



AGRICULTURE &amp; PRIORITY POLLUTANTS LABORATORIES

A METIRI GROUP COMPANY

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NELAP Certification Number: CA00046

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State Certification Number:

April 20, 2023

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

RE: Red Hill AFFF Assessment Sampling  
23D0008

Enclosed are the results of analyses for samples received by our laboratory on 4/4/2023. 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,

Karen Volpendesta  
Project Manager

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Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling / 60697810  
Project Manager: Watson Tanji

Reported: 04/20/2023 19:24

## 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 analyte PFOS recovered above the upper control limit in the BCD0035-MRL1. The samples were reextracted and only the reextracted data has been provided.

The analyte PFOSA recovered above ½ the LOQ in the BCD0235-BLK1. Samples with hits less than ten times this have been flagged appropriately. No sample remains for reextraction. Data was compared to the original analysis and all results confirm well, with uncontaminated blanks.

The analyte NMeFOSAA recovered below the lower control limit in the SC01534-LCV1.

The SC01534-PEM2 was miss-acquired and no TDCA peak can be seen in the chromatogram. The retention time check cannot be provided showing TDCA and the most branched peak for PFOS are more than 1 minute apart. The next TDCA check analyzed has been provided in leu of SC01534-PEM2.

### Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
23D0008-01	AF-RHMW04-WGN01LF-2304W1	Water	04/03/2023 12:50	04/04/2023
23D0008-02	AF-RHMW06-WGN01LF-2304W1	Water	04/03/2023 11:05	04/04/2023
23D0008-03	AF-RHMW16-WGN01LF-2304W1	Water	04/03/2023 12:16	04/04/2023
23D0008-04	AF-RHMW12A-WGN01LF-2304W1	Water	04/03/2023 09:28	04/04/2023
23D0008-05	AF-RHMW12A-WGFD01LF-2304W1	Water	04/03/2023 09:28	04/04/2023

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### Containers Received

Lab ID	Container Type	Count	Preservation Check
23D0008-01	500mL P	2	
23D0008-02	500mL P	2	
23D0008-03	500mL P	2	
23D0008-04	500mL P	2	
23D0008-05	500mL P	2	

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## Sample Results

**Sample: AF-RHMW04-WGN01LF-2304W1**  
**23D0008-01 (Water)**

### Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.74 U	1.5	0.74	0.19	ng/L	04/18/23	1	EPA 1633	BCD0235
PFPEA	0.37 U	0.74	0.37	0.060	ng/L	04/18/23	1	EPA 1633	BCD0235
PFHXA	0.18 U	0.37	0.18	0.051	ng/L	04/18/23	1	EPA 1633	BCD0235
PFHPA	0.18 U	0.37	0.18	0.038	ng/L	04/18/23	1	EPA 1633	BCD0235
PFOA	0.28 U	0.37	0.28	0.14	ng/L	04/18/23	1	EPA 1633	BCD0235
PFNA	0.18 U	0.37	0.18	0.075	ng/L	04/18/23	1	EPA 1633	BCD0235
PFDA	0.18 U	0.37	0.18	0.093	ng/L	04/18/23	1	EPA 1633	BCD0235
PFUnA	0.28 U	0.37	0.28	0.15	ng/L	04/18/23	1	EPA 1633	BCD0235
PFDOA	0.18 U	0.37	0.18	0.10	ng/L	04/18/23	1	EPA 1633	BCD0235
PFTRDA	0.28 U	0.37	0.28	0.19	ng/L	04/18/23	1	EPA 1633	BCD0235
PFTEDA	0.28 U	0.37	0.28	0.18	ng/L	04/18/23	1	EPA 1633	BCD0235
PFBS	0.18 U	0.37	0.18	0.034	ng/L	04/18/23	1	EPA 1633	BCD0235
PFPEs	0.18 U	0.37	0.18	0.058	ng/L	04/18/23	1	EPA 1633	BCD0235
PFHXS	0.18 U	0.37	0.18	0.029	ng/L	04/18/23	1	EPA 1633	BCD0235
PFHPS	0.18 U	0.37	0.18	0.047	ng/L	04/18/23	1	EPA 1633	BCD0235
PFOS	0.18 U	0.37	0.18	0.059	ng/L	04/18/23	1	EPA 1633	BCD0235
PFNS	0.18 U	0.37	0.18	0.11	ng/L	04/18/23	1	EPA 1633	BCD0235
PFDS	0.28 U	0.37	0.28	0.14	ng/L	04/18/23	1	EPA 1633	BCD0235
PFDOS	0.18 U	0.37	0.18	0.11	ng/L	04/18/23	1	EPA 1633	BCD0235
4:2FTS	0.74 U	1.5	0.74	0.27	ng/L	04/18/23	1	EPA 1633	BCD0235
6:2FTS	0.74 U	1.5	0.74	0.29	ng/L	04/18/23	1	EPA 1633	BCD0235
8:2FTS	0.74 U	1.5	0.74	0.076	ng/L	04/18/23	1	EPA 1633	BCD0235
PFOSA	0.18 U	0.37	0.18	0.096	ng/L	04/18/23	1	EPA 1633	BCD0235
NMeFOSA	0.74 U	1.5	0.74	0.44	ng/L	04/18/23	1	EPA 1633	BCD0235
NEtFOSA	0.74 U	1.5	0.74	0.38	ng/L	04/18/23	1	EPA 1633	BCD0235
NMeFOSAA	0.18 U	0.37	0.18	0.098	ng/L	04/18/23	1	EPA 1633	BCD0235
NEtFOSAA	0.18 U	0.37	0.18	0.11	ng/L	04/18/23	1	EPA 1633	BCD0235
NMeFOSE	1.1 U	1.5	1.1	0.93	ng/L	04/18/23	1	EPA 1633	BCD0235
NEtFOSE	1.1 U	1.5	1.1	0.97	ng/L	04/18/23	1	EPA 1633	BCD0235
HFPO-DA	0.37 U	0.74	0.37	0.16	ng/L	04/18/23	1	EPA 1633	BCD0235
ADONA	0.37 U	0.74	0.37	0.11	ng/L	04/18/23	1	EPA 1633	BCD0235
PFEESA	0.37 U	0.74	0.37	0.10	ng/L	04/18/23	1	EPA 1633	BCD0235
PFMPA	0.37 U	0.74	0.37	0.050	ng/L	04/18/23	1	EPA 1633	BCD0235
PFMBA	0.37 U	0.74	0.37	0.084	ng/L	04/18/23	1	EPA 1633	BCD0235
NFDHA	0.37 U	0.74	0.37	0.28	ng/L	04/18/23	1	EPA 1633	BCD0235
9CL-PF3ONS	0.37 U	0.74	0.37	0.19	ng/L	04/18/23	1	EPA 1633	BCD0235
11CL-PF3OUDS	0.37 U	0.74	0.37	0.19	ng/L	04/18/23	1	EPA 1633	BCD0235
3:3FTCA	0.74 U	1.5	0.74	0.53	ng/L	04/18/23	1	EPA 1633	BCD0235
5:3FTCA	0.74 U	1.5	0.74	0.41	ng/L	04/18/23	1	EPA 1633	BCD0235
7:3FTCA	0.74 U	1.5	0.74	0.51	ng/L	04/18/23	1	EPA 1633	BCD0235
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Surrogate: 13C4-PFBA	95.8%		10-130			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFPEA	104%		35-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFHXA	102%		55-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C4-PFHPA	98.1%		55-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	92.5%		60-140			04/18/23	1	EPA 1633	BCD0235

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## Sample Results (Continued)

### Sample: AF-RHMW04-WGN01LF-2304W1 (Continued) 23D0008-01 (Water)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	93.6%		55-140			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C6-PFDA	100%		50-140			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C7-PFUnA	99.8%		30-140			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFDOA	106%		10-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFTEDA	97.1%		10-130			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFBS	111%		55-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFHXS	109%		55-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOS	107%		45-140			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C2-4:2FTS	120%		60-200			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C2-6:2FTS	115%		60-200			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	217% S2		50-200			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	123%		50-200			04/18/23	10	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	84.7%		30-130			04/18/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOA	54.3%		15-130			04/18/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOA	54.9%		10-130			04/18/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOSAA	110%		45-200			04/18/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOSAA	109%		10-200			04/18/23	1	EPA 1633	BCD0235
Surrogate: D7-NMEFOSE	68.5%		10-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: D9-NETFOSE	64.3%		10-150			04/18/23	1	EPA 1633	BCD0235
Surrogate: 13C3-HFPO-DA	101%		25-160			04/18/23	1	EPA 1633	BCD0235

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### Sample Results (Continued)

**Sample: AF-RHMW06-WGN01LF-2304W1  
23D0008-02 (Water)**

#### Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.32 J	1.5	0.76	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEA	0.89	0.76	0.38	0.062	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXA	0.40	0.38	0.19	0.052	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPA	0.41	0.38	0.19	0.039	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOA	0.28 U	0.38	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNA	0.19 U	0.38	0.19	0.078	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDA	0.19 U	0.38	0.19	0.096	ng/L	04/19/23	1	EPA 1633	BCD0235
PFUnA	0.28 U	0.38	0.28	0.15	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOA	0.19 U	0.38	0.19	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTRDA	0.28 U	0.38	0.28	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTEDA	0.28 U	0.38	0.28	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFBS	0.053 J	0.38	0.19	0.035	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEs	0.19 U	0.38	0.19	0.059	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXS	0.19 U	0.38	0.19	0.030	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPS	0.19 U	0.38	0.19	0.049	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOS	0.19 U	0.38	0.19	0.060	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNS	0.19 U	0.38	0.19	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDS	0.28 U	0.38	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOS	0.19 U	0.38	0.19	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
4:2FTS	0.76 U	1.5	0.76	0.28	ng/L	04/19/23	1	EPA 1633	BCD0235
6:2FTS	1.7	1.5	0.76	0.30	ng/L	04/19/23	1	EPA 1633	BCD0235
8:2FTS	0.76 U	1.5	0.76	0.078	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOSA	0.19 U	0.38	0.19	0.099	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSA	0.76 U	1.5	0.76	0.45	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSA	0.76 U	1.5	0.76	0.39	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSAA	0.19 U	0.38	0.19	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSAA	0.19 U	0.38	0.19	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSE	1.1 U	1.5	1.1	0.96	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSE	1.1 U	1.5	1.1	0.99	ng/L	04/19/23	1	EPA 1633	BCD0235
HFPO-DA	0.38 U	0.76	0.38	0.17	ng/L	04/19/23	1	EPA 1633	BCD0235
ADONA	0.38 U	0.76	0.38	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
PFEESA	0.38 U	0.76	0.38	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMPA	0.38 U	0.76	0.38	0.051	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMBA	0.38 U	0.76	0.38	0.086	ng/L	04/19/23	1	EPA 1633	BCD0235
NFDHA	0.38 U	0.76	0.38	0.28	ng/L	04/19/23	1	EPA 1633	BCD0235
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
3:3FTCA	0.76 U	1.5	0.76	0.54	ng/L	04/19/23	1	EPA 1633	BCD0235
5:3FTCA	0.76 U	1.5	0.76	0.42	ng/L	04/19/23	1	EPA 1633	BCD0235
7:3FTCA	0.76 U	1.5	0.76	0.52	ng/L	04/19/23	1	EPA 1633	BCD0235
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Surrogate: 13C4-PFBA	94.4%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFPEA	93.4%		35-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFHXA	90.4%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C4-PFHPA	89.2%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	94.4%		60-140			04/19/23	1	EPA 1633	BCD0235



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## Sample Results (Continued)

### Sample: AF-RHMW06-WGN01LF-2304W1 (Continued) 23D0008-02 (Water)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	89.6%		55-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C6-PFDA	93.2%		50-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C7-PFUnA	84.1%		30-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFDOA	84.8%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFTEDA	87.5%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFBS	99.4%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFHXS	94.4%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOS	93.6%		45-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-4:2FTS	105%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-6:2FTS	95.3%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	202% S2		50-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	103%		50-200			04/19/23	10	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	82.4%		30-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOA	56.4%		15-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOA	54.0%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOSAA	104%		45-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOSAA	95.2%		10-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D7-NMEFOSE	60.6%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: D9-NETFOSE	60.6%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-HFPO-DA	92.0%		25-160			04/19/23	1	EPA 1633	BCD0235

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Reported: 04/20/2023 19:24

### Sample Results (Continued)

**Sample: AF-RHMW16-WGN01LF-2304W1  
23D0008-03 (Water)**

#### Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.74 U	1.5	0.74	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEA	0.37 U	0.74	0.37	0.060	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXA	0.18 U	0.37	0.18	0.051	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPA	0.18 U	0.37	0.18	0.038	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOA	0.28 U	0.37	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNA	0.18 U	0.37	0.18	0.076	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDA	0.18 U	0.37	0.18	0.094	ng/L	04/19/23	1	EPA 1633	BCD0235
PFUnA	0.28 U	0.37	0.28	0.15	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOA	0.18 U	0.37	0.18	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTRDA	0.28 U	0.37	0.28	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTEDA	0.28 U	0.37	0.28	0.18	ng/L	04/19/23	1	EPA 1633	BCD0235
PFBS	0.18 U	0.37	0.18	0.034	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEs	0.18 U	0.37	0.18	0.058	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXS	0.18 U	0.37	0.18	0.029	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPS	0.18 U	0.37	0.18	0.047	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOS	0.18 U	0.37	0.18	0.059	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNS	0.18 U	0.37	0.18	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDS	0.28 U	0.37	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOS	0.18 U	0.37	0.18	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
4:2FTS	0.74 U	1.5	0.74	0.27	ng/L	04/19/23	1	EPA 1633	BCD0235
6:2FTS	0.74 U	1.5	0.74	0.29	ng/L	04/19/23	1	EPA 1633	BCD0235
8:2FTS	0.74 U	1.5	0.74	0.076	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOSA	0.18 U	0.37	0.18	0.096	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSA	0.74 U	1.5	0.74	0.44	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSA	0.74 U	1.5	0.74	0.38	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSAA	0.18 U	0.37	0.18	0.098	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSAA	0.18 U	0.37	0.18	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSE	1.1 U	1.5	1.1	0.93	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSE	1.1 U	1.5	1.1	0.97	ng/L	04/19/23	1	EPA 1633	BCD0235
HFPO-DA	0.37 U	0.74	0.37	0.16	ng/L	04/19/23	1	EPA 1633	BCD0235
ADONA	0.37 U	0.74	0.37	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
PFEESA	0.37 U	0.74	0.37	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMPA	0.37 U	0.74	0.37	0.050	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMBA	0.37 U	0.74	0.37	0.084	ng/L	04/19/23	1	EPA 1633	BCD0235
NFDHA	0.37 U	0.74	0.37	0.28	ng/L	04/19/23	1	EPA 1633	BCD0235
9CL-PF3ONS	0.37 U	0.74	0.37	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
11CL-PF3OUDS	0.37 U	0.74	0.37	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
3:3FTCA	0.74 U	1.5	0.74	0.53	ng/L	04/19/23	1	EPA 1633	BCD0235
5:3FTCA	0.74 U	1.5	0.74	0.41	ng/L	04/19/23	1	EPA 1633	BCD0235
7:3FTCA	0.74 U	1.5	0.74	0.51	ng/L	04/19/23	1	EPA 1633	BCD0235
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Surrogate: 13C4-PFBA	98.9%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFPEA	99.0%		35-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFHXA	101%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C4-PFHPA	92.8%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	99.8%		60-140			04/19/23	1	EPA 1633	BCD0235

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Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling / 60697810  
Project Manager: Watson Tanji

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## Sample Results (Continued)

**Sample: AF-RHMW16-WGN01LF-2304W1 (Continued)**  
**23D0008-03 (Water)**

### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	92.1%		55-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C6-PFDA	107%		50-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C7-PFUnA	101%		30-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFDOA	90.6%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFTEDA	95.7%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFBS	105%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFHXS	100%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOS	103%		45-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-4:2FTS	107%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-6:2FTS	93.7%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	228% S2		50-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	116%		50-200			04/19/23	10	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	87.4%		30-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOA	60.2%		15-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOA	60.8%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOSAA	110%		45-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOSAA	106%		10-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D7-NMEFOSE	66.3%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: D9-NETFOSE	66.9%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-HFPO-DA	94.5%		25-160			04/19/23	1	EPA 1633	BCD0235

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Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling / 60697810  
Project Manager: Watson Tanji

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### Sample Results (Continued)

**Sample: AF-RHMW12A-WGN01LF-2304W1  
23D0008-04 (Water)**

#### Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	1.4 J	1.5	0.76	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEA	5.0	0.76	0.38	0.062	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXA	1.4	0.38	0.19	0.052	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPA	0.32 J	0.38	0.19	0.039	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOA	0.28 U	0.38	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNA	0.19 U	0.38	0.19	0.078	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDA	0.19 U	0.38	0.19	0.096	ng/L	04/19/23	1	EPA 1633	BCD0235
PFUnA	0.28 U	0.38	0.28	0.15	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOA	0.19 U	0.38	0.19	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTRDA	0.28 U	0.38	0.28	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTEDA	0.28 U	0.38	0.28	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFBS	0.19 U	0.38	0.19	0.035	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEs	0.19 U	0.38	0.19	0.059	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXS	0.19 U	0.38	0.19	0.030	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPS	0.19 U	0.38	0.19	0.049	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOS	0.19 U	0.38	0.19	0.060	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNS	0.19 U	0.38	0.19	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDS	0.28 U	0.38	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOS	0.19 U	0.38	0.19	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
4:2FTS	0.76 U	1.5	0.76	0.28	ng/L	04/19/23	1	EPA 1633	BCD0235
6:2FTS	0.92 J	1.5	0.76	0.30	ng/L	04/19/23	1	EPA 1633	BCD0235
8:2FTS	0.76 U	1.5	0.76	0.078	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOSA	0.13 J B,	0.38	0.19	0.099	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSA	0.76 U	1.5	0.76	0.45	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSA	0.76 U	1.5	0.76	0.39	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSAA	0.19 U	0.38	0.19	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSAA	0.19 U	0.38	0.19	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSE	1.1 U	1.5	1.1	0.96	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSE	1.1 U	1.5	1.1	0.99	ng/L	04/19/23	1	EPA 1633	BCD0235
HFPO-DA	0.38 U	0.76	0.38	0.17	ng/L	04/19/23	1	EPA 1633	BCD0235
ADONA	0.38 U	0.76	0.38	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
PFEESA	0.38 U	0.76	0.38	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMPA	0.38 U	0.76	0.38	0.051	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMBA	0.38 U	0.76	0.38	0.086	ng/L	04/19/23	1	EPA 1633	BCD0235
NFDHA	0.38 U	0.76	0.38	0.29	ng/L	04/19/23	1	EPA 1633	BCD0235
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
3:3FTCA	0.76 U	1.5	0.76	0.54	ng/L	04/19/23	1	EPA 1633	BCD0235
5:3FTCA	0.76 U	1.5	0.76	0.42	ng/L	04/19/23	1	EPA 1633	BCD0235
7:3FTCA	0.76 U	1.5	0.76	0.52	ng/L	04/19/23	1	EPA 1633	BCD0235
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Surrogate: 13C4-PFBA	91.4%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFPEA	91.6%		35-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFHXA	94.2%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C4-PFHPA	93.1%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	95.5%		60-140			04/19/23	1	EPA 1633	BCD0235

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Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling / 60697810  
Project Manager: Watson Tanji

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## Sample Results (Continued)

**Sample: AF-RHMW12A-WGN01LF-2304W1 (Continued)**  
**23D0008-04 (Water)**

### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	94.7%		55-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C6-PFDA	87.5%		50-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C7-PFUnA	82.2%		30-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFDOA	77.9%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFTEDA	77.5%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFBS	96.3%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFHXS	96.0%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOS	92.6%		45-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-4:2FTS	105%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-6:2FTS	90.7%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	229% S2		50-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	110%		50-200			04/19/23	10	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	80.5%		30-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOA	56.5%		15-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOA	53.8%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOSAA	107%		45-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOSAA	103%		10-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D7-NMEFOSE	63.2%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: D9-NETFOSE	63.6%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-HFPO-DA	92.0%		25-160			04/19/23	1	EPA 1633	BCD0235

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Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling / 60697810  
Project Manager: Watson Tanji

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## Sample Results (Continued)

