSE	(630.0 / 59.0) 178992	(10.70, 1.00) (0.01, N/A, 0.0)	207.9	N/A 0.0 0.0	25.6815 [20.0000]	128.4%			
HFPO-DA	(285.0 / 169.0) 1246098 (285.0 / 185.0) 3438645	(6.34, 1.00) (0.00, N/A, 0.0)	574.8 567.9	2.7595 102.9 100.0	10.2788 [10.0000]	102.8%			
ADONA	(377.0 / 85.0) 5935355 (377.0 / 251.0) 718648	(7.28, 1.15) (N/A, 0.00, 0.0)	598.4 453.4	0.1211 104.0 100.0	9.3665 [9.4270]	99.4%			
9CI-Pf3ONS	(531.0 / 351.0) 18719857 (533.0 / 353.0) 6078314	(9.68, 1.53) (N/A, 0.00, 0.0)	570.2 481.0	0.3247 104.6 100.0	10.5865 [9.3325]	113.4%			
11CI-PF3OUDS	(631.0 / 451.0) 13820468 (633.0 / 453.0) 4584249	(10.01, 1.58) (N/A, 0.00, 0.0)	1264.1 800.8	0.3317 96.6 100.0	16.3376 [9.4321]	173.2%			QC,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 125894 (241.0 / 117.0) 189275	(4.35, 0.90) (N/A, 0.00, 0.0)	517.2 320.6	1.5034 102.2 100.0	17.4202 [20.0000]	87.1%			
5:3FTCA	(341.0 / 236.7) 1144627 (341.0 / 217.0) 1846233	(6.66, 1.11) (N/A, 0.00, -0.1)	430.6 452.4	1.6130 96.6 100.0	20.3756 [20.0000]	101.9%			
7:3FTCA	(441.0 / 317.0) 1207914 (441.0 / 337.0) 1040882	(8.48, 1.42) (N/A, 0.00, 0.1)	383.8 370.3	0.8617 100.0 100.0	14.2873 [20.0000]	71.4%			
PFEESA	(315.0 / 135.0) 3425159 (315.0 / 83.0) 1030194	(6.43, 1.07) (N/A, 0.00, -0.2)	626.6 479.4	0.3008 98.4 100.0	9.4170 [8.9246]	105.5%			
PFMPA	(229.0 / 85.0) 595812	(4.03, 0.83) (N/A, 0.00, 0.0)	620.6	N/A 0.0 0.0	7.9141 [10.0000]	79.1%			
PFMBA	(279.0 / 85.0) 2155684	(5.23, 1.08) (N/A, 0.00, 0.0)	550.4	N/A 0.0 0.0	11.3351 [10.0000]	113.4%			
NFDHA	(295.0 / 201.0) 1446725 (295.0 / 85.0) 1415272	(5.87, 0.98) (N/A, 0.00, 0.1)	598.7 545.5	0.9783 106.4 100.0	9.4224 [10.0000]	94.2%			
13C3_PFBa_IIS	(216.0 / 172.0) 153751	(3.52, N/A) (N/A, 0.00, N/A)	422.3	N/A	0.6070 [1.0000]	60.7% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 369995	(5.99, N/A) (N/A, 0.00, N/A)	452.7	N/A	1.0009 [1.0000]	100.1% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 333798	(7.78, N/A) (N/A, 0.00, N/A)	433.8	N/A	0.7599 [1.0000]	76.0% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 280994	(8.52, N/A) (N/A, 0.00, N/A)	359.4	N/A	0.6929 [1.0000]	69.3% { 100.0% }			

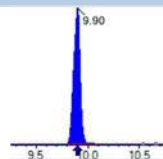
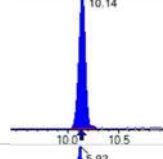
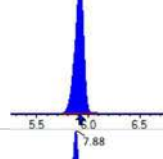
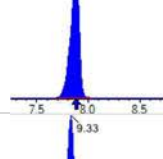
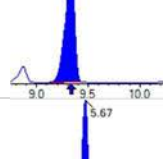
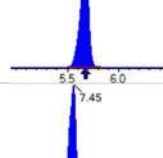
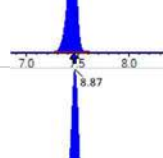
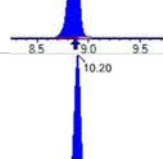
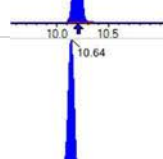
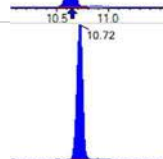



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (3)
 Acquired: 2023/01/11 - 11:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 447828	(9.19, N/A) (N/A, 0.00, N/A)	275.8	N/A	1.0368 [1.0000]	103.7% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 620472	(7.88, N/A) (N/A, 0.00, N/A)	504.2	N/A	0.8399 [1.0000]	84.0% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 664899	(9.33, N/A) (N/A, 0.00, N/A)	376.3	N/A	0.8623 [1.0000]	86.2% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1183409	(3.52, N/A) (N/A, 0.00, N/A)	536.9	N/A	7.8344 [8.0000]	97.9% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1036711	(4.86, N/A) (N/A, 0.00, N/A)	543.8	N/A	3.4235 [4.0000]	85.6% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 749209	(5.99, N/A) (N/A, 0.00, N/A)	484.1	N/A	1.9817 [2.0000]	99.1% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 678167	(6.95, N/A) (N/A, 0.00, N/A)	508.3	N/A	1.8870 [2.0000]	94.4% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 677558	(7.78, N/A) (N/A, 0.00, N/A)	466.2	N/A	1.9922 [2.0000]	99.6% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 268929	(8.51, N/A) (N/A, 0.00, N/A)	307.2	N/A	0.9643 [1.0000]	96.4% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 460168	(9.19, N/A) (N/A, 0.00, N/A)	357.9	N/A	0.9119 [1.0000]	91.2% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 607407	(9.69, N/A) (N/A, 0.00, N/A)	328.7	N/A	0.9735 [1.0000]	97.4% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 525491	(9.90, N/A) (N/A, 0.00, N/A)	367.8	N/A	0.8772 [1.0000]	87.7% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 325489	(10.14, N/A) (N/A, 0.00, N/A)	349.3	N/A	0.6788 [1.0000]	67.9% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1846590	(5.92, N/A) (N/A, 0.00, N/A)	514.4	N/A	2.2386 [2.0000]	111.9% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 974439	(7.88, N/A) (N/A, 0.00, N/A)	597.3	N/A	1.8850 [2.0000]	94.3% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1656565	(9.33, N/A) (N/A, 0.00, N/A)	132.7	N/A	2.0988 [2.0000]	104.9% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 754861	(5.67, N/A) (N/A, 0.00, N/A)	543.2	N/A	4.6883 [4.0000]	117.2% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 914694	(7.45, N/A) (N/A, 0.00, N/A)	582.2	N/A	3.8514 [4.0000]	96.3% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1070494	(8.87, N/A) (N/A, 0.00, N/A)	300.0	N/A	4.8106 [4.0000]	120.3% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1583023	(10.20, N/A) (N/A, 0.00, N/A)	738.3	N/A	1.5148 [2.0000]	75.7% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 176723	(10.64, N/A) (N/A, 0.00, N/A)	556.6	N/A	0.9418 [2.0000]	47.1% { 100.0% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 194131	(10.72, N/A) (N/A, 0.00, N/A)	445.9	N/A	1.0974 [2.0000]	54.9% { 100.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (3)
 Acquired: 2023/01/11 - 11:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1323857	(9.42, N/A) (N/A, 0.00, N/A)	377.2	N/A	5.3518 [4.0000]	133.8% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1229962	(9.65, N/A) (N/A, 0.00, N/A)	606.4	N/A	6.3240 [4.0000]	158.1% { 100.0% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 462289	(10.61, N/A) (N/A, 0.00, N/A)	329.0	N/A	16.0554 [20.0000]	80.3% { 100.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 248605	(10.70, N/A) (N/A, 0.00, N/A)	240.1	N/A	18.7343 [20.0000]	93.7% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1529069	(6.34, N/A) (N/A, 0.00, N/A)	615.7	N/A	7.7070 [8.0000]	96.3% { 100.0% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0448

Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2302005
 Sequence: SC00125

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC00125-CCV2	PFBA	20.0	20.3	102	ng/mL	+/- 30.00%
	PFPEA	10.0	10.1	101	ng/mL	+/- 30.00%
	PFHXA	5.00	5.14	103	ng/mL	+/- 30.00%
	PFHPA	5.00	4.99	99.7	ng/mL	+/- 30.00%
	PFOA	5.00	5.22	104	ng/mL	+/- 30.00%
	PFNA	5.00	5.22	104	ng/mL	+/- 30.00%
	PFDA	5.00	5.28	106	ng/mL	+/- 30.00%
	PFUnA	5.00	4.92	98.3	ng/mL	+/- 30.00%
	PFDOA	5.00	5.81	116	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.39	87.7	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.90	98.0	ng/mL	+/- 30.00%
	PFBS	4.42	4.58	104	ng/mL	+/- 30.00%
	PFPEs	4.70	6.05	129	ng/mL	+/- 30.00%
	PFHXS	4.58	4.70	103	ng/mL	+/- 30.00%
	PFHPS	4.78	4.28	89.6	ng/mL	+/- 30.00%
	PFOS	4.65	4.52	97.2	ng/mL	+/- 30.00%
	PFNS	4.80	5.82	121	ng/mL	+/- 30.00%
	PFDS	4.82	6.01	125	ng/mL	+/- 30.00%
	PFDOS	4.85	13.2	272	ng/mL	+/- 30.00%
	4:2FTS	18.8	20.5	109	ng/mL	+/- 30.00%
	6:2FTS	19.0	23.7	125	ng/mL	+/- 30.00%
	8:2FTS	19.2	23.4	122	ng/mL	+/- 30.00%
	PFOSA	5.00	5.58	112	ng/mL	+/- 30.00%
	NMeFOSA	20.0	23.4	117	ng/mL	+/- 30.00%
	NEtFOSA	20.0	19.9	99.7	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.82	96.4	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.07	101	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.3	96.6	ng/mL	+/- 30.00%
	NEtFOSE	20.0	25.5	127	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.9	109	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2302005
Standard ID:	22L0448	Sequence:	SC00125

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC00125-CCV2	ADONA	9.45	10.1	107	ng/mL	+/- 30.00%
	PFEESA	8.90	9.69	109	ng/mL	+/- 30.00%
	PFMPA	10.0	7.97	79.7	ng/mL	+/- 30.00%
	PFMBA	10.0	11.0	110	ng/mL	+/- 30.00%
	NFDHA	10.0	9.48	94.8	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	11.0	118	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	18.6	197	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.8	93.8	ng/mL	+/- 30.00%
	5:3FTCA	20.0	20.2	101	ng/mL	+/- 30.00%
	7:3FTCA	20.0	14.9	74.7	ng/mL	+/- 30.00%



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (29)
 Acquired: 2023/01/11 - 17:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2974891	(3.51, 1.00) (0.00, N/A, 0.0)	514.0	N/A 0.0 0.0	20.3019 [20.0000]	101.5%			
PFPeA	(263.0 / 219.0) 2591213 (263.0 / 69.0) 27922	(4.85, 1.00) (0.00, N/A, -0.1)	513.0 253.5	0.0108 99.3 92.6	10.1138 [10.0000]	101.1%			
PFHxA	(313.0 / 269.0) 1876728 (313.0 / 119.0) 181346	(5.98, 1.00) (0.00, N/A, 0.2)	509.0 377.6	0.0966 98.5 103.0	5.1445 [5.0000]	102.9%			
PFHpA	(363.0 / 319.0) 1738414 (363.0 / 169.0) 478716	(6.94, 1.00) (0.00, N/A, 0.0)	453.4 369.5	0.2754 96.8 93.5	4.9867 [5.0000]	99.7%			
PFOA	(413.0 / 369.0) 1853001 (413.0 / 169.0) 609827	(7.76, 1.00) (0.00, N/A, 0.1)	475.9 482.8	0.3291 103.1 95.5	5.2193 [5.0000]	104.4%			
PFNA	(463.0 / 419.0) 1445365 (463.0 / 169.0) 343212	(8.49, 1.00) (0.00, N/A, 0.0)	450.8 487.6	0.2375 105.9 107.6	5.2234 [5.0000]	104.5%			
PFDA	(513.0 / 469.0) 2216248 (513.0 / 169.0) 227405	(9.17, 1.00) (0.00, N/A, -0.4)	427.3 281.7	0.1026 93.4 115.1	5.2804 [5.0000]	105.6%			
PFUnA	(563.0 / 519.0) 3116504 (563.0 / 169.0) 256911	(9.68, 1.00) (0.00, N/A, 0.2)	582.2 377.6	0.0824 78.8 87.9	4.9157 [5.0000]	98.3%			
PFDoA	(613.0 / 569.0) 3275946 (613.0 / 169.0) 426215	(9.88, 1.00) (0.00, N/A, 0.0)	550.7 313.6	0.1301 101.1 95.9	5.8139 [5.0000]	116.3%			
PFTrDA	(663.0 / 619.0) 2435217 (663.0 / 169.0) 605650	(10.01, 1.01) (N/A, -0.01, -0.1)	755.9 644.9	0.2487 123.3 128.0	4.3857 [5.0000]	87.7%			
PFTeDA	(713.0 / 669.0) 1551093 (713.0 / 169.0) 343220	(10.13, 1.00) (0.00, N/A, -0.1)	813.6 344.1	0.2213 113.2 121.7	4.8981 [5.0000]	98.0%			

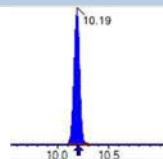
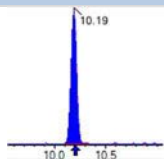
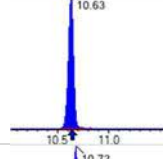
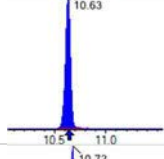
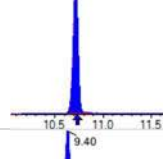
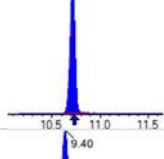
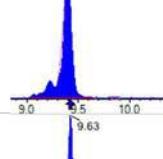
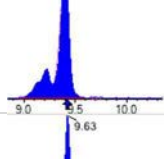
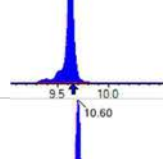
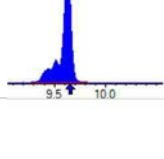
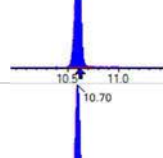
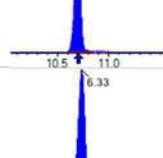
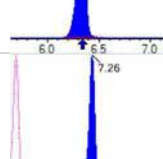
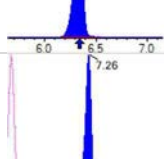
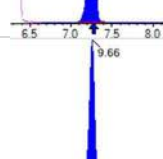
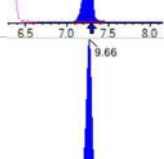
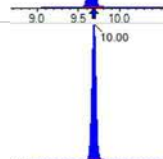
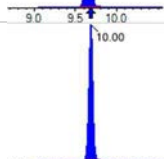
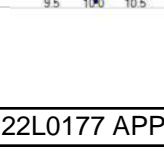
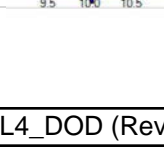


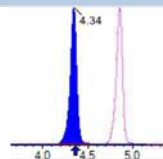
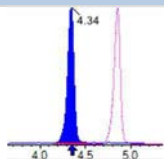
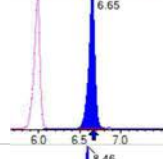
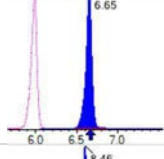
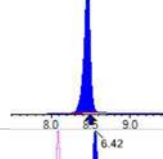
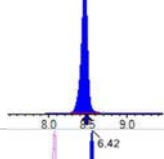
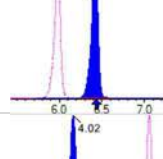
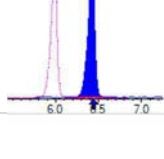
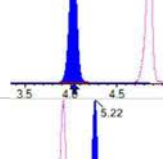
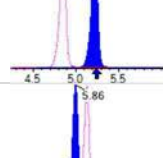
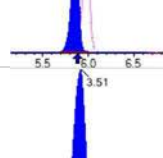
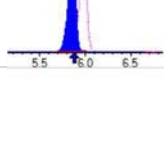
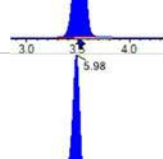
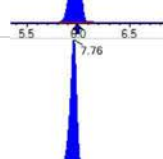
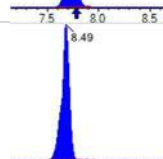

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (29)
 Acquired: 2023/01/11 - 17:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2852028 (299.0 / 99.0) 1832672	(5.91, 1.00) (0.00, N/A, -0.2)	593.6 511.7	0.6426 98.5 101.5	4.5838 [4.4237]	103.6%			
PFPeS	(349.0 / 80.0) 5274200 (349.0 / 99.0) 1920429	(6.98, 0.89) (N/A, -0.01, 0.1)	647.7 503.5	0.3641 98.5 101.1	6.0468 [4.6919]	128.9%			
PFHxS	(399.0 / 80.0) 4000569 (399.0 / 99.0) 1367031	(7.85, 1.00) (0.00, N/A, 0.1)	608.4 932.7	0.3417 103.6 102.1	4.6952 [4.5549]	103.1%			
PFHpS	(449.0 / 80.0) 3637496 (449.0 / 99.0) 1045666	(8.62, 0.93) (N/A, -0.02, -0.2)	561.2 593.9	0.2875 104.6 102.5	4.2835 [4.7570]	90.0%			
PFOS	(499.0 / 80.0) 4587861 (499.0 / 99.0) 1044883	(9.31, 1.00) (0.00, N/A, 0.1)	491.4 813.0	0.2277 100.2 103.6	4.5184 [4.6375]	97.4%			
PFNS	(549.0 / 80.0) 5995499 (549.0 / 99.0) 1385272	(9.73, 1.05) (N/A, -0.01, 0.0)	670.8 460.4	0.2311 99.2 97.2	5.8209 [4.7994]	121.3%			
PFDS	(599.0 / 80.0) 6837107 (599.0 / 99.0) 1489711	(9.90, 1.06) (N/A, -0.01, 0.0)	751.2 663.3	0.2179 95.4 97.7	6.0057 [4.8155]	124.7%			
PFDoS	(699.0 / 80.0) 6387810 (699.0 / 99.0) 1308462	(10.12, 1.09) (N/A, -0.01, 0.3)	794.7 592.9	0.2048 98.8 87.7	13.2097 [4.8478]	272.5%			QC,
4:2FTS	(327.0 / 307.0) 12220038 (327.0 / 81.0) 6724355	(5.66, 1.00) (-0.01, N/A, 0.1)	513.7 506.0	0.5503 87.4 88.8	20.5196 [18.6906]	109.8%			
6:2FTS	(427.0 / 407.0) 7790309 (427.0 / 81.0) 5161718	(7.44, 1.00) (0.00, N/A, 0.4)	704.1 617.8	0.6626 86.5 99.9	23.6734 [18.9808]	124.7%			
8:2FTS	(527.0 / 507.0) 7736511 (527.0 / 81.0) 5253002	(8.85, 1.00) (0.00, N/A, 0.3)	450.2 390.8	0.6790 89.5 98.2	23.3665 [19.1658]	121.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 5723740 (498.0 / 478.0) 134562	(10.19, 1.00) (0.00, N/A, 0.0)	1382.9 427.5	0.0235 124.7 117.0	5.5756 [5.0000]	111.5%			
NMeFOSA	(512.0 / 219.0) 2988260 (512.0 / 169.0) 2245539	(10.63, 1.00) (0.00, N/A, 0.0)	1589.6 1578.3	0.7515 105.3 101.5	23.3671 [20.0000]	116.8%			
NEIFOSA	(526.0 / 219.0) 2787601 (526.0 / 169.0) 3134647	(10.72, 1.00) (0.00, N/A, 0.0)	1222.5 1041.7	1.1245 106.3 100.3	19.9325 [20.0000]	99.7%			
NMeFOSAA	(570.0 / 419.0) 1542651 (570.0 / 483.0) 730382	(9.40, 1.00) (0.00, N/A, -0.2)	393.5 329.5	0.4735 93.1 88.8	4.8200 [5.0000]	96.4%			
NEIFOSAA	(584.0 / 419.0) 1527523 (584.0 / 526.0) 936177	(9.63, 1.00) (0.00, N/A, -0.1)	619.6 464.5	0.6129 98.6 91.9	5.0722 [5.0000]	101.4%			
NMeFOSE	(616.0 / 59.0) 917026	(10.60, 1.00) (0.01, N/A, 0.0)	632.4	N/A 0.0 0.0	19.3182 [20.0000]	96.6%			
NEtFOSE	(630.0 / 59.0) 274456	(10.70, 1.00) (0.01, N/A, 0.0)	588.7	N/A 0.0 0.0	25.4937 [20.0000]	127.5%			
HFPO-DA	(285.0 / 169.0) 1316356 (285.0 / 185.0) 3582120	(6.33, 1.00) (0.00, N/A, 0.0)	624.5 651.5	2.7212 101.4 98.6	10.9092 [10.0000]	109.1%			
ADONA	(377.0 / 85.0) 6378036 (377.0 / 251.0) 746802	(7.26, 1.15) (N/A, -0.02, -0.1)	682.1 559.3	0.1171 100.6 96.7	10.1122 [9.4270]	107.3%			
9CI-Pf3ONS	(531.0 / 351.0) 19374630 (533.0 / 353.0) 6074889	(9.66, 1.53) (N/A, -0.02, -0.1)	712.0 607.4	0.3135 101.0 96.6	11.0307 [9.3325]	118.2%			
11CI-PF3OUDS	(631.0 / 451.0) 15681155 (633.0 / 453.0) 5138834	(10.00, 1.58) (N/A, -0.01, 0.1)	641.1 772.9	0.3277 95.4 98.8	18.6240 [9.4321]	197.5%			QC,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 137960 (241.0 / 117.0) 204744	(4.34, 0.89) (N/A, -0.01, 0.0)	487.7 339.5	1.4841 100.9 98.7	18.7605 [20.0000]	93.8%			
5:3FTCA	(341.0 / 236.7) 1120497 (341.0 / 217.0) 1763952	(6.65, 1.11) (N/A, -0.01, 0.0)	558.5 449.5	1.5743 94.3 97.6	20.1844 [20.0000]	100.9%			
7:3FTCA	(441.0 / 317.0) 1248372 (441.0 / 337.0) 1063916	(8.46, 1.41) (N/A, -0.03, 0.0)	400.3 431.7	0.8522 98.9 98.9	14.9422 [20.0000]	74.7%			
PFEESA	(315.0 / 135.0) 3484291 (315.0 / 83.0) 935607	(6.42, 1.07) (N/A, -0.01, 0.0)	606.8 453.9	0.2685 87.8 89.3	9.6940 [8.9246]	108.6%			
PFMPA	(229.0 / 85.0) 610369	(4.02, 0.83) (N/A, -0.01, 0.0)	804.3	N/A 0.0 0.0	7.9676 [10.0000]	79.7%			
PFMBA	(279.0 / 85.0) 2130498	(5.22, 1.08) (N/A, -0.01, 0.0)	621.0	N/A 0.0 0.0	11.0095 [10.0000]	110.1%			
NFDHA	(295.0 / 201.0) 1437646 (295.0 / 85.0) 1390340	(5.86, 0.98) (N/A, -0.01, 0.1)	550.9 499.9	0.9671 105.2 98.9	9.4751 [10.0000]	94.8%			
13C3_PFBA_IIS	(216.0 / 172.0) 164304	(3.51, N/A) (N/A, -0.01, N/A)	365.0	N/A	0.6487 [1.0000]	64.9% { 106.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 354267	(5.98, N/A) (N/A, -0.01, N/A)	447.1	N/A	0.9584 [1.0000]	95.8% { 95.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 371862	(7.76, N/A) (N/A, -0.02, N/A)	464.6	N/A	0.8465 [1.0000]	84.7% { 111.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 287494	(8.49, N/A) (N/A, -0.03, N/A)	457.5	N/A	0.7089 [1.0000]	70.9% { 102.3% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (29)
 Acquired: 2023/01/11 - 17:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 374262	(9.17, N/A) (N/A, -0.02, N/A)	372.0	N/A	0.8665 [1.0000]	86.6% { 83.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 629372	(7.86, N/A) (N/A, -0.02, N/A)	508.9	N/A	0.8520 [1.0000]	85.2% { 101.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 675527	(9.31, N/A) (N/A, -0.02, N/A)	363.5	N/A	0.8761 [1.0000]	87.6% { 101.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1281525	(3.51, N/A) (N/A, -0.01, N/A)	528.8	N/A	7.9391 [8.0000]	99.2% { 108.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1054906	(4.85, N/A) (N/A, -0.01, N/A)	512.4	N/A	3.6383 [4.0000]	91.0% { 101.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 740364	(5.98, N/A) (N/A, -0.01, N/A)	583.0	N/A	2.0452 [2.0000]	102.3% { 98.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 690466	(6.94, N/A) (N/A, -0.01, N/A)	407.7	N/A	2.0066 [2.0000]	100.3% { 101.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 681475	(7.75, N/A) (N/A, -0.02, N/A)	538.9	N/A	1.7986 [2.0000]	89.9% { 100.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 288213	(8.49, N/A) (N/A, -0.02, N/A)	463.7	N/A	1.0101 [1.0000]	101.0% { 107.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 409382	(9.17, N/A) (N/A, -0.02, N/A)	420.8	N/A	0.9708 [1.0000]	97.1% { 89.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 697558	(9.68, N/A) (N/A, -0.01, N/A)	459.0	N/A	1.3378 [1.0000]	133.8% { 114.8% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (29)
 Acquired: 2023/01/11 - 17:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 601887	(9.88, N/A) (N/A, -0.02, N/A)	332.3	N/A	1.2022 [1.0000]	120.2% { 114.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 332434	(10.13, N/A) (N/A, -0.01, N/A)	633.8	N/A	0.8295 [1.0000]	83.0% { 102.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1907508	(5.90, N/A) (N/A, -0.01, N/A)	500.9	N/A	2.2798 [2.0000]	114.0% { 103.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1019561	(7.86, N/A) (N/A, -0.02, N/A)	604.1	N/A	1.9444 [2.0000]	97.2% { 104.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1652726	(9.31, N/A) (N/A, -0.02, N/A)	127.8	N/A	2.0610 [2.0000]	103.0% { 99.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 741161	(5.66, N/A) (N/A, -0.01, N/A)	552.6	N/A	4.5381 [4.0000]	113.5% { 98.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 861552	(7.44, N/A) (N/A, -0.01, N/A)	623.7	N/A	3.5764 [4.0000]	89.4% { 94.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 908034	(8.85, N/A) (N/A, -0.02, N/A)	345.2	N/A	4.0228 [4.0000]	100.6% { 84.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1927093	(10.19, N/A) (N/A, -0.01, N/A)	1027.1	N/A	1.8150 [2.0000]	90.7% { 121.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 269598	(10.63, N/A) (N/A, -0.01, N/A)	620.7	N/A	1.4141 [2.0000]	70.7% { 152.6% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 280792	(10.71, N/A) (N/A, -0.01, N/A)	580.7	N/A	1.5623 [2.0000]	78.1% { 144.6% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (29)
 Acquired: 2023/01/11 - 17:18

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1425078	(9.39, N/A) (N/A, -0.02, N/A)	371.3	N/A	5.6703 [4.0000]	141.8% { 107.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1259678	(9.63, N/A) (N/A, -0.02, N/A)	767.9	N/A	6.3748 [4.0000]	159.4% { 102.4% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 740790	(10.60, N/A) (N/A, -0.01, N/A)	490.9	N/A	25.3231 [20.0000]	126.6% { 160.2% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 384005	(10.69, N/A) (N/A, -0.01, N/A)	346.4	N/A	28.4825 [20.0000]	142.4% { 154.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1521941	(6.33, N/A) (N/A, -0.01, N/A)	594.1	N/A	8.0116 [8.0000]	100.1% { 99.5% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0448

Work Order: 22L0177
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2302005
 Sequence: SC00125

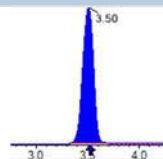
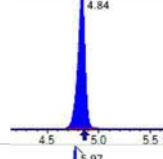
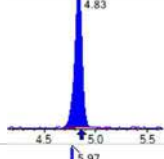
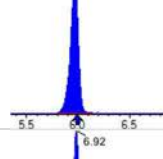
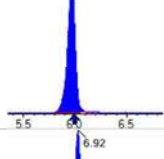
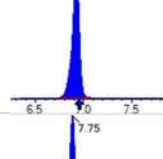
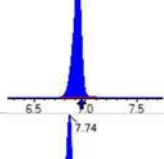
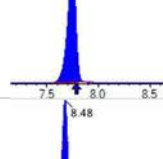
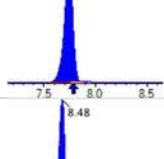
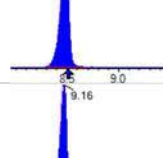
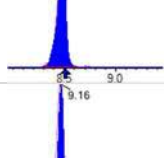
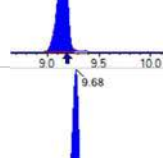
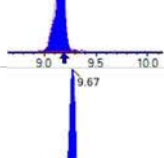
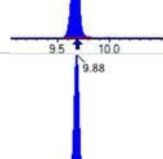
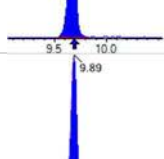
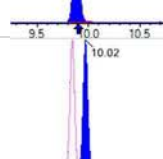
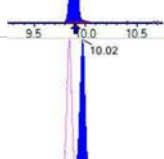
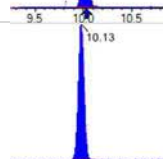
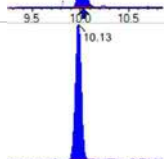
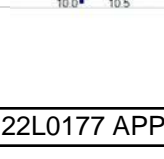
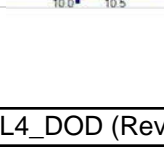
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC00125-CCV3	PFBA	20.0	20.2	101	ng/mL	+/- 30.00%
	PFPEA	10.0	10.8	108	ng/mL	+/- 30.00%
	PFHXA	5.00	5.20	104	ng/mL	+/- 30.00%
	PFHPA	5.00	5.28	106	ng/mL	+/- 30.00%
	PFOA	5.00	5.04	101	ng/mL	+/- 30.00%
	PFNA	5.00	5.37	107	ng/mL	+/- 30.00%
	PFDA	5.00	4.88	97.7	ng/mL	+/- 30.00%
	PFUnA	5.00	4.64	92.8	ng/mL	+/- 30.00%
	PFDOA	5.00	5.15	103	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.63	92.5	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.90	98.0	ng/mL	+/- 30.00%
	PFBS	4.42	4.75	107	ng/mL	+/- 30.00%
	PFPEs	4.70	5.67	121	ng/mL	+/- 30.00%
	PFHXS	4.58	4.56	99.7	ng/mL	+/- 30.00%
	PFHPS	4.78	4.10	85.7	ng/mL	+/- 30.00%
	PFOS	4.65	4.40	94.7	ng/mL	+/- 30.00%
	PFNS	4.80	4.96	103	ng/mL	+/- 30.00%
	PFDS	4.82	6.18	128	ng/mL	+/- 30.00%
	PFDOS	4.85	13.4	276	ng/mL	+/- 30.00%
	4:2FTS	18.8	19.7	105	ng/mL	+/- 30.00%
	6:2FTS	19.0	23.3	123	ng/mL	+/- 30.00%
	8:2FTS	19.2	19.7	103	ng/mL	+/- 30.00%
	PFOSA	5.00	5.71	114	ng/mL	+/- 30.00%
	NMeFOSA	20.0	23.1	116	ng/mL	+/- 30.00%
	NEtFOSA	20.0	22.8	114	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.00	99.9	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.38	87.6	ng/mL	+/- 30.00%
NMeFOSE	20.0	19.7	98.6	ng/mL	+/- 30.00%	
NEtFOSE	20.0	25.5	128	ng/mL	+/- 30.00%	
HFPO-DA	10.0	11.3	113	ng/mL	+/- 30.00%	

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2302005
Standard ID:	22L0448	Sequence:	SC00125

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC00125-CCV3	ADONA	9.45	11.4	121	ng/mL	+/- 30.00%
	PFEESA	8.90	11.1	125	ng/mL	+/- 30.00%
	PFMPA	10.0	8.57	85.7	ng/mL	+/- 30.00%
	PFMBA	10.0	11.2	112	ng/mL	+/- 30.00%
	NFDHA	10.0	9.96	99.6	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	10.8	116	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	17.4	184	ng/mL	+/- 30.00%
	3:3FTCA	20.0	21.1	105	ng/mL	+/- 30.00%
	5:3FTCA	20.0	23.5	118	ng/mL	+/- 30.00%
	7:3FTCA	20.0	19.3	96.5	ng/mL	+/- 30.00%

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2811584	(3.50, 1.00) (0.00, N/A, 0.0)	462.4	N/A 0.0 0.0	20.2256 [20.0000]	101.1%			
PFPeA	(263.0 / 219.0) 2530650 (263.0 / 69.0) 28561	(4.84, 1.00) (0.00, N/A, 0.1)	605.1 261.8	0.0113 104.0 97.0	10.8194 [10.0000]	108.2%			
PFHxA	(313.0 / 269.0) 1657935 (313.0 / 119.0) 147745	(5.97, 1.00) (0.00, N/A, 0.0)	400.5 392.4	0.0891 90.8 95.0	5.2002 [5.0000]	104.0%			
PFHpA	(363.0 / 319.0) 1895106 (363.0 / 169.0) 531607	(6.92, 1.00) (0.00, N/A, 0.0)	564.6 483.9	0.2805 98.6 95.3	5.2820 [5.0000]	105.6%			
PFOA	(413.0 / 369.0) 2034236 (413.0 / 169.0) 641202	(7.75, 1.00) (0.00, N/A, 0.1)	542.4 548.7	0.3152 98.7 91.5	5.0369 [5.0000]	100.7%			
PFNA	(463.0 / 419.0) 1571313 (463.0 / 169.0) 357144	(8.48, 1.00) (0.00, N/A, 0.0)	476.7 416.1	0.2273 101.3 103.0	5.3691 [5.0000]	107.4%			
PFDA	(513.0 / 469.0) 2236831 (513.0 / 169.0) 243668	(9.16, 1.00) (0.00, N/A, -0.2)	468.4 267.4	0.1089 99.2 122.2	4.8847 [5.0000]	97.7%			
PFUnA	(563.0 / 519.0) 2779049 (563.0 / 169.0) 272937	(9.68, 1.00) (0.00, N/A, 0.1)	470.3 267.8	0.0982 93.9 104.7	4.6400 [5.0000]	92.8%			
PFDoA	(613.0 / 569.0) 2872705 (613.0 / 169.0) 374396	(9.88, 1.00) (0.00, N/A, -0.2)	557.5 462.8	0.1303 101.3 96.0	5.1518 [5.0000]	103.0%			
PFTrDA	(663.0 / 619.0) 2542504 (663.0 / 169.0) 515493	(10.02, 1.01) (N/A, -0.01, -0.1)	774.3 477.2	0.2028 100.5 104.3	4.6270 [5.0000]	92.5%			
PFTeDA	(713.0 / 669.0) 1734083 (713.0 / 169.0) 338276	(10.13, 1.00) (-0.01, N/A, -0.2)	772.7 282.8	0.1951 99.8 107.3	4.9025 [5.0000]	98.0%			

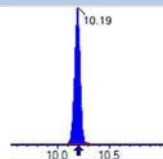
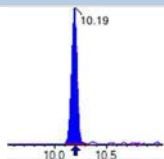
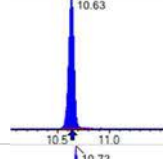
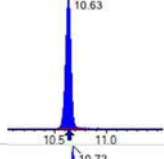
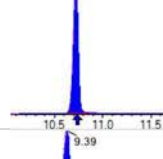
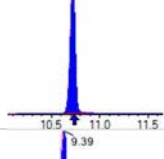
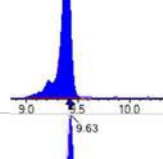
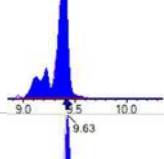
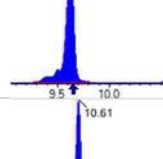
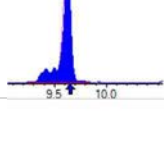
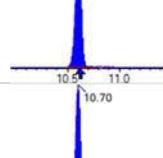
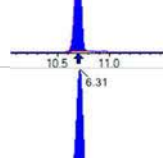
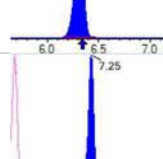
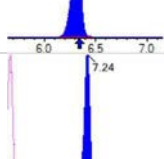
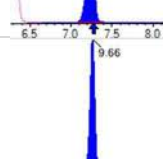
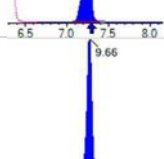
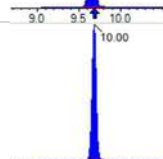
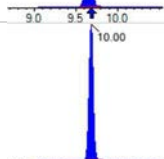
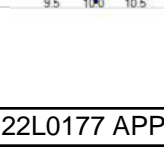
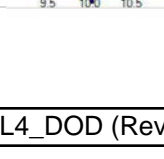


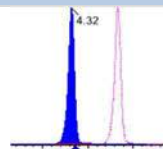
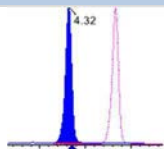
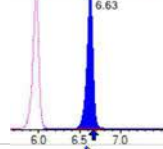
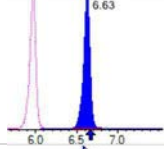
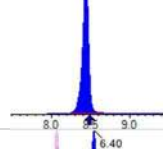
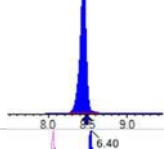
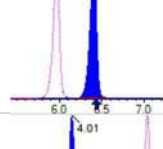
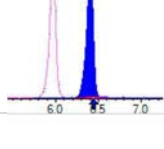
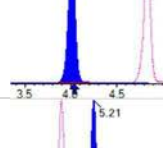
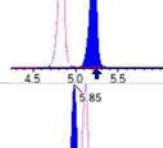
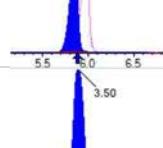
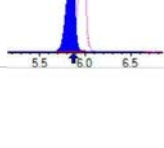
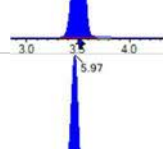
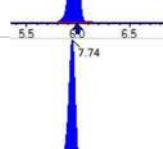
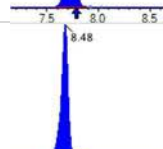

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

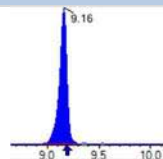
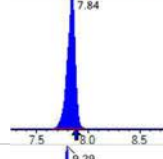
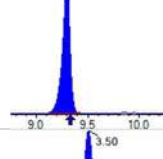
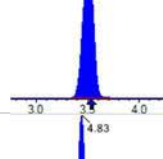
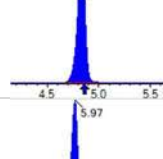
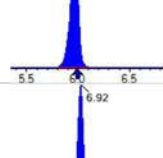
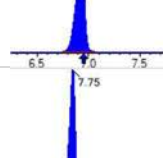
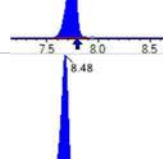
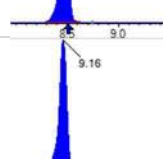
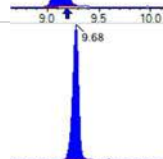
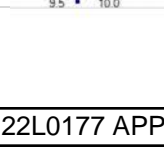
Sample I.D.: SC00125-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

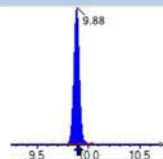
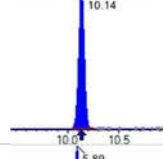
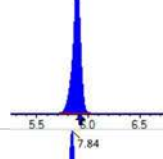
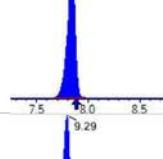
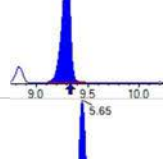
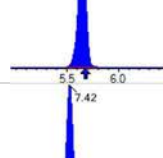
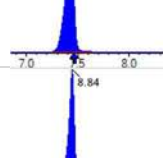
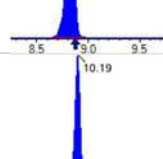
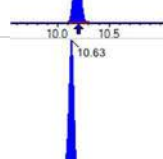
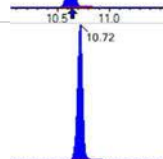
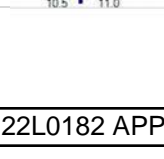
Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (51)
 Acquired: 2023/01/11 - 22:01

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2649350 (299.0 / 99.0) 1712374	(5.89, 1.00) (0.00, N/A, 0.1)	564.2 513.5	0.6463 99.1 102.1	4.7464 [4.4237]	107.3%			
PFPeS	(349.0 / 80.0) 4940361 (349.0 / 99.0) 1772791	(6.96, 0.89) (N/A, -0.03, 0.0)	516.2 596.4	0.3588 97.1 99.6	5.6692 [4.6919]	120.8%			
PFHxS	(399.0 / 80.0) 3885889 (399.0 / 99.0) 1284753	(7.84, 1.00) (0.00, N/A, 0.2)	706.1 905.5	0.3306 100.2 98.8	4.5647 [4.5549]	100.2%			
PFHpS	(449.0 / 80.0) 3509071 (449.0 / 99.0) 946870	(8.61, 0.93) (N/A, -0.03, 0.1)	562.4 616.5	0.2698 98.2 96.2	4.0977 [4.7570]	86.1%			
PFOS	(499.0 / 80.0) 4508897 (499.0 / 99.0) 1060433	(9.29, 1.00) (0.00, N/A, 0.0)	470.8 1452.5	0.2352 103.5 107.0	4.4021 [4.6375]	94.9%			
PFNS	(549.0 / 80.0) 5154652 (549.0 / 99.0) 1349510	(9.73, 1.05) (N/A, -0.01, 0.1)	490.4 571.6	0.2618 112.4 110.1	4.9626 [4.7994]	103.4%			
PFDS	(599.0 / 80.0) 7090822 (599.0 / 99.0) 1590284	(9.91, 1.07) (N/A, -0.01, 0.0)	741.4 521.7	0.2243 98.2 100.6	6.1764 [4.8155]	128.3%			
PFDoS	(699.0 / 80.0) 6517460 (699.0 / 99.0) 1140849	(10.13, 1.09) (N/A, 0.00, 0.1)	1350.6 569.2	0.1750 84.4 74.9	13.3648 [4.8478]	275.7%			QC,
4:2FTS	(327.0 / 307.0) 12283516 (327.0 / 81.0) 6967149	(5.65, 1.00) (0.00, N/A, -0.1)	658.7 594.3	0.5672 90.1 91.6	19.6512 [18.6906]	105.1%			
6:2FTS	(427.0 / 407.0) 7595903 (427.0 / 81.0) 5574105	(7.43, 1.00) (0.01, N/A, 0.5)	846.8 779.0	0.7338 95.8 110.7	23.2978 [18.9808]	122.7%			
8:2FTS	(527.0 / 507.0) 8007659 (527.0 / 81.0) 5493284	(8.84, 1.00) (0.00, N/A, 0.2)	491.3 443.2	0.6860 90.4 99.2	19.7470 [19.1658]	103.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 5611250 (498.0 / 478.0) 116410	(10.19, 1.00) (0.00, N/A, 0.0)	1381.2 185.2	0.0207 110.0 103.2	5.7118 [5.0000]	114.2%			
NMeFOSA	(512.0 / 219.0) 2674814 (512.0 / 169.0) 1990856	(10.63, 1.00) (0.00, N/A, 0.1)	1141.1 1107.5	0.7443 104.3 100.5	23.1061 [20.0000]	115.5%			
NEIFOSA	(526.0 / 219.0) 2768971 (526.0 / 169.0) 3038260	(10.72, 1.00) (0.00, N/A, 0.1)	1292.7 1773.8	1.0973 103.7 97.9	22.8207 [20.0000]	114.1%			
NMeFOSAA	(570.0 / 419.0) 1612254 (570.0 / 483.0) 807373	(9.39, 1.00) (0.01, N/A, 0.0)	378.6 233.6	0.5008 98.5 93.9	4.9954 [5.0000]	99.9%			
NEIFOSAA	(584.0 / 419.0) 1446832 (584.0 / 526.0) 902866	(9.63, 1.00) (0.01, N/A, 0.0)	598.0 334.4	0.6240 100.4 93.6	4.3794 [5.0000]	87.6%			
NMeFOSE	(616.0 / 59.0) 935334	(10.61, 1.00) (0.00, N/A, 0.0)	530.6	N/A 0.0 0.0	19.7179 [20.0000]	98.6%			
NEtFOSE	(630.0 / 59.0) 293569	(10.70, 1.00) (0.01, N/A, 0.0)	42.8	N/A 0.0 0.0	25.5316 [20.0000]	127.7%			
HFPO-DA	(285.0 / 169.0) 1250560 (285.0 / 185.0) 3350131	(6.31, 1.00) (0.00, N/A, -0.1)	611.6 663.9	2.6789 99.9 97.1	11.3392 [10.0000]	113.4%			
ADONA	(377.0 / 85.0) 6569719 (377.0 / 251.0) 730392	(7.25, 1.15) (N/A, -0.03, 0.1)	683.2 558.1	0.1112 95.5 91.8	11.3963 [9.4270]	120.9%			
9CI-Pf3ONS	(531.0 / 351.0) 17424355 (533.0 / 353.0) 5747566	(9.66, 1.53) (N/A, -0.02, 0.0)	488.5 459.1	0.3299 106.2 101.6	10.8445 [9.3325]	116.2%			
11CI-PF3OUDS	(631.0 / 451.0) 13415430 (633.0 / 453.0) 4327361	(10.00, 1.58) (N/A, -0.01, 0.0)	1222.4 1036.9	0.3226 93.9 97.2	17.4325 [9.4321]	184.8%			QC,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 141636 (241.0 / 117.0) 208334	(4.32, 0.89) (N/A, -0.03, 0.1)	404.2 345.5	1.4709 100.0 97.8	21.0972 [20.0000]	105.5%			
5:3FTCA	(341.0 / 236.7) 1142525 (341.0 / 217.0) 1889246	(6.63, 1.11) (N/A, -0.03, 0.1)	491.4 467.6	1.6536 99.0 102.5	23.5496 [20.0000]	117.7%			
7:3FTCA	(441.0 / 317.0) 1409660 (441.0 / 337.0) 1212069	(8.44, 1.41) (N/A, -0.04, 0.0)	360.3 414.9	0.8598 99.7 99.8	19.3063 [20.0000]	96.5%			
PFEESA	(315.0 / 135.0) 3484454 (315.0 / 83.0) 900697	(6.40, 1.07) (N/A, -0.03, -0.1)	631.7 481.6	0.2585 84.6 85.9	11.0927 [8.9246]	124.3%			
PFMPA	(229.0 / 85.0) 599284	(4.01, 0.83) (N/A, -0.02, 0.0)	640.4	N/A 0.0 0.0	8.5690 [10.0000]	85.7%			
PFMBA	(279.0 / 85.0) 1976552	(5.21, 1.08) (N/A, -0.02, 0.0)	545.3	N/A 0.0 0.0	11.1880 [10.0000]	111.9%			
NFDHA	(295.0 / 201.0) 1320603 (295.0 / 85.0) 1232021	(5.85, 0.98) (N/A, -0.02, 0.0)	608.9 521.1	0.9329 101.4 95.4	9.9590 [10.0000]	99.6%			
13C3_PFBAA_IIS	(216.0 / 172.0) 158745	(3.50, N/A) (N/A, -0.02, N/A)	378.1	N/A	0.6267 [1.0000]	62.7% { 103.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 327664	(5.97, N/A) (N/A, -0.02, N/A)	421.3	N/A	0.8864 [1.0000]	88.6% { 88.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 384385	(7.74, N/A) (N/A, -0.03, N/A)	443.6	N/A	0.8750 [1.0000]	87.5% { 115.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 309961	(8.48, N/A) (N/A, -0.04, N/A)	468.8	N/A	0.7643 [1.0000]	76.4% { 110.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 440577	(9.16, N/A) (N/A, -0.03, N/A)	326.5	N/A	1.0200 [1.0000]	102.0% { 98.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 624391	(7.84, N/A) (N/A, -0.04, N/A)	579.0	N/A	0.8452 [1.0000]	84.5% { 100.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 712149	(9.29, N/A) (N/A, -0.04, N/A)	491.4	N/A	0.9236 [1.0000]	92.4% { 107.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1215742	(3.50, N/A) (N/A, -0.02, N/A)	522.0	N/A	7.7953 [8.0000]	97.4% { 102.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 963065	(4.83, N/A) (N/A, -0.03, N/A)	473.1	N/A	3.5912 [4.0000]	89.8% { 92.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 647040	(5.97, N/A) (N/A, -0.02, N/A)	532.0	N/A	1.9325 [2.0000]	96.6% { 86.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 710628	(6.92, N/A) (N/A, -0.03, N/A)	560.4	N/A	2.2328 [2.0000]	111.6% { 104.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 775228	(7.75, N/A) (N/A, -0.03, N/A)	650.4	N/A	1.9794 [2.0000]	99.0% { 114.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 304826	(8.48, N/A) (N/A, -0.03, N/A)	403.0	N/A	0.9909 [1.0000]	99.1% { 113.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 446657	(9.16, N/A) (N/A, -0.04, N/A)	320.5	N/A	0.8997 [1.0000]	90.0% { 97.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 658982	(9.68, N/A) (N/A, -0.01, N/A)	318.5	N/A	1.0736 [1.0000]	107.4% { 108.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 595631	(9.88, N/A) (N/A, -0.01, N/A)	377.1	N/A	1.0106 [1.0000]	101.1% { 113.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 371316	(10.14, N/A) (N/A, -0.01, N/A)	356.0	N/A	0.7871 [1.0000]	78.7% { 114.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1711244	(5.89, N/A) (N/A, -0.03, N/A)	597.6	N/A	2.0615 [2.0000]	103.1% { 92.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1018645	(7.84, N/A) (N/A, -0.04, N/A)	541.2	N/A	1.9582 [2.0000]	97.9% { 104.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1666699	(9.29, N/A) (N/A, -0.04, N/A)	129.7	N/A	1.9715 [2.0000]	98.6% { 100.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 777932	(5.65, N/A) (N/A, -0.03, N/A)	615.5	N/A	4.8013 [4.0000]	120.0% { 103.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 853593	(7.42, N/A) (N/A, -0.03, N/A)	545.8	N/A	3.5716 [4.0000]	89.3% { 93.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1112125	(8.84, N/A) (N/A, -0.03, N/A)	412.1	N/A	4.9663 [4.0000]	124.2% { 103.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1844144	(10.19, N/A) (N/A, -0.01, N/A)	1028.9	N/A	1.6476 [2.0000]	82.4% { 116.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 244044	(10.63, N/A) (N/A, 0.00, N/A)	603.6	N/A	1.2143 [2.0000]	60.7% { 138.1% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 243616	(10.72, N/A) (N/A, 0.00, N/A)	627.2	N/A	1.2858 [2.0000]	64.3% { 125.5% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (51)
 Acquired: 2023/01/11 - 22:01

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1437083	(9.38, N/A) (N/A, -0.04, N/A)	296.9	N/A	5.4241 [4.0000]	135.6% { 108.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1381864	(9.62, N/A) (N/A, -0.03, N/A)	763.4	N/A	6.6336 [4.0000]	165.8% { 112.4% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 740266	(10.60, N/A) (N/A, 0.00, N/A)	516.6	N/A	24.0039 [20.0000]	120.0% { 160.1% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 410136	(10.69, N/A) (N/A, 0.00, N/A)	371.5	N/A	28.8564 [20.0000]	144.3% { 165.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1391035	(6.32, N/A) (N/A, -0.02, N/A)	638.2	N/A	7.9170 [8.0000]	99.0% { 91.0% }			

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ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00101
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00101-ICB1	PFBA	0.00	ng/mL	0.75	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00101
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00101-ICB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.01	ng/mL		
	13C5-PFPEA	3.28	ng/mL		
	13C5-PFHXA	1.66	ng/mL		
	13C4-PFHPA	1.73	ng/mL		
	13C8-PFOA	1.76	ng/mL		
	13C9-PFNA	0.893	ng/mL		
	13C6-PFDA	0.831	ng/mL		
	13C7-PFUnA	0.924	ng/mL		
	13C2-PFDOA	0.864	ng/mL		
	13C2-PFTEDA	0.903	ng/mL		
	13C3-PFBS	1.73	ng/mL		
	13C3-PFHXS	1.66	ng/mL		
	13C8-PFOS	1.88	ng/mL		
	13C2-4:2FTS	3.65	ng/mL		
	13C2-6:2FTS	3.40	ng/mL		
	13C2-8:2FTS	3.52	ng/mL		
	13C8-PFOSA	1.89	ng/mL		
	D5-NETFOSA	1.94	ng/mL		
	D3-NMEFOSA	1.85	ng/mL		
	D3-NMEFOSAA	3.63	ng/mL		
	D5-NETFOSAA	3.83	ng/mL		
	D7-NMEFOSE	19.2	ng/mL		
	D9-NETFOSAE	19.2	ng/mL		
	13C3-HFPO-DA	6.94	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00101-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (9)
 Acquired: 2023/01/09 - 16:46

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00101-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (9)
 Acquired: 2023/01/09 - 16:46

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00101-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (9)
 Acquired: 2023/01/09 - 16:46

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

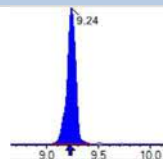
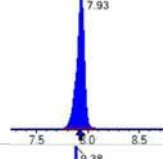
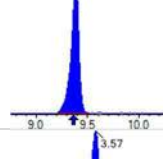
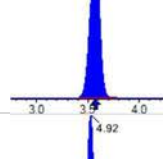
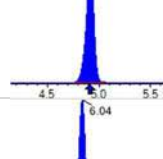
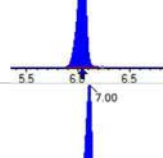
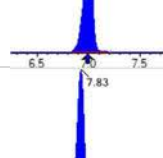
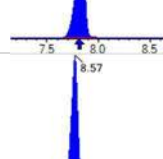
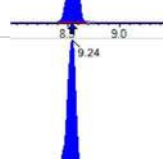
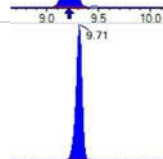
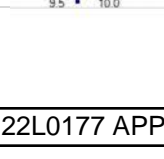


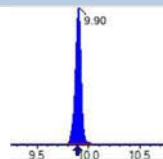
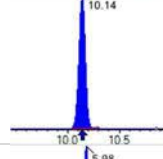
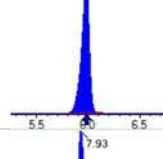
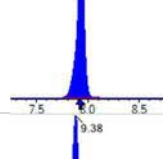
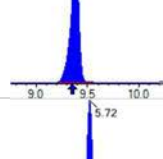
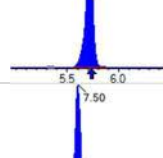
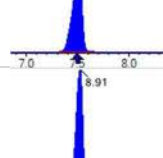
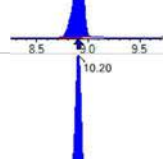
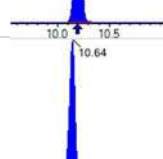
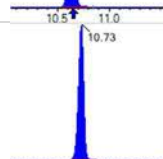

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

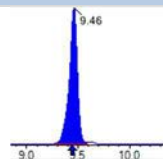
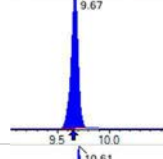
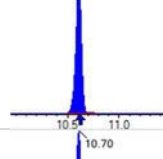
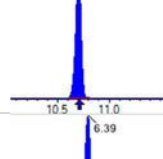
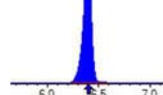
Sample I.D.: SC00101-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-09B (9)
 Acquired: 2023/01/09 - 16:46

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBa_IIS	(216.0 / 172.0) 258587	(3.57, N/A) (N/A, 0.00, N/A)	542.9	N/A	1.0209 [1.0000]	102.1% { 100.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 405527	(6.04, N/A) (N/A, -0.01, N/A)	443.5	N/A	1.0970 [1.0000]	109.7% { 110.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 461004	(7.83, N/A) (N/A, 0.02, N/A)	476.4	N/A	1.0495 [1.0000]	104.9% { 98.6% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 433450	(8.57, N/A) (N/A, 0.03, N/A)	492.8	N/A	1.0688 [1.0000]	106.9% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 473356	(9.24, N/A) (N/A, 0.03, N/A)	348.8	N/A	1.0959 [1.0000]	109.6% { 110.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 797997	(7.93, N/A) (N/A, 0.02, N/A)	709.4	N/A	1.0803 [1.0000]	108.0% { 106.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 786619	(9.38, N/A) (N/A, 0.03, N/A)	480.9	N/A	1.0202 [1.0000]	102.0% { 96.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1779803	(3.57, N/A) (N/A, 0.00, N/A)	576.9	N/A	7.0058 [8.0000]	87.6% { 87.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1089582	(4.92, N/A) (N/A, 0.01, N/A)	601.1	N/A	3.2829 [4.0000]	82.1% { 88.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 688861	(6.04, N/A) (N/A, -0.01, N/A)	469.2	N/A	1.6624 [2.0000]	83.1% { 84.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 682148	(7.00, N/A) (N/A, 0.01, N/A)	445.5	N/A	1.7318 [2.0000]	86.6% { 94.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 827713	(7.83, N/A) (N/A, 0.02, N/A)	526.2	N/A	1.7622 [2.0000]	88.1% { 90.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 384119	(8.57, N/A) (N/A, 0.03, N/A)	526.1	N/A	0.8929 [1.0000]	89.3% { 93.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 443457	(9.24, N/A) (N/A, 0.03, N/A)	429.7	N/A	0.8314 [1.0000]	83.1% { 100.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 609192	(9.71, N/A) (N/A, 0.02, N/A)	519.0	N/A	0.9237 [1.0000]	92.4% { 93.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 547034	(9.90, N/A) (N/A, 0.01, N/A)	426.2	N/A	0.8639 [1.0000]	86.4% { 88.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 457766	(10.14, N/A) (N/A, 0.00, N/A)	668.6	N/A	0.9031 [1.0000]	90.3% { 99.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1835466	(5.98, N/A) (N/A, 0.00, N/A)	553.1	N/A	1.7301 [2.0000]	86.5% { 92.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1106236	(7.93, N/A) (N/A, 0.02, N/A)	629.4	N/A	1.6639 [2.0000]	83.2% { 91.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1758547	(9.38, N/A) (N/A, 0.03, N/A)	467.8	N/A	1.8832 [2.0000]	94.2% { 92.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 755437	(5.72, N/A) (N/A, 0.00, N/A)	564.7	N/A	3.6481 [4.0000]	91.2% { 104.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 1038056	(7.50, N/A) (N/A, 0.02, N/A)	688.3	N/A	3.3985 [4.0000]	85.0% { 90.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1008170	(8.91, N/A) (N/A, 0.02, N/A)	419.7	N/A	3.5226 [4.0000]	88.1% { 104.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2331132	(10.20, N/A) (N/A, 0.00, N/A)	790.6	N/A	1.8855 [2.0000]	94.3% { 92.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 410072	(10.64, N/A) (N/A, 0.00, N/A)	766.7	N/A	1.8472 [2.0000]	92.4% { 95.0% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 406192	(10.73, N/A) (N/A, 0.00, N/A)	759.9	N/A	1.9409 [2.0000]	97.0% { 92.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1062032	(9.46, N/A) (N/A, 0.03, N/A)	256.3	N/A	3.6290 [4.0000]	90.7% { 90.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 880290	(9.67, N/A) (N/A, 0.02, N/A)	74.8	N/A	3.8257 [4.0000]	95.6% { 103.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 652633	(10.61, N/A) (N/A, 0.00, N/A)	980.6	N/A	19.1588 [20.0000]	95.8% { 96.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 301154	(10.70, N/A) (N/A, 0.00, N/A)	981.4	N/A	19.1827 [20.0000]	95.9% { 93.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1508994	(6.39, N/A) (N/A, 0.00, N/A)	552.6	N/A	6.9394 [8.0000]	86.7% { 94.4% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB1	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.12	ng/mL		
	13C5-PFPEA	3.05	ng/mL		
	13C5-PFHXA	1.70	ng/mL		
	13C4-PFHPA	1.71	ng/mL		
	13C8-PFOA	1.71	ng/mL		
	13C9-PFNA	0.878	ng/mL		
	13C6-PFDA	0.791	ng/mL		
	13C7-PFUnA	1.07	ng/mL		
	13C2-PFDOA	0.994	ng/mL		
	13C2-PFTEDA	0.618	ng/mL		
	13C3-PFBS	2.14	ng/mL		
	13C3-PFHXS	1.72	ng/mL		
	13C8-PFOS	2.00	ng/mL		
	13C2-4:2FTS	4.28	ng/mL		
	13C2-6:2FTS	3.45	ng/mL		
	13C2-8:2FTS	4.37	ng/mL		
	13C8-PFOSA	1.06	ng/mL		
	D5-NETFOSA	0.786	ng/mL		
	D3-NMEFOSA	0.735	ng/mL		
	D3-NMEFOSAA	5.52	ng/mL		
	D5-NETFOSAA	7.24	ng/mL		
	D7-NMEFOSE	8.38	ng/mL		
	D9-NETFOSAE	9.53	ng/mL		
	13C3-HFPO-DA	6.30	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (1)
 Acquired: 2023/01/11 - 10:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (1)
 Acquired: 2023/01/11 - 10:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

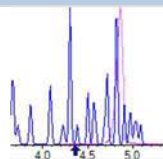
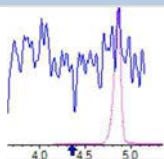
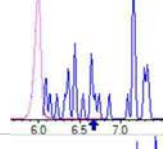
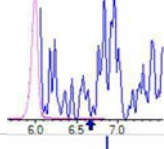
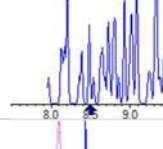
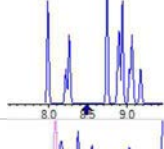
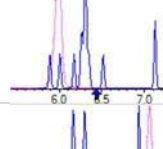
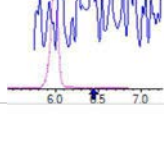
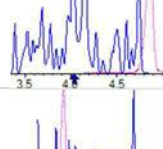
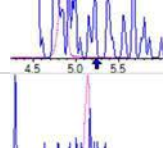
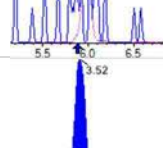
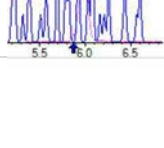
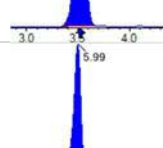
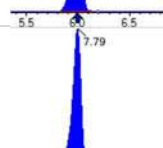
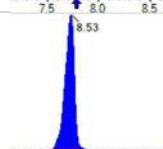



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (1)
 Acquired: 2023/01/11 - 10:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 149109	(3.52, N/A) (N/A, 0.00, N/A)	343.6	N/A	0.5887 [1.0000]	58.9% { 97.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 359214	(5.99, N/A) (N/A, 0.00, N/A)	563.8	N/A	0.9718 [1.0000]	97.2% { 97.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 349281	(7.79, N/A) (N/A, 0.02, N/A)	464.1	N/A	0.7951 [1.0000]	79.5% { 104.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 278306	(8.53, N/A) (N/A, 0.01, N/A)	279.5	N/A	0.6863 [1.0000]	68.6% { 99.0% }			

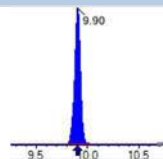
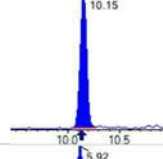
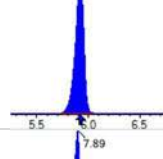
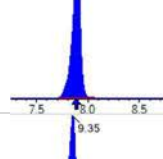
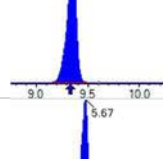
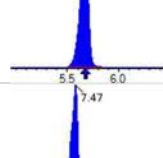
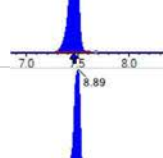
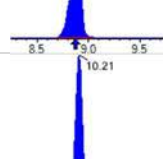
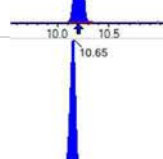
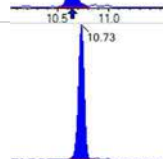



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (1)
 Acquired: 2023/01/11 - 10:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 371077	(9.21, N/A) (N/A, 0.02, N/A)	363.2	N/A	0.8591 [1.0000]	85.9% {82.9%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 610387	(7.89, N/A) (N/A, 0.01, N/A)	516.7	N/A	0.8263 [1.0000]	82.6% {98.4%}			
13C4_PFOS_IIS	(503.0 / 79.9) 593333	(9.35, N/A) (N/A, 0.02, N/A)	328.1	N/A	0.7695 [1.0000]	77.0% {89.2%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1043117	(3.52, N/A) (N/A, 0.00, N/A)	424.5	N/A	7.1206 [8.0000]	89.0% {88.1%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 896640	(4.86, N/A) (N/A, -0.01, N/A)	486.9	N/A	3.0498 [4.0000]	76.2% {86.5%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 624982	(5.99, N/A) (N/A, 0.00, N/A)	452.3	N/A	1.7027 [2.0000]	85.1% {83.4%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 596731	(6.96, N/A) (N/A, 0.02, N/A)	382.4	N/A	1.7103 [2.0000]	85.5% {88.0%}			
13C8_PFOA_EIS	(421.0 / 376.0) 608406	(7.79, N/A) (N/A, 0.01, N/A)	596.0	N/A	1.7096 [2.0000]	85.5% {89.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 242447	(8.53, N/A) (N/A, 0.02, N/A)	296.7	N/A	0.8777 [1.0000]	87.8% {90.2%}			
13C6_PFDA_EIS	(519.0 / 474.0) 330744	(9.21, N/A) (N/A, 0.02, N/A)	322.8	N/A	0.7910 [1.0000]	79.1% {71.9%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 553978	(9.71, N/A) (N/A, 0.01, N/A)	367.8	N/A	1.0716 [1.0000]	107.2% {91.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 493486	(9.90, N/A) (N/A, 0.01, N/A)	292.6	N/A	0.9941 [1.0000]	99.4% {93.9%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 245521	(10.15, N/A) (N/A, 0.01, N/A)	290.4	N/A	0.6179 [1.0000]	61.8% {75.4%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1733117	(5.92, N/A) (N/A, 0.00, N/A)	601.9	N/A	2.1358 [2.0000]	106.8% {93.9%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 872744	(7.89, N/A) (N/A, 0.01, N/A)	548.3	N/A	1.7162 [2.0000]	85.8% {89.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1407468	(9.35, N/A) (N/A, 0.02, N/A)	519.0	N/A	1.9983 [2.0000]	99.9% {85.0%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 678524	(5.67, N/A) (N/A, 0.00, N/A)	499.7	N/A	4.2838 [4.0000]	107.1% {89.9%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 805531	(7.47, N/A) (N/A, 0.02, N/A)	555.2	N/A	3.4478 [4.0000]	86.2% {88.1%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 955643	(8.89, N/A) (N/A, 0.02, N/A)	356.3	N/A	4.3654 [4.0000]	109.1% {89.3%}			
13C8_PFOA_EIS	(506.0 / 78.0) 986382	(10.21, N/A) (N/A, 0.01, N/A)	523.3	N/A	1.0577 [2.0000]	52.9% {62.3%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 123080	(10.65, N/A) (N/A, 0.01, N/A)	312.3	N/A	0.7350 [2.0000]	36.8% {69.6%}			
D5_NEtFOSA_EIS	(531.0 / 169.0) 124144	(10.73, N/A) (N/A, 0.01, N/A)	275.5	N/A	0.7864 [2.0000]	39.3% {63.9%}			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (1)
 Acquired: 2023/01/11 - 10:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1218293	(9.44, N/A) (N/A, 0.02, N/A)	352.2	N/A	5.5191 [4.0000]	138.0% {92.0%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1256273	(9.66, N/A) (N/A, 0.01, N/A)	606.8	N/A	7.2383 [4.0000]	181.0% {102.1%}			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 215445	(10.61, N/A) (N/A, 0.01, N/A)	266.1	N/A	8.3850 [20.0000]	41.9% {46.6%}			
D9_NEtFOSE_EIS	(639.0 / 58.9) 112871	(10.71, N/A) (N/A, 0.01, N/A)	131.9	N/A	9.5316 [20.0000]	47.7% {45.4%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1214105	(6.35, N/A) (N/A, 0.01, N/A)	700.4	N/A	6.3031 [8.0000]	78.8% {79.4%}			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB2	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB2	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	6.94	ng/mL		
	13C5-PFPEA	2.94	ng/mL		
	13C5-PFHXA	1.68	ng/mL		
	13C4-PFHPA	1.60	ng/mL		
	13C8-PFOA	1.80	ng/mL		
	13C9-PFNA	0.923	ng/mL		
	13C6-PFDA	0.877	ng/mL		
	13C7-PFUnA	1.01	ng/mL		
	13C2-PFDOA	0.992	ng/mL		
	13C2-PFTEDA	0.815	ng/mL		
	13C3-PFBS	2.17	ng/mL		
	13C3-PFHXS	1.82	ng/mL		
	13C8-PFOS	1.93	ng/mL		
	13C2-4:2FTS	4.46	ng/mL		
	13C2-6:2FTS	3.20	ng/mL		
	13C2-8:2FTS	4.59	ng/mL		
	13C8-PFOSA	1.49	ng/mL		
	D5-NETFOSA	1.17	ng/mL		
	D3-NMEFOSA	1.03	ng/mL		
	D3-NMEFOSAA	4.88	ng/mL		
	D5-NETFOSAA	6.25	ng/mL		
	D7-NMEFOSE	13.6	ng/mL		
	D9-NETFOSAE	14.7	ng/mL		
	13C3-HFPO-DA	6.17	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (4)
 Acquired: 2023/01/11 - 11:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (4)
 Acquired: 2023/01/11 - 11:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

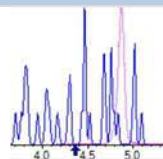
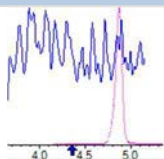
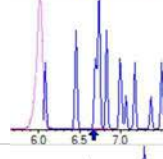
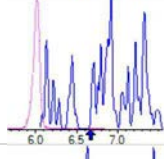
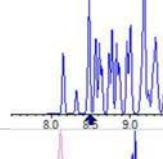
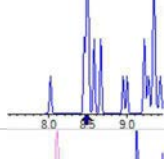
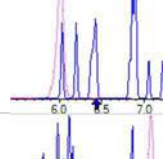
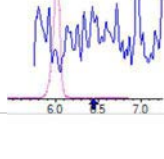
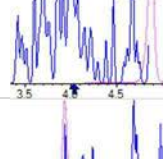
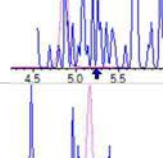
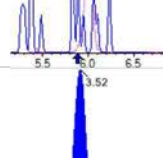
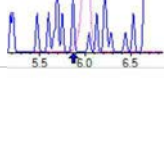
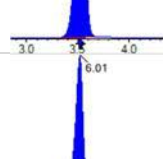
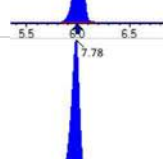
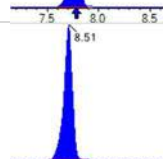



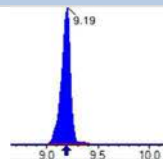
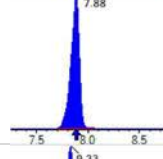
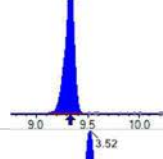
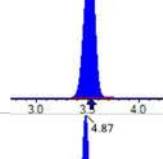
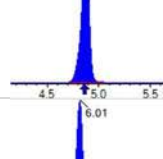
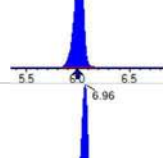
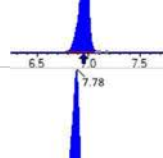
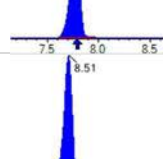
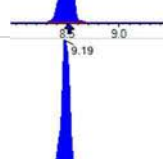
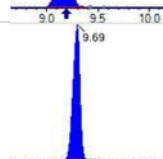

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

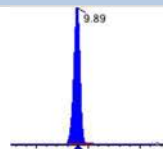
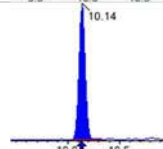
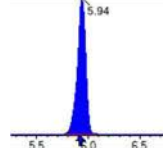
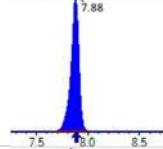
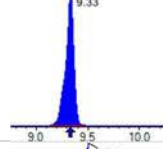
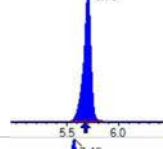
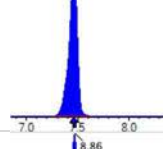
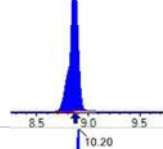
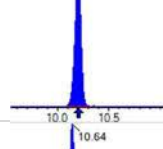
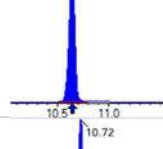
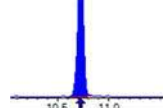
Sample I.D.: SC00125-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (4)
 Acquired: 2023/01/11 - 11:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 171900	(3.52, N/A) (N/A, 0.00, N/A)	366.0	N/A	0.6787 [1.0000]	67.9% { 111.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 411877	(6.01, N/A) (N/A, 0.02, N/A)	457.2	N/A	1.1142 [1.0000]	111.4% { 111.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 370847	(7.78, N/A) (N/A, 0.00, N/A)	479.6	N/A	0.8442 [1.0000]	84.4% { 111.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 303797	(8.51, N/A) (N/A, -0.01, N/A)	398.3	N/A	0.7491 [1.0000]	74.9% { 108.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 408508	(9.19, N/A) (N/A, 0.00, N/A)	301.3	N/A	0.9457 [1.0000]	94.6% { 91.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 617739	(7.88, N/A) (N/A, 0.00, N/A)	551.6	N/A	0.8362 [1.0000]	83.6% { 99.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 684299	(9.33, N/A) (N/A, 0.00, N/A)	332.8	N/A	0.8875 [1.0000]	88.7% { 102.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1172639	(3.52, N/A) (N/A, 0.00, N/A)	499.9	N/A	6.9435 [8.0000]	86.8% { 99.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 991266	(4.87, N/A) (N/A, 0.01, N/A)	525.9	N/A	2.9406 [4.0000]	73.5% { 95.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 707343	(6.01, N/A) (N/A, 0.02, N/A)	492.4	N/A	1.6807 [2.0000]	84.0% { 94.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 641409	(6.96, N/A) (N/A, 0.01, N/A)	507.6	N/A	1.6033 [2.0000]	80.2% { 94.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 680380	(7.78, N/A) (N/A, 0.01, N/A)	513.2	N/A	1.8007 [2.0000]	90.0% { 100.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 278411	(8.51, N/A) (N/A, 0.00, N/A)	368.4	N/A	0.9234 [1.0000]	92.3% { 103.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 403891	(9.19, N/A) (N/A, -0.01, N/A)	268.3	N/A	0.8775 [1.0000]	87.7% { 87.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 572450	(9.69, N/A) (N/A, 0.00, N/A)	361.3	N/A	1.0058 [1.0000]	100.6% { 94.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 542000	(9.89, N/A) (N/A, 0.00, N/A)	462.8	N/A	0.9918 [1.0000]	99.2% { 103.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 356353	(10.14, N/A) (N/A, 0.00, N/A)	397.1	N/A	0.8146 [1.0000]	81.5% { 109.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1781751	(5.94, N/A) (N/A, 0.02, N/A)	525.1	N/A	2.1696 [2.0000]	108.5% { 96.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 935742	(7.88, N/A) (N/A, 0.00, N/A)	684.3	N/A	1.8182 [2.0000]	90.9% { 96.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1565681	(9.33, N/A) (N/A, 0.00, N/A)	498.4	N/A	1.9274 [2.0000]	96.4% { 94.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 715169	(5.70, N/A) (N/A, 0.03, N/A)	603.8	N/A	4.4614 [4.0000]	111.5% { 94.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 757388	(7.46, N/A) (N/A, 0.01, N/A)	641.6	N/A	3.2032 [4.0000]	80.1% { 82.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1016996	(8.86, N/A) (N/A, 0.00, N/A)	399.2	N/A	4.5904 [4.0000]	114.8% { 95.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1607395	(10.20, N/A) (N/A, 0.00, N/A)	652.2	N/A	1.4945 [2.0000]	74.7% { 101.5% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 198405	(10.64, N/A) (N/A, 0.00, N/A)	550.4	N/A	1.0274 [2.0000]	51.4% { 112.3% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 213556	(10.72, N/A) (N/A, 0.00, N/A)	517.6	N/A	1.1730 [2.0000]	58.6% { 110.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (4)
 Acquired: 2023/01/11 - 11:55

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1242286	(9.41, N/A) (N/A, 0.00, N/A)	356.8	N/A	4.8797 [4.0000]	122.0% { 93.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1252028	(9.65, N/A) (N/A, 0.00, N/A)	747.2	N/A	6.2549 [4.0000]	156.4% { 101.8% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 403506	(10.61, N/A) (N/A, 0.00, N/A)	256.5	N/A	13.6166 [20.0000]	68.1% { 87.3% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 200694	(10.70, N/A) (N/A, 0.00, N/A)	268.6	N/A	14.6951 [20.0000]	73.5% { 80.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1362485	(6.36, N/A) (N/A, 0.02, N/A)	662.7	N/A	6.1690 [8.0000]	77.1% { 89.1% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB3	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB3	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.14	ng/mL		
	13C5-PFPEA	2.96	ng/mL		
	13C5-PFHXA	1.62	ng/mL		
	13C4-PFHPA	1.65	ng/mL		
	13C8-PFOA	1.80	ng/mL		
	13C9-PFNA	0.878	ng/mL		
	13C6-PFDA	0.870	ng/mL		
	13C7-PFUnA	0.967	ng/mL		
	13C2-PFDOA	1.02	ng/mL		
	13C2-PFTEDA	0.794	ng/mL		
	13C3-PFBS	2.02	ng/mL		
	13C3-PFHXS	1.73	ng/mL		
	13C8-PFOS	1.91	ng/mL		
	13C2-4:2FTS	4.40	ng/mL		
	13C2-6:2FTS	3.10	ng/mL		
	13C2-8:2FTS	4.36	ng/mL		
	13C8-PFOSA	1.72	ng/mL		
	D5-NETFOSA	1.46	ng/mL		
	D3-NMEFOSA	1.36	ng/mL		
	D3-NMEFOSAA	4.73	ng/mL		
	D5-NETFOSAA	6.63	ng/mL		
	D7-NMEFOSE	21.9	ng/mL		
	D9-NETFOSAE	25.8	ng/mL		
	13C3-HFPO-DA	6.53	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (30)
 Acquired: 2023/01/11 - 17:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (30)
 Acquired: 2023/01/11 - 17:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (30)
 Acquired: 2023/01/11 - 17:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (30)
 Acquired: 2023/01/11 - 17:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 162705	(3.52, N/A) (N/A, 0.00, N/A)	402.2	N/A	0.6424 [1.0000]	64.2% { 105.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 388138	(5.99, N/A) (N/A, 0.00, N/A)	615.3	N/A	1.0500 [1.0000]	105.0% { 104.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 364529	(7.75, N/A) (N/A, -0.03, N/A)	530.3	N/A	0.8298 [1.0000]	83.0% { 109.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 308315	(8.48, N/A) (N/A, -0.04, N/A)	413.5	N/A	0.7603 [1.0000]	76.0% { 109.7% }			

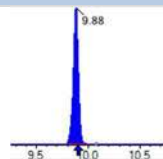
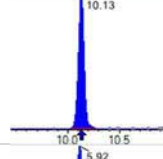
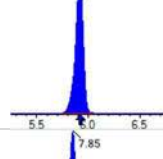
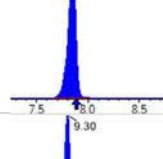
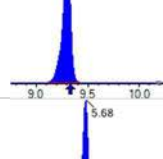
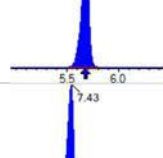
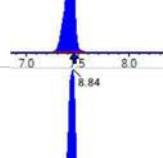
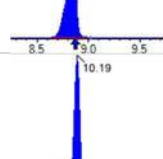
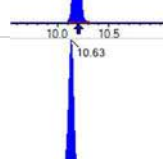
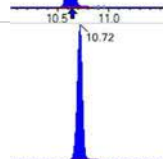



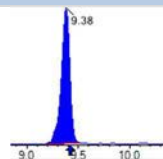
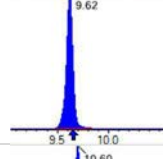
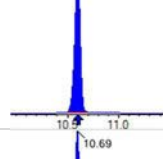
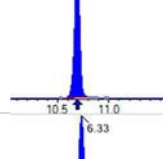
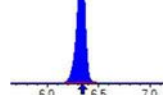
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (30)
 Acquired: 2023/01/11 - 17:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 442959	(9.16, N/A) (N/A, -0.03, N/A)	339.3	N/A	1.0255 [1.0000]	102.5% { 98.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 625673	(7.85, N/A) (N/A, -0.03, N/A)	611.1	N/A	0.8470 [1.0000]	84.7% { 100.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 661453	(9.30, N/A) (N/A, -0.04, N/A)	418.3	N/A	0.8579 [1.0000]	85.8% { 99.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1140935	(3.52, N/A) (N/A, 0.00, N/A)	556.6	N/A	7.1376 [8.0000]	89.2% { 96.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 941226	(4.86, N/A) (N/A, 0.00, N/A)	500.1	N/A	2.9629 [4.0000]	74.1% { 90.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 641873	(5.99, N/A) (N/A, 0.00, N/A)	472.4	N/A	1.6184 [2.0000]	80.9% { 85.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 623569	(6.93, N/A) (N/A, -0.02, N/A)	421.0	N/A	1.6540 [2.0000]	82.7% { 91.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 668919	(7.75, N/A) (N/A, -0.03, N/A)	528.4	N/A	1.8010 [2.0000]	90.1% { 98.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 268601	(8.48, N/A) (N/A, -0.03, N/A)	480.1	N/A	0.8778 [1.0000]	87.8% { 99.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 434454	(9.16, N/A) (N/A, -0.03, N/A)	307.5	N/A	0.8704 [1.0000]	87.0% { 94.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 596561	(9.67, N/A) (N/A, -0.02, N/A)	272.0	N/A	0.9667 [1.0000]	96.7% { 98.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 605942	(9.88, N/A) (N/A, -0.01, N/A)	485.0	N/A	1.0226 [1.0000]	102.3% { 115.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 376833	(10.13, N/A) (N/A, -0.01, N/A)	508.5	N/A	0.7945 [1.0000]	79.4% { 115.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1676839	(5.92, N/A) (N/A, 0.00, N/A)	548.5	N/A	2.0159 [2.0000]	100.8% { 90.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 903510	(7.85, N/A) (N/A, -0.03, N/A)	562.2	N/A	1.7333 [2.0000]	86.7% { 92.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1501885	(9.30, N/A) (N/A, -0.03, N/A)	462.9	N/A	1.9127 [2.0000]	95.6% { 90.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 715146	(5.68, N/A) (N/A, 0.01, N/A)	564.5	N/A	4.4047 [4.0000]	110.1% { 94.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 741921	(7.43, N/A) (N/A, -0.02, N/A)	940.8	N/A	3.0980 [4.0000]	77.4% { 81.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 977422	(8.84, N/A) (N/A, -0.03, N/A)	371.6	N/A	4.3558 [4.0000]	108.9% { 91.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1783048	(10.19, N/A) (N/A, -0.01, N/A)	921.6	N/A	1.7151 [2.0000]	85.8% { 112.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 253899	(10.63, N/A) (N/A, 0.00, N/A)	588.0	N/A	1.3601 [2.0000]	68.0% { 143.7% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 256983	(10.72, N/A) (N/A, 0.00, N/A)	596.5	N/A	1.4603 [2.0000]	73.0% { 132.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1163125	(9.38, N/A) (N/A, -0.04, N/A)	361.9	N/A	4.7265 [4.0000]	118.2% { 87.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1282532	(9.62, N/A) (N/A, -0.03, N/A)	1001.0	N/A	6.6286 [4.0000]	165.7% { 104.3% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 627773	(10.60, N/A) (N/A, -0.01, N/A)	374.3	N/A	21.9163 [20.0000]	109.6% { 135.8% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 341147	(10.69, N/A) (N/A, 0.00, N/A)	272.8	N/A	25.8420 [20.0000]	129.2% { 137.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1359667	(6.33, N/A) (N/A, -0.01, N/A)	613.7	N/A	6.5328 [8.0000]	81.7% { 88.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB4	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sam
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00125-CCB4	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	6.91	ng/mL		
	13C5-PFPEA	3.13	ng/mL		
	13C5-PFHXA	1.77	ng/mL		
	13C4-PFHPA	1.88	ng/mL		
	13C8-PFOA	1.75	ng/mL		
	13C9-PFNA	0.947	ng/mL		
	13C6-PFDA	0.924	ng/mL		
	13C7-PFUnA	0.914	ng/mL		
	13C2-PFDOA	0.924	ng/mL		
	13C2-PFTEDA	0.737	ng/mL		
	13C3-PFBS	1.77	ng/mL		
	13C3-PFHXS	1.81	ng/mL		
	13C8-PFOS	1.94	ng/mL		
	13C2-4:2FTS	4.35	ng/mL		
	13C2-6:2FTS	2.95	ng/mL		
	13C2-8:2FTS	4.10	ng/mL		
	13C8-PFOSA	1.74	ng/mL		
	D5-NETFOSA	1.22	ng/mL		
	D3-NMEFOSA	1.19	ng/mL		
	D3-NMEFOSAA	5.14	ng/mL		
	D5-NETFOSAA	5.77	ng/mL		
	D7-NMEFOSE	24.1	ng/mL		
	D9-NETFOSAE	28.7	ng/mL		
	13C3-HFPO-DA	6.49	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (52)
 Acquired: 2023/01/11 - 22:14

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (52)
 Acquired: 2023/01/11 - 22:14

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00125-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (52)
 Acquired: 2023/01/11 - 22:14

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

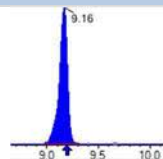
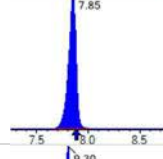
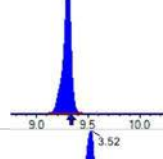
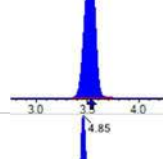
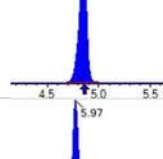
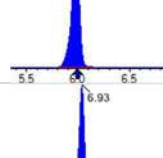
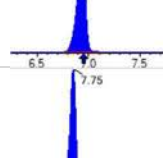
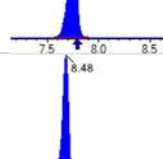
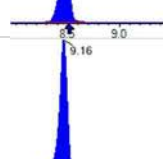
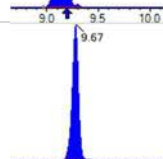
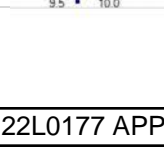


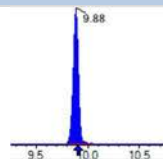
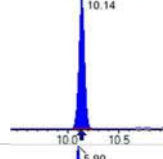
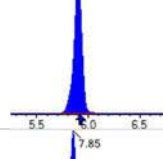
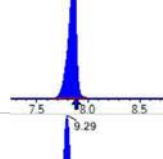
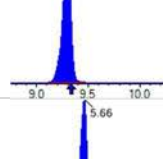
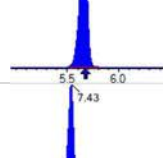
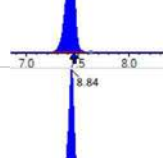
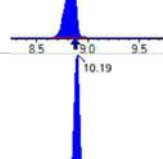
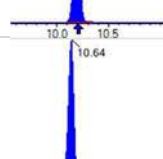
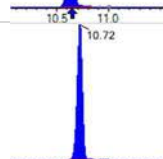

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

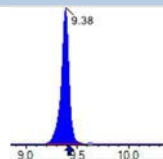
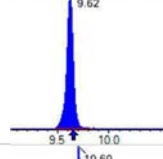
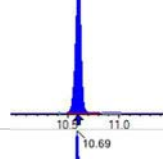
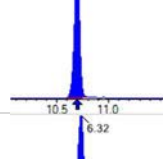
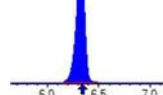
Sample I.D.: SC00125-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (52)
 Acquired: 2023/01/11 - 22:14

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 166419	(3.52, N/A) (N/A, 0.00, N/A)	442.5	N/A	0.6570 [1.0000]	65.7% { 108.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 370882	(5.98, N/A) (N/A, -0.01, N/A)	412.4	N/A	1.0033 [1.0000]	100.3% { 100.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 385121	(7.75, N/A) (N/A, -0.02, N/A)	512.4	N/A	0.8767 [1.0000]	87.7% { 115.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 337410	(8.49, N/A) (N/A, -0.03, N/A)	442.8	N/A	0.8320 [1.0000]	83.2% { 120.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 468469	(9.16, N/A) (N/A, -0.03, N/A)	265.0	N/A	1.0846 [1.0000]	108.5% { 104.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 660828	(7.85, N/A) (N/A, -0.03, N/A)	691.2	N/A	0.8946 [1.0000]	89.5% { 106.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 689303	(9.30, N/A) (N/A, -0.03, N/A)	411.9	N/A	0.8940 [1.0000]	89.4% { 103.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1130090	(3.52, N/A) (N/A, 0.00, N/A)	531.5	N/A	6.9119 [8.0000]	86.4% { 95.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 949888	(4.85, N/A) (N/A, -0.01, N/A)	526.0	N/A	3.1293 [4.0000]	78.2% { 91.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 670304	(5.97, N/A) (N/A, -0.02, N/A)	527.2	N/A	1.7687 [2.0000]	88.4% { 89.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 678145	(6.93, N/A) (N/A, -0.02, N/A)	492.4	N/A	1.8825 [2.0000]	94.1% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 685940	(7.75, N/A) (N/A, -0.02, N/A)	578.6	N/A	1.7481 [2.0000]	87.4% { 101.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 317124	(8.48, N/A) (N/A, -0.03, N/A)	445.7	N/A	0.9470 [1.0000]	94.7% { 117.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 487492	(9.16, N/A) (N/A, -0.03, N/A)	296.9	N/A	0.9235 [1.0000]	92.4% { 105.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 596263	(9.67, N/A) (N/A, -0.02, N/A)	471.5	N/A	0.9136 [1.0000]	91.4% { 98.2% }			

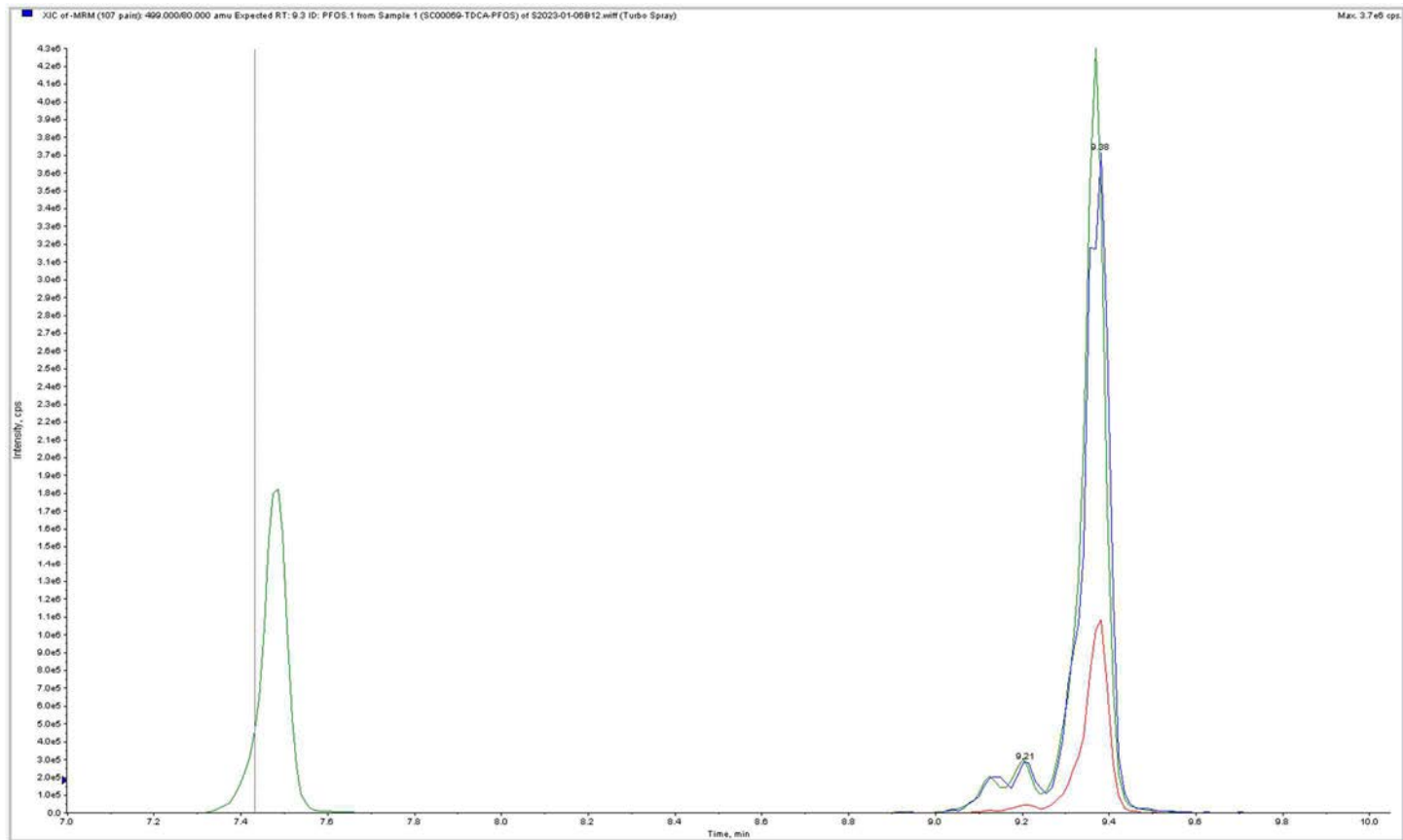
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 579069	(9.88, N/A) (N/A, -0.01, N/A)	545.3	N/A	0.9240 [1.0000]	92.4% { 110.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 369756	(10.14, N/A) (N/A, -0.01, N/A)	679.7	N/A	0.7371 [1.0000]	73.7% { 113.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1556991	(5.90, N/A) (N/A, -0.02, N/A)	435.8	N/A	1.7723 [2.0000]	88.6% { 84.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 996323	(7.85, N/A) (N/A, -0.03, N/A)	672.1	N/A	1.8097 [2.0000]	90.5% { 102.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1587756	(9.29, N/A) (N/A, -0.04, N/A)	390.5	N/A	1.9404 [2.0000]	97.0% { 95.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 745621	(5.66, N/A) (N/A, -0.01, N/A)	530.7	N/A	4.3481 [4.0000]	108.7% { 98.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 745806	(7.43, N/A) (N/A, -0.02, N/A)	627.2	N/A	2.9485 [4.0000]	73.7% { 81.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 971304	(8.84, N/A) (N/A, -0.03, N/A)	427.1	N/A	4.0983 [4.0000]	102.5% { 90.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1889617	(10.19, N/A) (N/A, -0.01, N/A)	806.2	N/A	1.7441 [2.0000]	87.2% { 119.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 230925	(10.64, N/A) (N/A, 0.00, N/A)	505.8	N/A	1.1871 [2.0000]	59.4% { 130.7% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 223211	(10.72, N/A) (N/A, 0.00, N/A)	543.9	N/A	1.2171 [2.0000]	60.9% { 115.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1318829	(9.38, N/A) (N/A, -0.03, N/A)	365.7	N/A	5.1427 [4.0000]	128.6% { 99.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1164357	(9.62, N/A) (N/A, -0.02, N/A)	697.9	N/A	5.7747 [4.0000]	144.4% { 94.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 719437	(10.60, N/A) (N/A, 0.00, N/A)	469.4	N/A	24.1017 [20.0000]	120.5% { 155.6% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 394157	(10.69, N/A) (N/A, 0.00, N/A)	287.0	N/A	28.6512 [20.0000]	143.3% { 158.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1290008	(6.32, N/A) (N/A, -0.01, N/A)	549.0	N/A	6.4865 [8.0000]	81.1% { 84.4% }			

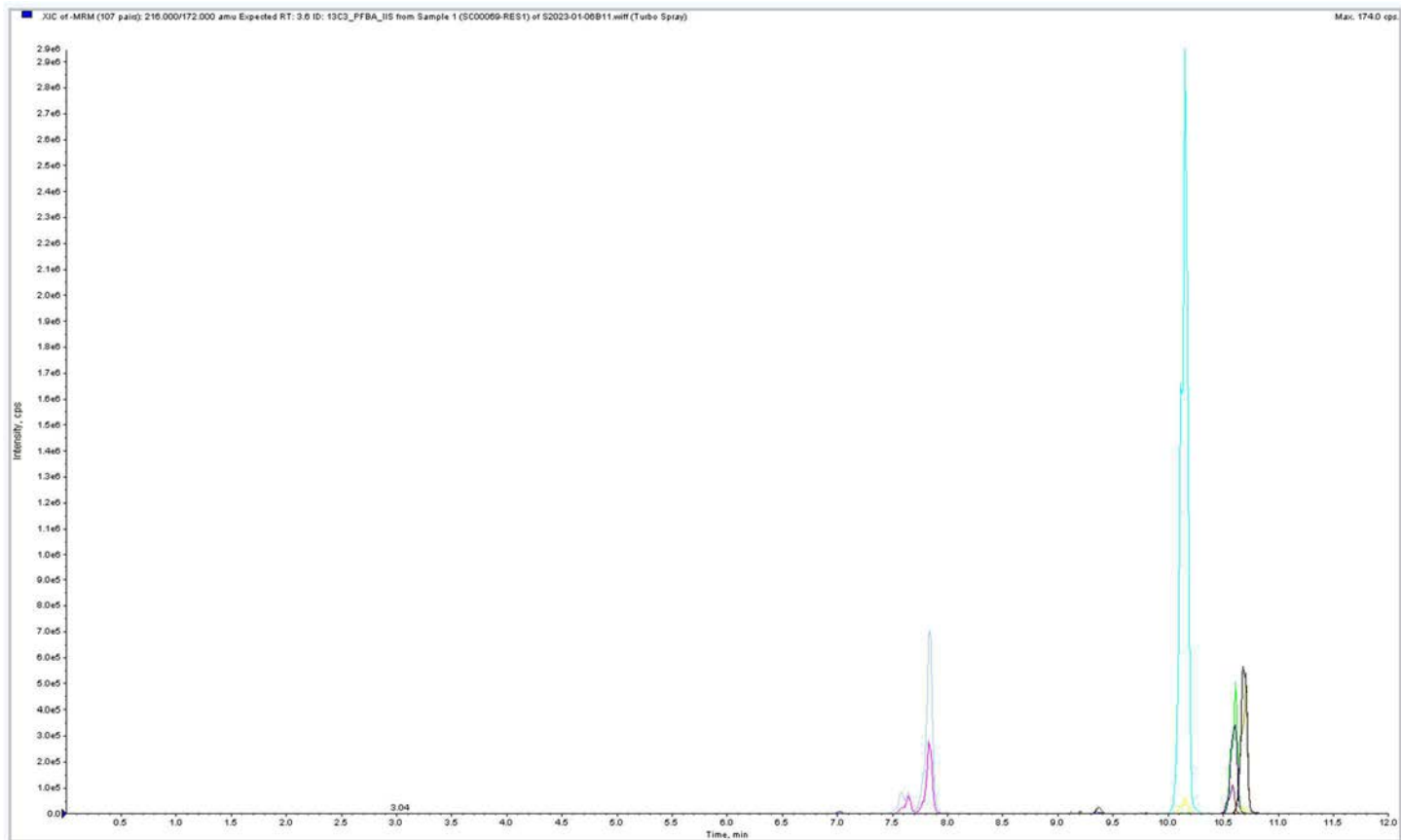
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BILE STANDARD CHECK S2023-01-06B/SC00069

TDCA = 7.50
PFOS = 9.10
TDCA-PFOS = 1.60 > 1.0 PASS



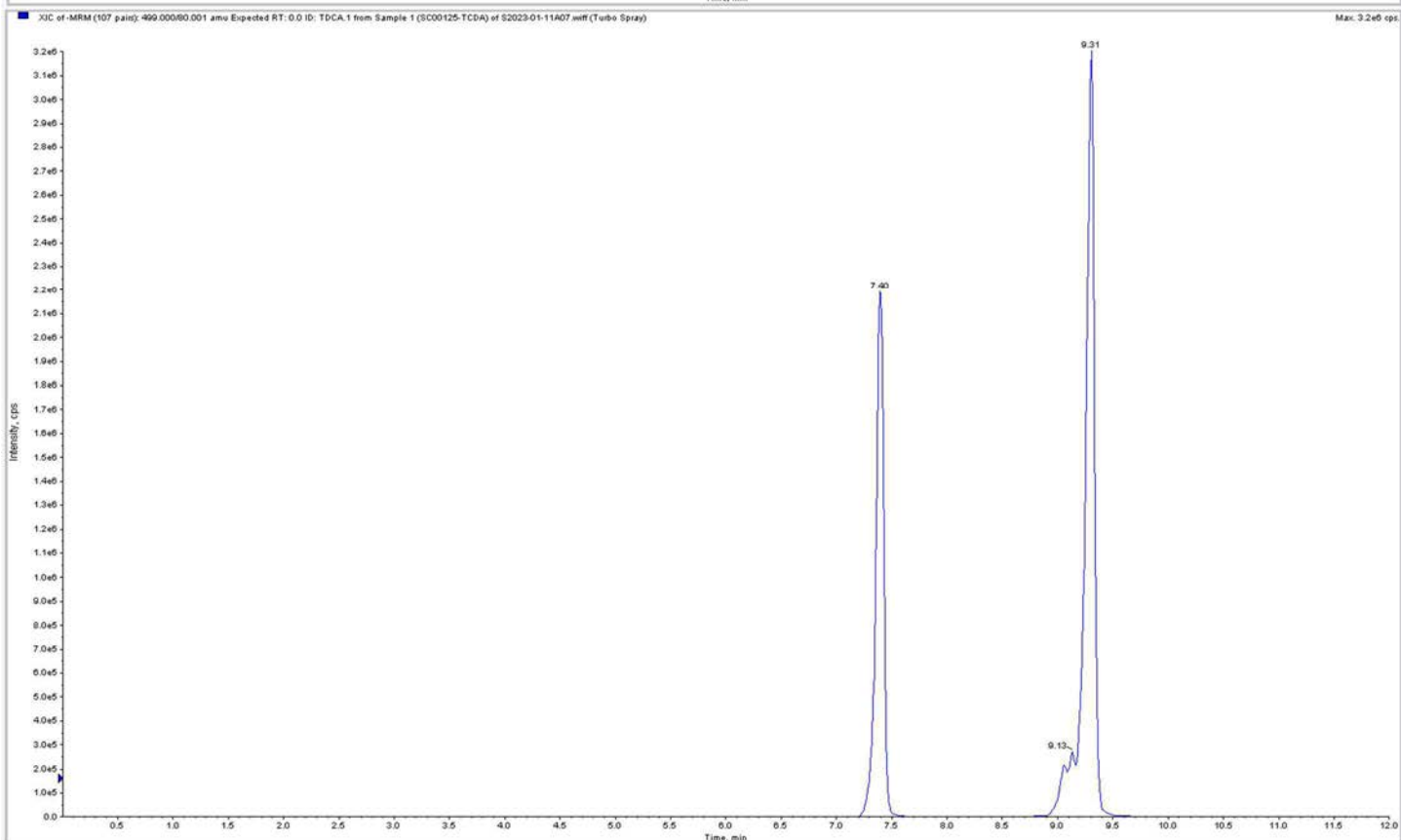
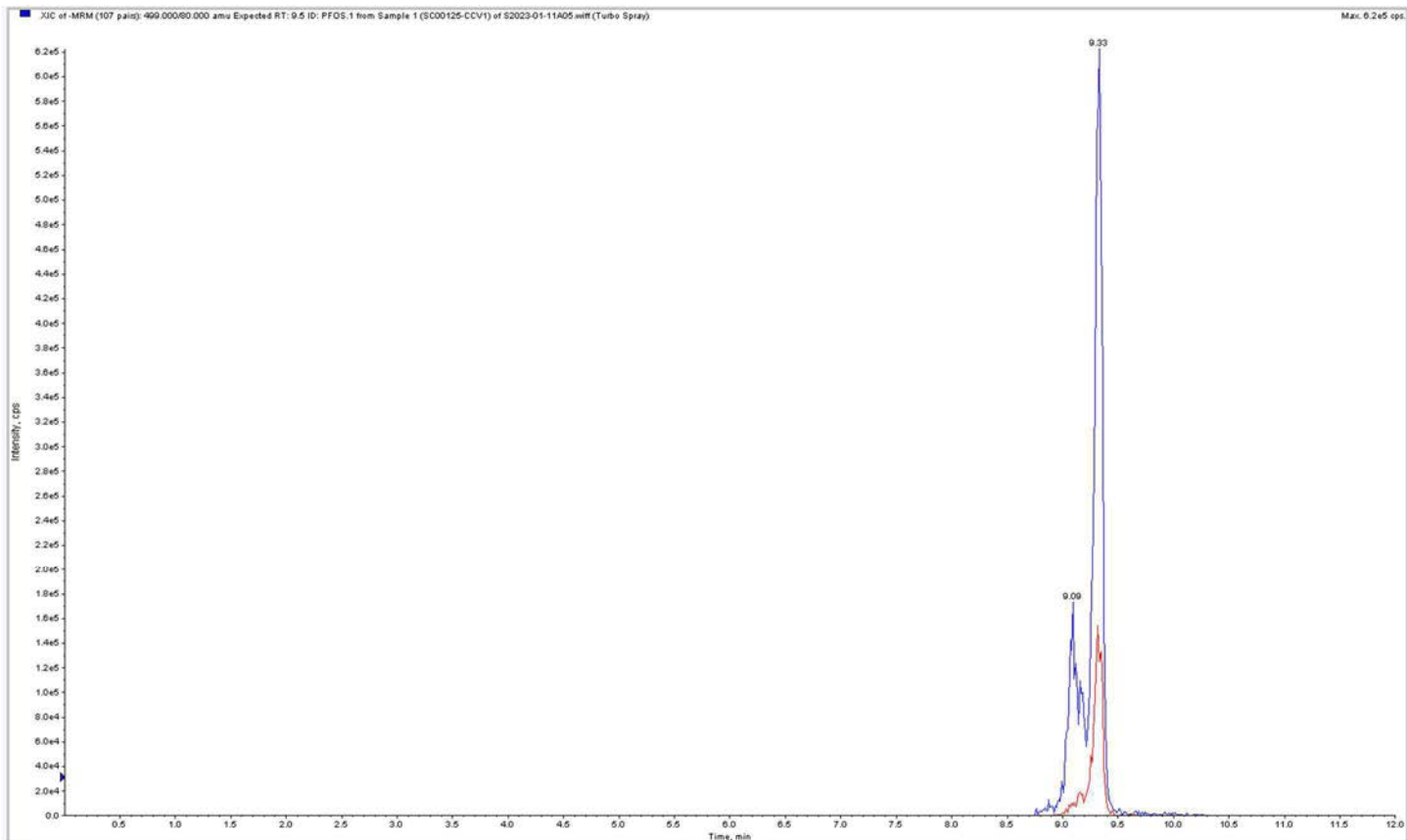
S2023-01-0B/SC00069 Column Resolution



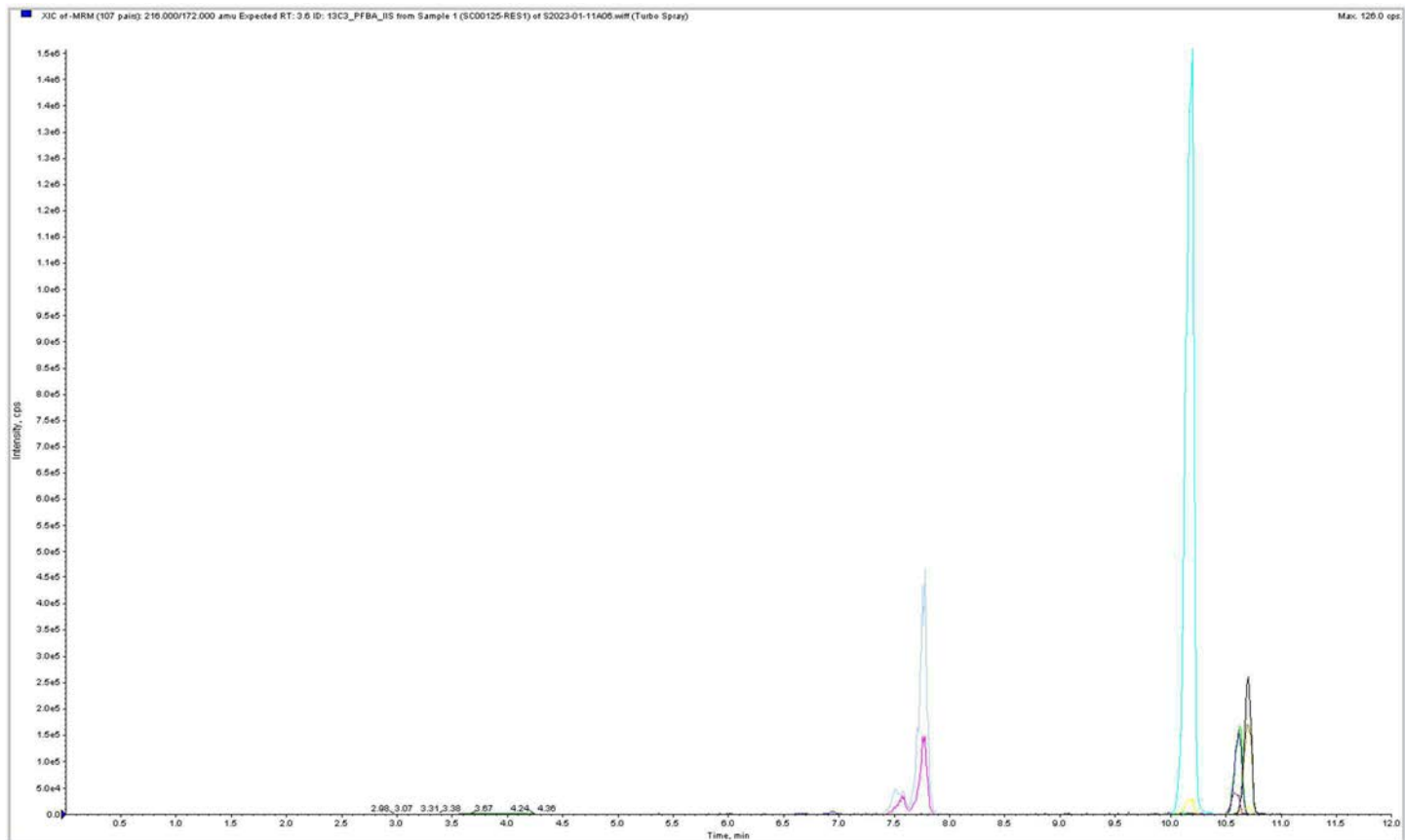
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BILE STANDARD CHECK S2023-01-11A/SC00125

TDCA = 7.40
PFOS = 8.85
PFOS - TDCA = 1.45 > 1.0 PASS



S2023-01-11A/SC00125 Column Resolution



QUALITY CONTROL RAW DATA

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-BLK1
Sampled:		Prepared:	01/09/23 16:01
Solids:		Preparation:	EPA 1633
Batch:	BCA0118	Sequence:	SC00125
Column:	1	Calibration:	2302005
		Instrument:	Saphira
		File ID:	S2023-01-11A (16)
		Analyzed:	01/11/23 14:30
		Dilution:	1

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.20 U	0.40	0.20	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.20 U	0.40	0.20	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.20 U	0.40	0.20	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.20 U	0.40	0.20	0.064	U
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.20 U	0.40	0.20	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-BLK1
Sampled:		Prepared:	01/09/23 16:01
Solids:		Preparation:	EPA 1633
Batch:	BCA0118	Sequence:	SC00125
Column:	1	Calibration:	2302005
			Instrument: Saphira
			File ID: S2023-01-11A (16)
			Analyzed: 01/11/23 14:30
			Dilution: 1