**Sample: AF-RHMW12A-WGFD01LF-2304W1  
23D0008-05 (Water)**

### Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	1.3 J	1.5	0.76	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEA	4.6	0.76	0.38	0.062	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXA	1.4	0.38	0.19	0.052	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPA	0.32 J	0.38	0.19	0.039	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOA	0.28 U	0.38	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNA	0.19 U	0.38	0.19	0.078	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDA	0.19 U	0.38	0.19	0.096	ng/L	04/19/23	1	EPA 1633	BCD0235
PFUnA	0.28 U	0.38	0.28	0.15	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOA	0.19 U	0.38	0.19	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTRDA	0.28 U	0.38	0.28	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFTEDA	0.28 U	0.38	0.28	0.19	ng/L	04/19/23	1	EPA 1633	BCD0235
PFBS	0.19 U	0.38	0.19	0.035	ng/L	04/19/23	1	EPA 1633	BCD0235
PFPEs	0.19 U	0.38	0.19	0.060	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHXS	0.19 U	0.38	0.19	0.030	ng/L	04/19/23	1	EPA 1633	BCD0235
PFHPS	0.19 U	0.38	0.19	0.049	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOS	0.13 J IR2, MI4,	0.38	0.19	0.060	ng/L	04/19/23	1	EPA 1633	BCD0235
PFNS	0.19 U	0.38	0.19	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDS	0.28 U	0.38	0.28	0.14	ng/L	04/19/23	1	EPA 1633	BCD0235
PFDOS	0.19 U	0.38	0.19	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
4:2FTS	0.76 U	1.5	0.76	0.28	ng/L	04/19/23	1	EPA 1633	BCD0235
6:2FTS	1.4 J	1.5	0.76	0.30	ng/L	04/19/23	1	EPA 1633	BCD0235
8:2FTS	0.76 U	1.5	0.76	0.078	ng/L	04/19/23	1	EPA 1633	BCD0235
PFOSA	0.13 J B,	0.38	0.19	0.099	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSA	0.76 U	1.5	0.76	0.45	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSA	0.76 U	1.5	0.76	0.39	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSAA	0.19 U	0.38	0.19	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSAA	0.19 U	0.38	0.19	0.11	ng/L	04/19/23	1	EPA 1633	BCD0235
NMeFOSE	1.1 U	1.5	1.1	0.96	ng/L	04/19/23	1	EPA 1633	BCD0235
NEtFOSE	1.1 U	1.5	1.1	0.99	ng/L	04/19/23	1	EPA 1633	BCD0235
HFPO-DA	0.38 U	0.76	0.38	0.17	ng/L	04/19/23	1	EPA 1633	BCD0235
ADONA	0.38 U	0.76	0.38	0.12	ng/L	04/19/23	1	EPA 1633	BCD0235
PFEESA	0.38 U	0.76	0.38	0.10	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMPA	0.38 U	0.76	0.38	0.051	ng/L	04/19/23	1	EPA 1633	BCD0235
PFMBA	0.38 U	0.76	0.38	0.086	ng/L	04/19/23	1	EPA 1633	BCD0235
NFDHA	0.38 U	0.76	0.38	0.29	ng/L	04/19/23	1	EPA 1633	BCD0235
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	ng/L	04/19/23	1	EPA 1633	BCD0235
3:3FTCA	0.76 U	1.5	0.76	0.55	ng/L	04/19/23	1	EPA 1633	BCD0235
5:3FTCA	0.76 U	1.5	0.76	0.42	ng/L	04/19/23	1	EPA 1633	BCD0235
7:3FTCA	0.76 U	1.5	0.76	0.53	ng/L	04/19/23	1	EPA 1633	BCD0235
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Surrogate: 13C4-PFBA	91.2%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFPEA	99.5%		35-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C5-PFHXA	97.5%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C4-PFHPA	96.8%		55-150			04/19/23	1	EPA 1633	BCD0235

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Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling / 60697810  
Project Manager: Watson Tanji

Reported: 04/20/2023 19:24

## Sample Results (Continued)

### Sample: AF-RHMW12A-WGFD01LF-2304W1 (Continued) 23D0008-05 (Water)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C8-PFOA	92.2%		60-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C9-PFNA	101%		55-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C6-PFDA	101%		50-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C7-PFUnA	91.9%		30-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFDOA	83.0%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-PFTEDA	84.7%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFBS	117%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-PFHXS	99.9%		55-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C8-PFOS	93.9%		45-140			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-4:2FTS	118%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-6:2FTS	111%		60-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	275% S2		50-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C2-8:2FTS	88.3%		50-200			04/19/23	10	EPA 1633	BCD0235
Surrogate: 13C8-PFOA	69.4%		30-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOA	53.1%		15-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOA	52.7%		10-130			04/19/23	1	EPA 1633	BCD0235
Surrogate: D3-NMEFOSAA	107%		45-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D5-NETFOSAA	99.6%		10-200			04/19/23	1	EPA 1633	BCD0235
Surrogate: D7-NMEFOSE	54.7%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: D9-NETFOSE	50.1%		10-150			04/19/23	1	EPA 1633	BCD0235
Surrogate: 13C3-HFPO-DA	96.1%		25-160			04/19/23	1	EPA 1633	BCD0235

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

Reported: 04/20/2023 19:24

## 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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#### Method: EPA 1633

#### Batch: BCD0235 - EPA 1633

#### Blank (BCD0235-BLK1)

Prepared: 04/17/23 11:15 Analyzed: 04/18/23 22:56

	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	0.30 U	0.40	0.30	0.15
PFNA	0.20 U	0.40	0.20	0.082
PFDA	0.20 U	0.40	0.20	0.10
PFUnA	0.30 U	0.40	0.30	0.16
PFDOA	0.20 U	0.40	0.20	0.11
PFTRDA	0.30 U	0.40	0.30	0.20
PFTEDA	0.30 U	0.40	0.30	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	0.30 U	0.40	0.30	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	0.246 J B,	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	30.3	32.0	94.7	10-130
13C5-PFPEA	15.2	16.0	95.0	35-150
13C5-PFHXA	7.58	8.00	94.8	55-150



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Reported: 04/20/2023 19:24

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Blank (BCD0235-BLK1)</b>						Prepared: 04/17/23 11:15 Analyzed: 04/18/23 22:56				
	ng/L									
<b>Surrogates</b>										
13C4-PFHFA	6.93				8.00		86.7	55-150		
13C8-PFOA	7.16				8.00		89.6	60-140		
13C9-PFNA	3.53				4.00		88.3	55-140		
13C6-PFDA	3.42				4.00		85.5	50-140		
13C7-PFUnA	3.48				4.00		87.0	30-140		
13C2-PFDOA	3.31				4.00		82.8	10-150		
13C2-PFTEDA	3.19				4.00		79.7	10-130		
13C3-PFBS	8.51				8.00		106	55-150		
13C3-PFHXS	7.80				8.00		97.5	55-150		
13C8-PFOS	7.30				8.00		91.3	45-140		
13C2-4:2FTS	16.8				16.0		105	60-200		
13C2-6:2FTS	15.6				16.0		97.6	60-200		
13C2-8:2FTS	28.5				16.0		178	50-200		
13C8-PFOA	5.56				8.00		69.5	30-130		
D3-NMEFOA	3.12				8.00		39.0	15-130		
D5-NETFOA	3.07				8.00		38.4	10-130		
D3-NMEFOSAA	14.7				16.0		91.9	45-200		
D5-NETFOSAA	13.7				16.0		85.6	10-200		
D7-NMEFOSE	40.2				80.0		50.3	10-150		
D9-NETFOSE	39.0				80.0		48.8	10-150		
13C3-HFPO-DA	29.5				32.0		92.2	25-160		

#### LCS (BCD0235-BS1)

Prepared: 04/17/23 11:15 Analyzed: 04/18/23 23:12

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
PFBA	16.3				16.0		102	58-148		
PFPEA	8.13				8.00		102	54-152		
PFHXA	4.24				4.00		106	55-152		
PFHFA	3.81				4.00		95.2	54-154		
PFOA	3.95				4.00		98.8	52-161		
PFNA	4.16				4.00		104	59-149		
PFDA	4.11				4.00		103	52-147		
PFUnA	3.79				4.00		94.8	48-159		
PFDOA	4.03				4.00		101	64-142		
PFTRDA	4.07				4.00		102	49-148		
PFTEDA	4.19				4.00		105	47-161		
PFBS	3.46				3.54		97.7	62-144		
PFPEA	3.82				3.76		102	59-151		
PFHXS	3.80 MI4				3.66		104	57-146		
PFHPS	4.42				3.82		116	55-152		
PFOS	4.07				3.72		109	58-149		
PFNS	3.95				3.84		103	52-148		
PFDS	4.13				3.86		107	51-147		
PFDOS	3.69				3.88		95.0	36-145		
4:2FTS	14.8				15.0		98.8	67-146		
6:2FTS	16.5				15.2		109	61-151		
8:2FTS	15.5				15.4		101	63-152		
PFOA	4.20				4.00		105	61-148		

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Project: Red Hill AFFF Assessment Sampling  
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Reported: 04/20/2023 19:24

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>LCS (BCD0235-BS1)</b>						Prepared: 04/17/23 11:15 Analyzed: 04/18/23 23:12				
	ng/L									
NMeFOSA	16.2				16.0		101	63-145		
NETFOSA	16.1				16.0		101	65-139		
NMeFOSAA	3.97				4.00		99.1	58-144		
NETFOSAA	3.85				4.00		96.3	59-146		
NMeFOSE	15.5				16.0		96.8	71-136		
NETFOSE	15.7				16.0		98.2	69-137		
HFPO-DA	7.54				8.00		94.2	63-144		
ADONA	7.94				7.56		105	68-146		
PFEESA	7.29				7.12		102	56-151		
PFMPA	7.46				8.00		93.3	51-145		
PFMBA	8.33				8.00		104	55-148		
NFDHA	7.97				8.00		99.7	48-161		
9CL-PF3ONS	8.09				7.48		108	56-156		
11CL-PF3OUDS	8.37				7.56		111	46-156		
3:3FTCA	14.4				16.0		89.9	62-129		
5:3FTCA	16.5				16.0		103	63-134		
7:3FTCA	15.3				16.0		95.4	50-138		
<b>Surrogates</b>										
13C4-PFBA	32.8				32.0		103	10-130		
13C5-PFPEA	16.2				16.0		101	35-150		
13C5-PFHXA	7.80				8.00		97.5	55-150		
13C4-PFHFA	8.16				8.00		102	55-150		
13C8-PFOA	8.27				8.00		103	60-140		
13C9-PFNA	4.34				4.00		108	55-140		
13C6-PFDA	3.87				4.00		96.7	50-140		
13C7-PFUnA	4.11				4.00		103	30-140		
13C2-PFDOA	3.63				4.00		90.8	10-150		
13C2-PFTEDA	3.87				4.00		96.6	10-130		
13C3-PFBS	8.24				8.00		103	55-150		
13C3-PFHXS	7.93				8.00		99.1	55-150		
13C8-PFOS	7.76				8.00		96.9	45-140		
13C2-4:2FTS	16.2				16.0		102	60-200		
13C2-6:2FTS	15.4				16.0		96.3	60-200		
13C2-8:2FTS	27.0				16.0		169	50-200		
13C8-PFOA	6.41				8.00		80.1	30-130		
D3-NMEFOSA	3.65				8.00		45.6	15-130		
D5-NETFOSA	3.72				8.00		46.5	10-130		
D3-NMEFOSAA	16.3				16.0		102	45-200		
D5-NETFOSAA	15.3				16.0		95.6	10-200		
D7-NMEFOSE	50.4				80.0		63.0	10-150		
D9-NETFOSSE	50.2				80.0		62.8	10-150		
13C3-HFPO-DA	31.8				32.0		99.3	25-160		

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Reported: 04/20/2023 19:24

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>MRL Check (BCD0235-MRL1)</b>						Prepared: 04/17/23 11:15 Analyzed: 04/18/23 23:28				
	ng/L									
PFBA	2.94				3.20		91.7	44-157		
PFPEA	1.41				1.60		88.3	57-148		
PFHXA	0.797				0.800		99.6	62-149		
PFHPA	0.652				0.800		81.5	56-150		
PFOA	0.762				0.800		95.3	57-161		
PFNA	0.738				0.800		92.2	53-157		
PFDA	0.772				0.800		96.5	43-158		
PFUnA	0.714				0.800		89.2	50-155		
PFDOA	0.755				0.800		94.4	60-141		
PFTRDA	0.685				0.800		85.7	52-140		
PFTEDA	0.722 IR2				0.800		90.3	52-156		
PFBS	0.696				0.708		98.4	63-145		
PFPEs	0.730				0.752		97.1	58-144		
PFHXS	0.731 MI4				0.732		99.9	44-158		
PFHPS	0.880				0.764		115	51-150		
PFOS	0.694				0.744		93.3	43-162		
PFNS	0.780				0.768		102	46-151		
PFDS	0.808				0.772		105	50-144		
PFDOS	0.617				0.776		79.5	30-138		
4:2FTS	3.14				3.00		105	52-158		
6:2FTS	2.96				3.04		97.5	48-158		
8:2FTS	3.08				3.07		100	46-165		
PFOSA	0.850				0.800		106	47-163		
NMeFOSA	2.76				3.20		86.1	54-155		
NETFOSA	2.93				3.20		91.5	49-156		
NMeFOSAA	0.471 MI4				0.800		58.9	32-160		
NETFOSAA	0.681 MI4				0.800		85.1	51-154		
NMeFOSE	3.12				3.20		97.4	56-151		
NETFOSE	3.12				3.20		97.5	60-147		
HFPO-DA	1.66				1.60		103	58-154		
ADONA	1.57				1.51		104	61-148		
PFEESA	1.23				1.42		86.6	56-144		
PFMPA	1.37				1.60		85.5	48-150		
PFMBA	1.49				1.60		93.2	49-154		
NFDHA	1.46				1.60		91.1	47-160		
9CL-PF3ONS	1.43				1.50		95.9	44-167		
11CL-PF3OUDS	1.36				1.51		90.0	36-158		
3:3FTCA	2.49				3.20		77.7	32-161		
5:3FTCA	3.39				3.20		106	39-156		
7:3FTCA	2.93				3.20		91.5	36-149		
<b>Surrogates</b>										
13C4-PFBA	32.7				32.0		102	10-130		
13C5-PFPEA	15.7				16.0		98.3	35-150		
13C5-PFHXA	7.66				8.00		95.8	55-150		
13C4-PFHPA	7.67				8.00		95.8	55-150		
13C8-PFOA	8.17				8.00		102	60-140		
13C9-PFNA	3.97				4.00		99.3	55-140		

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Reported: 04/20/2023 19:24

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>MRL Check (BCD0235-MRL1)</b>						Prepared: 04/17/23 11:15 Analyzed: 04/18/23 23:28				
	ng/L									
<b>Surrogates</b>										
13C6-PFDA	3.91				4.00		97.8	50-140		
13C7-PFUnA	3.61				4.00		90.3	30-140		
13C2-PFDOA	3.51				4.00		87.9	10-150		
13C2-PFTEDA	3.53				4.00		88.2	10-130		
13C3-PFBS	8.51				8.00		106	55-150		
13C3-PFHXS	7.81				8.00		97.6	55-150		
13C8-PFOS	7.87				8.00		98.4	45-140		
13C2-4:2FTS	16.3				16.0		102	60-200		
13C2-6:2FTS	15.5				16.0		96.7	60-200		
13C2-8:2FTS	31.7				16.0		198	50-200		
13C8-PFOA	6.57				8.00		82.2	30-130		
D3-NMEFOA	4.86				8.00		60.7	15-130		
D5-NETFOA	4.81				8.00		60.2	10-130		
D3-NMEFOSAA	16.2				16.0		101	45-200		
D5-NETFOSAA	15.5				16.0		97.2	10-200		
D7-NMEFOSE	49.2				80.0		61.4	10-150		
D9-NETFOSE	47.3				80.0		59.1	10-150		
13C3-HFPO-DA	29.7				32.0		92.7	25-160		

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Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling / 60697810  
Project Manager: Watson Tanji

Reported: 04/20/2023 19:24

## Notes and Definitions

Item	Definition
B	Blank contamination
CV1	Calibration verification recovered below the lower control limit
IR1	Ion ratio below the lower control limit
IR2	Ion ratio above the upper control limit
IS1	Internal standard recovered below the lower control limit
J	Estimated value
MI2	Manual integration, non-target peak interference
MI4	Manual integration, peak unsplit
MI5	Manual integration, whole peak was not integrated
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
DF	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.
LOQ, Limit of Quantitation = Method Reporting Limit (MRL).	



# WORK ORDER

**23D0008**

Printed: 04/20/2023 7:25 pm

**Project:** Red Hill AFFF Assessment Sampling  
**Project Number:** Red Hill AFFF Assessment Sampling / 60697810  
**Project Manager:** Karen Volpendesta  
**PO Number:** 150712

**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: 04/04/2023 09:45 AM  
 Date Due: 04/11/2023 (5.00 day TAT)

Logged In By: Megan Horne  
 Received By: Megan Horne

Analysis	Comments
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**23D0008**

**Sample Receipt Log**

Default Cooler

Samples Received at: **1.0°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

23D0008

**APPL, Inc.**  
908 N Temperance Ave  
Clovis, CA 93611  
www.applinc.com

**ELECTRONIC CHAIN OF CUSTODY RECORD**  
Phone: (559) 275-2175  
Fax: (559) 275-4422  
coc@applinc.com

**APPL LABS**  
808-954-4512 / 303-796-4624

C.O.C. 2304W1AFAL08

Report to: **AECOM**  
Company Name: **AECOM**  
Address: **1001 Bishop St ste1600**  
**Honolulu, HI 96813**  
Attn: **Watson Tanji / Katie Abbott**  
Email: **watson.tanji@aecom.com/katie.abbott@aecom.com**

Invoice to: **AECOM**  
Company Name: **AECOM**  
Address: \_\_\_\_\_  
Attn: **Sheree Smith**  
Email: **USAPimaging@aecom.com**

PLEASE PRINT

Project Name/Number	Sampler (Print)	Sampler (Signature)	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix		Analysis Requested/Method Number	Date Shipped:
								Aq	Soil		
CTO N6274223F0104 / 60697810	GABRIEL AUBIN	[Signature]	RED HILL	04/23/05	1250	HST	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PFAS EPA Draft 1633	
Purchase Order Number											Carrier:
Sample Identification											Waybill No.:
AF-RHMW04-WGN01LF-2304W1											Comments: EDMS upload EDMS Coverage: AFFF Assessment Sampling GW
<p>Turnaround Requested: Check one  <input type="checkbox"/> Standard 2-3 wk <input type="checkbox"/> 3 days <input checked="" type="checkbox"/> 5 day TAT <input type="checkbox"/> Other: _____</p> <p>Relinquished by: <b>Miranda Desarme</b> Date: <b>4/23/05</b> Time: <b>1400</b></p> <p>Relinquished by: _____ Date: _____ Time: _____</p> <p>Received by: _____ Date: _____ Time: _____</p> <p>Received by: _____ Date: _____ Time: _____</p> <p>Sample Disposal: <input type="checkbox"/> Return to client <input type="checkbox"/> Disposal by Lab (30-day retention)</p>											

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.









APPL, Inc.  
908 N Temperance Ave  
Clovis, CA 93611  
www.applinc.com

ELECTRONIC CHAIN OF CUSTODY RECORD  
Phone: (559) 275-2175  
Fax: (559) 275-4422  
coc@applinc.com C.O.C. 2304W1AFAL05

Report to: **AECOM** Invoice to: **AECOM** PLEASE PRINT  
 Company Name: **1001 Bishop St ste1600** Phone: \_\_\_\_\_  
 Address: **Honolulu, HI 96813** Fax: \_\_\_\_\_  
 Attn: **Watson Tanji / Katie Abbott**  
 Email: **watson.tanji@aecom.com/katie.abbott@aecom.com**

Project Name/Number	Purchase Order Number	Sampler (Print)	Sampler (Signature)	Location	Date Collected	Time Collected	Time Zone	No. of Containers		Matrix	Analysis Requested/Method Number	Date Shipped:
								Aq	Sed.			
CTO N6274223F0104 / 60697810		Jonae	UNARSA									
AF-RHMW12A-WGN01LF-2304W1		RHMW12A			4/3/23	0928	HST	2	✓	Soil	PFAS EPA Draft 1633	
AF-RHMW12A-WGFD01LF-2304W1		RHMW12A			4/3/23	0928	HST	2	✓			
<del>_____</del>												

Carrier: \_\_\_\_\_  
 Waybill No.: \_\_\_\_\_  
 Comments: EDMS upload database: JBPHE  
 EDMS Coverage: AFFF Assessment  
 Sampling GW

Sample Disposal:  Return to client  Disposal by Lab (30-day retention)

Turnaround Requested: Check one  
 Standard 2-3 wk  One week  3 days  Other: **5 day TAT**

Relinquished by sampler: **James Mason** Date: **4/1/23** Time: **1340**  
 Relinquished by: **James Mason** Date: **4/13/23** Time: **1400**

Received by: **James Mason** Date: **4/14/23** Time: **945**  
 Received at lab by: **Michelle**

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.