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.40 U	0.80	0.40	0.12	U
PFEESA	0.40 U	0.80	0.40	0.11	U
PFMPA	0.40 U	0.80	0.40	0.054	U
PFMBA	0.40 U	0.80	0.40	0.091	U
NFDHA	0.40 U	0.80	0.40	0.30	U
9CL-PF3ONS	0.40 U	0.80	0.40	0.21	U
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21	U
3:3FTCA	0.80 U	1.6	0.80	0.57	U
5:3FTCA	0.80 U	1.6	0.80	0.44	U
7:3FTCA	0.80 U	1.6	0.80	0.55	U



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (16)
 Acquired: 2023/01/11 - 14:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 10107 (413.0 / 169.0) 4557	(7.76, 1.00) (0.00, N/A, 0.9)	20.2 15.9	0.4509 141.2 130.8	0.0259	N/A			
PFNA	(463.0 / 419.0) 4090 (463.0 / 169.0) 834	(8.48, 1.00) (0.00, N/A, 0.2)	22.7 10.2	0.2038 90.9 92.3	0.0129	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (16)
 Acquired: 2023/01/11 - 14:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (16)
 Acquired: 2023/01/11 - 14:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 180288	(3.58, N/A) (N/A, 0.06, N/A)	490.3	N/A	0.7118 [1.0000]	71.2% { 117.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 378875	(5.98, N/A) (N/A, -0.01, N/A)	405.6	N/A	1.0249 [1.0000]	102.5% { 102.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 349014	(7.75, N/A) (N/A, -0.03, N/A)	553.4	N/A	0.7945 [1.0000]	79.5% { 104.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 311701	(8.48, N/A) (N/A, -0.04, N/A)	469.8	N/A	0.7686 [1.0000]	76.9% { 110.9% }			

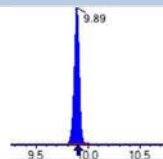
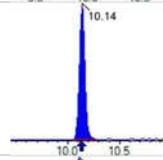
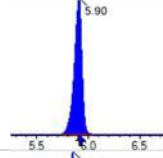
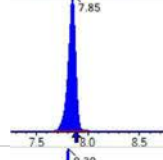
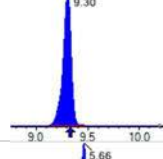
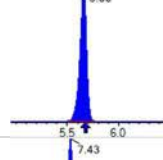
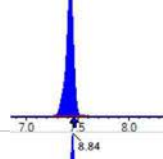
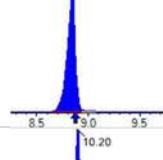
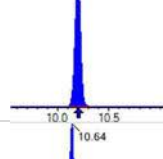
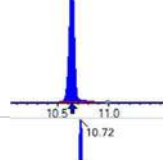
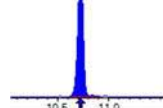


Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (16)
 Acquired: 2023/01/11 - 14:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 426877	(9.17, N/A) (N/A, -0.03, N/A)	271.6	N/A	0.9883 [1.0000]	98.8% { 95.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 616747	(7.85, N/A) (N/A, -0.03, N/A)	541.0	N/A	0.8349 [1.0000]	83.5% { 99.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 654906	(9.30, N/A) (N/A, -0.03, N/A)	265.6	N/A	0.8494 [1.0000]	84.9% { 98.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1421230	(3.57, N/A) (N/A, 0.05, N/A)	624.2	N/A	8.0239 [8.0000]	100.3% { 120.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1262011	(4.86, N/A) (N/A, 0.00, N/A)	516.6	N/A	4.0699 [4.0000]	101.7% { 121.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 812161	(5.97, N/A) (N/A, -0.02, N/A)	478.1	N/A	2.0978 [2.0000]	104.9% { 108.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 693133	(6.93, N/A) (N/A, -0.02, N/A)	465.4	N/A	1.8835 [2.0000]	94.2% { 102.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 748034	(7.75, N/A) (N/A, -0.02, N/A)	522.0	N/A	2.1036 [2.0000]	105.2% { 110.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 329171	(8.48, N/A) (N/A, -0.03, N/A)	426.7	N/A	1.0640 [1.0000]	106.4% { 122.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 416512	(9.16, N/A) (N/A, -0.03, N/A)	309.9	N/A	0.8659 [1.0000]	86.6% { 90.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 678336	(9.68, N/A) (N/A, -0.01, N/A)	503.1	N/A	1.1406 [1.0000]	114.1% { 111.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 623835	(9.89, N/A) (N/A, -0.01, N/A)	401.4	N/A	1.0925 [1.0000]	109.2% { 118.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 354833	(10.14, N/A) (N/A, 0.00, N/A)	445.8	N/A	0.7763 [1.0000]	77.6% { 109.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2101190	(5.90, N/A) (N/A, -0.01, N/A)	640.8	N/A	2.5626 [2.0000]	128.1% { 113.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1022447	(7.85, N/A) (N/A, -0.03, N/A)	556.1	N/A	1.9898 [2.0000]	99.5% { 104.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1775968	(9.30, N/A) (N/A, -0.03, N/A)	513.4	N/A	2.2844 [2.0000]	114.2% { 107.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 1103150	(5.66, N/A) (N/A, -0.01, N/A)	635.3	N/A	6.8928 [4.0000]	172.3% { 146.1% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 965154	(7.43, N/A) (N/A, -0.02, N/A)	634.9	N/A	4.0884 [4.0000]	102.2% { 105.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 934112	(8.84, N/A) (N/A, -0.03, N/A)	461.6	N/A	4.2231 [4.0000]	105.6% { 87.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1661622	(10.20, N/A) (N/A, 0.00, N/A)	797.7	N/A	1.6142 [2.0000]	80.7% { 105.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 154381	(10.64, N/A) (N/A, 0.00, N/A)	437.2	N/A	0.8353 [2.0000]	41.8% { 87.4% }			
D5_NEtFOsa_EIS	(531.0 / 169.0) 152994	(10.72, N/A) (N/A, 0.00, N/A)	385.5	N/A	0.8781 [2.0000]	43.9% { 78.8% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (16)
 Acquired: 2023/01/11 - 14:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1233775	(9.39, N/A) (N/A, -0.03, N/A)	263.4	N/A	5.0637 [4.0000]	126.6% { 93.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1296878	(9.63, N/A) (N/A, -0.02, N/A)	768.3	N/A	6.7698 [4.0000]	169.2% { 105.4% }			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 543050	(10.61, N/A) (N/A, 0.00, N/A)	427.1	N/A	19.1481 [20.0000]	95.7% { 117.5% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 287929	(10.70, N/A) (N/A, 0.00, N/A)	228.6	N/A	22.0288 [20.0000]	110.1% { 115.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1546232	(6.32, N/A) (N/A, -0.02, N/A)	594.3	N/A	7.6108 [8.0000]	95.1% { 101.1% }			

ANALYSIS DATA SHEET

LCS

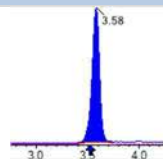
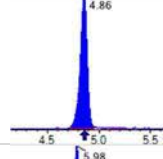
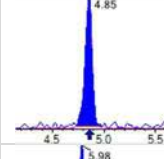
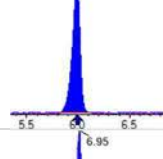
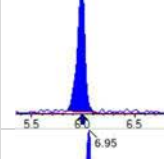
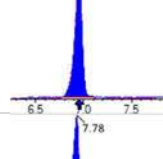
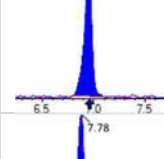
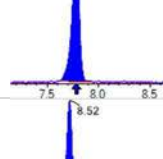
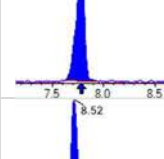
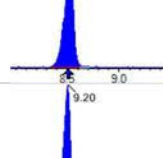
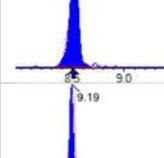
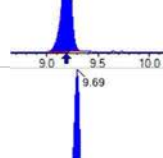
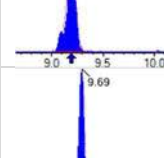
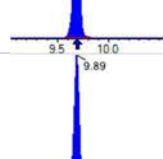
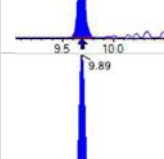
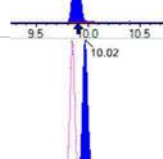
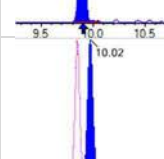
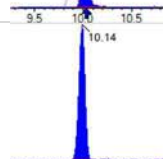
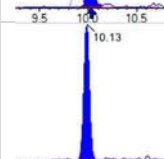
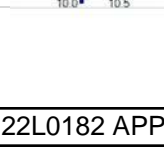
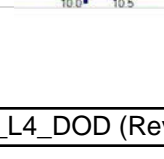
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Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-BS1
Sampled:		Prepared:	01/09/23 16:01
Solids:		Preparation:	EPA 1633
Batch:	BCA0118	Sequence:	SC00125
Column:	1	Calibration:	2302005
		Instrument:	Saphira
		File ID:	S2023-01-11A (17)
		Analyzed:	01/11/23 14:43
		Dilution:	1

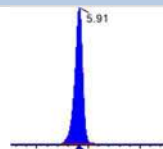
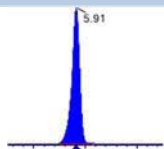
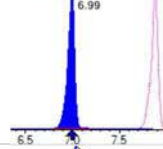
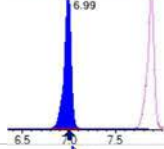
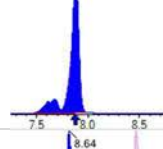
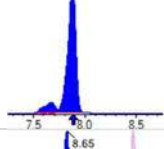
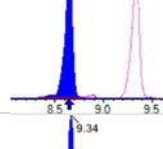
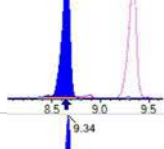
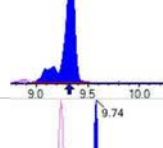
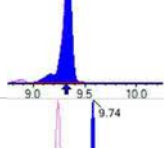
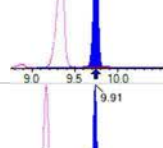
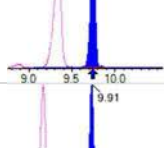
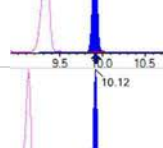
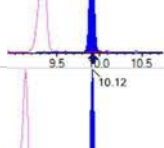
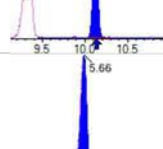
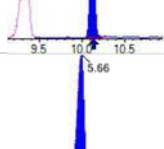
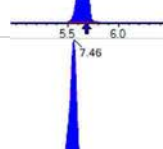
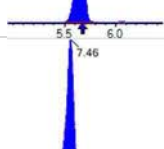
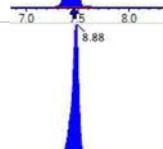
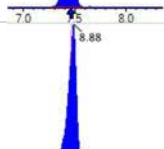

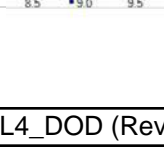
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	16.8	1.6	0.21	
PFPEA	8.22	0.80	0.065	
PFHXA	4.06	0.40	0.055	
PFHPA	4.53	0.40	0.041	
PFOA	4.31	0.40	0.15	
PFNA	4.35	0.40	0.082	
PFDA	3.93	0.40	0.10	
PFUnA	4.10	0.40	0.16	
PFDOA	3.95	0.40	0.11	
PFTRDA	3.36	0.40	0.20	
PFTEDA	4.46	0.40	0.20	
PFBS	3.64	0.40	0.037	
PFPEs	4.71	0.40	0.063	
PFHXS	4.67	0.40	0.032	
PFHPS	4.98	0.40	0.051	
PFOS	61.3	0.40	0.064	
PFNS	4.25	0.40	0.12	
PFDS	4.75	0.40	0.15	
PFDOS	8.27	0.40	0.12	BS2
4:2FTS	18.2	1.6	0.29	
6:2FTS	17.1	1.6	0.31	
8:2FTS	19.0	1.6	0.082	
PFOSA	4.38	0.40	0.10	
NMeFOSA	17.5	1.6	0.47	
NEtFOSA	16.1	1.6	0.41	
NMeFOSAA	4.03	0.40	0.11	
NEtFOSAA	4.30	0.40	0.11	
NMeFOSE	16.1	1.6	1.0	
NEtFOSE	21.7	1.6	1.0	
HFPO-DA	8.90	1.6	1.0	

ANALYSIS DATA SHEET**LCS**

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-BS1
Sampled:		File ID:	S2023-01-11A (17)
Solids:		Prepared:	01/09/23 16:01
Batch:	BCA0118	Analyzed:	01/11/23 14:43
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2302005
		Instrument:	Saphira
		Sequence:	SC00125

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	8.13	0.80	0.12	
PFEESA	7.55	0.80	0.11	
PFMPA	6.27	0.80	0.054	
PFMBA	8.57	0.80	0.091	
NFDHA	7.93	0.80	0.30	
9CL-PF3ONS	8.18	0.80	0.21	
11CL-PF3OUDS	12.5	0.80	0.21	BS2
3:3FTCA	13.9	1.6	0.57	
5:3FTCA	15.9	1.6	0.44	
7:3FTCA	10.0	1.6	0.55	

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 675886	(3.58, 1.00) (0.00, N/A, 0.0)	391.6	N/A 0.0 0.0	4.1936 [4.0000]	104.8%			
PFPeA	(263.0 / 219.0) 598596 (263.0 / 69.0) 6869	(4.86, 1.00) (0.00, N/A, 0.2)	525.2 81.2	0.0115 105.7 98.6	2.0543 [2.0000]	102.7%			
PFHxA	(313.0 / 269.0) 397904 (313.0 / 119.0) 37685	(5.98, 1.00) (0.00, N/A, 0.1)	389.9 140.8	0.0947 96.5 101.0	1.0151 [1.0000]	101.5%			
PFHpA	(363.0 / 319.0) 408921 (363.0 / 169.0) 112954	(6.95, 1.00) (0.00, N/A, 0.1)	346.5 190.7	0.2762 97.1 93.8	1.1321 [1.0000]	113.2%			
PFOA	(413.0 / 369.0) 412548 (413.0 / 169.0) 135776	(7.78, 1.00) (0.00, N/A, 0.1)	293.2 241.6	0.3291 103.1 95.5	1.0769 [1.0000]	107.7%			
PFNA	(463.0 / 419.0) 333050 (463.0 / 169.0) 66379	(8.52, 1.00) (0.00, N/A, 0.1)	391.6 159.4	0.1993 88.9 90.3	1.0864 [1.0000]	108.6%			
PFDA	(513.0 / 469.0) 499955 (513.0 / 169.0) 46997	(9.20, 1.00) (0.00, N/A, 0.5)	324.4 383.8	0.0940 85.6 105.4	0.9818 [1.0000]	98.2%			
PFUnA	(563.0 / 519.0) 657560 (563.0 / 169.0) 44786	(9.69, 1.00) (0.00, N/A, 0.2)	457.0 86.2	0.0681 65.1 72.6	1.0262 [1.0000]	102.6%			
PFDoA	(613.0 / 569.0) 612228 (613.0 / 169.0) 70449	(9.89, 1.00) (0.00, N/A, -0.1)	455.4 160.2	0.1151 89.4 84.8	0.9877 [1.0000]	98.8%			
PFTTrDA	(663.0 / 619.0) 512609 (663.0 / 169.0) 108096	(10.02, 1.01) (N/A, -0.01, -0.1)	428.1 184.0	0.2109 104.6 108.5	0.8392 [1.0000]	83.9%			
PFTeDA	(713.0 / 669.0) 341404 (713.0 / 169.0) 74694	(10.14, 1.00) (0.00, N/A, 0.2)	411.6 133.3	0.2188 111.9 120.3	1.1162 [1.0000]	111.6%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 610481 (299.0 / 99.0) 358485	(5.91, 1.00) (0.00, N/A, 0.0)	469.9 462.8	0.5872 90.0 92.7	0.9100 [0.8847]	102.9%			
PFPeS	(349.0 / 80.0) 1080601 (349.0 / 99.0) 382269	(6.99, 0.89) (N/A, 0.00, 0.1)	566.3 555.5	0.3538 95.7 98.2	1.1785 [0.9384]	125.6%			
PFHxS	(399.0 / 80.0) 1046085 (399.0 / 99.0) 347755	(7.88, 1.00) (0.00, N/A, 0.1)	190.3 200.6	0.3324 100.8 99.4	1.1679 [0.9110]	128.2%			
PFHpS	(449.0 / 80.0) 1134142 (449.0 / 99.0) 307464	(8.64, 0.93) (N/A, 0.01, -0.3)	299.6 296.5	0.2711 98.6 96.6	1.2458 [0.9514]	130.9%			QC,
PFOS	(499.0 / 80.0) 16543529 (499.0 / 99.0) 3888187	(9.34, 1.00) (0.00, N/A, -0.1)	715.7 1828.5	0.2350 103.4 106.9	15.3195 [0.9275]	1651.7%			QC,
PFNS	(549.0 / 80.0) 1172923 (549.0 / 99.0) 301199	(9.74, 1.04) (N/A, 0.00, 0.0)	422.5 495.5	0.2568 110.3 108.0	1.0622 [0.9599]	110.7%			
PFDS	(599.0 / 80.0) 1447847 (599.0 / 99.0) 308279	(9.91, 1.06) (N/A, 0.00, 0.3)	649.3 379.2	0.2129 93.3 95.5	1.1863 [0.9631]	123.2%			
PFDoS	(699.0 / 80.0) 1071332 (699.0 / 99.0) 235073	(10.12, 1.08) (N/A, -0.01, 0.0)	525.7 269.6	0.2194 105.8 93.9	2.0665 [0.9696]	213.1%			QC,
4:2FTS	(327.0 / 307.0) 3522421 (327.0 / 81.0) 1962354	(5.66, 1.00) (0.00, N/A, 0.0)	684.4 500.8	0.5571 88.5 90.0	4.5615 [3.7381]	122.0%			
6:2FTS	(427.0 / 407.0) 1551608 (427.0 / 81.0) 1095813	(7.46, 1.00) (0.00, N/A, 0.1)	586.7 687.1	0.7062 92.2 106.5	4.2787 [3.7962]	112.7%			
8:2FTS	(527.0 / 507.0) 1672533 (527.0 / 81.0) 1047534	(8.88, 1.00) (0.00, N/A, -0.1)	384.4 450.4	0.6263 82.6 90.6	4.7590 [3.8332]	124.2%			

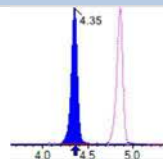
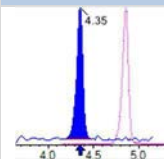
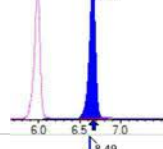
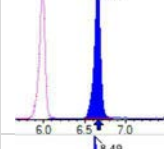
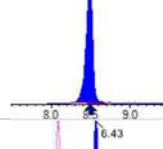
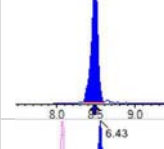
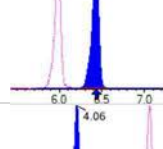
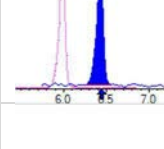
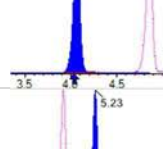
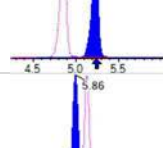
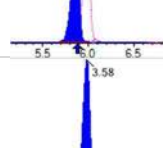
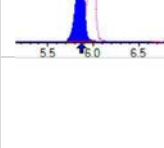
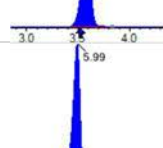
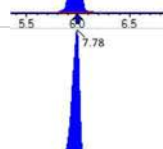
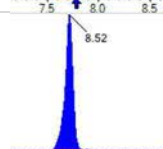



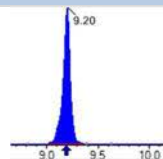
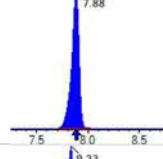
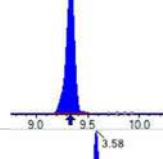
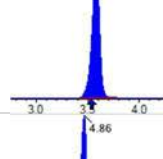
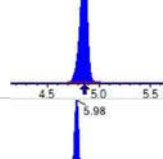
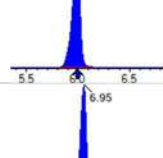
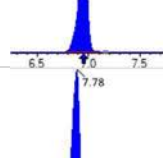
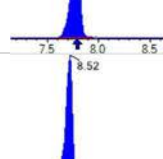
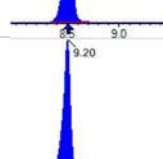
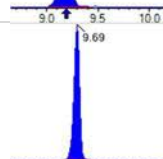

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (17)
 Acquired: 2023/01/11 - 14:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 968105 (498.0 / 478.0) 18766	(10.20, 1.00) (0.00, N/A, 0.1)	729.2 52.1	0.0194 102.8 96.5	1.0954 [1.0000]	109.5%			
NMeFOSA	(512.0 / 219.0) 298650 (512.0 / 169.0) 234449	(10.63, 1.00) (0.00, N/A, 0.0)	824.1 743.5	0.7850 110.0 106.0	4.3626 [4.0000]	109.1%			
NEIFOSA	(526.0 / 219.0) 283088 (526.0 / 169.0) 300437	(10.72, 1.00) (0.00, N/A, 0.0)	931.6 888.7	1.0613 100.3 94.7	4.0318 [4.0000]	100.8%			
NMeFOSAA	(570.0 / 419.0) 294760 (570.0 / 483.0) 127882	(9.43, 1.00) (0.00, N/A, 0.0)	224.2 171.4	0.4339 85.3 81.3	1.0081 [1.0000]	100.8%			
NEIFOSAA	(584.0 / 419.0) 259215 (584.0 / 526.0) 190355	(9.65, 1.00) (0.01, N/A, 0.3)	268.2 221.9	0.7344 118.1 110.1	1.0748 [1.0000]	107.5%			
NMeFOSE	(616.0 / 59.0) 129185	(10.61, 1.00) (0.01, N/A, 0.0)	325.0	N/A 0.0 0.0	4.0155 [4.0000]	100.4%			
NEtFOSE	(630.0 / 59.0) 40880	(10.70, 1.00) (0.01, N/A, 0.0)	166.9	N/A 0.0 0.0	5.4255 [4.0000]	135.6%			QC,
HFPO-DA	(285.0 / 169.0) 280888 (285.0 / 185.0) 737053	(6.34, 1.00) (0.00, N/A, -0.1)	542.5 676.9	2.6240 97.8 95.1	2.2244 [2.0000]	111.2%			
ADONA	(377.0 / 85.0) 1341751 (377.0 / 251.0) 157372	(7.27, 1.15) (N/A, 0.00, 0.1)	615.0 382.6	0.1173 100.8 96.9	2.0328 [1.8854]	107.8%			
9CI-Pf3ONS	(531.0 / 351.0) 3887981 (533.0 / 353.0) 1240385	(9.68, 1.53) (N/A, 0.00, 0.0)	594.4 478.4	0.3190 102.8 98.3	2.0438 [1.8665]	109.5%			
11CI-PF3OUDS	(631.0 / 451.0) 2744060 (633.0 / 453.0) 932951	(10.01, 1.58) (N/A, 0.00, 0.1)	1077.2 782.2	0.3400 99.0 102.5	3.1142 [1.8864]	165.1%			QC,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 29085 (241.0 / 117.0) 44219	(4.35, 0.90) (N/A, 0.00, -0.1)	444.5 137.1	1.5203 103.4 101.1	3.4776 [4.0000]	86.9%			
5:3FTCA	(341.0 / 236.7) 237090 (341.0 / 217.0) 385064	(6.66, 1.11) (N/A, 0.00, 0.0)	370.7 363.7	1.6241 97.2 100.7	3.9748 [4.0000]	99.4%			
7:3FTCA	(441.0 / 317.0) 224904 (441.0 / 337.0) 190910	(8.49, 1.42) (N/A, 0.00, 0.1)	304.9 236.5	0.8489 98.5 98.5	2.5054 [4.0000]	62.6%			QC,
PFEESA	(315.0 / 135.0) 728654 (315.0 / 83.0) 195950	(6.43, 1.07) (N/A, 0.00, 0.1)	658.4 183.7	0.2689 88.0 89.4	1.8867 [1.7849]	105.7%			
PFMPA	(229.0 / 85.0) 136603	(4.06, 0.84) (N/A, 0.03, 0.0)	593.7	N/A 0.0 0.0	1.5679 [2.0000]	78.4%			
PFMBA	(279.0 / 85.0) 471608	(5.23, 1.08) (N/A, -0.01, 0.0)	668.5	N/A 0.0 0.0	2.1429 [2.0000]	107.1%			
NFDHA	(295.0 / 201.0) 323048 (295.0 / 85.0) 295437	(5.86, 0.98) (N/A, -0.01, -0.1)	418.6 524.2	0.9145 99.4 93.5	1.9815 [2.0000]	99.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 174556	(3.58, N/A) (N/A, 0.06, N/A)	464.0	N/A	0.6891 [1.0000]	68.9% {113.5%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 360906	(5.99, N/A) (N/A, 0.00, N/A)	496.9	N/A	0.9763 [1.0000]	97.6% {97.5%}			
13C4_PFOA_IIS	(417.0 / 372.0) 318428	(7.78, N/A) (N/A, 0.01, N/A)	369.7	N/A	0.7249 [1.0000]	72.5% {95.4%}			
13C5_PFNA_IIS	(468.0 / 423.0) 296987	(8.52, N/A) (N/A, 0.00, N/A)	450.1	N/A	0.7323 [1.0000]	73.2% {105.7%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 367163	(9.20, N/A) (N/A, 0.00, N/A)	266.1	N/A	0.8500 [1.0000]	85.0% { 82.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 605706	(7.88, N/A) (N/A, 0.00, N/A)	637.9	N/A	0.8200 [1.0000]	82.0% { 97.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 681884	(9.33, N/A) (N/A, 0.00, N/A)	365.7	N/A	0.8844 [1.0000]	88.4% { 102.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1409543	(3.58, N/A) (N/A, 0.06, N/A)	675.7	N/A	8.2193 [8.0000]	102.7% { 119.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1199737	(4.86, N/A) (N/A, -0.01, N/A)	509.1	N/A	4.0617 [4.0000]	101.5% { 115.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 795507	(5.98, N/A) (N/A, -0.01, N/A)	512.2	N/A	2.1571 [2.0000]	107.9% { 106.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 715416	(6.95, N/A) (N/A, 0.00, N/A)	528.4	N/A	2.0408 [2.0000]	102.0% { 105.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 735339	(7.78, N/A) (N/A, 0.01, N/A)	476.9	N/A	2.2665 [2.0000]	113.3% { 108.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 319320	(8.52, N/A) (N/A, 0.01, N/A)	411.1	N/A	1.0833 [1.0000]	108.3% { 118.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 496713	(9.20, N/A) (N/A, 0.01, N/A)	339.5	N/A	1.2006 [1.0000]	120.1% { 107.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 704996	(9.69, N/A) (N/A, 0.00, N/A)	424.6	N/A	1.3782 [1.0000]	137.8% { 116.1% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (17)
 Acquired: 2023/01/11 - 14:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 662118	(9.89, N/A) (N/A, -0.01, N/A)	581.8	N/A	1.3481 [1.0000]	134.8% { 126.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 321084	(10.14, N/A) (N/A, -0.01, N/A)	324.9	N/A	0.8167 [1.0000]	81.7% { 98.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2056692	(5.91, N/A) (N/A, -0.01, N/A)	527.3	N/A	2.5541 [2.0000]	127.7% { 111.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1071828	(7.88, N/A) (N/A, 0.00, N/A)	681.9	N/A	2.1240 [2.0000]	106.2% { 110.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1771830	(9.33, N/A) (N/A, 0.01, N/A)	254.6	N/A	2.1889 [2.0000]	109.4% { 107.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 961044	(5.66, N/A) (N/A, -0.01, N/A)	580.4	N/A	6.1144 [4.0000]	152.9% { 127.3% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 949423	(7.46, N/A) (N/A, 0.01, N/A)	675.2	N/A	4.0951 [4.0000]	102.4% { 103.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 963857	(8.88, N/A) (N/A, 0.01, N/A)	292.4	N/A	4.4370 [4.0000]	110.9% { 90.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1659013	(10.20, N/A) (N/A, 0.00, N/A)	811.2	N/A	1.5479 [2.0000]	77.4% { 104.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 144317	(10.63, N/A) (N/A, 0.00, N/A)	550.3	N/A	0.7499 [2.0000]	37.5% { 81.7% }			
D5_NEtFOsa_EIS	(531.0 / 169.0) 140972	(10.72, N/A) (N/A, 0.00, N/A)	530.7	N/A	0.7771 [2.0000]	38.9% { 72.6% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (17)
 Acquired: 2023/01/11 - 14:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1301933	(9.42, N/A) (N/A, 0.00, N/A)	371.6	N/A	5.1321 [4.0000]	128.3% { 98.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1008800	(9.64, N/A) (N/A, -0.01, N/A)	677.4	N/A	5.0576 [4.0000]	126.4% { 82.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 502053	(10.60, N/A) (N/A, 0.00, N/A)	345.6	N/A	17.0021 [20.0000]	85.0% { 108.6% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 268764	(10.69, N/A) (N/A, 0.00, N/A)	341.2	N/A	19.7490 [20.0000]	98.7% { 108.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1592715	(6.34, N/A) (N/A, 0.00, N/A)	675.1	N/A	8.2299 [8.0000]	102.9% { 104.2% }			

ANALYSIS DATA SHEET

MRL Check

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-MRL1
Sampled:		File ID:	S2023-01-11A (18)
Solids:		Prepared:	01/09/23 16:01
Batch:	BCA0118	Analyzed:	01/11/23 14:56
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2302005
		Instrument:	Saphira
		Sequence:	SC00125

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	1.57	1.6	0.21	J
PFPEA	0.721	0.80	0.065	J
PFHXA	0.434	0.40	0.055	
PFHPA	0.457	0.40	0.041	
PFOA	0.469	0.40	0.15	
PFNA	0.465	0.40	0.082	
PFDA	0.457	0.40	0.10	
PFUnA	0.367	0.40	0.16	IR1, J
PFDOA	0.388	0.40	0.11	J
PFTRDA	0.347	0.40	0.20	J
PFTEDA	0.389	0.40	0.20	J
PFBS	0.343	0.40	0.037	J
PFPEs	0.444	0.40	0.063	
PFHXS	0.459	0.40	0.032	
PFHPS	0.452	0.40	0.051	
PFOS	6.33	0.40	0.064	
PFNS	0.405	0.40	0.12	
PFDS	0.406	0.40	0.15	
PFDOS	0.947	0.40	0.12	BS2
4:2FTS	1.54	1.6	0.29	J
6:2FTS	1.97	1.6	0.31	
8:2FTS	1.73	1.6	0.082	
PFOSA	0.573	0.40	0.10	
NMeFOSA	1.49	1.6	0.47	J
NEtFOSA	1.29	1.6	0.41	J
NMeFOSAA	0.293	0.40	0.11	J
NEtFOSAA	0.405	0.40	0.11	
NMeFOSE	1.34	1.6	1.0	J
NEtFOSE	2.76	1.6	1.0	BS2
HFPO-DA	0.796	0.80	0.17	J

ANALYSIS DATA SHEET**MRL Check**

Laboratory:	APPL, LLC	Work Order:	22L0177
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCA0118-MRL1
Sampled:		Prepared:	01/09/23 16:01
Solids:		Preparation:	EPA 1633
Batch:	BCA0118	Sequence:	SC00125
Column:	1	Calibration:	2302005
			Instrument: Saphira
			File ID: S2023-01-11A (18)
			Analyzed: 01/11/23 14:56
			Dilution: 1

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	0.742	0.80	0.12	J
PFEESA	0.800	0.80	0.11	
PFMPA	0.584	0.80	0.054	J
PFMBA	0.725	0.80	0.091	J
NFDHA	0.712	0.80	0.30	J
9CL-PF3ONS	0.816	0.80	0.21	
11CL-PF3OUDS	1.20	0.80	0.21	BS2
3:3FTCA	1.10	1.6	0.57	J
5:3FTCA	1.57	1.6	0.44	J
7:3FTCA	1.21	1.6	0.55	J



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BCA0118-MRL1
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (18)
Acquired: 2023/01/11 - 14:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 62686	(3.59, 1.00) (0.00, N/A, 0.0)	117.6	N/A 0.0 0.0	0.3916 [0.4000]	97.9%			
PFPeA	(263.0 / 219.0) 51497 (263.0 / 69.0) 757	(4.86, 1.00) (0.00, N/A, -0.1)	155.6 16.0	0.0147 135.4 126.3	0.1803 [0.2000]	90.2%			
PFHxA	(313.0 / 269.0) 40806 (313.0 / 119.0) 3923	(5.99, 1.00) (0.00, N/A, 0.1)	62.9 23.1	0.0961 97.9 102.5	0.1085 [0.1000]	108.4%			
PFHpA	(363.0 / 319.0) 42443 (363.0 / 169.0) 12158	(6.95, 1.00) (0.01, N/A, 0.7)	72.4 35.1	0.2864 100.7 97.3	0.1141 [0.1000]	114.1%			
PFOA	(413.0 / 369.0) 49024 (413.0 / 169.0) 17154	(7.76, 1.00) (0.00, N/A, 0.0)	79.1 46.3	0.3499 109.6 101.5	0.1173 [0.1000]	117.3%			
PFNA	(463.0 / 419.0) 34786 (463.0 / 169.0) 9222	(8.48, 1.00) (-0.01, N/A, 0.4)	112.7 82.1	0.2651 118.2 120.1	0.1163 [0.1000]	116.3%			
PFDA	(513.0 / 469.0) 59754 (513.0 / 169.0) 4372	(9.17, 1.00) (0.00, N/A, -0.3)	123.2 2336.9	0.0732 66.6 82.1	0.1142 [0.1000]	114.2%			
PFUnA	(563.0 / 519.0) 53685 (563.0 / 169.0) 2361	(9.66, 1.00) (-0.01, N/A, -0.2)	117.9 24.6	0.0440 42.0 46.9	0.0918 [0.1000]	91.8%			IR1,
PFDaA	(613.0 / 569.0) 59877 (613.0 / 169.0) 10180	(9.87, 1.00) (0.00, N/A, 0.0)	213.8 43.1	0.1700 132.1 125.3	0.0971 [0.1000]	97.1%			
PFTrDA	(663.0 / 619.0) 52735 (663.0 / 169.0) 5728	(10.02, 1.01) (N/A, -0.01, 0.2)	121.8 28.6	0.1086 53.9 55.9	0.0868 [0.1000]	86.8%			
PFTeDA	(713.0 / 669.0) 32079 (713.0 / 169.0) 7019	(10.12, 1.00) (0.00, N/A, -0.3)	73.7 19.8	0.2188 111.9 120.4	0.0971 [0.1000]	97.1%			

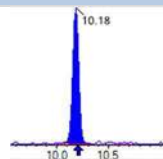
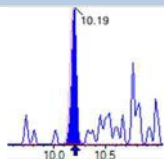
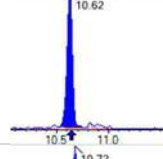
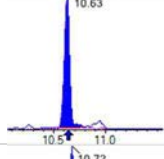
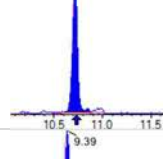
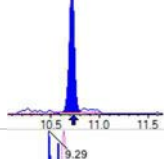
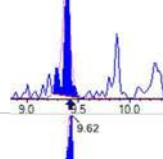
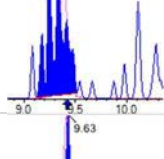
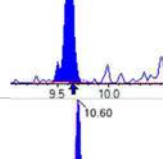
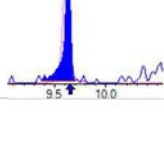
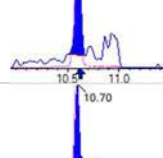
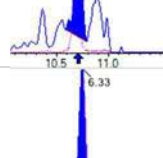
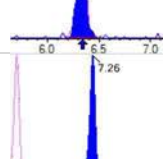
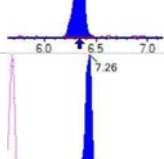
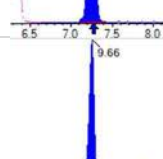
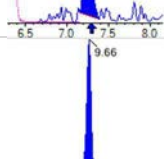
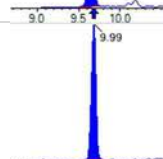
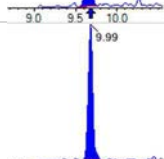
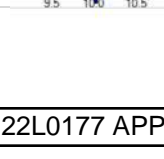
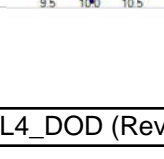


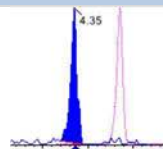
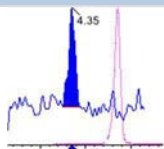
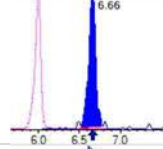
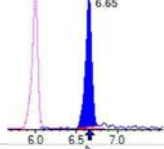
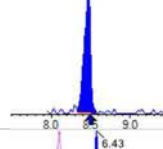
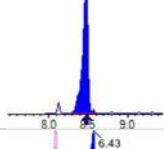
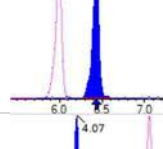
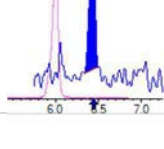
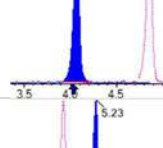
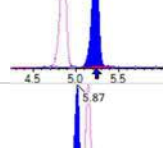
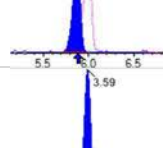
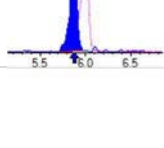
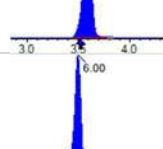
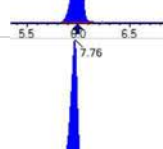
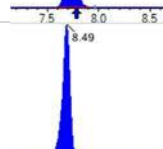

Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

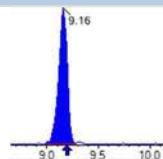
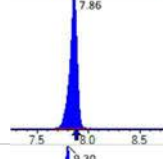
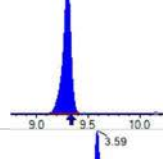
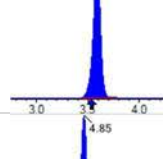
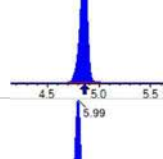
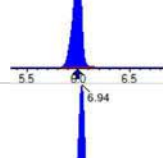
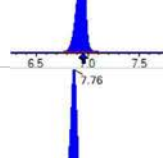
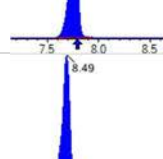
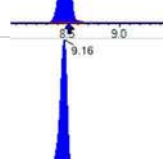
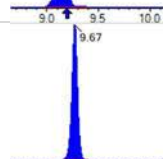
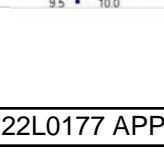
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DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
Path: S2023-01-11A (18)
Acquired: 2023/01/11 - 14:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 57384 (299.0 / 99.0) 34245	(5.92, 1.00) (0.00, N/A, 0.0)	201.0 125.0	0.5968 91.5 94.3	0.0857 [0.0885]	96.9%			
PFPeS	(349.0 / 80.0) 101475 (349.0 / 99.0) 34489	(6.98, 0.89) (N/A, -0.01, -0.2)	348.2 203.8	0.3399 92.0 94.4	0.1110 [0.0938]	118.3%			
PFHxS	(399.0 / 80.0) 102371 (399.0 / 99.0) 35696	(7.86, 1.00) (0.00, N/A, 0.2)	273.0 257.5	0.3487 105.7 104.2	0.1146 [0.0911]	125.8%			
PFHpS	(449.0 / 80.0) 103776 (449.0 / 99.0) 29502	(8.62, 0.93) (N/A, -0.02, -0.1)	161.0 137.5	0.2843 103.4 101.3	0.1130 [0.0951]	118.8%			
PFOS	(499.0 / 80.0) 1773730 (499.0 / 99.0) 426287	(9.30, 1.00) (0.00, N/A, 0.0)	343.2 856.8	0.2403 105.8 109.3	1.5824 [0.0927]	1706.1%			QC,
PFNS	(549.0 / 80.0) 112655 (549.0 / 99.0) 25012	(9.72, 1.05) (N/A, -0.02, 0.1)	120.3 87.0	0.2220 95.3 93.4	0.1011 [0.0960]	105.4%			
PFDS	(599.0 / 80.0) 125066 (599.0 / 99.0) 23103	(9.90, 1.06) (N/A, -0.02, -0.3)	185.6 74.9	0.1847 80.9 82.8	0.1016 [0.0963]	105.5%			
PFDoS	(699.0 / 80.0) 123845 (699.0 / 99.0) 17265	(10.12, 1.09) (N/A, -0.01, -0.1)	173.9 41.2	0.1394 67.2 59.7	0.2368 [0.0970]	244.3%			QC,
4:2FTS	(327.0 / 307.0) 324281 (327.0 / 81.0) 171151	(5.67, 1.00) (0.00, N/A, -0.1)	680.2 158.8	0.5278 83.9 85.2	0.3851 [0.3738]	103.0%			
6:2FTS	(427.0 / 407.0) 168214 (427.0 / 81.0) 105434	(7.44, 1.00) (0.00, N/A, 0.3)	470.1 262.3	0.6268 81.8 94.5	0.4929 [0.3796]	129.8%			
8:2FTS	(527.0 / 507.0) 164450 (527.0 / 81.0) 103331	(8.84, 1.00) (0.00, N/A, 0.1)	277.4 184.1	0.6283 82.8 90.9	0.4337 [0.3833]	113.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 127050 (498.0 / 478.0) 3011	(10.18, 1.00) (0.00, N/A, -0.8)	166.2 16.2	0.0237 125.7 118.0	0.1433 [0.1000]	143.3%			QC,
NMeFOSA	(512.0 / 219.0) 27844 (512.0 / 169.0) 23066	(10.62, 1.00) (0.00, N/A, -0.2)	166.1 150.0	0.8284 116.1 111.9	0.3728 [0.4000]	93.2%			
NEIFOSA	(526.0 / 219.0) 26099 (526.0 / 169.0) 28850	(10.72, 1.00) (0.00, N/A, 0.1)	204.5 180.3	1.1054 104.5 98.6	0.3229 [0.4000]	80.7%			
NMeFOSAA	(570.0 / 419.0) 19855 (570.0 / 483.0) 9545	(9.39, 1.00) (0.01, N/A, 6.0)	47.6 19.4	0.4807 94.6 90.1	0.0733 [0.1000]	73.3%			
NEIFOSAA	(584.0 / 419.0) 27998 (584.0 / 526.0) 18773	(9.62, 1.00) (0.00, N/A, -0.7)	59.3 64.3	0.6705 107.8 100.5	0.1012 [0.1000]	101.2%			
NMeFOSE	(616.0 / 59.0) 11016	(10.60, 1.00) (0.01, N/A, 0.0)	40.3	N/A 0.0 0.0	0.3360 [0.4000]	84.0%			
NEtFOSE	(630.0 / 59.0) 5121	(10.70, 1.00) (0.01, N/A, 0.0)	24.6	N/A 0.0 0.0	0.6891 [0.4000]	172.3%			QC,
HFPO-DA	(285.0 / 169.0) 25117 (285.0 / 185.0) 70860	(6.33, 1.00) (-0.01, N/A, -0.5)	172.2 292.9	2.8212 105.2 102.2	0.1991 [0.2000]	99.6%			
ADONA	(377.0 / 85.0) 122389 (377.0 / 251.0) 14740	(7.26, 1.15) (N/A, -0.01, 0.2)	410.3 40.9	0.1204 103.5 99.5	0.1856 [0.1885]	98.5%			
9CI-Pf3ONS	(531.0 / 351.0) 357692 (533.0 / 353.0) 105478	(9.66, 1.52) (N/A, -0.02, -0.1)	169.8 104.7	0.2949 95.0 90.8	0.2041 [0.1867]	109.3%			
11CI-PF3OUDS	(631.0 / 451.0) 263370 (633.0 / 453.0) 77993	(9.99, 1.58) (N/A, -0.01, 0.2)	217.9 163.5	0.2961 86.2 89.3	0.2992 [0.1886]	158.6%			QC,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 2263 (241.0 / 117.0) 4404	(4.35, 0.90) (N/A, -0.01, -0.5)	102.4 26.7	1.9461 132.3 129.4	0.2760 [0.4000]	69.0%			QC,
5:3FTCA	(341.0 / 236.7) 22516 (341.0 / 217.0) 42391	(6.66, 1.11) (N/A, 0.00, 0.5)	107.7 145.3	1.8828 112.7 116.7	0.3932 [0.4000]	98.3%			
7:3FTCA	(441.0 / 317.0) 26091 (441.0 / 337.0) 21197	(8.46, 1.41) (N/A, -0.02, -0.4)	100.3 190.8	0.8124 94.2 94.3	0.3028 [0.4000]	75.7%			
PFEESA	(315.0 / 135.0) 74179 (315.0 / 83.0) 15905	(6.43, 1.07) (N/A, 0.00, 0.2)	330.4 23.1	0.2144 70.1 71.3	0.2001 [0.1785]	112.1%			
PFMPA	(229.0 / 85.0) 12465	(4.07, 0.84) (N/A, 0.04, 0.0)	329.0	N/A 0.0 0.0	0.1460 [0.2000]	73.0%			
PFMBA	(279.0 / 85.0) 39089	(5.23, 1.08) (N/A, 0.00, 0.0)	298.5	N/A 0.0 0.0	0.1812 [0.2000]	90.6%			
NFDHA	(295.0 / 201.0) 27876 (295.0 / 85.0) 26201	(5.87, 0.98) (N/A, 0.01, 0.0)	274.7 162.3	0.9399 102.2 96.1	0.1781 [0.2000]	89.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 172056	(3.59, N/A) (N/A, 0.07, N/A)	525.1	N/A	0.6793 [1.0000]	67.9% {111.9%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 382376	(6.00, N/A) (N/A, 0.01, N/A)	475.5	N/A	1.0344 [1.0000]	103.4% {103.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 364494	(7.76, N/A) (N/A, -0.01, N/A)	654.3	N/A	0.8298 [1.0000]	83.0% {109.2%}			
13C5_PFNA_IIS	(468.0 / 423.0) 297101	(8.49, N/A) (N/A, -0.03, N/A)	349.2	N/A	0.7326 [1.0000]	73.3% {105.7%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 382440	(9.16, N/A) (N/A, -0.03, N/A)	278.9	N/A	0.8854 [1.0000]	88.5% { 85.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 613622	(7.86, N/A) (N/A, -0.02, N/A)	602.0	N/A	0.8307 [1.0000]	83.1% { 98.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 697126	(9.30, N/A) (N/A, -0.03, N/A)	475.6	N/A	0.9041 [1.0000]	90.4% { 104.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1399890	(3.59, N/A) (N/A, 0.07, N/A)	591.1	N/A	8.2816 [8.0000]	103.5% { 118.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1175984	(4.85, N/A) (N/A, -0.01, N/A)	543.0	N/A	3.7577 [4.0000]	93.9% { 113.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 763627	(5.99, N/A) (N/A, 0.00, N/A)	524.6	N/A	1.9544 [2.0000]	97.7% { 101.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 736486	(6.94, N/A) (N/A, -0.01, N/A)	559.3	N/A	1.9830 [2.0000]	99.1% { 108.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 802499	(7.76, N/A) (N/A, -0.02, N/A)	545.6	N/A	2.1609 [2.0000]	108.0% { 118.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 311467	(8.49, N/A) (N/A, -0.02, N/A)	417.6	N/A	1.0563 [1.0000]	105.6% { 115.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 510410	(9.16, N/A) (N/A, -0.03, N/A)	323.0	N/A	1.1845 [1.0000]	118.4% { 110.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 643584	(9.67, N/A) (N/A, -0.02, N/A)	487.9	N/A	1.2079 [1.0000]	120.8% { 106.0% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-MRL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (18)
 Acquired: 2023/01/11 - 14:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 658944	(9.88, N/A) (N/A, -0.02, N/A)	762.1	N/A	1.2880 [1.0000]	128.8% { 125.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 346697	(10.12, N/A) (N/A, -0.02, N/A)	649.8	N/A	0.8466 [1.0000]	84.7% { 106.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2052253	(5.92, N/A) (N/A, 0.00, N/A)	562.0	N/A	2.5157 [2.0000]	125.8% { 111.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1068503	(7.86, N/A) (N/A, -0.02, N/A)	559.9	N/A	2.0901 [2.0000]	104.5% { 109.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1787176	(9.30, N/A) (N/A, -0.03, N/A)	506.3	N/A	2.1596 [2.0000]	108.0% { 107.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 1047977	(5.67, N/A) (N/A, 0.00, N/A)	736.8	N/A	6.5815 [4.0000]	164.5% { 138.8% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 893522	(7.44, N/A) (N/A, -0.01, N/A)	800.9	N/A	3.8043 [4.0000]	95.1% { 97.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 1039939	(8.84, N/A) (N/A, -0.02, N/A)	363.7	N/A	4.7255 [4.0000]	118.1% { 97.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1663808	(10.18, N/A) (N/A, -0.01, N/A)	874.2	N/A	1.5185 [2.0000]	75.9% { 105.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 157440	(10.63, N/A) (N/A, -0.01, N/A)	460.3	N/A	0.8002 [2.0000]	40.0% { 89.1% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 162274	(10.71, N/A) (N/A, -0.01, N/A)	461.1	N/A	0.8749 [2.0000]	43.7% { 83.6% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCA0118-MRL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-01-09.dam

Quant Method: 1633 - S2023-01-09B
 Path: S2023-01-11A (18)
 Acquired: 2023/01/11 - 14:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1205653	(9.38, N/A) (N/A, -0.03, N/A)	312.7	N/A	4.6486 [4.0000]	116.2% { 91.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1157490	(9.62, N/A) (N/A, -0.03, N/A)	910.2	N/A	5.6762 [4.0000]	141.9% { 94.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 511568	(10.59, N/A) (N/A, -0.01, N/A)	383.9	N/A	16.9456 [20.0000]	84.7% { 110.7% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 265077	(10.69, N/A) (N/A, -0.01, N/A)	254.3	N/A	19.0522 [20.0000]	95.3% { 106.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1591012	(6.34, N/A) (N/A, 0.00, N/A)	563.0	N/A	7.7595 [8.0000]	97.0% { 104.1% }			

PREPARATION BENCH SHEET

Organics

BCA0118

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses		Spiking Solution(s)			Surrogate Solution(s)				
1633		23A0174	1633 - mix C 2023-01-11	23A0117	MPFAC-HIF-ES 20.0ng/mL				
Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
22L0177-01RE2	AF-RHMW10-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	565.56	2		200	Re-extract added 1/9/2023 by ABK
22L0177-01RE3	AF-RHMW10-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	565.56	2		200	Re-extract added 1/9/2023 by ABK
22L0177-02RE2	AF-RHMW10-WGFD01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	577.6	2		200	Re-extract added 1/9/2023 by ABK
22L0177-02RE3	AF-RHMW10-WGFD01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	577.6	2		200	Re-extract added 1/9/2023 by ABK
22L0177-03RE2	AF-HDMW225303-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	565.54	2		200	Re-extract added 1/9/2023 by ABK
22L0177-03RE3	AF-HDMW225303-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	565.54	2		200	Re-extract added 1/9/2023 by ABK
22L0177-04RE2	AF-RHMW03-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	550.8	2		200	Re-extract added 1/9/2023 by ABK
22L0177-04RE3	AF-RHMW03-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	550.8	2		200	Re-extract added 1/9/2023 by ABK
22L0177-05RE2	AF-RHMW02-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	574.78	2		200	Re-extract added 1/9/2023 by ABK
22L0177-05RE3	AF-RHMW02-WGN01LF-2212W4	01/06/2023	01/24/2023	1/9/2023 4:01:00PM	574.78	2		200	Re-extract added 1/9/2023 by ABK
22L0182-01RE2	AF-RHMW17D-WGN01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	559.32	2		200	Re-extract added 1/9/2023 by ABK
22L0182-01RE3	AF-RHMW17D-WGN01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	559.32	2		200	Re-extract added 1/9/2023 by ABK
22L0182-02RE2	AF-RHMW17D-WQEB01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	519.23	2		200	Re-extract added 1/9/2023 by ABK
22L0182-02RE3	AF-RHMW17D-WQEB01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	519.23	2		200	Re-extract added 1/9/2023 by ABK
22L0182-03RE2	AF-RHMW12A-WGN01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	572.75	2		200	Re-extract added 1/9/2023 by ABK
22L0182-03RE3	AF-RHMW12A-WGN01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	572.75	2		200	Re-extract added 1/9/2023 by ABK
22L0182-04RE2	AF-RHMW16-WGN01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	557.46	2		200	Re-extract added 1/9/2023 by ABK
22L0182-04RE3	AF-RHMW16-WGN01LF-2212W4	01/09/2023	01/25/2023	1/9/2023 4:01:00PM	557.46	2		200	Re-extract added 1/9/2023 by ABK

PREPARATION BENCH SHEET

Organics

BCA0118

(Continued)

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses 1633	Surrogate Solution(s) 23A0117 MPFAC-HIF-ES 20.0ng/mL		Spiking Solution(s) 23A0174 1633 - mix C 2023-01-11	
	Sample ID	Volume	Date/Time	Volume
22L0182-05RE2	AF-RHMW17-WGN01LF-2212W4	200	01/09/2023 1/9/2023 4:01:00PM	2
22L0182-05RE3	AF-RHMW17-WGN01LF-2212W4	200	01/09/2023 1/9/2023 4:01:00PM	2
23A0002-01RE2	AF-RHMW225401-WGN01B-2212 W4	200	01/10/2023 1/9/2023 4:01:00PM	2
23A0002-01RE3	AF-RHMW225401-WGN01B-2212 W4	200	01/10/2023 1/9/2023 4:01:00PM	2
23A0002-02RE2	AF-RHMW04-WGN01LF-2212W4	200	01/10/2023 1/9/2023 4:01:00PM	2
23A0002-02RE3	AF-RHMW04-WGN01LF-2212W4	200	01/10/2023 1/9/2023 4:01:00PM	2
23A0002-03RE2	AF-RHMW06-WGN01LF-2212W4	200	01/10/2023 1/9/2023 4:01:00PM	2
23A0002-03RE3	AF-RHMW06-WGN01LF-2212W4	200	01/10/2023 1/9/2023 4:01:00PM	2
BCA0118-BLK1	Blank	200	1/9/2023 4:01:00PM	2
BCA0118-BS1	LCS	200	1/9/2023 4:01:00PM	2
BCA0118-MRL1	MRL Check	200	1/9/2023 4:01:00PM	2

Standard	Description	LotNum
22K0511	Reagent -0.3M Formic Acid	M13H051
22L0094	Reagent - 0.05MFA wash	x
22L0360	Am. Ac. preservative	P28I056
23A0082	Reagent - 1.0% Ammonia Hydroxide	219481

atch Comments:

PREPARATION BENCH SHEET

Organics

Print Date/Time: 01/12/2023 2:52 pm

BCA0118

(Continued)

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses

1633

Spiked by: LYA 1/10/23/8:40

Balance #: WB2

Cartridge: N/A

Concentration: N/A

Spiking Solution(s)

23A0174

1633 - mix C 2023-01-11

Surrogate Solution(s)

23A0117

MPFAC-HIF-ES 20.0ng/mL

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date

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INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00101
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sampling
 Instrument: Saphira

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SC00101-CAL1	S2023-01-09B (1)	01/09/23 15:03
Cal Standard	SC00101-CAL2	S2023-01-09B (2)	01/09/23 15:16
Cal Standard	SC00101-CAL3	S2023-01-09B (3)	01/09/23 15:29
Cal Standard	SC00101-CAL4	S2023-01-09B (4)	01/09/23 15:42
Cal Standard	SC00101-CAL5	S2023-01-09B (5)	01/09/23 15:55
Cal Standard	SC00101-CAL6	S2023-01-09B (6)	01/09/23 16:08
Cal Standard	SC00101-CAL7	S2023-01-09B (7)	01/09/23 16:21
Cal Standard	SC00101-CAL8	S2023-01-09B (8)	01/09/23 16:34
Initial Cal Blank	SC00101-ICB1	S2023-01-09B (9)	01/09/23 16:46
Secondary Cal Check	SC00101-SCV1	S2023-01-09B (10)	01/09/23 16:59

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00125
 Calibration: 2302005

SDG:
 Project: Red Hill AFFF Assessment Sampling
 Instrument: Saphira

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SC00125-CCB1	S2023-01-11A (1)	01/11/23 10:51
Low Cal Check	SC00125-LCV1	S2023-01-11A (2)	01/11/23 11:04
Calibration Check	SC00125-CCV1	S2023-01-11A (3)	01/11/23 11:17
Calibration Blank	SC00125-CCB2	S2023-01-11A (4)	01/11/23 11:55
Blank	BCA0118-BLK1	S2023-01-11A (16)	01/11/23 14:30
LCS	BCA0118-BS1	S2023-01-11A (17)	01/11/23 14:43
MRL Check	BCA0118-MRL1	S2023-01-11A (18)	01/11/23 14:56
AF-RHMW10-WGN01LF-2212W4	22L0177-01RE2	S2023-01-11A (19)	01/11/23 15:09
AF-RHMW10-WGN01LF-2212W4	22L0177-01RE3	S2023-01-11A (20)	01/11/23 15:22
AF-RHMW10-WGFD01LF-2212W4	22L0177-02RE2	S2023-01-11A (21)	01/11/23 15:35
AF-RHMW10-WGFD01LF-2212W4	22L0177-02RE3	S2023-01-11A (22)	01/11/23 15:47
AF-HDMW225303-WGN01LF-2212W4	22L0177-03RE2	S2023-01-11A (23)	01/11/23 16:00
AF-HDMW225303-WGN01LF-2212W4	22L0177-03RE3	S2023-01-11A (24)	01/11/23 16:13
AF-RHMW03-WGN01LF-2212W4	22L0177-04RE2	S2023-01-11A (25)	01/11/23 16:26
AF-RHMW03-WGN01LF-2212W4	22L0177-04RE3	S2023-01-11A (26)	01/11/23 16:39
AF-RHMW02-WGN01LF-2212W4	22L0177-05RE2	S2023-01-11A (27)	01/11/23 16:52
AF-RHMW02-WGN01LF-2212W4	22L0177-05RE3	S2023-01-11A (28)	01/11/23 17:05
Calibration Check	SC00125-CCV2	S2023-01-11A (29)	01/11/23 17:18
Calibration Blank	SC00125-CCB3	S2023-01-11A (30)	01/11/23 17:30
Calibration Check	SC00125-CCV3	S2023-01-11A (51)	01/11/23 22:01
Calibration Blank	SC00125-CCB4	S2023-01-11A (52)	01/11/23 22:14

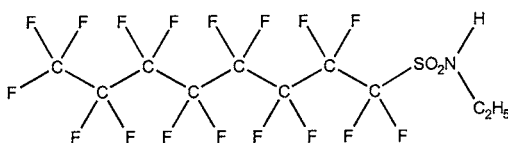


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M **LOT NUMBER:** NEtFOSA0821M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

STRUCTURE: **CAS #:** 4151-50-2



MOLECULAR FORMULA: $C_{10}H_6F_{17}NO_2S$ **MOLECULAR WEIGHT:** 527.20
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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: 
 B.G. Chittim, General Manager

Date: 08/16/2021
 (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:

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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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.