**CUSTODY SEAL**  
AECOM (808)-521-3051  
Initials: JMM Date: 4/3/23  
1405

# PFAS

# SAMPLE DATA

# FORM I ANALYSIS DATA SHEET

AF-RHMW04-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-01RE2
		File ID:	S2023-04-18C (10)
Sampled:	04/03/23 12:50	Prepared:	04/17/23 11:15
		Analyzed:	04/18/23 23:43
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	542.31 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.74 U	1.5	0.74	0.19	
PFPEA	0.37 U	0.74	0.37	0.060	
PFHXA	0.18 U	0.37	0.18	0.051	
PFHPA	0.18 U	0.37	0.18	0.038	
PFOA	0.28 U	0.37	0.28	0.14	
PFNA	0.18 U	0.37	0.18	0.075	
PFDA	0.18 U	0.37	0.18	0.093	
PFUnA	0.28 U	0.37	0.28	0.15	
PFDOA	0.18 U	0.37	0.18	0.10	
PFTRDA	0.28 U	0.37	0.28	0.19	
PFTEDA	0.28 U	0.37	0.28	0.18	
PFBS	0.18 U	0.37	0.18	0.034	
PFPEs	0.18 U	0.37	0.18	0.058	
PFHXS	0.18 U	0.37	0.18	0.029	
PFHPS	0.18 U	0.37	0.18	0.047	
PFOS	0.18 U	0.37	0.18	0.059	
PFNS	0.18 U	0.37	0.18	0.11	
PFDS	0.28 U	0.37	0.28	0.14	
PFDOS	0.18 U	0.37	0.18	0.11	
4:2FTS	0.74 U	1.5	0.74	0.27	
6:2FTS	0.74 U	1.5	0.74	0.29	
8:2FTS	0.74 U	1.5	0.74	0.076	
PFOSA	0.18 U	0.37	0.18	0.096	
NMeFOSA	0.74 U	1.5	0.74	0.44	
NEtFOSA	0.74 U	1.5	0.74	0.38	
NMeFOSAA	0.18 U	0.37	0.18	0.098	
NEtFOSAA	0.18 U	0.37	0.18	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.93	
NEtFOSE	1.1 U	1.5	1.1	0.97	
HFPO-DA	0.37 U	0.74	0.37	0.16	

# FORM I ANALYSIS DATA SHEET

AF-RHMW04-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-01RE2
		File ID:	S2023-04-18C (10)
Sampled:	04/03/23 12:50	Prepared:	04/17/23 11:15
		Analyzed:	04/18/23 23:43
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	542.31 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.37 U	0.74	0.37	0.11	
PFEESA	0.37 U	0.74	0.37	0.10	
PFMPA	0.37 U	0.74	0.37	0.050	
PFMBA	0.37 U	0.74	0.37	0.084	
NFDHA	0.37 U	0.74	0.37	0.28	
9CL-PF3ONS	0.37 U	0.74	0.37	0.19	
11CL-PF3OUDS	0.37 U	0.74	0.37	0.19	
3:3FTCA	0.74 U	1.5	0.74	0.53	
5:3FTCA	0.74 U	1.5	0.74	0.41	
7:3FTCA	0.74 U	1.5	0.74	0.51	



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01541-PEM2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-19A (5)  
 Acquired: 2023/04/19 - 13:25

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
PFOS	( 499.0 / 80.0 ) 34980 ( 499.0 / 99.0 ) 1542314	( 7.94 , 0.95 ) ( -0.42 , N/A , -24.9 )	66.4	44.0910 19147.1 18151.3	0.0534	N/A			
TDCA	( 499.0 / 80.0 ) 2365910	( 6.38 , 0.76 ) ( N/A , #Value! , 0.0 )	36666.6	N/A 0.0 0.0	3.8591	N/A			

*R.T.PFOS – R.T.TDCA > 1 minute*

7.94 - 6.38 = 1.57 Pass



# FORM I

## ANALYSIS DATA SHEET

AF-RHMW04-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810		
Matrix:	Water	Laboratory ID:	23D0008-01RE3	File ID:	S2023-04-18C (11)
Sampled:	04/03/23 12:50	Prepared:	04/17/23 11:15	Analyzed:	04/18/23 23:59
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	542.31 mL / 2 mL			Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534	Calibration:	2316009

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 ]	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			
PFTTrDA	(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			

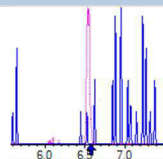
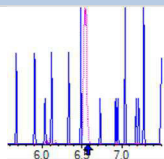
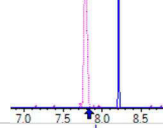
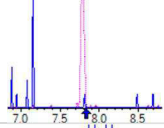
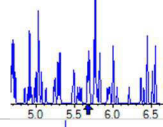
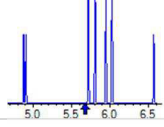
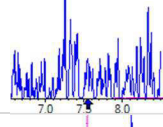
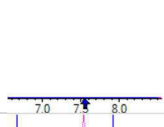
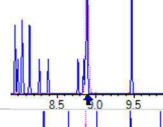
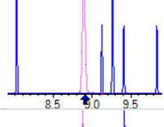
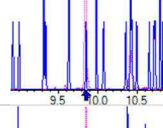
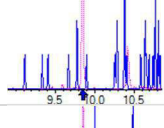
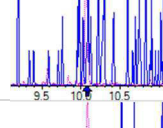
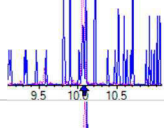
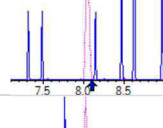
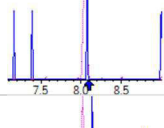
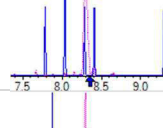
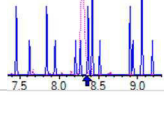
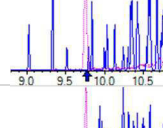

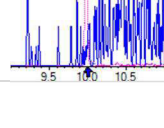



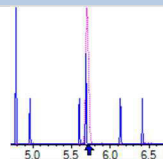
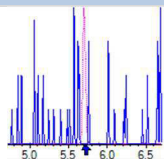
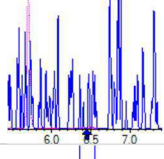
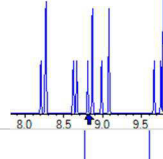
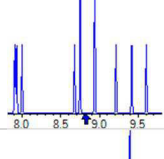
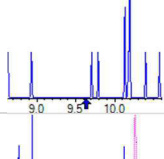
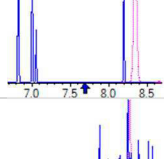
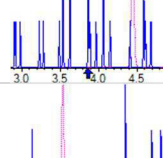
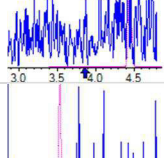
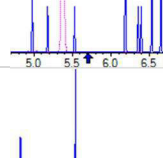
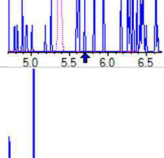
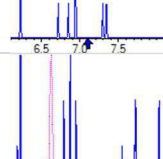
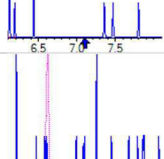
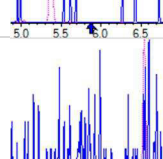
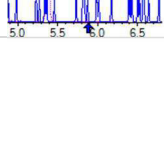
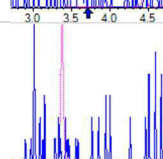
Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

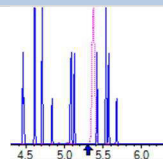
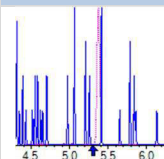
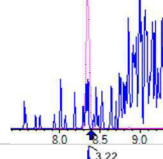
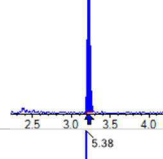
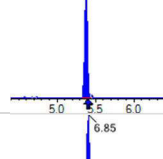
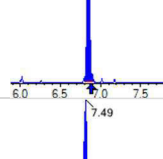
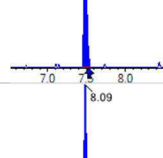
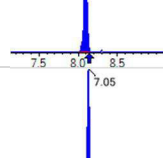
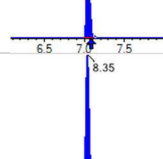
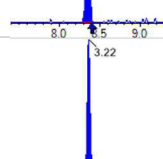
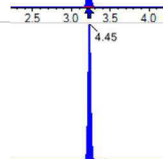
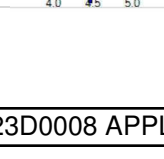
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Acquisition Method: 1633 2023-04-18.dam

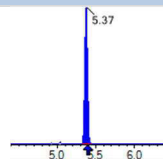
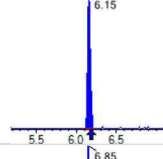
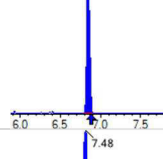
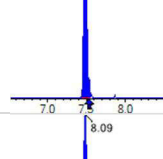
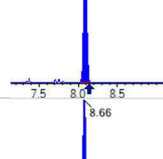
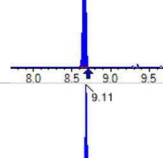
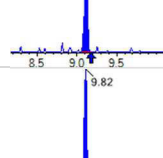
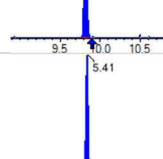
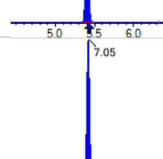
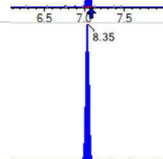
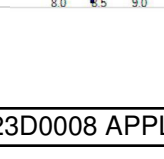
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Path: S2023-04-18C (11)  
Acquired: 2023/04/18 - 23:59

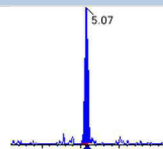
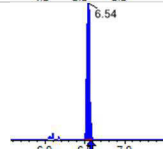
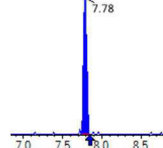
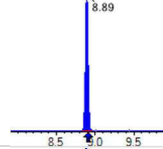
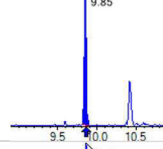
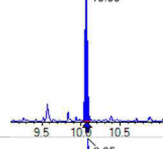
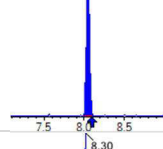
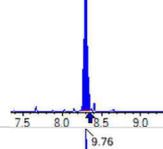
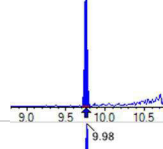
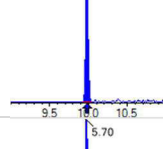
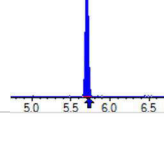
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 19812	(3.22, N/A) (N/A, 0.00, N/A)	249.6	N/A	0.9614 [ 1.0000 ]	96.1% { 10.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 19512	(5.38, N/A) (N/A, -0.02, N/A)	196.9	N/A	1.3458 [ 1.0000 ]	134.6% { 13.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 24416	(6.85, N/A) (N/A, -0.04, N/A)	139.4	N/A	0.8954 [ 1.0000 ]	89.5% { 8.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 28050	(7.49, N/A) (N/A, -0.04, N/A)	212.8	N/A	1.1206 [ 1.0000 ]	112.1% { 11.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 24573	(8.09, N/A) (N/A, -0.05, N/A)	124.7	N/A	1.0350 [ 1.0000 ]	103.5% { 10.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 34825	(7.05, N/A) (N/A, -0.04, N/A)	123.6	N/A	0.9119 [ 1.0000 ]	91.2% { 9.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 44939	(8.35, N/A) (N/A, -0.05, N/A)	128.6	N/A	0.9425 [ 1.0000 ]	94.3% { 7.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 170081	(3.22, N/A) (N/A, 0.00, N/A)	1146.7	N/A	0.8014 [ 0.8000 ]	100.2% { 10.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 123119	(4.45, N/A) (N/A, -0.01, N/A)	504.4	N/A	0.3191 [ 0.4000 ]	79.8% { 11.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 68932	(5.37, N/A) (N/A, -0.02, N/A)	499.5	N/A	0.1578 [0.2000]	78.9% {11.6%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 52134	(6.15, N/A) (N/A, -0.03, N/A)	318.7	N/A	0.1512 [0.2000]	75.6% {11.8%}			
13C8_PFOA_EIS	(421.0 / 376.0) 63761	(6.85, N/A) (N/A, -0.03, N/A)	361.9	N/A	0.2195 [0.2000]	109.7% {10.2%}			
13C9_PFNA_EIS	(472.0 / 427.0) 20864	(7.48, N/A) (N/A, -0.04, N/A)	100.6	N/A	0.0717 [0.1000]	71.7% {8.7%}			
13C6_PFDA_EIS	(519.0 / 474.0) 27716	(8.09, N/A) (N/A, -0.05, N/A)	189.0	N/A	0.0951 [0.1000]	95.1% {10.0%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 27919	(8.66, N/A) (N/A, -0.05, N/A)	170.9	N/A	0.0995 [0.1000]	99.5% {11.1%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 20142	(9.11, N/A) (N/A, -0.05, N/A)	135.7	N/A	0.0847 [0.1000]	84.7% {9.5%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 23507	(9.82, N/A) (N/A, -0.07, N/A)	137.0	N/A	0.0801 [0.1000]	80.1% {8.7%}			
13C3_PFBs_EIS	(302.0 / 80.0) 150993	(5.41, N/A) (N/A, -0.02, N/A)	269.4	N/A	0.2279 [0.2000]	113.9% {10.5%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 56866	(7.05, N/A) (N/A, -0.04, N/A)	412.4	N/A	0.2036 [0.2000]	101.8% {9.4%}			
13C8_PFOS_EIS	(507.0 / 80.0) 108521	(8.35, N/A) (N/A, -0.06, N/A)	285.3	N/A	0.1933 [0.2000]	96.7% {7.7%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 14551	(5.07, N/A) (N/A, -0.01, N/A)	108.1	N/A	0.4557 [0.4000]	113.9% {10.4%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 16136	(6.54, N/A) (N/A, -0.03, N/A)	140.7	N/A	0.4073 [0.4000]	101.8% {9.5%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 21936	(7.78, N/A) (N/A, -0.05, N/A)	182.9	N/A	0.4902 [0.4000]	122.6% {12.8%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 109983	(8.89, N/A) (N/A, -0.02, N/A)	579.9	N/A	0.1746 [0.2000]	87.3% {8.3%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 26302	(9.85, N/A) (N/A, -0.01, N/A)	82.3	N/A	0.1349 [0.2000]	67.4% {6.4%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 21498	(10.06, N/A) (N/A, -0.01, N/A)	115.3	N/A	0.1122 [0.2000]	56.1% {5.5%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 52149	(8.05, N/A) (N/A, -0.04, N/A)	294.6	N/A	0.4449 [0.4000]	111.2% {10.7%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 38245	(8.30, N/A) (N/A, -0.05, N/A)	129.4	N/A	0.4086 [0.4000]	102.1% {9.7%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 83611	(9.76, N/A) (N/A, -0.01, N/A)	141.4	N/A	1.3531 [2.0000]	67.7% {6.8%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 94228	(9.98, N/A) (N/A, -0.01, N/A)	256.0	N/A	1.2302 [2.0000]	61.5% {6.0%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 140646	(5.70, N/A) (N/A, -0.02, N/A)	512.5	N/A	0.6255 [0.8000]	78.2% {11.2%}			



# FORM I ANALYSIS DATA SHEET

AF-RHMW06-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-02RE2
		File ID:	S2023-04-18C (12)
Sampled:	04/03/23 11:05	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 00:15
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	528.05 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.32 J	1.5	0.76	0.20	
PFPEA	0.89	0.76	0.38	0.062	
PFHXA	0.40	0.38	0.19	0.052	
PFHPA	0.41	0.38	0.19	0.039	
PFOA	0.28 U	0.38	0.28	0.14	
PFNA	0.19 U	0.38	0.19	0.078	
PFDA	0.19 U	0.38	0.19	0.096	
PFUnA	0.28 U	0.38	0.28	0.15	
PFDOA	0.19 U	0.38	0.19	0.11	
PFTRDA	0.28 U	0.38	0.28	0.19	
PFTEDA	0.28 U	0.38	0.28	0.19	
PFBS	0.053 J	0.38	0.19	0.035	
PFPEs	0.19 U	0.38	0.19	0.059	
PFHXS	0.19 U	0.38	0.19	0.030	
PFHPS	0.19 U	0.38	0.19	0.049	
PFOS	0.19 U	0.38	0.19	0.060	
PFNS	0.19 U	0.38	0.19	0.12	
PFDS	0.28 U	0.38	0.28	0.14	
PFDOS	0.19 U	0.38	0.19	0.12	
4:2FTS	0.76 U	1.5	0.76	0.28	
6:2FTS	1.7	1.5	0.76	0.30	
8:2FTS	0.76 U	1.5	0.76	0.078	
PFOSA	0.19 U	0.38	0.19	0.099	
NMeFOSA	0.76 U	1.5	0.76	0.45	
NEtFOSA	0.76 U	1.5	0.76	0.39	
NMeFOSAA	0.19 U	0.38	0.19	0.10	
NEtFOSAA	0.19 U	0.38	0.19	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.96	
NEtFOSE	1.1 U	1.5	1.1	0.99	
HFPO-DA	0.38 U	0.76	0.38	0.17	

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW06-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-02RE2
		File ID:	S2023-04-18C (12)
Sampled:	04/03/23 11:05	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 00:15
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	528.05 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.38 U	0.76	0.38	0.12	
PFEESA	0.38 U	0.76	0.38	0.10	
PFMPA	0.38 U	0.76	0.38	0.051	
PFMBA	0.38 U	0.76	0.38	0.086	
NFDHA	0.38 U	0.76	0.38	0.28	
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	
3:3FTCA	0.76 U	1.5	0.76	0.54	
5:3FTCA	0.76 U	1.5	0.76	0.42	
7:3FTCA	0.76 U	1.5	0.76	0.52	



Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: 23D0008-02RE2  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18C (12)  
Acquired: 2023/04/19 - 00:15

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 16028	(3.21, 1.00) (0.00, N/A, 0.0)	101.0	N/A 0.0 0.0	0.0840	N/A			
PFPeA	(263.0 / 219.0) 67396 (263.0 / 69.0) 856	(4.44, 1.00) (0.00, N/A, 0.4)	282.6 17.3	0.0127 108.2 109.0	0.2362	N/A			
PFHxA	(313.0 / 269.0) 37718 (313.0 / 119.0) 4149	(5.38, 1.00) (0.00, N/A, 0.2)	75.4 46.3	0.1100 131.8 127.2	0.1064	N/A			
PFHpA	(363.0 / 319.0) 30009 (363.0 / 169.0) 8593	(6.16, 1.00) (0.00, N/A, 0.0)	90.6 58.0	0.2863 103.3 103.9	0.1077	N/A			
PFOA	(413.0 / 369.0) 8411 (413.0 / 169.0) 2344	(6.85, 1.00) (0.00, N/A, -0.3)	29.3 18.6	0.2786 93.3 95.1	0.0255	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			
PFTTrDA	(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.: 23D0008-02RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (12)  
 Acquired: 2023/04/19 - 00:15

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) N/A ( 813.0 / 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			
PFODA	( 913.0 / 869.0 ) N/A ( 913.0 / 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			
PFBS	( 299.0 / 80.0 ) 6693 ( 299.0 / 99.0 ) 3352	( 5.40 , 1.00 ) ( 0.00 , N/A , -0.3 )	30.4 19.8	0.5008 72.9 66.9	0.0139	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			

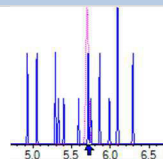
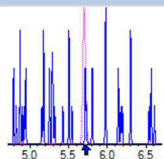
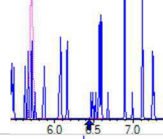
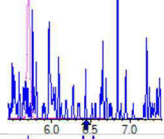
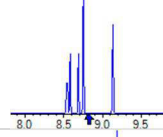
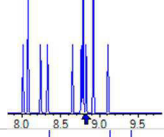
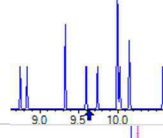
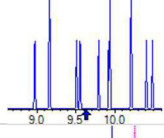
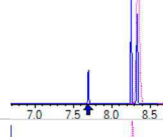
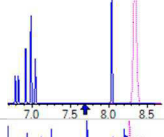
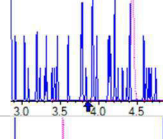
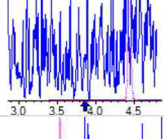
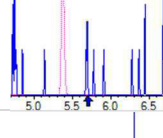
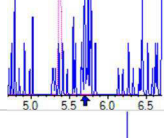
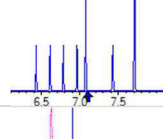
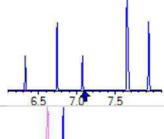
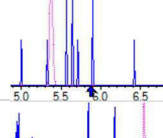
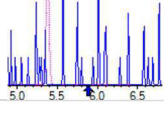
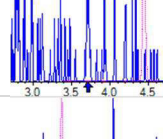
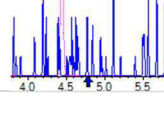


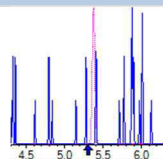
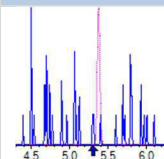
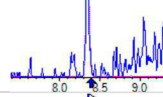
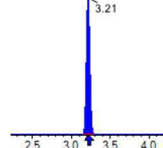
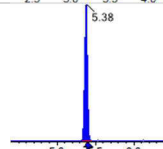
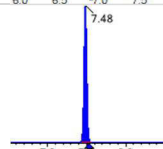
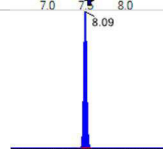
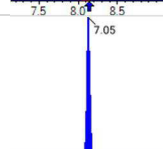
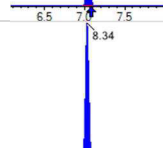
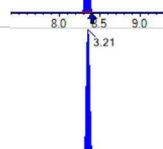
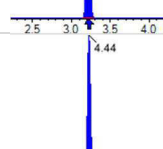
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

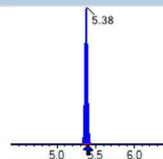
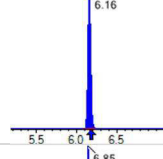
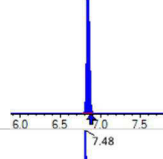
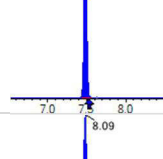
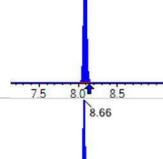
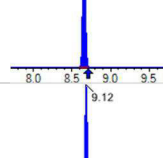
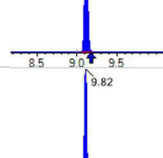
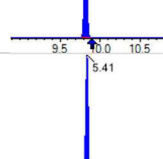
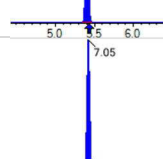
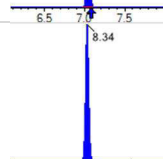
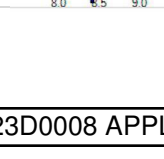
Sample I.D.: 23D0008-02RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (12)  
 Acquired: 2023/04/19 - 00:15

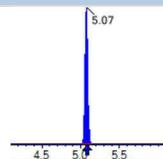
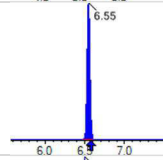
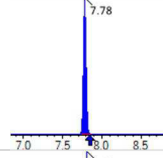
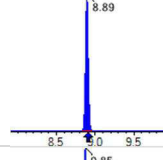
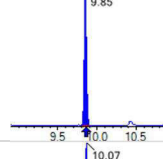
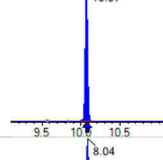
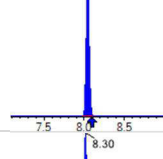
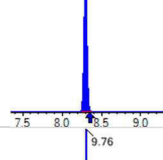
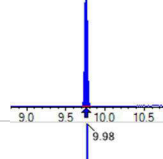
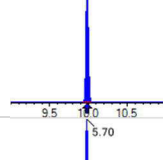
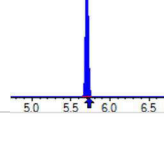
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 30850 ( 427.0 / 81.0 ) 19362	( 6.54 , 1.00 ) ( 0.00 , N/A , 0.0 )	278.0 108.3	0.6276 85.0 85.9	0.4598	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			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 218837	(3.21, N/A) (N/A, 0.00, N/A)	618.8	N/A	1.0619 [ 1.0000 ]	106.2% { 112.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 166634	(5.38, N/A) (N/A, -0.02, N/A)	395.0	N/A	1.1494 [ 1.0000 ]	114.9% { 118.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 293918	(6.85, N/A) (N/A, -0.03, N/A)	328.4	N/A	1.0779 [ 1.0000 ]	107.8% { 106.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 280698	(7.48, N/A) (N/A, -0.04, N/A)	440.8	N/A	1.1214 [ 1.0000 ]	112.1% { 118.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 272255	(8.09, N/A) (N/A, -0.05, N/A)	329.5	N/A	1.1467 [ 1.0000 ]	114.7% { 112.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 416720	(7.05, N/A) (N/A, -0.04, N/A)	267.8	N/A	1.0912 [ 1.0000 ]	109.1% { 112.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 462407	(8.34, N/A) (N/A, -0.06, N/A)	621.0	N/A	0.9698 [ 1.0000 ]	97.0% { 78.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1769835	(3.21, N/A) (N/A, 0.00, N/A)	1320.3	N/A	7.5496 [ 8.0000 ]	94.4% { 109.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1230768	(4.44, N/A) (N/A, -0.01, N/A)	1430.2	N/A	3.7355 [ 4.0000 ]	93.4% { 110.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 674736	(5.38, N/A) (N/A, -0.02, N/A)	638.8	N/A	1.8085 [ 2.0000 ]	90.4% { 113.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 525199	(6.16, N/A) (N/A, -0.02, N/A)	778.8	N/A	1.7835 [ 2.0000 ]	89.2% { 118.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 660616	(6.85, N/A) (N/A, -0.03, N/A)	514.6	N/A	1.8888 [ 2.0000 ]	94.4% { 105.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 261197	(7.48, N/A) (N/A, -0.04, N/A)	523.9	N/A	0.8964 [ 1.0000 ]	89.6% { 109.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 300975	(8.09, N/A) (N/A, -0.05, N/A)	320.0	N/A	0.9318 [ 1.0000 ]	93.2% { 109.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 261303	(8.66, N/A) (N/A, -0.06, N/A)	306.4	N/A	0.8408 [ 1.0000 ]	84.1% { 103.5% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 223535	(9.12, N/A) (N/A, -0.05, N/A)	693.8	N/A	0.8481 [ 1.0000 ]	84.8% { 105.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 284305	(9.82, N/A) (N/A, -0.06, N/A)	750.4	N/A	0.8745 [ 1.0000 ]	87.5% { 105.7% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1576215	(5.41, N/A) (N/A, -0.02, N/A)	730.9	N/A	1.9881 [ 2.0000 ]	99.4% { 109.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 631043	(7.05, N/A) (N/A, -0.04, N/A)	408.8	N/A	1.8877 [ 2.0000 ]	94.4% { 103.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1080764	(8.34, N/A) (N/A, -0.06, N/A)	716.3	N/A	1.8713 [ 2.0000 ]	93.6% { 76.2% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 159972	(5.07, N/A) (N/A, -0.01, N/A)	492.7	N/A	4.1863 [4.0000]	104.7% {114.5%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 180631	(6.55, N/A) (N/A, -0.02, N/A)	399.4	N/A	3.8105 [4.0000]	95.3% {106.2%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 431988	(7.78, N/A) (N/A, -0.05, N/A)	1109.3	N/A	8.0674 [4.0000]	201.7% {251.9%}			S2,
13C8_PFOSA_EIS	(506.0 / 78.0) 1068223	(8.89, N/A) (N/A, -0.02, N/A)	718.2	N/A	1.6480 [2.0000]	82.4% {80.2%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 226541	(9.85, N/A) (N/A, 0.00, N/A)	278.3	N/A	1.1288 [2.0000]	56.4% {55.4%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 212881	(10.07, N/A) (N/A, 0.00, N/A)	674.2	N/A	1.0798 [2.0000]	54.0% {54.0%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 500299	(8.04, N/A) (N/A, -0.05, N/A)	677.2	N/A	4.1484 [4.0000]	103.7% {103.0%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 366880	(8.30, N/A) (N/A, -0.05, N/A)	612.9	N/A	3.8092 [4.0000]	95.2% {93.3%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 771053	(9.76, N/A) (N/A, 0.00, N/A)	717.9	N/A	12.1270 [20.0000]	60.6% {62.8%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 955104	(9.98, N/A) (N/A, 0.00, N/A)	1465.9	N/A	12.1187 [20.0000]	60.6% {61.2%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1413286	(5.70, N/A) (N/A, -0.02, N/A)	965.0	N/A	7.3600 [8.0000]	92.0% {112.4%}			

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW06-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810		
Matrix:	Water	Laboratory ID:	23D0008-02RE3	File ID:	S2023-04-18C (13)
Sampled:	04/03/23 11:05	Prepared:	04/17/23 11:15	Analyzed:	04/19/23 00:31
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	528.05 mL / 2 mL			Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534	Calibration:	2316009



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-02RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (13)  
 Acquired: 2023/04/19 - 00:31

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 ]	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.: 23D0008-02RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (13)  
 Acquired: 2023/04/19 - 00:31

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-02RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (13)  
 Acquired: 2023/04/19 - 00:31

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

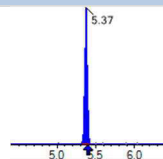
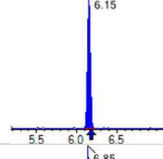
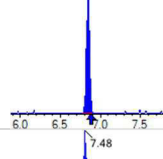
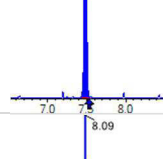
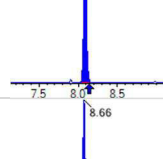
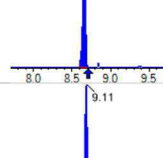
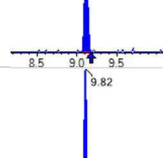
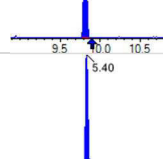
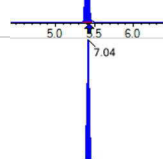
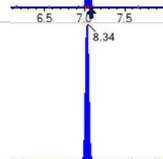
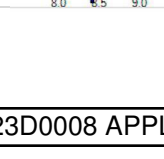


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

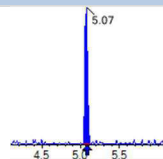
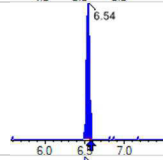
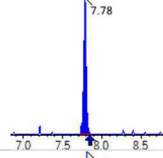
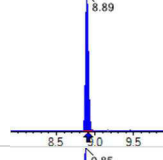
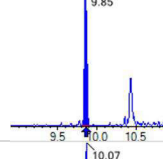
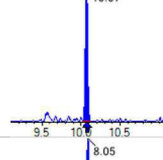
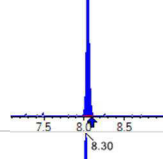
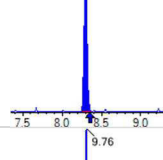
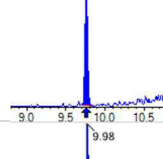
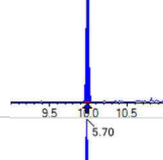
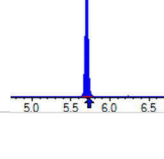
Sample I.D.: 23D0008-02RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (13)  
 Acquired: 2023/04/19 - 00:31

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 22305	(3.22, N/A) (N/A, 0.00, N/A)	272.5	N/A	1.0824 [ 1.0000 ]	108.2% { 11.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 17673	(5.38, N/A) (N/A, -0.02, N/A)	164.8	N/A	1.2190 [ 1.0000 ]	121.9% { 12.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 28538	(6.84, N/A) (N/A, -0.04, N/A)	195.1	N/A	1.0466 [ 1.0000 ]	104.7% { 10.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 28320	(7.48, N/A) (N/A, -0.04, N/A)	179.3	N/A	1.1314 [ 1.0000 ]	113.1% { 11.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 23664	(8.09, N/A) (N/A, -0.05, N/A)	232.5	N/A	0.9967 [ 1.0000 ]	99.7% { 9.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 35791	(7.04, N/A) (N/A, -0.04, N/A)	173.5	N/A	0.9372 [ 1.0000 ]	93.7% { 9.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 38942	(8.34, N/A) (N/A, -0.06, N/A)	180.8	N/A	0.8167 [ 1.0000 ]	81.7% { 6.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 178261	(3.22, N/A) (N/A, 0.00, N/A)	1185.6	N/A	0.7461 [ 0.8000 ]	93.3% { 11.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 120636	(4.44, N/A) (N/A, -0.01, N/A)	608.2	N/A	0.3452 [ 0.4000 ]	86.3% { 10.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 68657	(5.37, N/A) (N/A, -0.02, N/A)	417.8	N/A	0.1735 [0.2000]	86.8% {11.5%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 50735	(6.15, N/A) (N/A, -0.03, N/A)	446.0	N/A	0.1624 [0.2000]	81.2% {11.5%}			
13C8_PFOA_EIS	(421.0 / 376.0) 63234	(6.85, N/A) (N/A, -0.03, N/A)	159.3	N/A	0.1862 [0.2000]	93.1% {10.1%}			
13C9_PFNA_EIS	(472.0 / 427.0) 27307	(7.48, N/A) (N/A, -0.04, N/A)	160.5	N/A	0.0929 [0.1000]	92.9% {11.4%}			
13C6_PFDA_EIS	(519.0 / 474.0) 24420	(8.09, N/A) (N/A, -0.05, N/A)	172.8	N/A	0.0870 [0.1000]	87.0% {8.9%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 27153	(8.66, N/A) (N/A, -0.05, N/A)	168.0	N/A	0.1005 [0.1000]	100.5% {10.8%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 22620	(9.11, N/A) (N/A, -0.05, N/A)	268.1	N/A	0.0987 [0.1000]	98.7% {10.7%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 28988	(9.82, N/A) (N/A, -0.07, N/A)	318.4	N/A	0.1026 [0.1000]	102.6% {10.8%}			
13C3_PFBS_EIS	(302.0 / 80.0) 151661	(5.40, N/A) (N/A, -0.02, N/A)	382.0	N/A	0.2227 [0.2000]	111.4% {10.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 59316	(7.04, N/A) (N/A, -0.04, N/A)	350.7	N/A	0.2066 [0.2000]	103.3% {9.8%}			
13C8_PFOS_EIS	(507.0 / 80.0) 100802	(8.34, N/A) (N/A, -0.06, N/A)	293.1	N/A	0.2072 [0.2000]	103.6% {7.1%}			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 16315	(5.07, N/A) (N/A, -0.02, N/A)	155.9	N/A	0.4971 [0.4000]	124.3% {11.7%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 14283	(6.54, N/A) (N/A, -0.03, N/A)	126.0	N/A	0.3508 [0.4000]	87.7% {8.4%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 18870	(7.78, N/A) (N/A, -0.05, N/A)	177.5	N/A	0.4103 [0.4000]	102.6% {11.0%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 108495	(8.89, N/A) (N/A, -0.02, N/A)	530.6	N/A	0.1987 [0.2000]	99.4% {8.1%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 21103	(9.85, N/A) (N/A, 0.00, N/A)	61.2	N/A	0.1249 [0.2000]	62.4% {5.2%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 20631	(10.07, N/A) (N/A, 0.00, N/A)	107.4	N/A	0.1243 [0.2000]	62.1% {5.2%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 45179	(8.05, N/A) (N/A, -0.05, N/A)	279.1	N/A	0.4448 [0.4000]	111.2% {9.3%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 34076	(8.30, N/A) (N/A, -0.05, N/A)	231.2	N/A	0.4201 [0.4000]	105.0% {8.7%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 70633	(9.76, N/A) (N/A, 0.00, N/A)	102.2	N/A	1.3191 [2.0000]	66.0% {5.8%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 89847	(9.98, N/A) (N/A, 0.00, N/A)	346.8	N/A	1.3537 [2.0000]	67.7% {5.8%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 146129	(5.70, N/A) (N/A, -0.02, N/A)	444.8	N/A	0.7175 [0.8000]	89.7% {11.6%}			

# FORM I ANALYSIS DATA SHEET

AF-RHMW16-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-03RE2
		File ID:	S2023-04-18C (14)
Sampled:	04/03/23 12:16	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 00:47
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	541.78 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.74 U	1.5	0.74	0.19	
PFPEA	0.37 U	0.74	0.37	0.060	
PFHXA	0.18 U	0.37	0.18	0.051	
PFHPA	0.18 U	0.37	0.18	0.038	
PFOA	0.28 U	0.37	0.28	0.14	
PFNA	0.18 U	0.37	0.18	0.076	
PFDA	0.18 U	0.37	0.18	0.094	
PFUnA	0.28 U	0.37	0.28	0.15	
PFDOA	0.18 U	0.37	0.18	0.10	
PFTRDA	0.28 U	0.37	0.28	0.19	
PFTEDA	0.28 U	0.37	0.28	0.18	
PFBS	0.18 U	0.37	0.18	0.034	
PFPEs	0.18 U	0.37	0.18	0.058	
PFHXS	0.18 U	0.37	0.18	0.029	
PFHPS	0.18 U	0.37	0.18	0.047	
PFOS	0.18 U	0.37	0.18	0.059	
PFNS	0.18 U	0.37	0.18	0.11	
PFDS	0.28 U	0.37	0.28	0.14	
PFDOS	0.18 U	0.37	0.18	0.11	
4:2FTS	0.74 U	1.5	0.74	0.27	
6:2FTS	0.74 U	1.5	0.74	0.29	
8:2FTS	0.74 U	1.5	0.74	0.076	
PFOSA	0.18 U	0.37	0.18	0.096	
NMeFOSA	0.74 U	1.5	0.74	0.44	
NEtFOSA	0.74 U	1.5	0.74	0.38	
NMeFOSAA	0.18 U	0.37	0.18	0.098	
NEtFOSAA	0.18 U	0.37	0.18	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.93	
NEtFOSE	1.1 U	1.5	1.1	0.97	
HFPO-DA	0.37 U	0.74	0.37	0.16	

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW16-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-03RE2
		File ID:	S2023-04-18C (14)
Sampled:	04/03/23 12:16	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 00:47
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	541.78 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.37 U	0.74	0.37	0.11	
PFEESA	0.37 U	0.74	0.37	0.10	
PFMPA	0.37 U	0.74	0.37	0.050	
PFMBA	0.37 U	0.74	0.37	0.084	
NFDHA	0.37 U	0.74	0.37	0.28	
9CL-PF3ONS	0.37 U	0.74	0.37	0.19	
11CL-PF3OUDS	0.37 U	0.74	0.37	0.19	
3:3FTCA	0.74 U	1.5	0.74	0.53	
5:3FTCA	0.74 U	1.5	0.74	0.41	
7:3FTCA	0.74 U	1.5	0.74	0.51	



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-03RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (14)  
 Acquired: 2023/04/19 - 00:47

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 ]	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.: 23D0008-03RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (14)  
 Acquired: 2023/04/19 - 00:47

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			

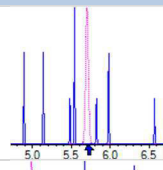
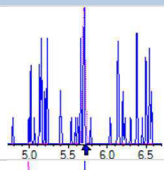
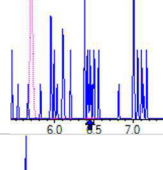
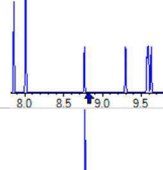
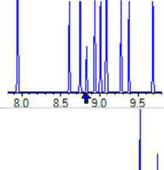
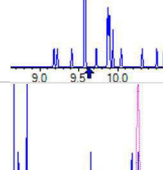
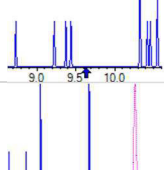
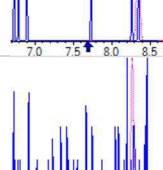
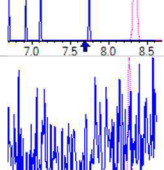
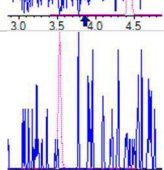
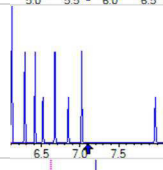
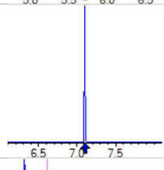
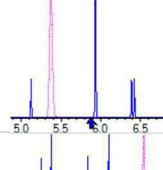
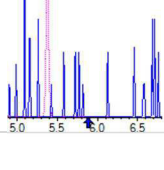
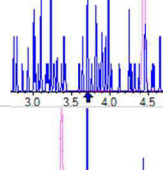
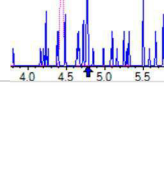
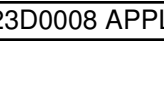


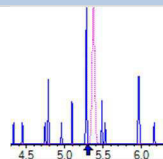
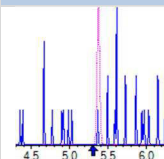
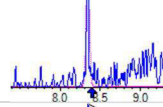
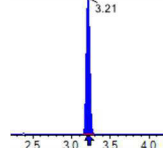
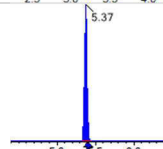
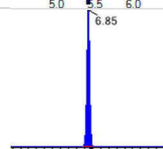
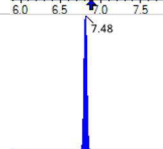
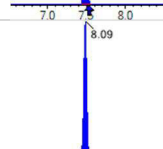
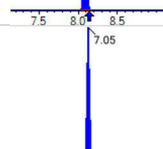
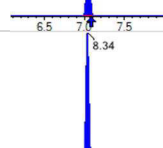
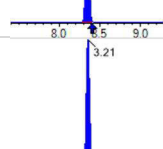
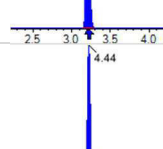
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-03RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

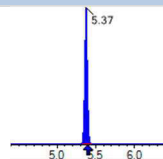
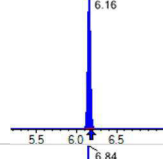
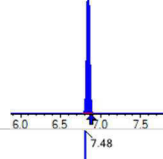
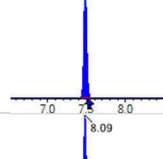
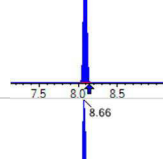
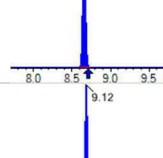
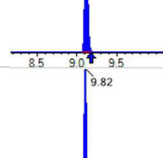
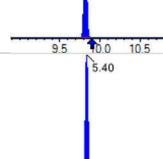
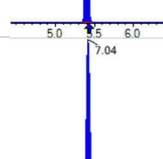
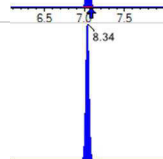
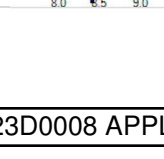
Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (14)  
 Acquired: 2023/04/19 - 00:47