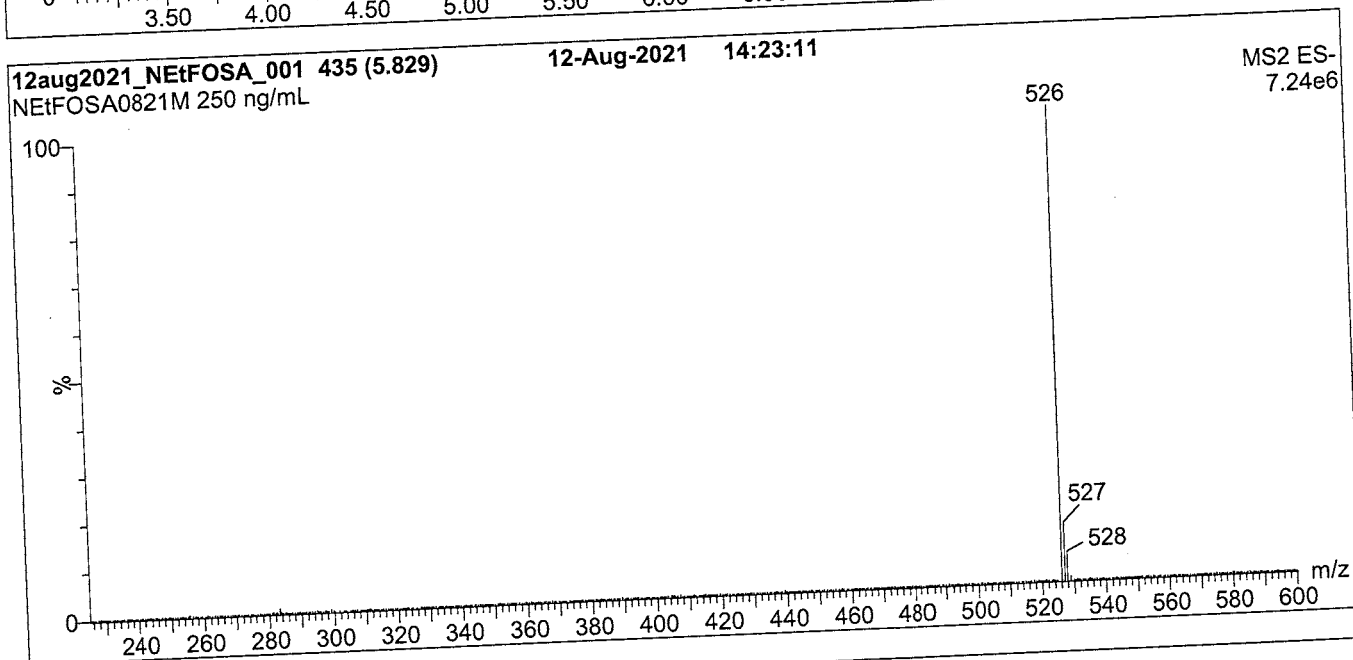
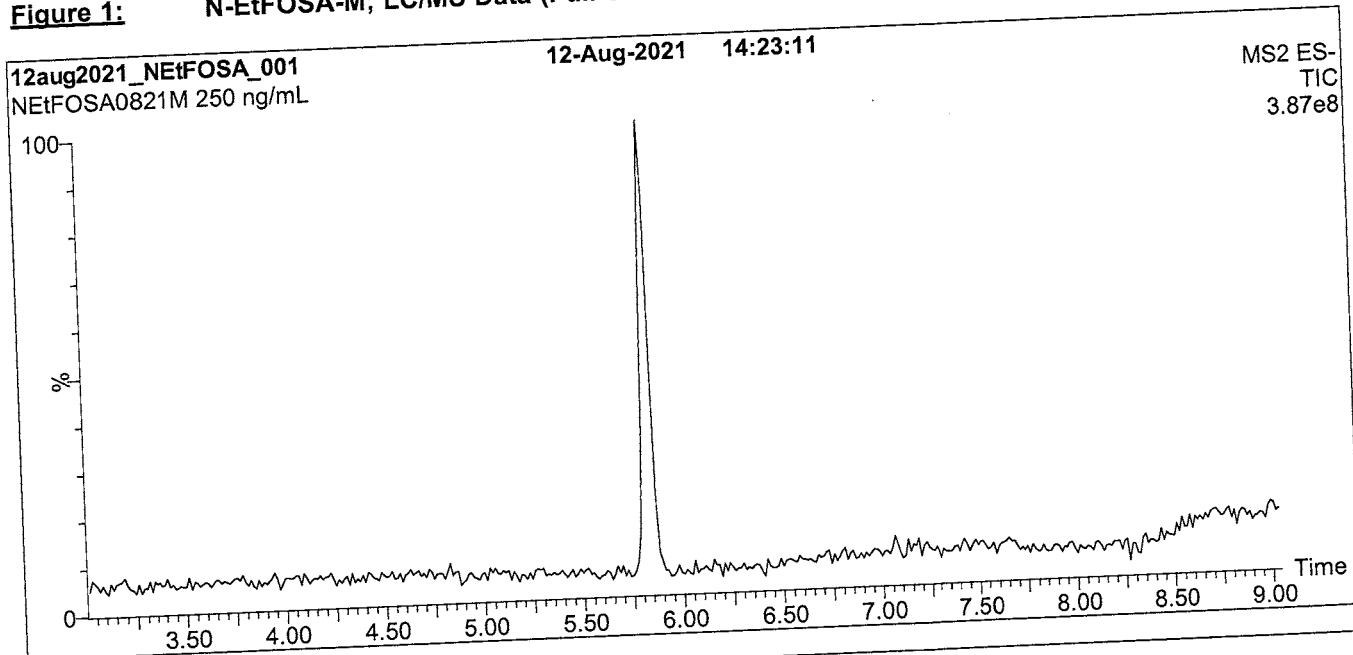
QUALITY MANAGEMENT:

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).



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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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

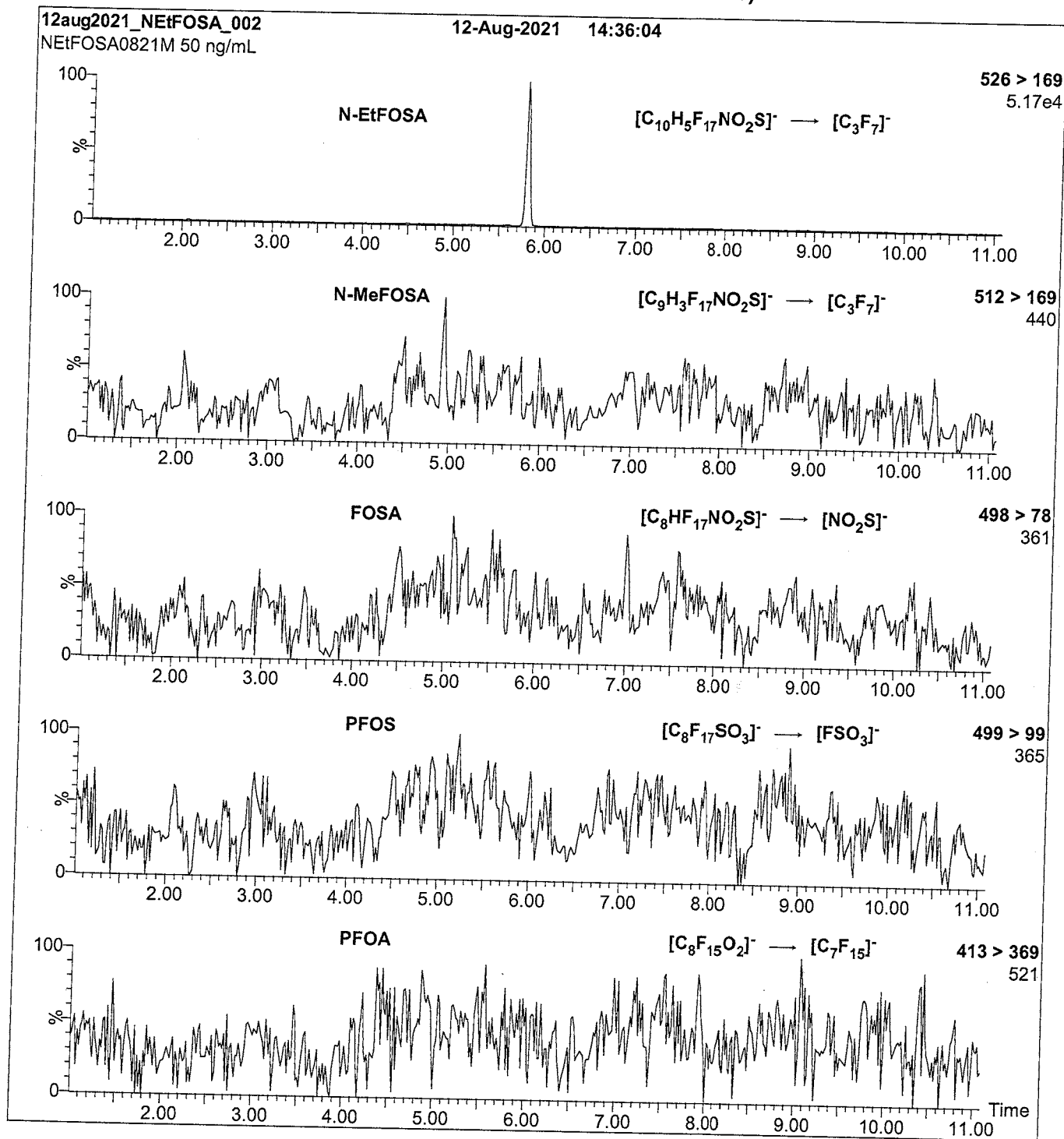
Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

NEtFOSA0821M (3 of 4)
rev0

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.29e-3

Collision Energy (eV) = 24

Analytical Standard Record

21J0007

Description:	PFAS - SAS N-EtFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Analyte Spike	Prepared:	08/12/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS (Lot# OSA0821M)
Vials:	1	Last Edit:	12/07/2021 16:05 by HGH

Analyte	Parent	CAS Number	Concentration	Units
N-ETFOSA		4151-50-2	50	ug/mL

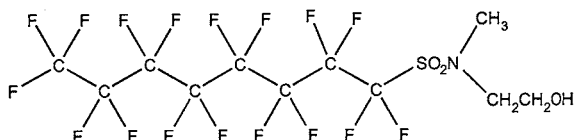


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

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



MOLECULAR FORMULA: C₁₁H₈F₁₇NO₃S **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: _____

B.G. Chittim, General Manager

Date: 09/28/2021
 (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:

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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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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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:

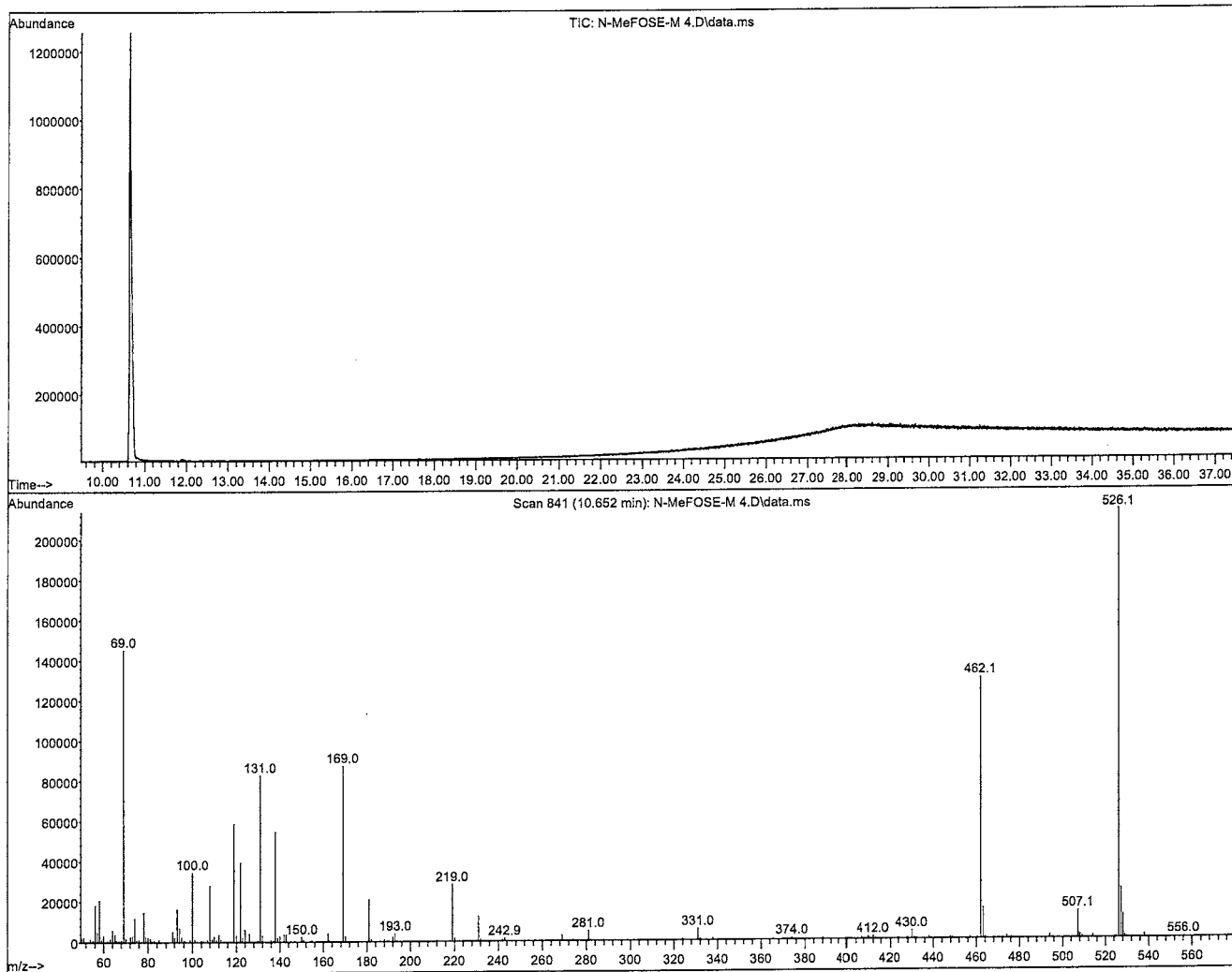
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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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 μ m film thickness) Agilent J&W

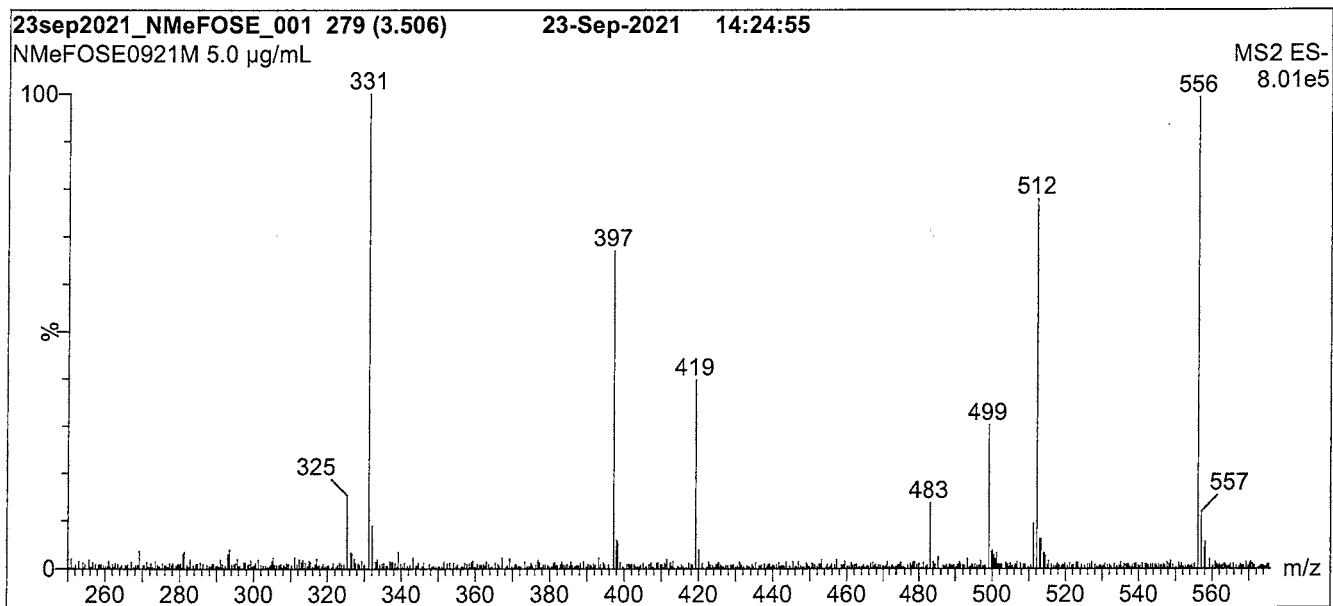
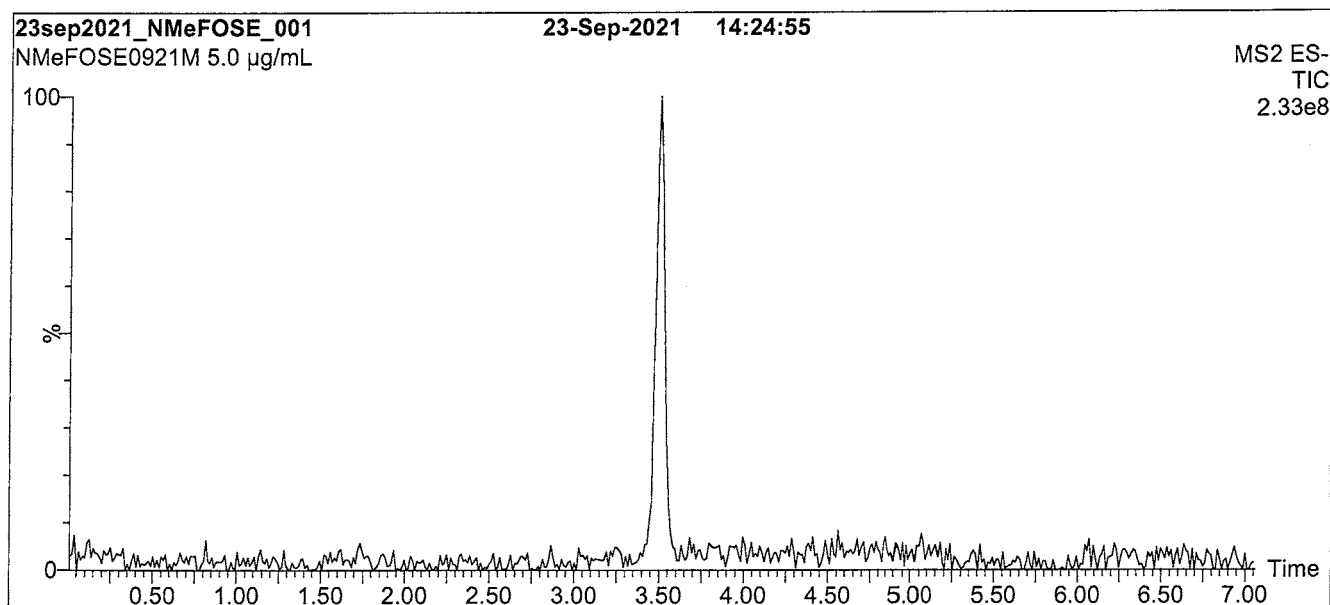
Flow: Constant at 1 mL/min

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 RP₁₈
1.7 µm, 2.1 x 100 mm

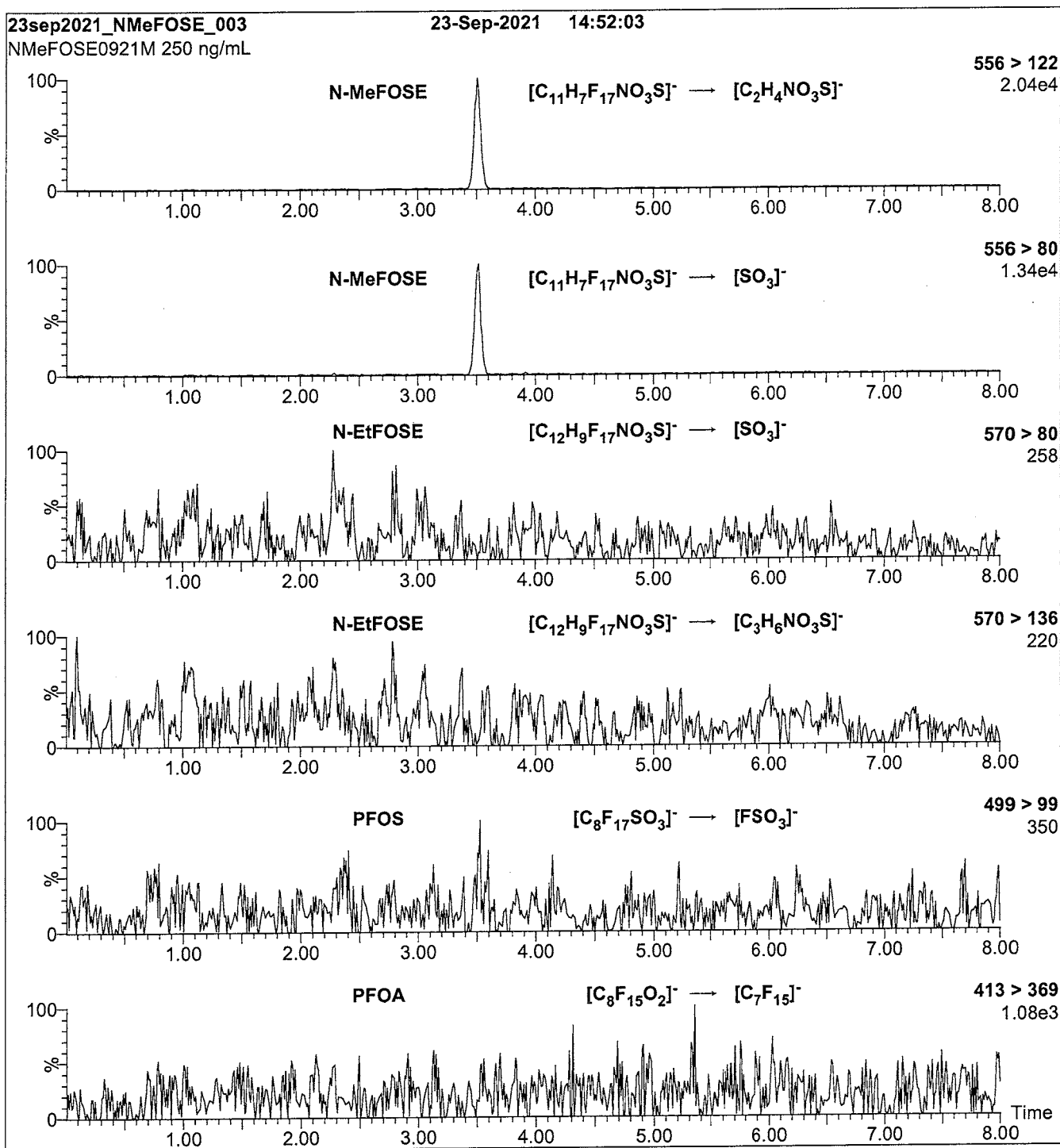
Mobile phase: Gradient
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

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)

MS Parameters:

Mobile phase: Same as Figure 2

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 36

Flow: 300 μ L/min

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Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS (N-MeFOSE0921M)
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSE		24448-09-7	50	ug/mL

Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS (N-MeFOSE0921M)
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

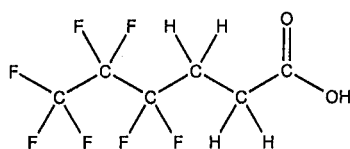
Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSE		24448-09-7	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA **LOT NUMBER:** FPrPA1020
COMPOUND: 3-Perfluoropropyl propanoic acid
STRUCTURE: **CAS #:** 356-02-5



MOLECULAR FORMULA: $C_8H_5F_7O_2$ **MOLECULAR WEIGHT:** 242.09
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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 ($C_8H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

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Certified By: 
 B.G. Chittim, General Manager

Date: 11/27/2020
 (mm/dd/yyyy)

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

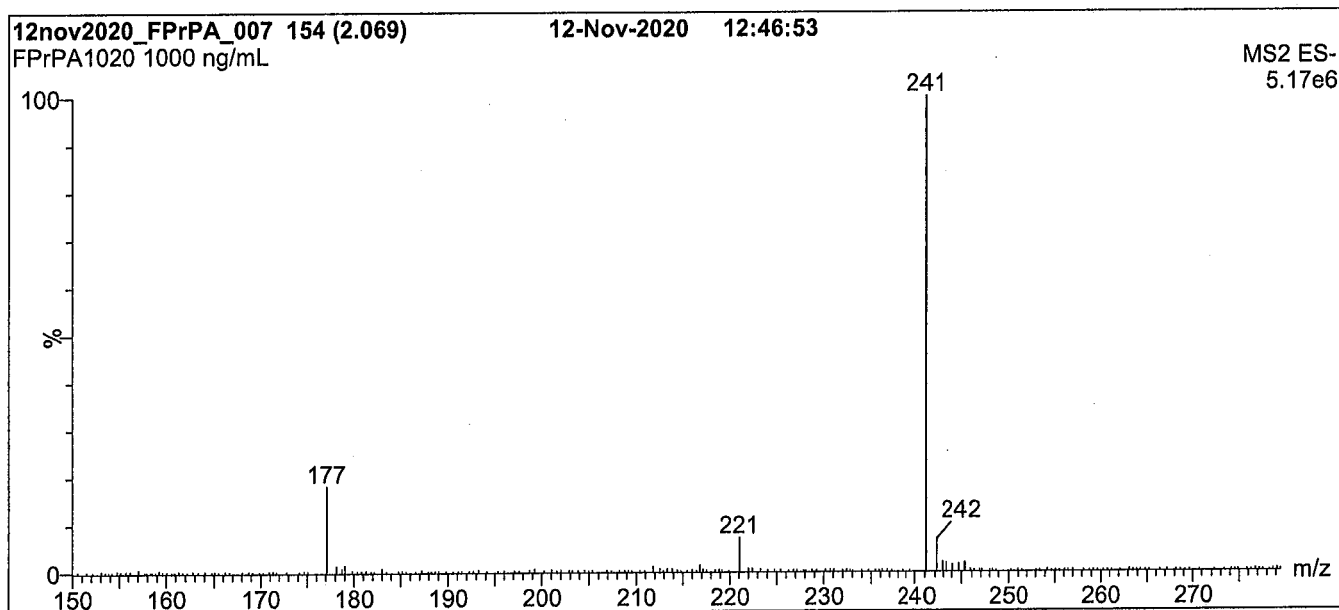
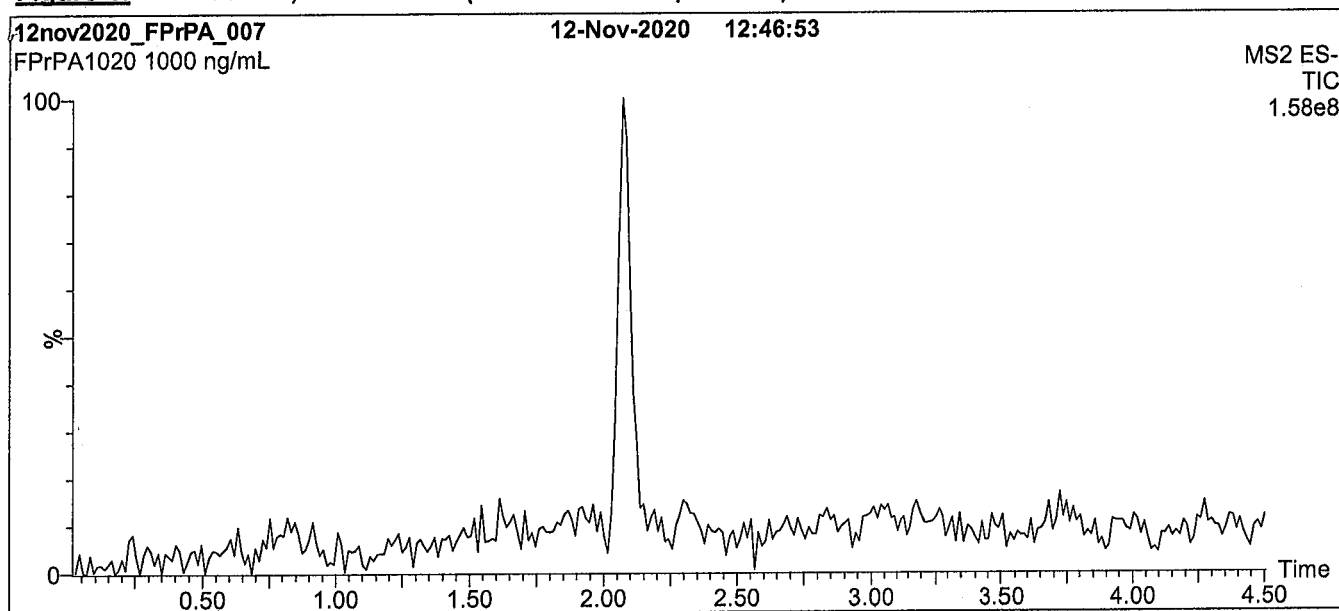
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Figure 1: FPrPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

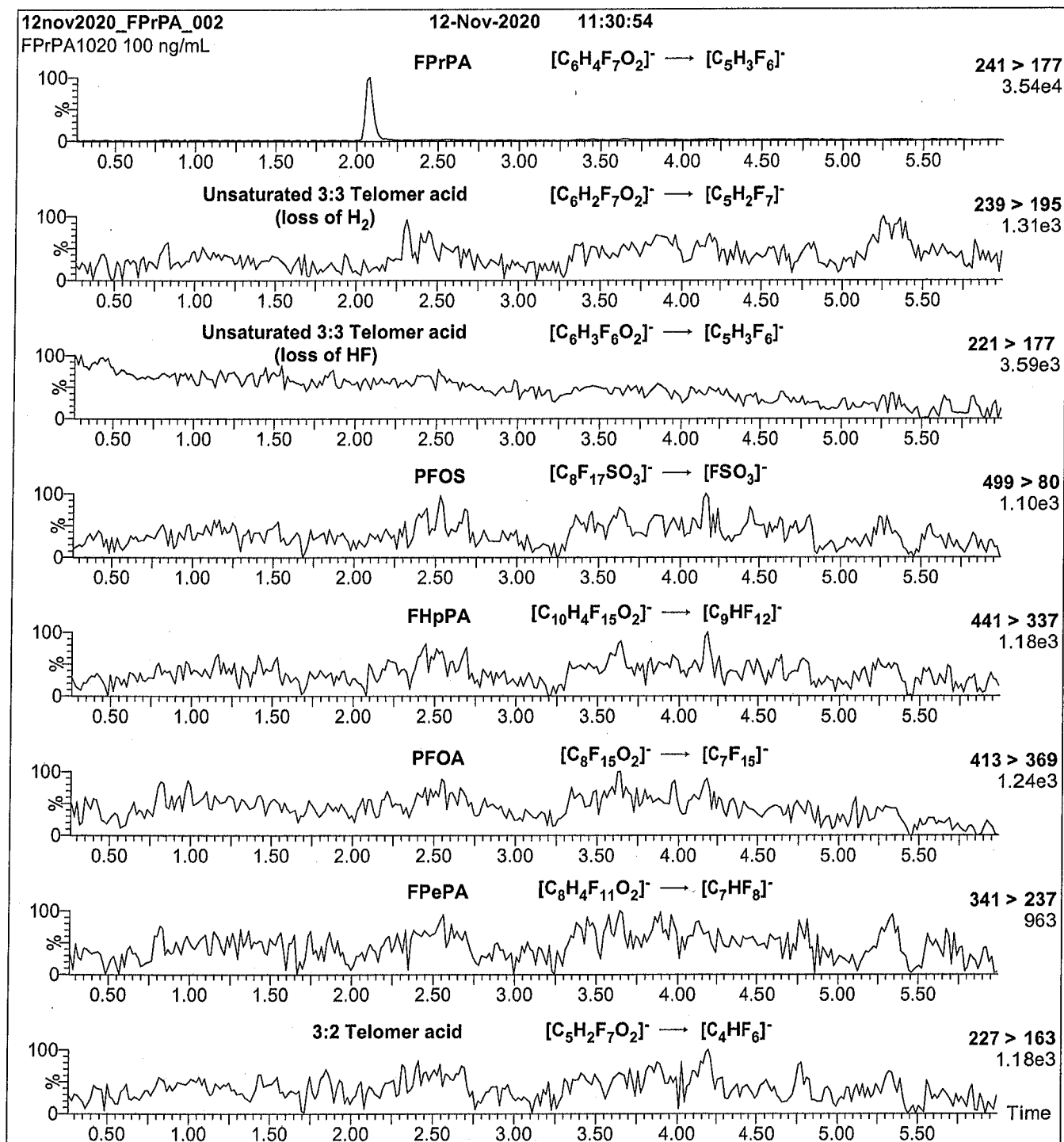
Source: Electrospray (negative)

Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 18.50

Desolvation Temperature ($^{\circ}$ 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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.49e-3

Collision Energy (eV) = 10

Analytical Standard Record

21L0004

Description:	PFAS - SAS 3:3FTA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:03 by HGH
Comments:	3:3 FTCA 50.0ug/mL		

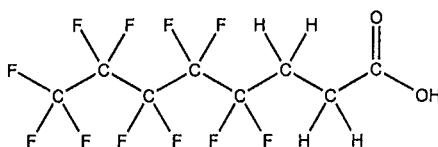
Analyte	Parent	CAS Number	Concentration	Units
3:3 FTA		113507-82-7	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA **LOT NUMBER:** FPePA1120
COMPOUND: 3-Perfluoropentyl propanoic acid
STRUCTURE: **CAS #:** 914637-49-3



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$ **MOLECULAR WEIGHT:** 342.11
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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.

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

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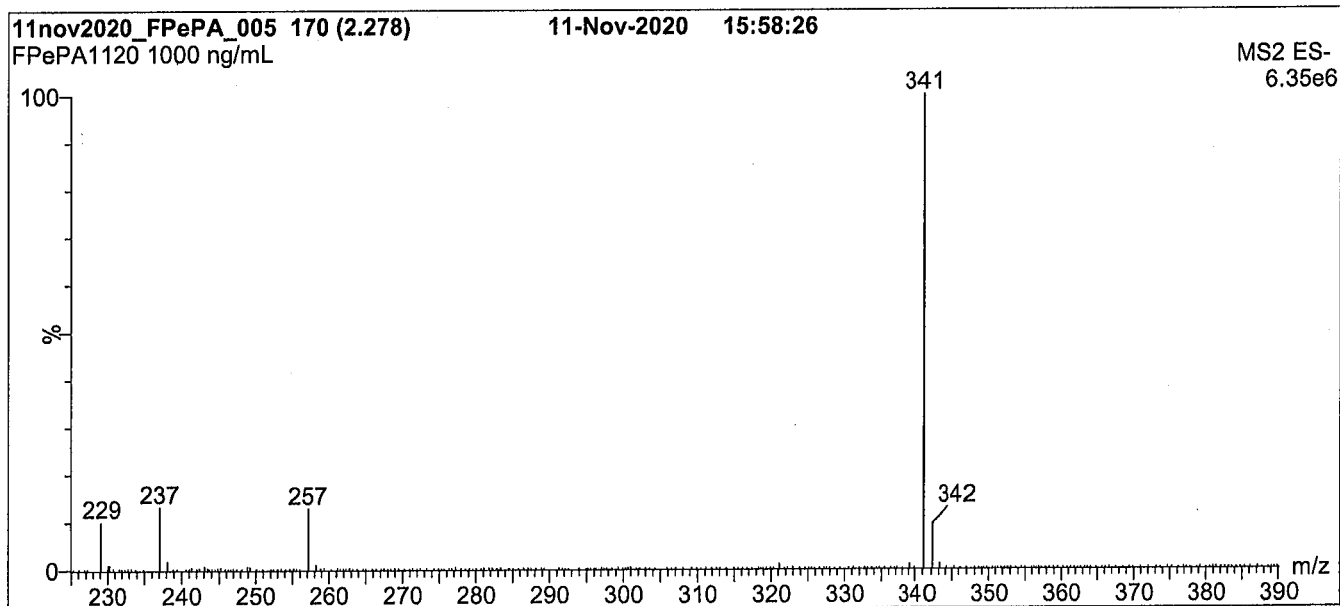
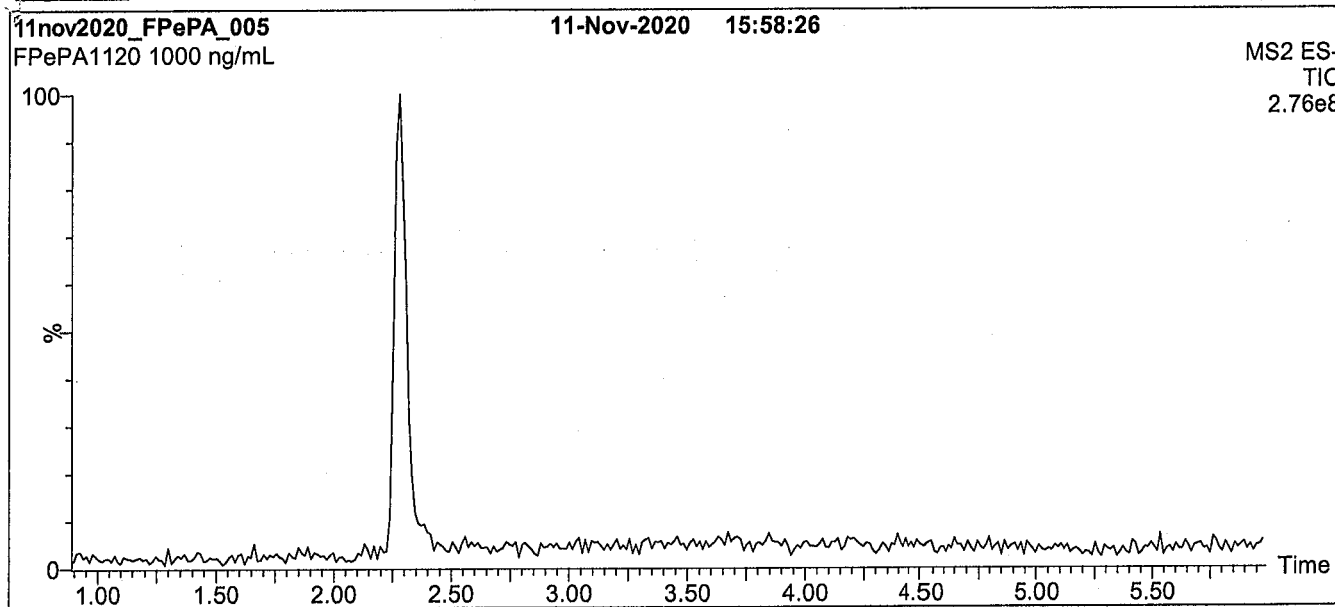
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Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

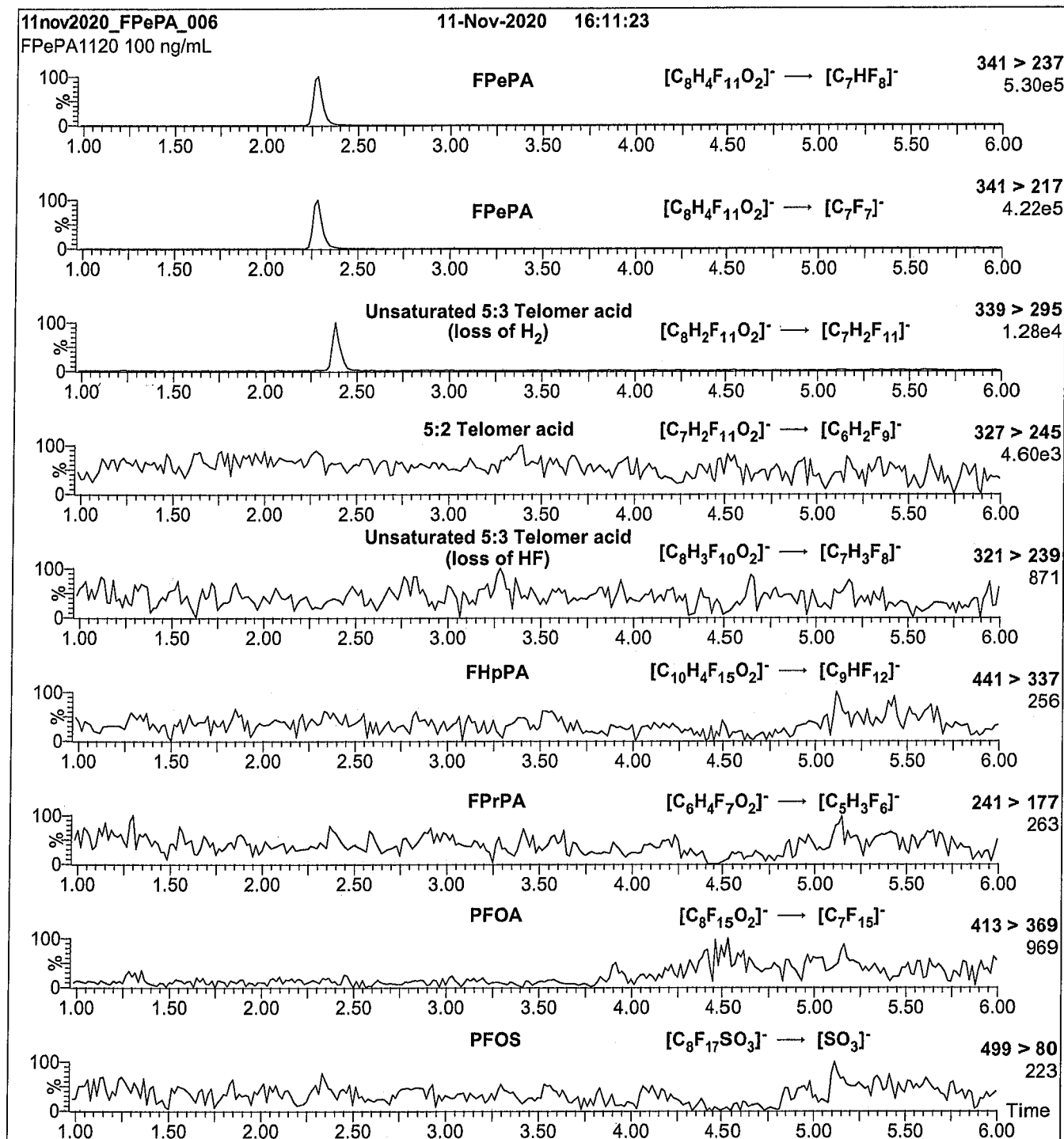
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 10

Analytical Standard Record

21L0005

Description:	PFAS - SAS 5:3FTA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:03 by HGH
Comments:	5:3 FTCA 50.0ug/mL		

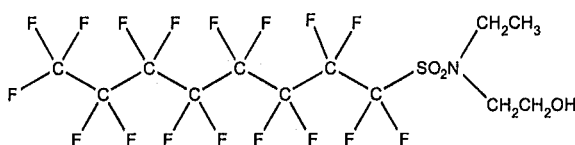
Analyte	Parent	CAS Number	Concentration	Units
5:3 FTA		914637-49-3	50	ug/mL



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



MOLECULAR FORMULA: C₁₂H₁₀F₁₇NO₃S **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.

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Certified By: 
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Date: 10/20/2021
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HOMOGENEITY:

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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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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:

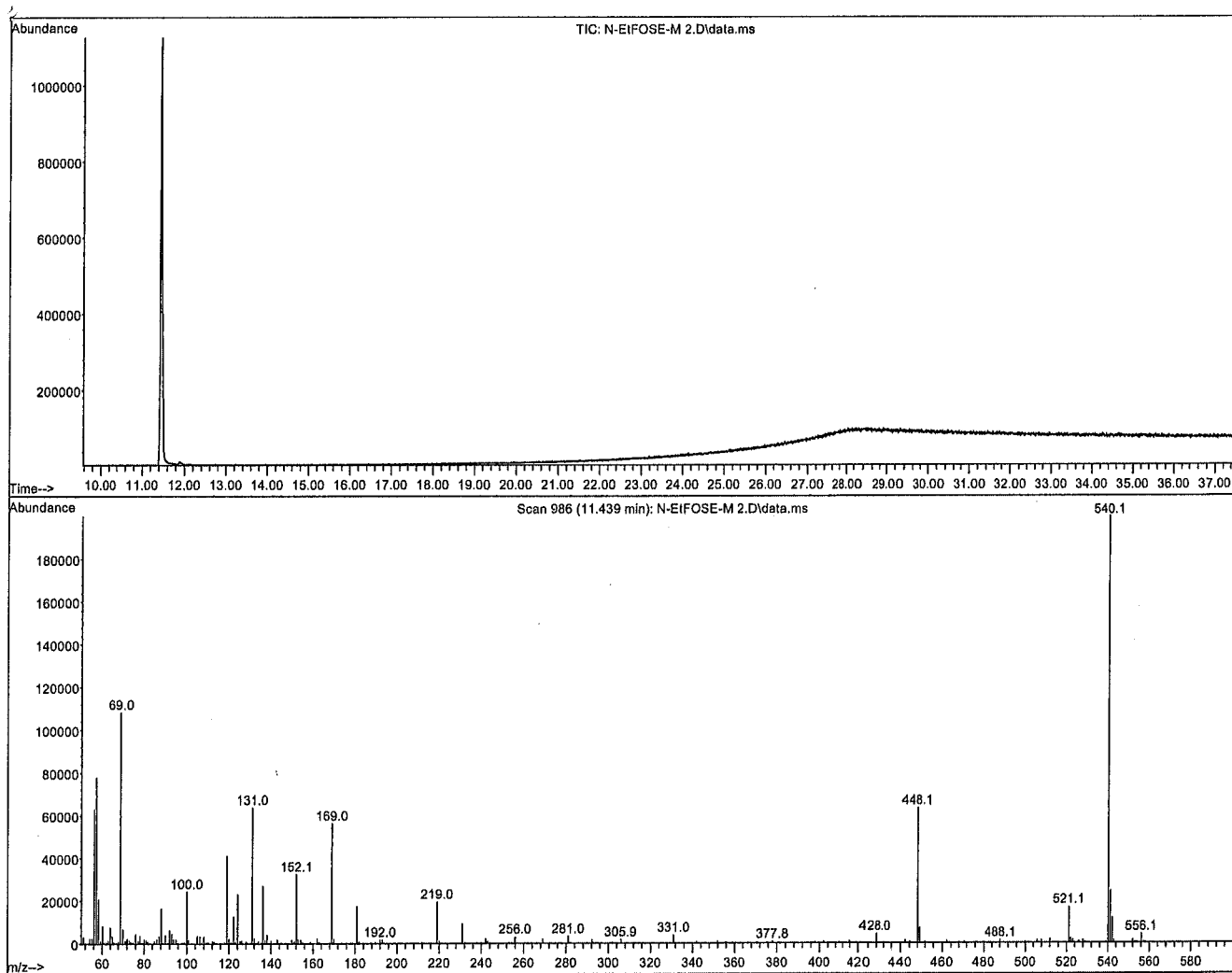
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



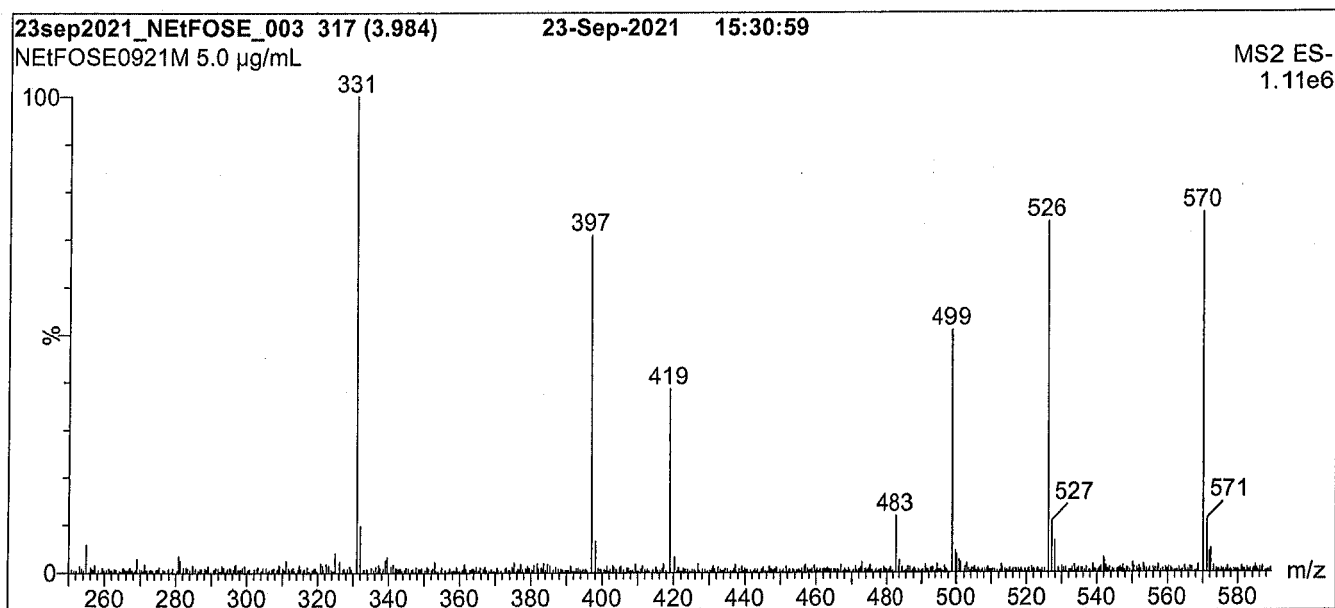
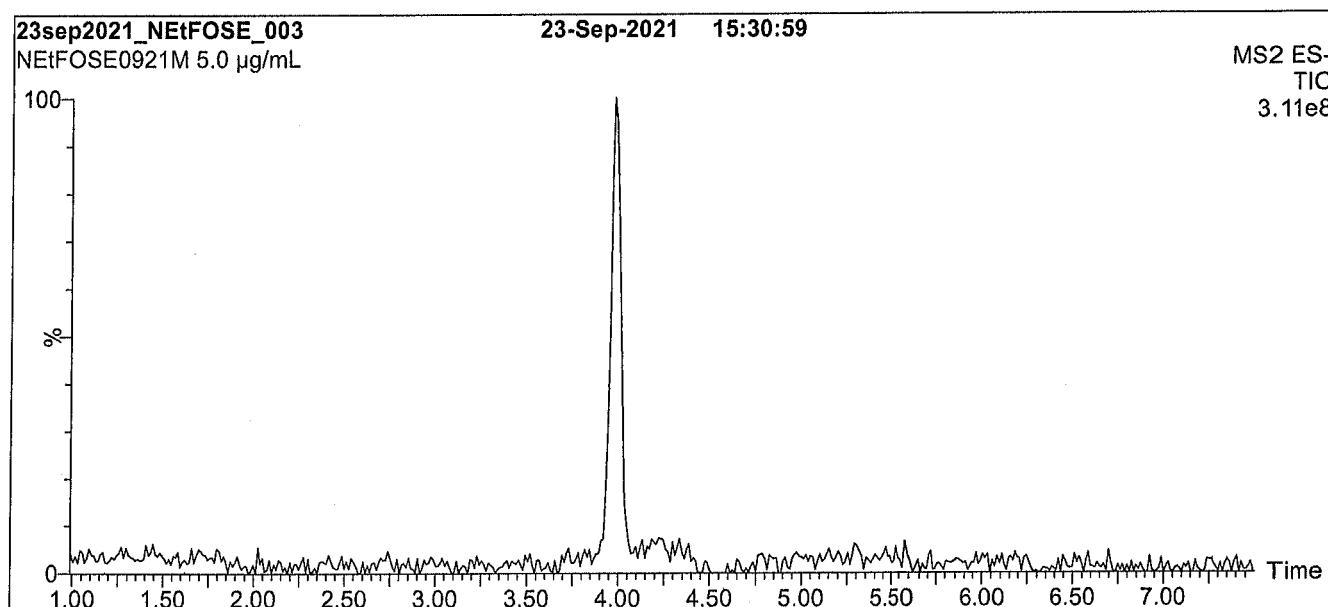
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m 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 RP₁₈
1.7 µm, 2.1 x 100 mm