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 220052	(3.21, N/A) (N/A, -0.01, N/A)	657.8	N/A	1.0678 [ 1.0000 ]	106.8% { 113.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 161640	(5.37, N/A) (N/A, -0.02, N/A)	808.1	N/A	1.1149 [ 1.0000 ]	111.5% { 115.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 289744	(6.85, N/A) (N/A, -0.04, N/A)	572.2	N/A	1.0626 [ 1.0000 ]	106.3% { 105.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 272076	(7.48, N/A) (N/A, -0.04, N/A)	265.9	N/A	1.0869 [ 1.0000 ]	108.7% { 114.4% }			
13C2_PFDA_IIS	(515.0 / 470.1) 248136	(8.09, N/A) (N/A, -0.05, N/A)	395.8	N/A	1.0451 [ 1.0000 ]	104.5% { 102.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 409421	(7.05, N/A) (N/A, -0.04, N/A)	439.3	N/A	1.0721 [ 1.0000 ]	107.2% { 110.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 451005	(8.34, N/A) (N/A, -0.06, N/A)	439.8	N/A	0.9459 [ 1.0000 ]	94.6% { 76.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1864996	(3.21, N/A) (N/A, -0.01, N/A)	1323.9	N/A	7.9116 [ 8.0000 ]	98.9% { 115.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1266104	(4.44, N/A) (N/A, -0.02, N/A)	1101.9	N/A	3.9615 [ 4.0000 ]	99.0% { 113.9% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 727466	(5.37, N/A) (N/A, -0.02, N/A)	1258.1	N/A	2.0101 [2.0000]	100.5% {122.3%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 530054	(6.16, N/A) (N/A, -0.03, N/A)	665.8	N/A	1.8556 [2.0000]	92.8% {119.6%}			
13C8_PFOA_EIS	(421.0 / 376.0) 688205	(6.84, N/A) (N/A, -0.03, N/A)	458.2	N/A	1.9960 [2.0000]	99.8% {110.2%}			
13C9_PFNA_EIS	(472.0 / 427.0) 260083	(7.48, N/A) (N/A, -0.04, N/A)	343.4	N/A	0.9209 [1.0000]	92.1% {109.0%}			
13C6_PFDA_EIS	(519.0 / 474.0) 314384	(8.09, N/A) (N/A, -0.05, N/A)	569.8	N/A	1.0679 [1.0000]	106.8% {113.9%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 285182	(8.66, N/A) (N/A, -0.05, N/A)	297.9	N/A	1.0069 [1.0000]	100.7% {113.0%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 217639	(9.12, N/A) (N/A, -0.05, N/A)	695.6	N/A	0.9060 [1.0000]	90.6% {102.7%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 283471	(9.82, N/A) (N/A, -0.07, N/A)	401.8	N/A	0.9567 [1.0000]	95.7% {105.4%}			
13C3_PFBS_EIS	(302.0 / 80.0) 1631461	(5.40, N/A) (N/A, -0.02, N/A)	524.2	N/A	2.0944 [2.0000]	104.7% {113.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 659333	(7.04, N/A) (N/A, -0.04, N/A)	621.9	N/A	2.0075 [2.0000]	100.4% {108.5%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1155431	(8.34, N/A) (N/A, -0.06, N/A)	513.6	N/A	2.0511 [2.0000]	102.6% {81.5%}			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-03RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (14)  
 Acquired: 2023/04/19 - 00:47

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 160213	( 5.07, N/A ) ( N/A, -0.01, N/A )	462.7	N/A	4.2674 [ 4.0000 ]	106.7% { 114.7% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 174609	( 6.54, N/A ) ( N/A, -0.03, N/A )	512.1	N/A	3.7492 [ 4.0000 ]	93.7% { 102.6% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 480028	( 7.78, N/A ) ( N/A, -0.05, N/A )	699.5	N/A	9.1244 [ 4.0000 ]	228.1% { 280.0% }			S2,
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1104627	( 8.89, N/A ) ( N/A, -0.01, N/A )	679.0	N/A	1.7472 [ 2.0000 ]	87.4% { 82.9% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 235719	( 9.85, N/A ) ( N/A, 0.00, N/A )	334.1	N/A	1.2043 [ 2.0000 ]	60.2% { 57.6% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 233969	( 10.07, N/A ) ( N/A, 0.00, N/A )	711.8	N/A	1.2168 [ 2.0000 ]	60.8% { 59.4% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 517486	( 8.04, N/A ) ( N/A, -0.05, N/A )	375.5	N/A	4.3994 [ 4.0000 ]	110.0% { 106.5% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 400005	( 8.30, N/A ) ( N/A, -0.05, N/A )	441.1	N/A	4.2581 [ 4.0000 ]	106.5% { 101.7% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 822866	( 9.76, N/A ) ( N/A, 0.00, N/A )	748.7	N/A	13.2691 [ 20.0000 ]	66.3% { 67.1% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1028025	( 9.98, N/A ) ( N/A, 0.00, N/A )	1297.7	N/A	13.3738 [ 20.0000 ]	66.9% { 65.8% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1408810	( 5.70, N/A ) ( N/A, -0.02, N/A )	1028.2	N/A	7.5634 [ 8.0000 ]	94.5% { 112.0% }			

**FORM I**  
**ANALYSIS DATA SHEET**

AF-RHMW16-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810		
Matrix:	Water	Laboratory ID:	23D0008-03RE3	File ID:	S2023-04-18C (15)
Sampled:	04/03/23 12:16	Prepared:	04/17/23 11:15	Analyzed:	04/19/23 01:03
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	541.78 mL / 2 mL			Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534	Calibration:	2316009



Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: 23D0008-03RE3@10  
DF, IV: 1, 1.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18C (15)  
Acquired: 2023/04/19 - 01:03

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 ]	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.: 23D0008-03RE3@10  
DF, IV: 1, 1.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18C (15)  
Acquired: 2023/04/19 - 01:03

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

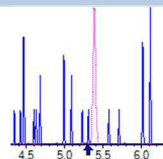
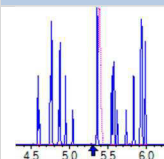
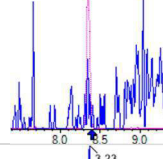
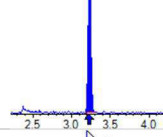
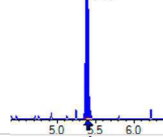
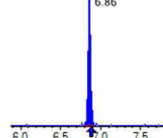
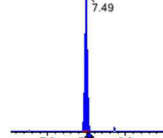
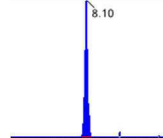
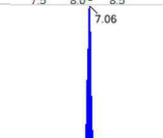
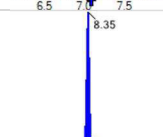
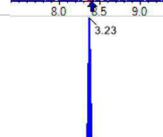
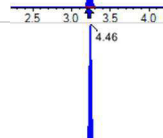


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

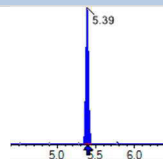
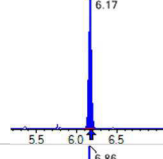
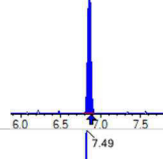
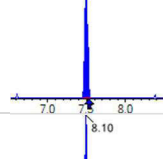
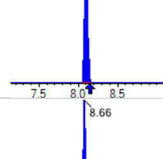
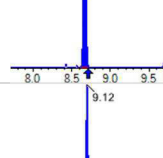
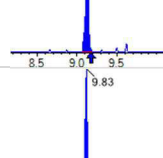
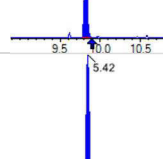
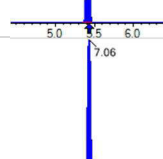
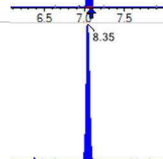
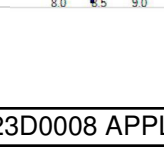
Sample I.D.: 23D0008-03RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

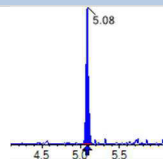
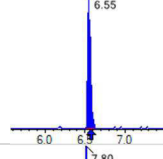
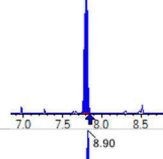
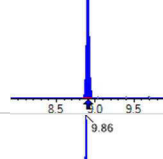
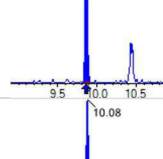
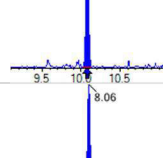
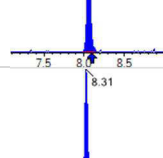
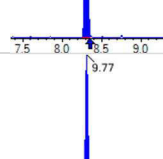
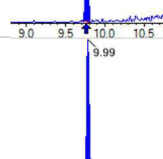
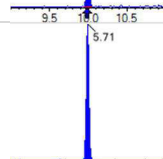
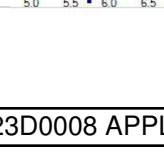
Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (15)  
 Acquired: 2023/04/19 - 01:03

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 21689	(3.23, N/A) (N/A, 0.01, N/A)	237.8	N/A	1.0525 [ 1.0000 ]	105.2% { 11.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 12152	(5.39, N/A) (N/A, -0.01, N/A)	139.2	N/A	0.8382 [ 1.0000 ]	83.8% { 8.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 26412	(6.86, N/A) (N/A, -0.02, N/A)	224.8	N/A	0.9686 [ 1.0000 ]	96.9% { 9.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 27060	(7.49, N/A) (N/A, -0.03, N/A)	313.0	N/A	1.0810 [ 1.0000 ]	108.1% { 11.4% }			
13C2_PFDA_IIS	(515.0 / 470.1) 26096	(8.10, N/A) (N/A, -0.04, N/A)	166.6	N/A	1.0991 [ 1.0000 ]	109.9% { 10.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 38041	(7.06, N/A) (N/A, -0.03, N/A)	305.8	N/A	0.9961 [ 1.0000 ]	99.6% { 10.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 46309	(8.35, N/A) (N/A, -0.05, N/A)	144.6	N/A	0.9712 [ 1.0000 ]	97.1% { 7.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 176042	(3.23, N/A) (N/A, 0.01, N/A)	1048.2	N/A	0.7577 [ 0.8000 ]	94.7% { 10.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 121159	(4.46, N/A) (N/A, 0.00, N/A)	630.1	N/A	0.5043 [ 0.4000 ]	126.1% { 10.9% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 68595	(5.39, N/A) (N/A, -0.01, N/A)	542.9	N/A	0.2521 [0.2000]	126.1% {11.5%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 55109	(6.17, N/A) (N/A, -0.01, N/A)	303.1	N/A	0.2566 [0.2000]	128.3% {12.4%}			
13C8_PFOA_EIS	(421.0 / 376.0) 68979	(6.86, N/A) (N/A, -0.02, N/A)	242.7	N/A	0.2195 [0.2000]	109.7% {11.0%}			
13C9_PFNA_EIS	(472.0 / 427.0) 27419	(7.49, N/A) (N/A, -0.03, N/A)	138.5	N/A	0.0976 [0.1000]	97.6% {11.5%}			
13C6_PFDA_EIS	(519.0 / 474.0) 29977	(8.10, N/A) (N/A, -0.04, N/A)	169.6	N/A	0.0968 [0.1000]	96.8% {10.9%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 24904	(8.66, N/A) (N/A, -0.05, N/A)	128.4	N/A	0.0836 [0.1000]	83.6% {9.9%}			
13C2_PFDaA_EIS	(615.0 / 570.0) 16700	(9.12, N/A) (N/A, -0.04, N/A)	157.2	N/A	0.0661 [0.1000]	66.1% {7.9%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 24748	(9.83, N/A) (N/A, -0.06, N/A)	216.3	N/A	0.0794 [0.1000]	79.4% {9.2%}			
13C3_PFBs_EIS	(302.0 / 80.0) 154493	(5.42, N/A) (N/A, -0.01, N/A)	596.5	N/A	0.2135 [0.2000]	106.7% {10.8%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 60442	(7.06, N/A) (N/A, -0.03, N/A)	308.3	N/A	0.1981 [0.2000]	99.0% {9.9%}			
13C8_PFOS_EIS	(507.0 / 80.0) 88592	(8.35, N/A) (N/A, -0.05, N/A)	227.1	N/A	0.1532 [0.2000]	76.6% {6.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 12480	(5.08, N/A) (N/A, 0.00, N/A)	153.6	N/A	0.3578 [0.4000]	89.4% {8.9%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 18807	(6.55, N/A) (N/A, -0.02, N/A)	227.6	N/A	0.4346 [0.4000]	108.7% {11.1%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 22604	(7.80, N/A) (N/A, -0.03, N/A)	178.0	N/A	0.4624 [0.4000]	115.6% {13.2%}			
13C8_PFOA_EIS	(506.0 / 78.0) 90437	(8.90, N/A) (N/A, 0.00, N/A)	362.6	N/A	0.1393 [0.2000]	69.7% {6.8%}			
D3_NMeFOA_EIS	(515.0 / 169.0) 25729	(9.86, N/A) (N/A, 0.01, N/A)	71.3	N/A	0.1280 [0.2000]	64.0% {6.3%}			
D5_NEtFOA_EIS	(531.0 / 169.0) 23473	(10.08, N/A) (N/A, 0.01, N/A)	117.5	N/A	0.1189 [0.2000]	59.4% {6.0%}			
D3_MeFOA_EIS	(573.0 / 419.0) 47950	(8.06, N/A) (N/A, -0.03, N/A)	195.0	N/A	0.3970 [0.4000]	99.3% {9.9%}			
D5_EtFOA_EIS	(589.0 / 419.0) 35337	(8.31, N/A) (N/A, -0.04, N/A)	283.8	N/A	0.3663 [0.4000]	91.6% {9.0%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 82144	(9.77, N/A) (N/A, 0.01, N/A)	142.0	N/A	1.2900 [2.0000]	64.5% {6.7%}			
D9_NEtFOSE_EIS	(639.0 / 58.9) 98247	(9.99, N/A) (N/A, 0.01, N/A)	363.4	N/A	1.2447 [2.0000]	62.2% {6.3%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 149028	(5.71, N/A) (N/A, -0.01, N/A)	569.6	N/A	1.0642 [0.8000]	133.0% {11.8%}			

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW12A-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-04RE2
		File ID:	S2023-04-18C (16)
Sampled:	04/03/23 09:28	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 01:19
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	527.67 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	1.4 J	1.5	0.76	0.20	
PFPEA	5.0	0.76	0.38	0.062	
PFHXA	1.4	0.38	0.19	0.052	
PFHPA	0.32 J	0.38	0.19	0.039	
PFOA	0.28 U	0.38	0.28	0.14	
PFNA	0.19 U	0.38	0.19	0.078	
PFDA	0.19 U	0.38	0.19	0.096	
PFUnA	0.28 U	0.38	0.28	0.15	
PFDOA	0.19 U	0.38	0.19	0.11	
PFTRDA	0.28 U	0.38	0.28	0.19	
PFTEDA	0.28 U	0.38	0.28	0.19	
PFBS	0.19 U	0.38	0.19	0.035	
PFPEs	0.19 U	0.38	0.19	0.059	
PFHXS	0.19 U	0.38	0.19	0.030	
PFHPS	0.19 U	0.38	0.19	0.049	
PFOS	0.19 U	0.38	0.19	0.060	
PFNS	0.19 U	0.38	0.19	0.12	
PFDS	0.28 U	0.38	0.28	0.14	
PFDOS	0.19 U	0.38	0.19	0.12	
4:2FTS	0.76 U	1.5	0.76	0.28	
6:2FTS	0.92 J	1.5	0.76	0.30	
8:2FTS	0.76 U	1.5	0.76	0.078	
PFOSA	0.13 J	0.38	0.19	0.099	B,
NMeFOSA	0.76 U	1.5	0.76	0.45	
NEtFOSA	0.76 U	1.5	0.76	0.39	
NMeFOSAA	0.19 U	0.38	0.19	0.10	
NEtFOSAA	0.19 U	0.38	0.19	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.96	
NEtFOSE	1.1 U	1.5	1.1	0.99	
HFPO-DA	0.38 U	0.76	0.38	0.17	

# FORM I ANALYSIS DATA SHEET

AF-RHMW12A-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-04RE2
		File ID:	S2023-04-18C (16)
Sampled:	04/03/23 09:28	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 01:19
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	527.67 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.38 U	0.76	0.38	0.12	
PFEESA	0.38 U	0.76	0.38	0.10	
PFMPA	0.38 U	0.76	0.38	0.051	
PFMBA	0.38 U	0.76	0.38	0.086	
NFDHA	0.38 U	0.76	0.38	0.29	
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	
3:3FTCA	0.76 U	1.5	0.76	0.54	
5:3FTCA	0.76 U	1.5	0.76	0.42	
7:3FTCA	0.76 U	1.5	0.76	0.52	



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-04RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (16)  
 Acquired: 2023/04/19 - 01:19

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 66832	(3.21, 1.00) (0.00, N/A, 0.0)	304.7	N/A 0.0 0.0	0.3630	N/A			
PFPeA	(263.0 / 219.0) 358949 (263.0 / 69.0) 4663	(4.44, 1.00) (0.00, N/A, -0.2)	751.9 74.1	0.0130 110.7 111.5	1.3152	N/A			
PFHxA	(313.0 / 269.0) 137438 (313.0 / 119.0) 8835	(5.37, 1.00) (0.00, N/A, 0.0)	243.1 44.3	0.0643 77.0 74.3	0.3814	N/A			
PFHpA	(363.0 / 319.0) 23910 (363.0 / 169.0) 7202	(6.15, 1.00) (0.00, N/A, -0.4)	50.7 40.8	0.3012 108.6 109.3	0.0842	N/A			
PFOA	(413.0 / 369.0) 10152 (413.0 / 169.0) 3130	(6.84, 1.00) (0.00, N/A, -0.5)	27.9 14.0	0.3083 103.3 105.2	0.0308	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.: 23D0008-04RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (16)  
 Acquired: 2023/04/19 - 01:19

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

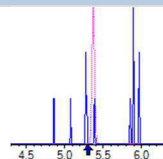
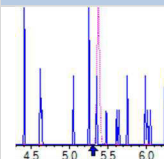
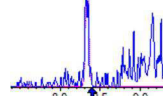
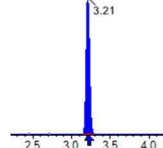
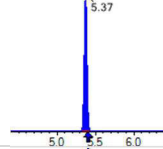
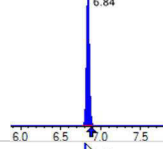
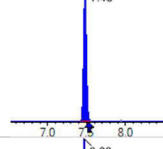
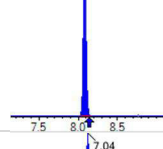
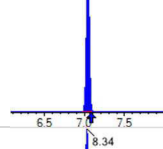
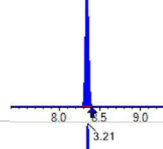
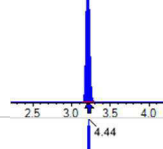
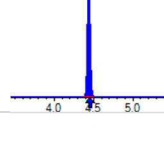
Sample I.D.: 23D0008-04RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (16)  
 Acquired: 2023/04/19 - 01:19

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 15824 ( 427.0 / 81.0 ) 16302	( 6.54 , 1.00 ) ( 0.00 , N/A , 0.2)	118.1 141.6	1.0302 139.5 141.0	0.2438	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			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOSA	( 498.0 / 78.0 ) 14956 ( 498.0 / 478.0 ) 320	( 8.88 , 1.00 ) ( -0.01 , N/A , -0.1)	89.3 18.9	0.0214 86.3 87.2	0.0348	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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 218084	(3.21, N/A) (N/A, -0.01, N/A)	657.3	N/A	1.0583 [ 1.0000 ]	105.8% { 112.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 162553	(5.37, N/A) (N/A, -0.02, N/A)	759.8	N/A	1.1212 [ 1.0000 ]	112.1% { 115.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 290087	(6.84, N/A) (N/A, -0.04, N/A)	400.9	N/A	1.0638 [ 1.0000 ]	106.4% { 105.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 266770	(7.48, N/A) (N/A, -0.05, N/A)	520.6	N/A	1.0657 [ 1.0000 ]	106.6% { 112.2% }			
13C2_PFDA_IIS	(515.0 / 470.1) 272004	(8.08, N/A) (N/A, -0.06, N/A)	418.5	N/A	1.1456 [ 1.0000 ]	114.6% { 111.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 423144	(7.04, N/A) (N/A, -0.05, N/A)	193.5	N/A	1.1080 [ 1.0000 ]	110.8% { 113.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 455814	(8.34, N/A) (N/A, -0.06, N/A)	441.4	N/A	0.9560 [ 1.0000 ]	95.6% { 77.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1707309	(3.21, N/A) (N/A, -0.01, N/A)	1186.9	N/A	7.3080 [ 8.0000 ]	91.4% { 105.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1177037	(4.44, N/A) (N/A, -0.02, N/A)	1141.3	N/A	3.6621 [ 4.0000 ]	91.6% { 105.9% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-04RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (16)  
 Acquired: 2023/04/19 - 01:19

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 685883	(5.37, N/A) (N/A, -0.02, N/A)	759.0	N/A	1.8845 [ 2.0000 ]	94.2% { 115.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 535045	(6.15, N/A) (N/A, -0.03, N/A)	987.7	N/A	1.8625 [ 2.0000 ]	93.1% { 120.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 659487	(6.84, N/A) (N/A, -0.04, N/A)	659.5	N/A	1.9105 [ 2.0000 ]	95.5% { 105.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 262190	(7.48, N/A) (N/A, -0.05, N/A)	768.7	N/A	0.9468 [ 1.0000 ]	94.7% { 109.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 282411	(8.08, N/A) (N/A, -0.06, N/A)	368.1	N/A	0.8751 [ 1.0000 ]	87.5% { 102.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 255185	(8.65, N/A) (N/A, -0.06, N/A)	209.1	N/A	0.8219 [ 1.0000 ]	82.2% { 101.1% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 205189	(9.11, N/A) (N/A, -0.06, N/A)	667.5	N/A	0.7792 [ 1.0000 ]	77.9% { 96.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 251867	(9.81, N/A) (N/A, -0.07, N/A)	640.2	N/A	0.7755 [ 1.0000 ]	77.5% { 93.6% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1550054	(5.40, N/A) (N/A, -0.03, N/A)	756.8	N/A	1.9254 [ 2.0000 ]	96.3% { 107.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 651556	(7.04, N/A) (N/A, -0.05, N/A)	525.0	N/A	1.9195 [ 2.0000 ]	96.0% { 107.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1054393	(8.34, N/A) (N/A, -0.06, N/A)	524.6	N/A	1.8520 [ 2.0000 ]	92.6% { 74.3% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-04RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (16)  
 Acquired: 2023/04/19 - 01:19

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 162728	( 5.07, N/A ) ( N/A, -0.02, N/A )	423.8	N/A	4.1938 [ 4.0000 ]	104.8% { 116.5% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 174714	( 6.54, N/A ) ( N/A, -0.03, N/A )	364.5	N/A	3.6298 [ 4.0000 ]	90.7% { 102.7% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 498206	( 7.78, N/A ) ( N/A, -0.05, N/A )	997.9	N/A	9.1628 [ 4.0000 ]	229.1% { 290.6% }			S2,
13C8_PFOA_EIS	( 506.0 / 78.0 ) 1028299	( 8.89, N/A ) ( N/A, -0.02, N/A )	933.6	N/A	1.6093 [ 2.0000 ]	80.5% { 77.2% }			
D3_NMeFOA_EIS	( 515.0 / 169.0 ) 223431	( 9.85, N/A ) ( N/A, -0.01, N/A )	329.8	N/A	1.1294 [ 2.0000 ]	56.5% { 54.6% }			
D5_NEtFOA_EIS	( 531.0 / 169.0 ) 209137	( 10.07, N/A ) ( N/A, 0.00, N/A )	705.5	N/A	1.0762 [ 2.0000 ]	53.8% { 53.1% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 509158	( 8.04, N/A ) ( N/A, -0.05, N/A )	595.6	N/A	4.2829 [ 4.0000 ]	107.1% { 104.8% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 390717	( 8.29, N/A ) ( N/A, -0.06, N/A )	378.2	N/A	4.1153 [ 4.0000 ]	102.9% { 99.4% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 791947	( 9.76, N/A ) ( N/A, 0.00, N/A )	754.1	N/A	12.6358 [ 20.0000 ]	63.2% { 64.5% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 988945	( 9.98, N/A ) ( N/A, 0.00, N/A )	1075.0	N/A	12.7296 [ 20.0000 ]	63.6% { 63.3% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1378505	( 5.70, N/A ) ( N/A, -0.02, N/A )	935.6	N/A	7.3591 [ 8.0000 ]	92.0% { 109.6% }			

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW12A-WGN01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810		
Matrix:	Water	Laboratory ID:	23D0008-04RE3	File ID:	S2023-04-18C (17)
Sampled:	04/03/23 09:28	Prepared:	04/17/23 11:15	Analyzed:	04/19/23 01:35
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	527.67 mL / 2 mL			Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534	Calibration:	2316009



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-04RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (17)  
 Acquired: 2023/04/19 - 01:35

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 ]	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.: 23D0008-04RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (17)  
 Acquired: 2023/04/19 - 01:35

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-04RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (17)  
 Acquired: 2023/04/19 - 01:35

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			



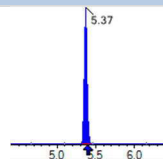
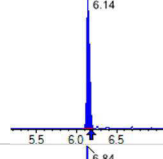
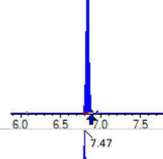
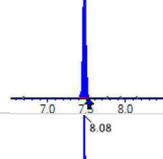
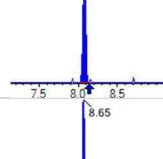
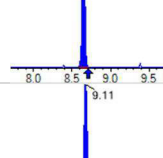
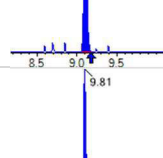
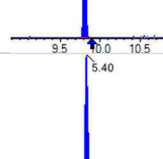
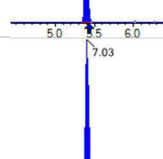
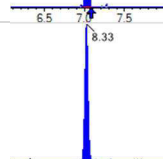
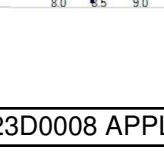


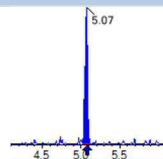
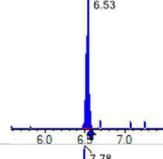
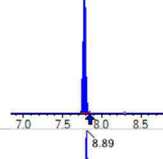
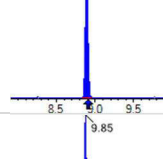
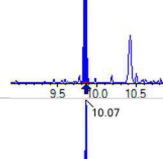
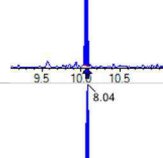
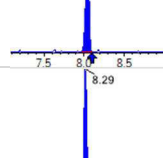
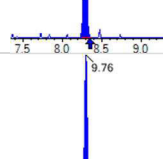
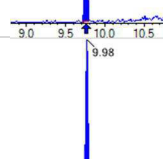
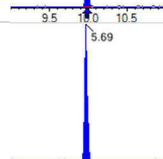
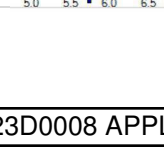
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-04RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (17)  
 Acquired: 2023/04/19 - 01:35

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 21508	(3.21, N/A) (N/A, 0.00, N/A)	202.7	N/A	1.0437 [ 1.0000 ]	104.4% { 11.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 18962	(5.37, N/A) (N/A, -0.03, N/A)	245.0	N/A	1.3079 [ 1.0000 ]	130.8% { 13.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 26451	(6.83, N/A) (N/A, -0.05, N/A)	185.5	N/A	0.9700 [ 1.0000 ]	97.0% { 9.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 28611	(7.47, N/A) (N/A, -0.06, N/A)	256.5	N/A	1.1430 [ 1.0000 ]	114.3% { 12.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 23821	(8.07, N/A) (N/A, -0.07, N/A)	218.0	N/A	1.0033 [ 1.0000 ]	100.3% { 9.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 36998	(7.04, N/A) (N/A, -0.05, N/A)	157.0	N/A	0.9688 [ 1.0000 ]	96.9% { 9.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 38683	(8.34, N/A) (N/A, -0.06, N/A)	190.9	N/A	0.8113 [ 1.0000 ]	81.1% { 6.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 168992	(3.21, N/A) (N/A, 0.00, N/A)	1207.6	N/A	0.7335 [ 0.8000 ]	91.7% { 10.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 116453	(4.44, N/A) (N/A, -0.02, N/A)	499.6	N/A	0.3106 [ 0.4000 ]	77.7% { 10.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 66988	(5.37, N/A) (N/A, -0.02, N/A)	416.3	N/A	0.1578 [0.2000]	78.9% {11.3%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 53799	(6.14, N/A) (N/A, -0.04, N/A)	312.8	N/A	0.1605 [0.2000]	80.3% {12.1%}			
13C8_PFOA_EIS	(421.0 / 376.0) 63764	(6.84, N/A) (N/A, -0.04, N/A)	143.6	N/A	0.2026 [0.2000]	101.3% {10.2%}			
13C9_PFNA_EIS	(472.0 / 427.0) 27807	(7.47, N/A) (N/A, -0.06, N/A)	314.9	N/A	0.0936 [0.1000]	93.6% {11.7%}			
13C6_PFDA_EIS	(519.0 / 474.0) 22575	(8.08, N/A) (N/A, -0.06, N/A)	133.8	N/A	0.0799 [0.1000]	79.9% {8.2%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 23782	(8.65, N/A) (N/A, -0.06, N/A)	222.0	N/A	0.0875 [0.1000]	87.5% {9.4%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 17419	(9.11, N/A) (N/A, -0.06, N/A)	116.5	N/A	0.0755 [0.1000]	75.5% {8.2%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 25473	(9.81, N/A) (N/A, -0.08, N/A)	300.4	N/A	0.0896 [0.1000]	89.6% {9.5%}			
13C3_PFBs_EIS	(302.0 / 80.0) 142952	(5.40, N/A) (N/A, -0.03, N/A)	400.1	N/A	0.2031 [0.2000]	101.5% {10.0%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 68151	(7.03, N/A) (N/A, -0.06, N/A)	230.0	N/A	0.2296 [0.2000]	114.8% {11.2%}			
13C8_PFOS_EIS	(507.0 / 80.0) 108188	(8.33, N/A) (N/A, -0.07, N/A)	234.5	N/A	0.2239 [0.2000]	112.0% {7.6%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 13617	(5.07, N/A) (N/A, -0.01, N/A)	144.6	N/A	0.4014 [0.4000]	100.3% {9.7%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 16329	(6.53, N/A) (N/A, -0.04, N/A)	130.0	N/A	0.3880 [0.4000]	97.0% {9.6%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 20996	(7.78, N/A) (N/A, -0.05, N/A)	260.8	N/A	0.4416 [0.4000]	110.4% {12.2%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 98459	(8.89, N/A) (N/A, -0.02, N/A)	657.6	N/A	0.1816 [0.2000]	90.8% {7.4%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 22093	(9.85, N/A) (N/A, 0.00, N/A)	54.5	N/A	0.1316 [0.2000]	65.8% {5.4%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 20902	(10.07, N/A) (N/A, -0.01, N/A)	124.9	N/A	0.1267 [0.2000]	63.4% {5.3%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 50309	(8.04, N/A) (N/A, -0.05, N/A)	267.8	N/A	0.4987 [0.4000]	124.7% {10.4%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 30826	(8.29, N/A) (N/A, -0.06, N/A)	146.8	N/A	0.3826 [0.4000]	95.6% {7.8%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 84029	(9.76, N/A) (N/A, 0.00, N/A)	141.3	N/A	1.5798 [2.0000]	79.0% {6.8%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 100247	(9.98, N/A) (N/A, -0.01, N/A)	394.9	N/A	1.5205 [2.0000]	76.0% {6.4%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 149183	(5.69, N/A) (N/A, -0.03, N/A)	491.7	N/A	0.6827 [0.8000]	85.3% {11.9%}			

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW12A-WGFD01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-05RE2
		File ID:	S2023-04-18C (18)
Sampled:	04/03/23 09:28	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 01:50
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	526.48 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	1.3 J	1.5	0.76	0.20	
PFPEA	4.6	0.76	0.38	0.062	
PFHXA	1.4	0.38	0.19	0.052	
PFHPA	0.32 J	0.38	0.19	0.039	
PFOA	0.28 U	0.38	0.28	0.14	
PFNA	0.19 U	0.38	0.19	0.078	
PFDA	0.19 U	0.38	0.19	0.096	
PFUnA	0.28 U	0.38	0.28	0.15	
PFDOA	0.19 U	0.38	0.19	0.11	
PFTRDA	0.28 U	0.38	0.28	0.19	
PFTEDA	0.28 U	0.38	0.28	0.19	
PFBS	0.19 U	0.38	0.19	0.035	
PFPEs	0.19 U	0.38	0.19	0.060	
PFHXS	0.19 U	0.38	0.19	0.030	
PFHPS	0.19 U	0.38	0.19	0.049	
PFOS	0.13 J	0.38	0.19	0.060	IR2, MI4,
PFNS	0.19 U	0.38	0.19	0.12	
PFDS	0.28 U	0.38	0.28	0.14	
PFDOS	0.19 U	0.38	0.19	0.12	
4:2FTS	0.76 U	1.5	0.76	0.28	
6:2FTS	1.4 J	1.5	0.76	0.30	
8:2FTS	0.76 U	1.5	0.76	0.078	
PFOSA	0.13 J	0.38	0.19	0.099	B,
NMeFOSA	0.76 U	1.5	0.76	0.45	
NEtFOSA	0.76 U	1.5	0.76	0.39	
NMeFOSAA	0.19 U	0.38	0.19	0.10	
NEtFOSAA	0.19 U	0.38	0.19	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.96	
NEtFOSE	1.1 U	1.5	1.1	0.99	
HFPO-DA	0.38 U	0.76	0.38	0.17	

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW12A-WGFD01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	23D0008-05RE2
		File ID:	S2023-04-18C (18)
Sampled:	04/03/23 09:28	Prepared:	04/17/23 11:15
		Analyzed:	04/19/23 01:50
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	526.48 mL / 2 mL	Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.38 U	0.76	0.38	0.12	
PFEESA	0.38 U	0.76	0.38	0.10	
PFMPA	0.38 U	0.76	0.38	0.051	
PFMBA	0.38 U	0.76	0.38	0.086	
NFDHA	0.38 U	0.76	0.38	0.29	
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	
3:3FTCA	0.76 U	1.5	0.76	0.55	
5:3FTCA	0.76 U	1.5	0.76	0.42	
7:3FTCA	0.76 U	1.5	0.76	0.53	



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-05RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (18)  
 Acquired: 2023/04/19 - 01:50

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 59313	(3.20, 1.00) (0.00, N/A, 0.0)	264.2	N/A 0.0 0.0	0.3304	N/A			
PFPeA	(263.0 / 219.0) 345744 (263.0 / 69.0) 3845	(4.43, 1.00) (0.00, N/A, 0.1)	518.5 48.0	0.0111 94.8 95.5	1.2169	N/A			
PFHxA	(313.0 / 269.0) 131611 (313.0 / 119.0) 12624	(5.36, 1.00) (0.00, N/A, 0.0)	182.8 137.3	0.0959 114.9 110.9	0.3688	N/A			
PFHpA	(363.0 / 319.0) 24163 (363.0 / 169.0) 7450	(6.14, 1.00) (0.00, N/A, -0.3)	85.3 56.7	0.3083 111.2 111.9	0.0855	N/A			
PFOA	(413.0 / 369.0) 8692 (413.0 / 169.0) 2859	(6.84, 1.00) (0.00, N/A, -0.1)	22.6 17.4	0.3289 110.2 112.2	0.0264	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.: 23D0008-05RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (18)  
 Acquired: 2023/04/19 - 01:50

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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) 21819 (499.0 / 99.0) 8258	(8.33, 1.00) (0.00, N/A, 0.2)	5161.1 669.6	0.3785 164.4 152.1	0.0331	N/A			IR2.M14 ABK 4/19/23
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			



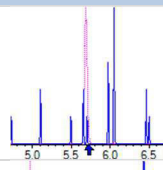
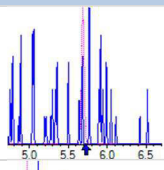
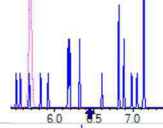
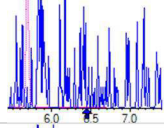
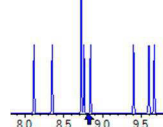
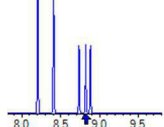
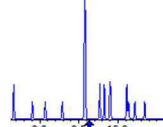
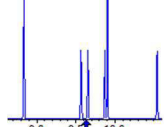
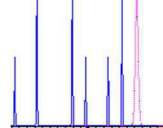
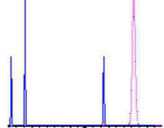
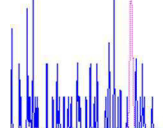
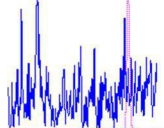
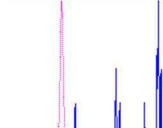
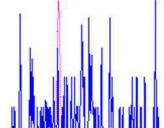
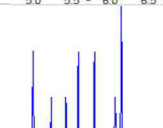

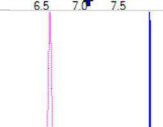
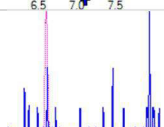
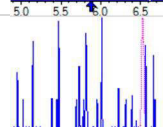
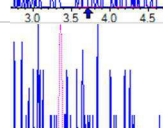
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-05RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (18)  
 Acquired: 2023/04/19 - 01:50

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 25070 ( 427.0 / 81.0 ) 20068	( 6.53 , 1.00 ) ( 0.00 , N/A , -0.2)	139.2 127.5	0.8005 108.4 109.6	0.3725	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			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOSA	( 498.0 / 78.0 ) 12056 ( 498.0 / 478.0 ) 220	( 8.88 , 1.00 ) ( -0.01 , N/A , -0.3)	5770.8 53.3	0.0183 73.5 74.3	0.0334	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			



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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

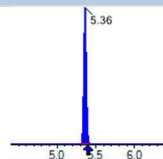
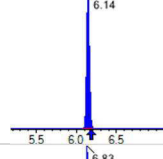
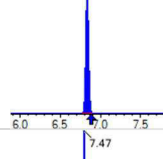
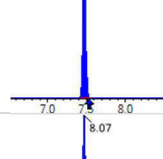
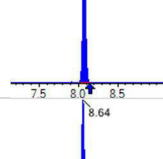
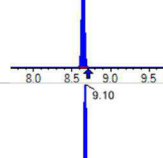
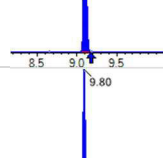
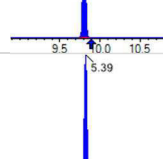
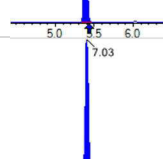
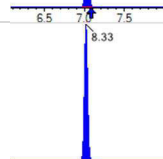
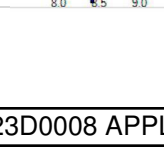


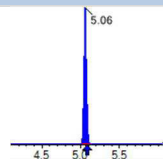
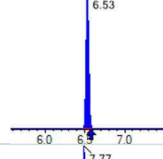
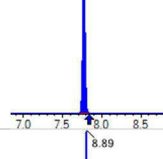
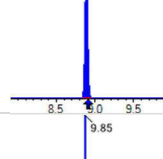
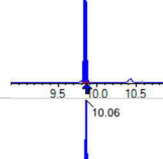
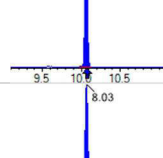
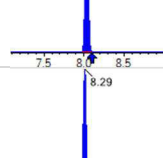
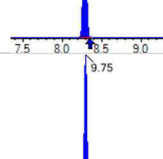
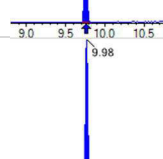
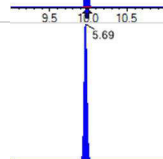
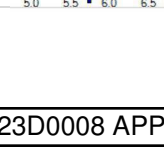
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-05RE2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (18)  
 Acquired: 2023/04/19 - 01:50

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 213022	(3.20, N/A) (N/A, -0.02, N/A)	595.4	N/A	1.0337 [ 1.0000 ]	103.4% { 109.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 155635	(5.36, N/A) (N/A, -0.03, N/A)	620.7	N/A	1.0735 [ 1.0000 ]	107.4% { 110.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 300620	(6.83, N/A) (N/A, -0.05, N/A)	484.9	N/A	1.1025 [ 1.0000 ]	110.2% { 109.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 258797	(7.47, N/A) (N/A, -0.06, N/A)	482.3	N/A	1.0339 [ 1.0000 ]	103.4% { 108.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 258555	(8.08, N/A) (N/A, -0.06, N/A)	233.0	N/A	1.0890 [ 1.0000 ]	108.9% { 106.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 359978	(7.03, N/A) (N/A, -0.06, N/A)	432.8	N/A	0.9426 [ 1.0000 ]	94.3% { 96.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 444970	(8.33, N/A) (N/A, -0.07, N/A)	381.9	N/A	0.9332 [ 1.0000 ]	93.3% { 75.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1664908	(3.19, N/A) (N/A, -0.02, N/A)	1098.9	N/A	7.2959 [ 8.0000 ]	91.2% { 103.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1225248	(4.43, N/A) (N/A, -0.03, N/A)	949.6	N/A	3.9816 [ 4.0000 ]	99.5% { 110.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 679277	(5.36, N/A) (N/A, -0.03, N/A)	673.6	N/A	1.9493 [ 2.0000 ]	97.5% { 114.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 532510	(6.14, N/A) (N/A, -0.04, N/A)	845.5	N/A	1.9361 [ 2.0000 ]	96.8% { 120.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 659740	(6.83, N/A) (N/A, -0.05, N/A)	472.3	N/A	1.8442 [ 2.0000 ]	92.2% { 105.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 272303	(7.47, N/A) (N/A, -0.06, N/A)	273.6	N/A	1.0136 [ 1.0000 ]	101.4% { 114.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 309277	(8.07, N/A) (N/A, -0.07, N/A)	423.8	N/A	1.0083 [ 1.0000 ]	100.8% { 112.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 271262	(8.64, N/A) (N/A, -0.07, N/A)	381.3	N/A	0.9191 [ 1.0000 ]	91.9% { 107.4% }			
13C2_PFDaA_EIS	(615.0 / 570.0) 207790	(9.10, N/A) (N/A, -0.06, N/A)	705.1	N/A	0.8301 [ 1.0000 ]	83.0% { 98.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 261593	(9.80, N/A) (N/A, -0.08, N/A)	695.1	N/A	0.8473 [ 1.0000 ]	84.7% { 97.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1606568	(5.39, N/A) (N/A, -0.04, N/A)	691.3	N/A	2.3457 [ 2.0000 ]	117.3% { 111.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 577047	(7.03, N/A) (N/A, -0.06, N/A)	367.6	N/A	1.9983 [ 2.0000 ]	99.9% { 94.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1043314	(8.33, N/A) (N/A, -0.07, N/A)	537.1	N/A	1.8772 [ 2.0000 ]	93.9% { 73.6% }			