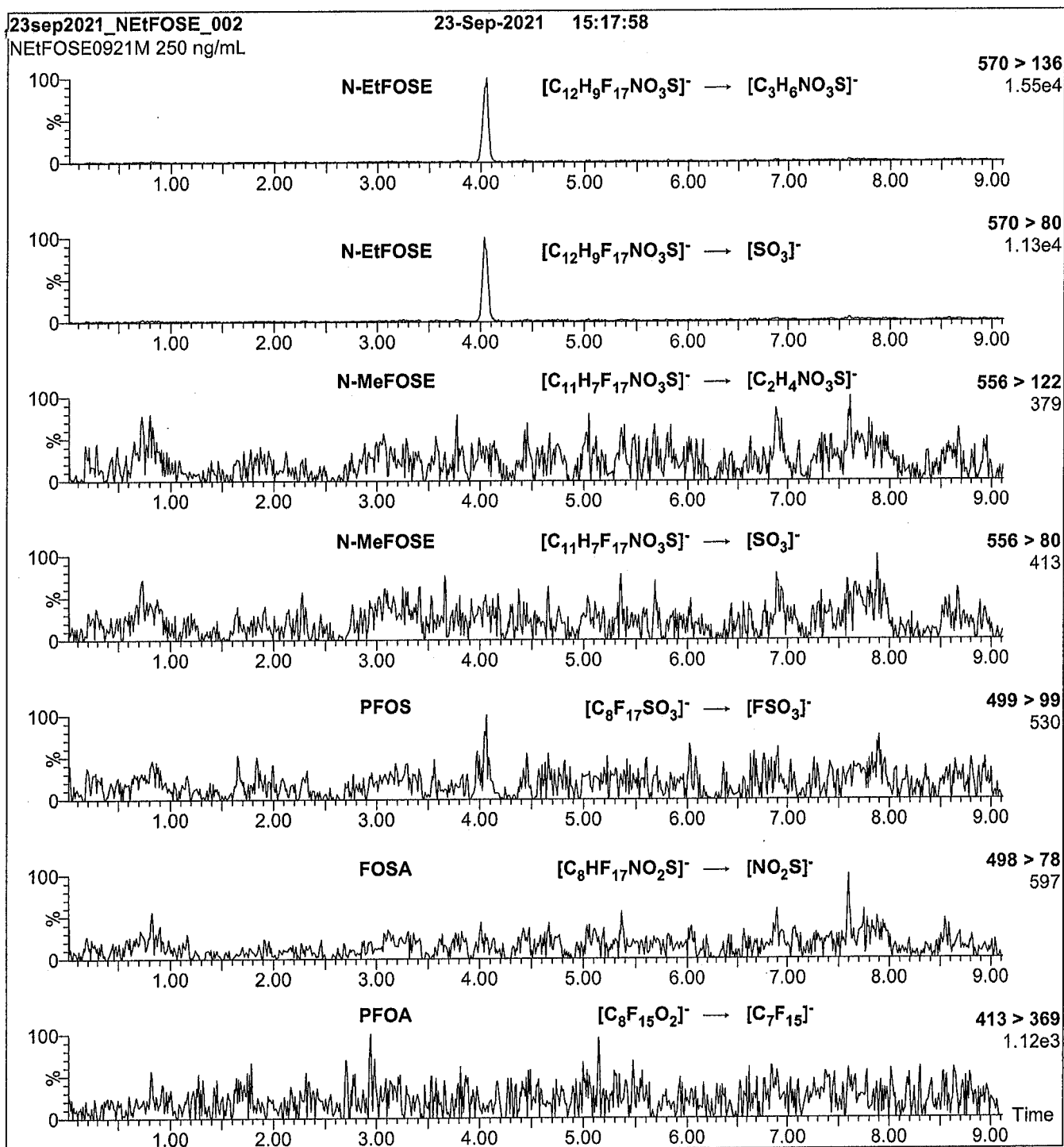
Mobile phase: Gradient
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 32

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t

Analytical Standard Record

21L0006

Description:	PFAS - SAS EtFOSE 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 17:22 by HGH
Comments:	5:3 FTCA 50.0ug/mL		

Analyte	Parent	CAS Number	Concentration	Units
N-ETFOSE		1691-99-2	50	ug/mL

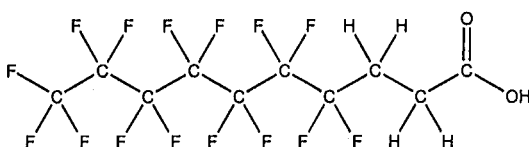


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

STRUCTURE: **CAS #:** 812-70-4



MOLECULAR FORMULA: $C_{10}H_6F_{16}O_2$ **MOLECULAR WEIGHT:** 442.12
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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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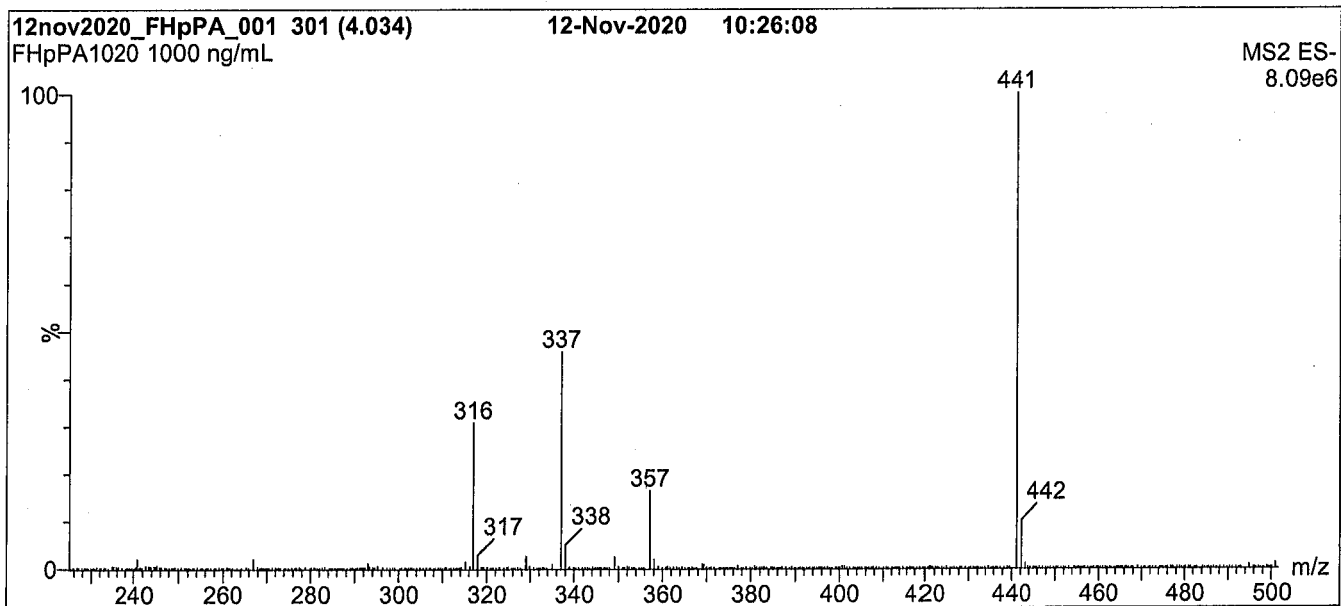
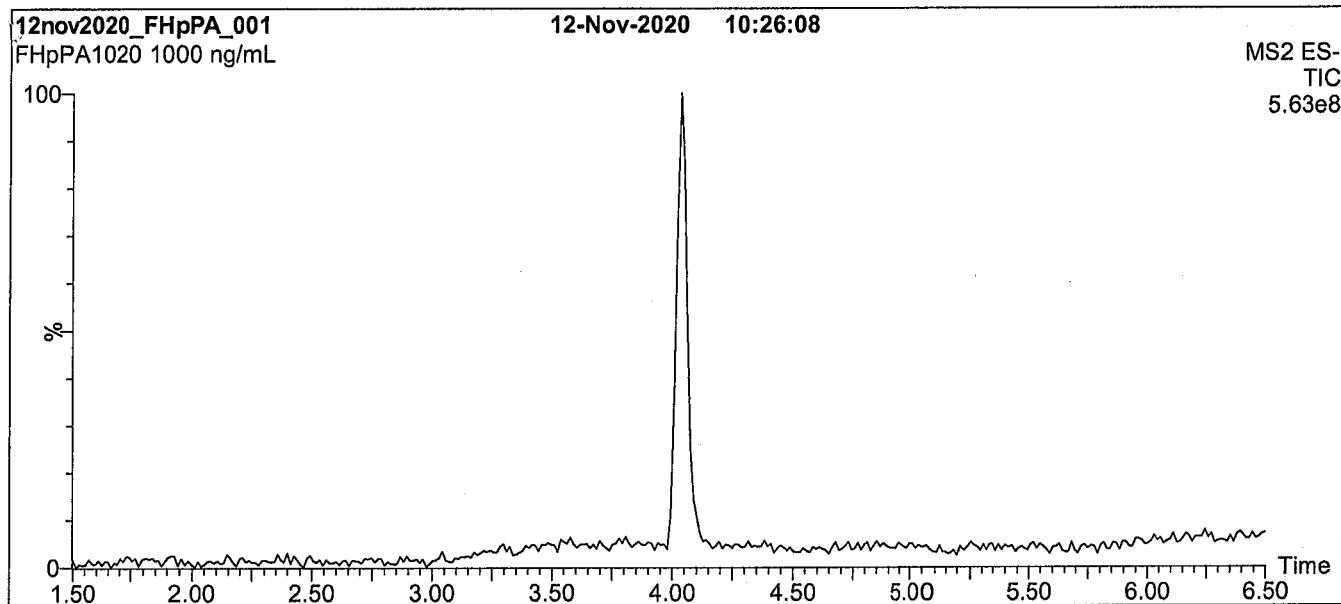
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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

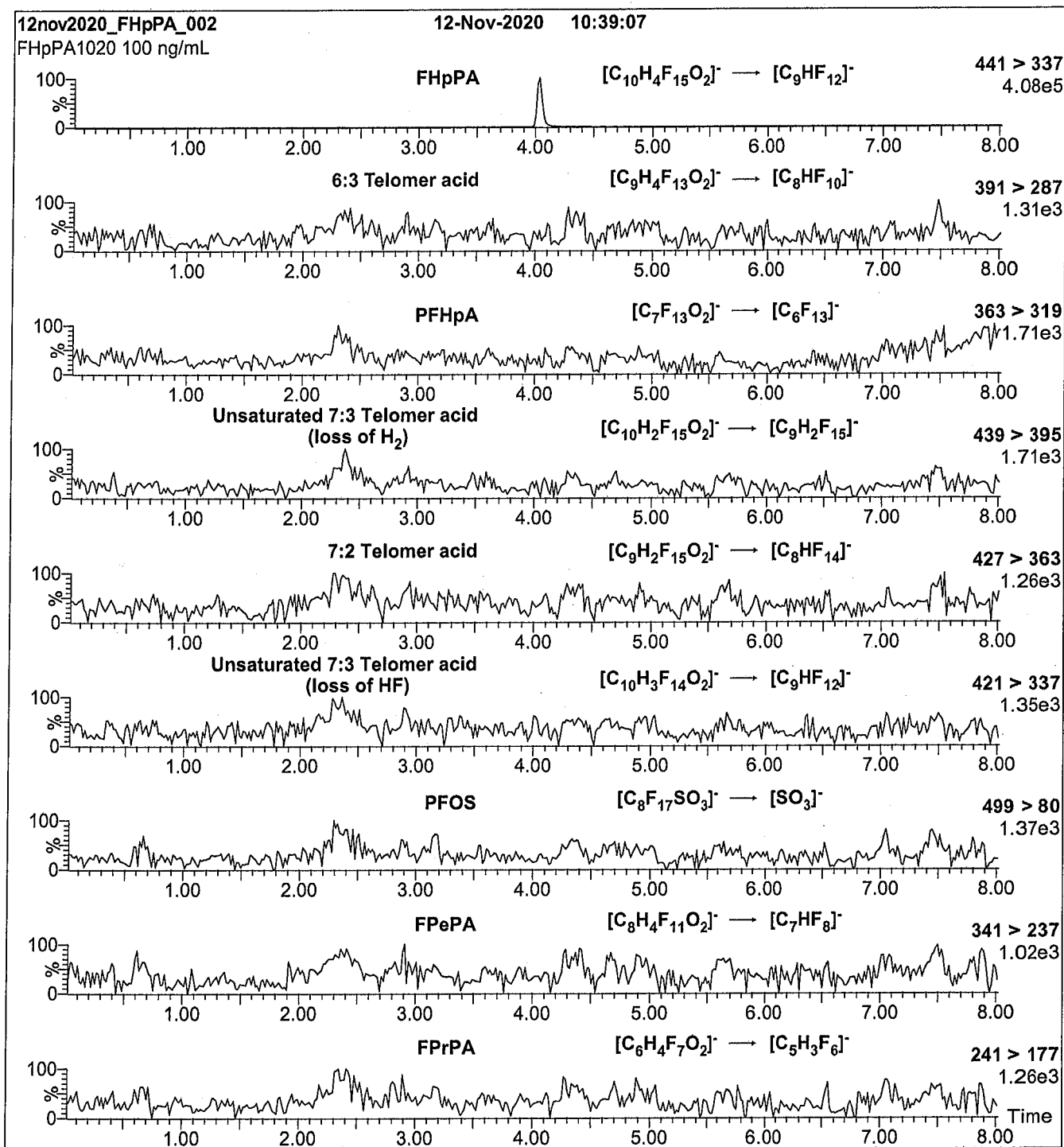
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 8

Analytical Standard Record

21L0007

Description:	PFAS - SAS 7:3FTA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:16 by HGH
Comments:	7:3 FTCA 50.0ug/mL		

Analyte	Parent	CAS Number	Concentration	Units
7:3 FTA		812-70-4	50	ug/mL

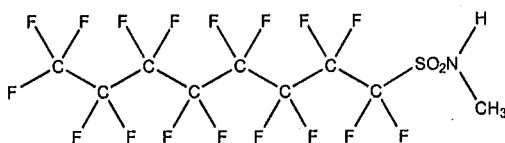


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M **LOT NUMBER:** NMeFOSA0721M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

STRUCTURE: **CAS #:** 31506-32-8



MOLECULAR FORMULA: $C_9H_4F_{17}NO_2S$ **MOLECULAR WEIGHT:** 513.17
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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: 
 B.G. Chittim, General Manager **Date:** 08/04/2021
 (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

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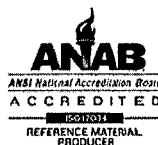
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LIMITED WARRANTY:

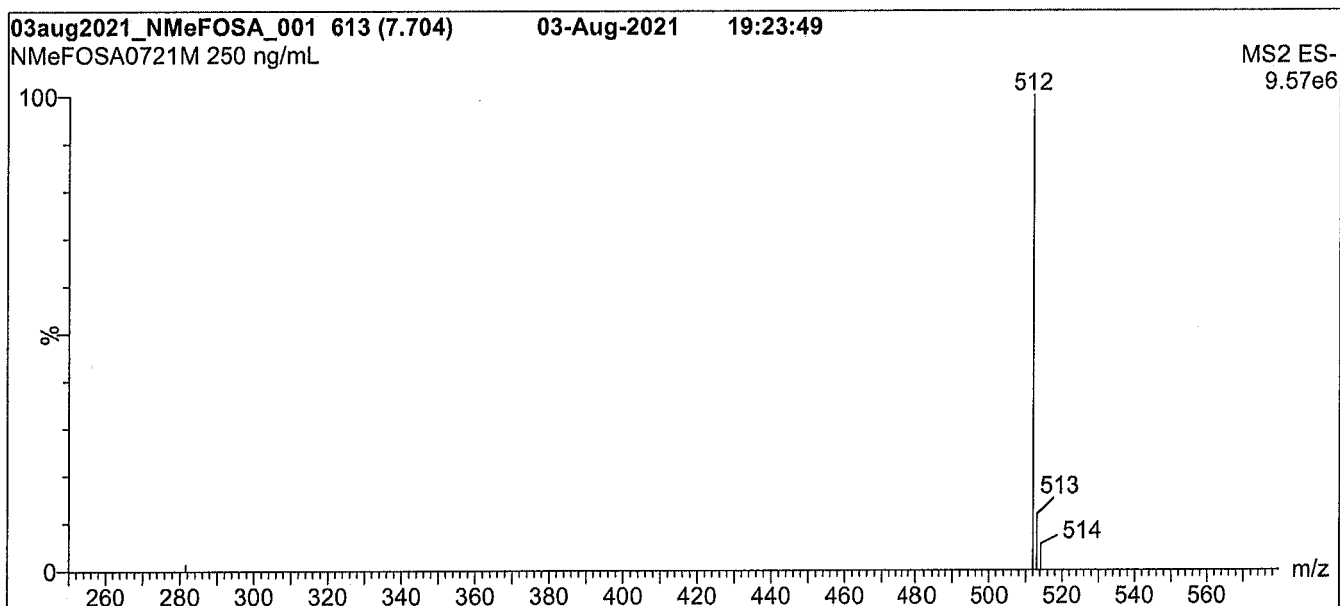
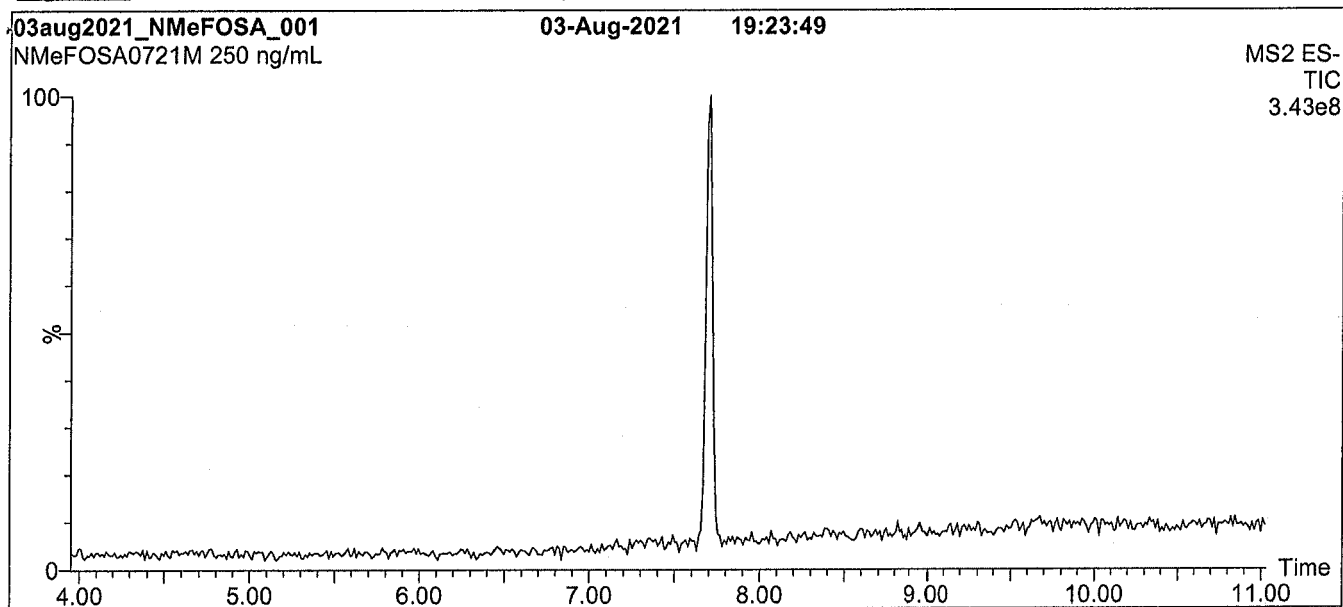
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Figure 1: N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

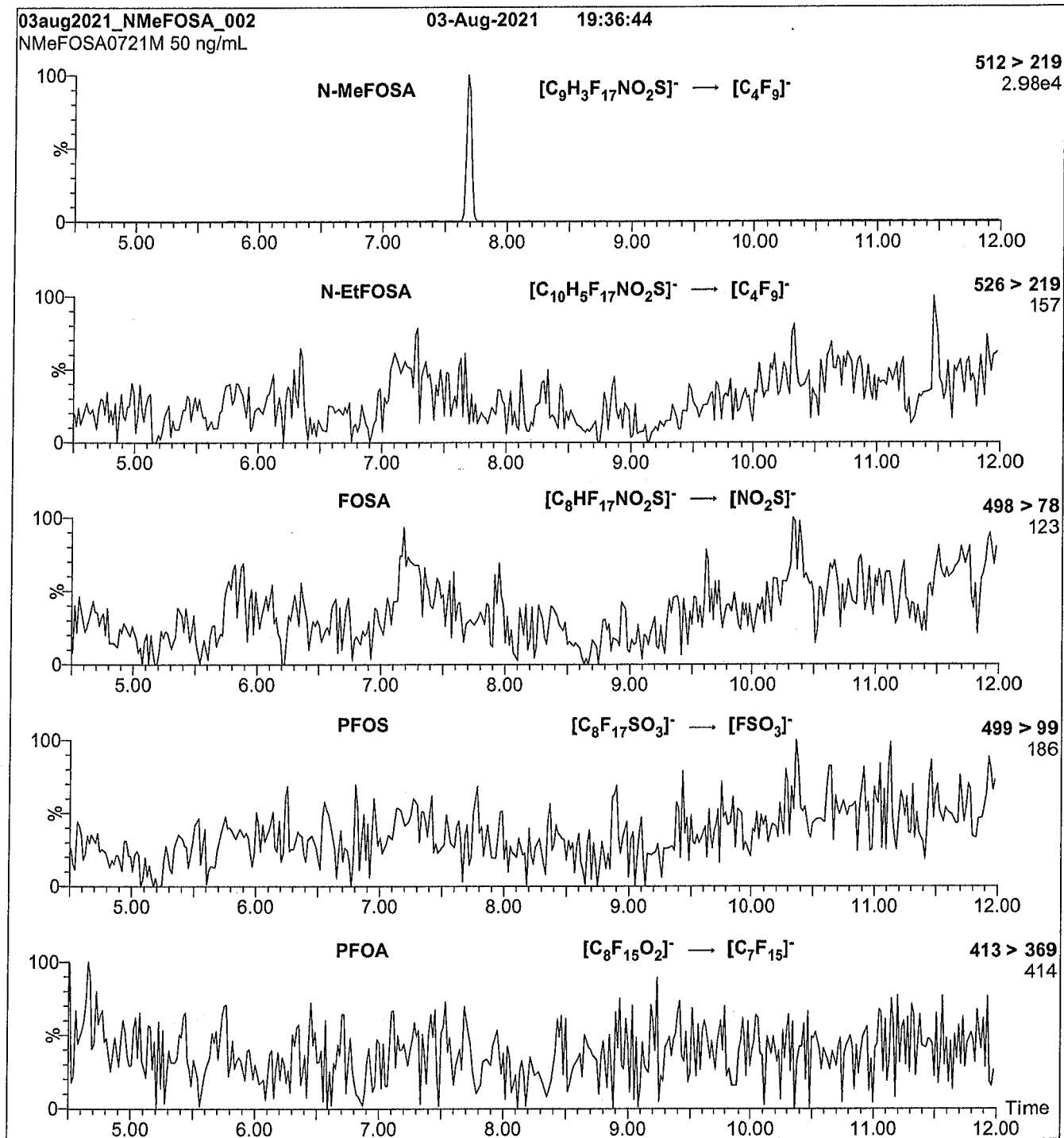
Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature ($^{\circ}$ 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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 24

Analytical Standard Record

21L0008

Description:	PFAS - SAS N-MeFOSA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:18 by HGH

Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSA		31506-32-8	50	ug/mL

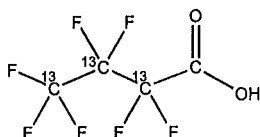


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBA **LOT NUMBER:** M3PFBA0721
COMPOUND: Perfluoro-n-(2,3,4-¹³C₃)butanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²CHF₇O₂ **MOLECULAR WEIGHT:** 217.02
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (2,3,4-¹³C₃)
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 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.2% of perfluoro-n-(¹³C₃)propanoic acid and also contains ~1.0% of perfluoro-n-(1,2,3,4-¹³C₄)butanoic acid due to the naturally occurring isotopic abundance of ¹³C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 08/25/2021
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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LIMITED WARRANTY:

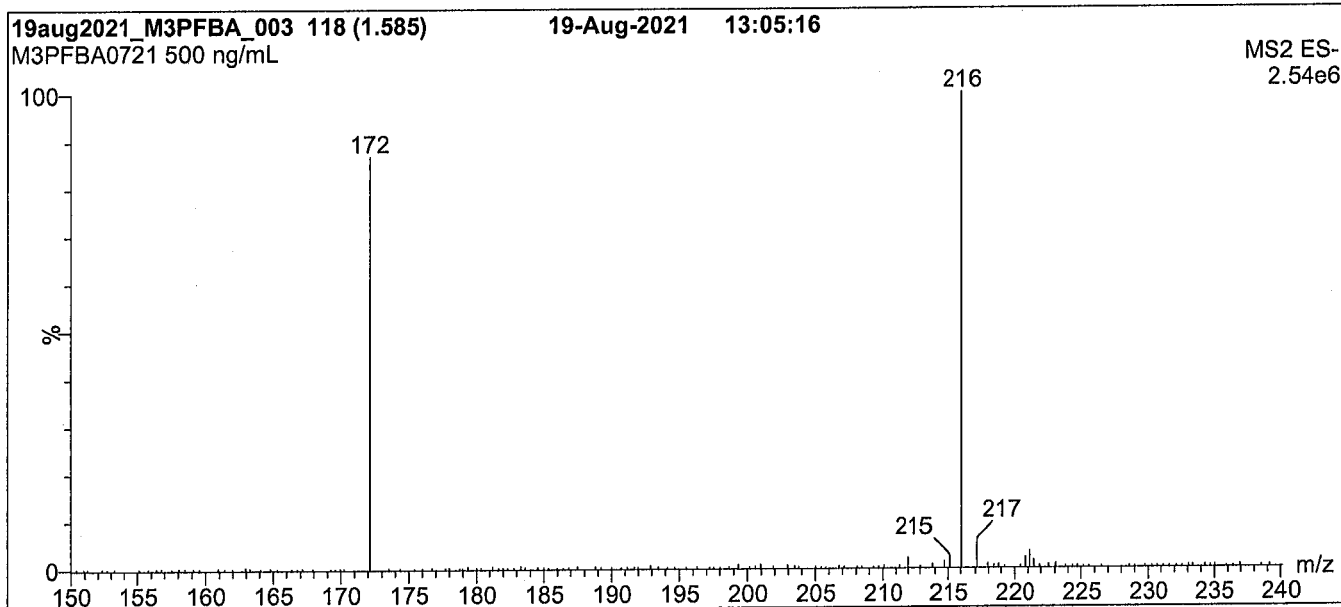
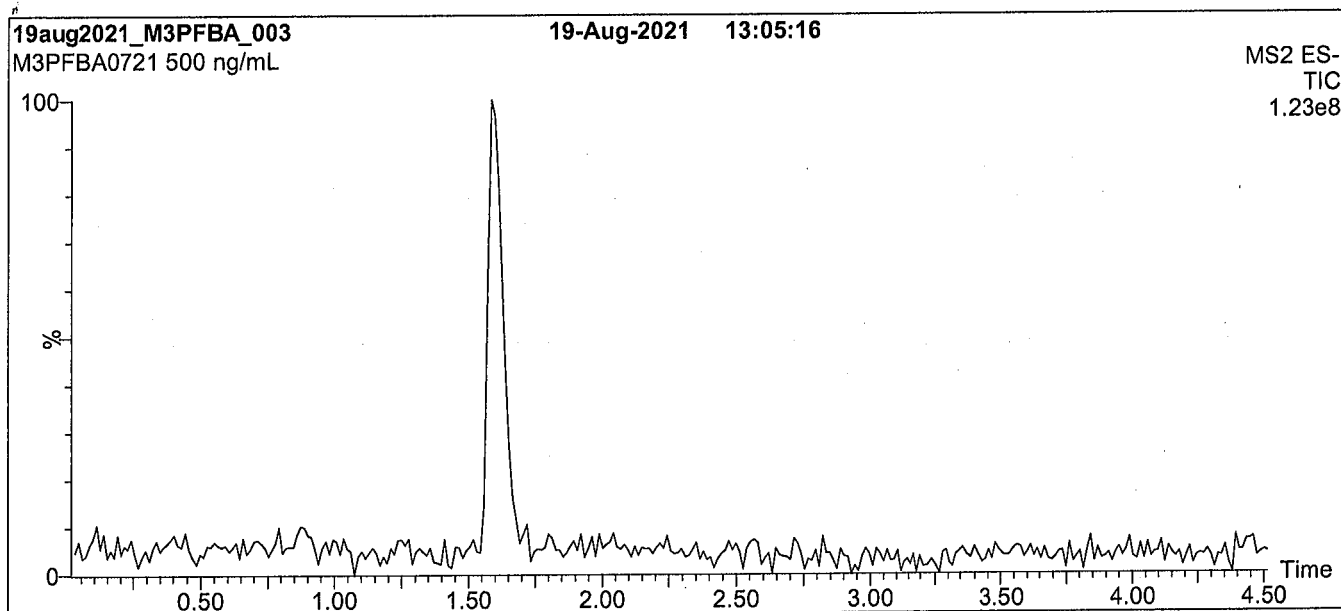
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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Figure 1: M3PFBA; 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

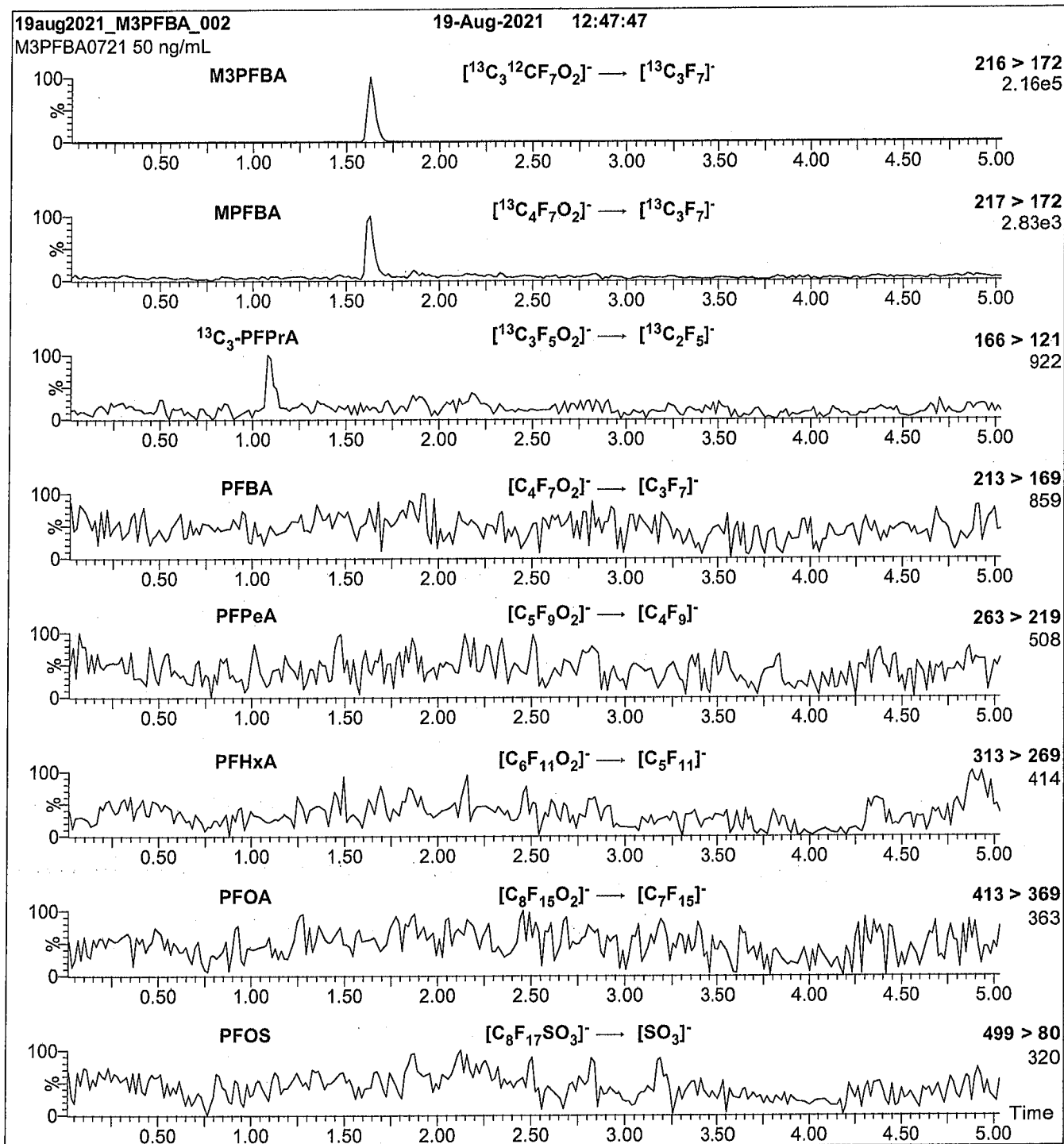
Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: M3PFBA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (M3PFBA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.45e-3

Collision Energy (eV) = 8

Analytical Standard Record

22A0116

Description:	PFAS - IIS M3PFBA 50ug/mL	Expires:	08/19/2026
Standard Type:	Analyte Spike	Prepared:	08/19/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA		13C3-PFBA	50	ug/mL

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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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:

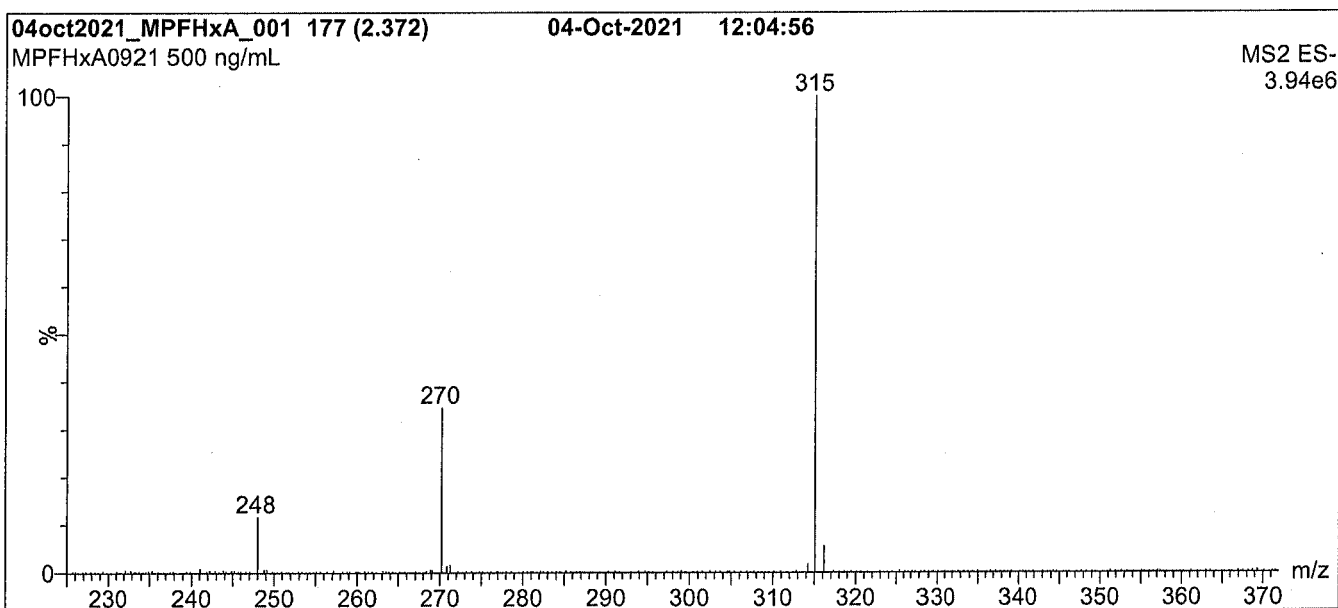
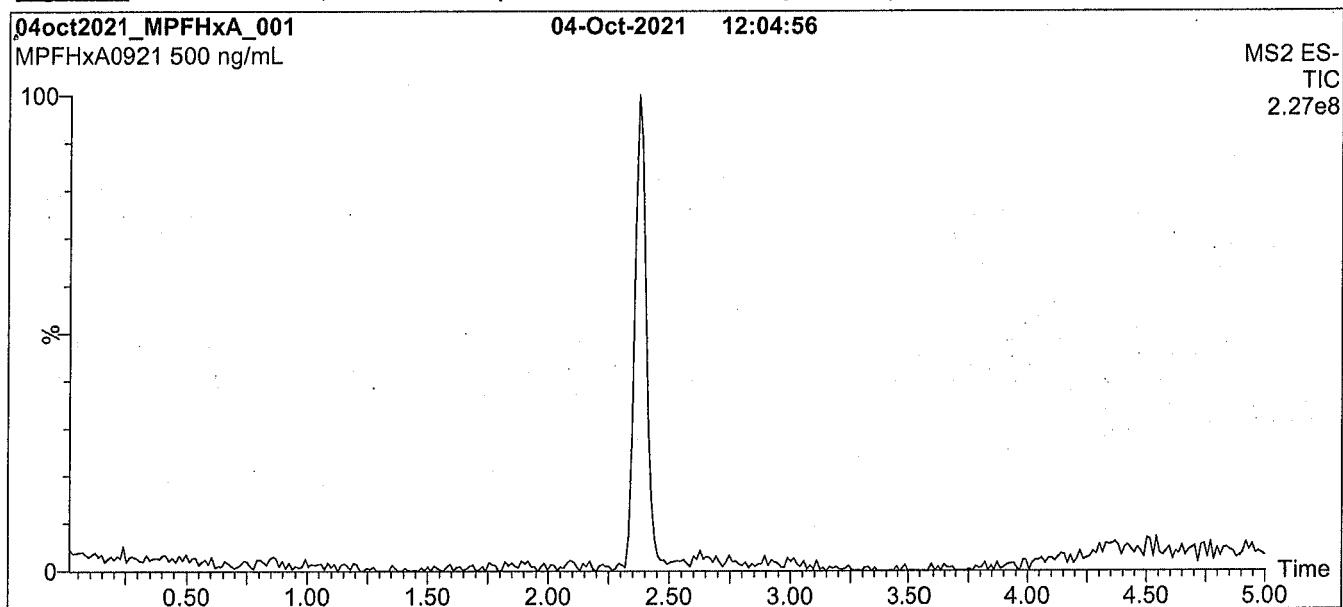
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Figure 1: MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

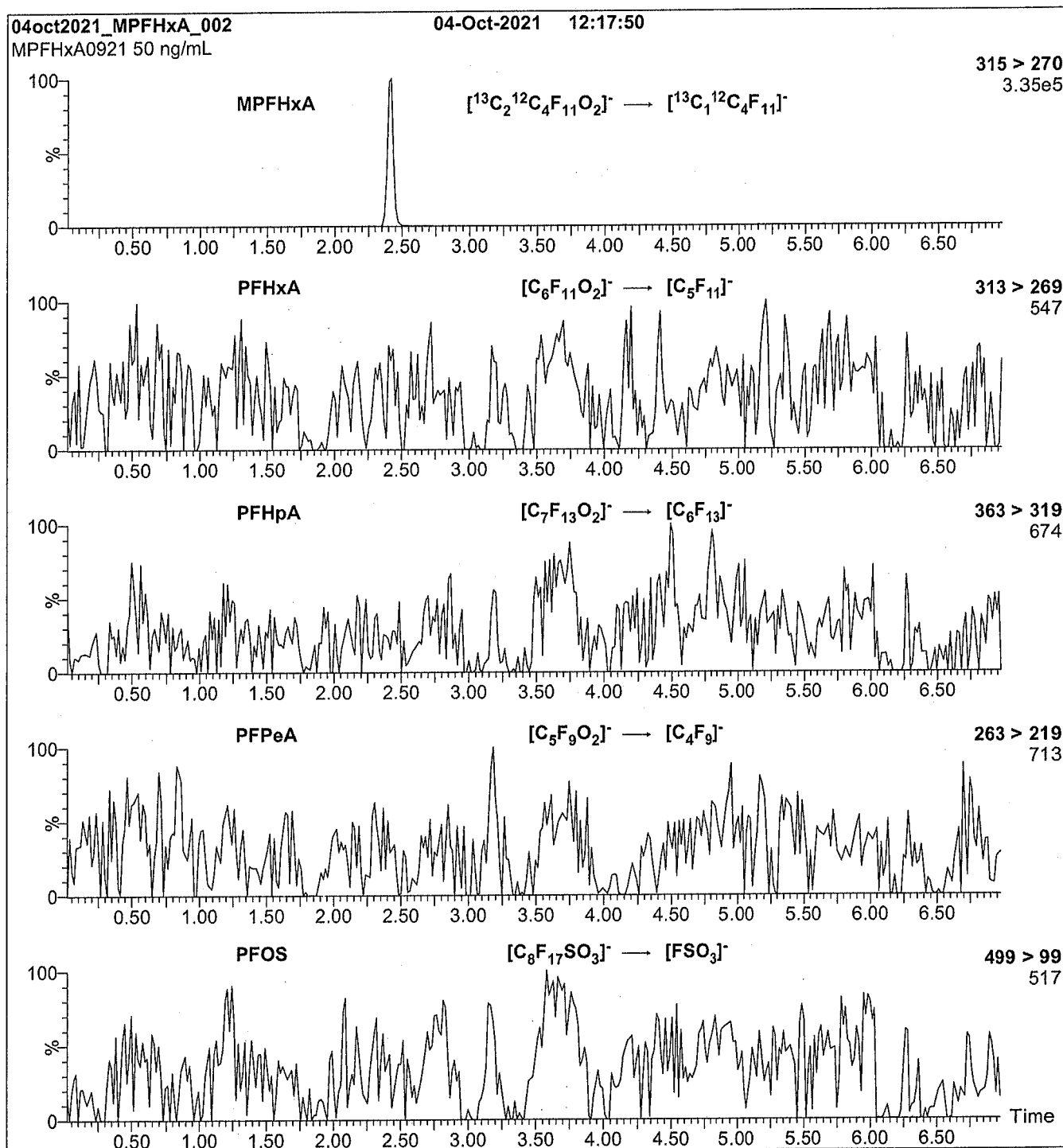
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 8

Analytical Standard Record

22A0117

Description:	PFAS - IIS MPFHxA 50ug/mL	Expires:	10/04/2026
Standard Type:	Analyte Spike	Prepared:	10/04/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFHxA		13C2-PFHxA	50	ug/mL

Analytical Standard Record

22A0117

Description:	PFAS - IIS MPFHxA 50ug/mL	Expires:	10/04/2026
Standard Type:	Analyte Spike	Prepared:	10/04/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

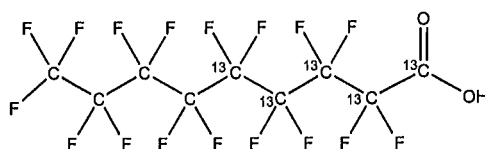
Analyte	Parent	CAS Number	Concentration	Units
13C2-PFHxA		13C2-PFHxA	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFNA **LOT NUMBER:** MPFNA1021
COMPOUND: Perfluoro-n-(1,2,3,4,5-¹³C₅)nonanoic acid
STRUCTURE: **CAS #:** 960315-49-5



MOLECULAR FORMULA: $^{13}\text{C}_5^{12}\text{C}_4\text{HF}_{17}\text{O}_2$ **MOLECULAR WEIGHT:** 469.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4,5-¹³C₅)
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: 
 B.G. Chittim, General Manager

Date: 11/01/2021
 (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:

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:

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UNCERTAINTY:

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

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 $\pm 5\%$ (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:

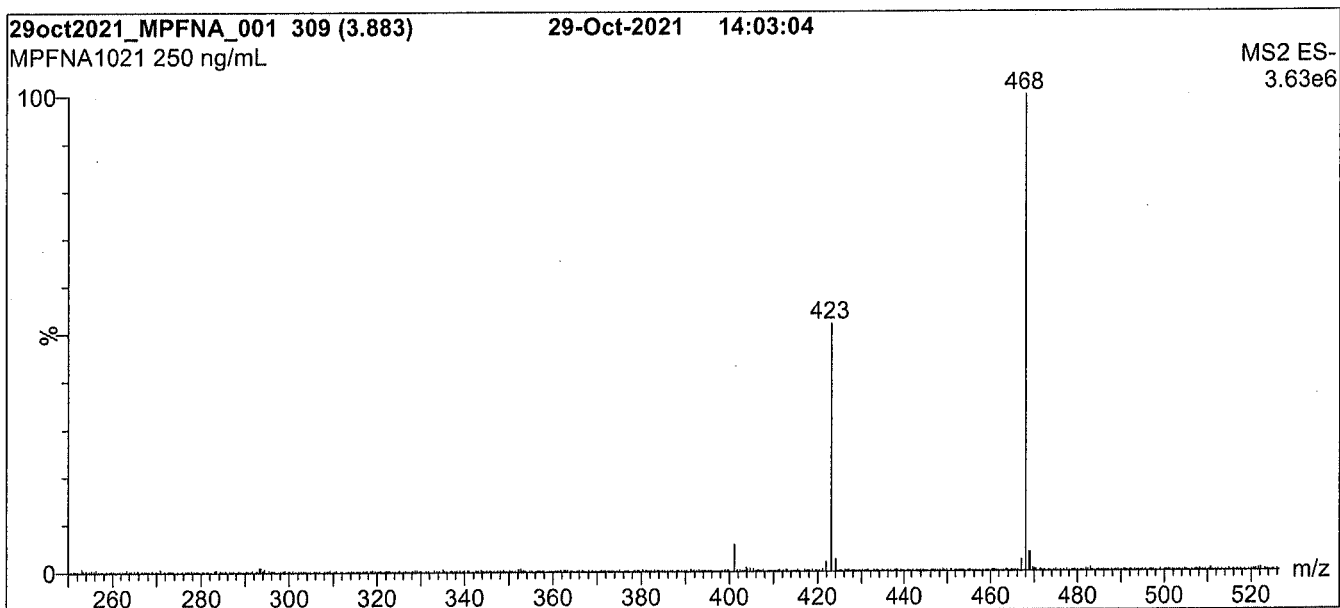
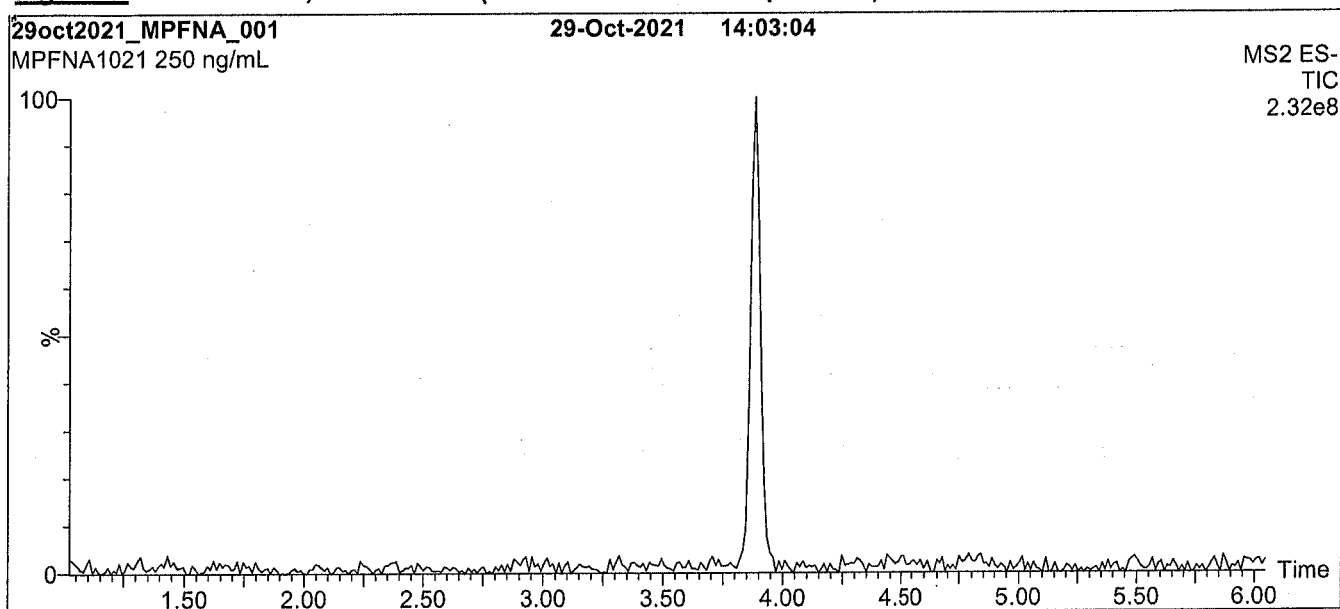
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Figure 1: MPFNA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

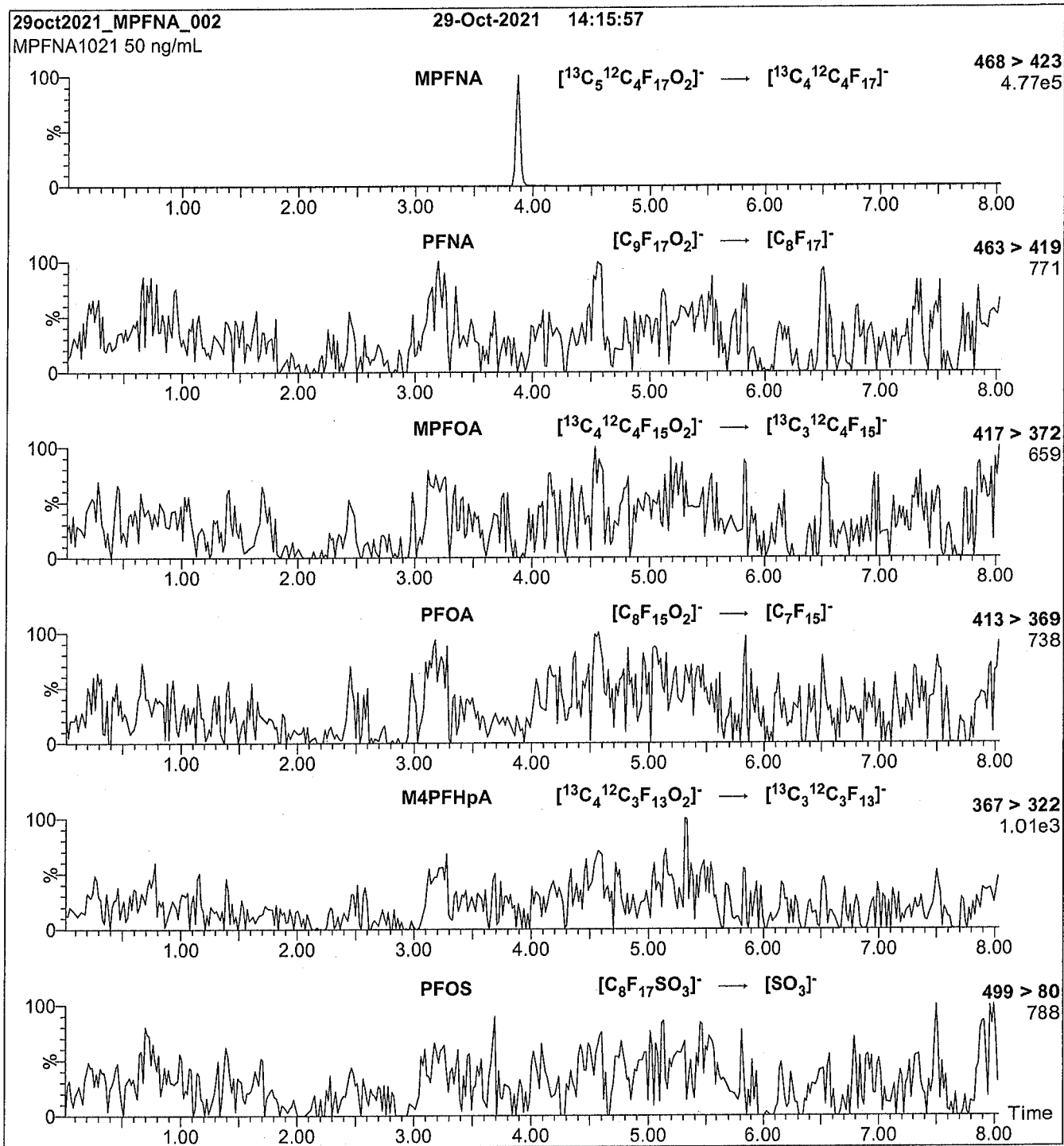
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/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: MPFNA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 10

Analytical Standard Record

22A0118

Description:	PFAS - IIS MPFNA 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C5-PFNA		13C5-PFNA	50	ug/mL

Analytical Standard Record

22A0118

Description:	PFAS - IIS MPFNA 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

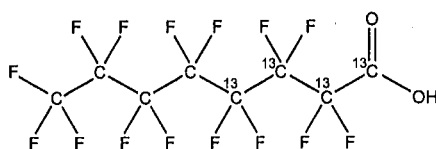
Analyte	Parent	CAS Number	Concentration	Units
13C5-PFNA		13C5-PFNA	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOA **LOT NUMBER:** MPFOA1121
COMPOUND: Perfluoro-n-(1,2,3,4-¹³C₄)octanoic acid
STRUCTURE: **CAS #:** 960315-48-4



MOLECULAR FORMULA: ¹³C₄¹²C₄HF₁₅O₂ **MOLECULAR WEIGHT:** 418.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2,3,4-¹³C₄)
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 12/20/2021
(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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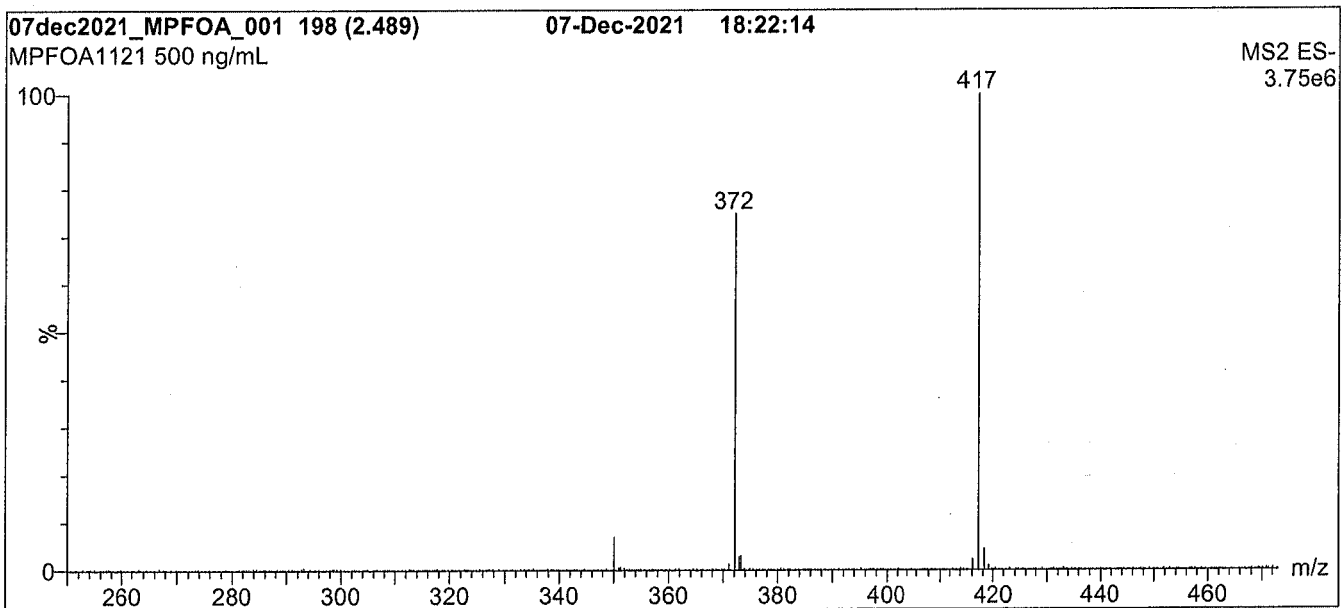
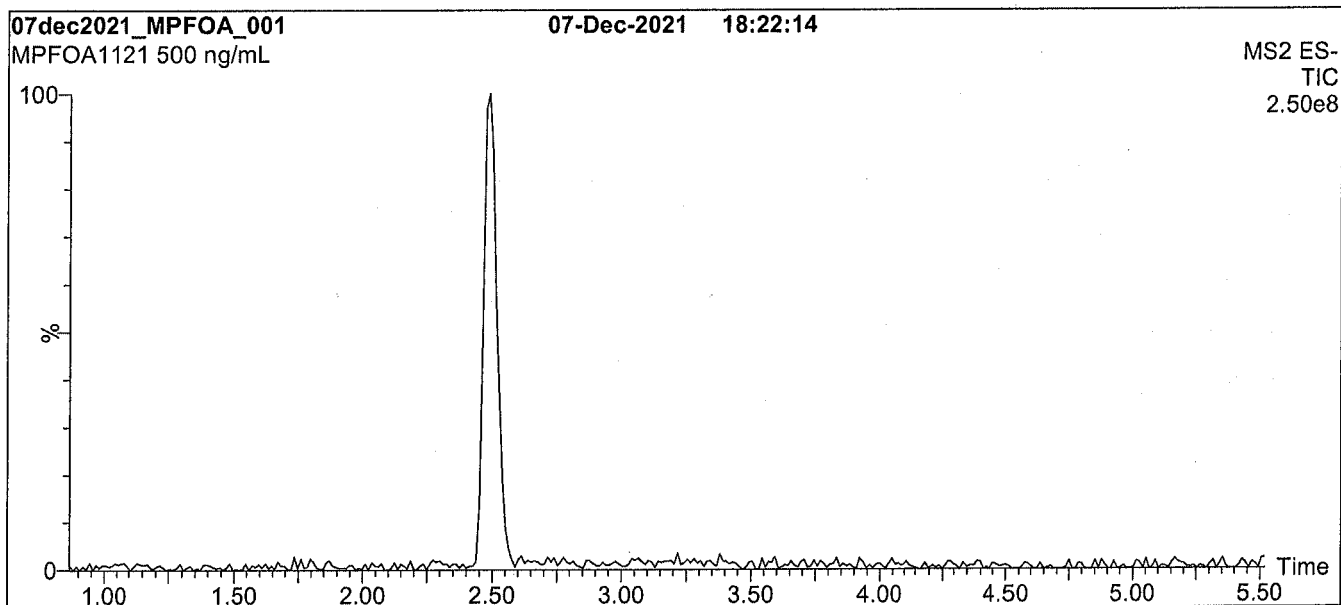
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Figure 1: MPFOA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

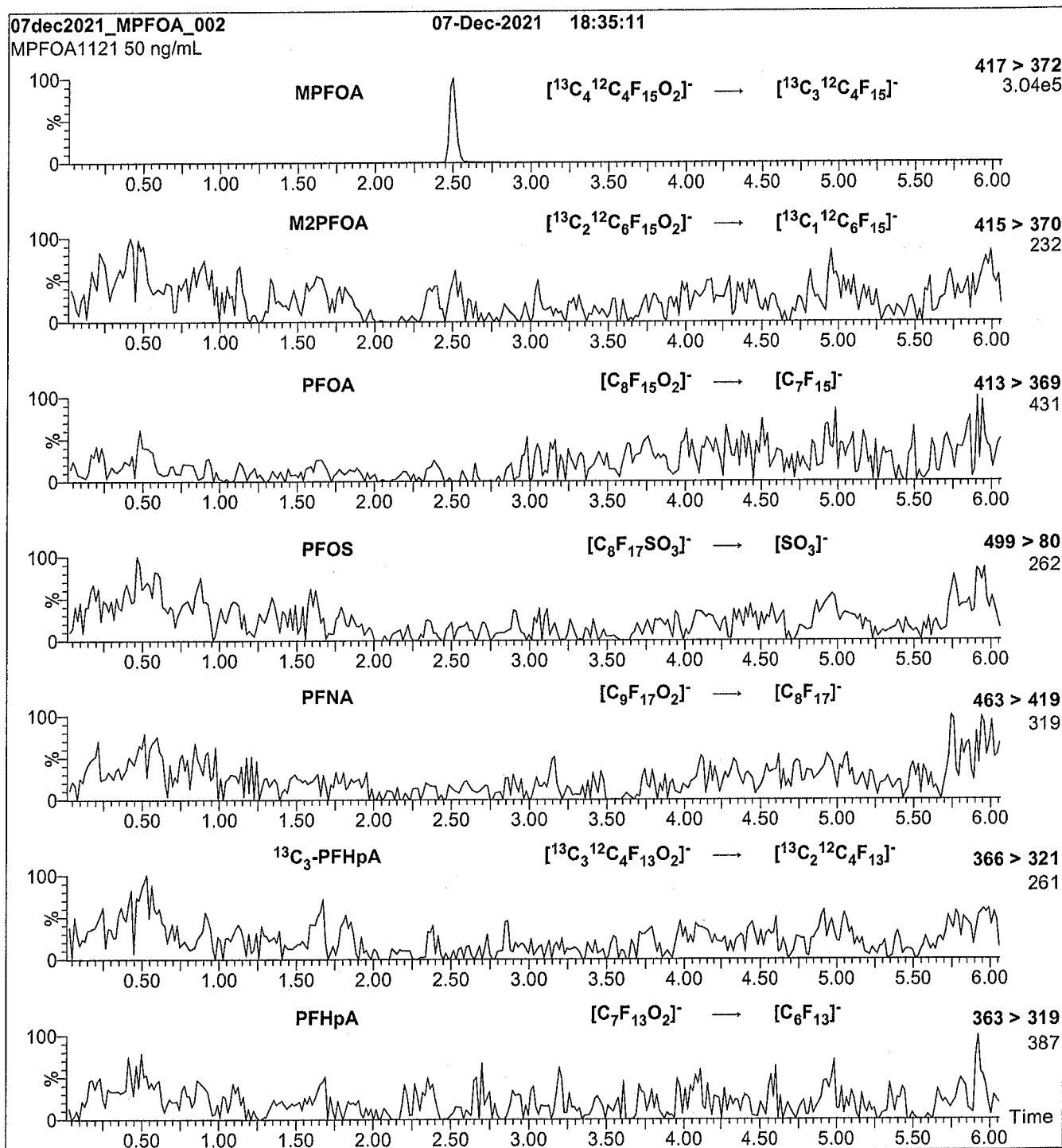
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/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: MPFOA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (MPFOA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 8

Analytical Standard Record

22A0119

Description:	PFAS - IIS MPFOA 50ug/mL	Expires:	12/07/2026
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C4-PFOA		13C4-PFOA	50	ug/mL

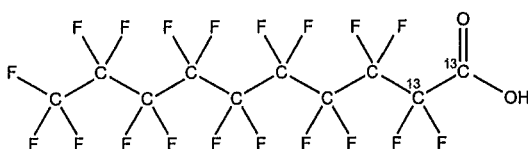


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDA **LOT NUMBER:** MPFDA1221
COMPOUND: Perfluoro-n-(1,2-¹³C₂)decanoic acid

STRUCTURE: **CAS #:** 960315-50-8



MOLECULAR FORMULA: ¹³C₂¹²C₈HF₁₉O₂ **MOLECULAR WEIGHT:** 516.07
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 12/08/2021
EXPIRY DATE: (mm/dd/yyyy) 12/08/2026
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: 
 B.G. Chittim, General Manager

Date: 12/13/2021
 (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:

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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, \dots, x_n on which it depends is:

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

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

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LIMITED WARRANTY:

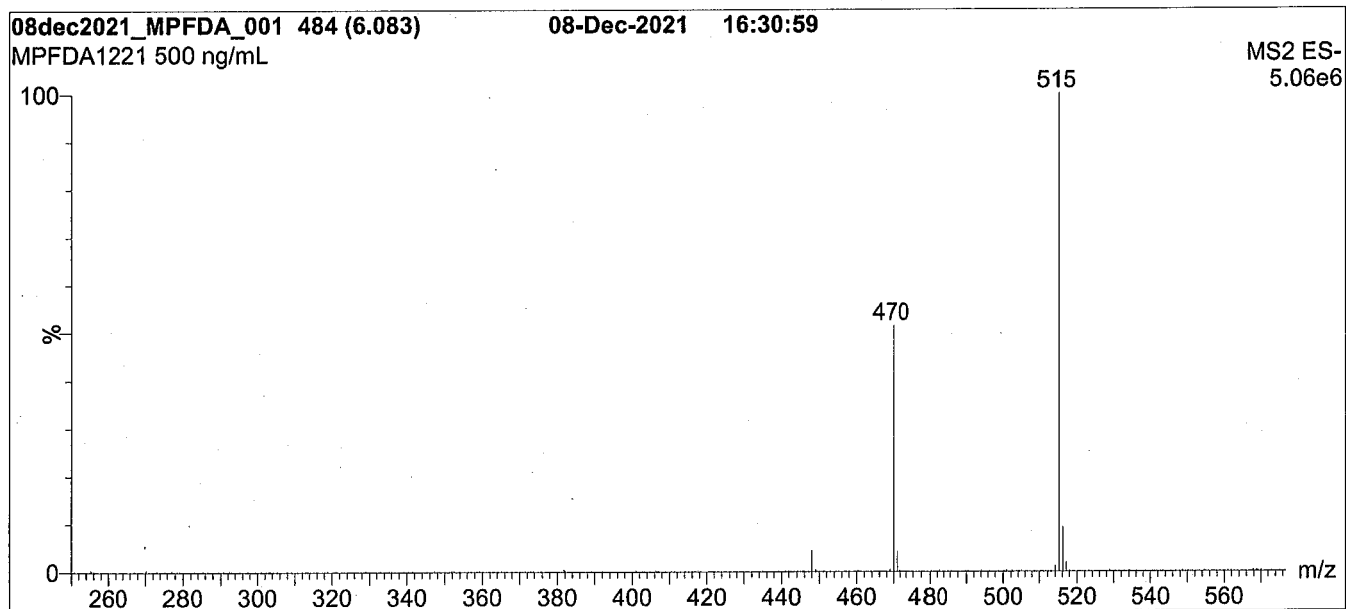
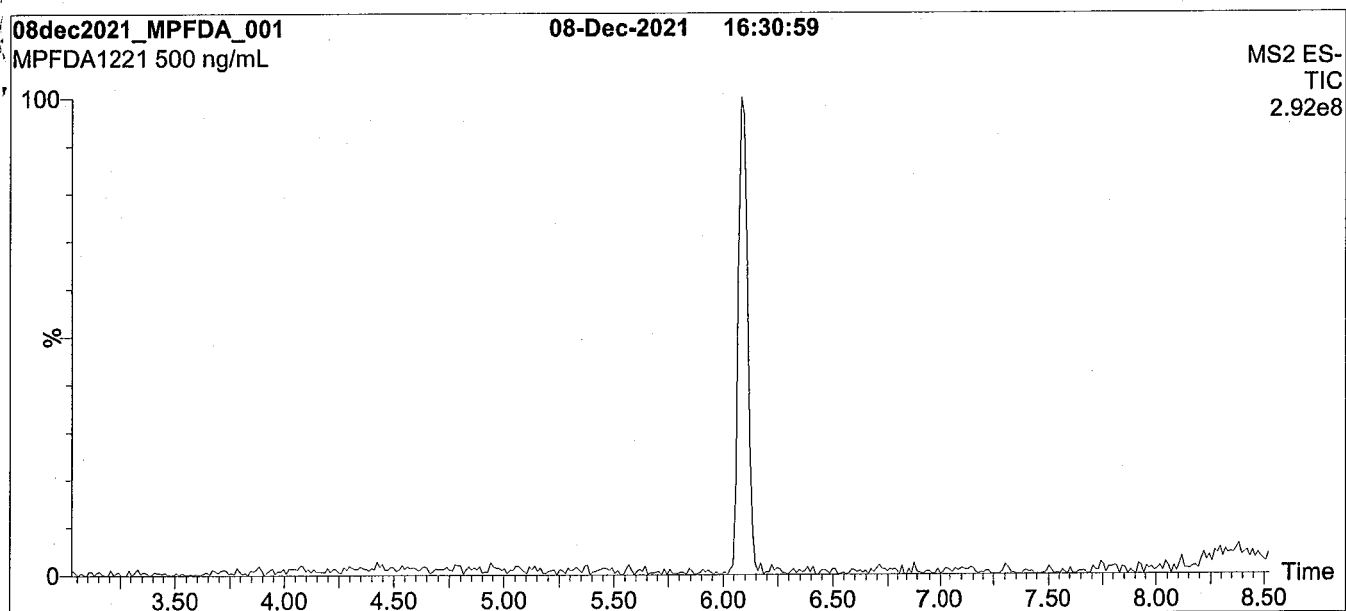
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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Figure 1: MPFDA; 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

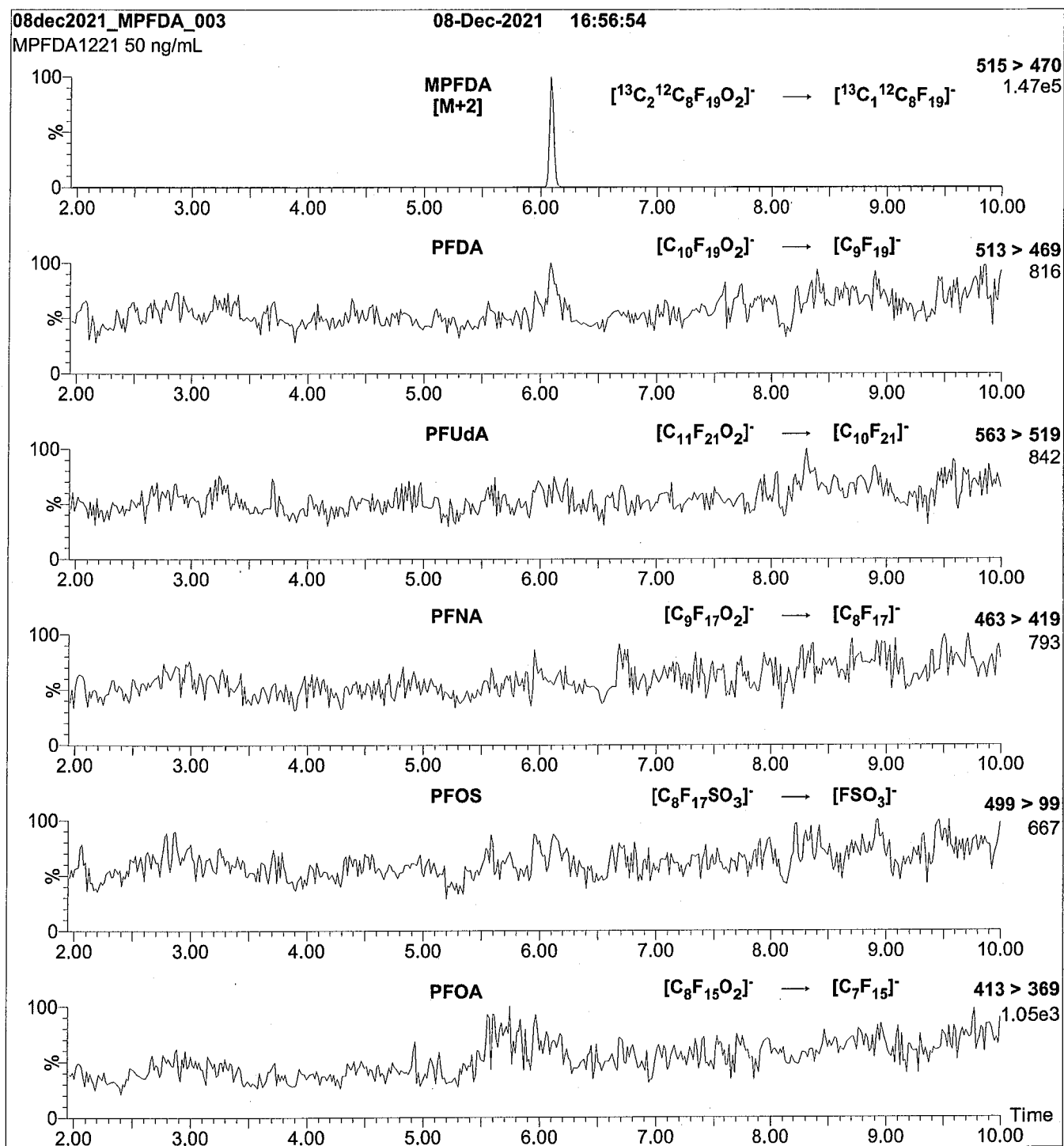
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 10

Analytical Standard Record

22A0120

Description:	PFAS - IIS MPFDA 50ug/mL	Expires:	12/08/2026
Standard Type:	Analyte Spike	Prepared:	12/08/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA		13C2-PFDA	50	ug/mL

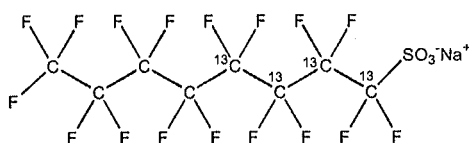


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0821
COMPOUND: Sodium perfluoro-1-(1,2,3,4-¹³C₄)octanesulfonate

STRUCTURE: **CAS #:** 960315-53-1



MOLECULAR FORMULA: ¹³C₄¹²C₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 526.08
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 47.9 ± 2.4 µg/mL (MPFOS acid)
 47.8 ± 2.4 µg/mL (MPFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 08/18/2021 (1,2,3,4-¹³C₄)
EXPIRY DATE: (mm/dd/yyyy) 08/18/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

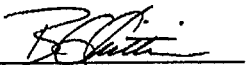
DOCUMENTATION/ DATA ATTACHED:

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 ~0.4% sodium perfluoro-1-(¹³C₃)heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 08/19/2021
 (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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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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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:

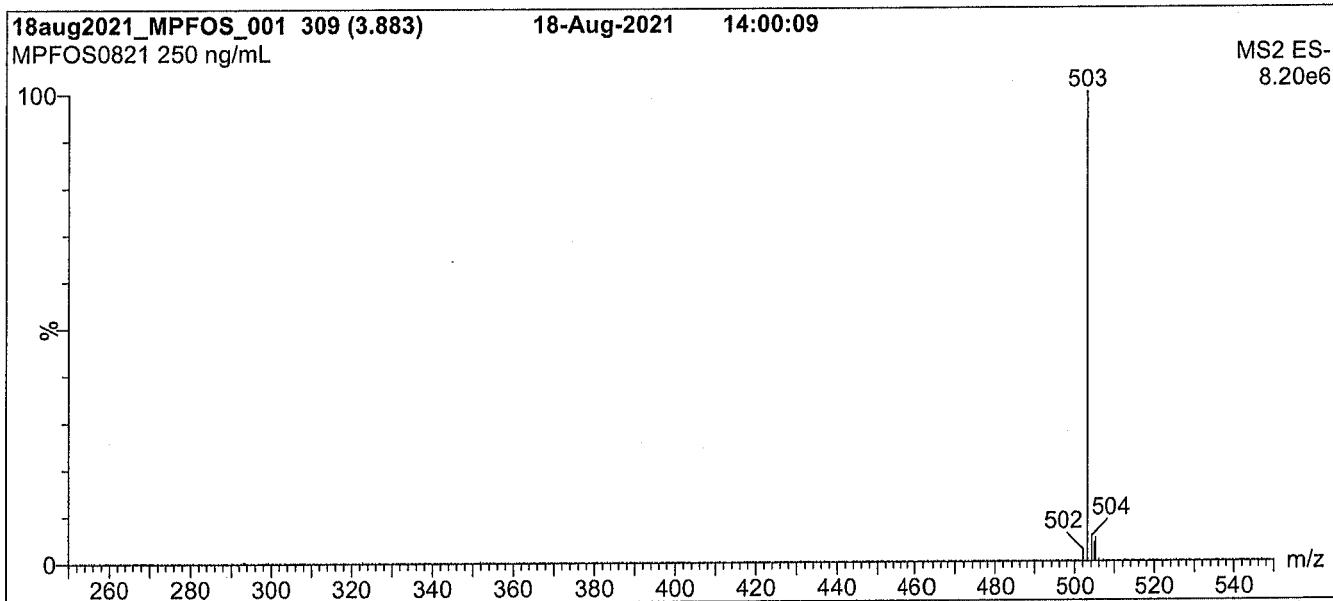
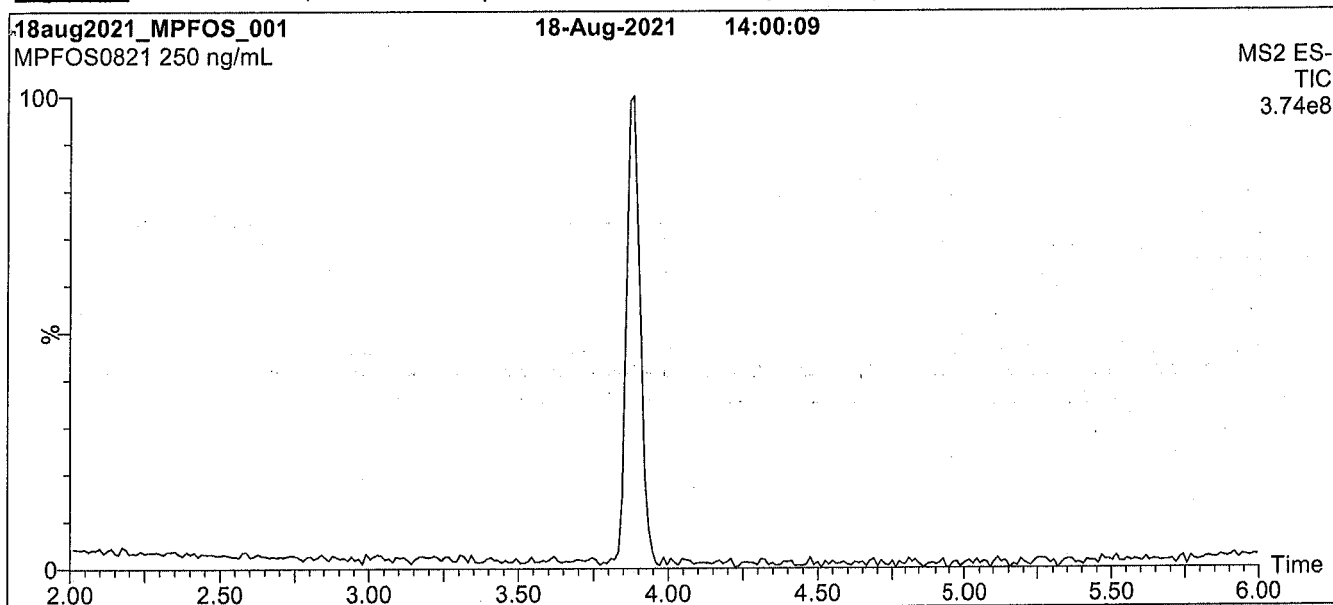
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QUALITY MANAGEMENT:

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Figure 1: MPFOS; 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

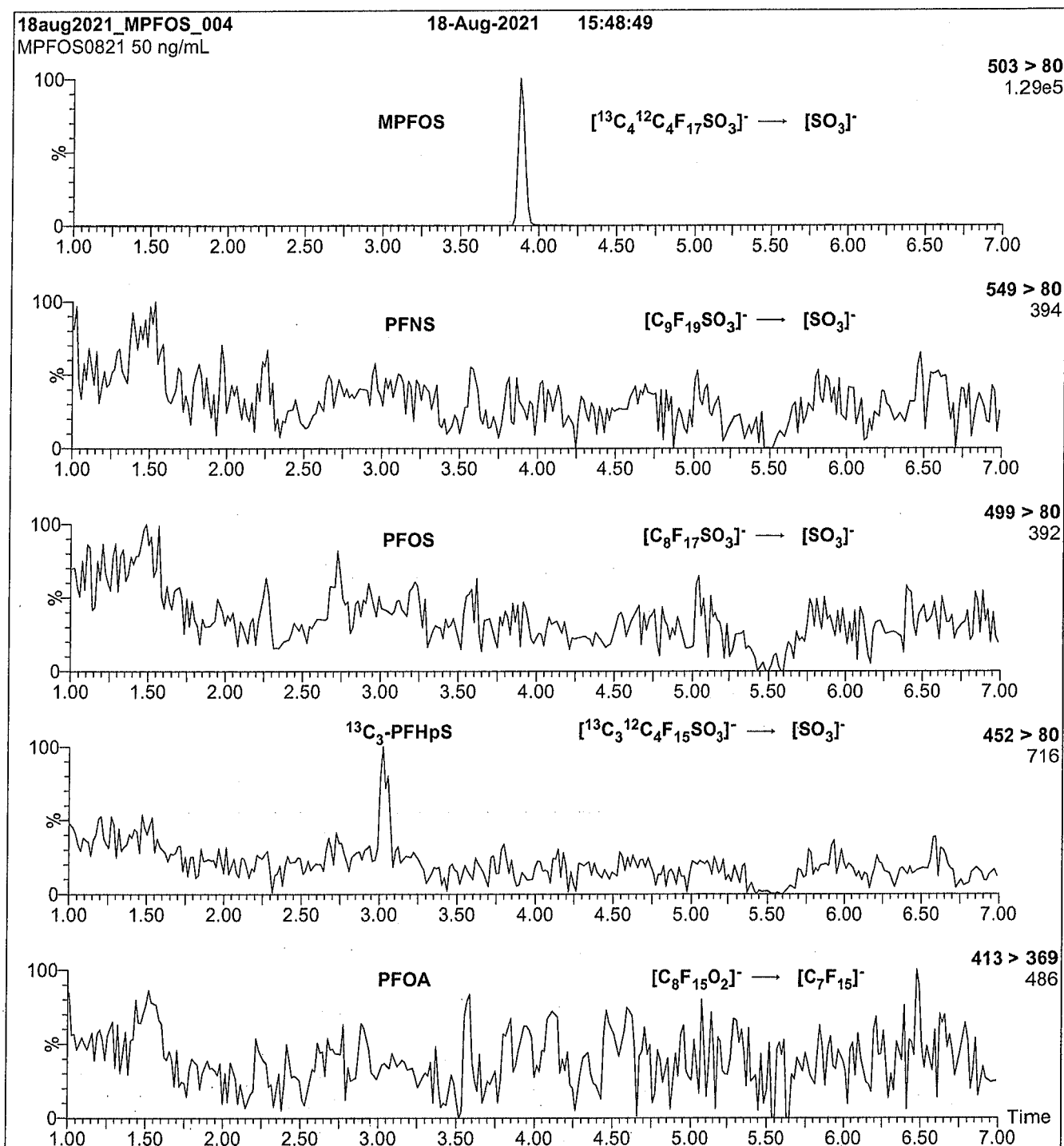
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

Flow: 300 $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 42

Analytical Standard Record

22A0121

Description:	PFAS - IIS MPFOS 50ug/mL	Expires:	08/18/2026
Standard Type:	Analyte Spike	Prepared:	08/18/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C4-PFOS		13C4-PFOS	50	ug/mL

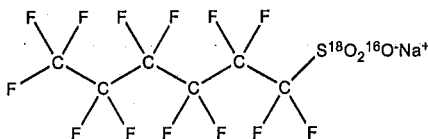


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS **LOT NUMBER:** MPFHxS1021
COMPOUND: Sodium perfluoro-1-hexane(¹⁸O₂)sulfonate

STRUCTURE: **CAS #:** 1585941-14-5



MOLECULAR FORMULA: C₆F₁₃S¹⁸O₂¹⁶ONa **MOLECULAR WEIGHT:** 426.10
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 47.4 ± 2.4 µg/mL (MPFHxS acid)
 47.3 ± 2.4 µg/mL (MPFHxS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** >94% (¹⁸O₂)
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.
- The response factor for MPFHxS (C₆F₁₃S¹⁸O₂¹⁶O) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁸O₃) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane(¹⁸O₂)sulfonate (¹⁸O₂-PFOS) and ~0.3% of sodium perfluoro-1-heptane(¹⁸O₂)sulfonate (¹⁸O₂-PFHpS).
- Due to the isotopic purity of the starting material (¹⁸O₂ >94%), MPFHxS contains ~0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 11/05/2021
 (mm/dd/yyyy)

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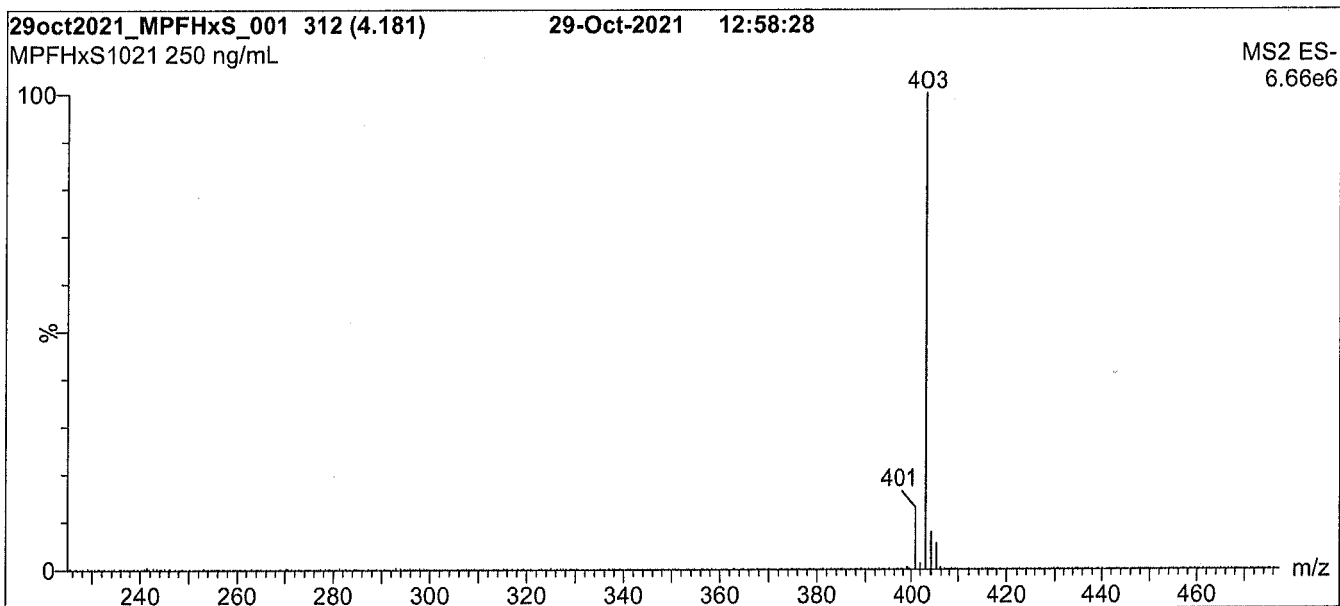
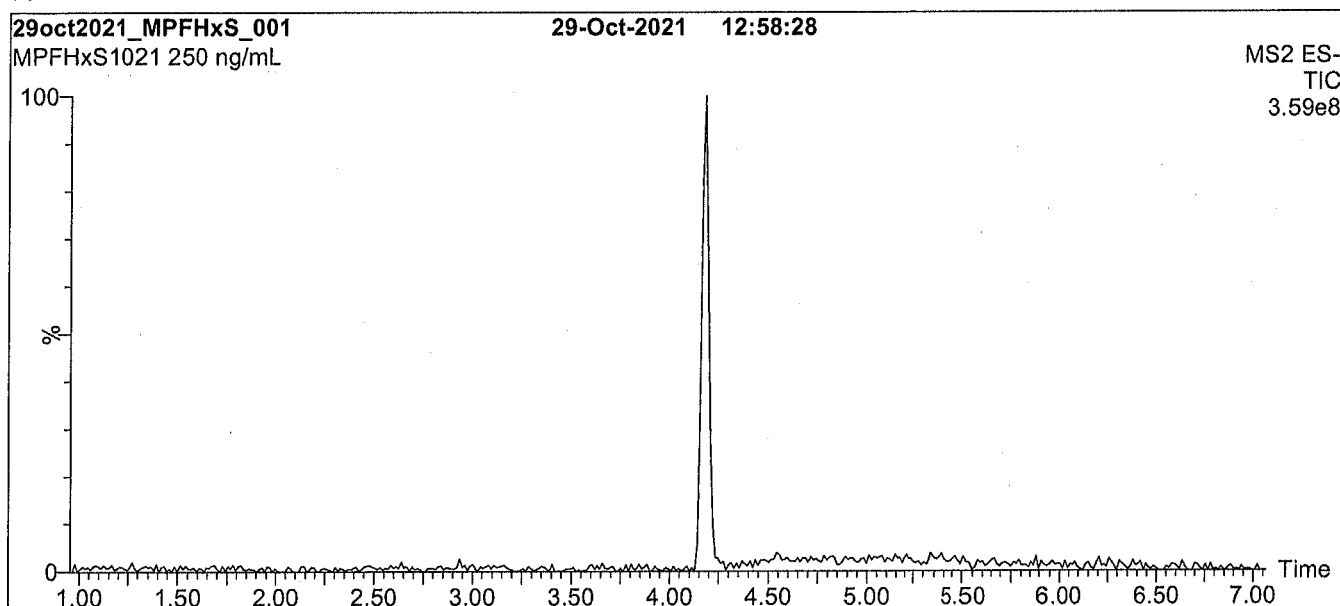
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Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

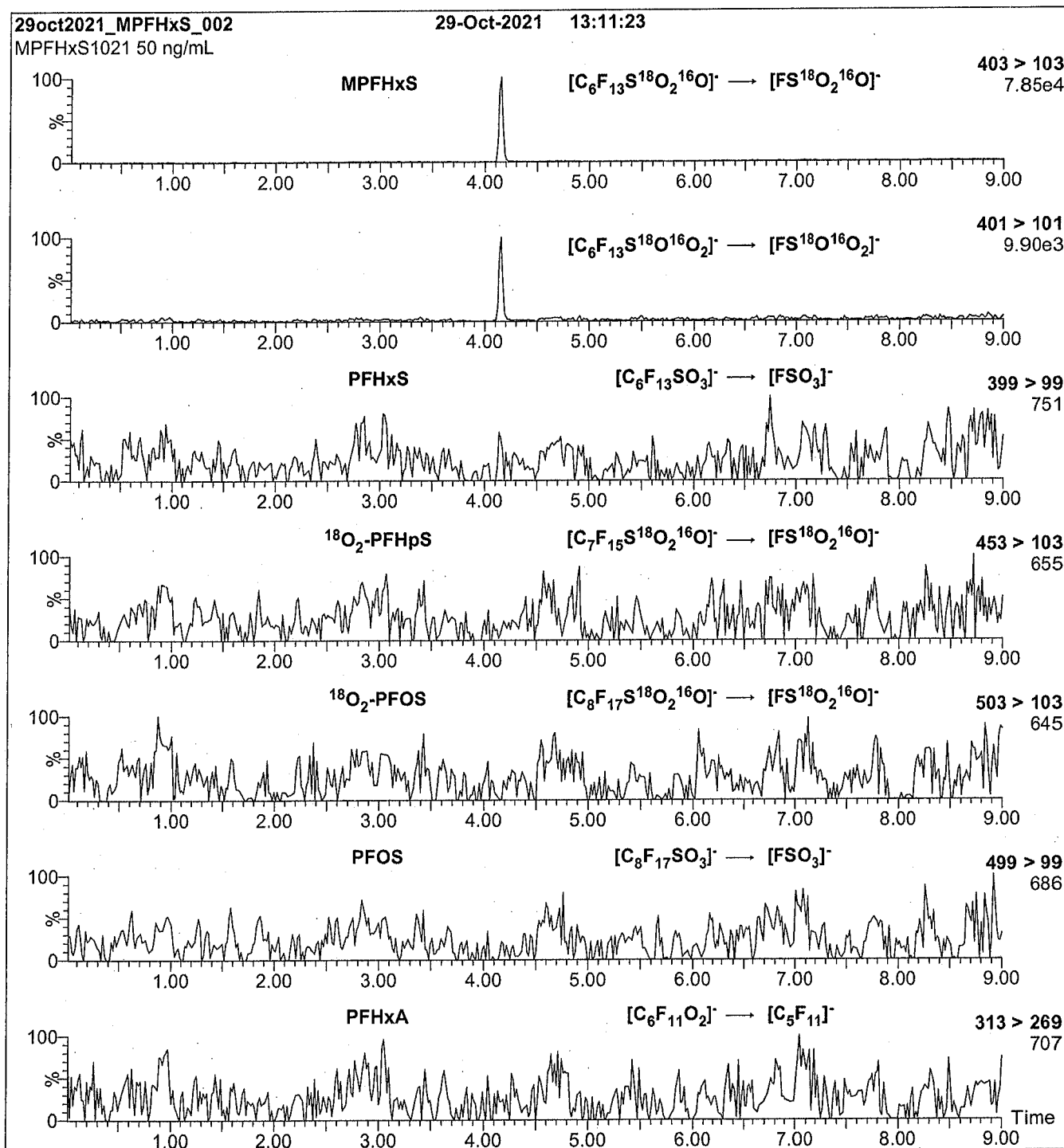
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ($^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 32

Analytical Standard Record

22A0122

Description:	PFAS - IIS MPFHxS 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

Analyte	Parent	CAS Number	Concentration	Units
1802-PFHXS		1802-PFHXS	50	ug/mL

Analytical Standard Record

22A0122

Description:	PFAS - IIS MPFHxS 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

Analyte	Parent	CAS Number	Concentration	Units
1802-PFHXS		1802-PFHXS	50	ug/mL

Analytical Standard Record

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mLs)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

Analytical Standard Record

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

Analytical Standard Record

22A0234

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mLs)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

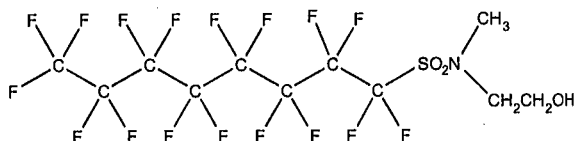


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol **22C0307**

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



MOLECULAR FORMULA: $C_{11}H_8F_{17}NO_3S$ **MOLECULAR WEIGHT:** 557.22
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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: 
 B.G. Chittim, General Manager **Date:** 09/28/2021
 (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:

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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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:

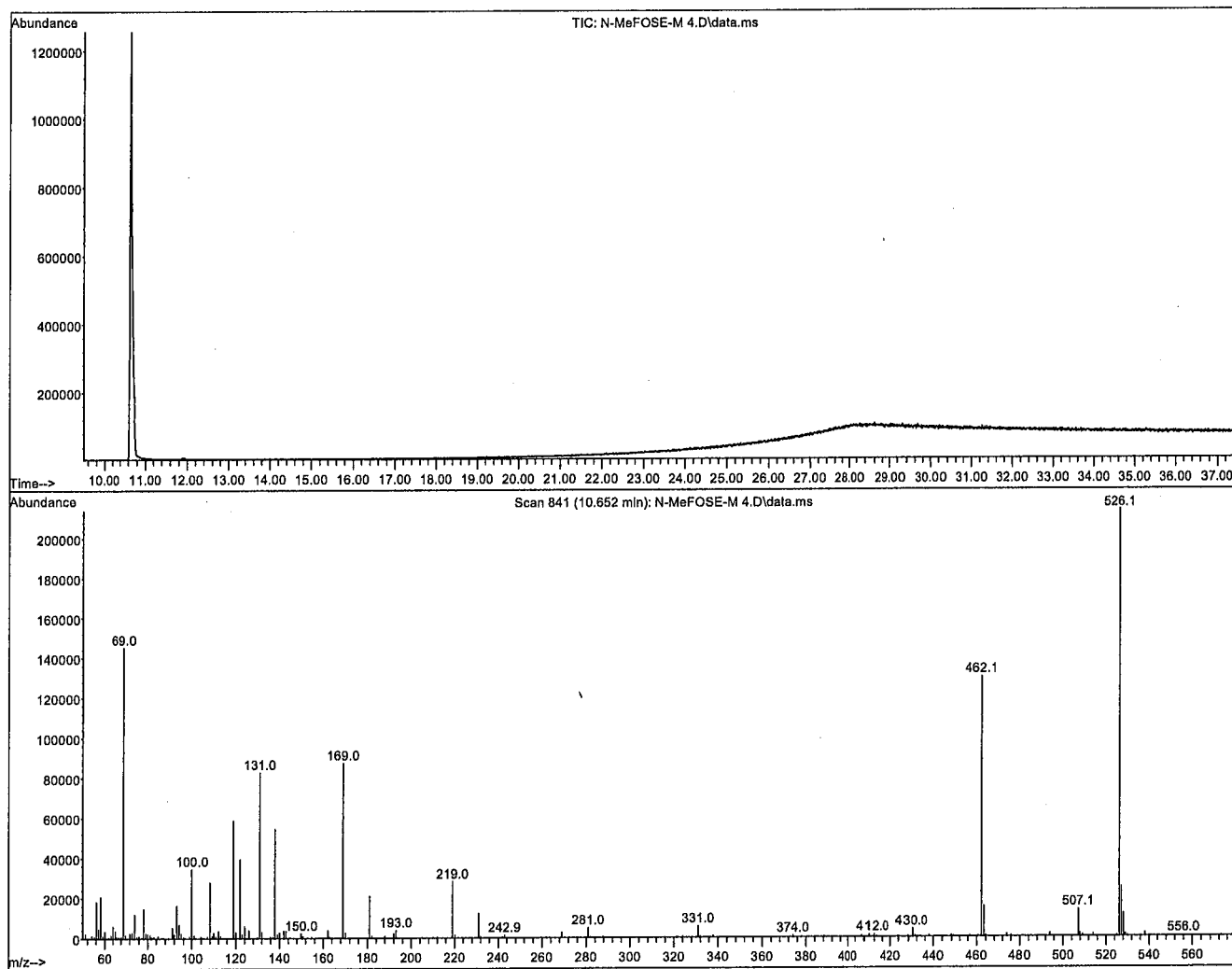
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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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 μ m film thickness) Agilent J&W

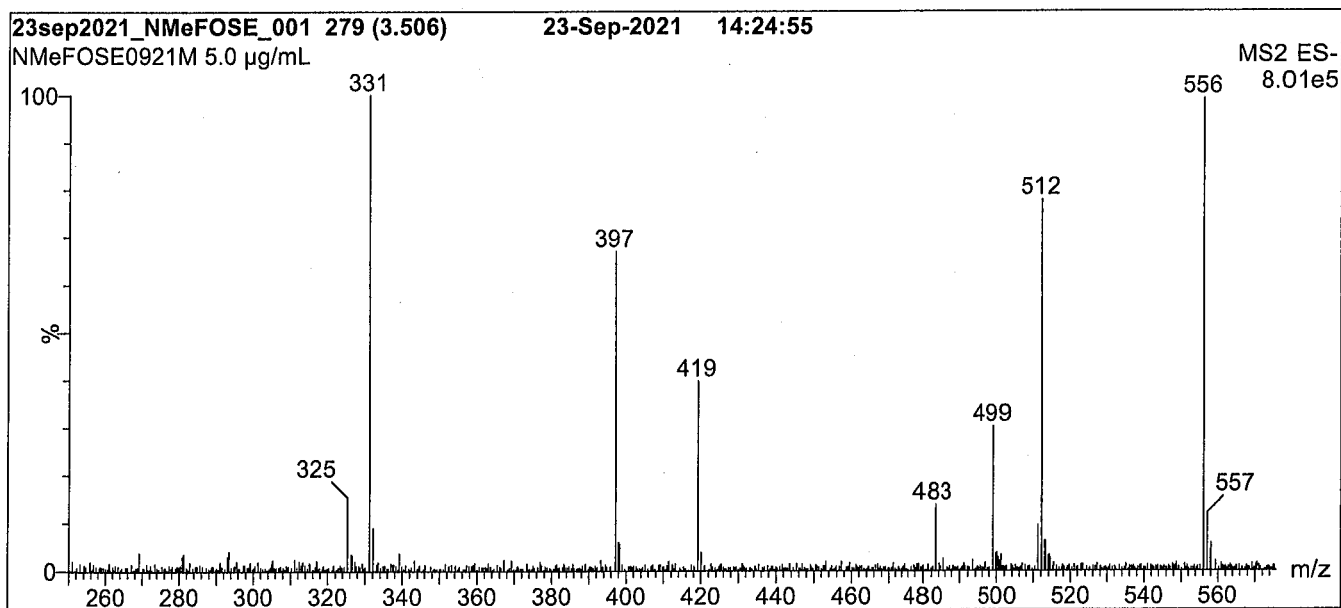
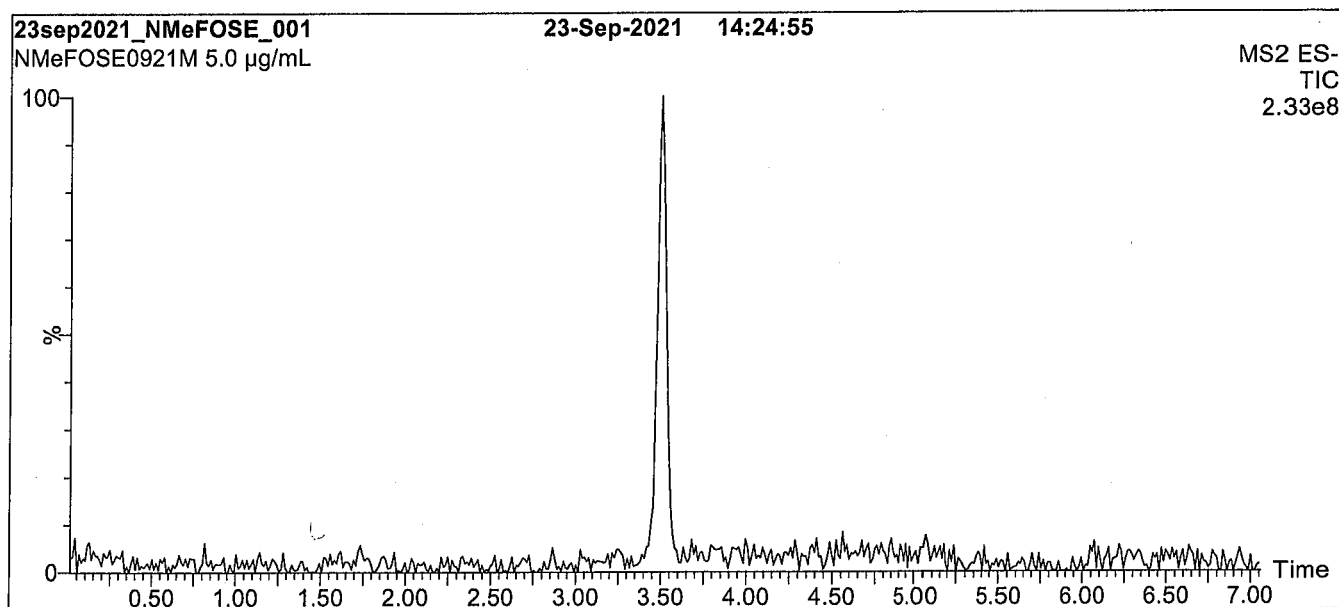
Flow: Constant at 1 mL/min

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 RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 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)

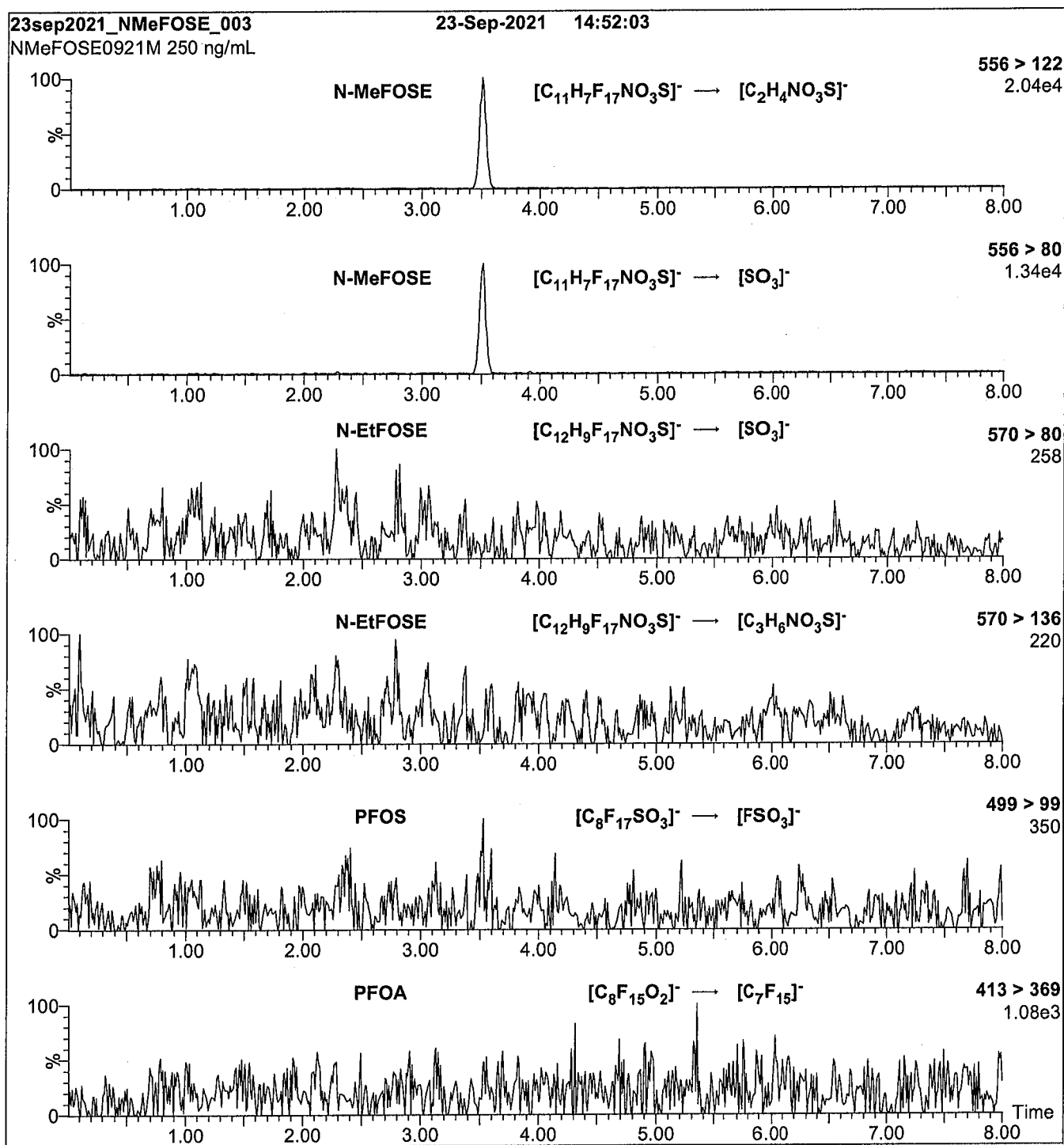
Source: Electrospray (negative)

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 36

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Analytical Standard Record

22C0307

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NMeFOSE0921M)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE		24448-09-7	50	ug/mL

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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UNCERTAINTY:

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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 $\pm 5\%$ (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:

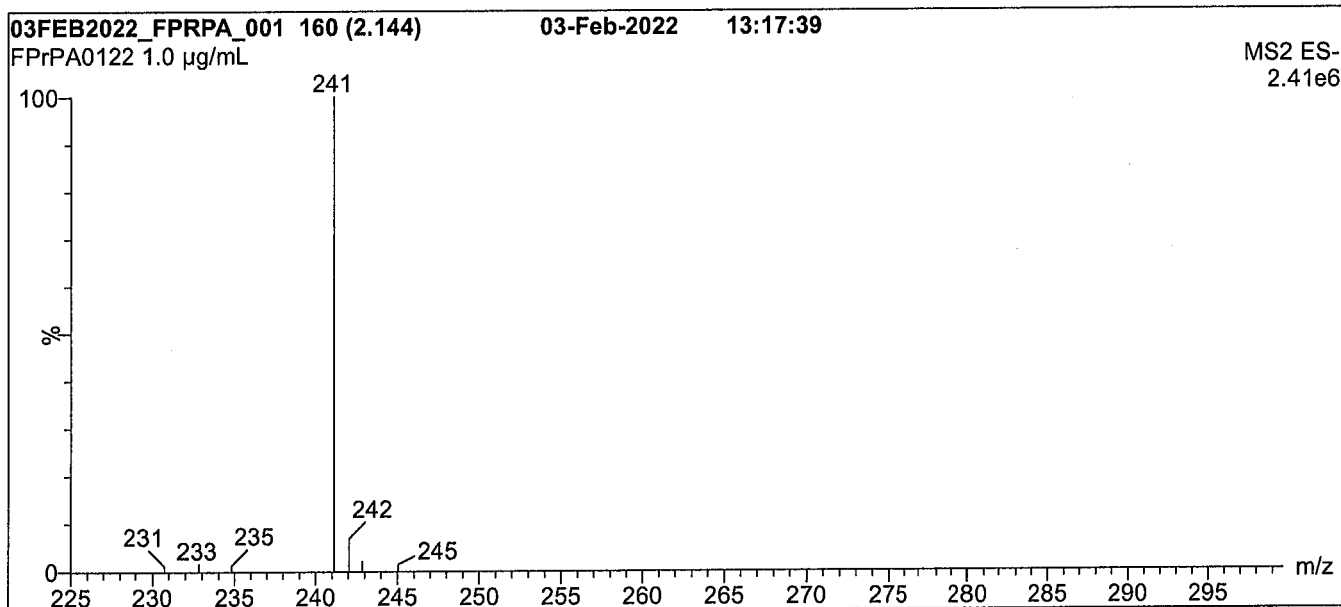
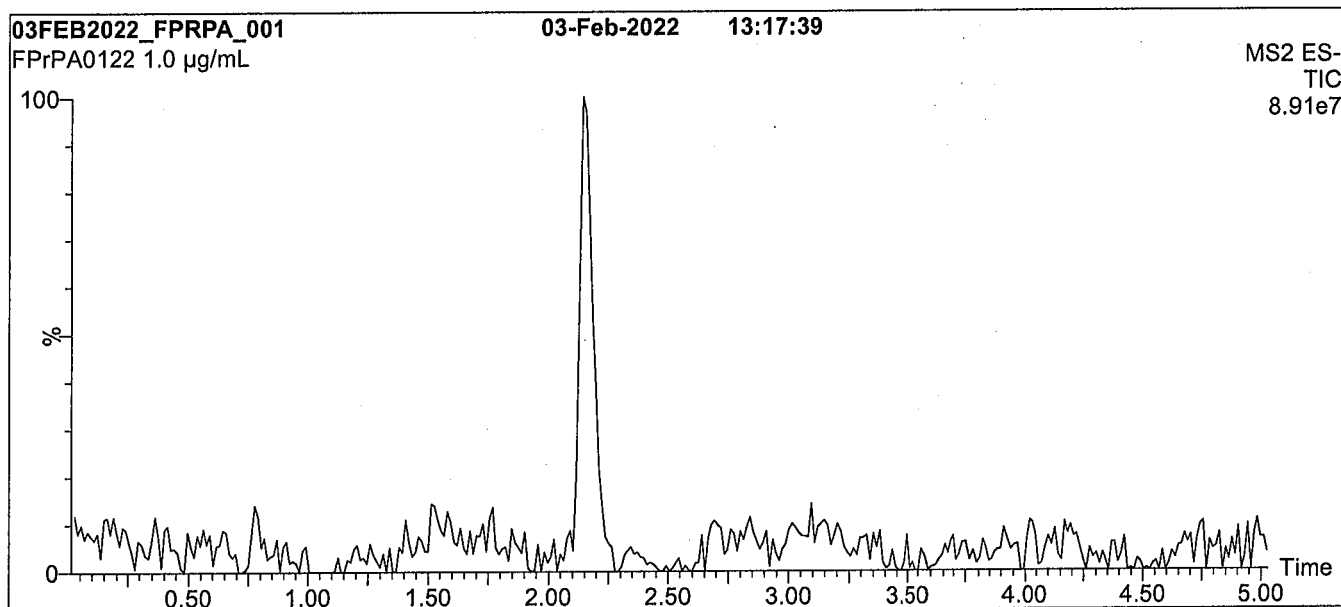
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QUALITY MANAGEMENT:

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Figure 1: FPrPA; 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 RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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)

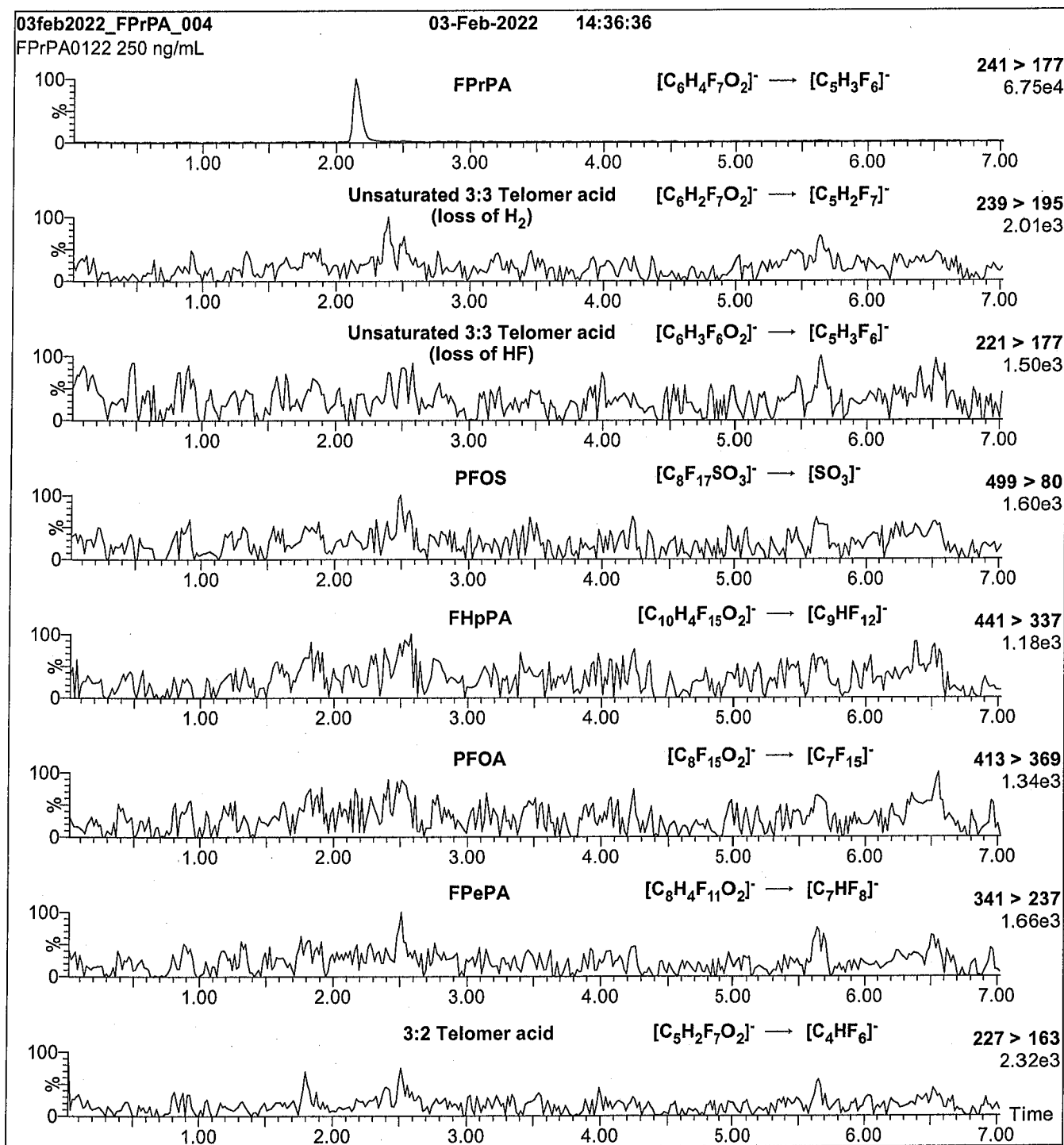
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 10

Analytical Standard Record

22C0308

Description:	PFAS - SAS FPrPA 50ug/mL	Expires:	02/03/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FPrPA0122)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
3:3FTCA		113507-82-7	50	ug/mL

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LIMITED WARRANTY:

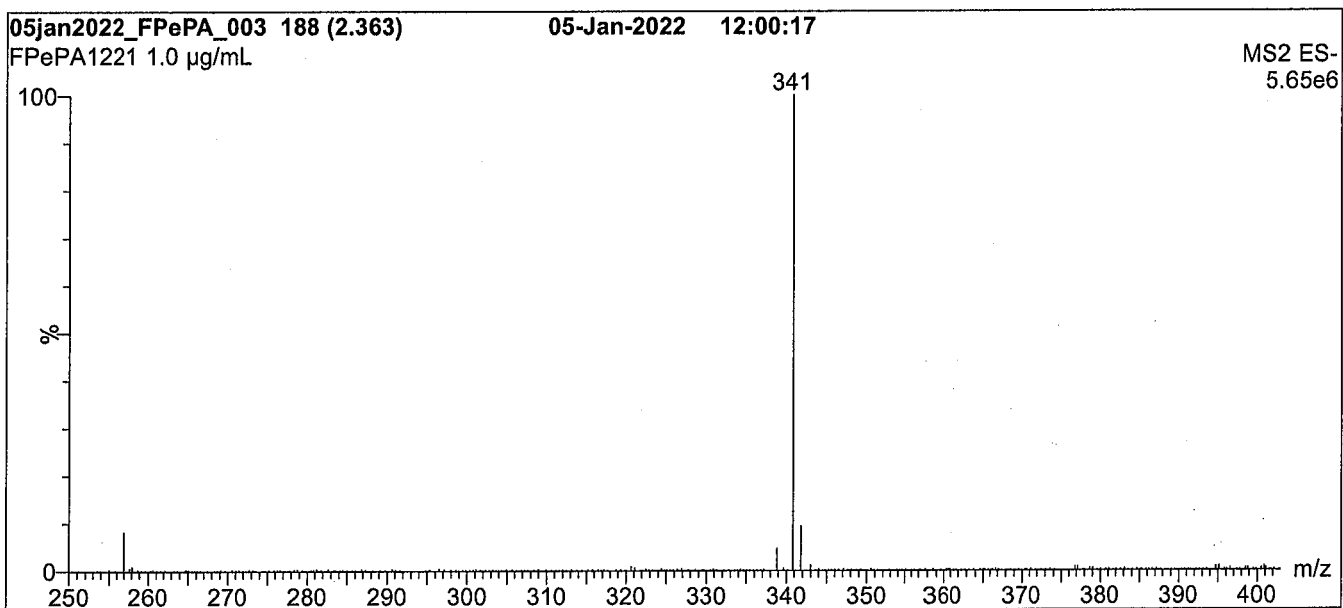
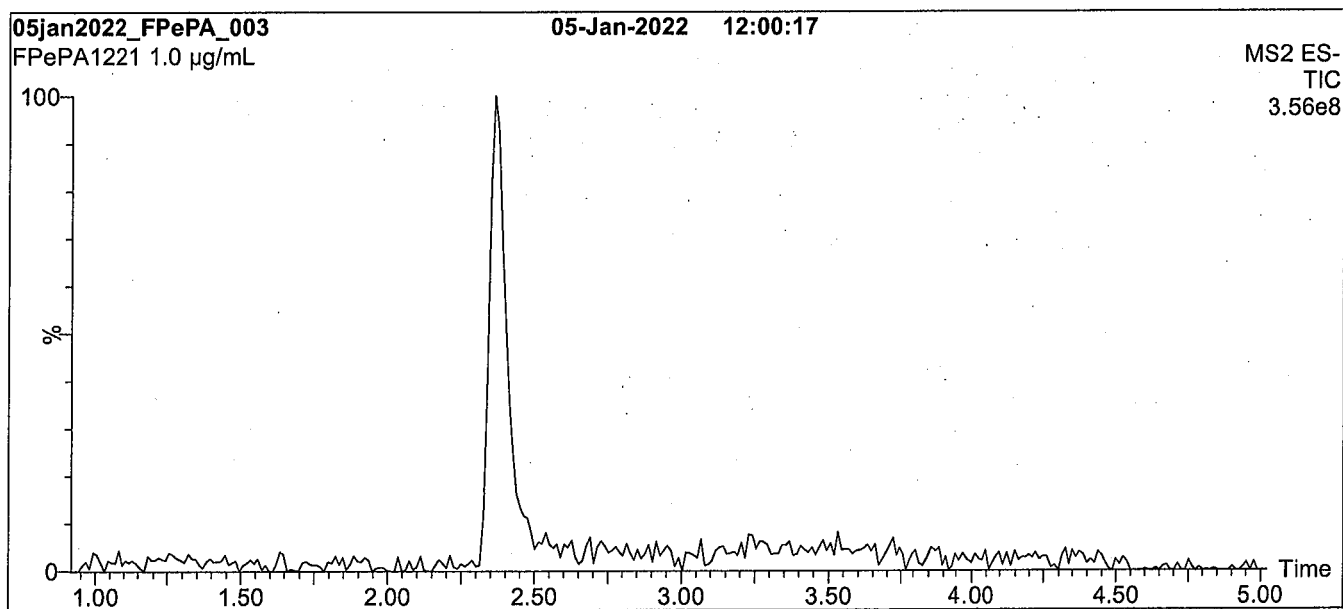
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QUALITY MANAGEMENT:

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Figure 1: FPePA; 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 RP₁₈
 1.7 µm, 2.1 x 100 mm

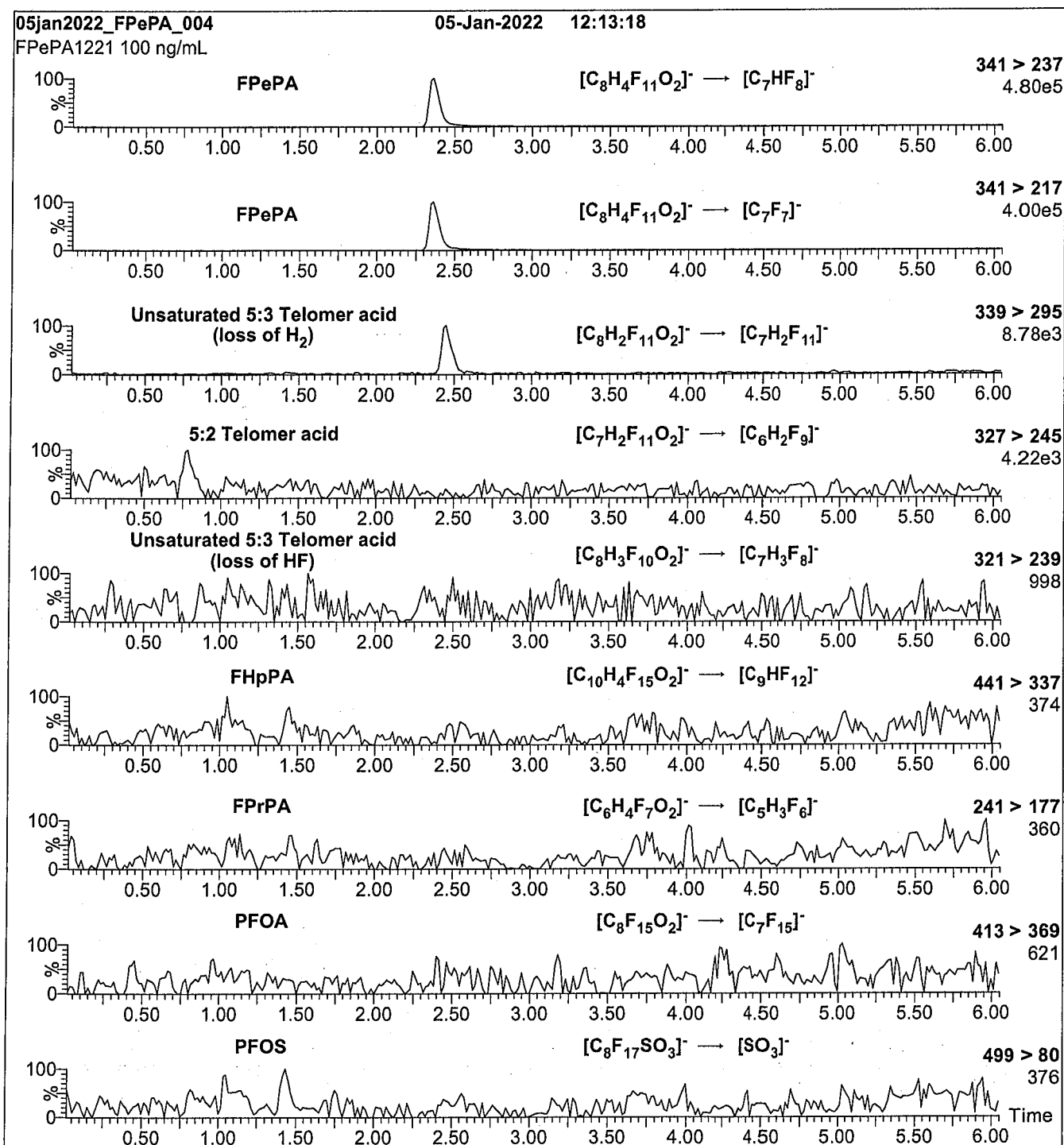
Mobile phase: Gradient
 Start: 45% H₂O / 55% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 3 min before returning to initial conditions in 0.75 min.
 Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
 Capillary Voltage (kV) = 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 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.09e-3
Collision Energy (eV) = 10

Analytical Standard Record

22C0309

Description:	PFAS - SAS FPePA 50ug/mL	Expires:	01/05/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS1221)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

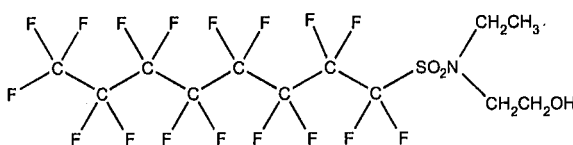
Analyte	Parent	CAS Number	Concentration	Units
5:3FTCA		914637-49-3	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol 22C0310
STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA: C₁₂H₁₀F₁₇NO₃S **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: 
 B.G. Chittim, General Manager

Date: 10/20/2021
 (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

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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.

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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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:

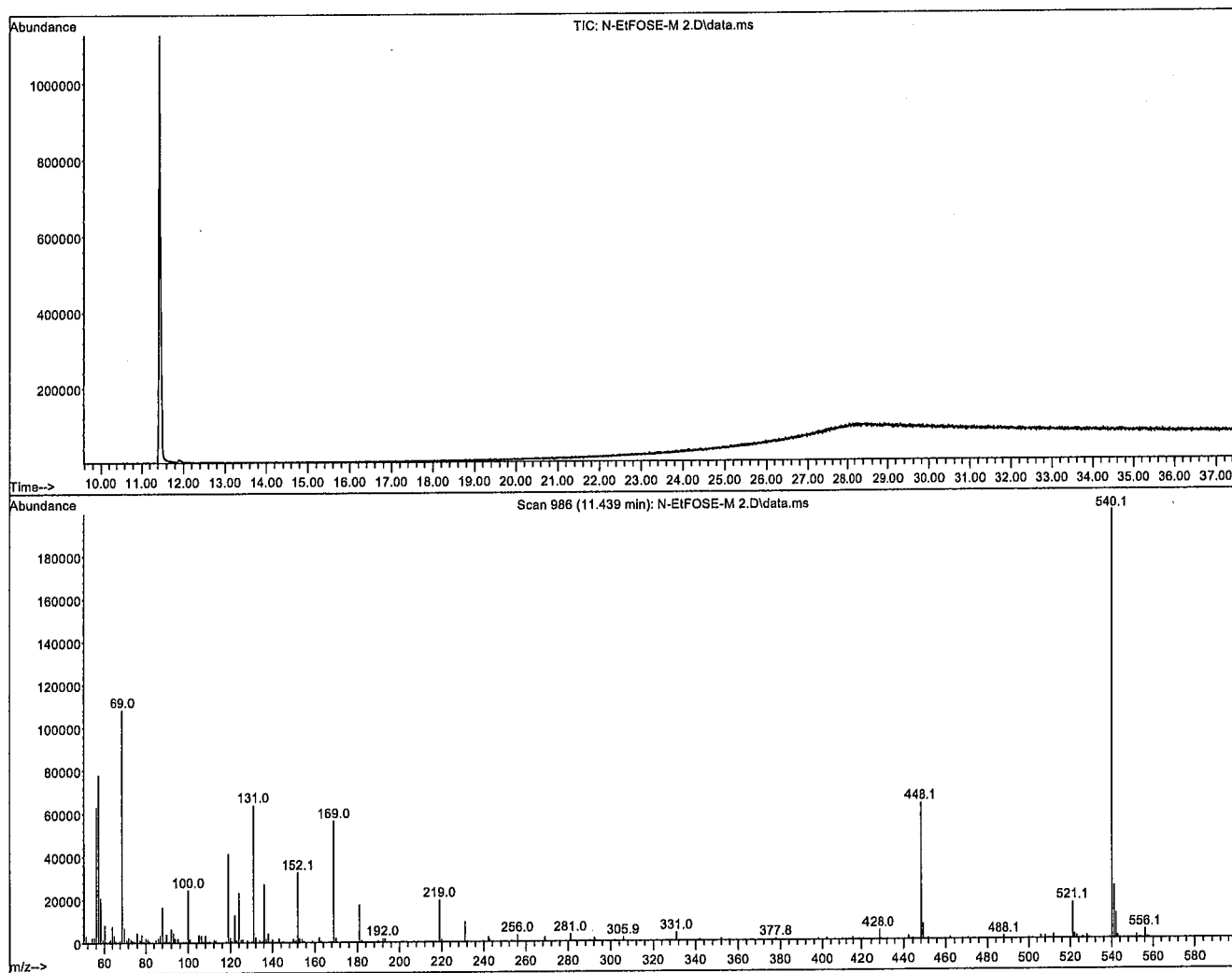
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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)**Conditions for Figure 1:**

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W

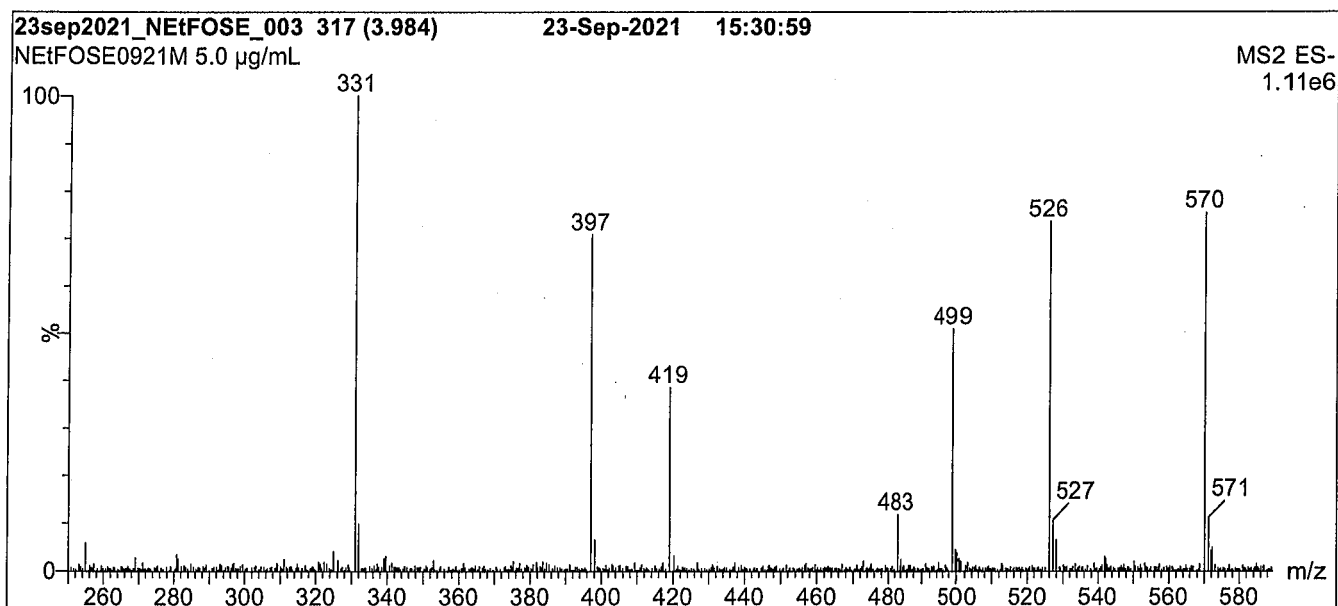
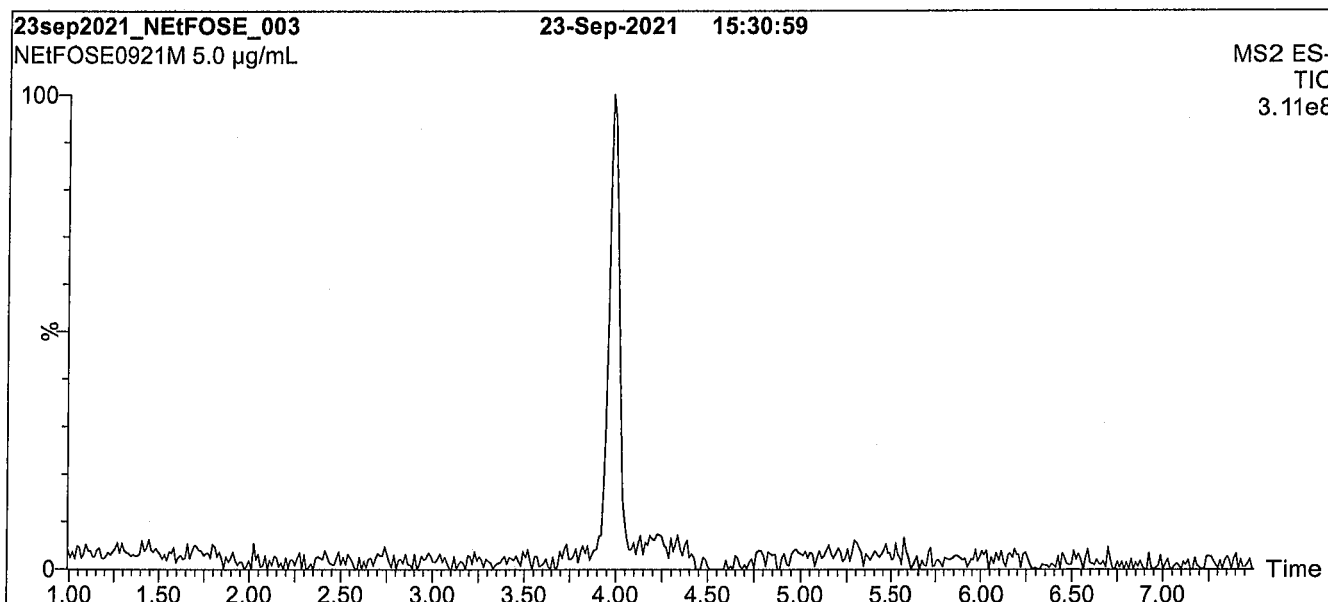
Flow: Constant at 1 mL/min

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 RP₁₈
1.7 µm, 2.1 x 100 mm

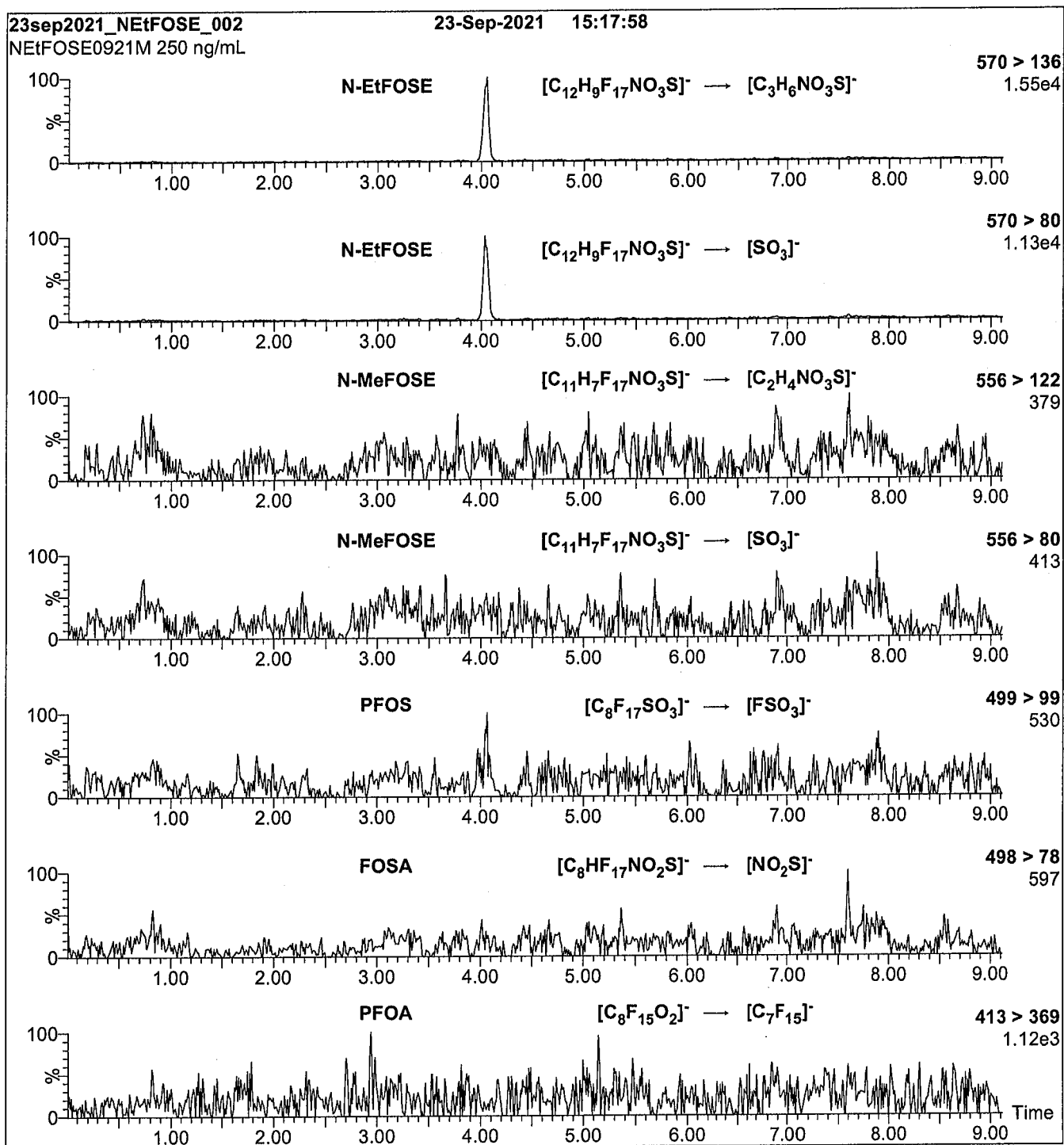
Mobile phase: Gradient
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

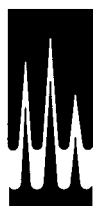
Collision Energy (eV) = 32

Analytical Standard Record

22C0310

Description:	PFAS - SAS NtFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS (Lot# PFAS0921M)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

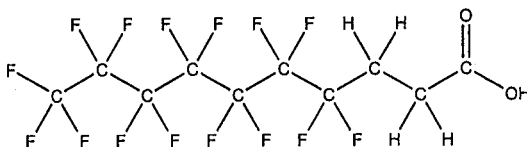
Analyte	Parent	CAS Number	Concentration	Units
NETFOSE		1691-99-2	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHpPA **LOT NUMBER:** FHpPA1020
COMPOUND: 3-Perfluoroheptyl propanoic acid **22C0311**
STRUCTURE: **CAS #:** 812-70-4



MOLECULAR FORMULA: $C_{10}H_6F_{16}O_2$ **MOLECULAR WEIGHT:** 442.12
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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:

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:

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HOMOGENEITY:

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UNCERTAINTY:

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

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

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TRACEABILITY:

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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:

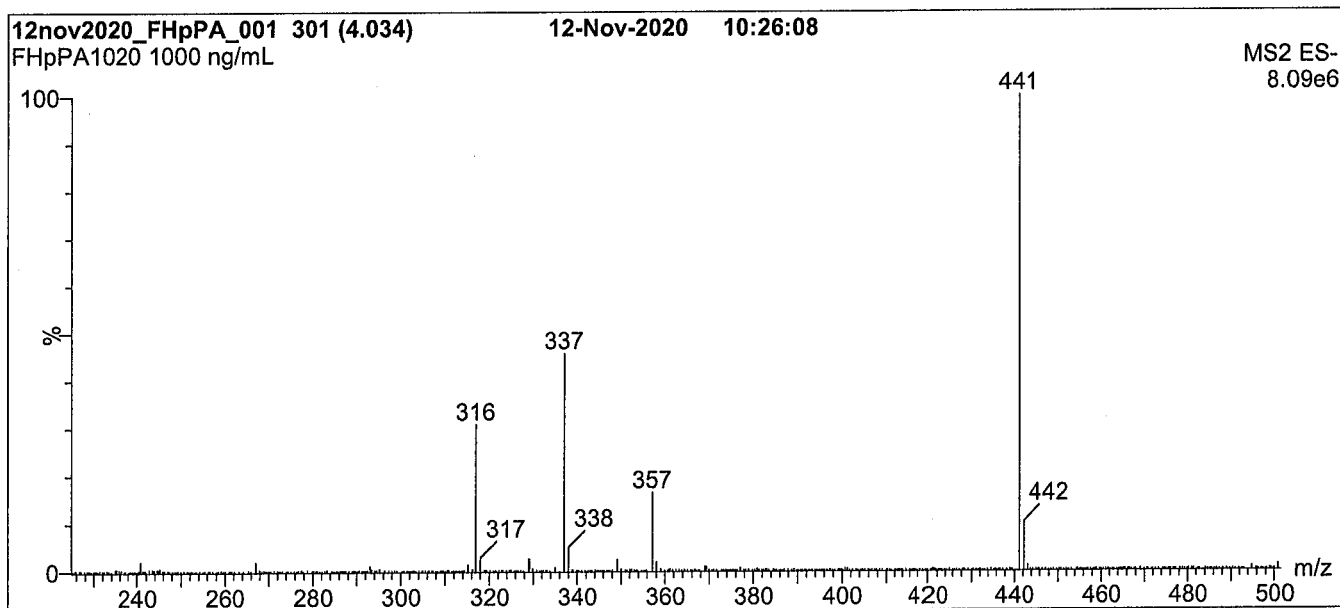
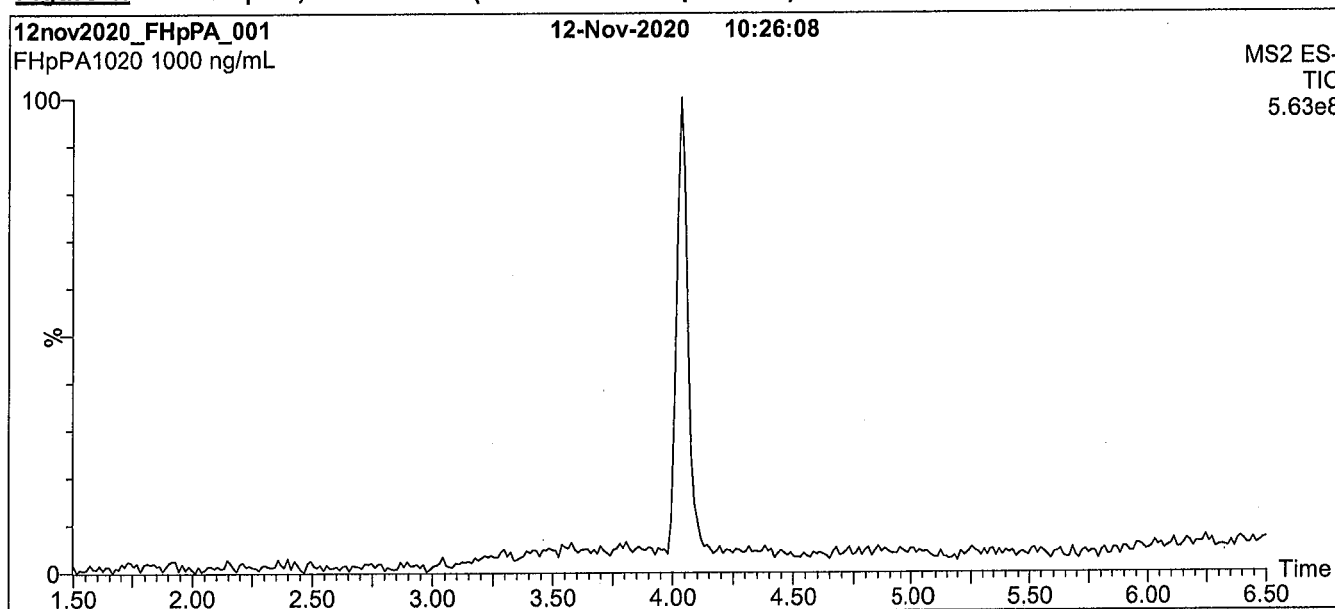
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QUALITY MANAGEMENT:

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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: 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

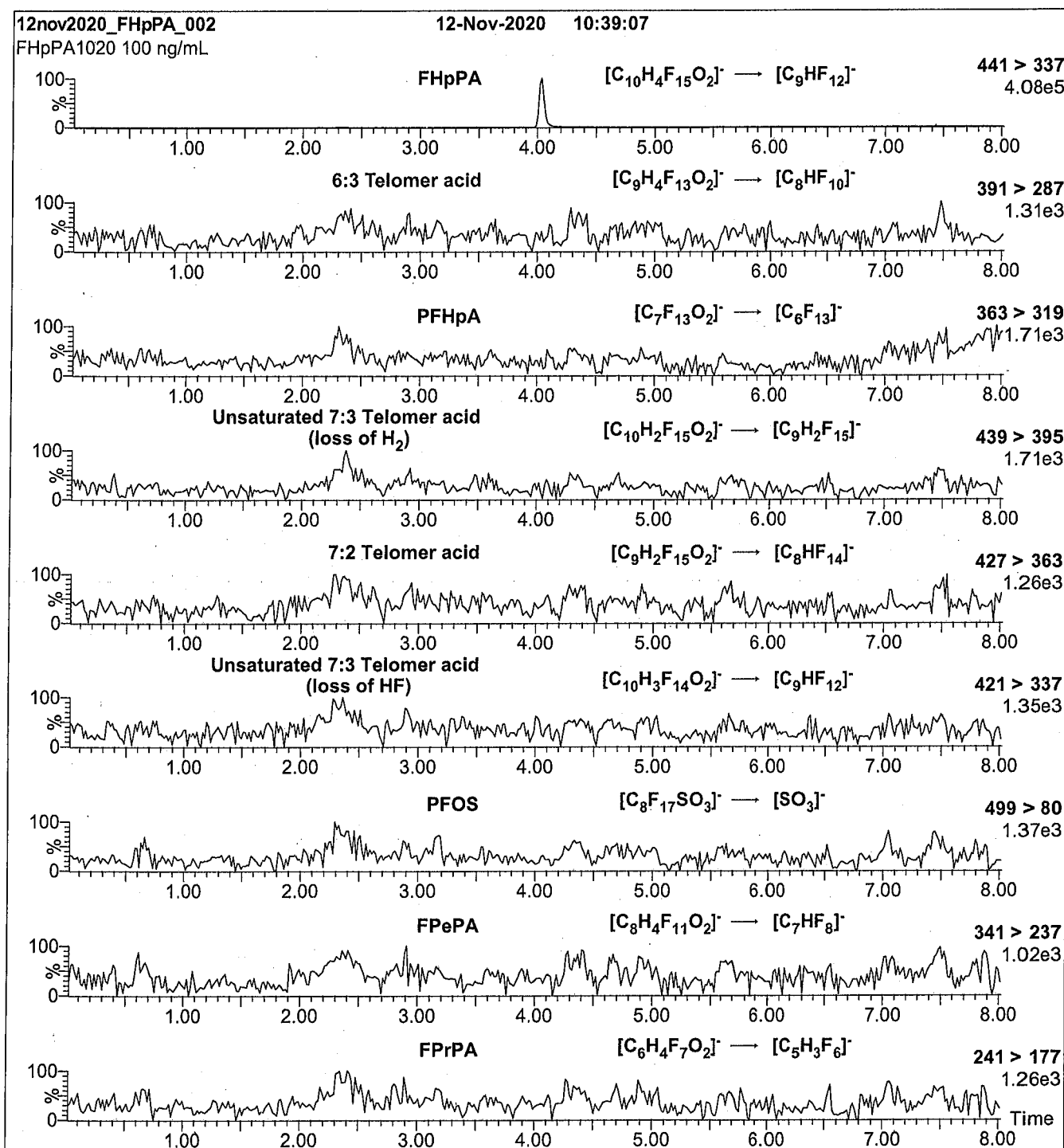
Source: Electrospray (negative)

Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 28.50

Desolvation Temperature ($^{\circ}$ 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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 8

Analytical Standard Record

22C0311

Description:	PFAS - SAS FHpPA 50ug/mL	Expires:	11/12/2025
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FHpPA1020)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL

Analytical Standard Record

22C0311

Description:	PFAS - SAS FHpPA 50ug/mL	Expires:	11/12/2025
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS (Lot# PA1020)
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

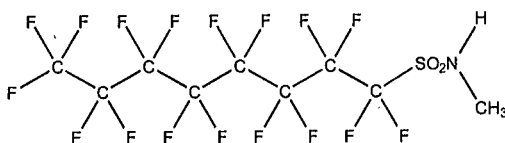
Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M **LOT NUMBER:** NMeFOSA0721M
COMPOUND: N-methylperfluoro-1-octanesulfonamide 22C0312
STRUCTURE: **CAS #:** 31506-32-8



MOLECULAR FORMULA: C₉H₄F₁₇NO₂S **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: _____

B.G. Chittim, General Manager

Date: 08/04/2021
 (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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where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

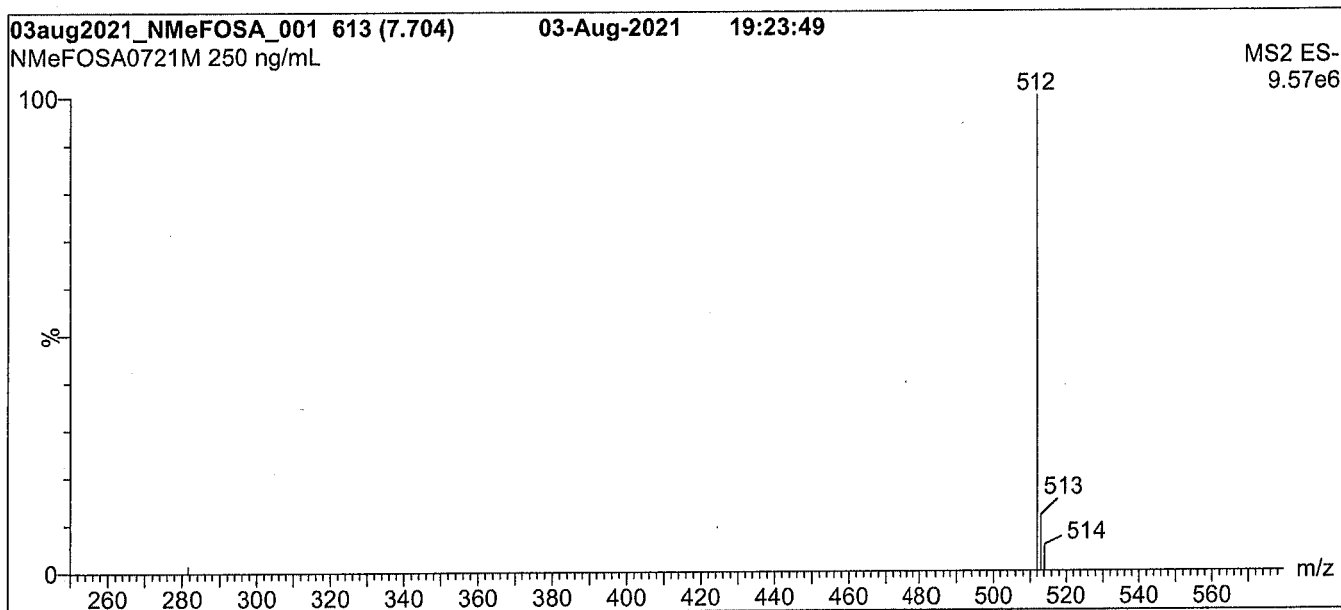
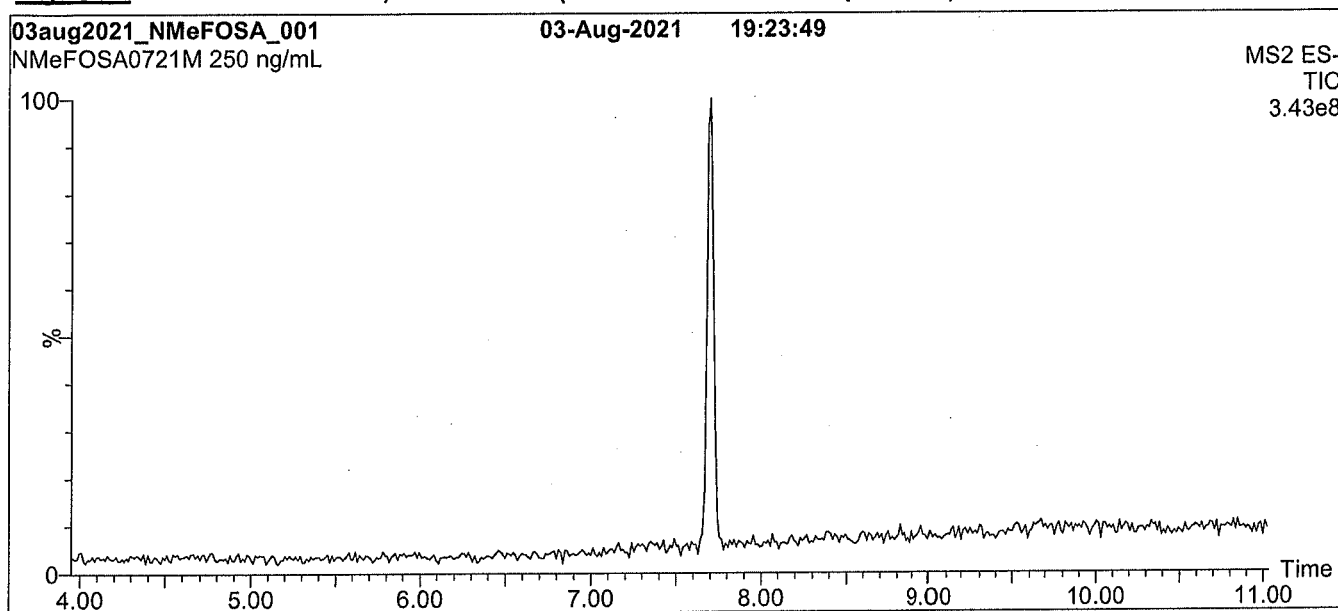
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Figure 1: N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

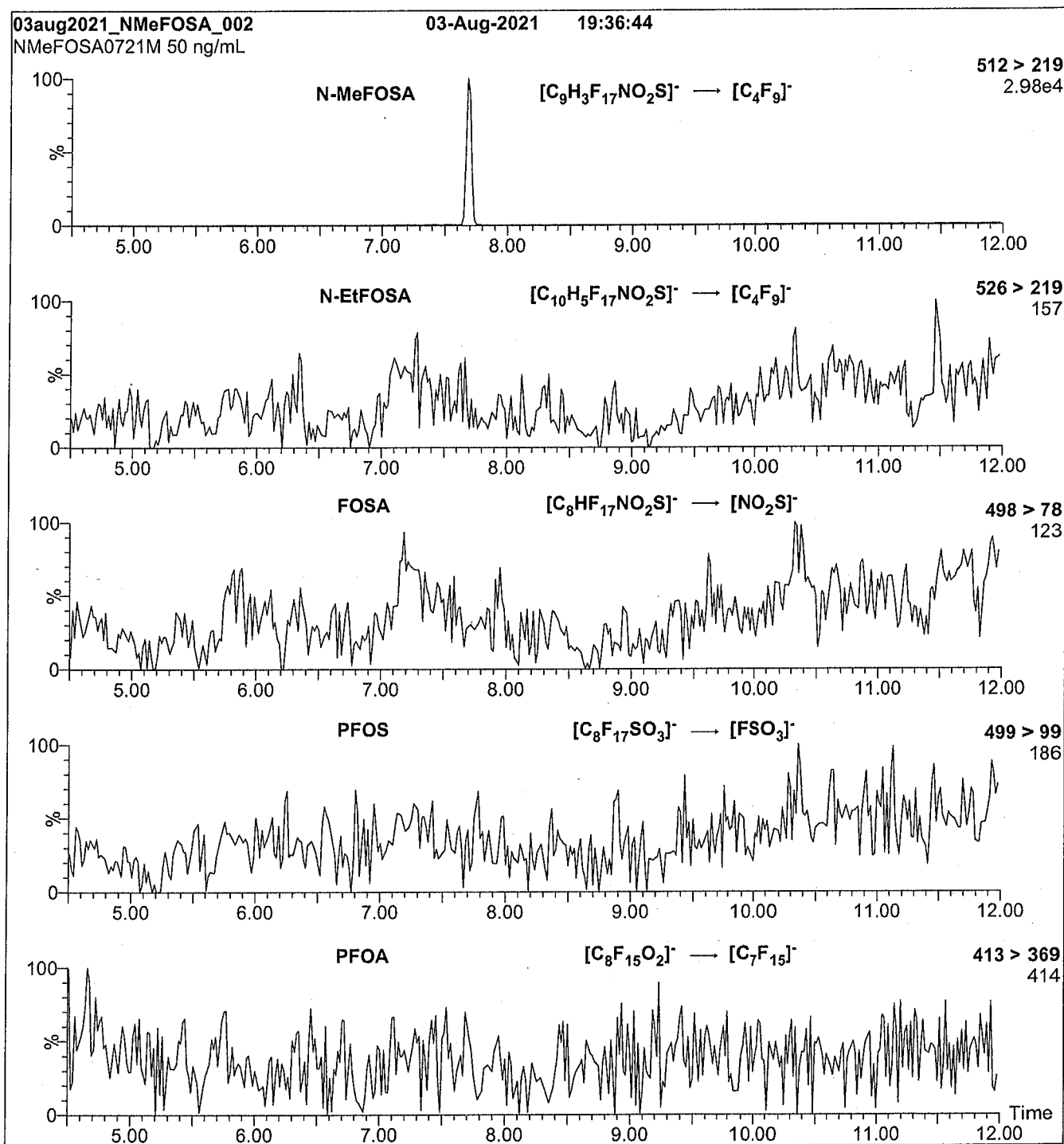
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 24

Analytical Standard Record

22C0312

Description:	PFAS - SAS NMeFOSA 50ug/mL	Expires:	08/03/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

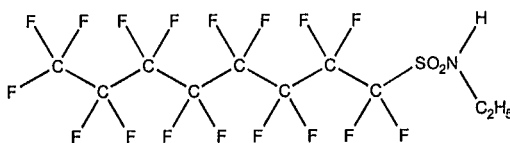
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M **LOT NUMBER:** NEtFOSA0821M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide **22C0313**
STRUCTURE: **CAS #:** 4151-50-2



MOLECULAR FORMULA: $C_{10}H_{17}F_{17}NO_2S$ **MOLECULAR WEIGHT:** 527.20
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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.

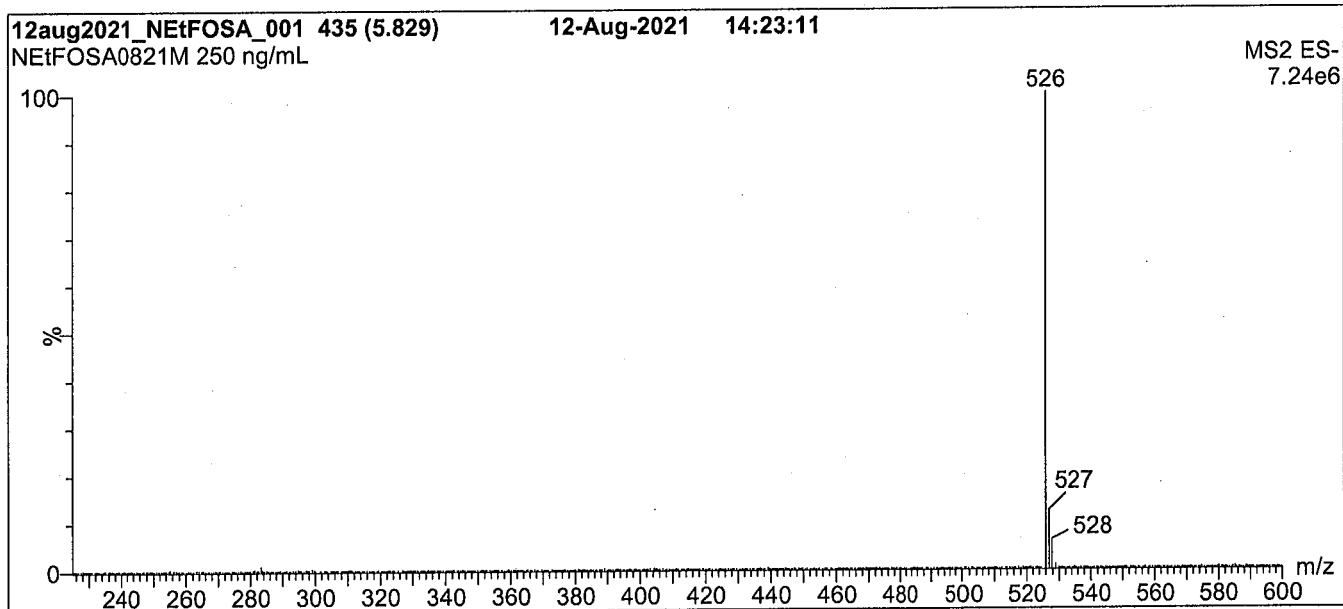
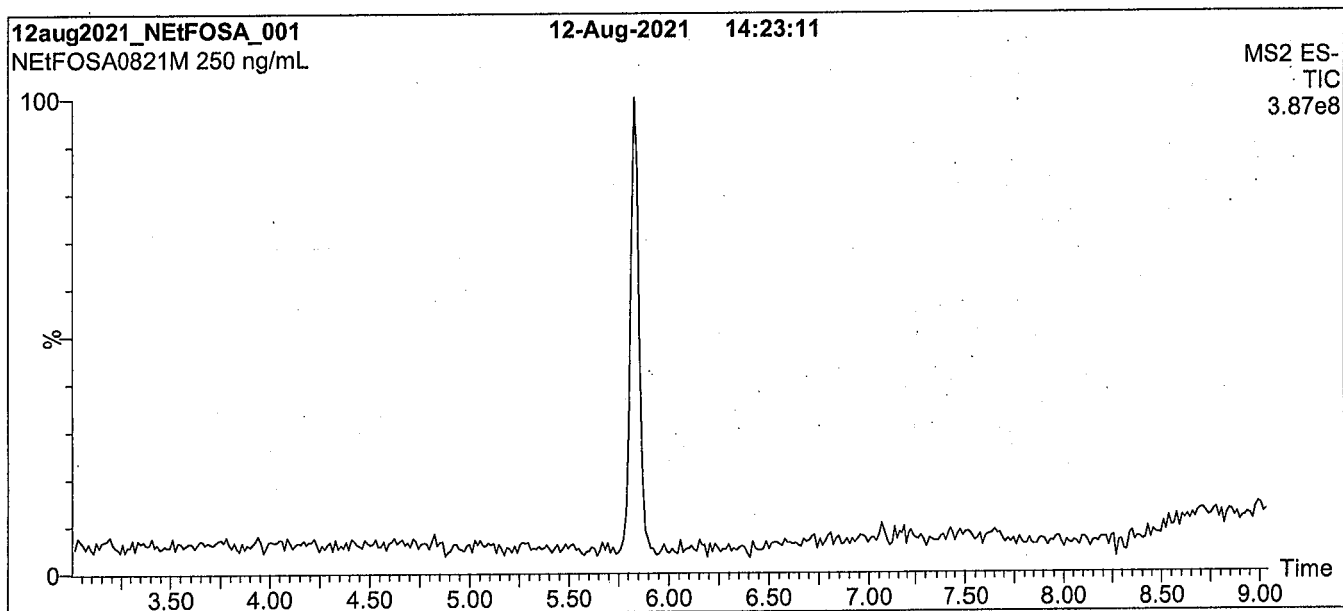
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____

B.G. Chittim, General Manager

Date: 08/16/2021
(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

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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Analytical Standard Record

22C0313

Description:	PFAS - SAS NETFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Other	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	NETFOSA0821M)
Vials:	1	Last Edit:	08/17/2022 10:49 by LYA

Analyte	Parent	CAS Number	Concentration	Units
NETFOSA		4151-50-2	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF 22F0058

**Native Replacement PFAS
Solution/Mixture**

PRODUCT CODE: PFAC-MXF
LOT NUMBER: PFACMXF0122
SOLVENT(S): Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 01/10/2022
LAST TESTED: (mm/dd/yyyy) 01/11/2022
EXPIRY DATE: (mm/dd/yyyy) 01/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

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.
- 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

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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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).



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Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

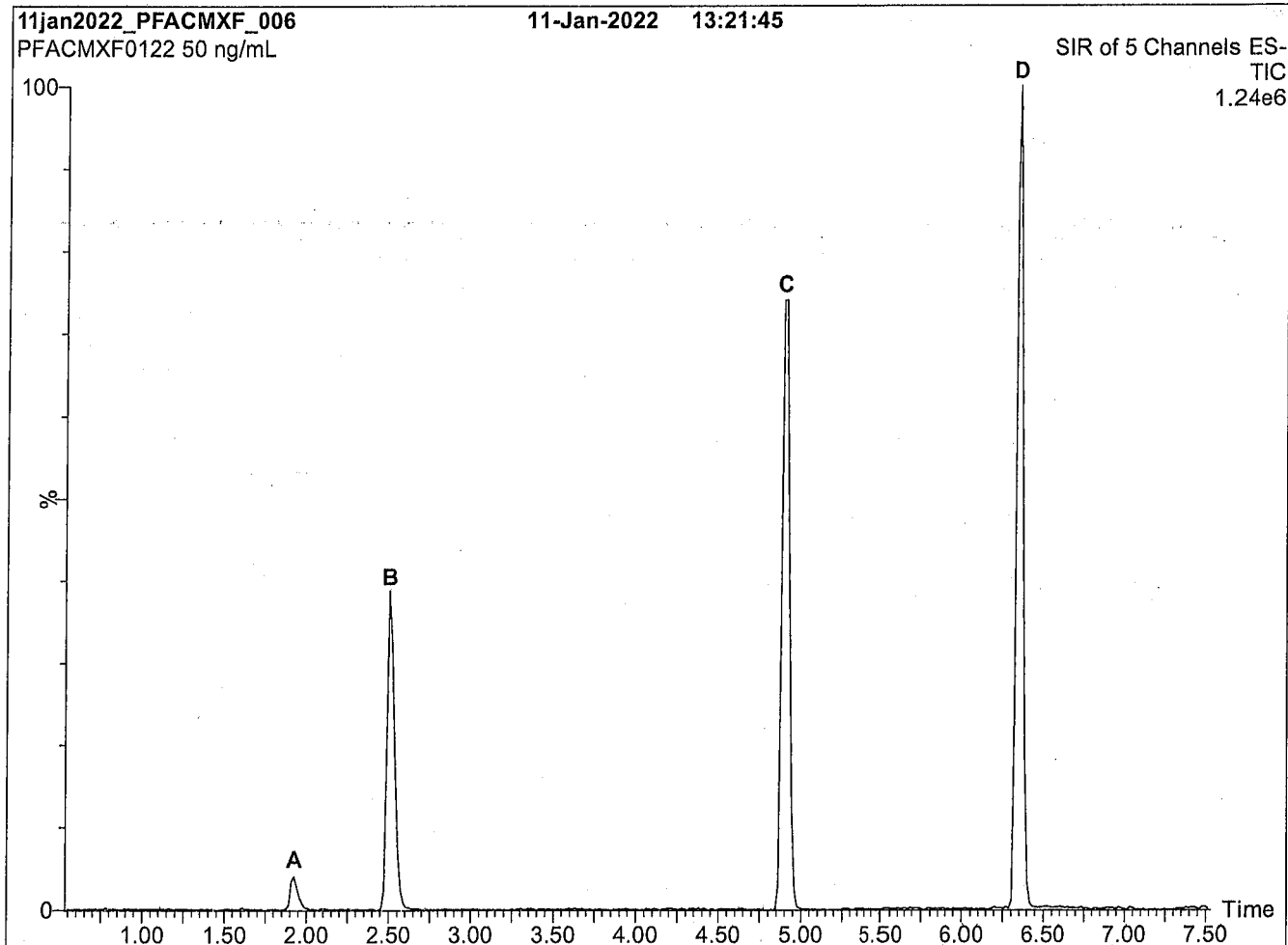
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: 

B.G. Chittim, General Manager

Date: 01/12/2022
(mm/dd/yyyy)

Figure 1: PFAC-MXF; 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

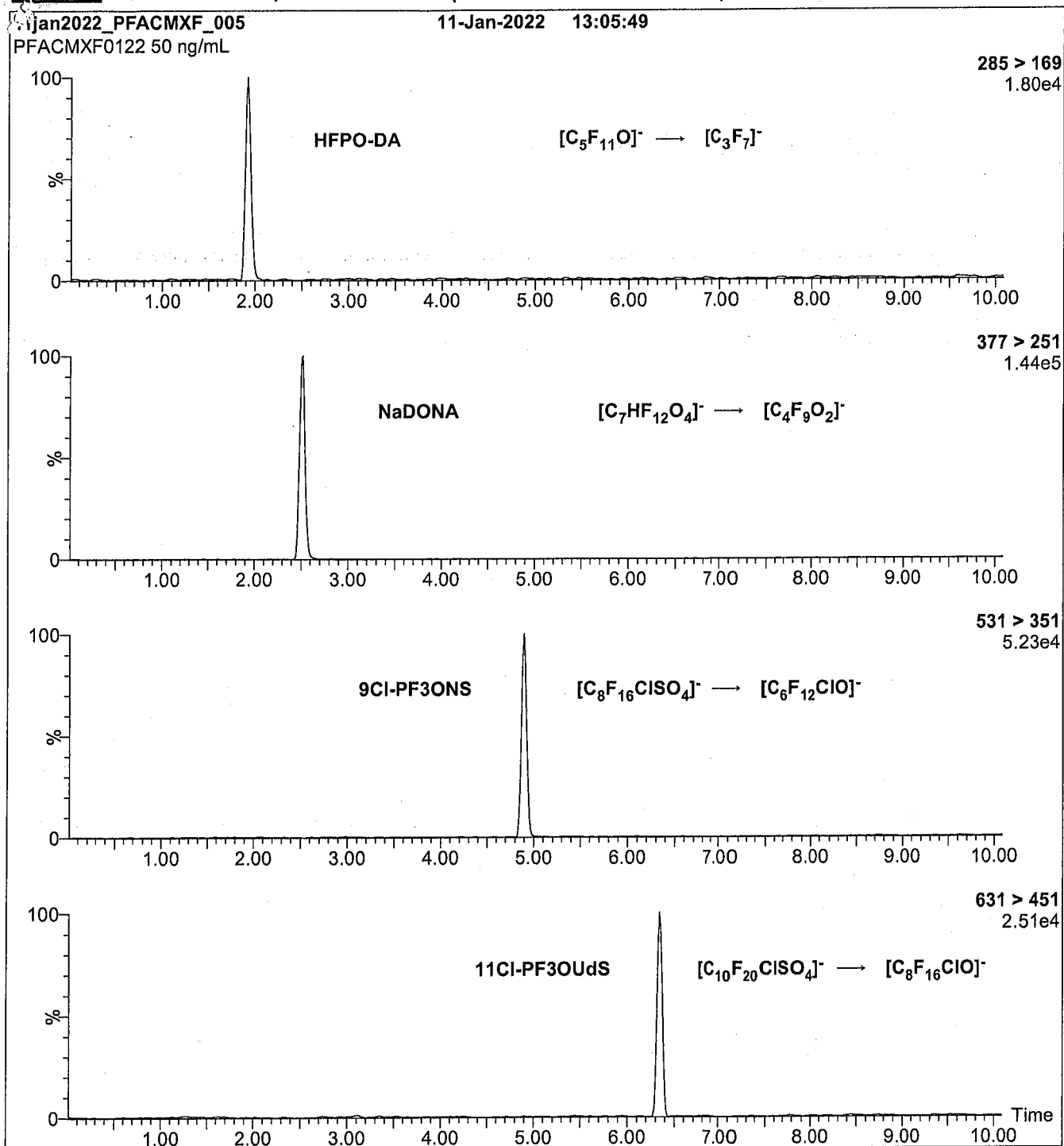
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (15-74)
Desolvation Temperature ($^{\circ}$ C) = 325
Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFAC-MXF; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (PFAC-MXF)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.43e-3

Collision Energy (eV) = 6-60 (variable)

Analytical Standard Record

22F0058

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:32 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH 22F0059

**Native Per- and Poly-fluoroalkyl Substance
Solution/Mixture**

PRODUCT CODE: PFAC-MXH
LOT NUMBER: PFACMXH0921
SOLVENT(S): Methanol / Isopropanol (2%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 09/09/2021
LAST TESTED: (mm/dd/yyyy) 09/14/2021
EXPIRY DATE: (mm/dd/yyyy) 09/14/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this 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 br-NMeFOSAA
 Table C: Isomeric Components and Percent Composition of br-NEtFOSAA
 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.

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

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Table A: PFAC-MXH; Components and Concentrations
($\mu\text{g/mL}$, $\pm 5\%$ in methanol / isopropanol (2%) / water (<1%))

Compound	Acronym	Concentration* ($\mu\text{g/mL}$)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4.00		1
Perfluoro-n-pentanoic acid	PFPeA	2.00		2
Perfluoro-n-hexanoic acid	PFHxA	1.00		5
Perfluoro-n-heptanoic acid	PFHpA	1.00		7
Perfluoro-n-octanoic acid	PFOA	1.00		11
Perfluoro-n-nonanoic acid	PFNA	1.00		14
Perfluoro-n-decanoic acid	PFDA	1.00		18
Perfluoro-n-undecanoic acid	PFUdA	1.00		23
Perfluoro-n-dodecanoic acid	PFDoA	1.00		26
Perfluoro-n-tridecanoic acid	PFTrDA	1.00		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00		29
Perfluoro-1-octanesulfonamide	FOSA	1.00		25
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: Σ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: Σ branched isomers	0.225		21
Compound	Acronym	Concentration* ($\mu\text{g/mL}$)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanedisulfonate ^c	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: Σ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanedisulfonate ^d	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: Σ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanedisulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanedisulfonate	L-PFDs	1.00	0.965	24
Sodium perfluoro-1-dodecanedisulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2Fts	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2Fts	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecanedisulfonate	8:2Fts	4.00	3.84	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

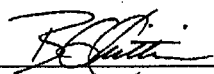
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^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.

* Concentrations have been rounded to three significant figures.

Certified By: _____


B.G. Chittim, General Manager

Date: 09/23/2021

(mm/dd/yyyy)

Table B: br-NMeFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad $ $\quad \quad \quad \text{CH}_3$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\quad \quad \quad $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: br-NEtFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad $ $\quad \quad \quad \text{C}_2\text{H}_5$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CFCF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CFCF}_2\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	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	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{C}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	0.2	
7	Other Unidentified Isomers		0.5	

* Percent of total perfluorohexanesulfonate isomers only.

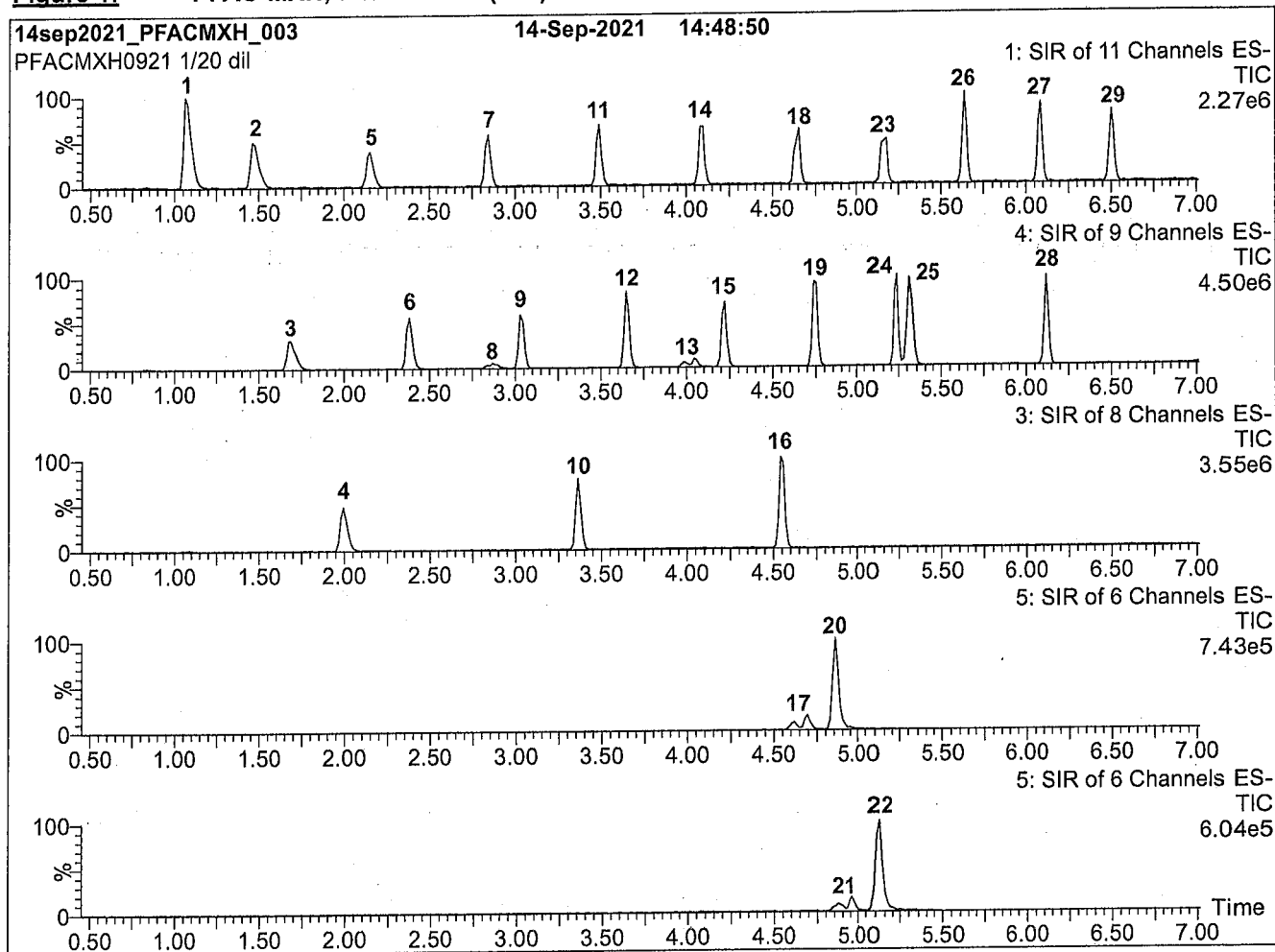
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

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

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF(SO ₃ ⁻)K ⁺ CF ₃	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF(CF ₃)SO ₃ ⁻ K ⁺ CF ₃	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF(CF ₃)CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CCF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF ₂ CCF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.07	

* Percent of total perfluorooctanesulfonate isomers only.

** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Figure 1: PFAC-MXH; 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

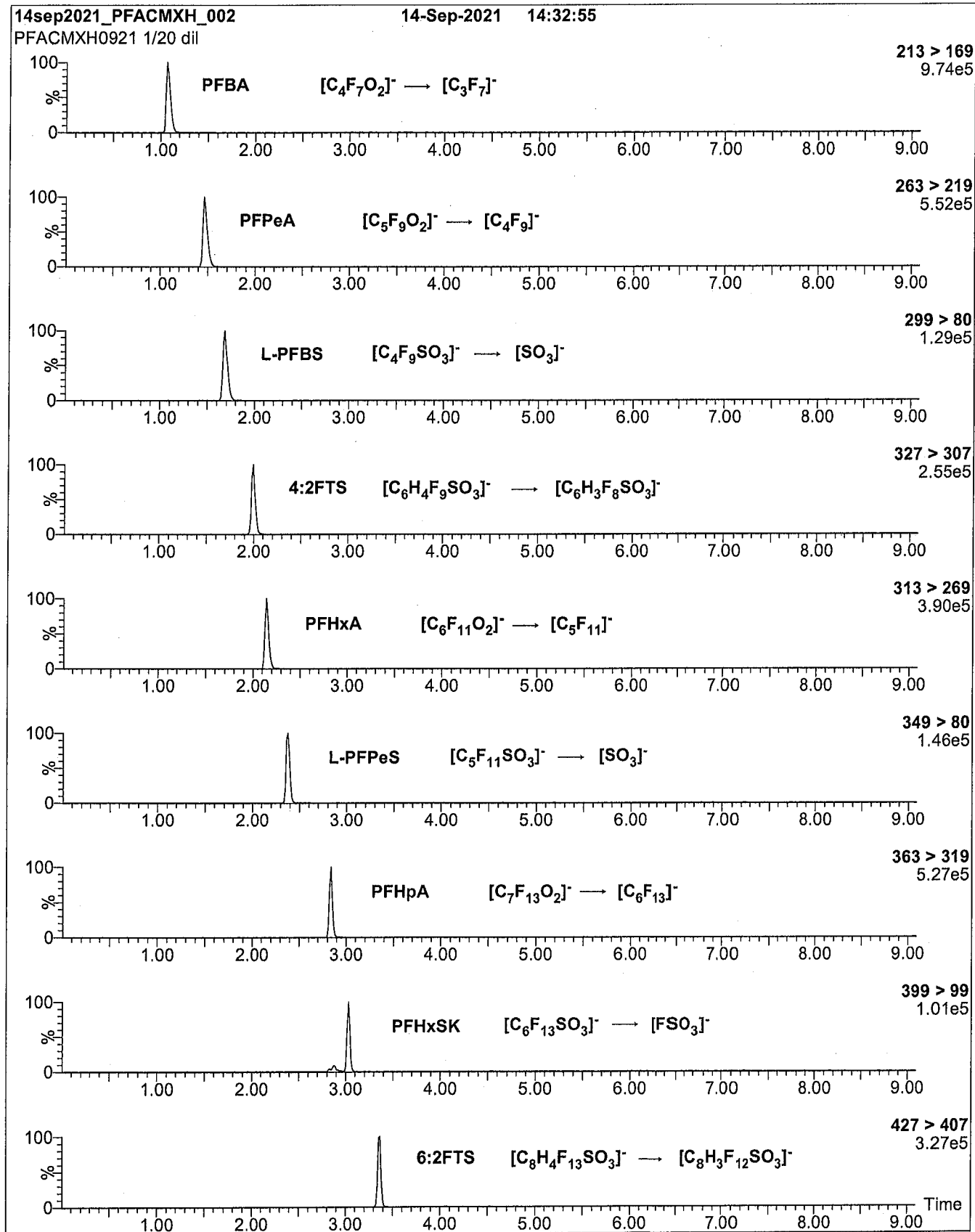
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

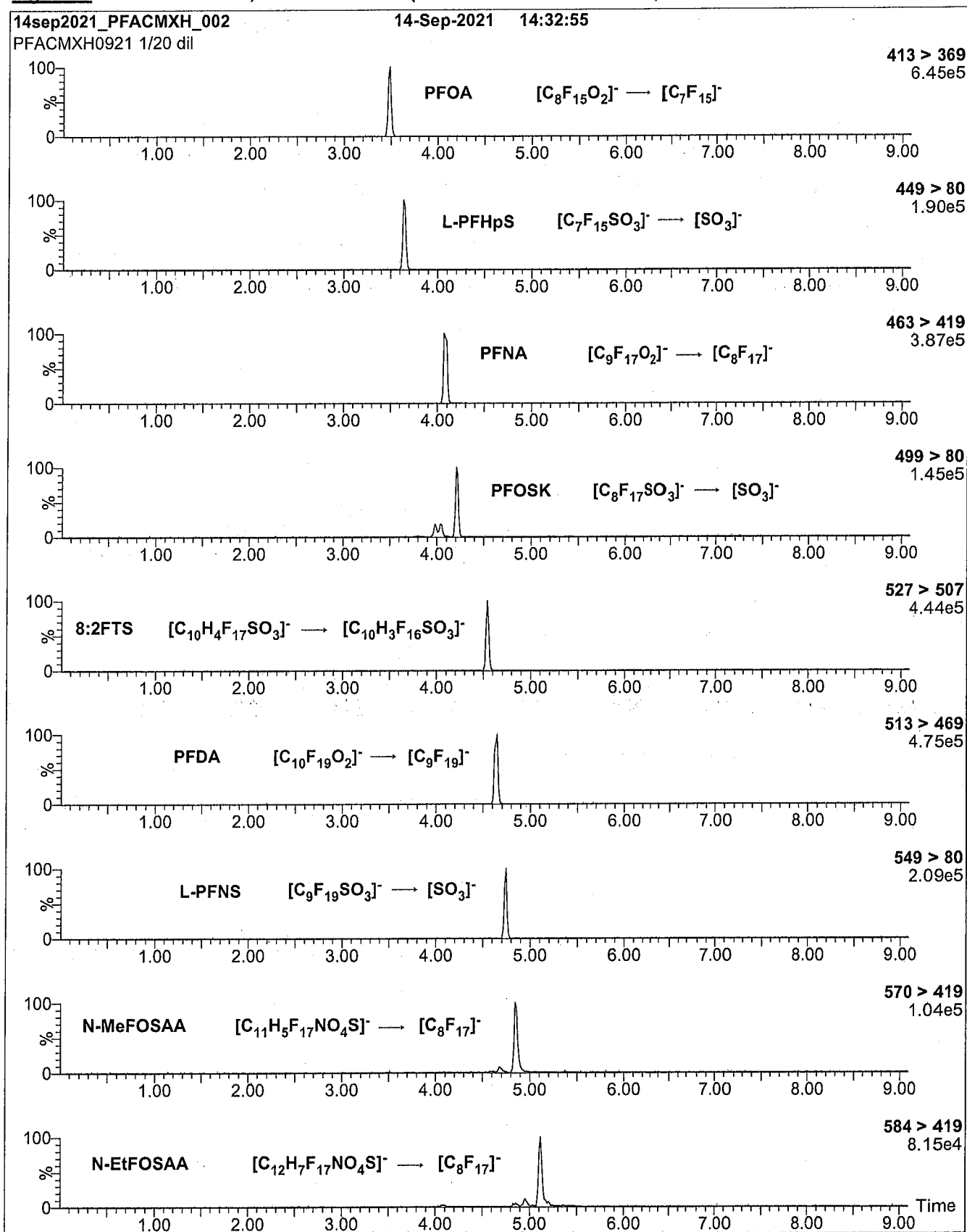
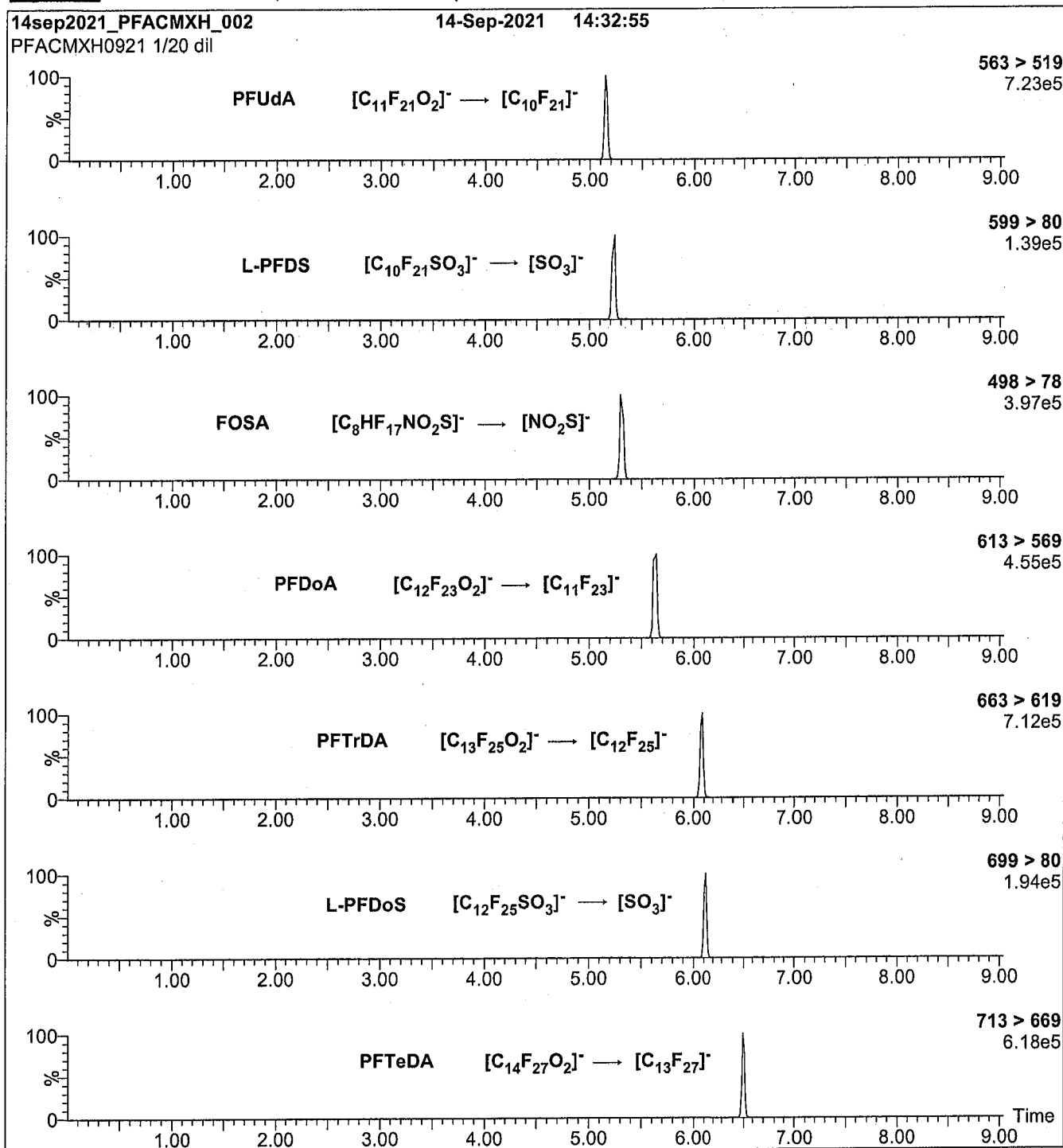
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (PFAC-MXH)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 6-60 (variable)

Analytical Standard Record

22F0059

Description:	PFAS - MIX MXH 2ug/mL	Expires:	09/14/2026
Standard Type:	Other	Prepared:	09/09/2021
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:33 by DAG

Analyte	Parent	CAS Number	Concentration	Units
4:2FTS		757124-72-4	3.75	ug/mL
6:2FTS		27619-97-2	3.8	ug/mL
8:2FTS		39108-34-4	3.84	ug/mL
NETFOSAA		2991-50-6	1	ug/mL
NMeFOSAA		2355-31-9	1	ug/mL
PFBA		375-22-4	4	ug/mL
PFBS		375-73-5	0.887	ug/mL
PFDA		335-76-2	1	ug/mL
PFDOA		307-55-1	1	ug/mL
PFDOS		79780-39-5	0.97	ug/mL
PFDS		335-77-3	0.965	ug/mL
PFHPA		375-85-9	1	ug/mL
PFHPS		375-92-8	0.953	ug/mL
PFHXA		307-24-4	1	ug/mL
PFHXS		355-46-4	0.914	ug/mL
PFNA		375-95-1	1	ug/mL
PFNS		68259-12-1	0.962	ug/mL
PFOA		335-67-1	1	ug/mL
PFOS		1763-23-1	0.928	ug/mL
PFOSA		754-91-6	1	ug/mL
PFPEA		2706-90-3	2	ug/mL
PFPEs		630402-22-1	0.941	ug/mL
PFTEDA		376-06-7	1	ug/mL
PFTRDA		72629-94-8	1	ug/mL
PFUnA		2058-94-8	1	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG 22F0061

**Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture**

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG0222
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	02/07/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	02/22/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	02/22/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

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.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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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, \dots, x_n on which it depends is:

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

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 $\pm 5\%$ (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).




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: PFAC-MXG; Components and Concentrations (ng/mL; \pm 5% in methanol/water (<1%))

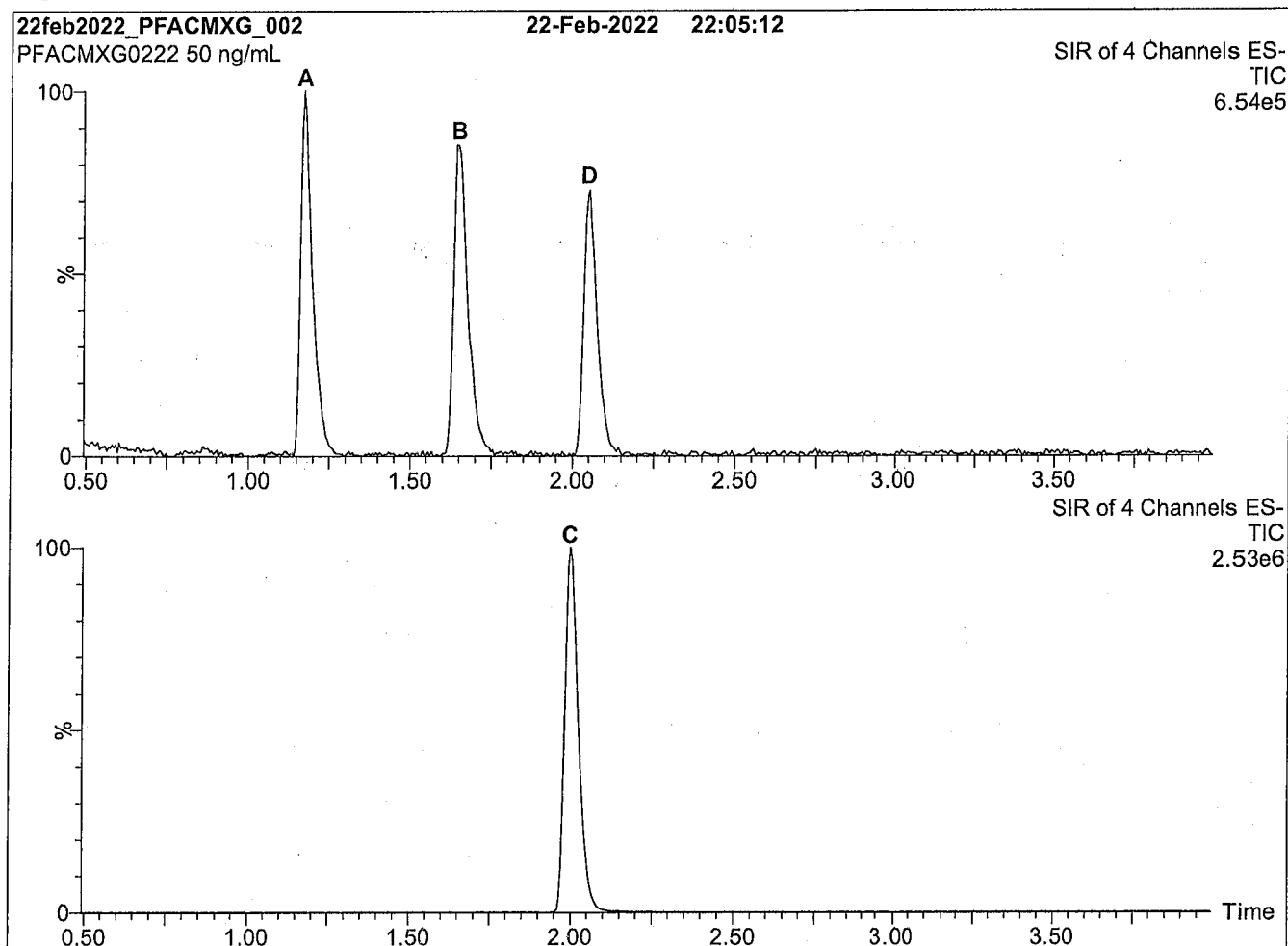
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____


B.G. Chittim, General Manager

Date: 03/03/2022
(mm/dd/yyyy)

Figure 1: PFAC-MXG; 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

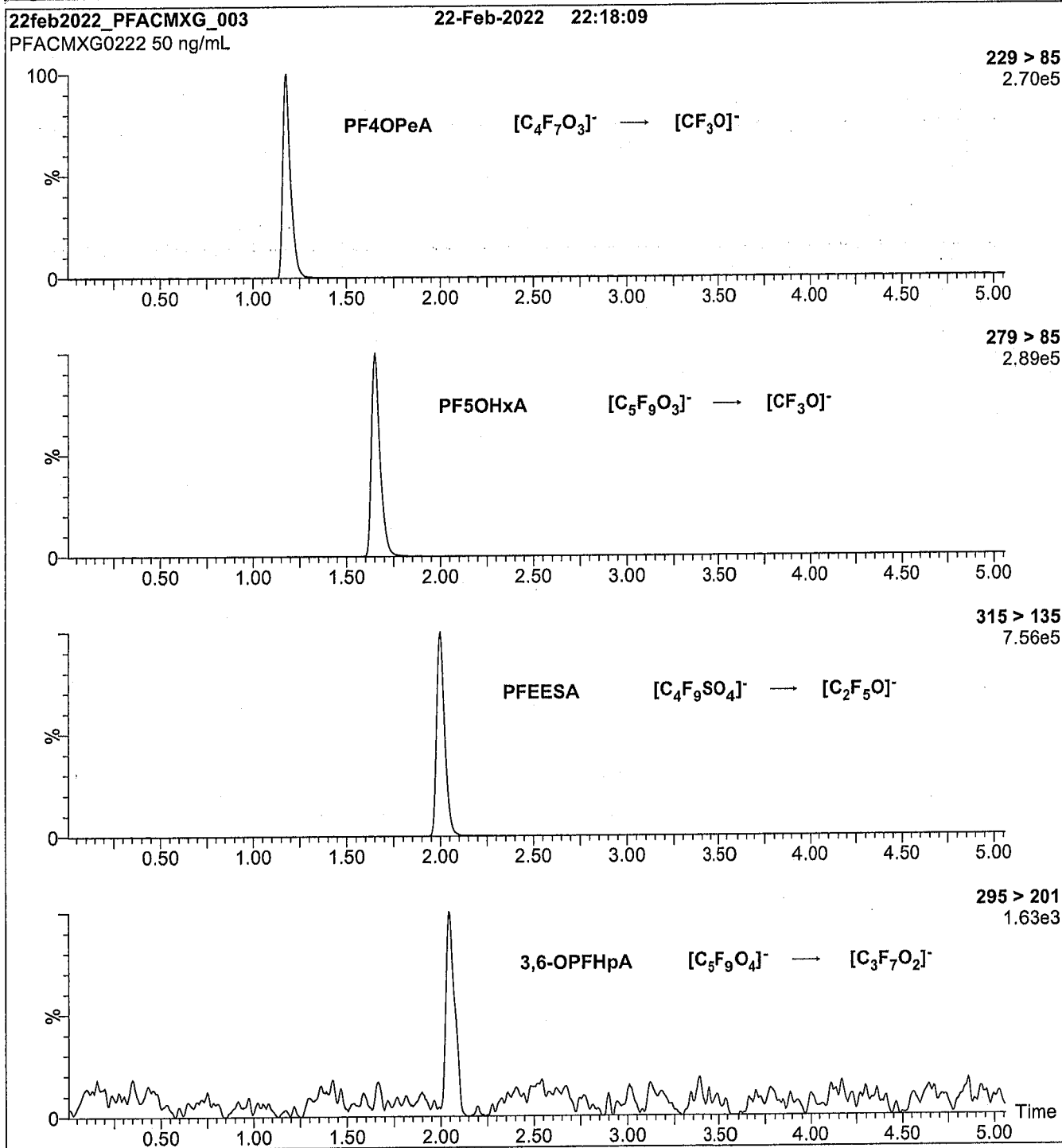
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = variable (15-35)
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

Figure 2: PFAC-MXG; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (PFAC-MXG)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 8-48 (variable)

Analytical Standard Record

22F0061

Description:	PFAS - MIX MXG 2ug/mL	Expires:	02/22/2027
Standard Type:	Other	Prepared:	02/07/2022
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG
Comments:	contains NFDHA PFMBA PFMPA PFEESA @ 2ug/mL		

Analyte	Parent	CAS Number	Concentration	Units
NFDHA		151772-58-6	2	ug/mL
PFEESA		113507-82-7	1.78	ug/mL
PFMBA		863090-89-5	2	ug/mL
PFMPA		377-73-1	2	ug/mL

Analytical Standard Record

22I0153

Description:	PFAS - MIX 1633 200ng/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	09/13/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	6	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE	22C0307	24448-09-7	0.8	ug/mL
3:3FTCA	22C0308	113507-82-7	0.8	ug/mL
5:3FTCA	22C0309	914637-49-3	0.8	ug/mL
NETFOSE	22C0310	1691-99-2	0.8	ug/mL
7:3FTCA	22C0311	812-70-4	0.8	ug/mL
NMeFOSA	22C0312	31506-32-8	0.8	ug/mL
NETFOSA	22C0313	4151-50-2	0.8	ug/mL
11CL-PF3OUDS	22F0058	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22F0058	756426-58-1	0.374	ug/mL
ADONA	22F0058	919005-14-4	0.378	ug/mL
HFPO-DA	22F0058	13252-13-6	0.4	ug/mL
4:2FTS	22F0059	757124-72-4	0.75	ug/mL
6:2FTS	22F0059	27619-97-2	0.76	ug/mL
8:2FTS	22F0059	39108-34-4	0.768	ug/mL
NETFOSAA	22F0059	2991-50-6	0.2	ug/mL
NMeFOSAA	22F0059	2355-31-9	0.2	ug/mL
PFBA	22F0059	375-22-4	0.8	ug/mL
PFBS	22F0059	375-73-5	0.177	ug/mL
PFDA	22F0059	335-76-2	0.2	ug/mL
PFDOA	22F0059	307-55-1	0.2	ug/mL
PFDOS	22F0059	79780-39-5	0.194	ug/mL
PFDS	22F0059	335-77-3	0.193	ug/mL
PFHPA	22F0059	375-85-9	0.2	ug/mL
PFHPS	22F0059	375-92-8	0.191	ug/mL
PFHXA	22F0059	307-24-4	0.2	ug/mL
PFHXS	22F0059	355-46-4	0.183	ug/mL
PFNA	22F0059	375-95-1	0.2	ug/mL
PFNS	22F0059	68259-12-1	0.192	ug/mL
PFOA	22F0059	335-67-1	0.2	ug/mL
PFOS	22F0059	1763-23-1	0.186	ug/mL
PFOSA	22F0059	754-91-6	0.2	ug/mL
PFPEA	22F0059	2706-90-3	0.4	ug/mL
PFPEs	22F0059	630402-22-1	0.188	ug/mL
PFTEDA	22F0059	376-06-7	0.2	ug/mL
PFTRDA	22F0059	72629-94-8	0.2	ug/mL
PFUnA	22F0059	2058-94-8	0.2	ug/mL
NFDHA	22F0061	151772-58-6	0.4	ug/mL
PFEESA	22F0061	113507-82-7	0.356	ug/mL
PFMBA	22F0061	863090-89-5	0.4	ug/mL
PFMPA	22F0061	377-73-1	0.4	ug/mL

Analytical Standard Record

22I0153

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22C0307	PFAS - SAS N-MeFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0308	PFAS - SAS FPrPA 50ug/mL	03/15/2022	Wellington Laboratories	FPrPA0122	02/03/2027	03/15/2022 15:59	by DAG	0.096
22C0309	PFAS - SAS FPePA 50ug/mL	03/15/2022	Wellington Laboratories	FPePA1221	01/05/2027	03/15/2022 15:59	by DAG	0.096
22C0310	PFAS - SAS NEtFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0311	PFAS - SAS FHpPA 50ug/mL	03/15/2022	Wellington Laboratories	HHpPA1020	11/12/2025	03/15/2022 16:00	by DAG	0.096
22C0312	PFAS - SAS NMeFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSA0721M	08/03/2026	03/15/2022 16:00	by DAG	0.096
22C0313	PFAS - SAS NEtFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSA0821M	08/12/2026	08/17/2022 10:49	by LYA	0.096
22F0058	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	09/15/2022 09:32	by DAG	1.2
22F0059	PFAS - MIX MXH 2ug/mL	09/09/2021	Wellington Laboratories	PFACMXH0921	09/14/2026	09/15/2022 09:33	by DAG	1.2
22F0061	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	09/15/2022 09:34	by DAG	1.2



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG0222
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	02/07/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	02/22/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	02/22/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

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.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Table A: PFAC-MXG; Components and Concentrations (ng/mL; \pm 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 03/03/2022
(mm/dd/yyyy)

Analytical Standard Record

22I0342

Description: PFAS - MIX MXG 2ug/mL Expires: 02/22/2027
Standard Type: Other Prepared: 02/07/2022
Solvent: MeOH Prepared By: Dipti Gokal
Final Volume (mls): 1 Department: PFAS
Vials: 1 Last Edit: 09/26/2022 09:55 by DAG
Comments: contains NFDHA PFMBA PFMPA PFEESA @ 2ug/mL

Analyte	Parent	CAS Number	Concentration	Units
NFDHA		151772-58-6	2	ug/mL
PFEESA		113507-82-7	1.78	ug/mL
PFMBA		863090-89-5	2	ug/mL
PFMPA		377-73-1	2	ug/mL

Analytical Standard Record

22I0343

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	09/26/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:47 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXF
<u>LOT NUMBER:</u>	PFACMXF0122
<u>SOLVENT(S):</u>	Methanol / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	01/10/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	01/11/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	01/11/2025
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

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.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxananoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 01/12/2022
(mm/dd/yyyy)

Analytical Standard Record

22I0343

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:54 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

APPL ID:2210334

PFAC-MXH

Native PFAS
Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXH
<u>LOT NUMBER:</u>	PFACMXH0822
<u>SOLVENT(S):</u>	Methanol/Isopropanol (2%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/05/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/08/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/08/2027
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this 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.

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Table A: PFAC-MXH; Components and Concentrations
(ng/mL, \pm 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		24
Perfluoro-n-dodecanoic acid	PFDoA	1000		26
Perfluoro-n-tridecanoic acid	PFTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		23
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: Σ branched isomers	240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: Σ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexadisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: Σ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: Σ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decadisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	8:2FTS	4000	3840	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

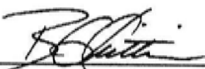
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^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.

* Concentrations have been rounded to three significant figures.

Certified By: _____


B.G. Chittim, General Manager

Date: 08/09/2022

(mm/dd/yyyy)

Analytical Standard Record

22I0344

Description:	PFAS - MIX MXH 1-4ug/mL	Expires:	08/08/2027
Standard Type:	Other	Prepared:	08/05/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
4:2FTS		757124-72-4	3.75	ug/mL
6:2FTS		27619-97-2	3.8	ug/mL
8:2FTS		39108-34-4	3.84	ug/mL
NETFOSAA		2991-50-6	1	ug/mL
NMeFOSAA		2355-31-9	1	ug/mL
PFBA		375-22-4	4	ug/mL
PFBS		375-73-5	0.887	ug/mL
PFDA		335-76-2	1	ug/mL
PFDOA		307-55-1	1	ug/mL
PFDOS		79780-39-5	0.97	ug/mL
PFDS		335-77-3	0.965	ug/mL
PFHPA		375-85-9	1	ug/mL
PFHPS		375-92-8	0.953	ug/mL
PFHXA		307-24-4	1	ug/mL
PFHXS		355-46-4	0.914	ug/mL
PFNA		375-95-1	1	ug/mL
PFNS		68259-12-1	0.962	ug/mL
PFOA		335-67-1	1	ug/mL
PFOS		1763-23-1	0.928	ug/mL
PFOSA		754-91-6	1	ug/mL
PFPEA		2706-90-3	2	ug/mL
PFPEs		630402-22-1	0.941	ug/mL
PFTEDA		376-06-7	1	ug/mL
PFTRDA		72629-94-8	1	ug/mL
PFUnA		2058-94-8	1	ug/mL

Analytical Standard Record

22J0448

Description:	PFAS - MIX 1633 20ng/mL	Expires:	04/25/2023
Standard Type:	Analyte Spike	Prepared:	10/27/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	10/27/2022 08:51 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS	22I0153	763051-92-9	0.0378	ug/mL
3:3FTCA	22I0153	113507-82-7	0.08	ug/mL
4:2FTS	22I0153	757124-72-4	0.075	ug/mL
5:3FTCA	22I0153	914637-49-3	0.08	ug/mL
6:2FTS	22I0153	27619-97-2	0.076	ug/mL
7:3FTCA	22I0153	812-70-4	0.08	ug/mL
8:2FTS	22I0153	39108-34-4	0.0768	ug/mL
9CL-PF3ONS	22I0153	756426-58-1	0.0374	ug/mL
ADONA	22I0153	919005-14-4	0.0378	ug/mL
HFPO-DA	22I0153	13252-13-6	0.04	ug/mL
NETFOSA	22I0153	4151-50-2	0.08	ug/mL
NETFOSAA	22I0153	2991-50-6	0.02	ug/mL
NETFOSE	22I0153	1691-99-2	0.08	ug/mL
NFDHA	22I0153	151772-58-6	0.04	ug/mL
NMeFOSA	22I0153	31506-32-8	0.08	ug/mL
NMeFOSAA	22I0153	2355-31-9	0.02	ug/mL
NMeFOSE	22I0153	24448-09-7	0.08	ug/mL
PFBA	22I0153	375-22-4	0.08	ug/mL
PFBS	22I0153	375-73-5	0.0177	ug/mL
PFDA	22I0153	335-76-2	0.02	ug/mL
PFDOA	22I0153	307-55-1	0.02	ug/mL
PFDOS	22I0153	79780-39-5	0.0194	ug/mL
PFDS	22I0153	335-77-3	0.0193	ug/mL
PFEESA	22I0153	113507-82-7	0.0356	ug/mL
PFHPA	22I0153	375-85-9	0.02	ug/mL
PFHPS	22I0153	375-92-8	0.0191	ug/mL
PFHXA	22I0153	307-24-4	0.02	ug/mL
PFHXS	22I0153	355-46-4	0.0183	ug/mL
PFMBA	22I0153	863090-89-5	0.04	ug/mL
PFMPA	22I0153	377-73-1	0.04	ug/mL
PFNA	22I0153	375-95-1	0.02	ug/mL
PFNS	22I0153	68259-12-1	0.0192	ug/mL
PFOA	22I0153	335-67-1	0.02	ug/mL
PFOS	22I0153	1763-23-1	0.0186	ug/mL
PFOSA	22I0153	754-91-6	0.02	ug/mL
PFPEA	22I0153	2706-90-3	0.04	ug/mL
PFPEs	22I0153	630402-22-1	0.0188	ug/mL
PFTEDA	22I0153	376-06-7	0.02	ug/mL
PFTRDA	22I0153	72629-94-8	0.02	ug/mL
PFUnA	22I0153	2058-94-8	0.02	ug/mL

Analytical Standard Record

22J0448**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22I0153	PFAS - MIX 1633 200ng/mL	09/13/2022	In house	x	01/11/2025	09/15/2022 09:34 by DAG	1

Analytical Standard Record

22J0552

Description:	PFAS - MIX 1633 200ng/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	10/31/2022
Solvent:	MeOH 62244	Prepared By:	Dipti Gokal
Final Volume (mls):	6	Department:	PFAS
Vials:	1	Last Edit:	10/31/2022 14:57 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NETFOSA	21J0007	4151-50-2	0.8	ug/mL
NMeFOSE	21J0014	24448-09-7	0.8	ug/mL
3:3FTCA	21L0004	113507-82-7	0.8	ug/mL
5:3FTCA	21L0005	914637-49-3	0.8	ug/mL
NETFOSE	21L0006	1691-99-2	0.8	ug/mL
7:3FTCA	21L0007	812-70-4	0.8	ug/mL
NMeFOSA	21L0008	31506-32-8	0.8	ug/mL
NFDHA	22I0342	151772-58-6	0.4	ug/mL
PFEESA	22I0342	113507-82-7	0.356	ug/mL
PFMBA	22I0342	863090-89-5	0.4	ug/mL
PFMPA	22I0342	377-73-1	0.4	ug/mL
11CL-PF3OUDS	22I0343	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22I0343	756426-58-1	0.374	ug/mL
ADONA	22I0343	919005-14-4	0.378	ug/mL
HFPO-DA	22I0343	13252-13-6	0.4	ug/mL
4:2FTS	22I0344	757124-72-4	0.75	ug/mL
6:2FTS	22I0344	27619-97-2	0.76	ug/mL
8:2FTS	22I0344	39108-34-4	0.768	ug/mL
NETFOSAA	22I0344	2991-50-6	0.2	ug/mL
NMeFOSAA	22I0344	2355-31-9	0.2	ug/mL
PFBA	22I0344	375-22-4	0.8	ug/mL
PFBS	22I0344	375-73-5	0.177	ug/mL
PFDA	22I0344	335-76-2	0.2	ug/mL
PFDOA	22I0344	307-55-1	0.2	ug/mL
PFDOS	22I0344	79780-39-5	0.194	ug/mL
PFDS	22I0344	335-77-3	0.193	ug/mL
PFHPA	22I0344	375-85-9	0.2	ug/mL
PFHPS	22I0344	375-92-8	0.191	ug/mL
PFHXA	22I0344	307-24-4	0.2	ug/mL
PFHXS	22I0344	355-46-4	0.183	ug/mL
PFNA	22I0344	375-95-1	0.2	ug/mL
PFNS	22I0344	68259-12-1	0.192	ug/mL
PFOA	22I0344	335-67-1	0.2	ug/mL
PFOS	22I0344	1763-23-1	0.186	ug/mL
PFOSA	22I0344	754-91-6	0.2	ug/mL
PFPEA	22I0344	2706-90-3	0.4	ug/mL
PFPEs	22I0344	630402-22-1	0.188	ug/mL
PFTEDA	22I0344	376-06-7	0.2	ug/mL
PFTRDA	22I0344	72629-94-8	0.2	ug/mL
PFUnA	22I0344	2058-94-8	0.2	ug/mL

Analytical Standard Record

22J0552

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
21J0007	PFAS - SAS N-EtFOSA 50ug/mL	08/12/2021	Wellington Laboratories	NEtFOSA0821M	08/12/2026	10/31/2022 14:36	by DAG	0.096
21J0014	PFAS - SAS N-MeFOSE 50ug/mL	09/22/2021	Wellington Laboratories	NMeFOSE0921M	09/23/2026	10/31/2022 14:35	by DAG	0.096
21L0004	PFAS - SAS 3:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPrPA1020	11/12/2025	10/31/2022 14:39	by DAG	0.096
21L0005	PFAS - SAS 5:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	11/11/2025	10/31/2022 14:41	by DAG	0.096
21L0006	PFAS - SAS EtFOSE 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	09/23/2026	10/31/2022 14:41	by DAG	0.096
21L0007	PFAS - SAS 7:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FHpPA1020	11/12/2025	10/31/2022 14:42	by DAG	0.096
21L0008	PFAS - SAS N-MeFOSA 50ug/mL	12/07/2021	Wellington Laboratories	NMeFOSA0721M	08/03/2026	10/31/2022 14:42	by DAG	0.096
22I0342	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	10/31/2022 14:48	by DAG	1.2
22I0343	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	10/31/2022 14:55	by DAG	1.2
22I0344	PFAS - MIX MXH 1-4ug/mL	08/05/2022	Wellington Laboratories	PFACMXH0822	08/08/2027	10/31/2022 14:56	by DAG	1.2



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

<u>PRODUCT CODE:</u>	MPFAC-HIF-ES
<u>LOT NUMBER:</u>	MPFACHIFES0822
<u>SOLVENT(S):</u>	Methanol/Isopropanol (1%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	07/20/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/02/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/02/2025
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 - C_{12} , C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

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.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.


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Table A: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₄)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid	M7PFUdA	250		17
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFD _o A	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		23
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		18
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 08/02/2022
(mm/dd/yyyy)

Analytical Standard Record

22K0502

Description:	PFAS IIS 7C 40ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	11/28/2022
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	11/28/2022 15:10 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22A0234	13C2-PFDA	0.04	ug/mL
13C2-PFHXA	22A0234	13C2-PFHxA	0.04	ug/mL
13C3-PFBA	22A0234	13C3-PFBA	0.04	ug/mL
13C4-PFOA	22A0234	13C4-PFOA	0.04	ug/mL
13C4-PFOS	22A0234	13C4-PFOS	0.04	ug/mL
13C5-PFNA	22A0234	13C5-PFNA	0.04	ug/mL
18O2-PFHXS	22A0234	18O2-PFHXS	0.04	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0234	PFAS IIS 7C 5ug/mL	01/20/2022	In house	*	01/20/2023	01/20/2022 15:49 by HGH	0.2

Analytical Standard Record

22K0503

Description:	1633- IIS Static 1ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	11/28/2022
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mLs):	2	Department:	PFAS
Vials:	1	Last Edit:	11/28/2022 15:11 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22K0502	13C2-PFDA	0.001	ug/mL
13C2-PFHXA	22K0502	13C2-PFHxA	0.001	ug/mL
13C3-PFBA	22K0502	13C3-PFBA	0.001	ug/mL
13C4-PFOA	22K0502	13C4-PFOA	0.001	ug/mL
13C4-PFOS	22K0502	13C4-PFOS	0.001	ug/mL
13C5-PFNA	22K0502	13C5-PFNA	0.001	ug/mL
18O2-PFHXS	22K0502	18O2-PFHXS	0.001	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mLs)
22K0502	PFAS IIS 7C 40ng/mL	11/28/2022	In house	*	01/20/2023	11/28/2022 15:10 by DAG	0.05



WELLINGTON
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CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

**Mass-Labelled PFAS Extraction
Standard Solution/Mixture**

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 - C_{12} , C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

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.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.


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Table A: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₆)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₉)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₉)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

Analytical Standard Record

22L0254

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	meoh	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/13/2022 17:14 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHPA		13C4-PFHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

**Mass-Labelled PFAS Extraction
Standard Solution/Mixture**

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 - C_{12} , C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

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.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

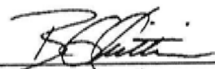
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Table A: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₆)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₉)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₉)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

Analytical Standard Record

22L0255

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	meoh	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/13/2022 17:15 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHPA		13C4-PFHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL

Analytical Standard Record

22L0255

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	meoh	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/13/2022 17:15 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHPA		13C4-PFHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL

Analytical Standard Record

22L0432

Description:	PFAS IIS 7C 40ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	12/29/2022
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mL):	25	Department:	PFAS
Vials:	1	Last Edit:	12/29/2022 09:09 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22A0234	13C2-PFDA	0.04	ug/mL
13C2-PFHXA	22A0234	13C2-PFHxA	0.04	ug/mL
13C3-PFBA	22A0234	13C3-PFBA	0.04	ug/mL
13C4-PFOA	22A0234	13C4-PFOA	0.04	ug/mL
13C4-PFOS	22A0234	13C4-PFOS	0.04	ug/mL
13C5-PFNA	22A0234	13C5-PFNA	0.04	ug/mL
18O2-PFHXS	22A0234	18O2-PFHXS	0.04	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0234	PFAS IIS 7C 5ug/mL	01/20/2022	In house	*	01/20/2023	01/20/2022 15:49	by HGH 0.2

Analytical Standard Record

22L0442

Description:	PFAS - MIX 1633 10ng/mL	Expires:	06/27/2023
Standard Type:	Analyte Spike	Prepared:	12/29/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	12/29/2022 09:41 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS	22J0552	763051-92-9	0.0189	ug/mL
3:3FTCA	22J0552	113507-82-7	0.04	ug/mL
4:2FTS	22J0552	757124-72-4	0.0375	ug/mL
5:3FTCA	22J0552	914637-49-3	0.04	ug/mL
6:2FTS	22J0552	27619-97-2	0.038	ug/mL
7:3FTCA	22J0552	812-70-4	0.04	ug/mL
8:2FTS	22J0552	39108-34-4	0.0384	ug/mL
9CL-PF3ONS	22J0552	756426-58-1	0.0187	ug/mL
ADONA	22J0552	919005-14-4	0.0189	ug/mL
HFPO-DA	22J0552	13252-13-6	0.02	ug/mL
NETFOSA	22J0552	4151-50-2	0.04	ug/mL
NETFOSAA	22J0552	2991-50-6	0.01	ug/mL
NETFOSE	22J0552	1691-99-2	0.04	ug/mL
NFDHA	22J0552	151772-58-6	0.02	ug/mL
NMeFOSA	22J0552	31506-32-8	0.04	ug/mL
NMeFOSAA	22J0552	2355-31-9	0.01	ug/mL
NMeFOSE	22J0552	24448-09-7	0.04	ug/mL
PFBA	22J0552	375-22-4	0.04	ug/mL
PFBS	22J0552	375-73-5	0.00885	ug/mL
PFDA	22J0552	335-76-2	0.01	ug/mL
PFDOA	22J0552	307-55-1	0.01	ug/mL
PFDOS	22J0552	79780-39-5	0.0097	ug/mL
PFDS	22J0552	335-77-3	0.00965	ug/mL
PFEESA	22J0552	113507-82-7	0.0178	ug/mL
PFHPA	22J0552	375-85-9	0.01	ug/mL
PFHPS	22J0552	375-92-8	0.00955	ug/mL
PFHXA	22J0552	307-24-4	0.01	ug/mL
PFHXS	22J0552	355-46-4	0.00915	ug/mL
PFMBA	22J0552	863090-89-5	0.02	ug/mL
PFMPA	22J0552	377-73-1	0.02	ug/mL
PFNA	22J0552	375-95-1	0.01	ug/mL
PFNS	22J0552	68259-12-1	0.0096	ug/mL
PFOA	22J0552	335-67-1	0.01	ug/mL
PFOS	22J0552	1763-23-1	0.0093	ug/mL
PFOSA	22J0552	754-91-6	0.01	ug/mL
PFPEA	22J0552	2706-90-3	0.02	ug/mL
PFPEs	22J0552	630402-22-1	0.0094	ug/mL
PFTEDA	22J0552	376-06-7	0.01	ug/mL
PFTRDA	22J0552	72629-94-8	0.01	ug/mL
PFUnA	22J0552	2058-94-8	0.01	ug/mL

Analytical Standard Record

22L0442**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22J0552	PFAS - MIX 1633 200ng/mL	10/31/2022	In house	x	01/11/2025	10/31/2022 15:40 by DAG	0.5

Analytical Standard Record

23A0016

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	07/02/2023
Standard Type:	Surrogate Spike	Prepared:	01/03/2023
Solvent:	MeOH/62244	Prepared By:	Andonios Karas
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	01/03/2023 17:57 by ABK
Comments:	Half the concentration of previous EIS solution used for 1633/B-15. Double the spiking volume from 100 uL to 200 uL		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS	22L0254	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22L0254	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22L0254	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22L0254	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22L0254	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22L0254	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22L0254	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22L0254	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22L0254	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22L0254	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22L0254	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22L0254	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22L0254	13C6-PFDA	0.01	ug/mL
13C7-PFUHA	22L0254	13C7-PFUHA	0.01	ug/mL
13C8-PFOA	22L0254	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22L0254	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22L0254	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22L0254	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22L0254	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22L0254	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22L0254	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22L0254	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22L0254	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSSE	22L0254	D9-NETFOSSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22L0254	MPFAC-HIF-ES-EIS	10/28/2022	Wellington Laboratories	MPFACHIFES1022	11/23/2025	12/13/2022 17:14 by DAG	0.4

Analytical Standard Record

23A0117

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	07/08/2023
Standard Type:	Surrogate Spike	Prepared:	01/09/2023
Solvent:	MeOH/62244	Prepared By:	Dipti Gokal
Final Volume (mls):	5	Department:	PFAS
Vials:	1	Last Edit:	01/09/2023 14:48 by DAG
Comments:	Half the concentration of previous EIS solution used for 1633/B-15. Double the spiking volume from 100 uL to 200 uL		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS	22L0255	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22L0255	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22L0255	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22L0255	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22L0255	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22L0255	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22L0255	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22L0255	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22L0255	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22L0255	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22L0255	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22L0255	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22L0255	13C6-PFDA	0.01	ug/mL
13C7-PFUhA	22L0255	13C7-PFUJA	0.01	ug/mL
13C8-PFOA	22L0255	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22L0255	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22L0255	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22L0255	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22L0255	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22L0255	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22L0255	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22L0255	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22L0255	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSSE	22L0255	D9-NETFOSSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22L0255	MPFAC-HIF-ES-EIS	10/28/2022	Wellington Laboratories	MPFACHIFES1022	11/23/2025	12/13/2022 17:15 by DAG	0.2

Analytical Standard Record

23A0132

Description:	PFAS IIS 7C 40ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/10/2023
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	01/10/2023 10:00 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22A0234	13C2-PFDA	0.04	ug/mL
13C2-PFHXA	22A0234	13C2-PFHxA	0.04	ug/mL
13C3-PFBA	22A0234	13C3-PFBA	0.04	ug/mL
13C4-PFOA	22A0234	13C4-PFOA	0.04	ug/mL
13C4-PFOS	22A0234	13C4-PFOS	0.04	ug/mL
13C5-PFNA	22A0234	13C5-PFNA	0.04	ug/mL
18O2-PFHXS	22A0234	18O2-PFHXS	0.04	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0234	PFAS IIS 7C 5ug/mL	01/20/2022	In house	*	01/20/2023	01/20/2022 15:49 by HGH	0.2

Analytical Standard Record

23A0132

Description:	PFAS IIS 7C 40ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/10/2023
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	01/10/2023 10:00 by DAG
Lot Number:	*		

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22A0234	13C2-PFDA	0.04	ug/mL
13C2-PFHXA	22A0234	13C2-PFHxA	0.04	ug/mL
13C3-PFBA	22A0234	13C3-PFBA	0.04	ug/mL
13C4-PFOA	22A0234	13C4-PFOA	0.04	ug/mL
13C4-PFOS	22A0234	13C4-PFOS	0.04	ug/mL
13C5-PFNA	22A0234	13C5-PFNA	0.04	ug/mL
18O2-PFHXS	22A0234	18O2-PFHXS	0.04	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0234	PFAS IIS 7C 5ug/mL	01/20/2022	In house	*	01/20/2023	01/20/2022 15:49	by HGH 0.2

Analytical Standard Record

23A0132

Description:	PFAS IIS 7C 40ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/10/2023
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	01/10/2023 10:00 by DAG
Lot Number:	*		

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22A0234	13C2-PFDA	0.04	ug/mL
13C2-PFHXA	22A0234	13C2-PFHxA	0.04	ug/mL
13C3-PFBA	22A0234	13C3-PFBA	0.04	ug/mL
13C4-PFOA	22A0234	13C4-PFOA	0.04	ug/mL
13C4-PFOS	22A0234	13C4-PFOS	0.04	ug/mL
13C5-PFNA	22A0234	13C5-PFNA	0.04	ug/mL
18O2-PFHXS	22A0234	18O2-PFHXS	0.04	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0234	PFAS IIS 7C 5ug/mL	01/20/2022	In house	*	01/20/2023	01/20/2022 15:49	by HGH 0.2