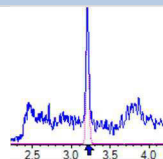
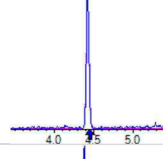
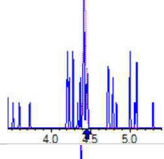
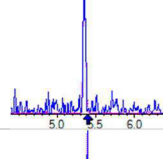
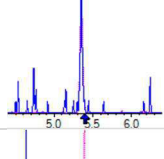
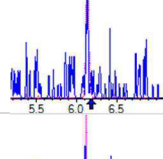
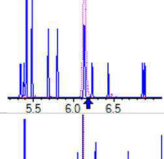
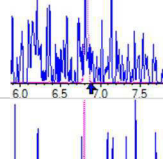
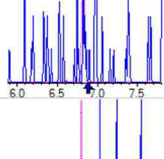
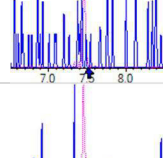
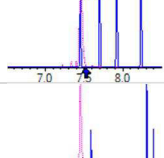
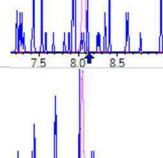
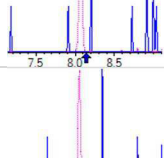
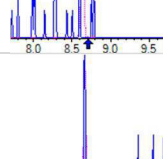
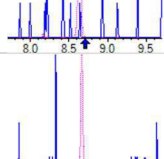
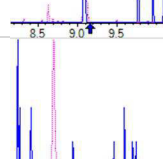
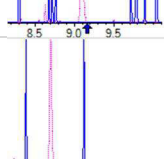
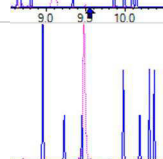
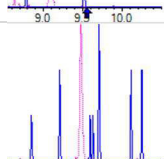
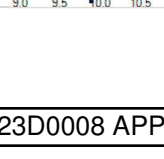
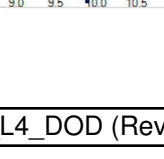
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 156441	(5.06, N/A) (N/A, -0.03, N/A)	530.0	N/A	4.7392 [4.0000]	118.5% {112.0%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 181184	(6.53, N/A) (N/A, -0.04, N/A)	508.0	N/A	4.4247 [4.0000]	110.6% {106.5%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 508422	(7.77, N/A) (N/A, -0.06, N/A)	809.1	N/A	10.9914 [4.0000]	274.8% {296.5%}			S2,
13C8_PFOSA_EIS	(506.0 / 78.0) 865434	(8.89, N/A) (N/A, -0.02, N/A)	426.0	N/A	1.3874 [2.0000]	69.4% {64.9%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 205189	(9.85, N/A) (N/A, -0.01, N/A)	391.7	N/A	1.0625 [2.0000]	53.1% {50.2%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 199870	(10.06, N/A) (N/A, -0.01, N/A)	608.3	N/A	1.0536 [2.0000]	52.7% {50.7%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 498927	(8.03, N/A) (N/A, -0.06, N/A)	334.9	N/A	4.2992 [4.0000]	107.5% {102.7%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 369192	(8.29, N/A) (N/A, -0.06, N/A)	379.6	N/A	3.9834 [4.0000]	99.6% {93.9%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 668951	(9.75, N/A) (N/A, -0.01, N/A)	617.3	N/A	10.9335 [20.0000]	54.7% {54.5%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 759659	(9.98, N/A) (N/A, -0.01, N/A)	1636.4	N/A	10.0166 [20.0000]	50.1% {48.6%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1378386	(5.69, N/A) (N/A, -0.04, N/A)	674.0	N/A	7.6856 [8.0000]	96.1% {109.6%}			

# FORM I

## ANALYSIS DATA SHEET

AF-RHMW12A-WGFD01LF-2304W1

Laboratory:	APPL, LLC	Work Order:	23D0008		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810		
Matrix:	Water	Laboratory ID:	23D0008-05RE3	File ID:	S2023-04-18C (19)
Sampled:	04/03/23 09:28	Prepared:	04/17/23 11:15	Analyzed:	04/19/23 02:06
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	526.48 mL / 2 mL			Instrument:	Saphira
Batch:	BCD0235	Sequence:	SC01534	Calibration:	2316009

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 ]	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			
PFTTrDA	(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.: 23D0008-05RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (19)  
 Acquired: 2023/04/19 - 02:06

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) N/A ( 813.0 / 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			
PFODA	( 913.0 / 869.0 ) N/A ( 913.0 / 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			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-05RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (19)  
 Acquired: 2023/04/19 - 02:06

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

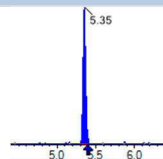
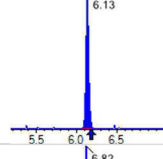
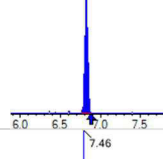
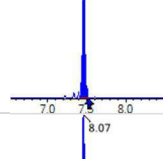
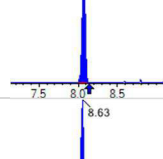
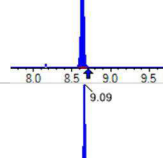
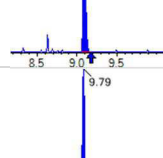
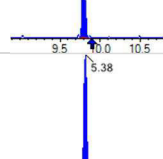
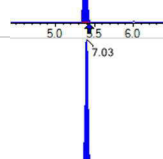
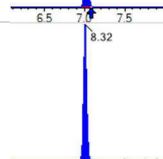
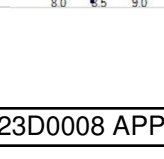


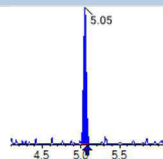
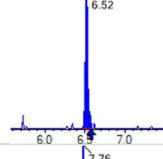
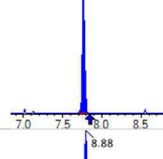
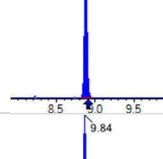
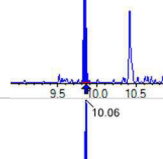
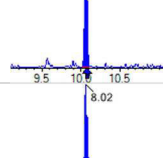
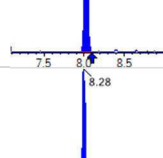
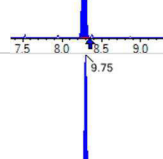
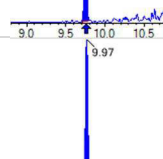
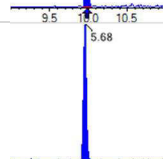
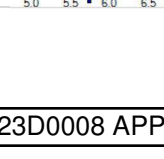
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23D0008-05RE3@10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (19)  
 Acquired: 2023/04/19 - 02:06

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFDA_IIS	(216.0 / 172.0) 21453	(3.21, N/A) (N/A, -0.01, N/A)	222.5	N/A	1.0410 [ 1.0000 ]	104.1% { 11.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 15453	(5.35, N/A) (N/A, -0.04, N/A)	129.0	N/A	1.0659 [ 1.0000 ]	106.6% { 11.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 27141	(6.82, N/A) (N/A, -0.06, N/A)	280.1	N/A	0.9953 [ 1.0000 ]	99.5% { 9.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 28141	(7.47, N/A) (N/A, -0.06, N/A)	161.9	N/A	1.1242 [ 1.0000 ]	112.4% { 11.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 24649	(8.07, N/A) (N/A, -0.07, N/A)	138.9	N/A	1.0381 [ 1.0000 ]	103.8% { 10.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 42000	(7.02, N/A) (N/A, -0.07, N/A)	259.0	N/A	1.0998 [ 1.0000 ]	110.0% { 11.3% }			
13C4_PFOS_IIS	(503.0 / 79.9) 39483	(8.32, N/A) (N/A, -0.08, N/A)	130.7	N/A	0.8281 [ 1.0000 ]	82.8% { 6.7% }			
13C4_PFDA_EIS	(217.0 / 172.0) 168041	(3.21, N/A) (N/A, -0.01, N/A)	1298.8	N/A	0.7312 [ 0.8000 ]	91.4% { 10.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 114611	(4.42, N/A) (N/A, -0.03, N/A)	438.1	N/A	0.3751 [ 0.4000 ]	93.8% { 10.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 59030	(5.35, N/A) (N/A, -0.04, N/A)	352.2	N/A	0.1706 [0.2000]	85.3% {9.9%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 48140	(6.13, N/A) (N/A, -0.05, N/A)	305.1	N/A	0.1763 [0.2000]	88.1% {10.9%}			
13C8_PFOA_EIS	(421.0 / 376.0) 62751	(6.82, N/A) (N/A, -0.06, N/A)	299.7	N/A	0.1943 [0.2000]	97.1% {10.0%}			
13C9_PFNA_EIS	(472.0 / 427.0) 23149	(7.46, N/A) (N/A, -0.06, N/A)	120.8	N/A	0.0792 [0.1000]	79.2% {9.7%}			
13C6_PFDA_EIS	(519.0 / 474.0) 27600	(8.07, N/A) (N/A, -0.07, N/A)	261.7	N/A	0.0944 [0.1000]	94.4% {10.0%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 25608	(8.63, N/A) (N/A, -0.08, N/A)	144.9	N/A	0.0910 [0.1000]	91.0% {10.1%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 19593	(9.09, N/A) (N/A, -0.07, N/A)	172.9	N/A	0.0821 [0.1000]	82.1% {9.2%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 27127	(9.79, N/A) (N/A, -0.09, N/A)	185.7	N/A	0.0922 [0.1000]	92.2% {10.1%}			
13C3_PFBS_EIS	(302.0 / 80.0) 141892	(5.38, N/A) (N/A, -0.04, N/A)	412.7	N/A	0.1776 [0.2000]	88.8% {9.9%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 62683	(7.03, N/A) (N/A, -0.06, N/A)	110.2	N/A	0.1860 [0.2000]	93.0% {10.3%}			
13C8_PFOS_EIS	(507.0 / 80.0) 101469	(8.32, N/A) (N/A, -0.08, N/A)	287.2	N/A	0.2058 [0.2000]	102.9% {7.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 12071	(5.05, N/A) (N/A, -0.03, N/A)	162.5	N/A	0.3134 [0.4000]	78.4% {8.6%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 15869	(6.52, N/A) (N/A, -0.05, N/A)	106.7	N/A	0.3321 [0.4000]	83.0% {9.3%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 19061	(7.76, N/A) (N/A, -0.07, N/A)	190.8	N/A	0.3532 [0.4000]	88.3% {11.1%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 83590	(8.88, N/A) (N/A, -0.03, N/A)	349.5	N/A	0.1510 [0.2000]	75.5% {6.3%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 16667	(9.84, N/A) (N/A, -0.01, N/A)	57.3	N/A	0.0973 [0.2000]	48.6% {4.1%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 18227	(10.06, N/A) (N/A, -0.01, N/A)	126.4	N/A	0.1083 [0.2000]	54.1% {4.6%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 50444	(8.02, N/A) (N/A, -0.07, N/A)	197.1	N/A	0.4899 [0.4000]	122.5% {10.4%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 38811	(8.28, N/A) (N/A, -0.07, N/A)	196.6	N/A	0.4719 [0.4000]	118.0% {9.9%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 61091	(9.75, N/A) (N/A, -0.01, N/A)	105.4	N/A	1.1253 [2.0000]	56.3% {5.0%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 73626	(9.97, N/A) (N/A, -0.01, N/A)	247.3	N/A	1.0941 [2.0000]	54.7% {4.7%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 124615	(5.68, N/A) (N/A, -0.05, N/A)	399.3	N/A	0.6998 [0.8000]	87.5% {9.9%}			

# QUALITY CONTROL

## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>AF-RHMW04-WGN01LF-2304W1 (23D0008-01RE2) ng/L</b> Lab File ID: S2023-04-18C (10)				Analyzed: 04/18/23 23:43
13C4-PFBA	29.5	95.8	10 - 130	
13C5-PFPEA	14.8	104	35 - 150	
13C5-PFHXA	7.38	102	55 - 150	
13C4-PFHFA	7.38	98.1	55 - 150	
13C8-PFOA	7.38	92.5	60 - 140	
13C9-PFNA	3.69	93.6	55 - 140	
13C6-PFDA	3.69	100	50 - 140	
13C7-PFUnA	3.69	99.8	30 - 140	
13C2-PFDOA	3.69	106	10 - 150	
13C2-PFTEDA	3.69	97.1	10 - 130	
13C3-PFBS	7.38	111	55 - 150	
13C3-PFHXS	7.38	109	55 - 150	
13C8-PFOS	7.38	107	45 - 140	
13C2-4:2FTS	14.8	120	60 - 200	
13C2-6:2FTS	14.8	115	60 - 200	
13C2-8:2FTS	14.8	217	50 - 200	*
13C8-PFOSA	7.38	84.7	30 - 130	
D3-NMEFOSA	7.38	54.3	15 - 130	
D5-NETFOSA	7.38	54.9	10 - 130	
D3-NMEFOSAA	14.8	110	45 - 200	
D5-NETFOSAA	14.8	109	10 - 200	
D7-NMEFOSE	73.8	68.5	10 - 150	
D9-NETFOSSE	73.8	64.3	10 - 150	
13C3-HFPO-DA	29.5	101	25 - 160	
<b>AF-RHMW04-WGN01LF-2304W1 (23D0008-01RE3) ng/L</b> Lab File ID: S2023-04-18C (11)				Analyzed: 04/18/23 23:59
13C2-8:2FTS	14.8	123	50 - 200	

## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>AF-RHMW06-WGN01LF-2304W1 (23D0008-02RE2 ) ng/L</b>		Lab File ID: S2023-04-18C (12)		Analyzed: 04/19/23 00:15
13C4-PFBA	30.3	94.4	10 - 130	
13C5-PFPEA	15.2	93.4	35 - 150	
13C5-PFHXA	7.58	90.4	55 - 150	
13C4-PFHPA	7.58	89.2	55 - 150	
13C8-PFOA	7.58	94.4	60 - 140	
13C9-PFNA	3.79	89.6	55 - 140	
13C6-PFDA	3.79	93.2	50 - 140	
13C7-PFUnA	3.79	84.1	30 - 140	
13C2-PFDOA	3.79	84.8	10 - 150	
13C2-PFTEDA	3.79	87.5	10 - 130	
13C3-PFBS	7.58	99.4	55 - 150	
13C3-PFHXS	7.58	94.4	55 - 150	
13C8-PFOS	7.58	93.6	45 - 140	
13C2-4:2FTS	15.2	105	60 - 200	
13C2-6:2FTS	15.2	95.3	60 - 200	
13C2-8:2FTS	15.2	202	50 - 200	*
13C8-PFOSA	7.58	82.4	30 - 130	
D3-NMEFOSA	7.58	56.4	15 - 130	
D5-NETFOSA	7.58	54.0	10 - 130	
D3-NMEFOSAA	15.2	104	45 - 200	
D5-NETFOSAA	15.2	95.2	10 - 200	
D7-NMEFOSE	75.8	60.6	10 - 150	
D9-NETFOSSE	75.8	60.6	10 - 150	
13C3-HFPO-DA	30.3	92.0	25 - 160	
<b>AF-RHMW06-WGN01LF-2304W1 (23D0008-02RE3 ) ng/L</b>		Lab File ID: S2023-04-18C (13)		Analyzed: 04/19/23 00:31
13C2-8:2FTS	15.2	103	50 - 200	

## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>AF-RHMW16-WGN01LF-2304W1 (23D0008-03RE2 ) ng/L</b> Lab File ID: S2023-04-18C (14)				Analyzed: 04/19/23 00:47
13C4-PFBA	29.5	98.9	10 - 130	
13C5-PFPEA	14.8	99.0	35 - 150	
13C5-PFHXA	7.38	101	55 - 150	
13C4-PFHPA	7.38	92.8	55 - 150	
13C8-PFOA	7.38	99.8	60 - 140	
13C9-PFNA	3.69	92.1	55 - 140	
13C6-PFDA	3.69	107	50 - 140	
13C7-PFUnA	3.69	101	30 - 140	
13C2-PFDOA	3.69	90.6	10 - 150	
13C2-PFTEDA	3.69	95.7	10 - 130	
13C3-PFBS	7.38	105	55 - 150	
13C3-PFHXS	7.38	100	55 - 150	
13C8-PFOS	7.38	103	45 - 140	
13C2-4:2FTS	14.8	107	60 - 200	
13C2-6:2FTS	14.8	93.7	60 - 200	
13C2-8:2FTS	14.8	228	50 - 200	*
13C8-PFOSA	7.38	87.4	30 - 130	
D3-NMEFOSA	7.38	60.2	15 - 130	
D5-NETFOSA	7.38	60.8	10 - 130	
D3-NMEFOSAA	14.8	110	45 - 200	
D5-NETFOSAA	14.8	106	10 - 200	
D7-NMEFOSE	73.8	66.3	10 - 150	
D9-NETFOSSE	73.8	66.9	10 - 150	
13C3-HFPO-DA	29.5	94.5	25 - 160	
<b>AF-RHMW16-WGN01LF-2304W1 (23D0008-03RE3 ) ng/L</b> Lab File ID: S2023-04-18C (15)				Analyzed: 04/19/23 01:03
13C2-8:2FTS	14.8	116	50 - 200	



## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>AF-RHMW12A-WGN01LF-2304W1 (23D0008-04RE2) ng/l</b> Lab File ID: S2023-04-18C (16)				Analyzed: 04/19/23 01:19
13C4-PFBA	30.3	91.4	10 - 130	
13C5-PFPEA	15.2	91.6	35 - 150	
13C5-PFHXA	7.58	94.2	55 - 150	
13C4-PFHPA	7.58	93.1	55 - 150	
13C8-PFOA	7.58	95.5	60 - 140	
13C9-PFNA	3.79	94.7	55 - 140	
13C6-PFDA	3.79	87.5	50 - 140	
13C7-PFUnA	3.79	82.2	30 - 140	
13C2-PFDOA	3.79	77.9	10 - 150	
13C2-PFTEDA	3.79	77.5	10 - 130	
13C3-PFBS	7.58	96.3	55 - 150	
13C3-PFHXS	7.58	96.0	55 - 150	
13C8-PFOS	7.58	92.6	45 - 140	
13C2-4:2FTS	15.2	105	60 - 200	
13C2-6:2FTS	15.2	90.7	60 - 200	
13C2-8:2FTS	15.2	229	50 - 200	*
13C8-PFOSA	7.58	80.5	30 - 130	
D3-NMEFOSA	7.58	56.5	15 - 130	
D5-NETFOSA	7.58	53.8	10 - 130	
D3-NMEFOSAA	15.2	107	45 - 200	
D5-NETFOSAA	15.2	103	10 - 200	
D7-NMEFOSE	75.8	63.2	10 - 150	
D9-NETFOSSE	75.8	63.6	10 - 150	
13C3-HFPO-DA	30.3	92.0	25 - 160	
<b>AF-RHMW12A-WGN01LF-2304W1 (23D0008-04RE3) ng/l</b> Lab File ID: S2023-04-18C (17)				Analyzed: 04/19/23 01:35
13C2-8:2FTS	15.2	110	50 - 200	

## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>AF-RHMW12A-WGFD01LF-2304W1 (23D0008-05RE2) . nç</b> Lab File ID: S2023-04-18C (18)				Analyzed: 04/19/23 01:50
13C4-PFBA	30.4	91.2	10 - 130	
13C5-PFPEA	15.2	99.5	35 - 150	
13C5-PFHXA	7.60	97.5	55 - 150	
13C4-PFHPA	7.60	96.8	55 - 150	
13C8-PFOA	7.60	92.2	60 - 140	
13C9-PFNA	3.80	101	55 - 140	
13C6-PFDA	3.80	101	50 - 140	
13C7-PFUnA	3.80	91.9	30 - 140	
13C2-PFDOA	3.80	83.0	10 - 150	
13C2-PFTEDA	3.80	84.7	10 - 130	
13C3-PFBS	7.60	117	55 - 150	
13C3-PFHXS	7.60	99.9	55 - 150	
13C8-PFOS	7.60	93.9	45 - 140	
13C2-4:2FTS	15.2	118	60 - 200	
13C2-6:2FTS	15.2	111	60 - 200	
13C2-8:2FTS	15.2	275	50 - 200	*
13C8-PFOSA	7.60	69.4	30 - 130	
D3-NMEFOSA	7.60	53.1	15 - 130	
D5-NETFOSA	7.60	52.7	10 - 130	
D3-NMEFOSAA	15.2	107	45 - 200	
D5-NETFOSAA	15.2	99.6	10 - 200	
D7-NMEFOSE	76.0	54.7	10 - 150	
D9-NETFOSSE	76.0	50.1	10 - 150	
13C3-HFPO-DA	30.4	96.1	25 - 160	
<b>AF-RHMW12A-WGFD01LF-2304W1 (23D0008-05RE3) . nç</b> Lab File ID: S2023-04-18C (19)				Analyzed: 04/19/23 02:06
13C2-8:2FTS	15.2	88.3	50 - 200	

# SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>Blank (BCD0235-BLK1) . ng/L</b>	Lab File ID: S2023-04-18C (7)			Analyzed: 04/18/23 22:56
13C4-PFBA	32.0	94.7	10 - 130	
13C5-PFPEA	16.0	95.0	35 - 150	
13C5-PFHXA	8.00	94.8	55 - 150	
13C4-PFHPA	8.00	86.7	55 - 150	
13C8-PFOA	8.00	89.6	60 - 140	
13C9-PFNA	4.00	88.3	55 - 140	
13C6-PFDA	4.00	85.5	50 - 140	
13C7-PFUnA	4.00	87.0	30 - 140	
13C2-PFDOA	4.00	82.8	10 - 150	
13C2-PFTEDA	4.00	79.7	10 - 130	
13C3-PFBS	8.00	106	55 - 150	
13C3-PFHXS	8.00	97.5	55 - 150	
13C8-PFOS	8.00	91.3	45 - 140	
13C2-4:2FTS	16.0	105	60 - 200	
13C2-6:2FTS	16.0	97.6	60 - 200	
13C2-8:2FTS	16.0	178	50 - 200	
13C8-PFOSA	8.00	69.5	30 - 130	
D3-NMEFOSA	8.00	39.0	15 - 130	
D5-NETFOSA	8.00	38.4	10 - 130	
D3-NMEFOSAA	16.0	91.9	45 - 200	
D5-NETFOSAA	16.0	85.6	10 - 200	
D7-NMEFOSE	80.0	50.3	10 - 150	
D9-NETFOSSE	80.0	48.8	10 - 150	
13C3-HFPO-DA	32.0	92.2	25 - 160	

# SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>LCS (BCD0235-BS1) . ng/L</b>	Lab File ID: S2023-04-18C (8)			Analyzed: 04/18/23 23:12
13C4-PFBA	32.0	103	10 - 130	
13C5-PFPEA	16.0	101	35 - 150	
13C5-PFHXA	8.00	97.5	55 - 150	
13C4-PFHPA	8.00	102	55 - 150	
13C8-PFOA	8.00	103	60 - 140	
13C9-PFNA	4.00	108	55 - 140	
13C6-PFDA	4.00	96.7	50 - 140	
13C7-PFUnA	4.00	103	30 - 140	
13C2-PFDOA	4.00	90.8	10 - 150	
13C2-PFTEDA	4.00	96.6	10 - 130	
13C3-PFBS	8.00	103	55 - 150	
13C3-PFHXS	8.00	99.1	55 - 150	
13C8-PFOS	8.00	96.9	45 - 140	
13C2-4:2FTS	16.0	102	60 - 200	
13C2-6:2FTS	16.0	96.3	60 - 200	
13C2-8:2FTS	16.0	169	50 - 200	
13C8-PFOSA	8.00	80.1	30 - 130	
D3-NMEFOSA	8.00	45.6	15 - 130	
D5-NETFOSA	8.00	46.5	10 - 130	
D3-NMEFOSAA	16.0	102	45 - 200	
D5-NETFOSAA	16.0	95.6	10 - 200	
D7-NMEFOSE	80.0	63.0	10 - 150	
D9-NETFOSE	80.0	62.8	10 - 150	
13C3-HFPO-DA	32.0	99.3	25 - 160	

## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>MRL Check (BCD0235-MRL1) . ng/L</b>				
		Lab File ID: S2023-04-18C (9)		Analyzed: 04/18/23 23:28
13C4-PFBA	32.0	102	10 - 130	
13C5-PFPEA	16.0	98.3	35 - 150	
13C5-PFHXA	8.00	95.8	55 - 150	
13C4-PFHPA	8.00	95.8	55 - 150	
13C8-PFOA	8.00	102	60 - 140	
13C9-PFNA	4.00	99.3	55 - 140	
13C6-PFDA	4.00	97.8	50 - 140	
13C7-PFUnA	4.00	90.3	30 - 140	
13C2-PFDOA	4.00	87.9	10 - 150	
13C2-PFTEDA	4.00	88.2	10 - 130	
13C3-PFBS	8.00	106	55 - 150	
13C3-PFHXS	8.00	97.6	55 - 150	
13C8-PFOS	8.00	98.4	45 - 140	
13C2-4:2FTS	16.0	102	60 - 200	
13C2-6:2FTS	16.0	96.7	60 - 200	
13C2-8:2FTS	16.0	198	50 - 200	
13C8-PFOSA	8.00	82.2	30 - 130	
D3-NMEFOSA	8.00	60.7	15 - 130	
D5-NETFOSA	8.00	60.2	10 - 130	
D3-NMEFOSAA	16.0	101	45 - 200	
D5-NETFOSAA	16.0	97.2	10 - 200	
D7-NMEFOSE	80.0	61.4	10 - 150	
D9-NETFOSSE	80.0	59.1	10 - 150	
13C3-HFPO-DA	32.0	92.7	25 - 160	

# METHOD BLANK SUMMARY

## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Blank ID:	BCD0235-BLK1	Batch:	BCD0235
		Prepared:	04/17/2023 11:15

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	BCD0235-BS1	S2023-04-18C (8)	23:12
MRL Check	BCD0235-MRL1	S2023-04-18C (9)	23:28
AF-RHMW04-WGN01LF-2304W1	23D0008-01RE2	S2023-04-18C (10)	23:43
DF 10	23D0008-01RE3	S2023-04-18C (11)	23:59
AF-RHMW06-WGN01LF-2304W1	23D0008-02RE2	S2023-04-18C (12)	00:15
DF 10	23D0008-02RE3	S2023-04-18C (13)	00:31
AF-RHMW16-WGN01LF-2304W1	23D0008-03RE2	S2023-04-18C (14)	00:47
DF 10	23D0008-03RE3	S2023-04-18C (15)	01:03
AF-RHMW12A-WGN01LF-2304W1	23D0008-04RE2	S2023-04-18C (16)	01:19
DF 10	23D0008-04RE3	S2023-04-18C (17)	01:35
AF-RHMW12A-WGFD01LF-2304W1	23D0008-05RE2	S2023-04-18C (18)	01:50
DF 10	23D0008-05RE3	S2023-04-18C (19)	02:06

# ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-BLK1
Sampled:		Prepared:	04/17/23 11:15
Solids:		Preparation:	EPA 1633
Batch:	BCD0235	Sequence:	SC01534
Column:	1	Calibration:	2316009
		Instrument:	Saphira

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	0.30 U	0.40	0.30	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	0.30 U	0.40	0.30	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	0.30 U	0.40	0.30	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	0.30 U	0.40	0.30	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	0.246 J	0.40	0.20	0.10	B, J
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:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-BLK1
Sampled:		Prepared:	04/17/23 11:15
Solids:		Preparation:	EPA 1633
Batch:	BCD0235	Sequence:	SC01534
Column:	1	Calibration:	2316009
			Instrument: Saphira

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: 23D0008

Client: AECOM

Project: Red Hill AFFF Assessment Sampling / 60697810

Matrix: Water

Preparation: EPA 1633

Batch: BCD0235

Laboratory ID: BCD0235-BS1

Column:

<b>ANALYTE</b>	<b>SPIKE ADDED (ng/L)</b>	<b>LCS CONCENTRATION (ng/L)</b>	<b>LCS % REC.</b>	<b>QC LIMITS REC.</b>
PFBA	16.0	16.3	102	58 - 148
PFPEA	8.00	8.13	102	54 - 152
PFHXA	4.00	4.24	106	55 - 152
PFHPA	4.00	3.81	95.2	54 - 154
PFOA	4.00	3.95	98.8	52 - 161
PFNA	4.00	4.16	104	59 - 149
PFDA	4.00	4.11	103	52 - 147
PFUnA	4.00	3.79	94.8	48 - 159
PFDOA	4.00	4.03	101	64 - 142
PFTRDA	4.00	4.07	102	49 - 148
PFTEDA	4.00	4.19	105	47 - 161
PFBS	3.54	3.46	97.7	62 - 144
PFPEs	3.76	3.82	102	59 - 151
PFHXS	3.66	3.80	104	57 - 146
PFHPS	3.82	4.42	116	55 - 152
PFOS	3.72	4.07	109	58 - 149
PFNS	3.84	3.95	103	52 - 148
PFDS	3.86	4.13	107	51 - 147
PFDOS	3.88	3.69	95.0	36 - 145
4:2FTS	15.0	14.8	98.8	67 - 146
6:2FTS	15.2	16.5	109	61 - 151
8:2FTS	15.4	15.5	101	63 - 152
PFOSA	4.00	4.20	105	61 - 148
NMeFOSA	16.0	16.2	101	63 - 145
NEtFOSA	16.0	16.1	101	65 - 139
NMeFOSAA	4.00	3.97	99.1	58 - 144
NEtFOSAA	4.00	3.85	96.3	59 - 146
NMeFOSE	16.0	15.5	96.8	71 - 136
NEtFOSE	16.0	15.7	98.2	69 - 137
HFPO-DA	8.00	7.54	94.2	63 - 144
ADONA	7.56	7.94	105	68 - 146
PFEESA	7.12	7.29	102	56 - 151
PFMPA	8.00	7.46	93.3	51 - 145
PFMBA	8.00	8.33	104	55 - 148

**LCS / LCS DUPLICATE RECOVERY**

EPA 1633

Laboratory: APPL, LLC

Work Order: 23D0008

Client: AECOM

Project: Red Hill AFFF Assessment Sampling / 60697810

Matrix: Water

Preparation: EPA 1633

Batch: BCD0235

Laboratory ID: BCD0235-BS1

Column:

<b>ANALYTE</b>	<b>SPIKE ADDED (ng/L)</b>	<b>LCS CONCENTRATION (ng/L)</b>	<b>LCS % REC.</b>	<b>QC LIMITS REC.</b>
NFDHA	8.00	7.97	99.7	48 - 161
9CL-PF3ONS	7.48	8.09	108	56 - 156
11CL-PF3OUDS	7.56	8.37	111	46 - 156
3:3FTCA	16.0	14.4	89.9	62 - 129
5:3FTCA	16.0	16.5	103	63 - 134
7:3FTCA	16.0	15.3	95.4	50 - 138

# CALIBRATION SUMMARY

Analyte	( Q1 / Q3 )	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	( 213.0 / 169.0 )	13C4_PFBA_EIS	4.0000	1.0000	y = 0.43469 x (std. dev. = 0.01229) (weighting: None)	%RSE=2.8
PFPeA	( 263.0 / 219.0 )	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.46979 x (std. dev. = 0.01929) (weighting: None)	%RSE=4.1
PFHxA	( 313.0 / 269.0 )	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.48124 x (std. dev. = 0.02821) (weighting: None)	%RSE=5.9
PFHpA	( 363.0 / 319.0 )	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.42894 x (std. dev. = 0.03192) (weighting: None)	%RSE=7.4
PFOA	( 413.0 / 369.0 )	13C8_PFOA_EIS	1.0000	1.0000	y = 0.49661 x (std. dev. = 0.06193) (weighting: None)	%RSE=12.5
PFNA	( 463.0 / 419.0 )	13C9_PFNA_EIS	1.0000	1.0000	y = 0.90364 x (std. dev. = 0.06805) (weighting: None)	%RSE=7.5
PFDA	( 513.0 / 469.0 )	13C6_PFDA_EIS	1.0000	1.0000	y = 0.99037 x (std. dev. = 0.02988) (weighting: None)	%RSE=3.0
PFUnA	( 563.0 / 519.0 )	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.89593 x (std. dev. = 0.07931) (weighting: None)	%RSE=8.9
PFDaA	( 613.0 / 569.0 )	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.86901 x (std. dev. = 0.04523) (weighting: None)	%RSE=5.2
PFTrDA	( 663.0 / 619.0 )	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.80458 x (std. dev. = 0.10401) (weighting: None)	%RSE=12.9
PFTeDA	( 713.0 / 669.0 )	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.89669 x (std. dev. = 0.02906) (weighting: None)	%RSE=3.2
PFBS	( 299.0 / 80.0 )	13C3_PFBS_EIS	1.0000	0.8847	y = 0.31588 x (std. dev. = 0.01382) (weighting: None)	%RSE=4.4
PFPeS	( 349.0 / 80.0 )	13C3_PFHxS_EIS	1.0000	0.9384	y = 0.83878 x (std. dev. = 0.05754) (weighting: None)	%RSE=6.9
PFHxS	( 399.0 / 80.0 )	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.66743 x (std. dev. = 0.04093) (weighting: None)	%RSE=6.1
PFHpS	( 449.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9514	y = 0.39687 x (std. dev. = 0.02398) (weighting: None)	%RSE=6.0
PFOS	( 499.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9275	y = 0.52748 x (std. dev. = 0.05200) (weighting: None)	%RSE=9.9
PFNS	( 549.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9599	y = 0.48124 x (std. dev. = 0.02028) (weighting: None)	%RSE=4.2
PFDS	( 599.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9631	y = 0.58486 x (std. dev. = 0.04689) (weighting: None)	%RSE=8.0
PFDoS	( 699.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9696	y = 0.47448 x (std. dev. = 0.02516) (weighting: None)	%RSE=5.3
4:2FTS	( 327.0 / 307.0 )	13C2_4:2FTS_EIS	4.0000	0.9345	y = 2.86754 x (std. dev. = 0.22784) (weighting: None)	%RSE=7.9
6:2FTS	( 427.0 / 407.0 )	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.46346 x (std. dev. = 0.11522) (weighting: None)	%RSE=7.9
8:2FTS	( 527.0 / 507.0 )	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.35654 x (std. dev. = 0.13432) (weighting: None)	%RSE=9.9
PFOSA	( 498.0 / 78.0 )	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.42460 x (std. dev. = 0.03657) (weighting: None)	%RSE=8.6
NMeFOSA	( 512.0 / 219.0 )	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.63914 x (std. dev. = 0.18071) (weighting: None)	%RSE=11.0
NEiFOSA	( 526.0 / 219.0 )	D5_NEiFOSA_EIS	4.0000	1.0000	y = 2.16664 x (std. dev. = 0.06455) (weighting: None)	%RSE=3.0
NMeFOSAA	( 570.0 / 419.0 )	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.20663 x (std. dev. = 0.00889) (weighting: None)	%RSE=4.3
NEiFOSAA	( 584.0 / 419.0 )	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.22005 x (std. dev. = 0.01761) (weighting: None)	%RSE=8.0
NMeFOSE	( 616.0 / 59.0 )	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.20752 x (std. dev. = 0.00574) (weighting: None)	%RSE=2.8
NEiFOSE	( 630.0 / 59.0 )	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.19573 x (std. dev. = 0.00496) (weighting: None)	%RSE=2.5
HFPO-DA	( 285.0 / 169.0 )	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.23809 x (std. dev. = 0.01009) (weighting: None)	%RSE=4.2
ADONA	( 377.0 / 85.0 )	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.82053 x (std. dev. = 0.07790) (weighting: None)	%RSE=9.5
9Cl-Pf3ONS	( 531.0 / 351.0 )	13C3_HFPODA_EIS	2.0000	0.9333	y = 2.40818 x (std. dev. = 0.35080) (weighting: None)	%RSE=14.6
11Cl-Pf3OUDS	( 631.0 / 451.0 )	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.60382 x (std. dev. = 0.22125) (weighting: None)	%RSE=13.8
3:3FTCA	( 241.0 / 177.0 )	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.04019 x (std. dev. = 0.00292) (weighting: None)	%RSE=7.3
5:3FTCA	( 341.0 / 236.7 )	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.33306 x (std. dev. = 0.02816) (weighting: None)	%RSE=8.5
7:3FTCA	( 441.0 / 317.0 )	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.60655 x (std. dev. = 0.03541) (weighting: None)	%RSE=5.8
PFEESA	( 315.0 / 135.0 )	13C5_PFHxA_EIS	2.0000	0.8925	y = 1.12744 x (std. dev. = 0.13527) (weighting: None)	%RSE=12.0
PFMPA	( 229.0 / 85.0 )	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.10483 x (std. dev. = 0.00704) (weighting: None)	%RSE=6.7
PFMBA	( 279.0 / 85.0 )	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.32807 x (std. dev. = 0.01738) (weighting: None)	%RSE=5.3
NFDHA	( 295.0 / 201.0 )	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.48569 x (std. dev. = 0.03203) (weighting: None)	%RSE=6.6
TDCA	( 499.0 / 80.0 )	13C8_PFOS_EIS	1.0000	1.0000	y = 0.47803 x (std. dev. = 0.05012) (weighting: None)	%RSE=10.5
13C3_PFBA_IIS	( 216.0 / 172.0 )	13C3_PFBA_IIS	1.0000	1.0000	y = 114005.5553 x	%RSD=15.3
13C2_PFHxA_IIS	( 315.0 / 270.0 )	13C2_PFHxA_IIS	1.0000	1.0000	y = 138002.2916 x	%RSD=12.7
13C4_PFOA_IIS	( 417.0 / 372.0 )	13C4_PFOA_IIS	1.0000	1.0000	y = 310603.8337 x	%RSD=7.0
13C5_PFNA_IIS	( 468.0 / 423.0 )	13C5_PFNA_IIS	1.0000	1.0000	y = 294801.9603 x	%RSD=4.7
13C2_PFDA_IIS	( 515.0 / 470.1 )	13C2_PFDA_IIS	1.0000	1.0000	y = 309997.1649 x	%RSD=8.4
18O2_PFHxS_IIS	( 403.0 / 83.9 )	18O2_PFHxS_IIS	1.0000	1.0000	y = 448574.2140 x	%RSD=4.2

Analyte	( Q1 / Q3 )	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFOS_IIS	( 503.0 / 79.9 )	13C4_PFOS_IIS	1.0000	1.0000	y = 695912.8076 x	%RSD=9.3
13C4_PFBA_EIS	( 217.0 / 172.0 )	13C3_PFBA_IIS	8.0000	1.0000	y = 8.5797 x	%RSD=4.7
13C5_PFPeA_EIS	( 268.0 / 223.0 )	13C2_PFHxA_IIS	4.0000	1.0000	y = 6.3151 x	%RSD=9.1
13C5_PFHxA_EIS	( 318.0 / 273.0 )	13C2_PFHxA_IIS	2.0000	1.0000	y = 3.8265 x	%RSD=8.6
13C4_PFHpA_EIS	( 367.0 / 322.0 )	13C2_PFHxA_IIS	2.0000	1.0000	y = 3.8319 x	%RSD=9.9
13C8_PFOA_EIS	( 421.0 / 376.0 )	13C4_PFOA_IIS	2.0000	1.0000	y = 2.0588 x	%RSD=5.2
13C9_PFNA_EIS	( 472.0 / 427.0 )	13C5_PFNA_IIS	1.0000	1.0000	y = 0.9742 x	%RSD=4.5
13C6_PFDA_EIS	( 519.0 / 474.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0923 x	%RSD=6.3
13C7_PFUhA_EIS	( 570.0 / 525.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.0530 x	%RSD=6.0
13C2_PFDoA_EIS	( 615.0 / 570.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 0.9523 x	%RSD=5.3
13C2_PFTeDA_EIS	( 715.0 / 670.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 0.9121 x	%RSD=7.3
13C3_PFBS_EIS	( 302.0 / 80.0 )	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.6121 x	%RSD=8.3
13C3_PFHxS_EIS	( 402.0 / 80.0 )	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.8697 x	%RSD=5.2
13C8_PFOS_EIS	( 507.0 / 80.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 2.4348 x	%RSD=4.2
13C2_4:2FTS_EIS	( 329.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.4782 x	%RSD=7.4
13C2_6:2FTS_EIS	( 429.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.6348 x	%RSD=5.5
13C2_8:2FTS_EIS	( 529.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.7815 x	%RSD=6.9
13C8_PFOA_EIS	( 506.0 / 78.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 4.1196 x	%RSD=4.6
D3_NMeFOSA_EIS	( 515.0 / 169.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 0.9344 x	%RSD=13.2
D5_NEtFOSA_EIS	( 531.0 / 169.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 0.7650 x	%RSD=6.8
D3_MeFOSAA_EIS	( 573.0 / 419.0 )	13C4_PFOS_IIS	4.0000	1.0000	y = 1.0218 x	%RSD=4.8
D5_EtFOSAA_EIS	( 589.0 / 419.0 )	13C4_PFOS_IIS	4.0000	1.0000	y = 0.8391 x	%RSD=7.8
D7_NMeFOSE_EIS	( 623.0 / 58.9 )	13C4_PFOS_IIS	20.0000	1.0000	y = 3.0019 x	%RSD=5.9
D9_NEtFOSE_EIS	( 639.0 / 58.9 )	13C4_PFOS_IIS	20.0000	1.0000	y = 3.9722 x	%RSD=6.1
13C3_HFPODA_EIS	( 287.0 / 169.0 )	13C2_PFHxA_IIS	8.0000	1.0000	y = 7.8543 x	%RSD=8.8

x= Concentration Analyte

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

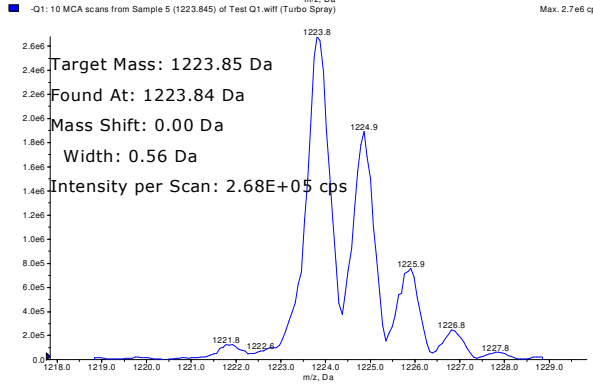
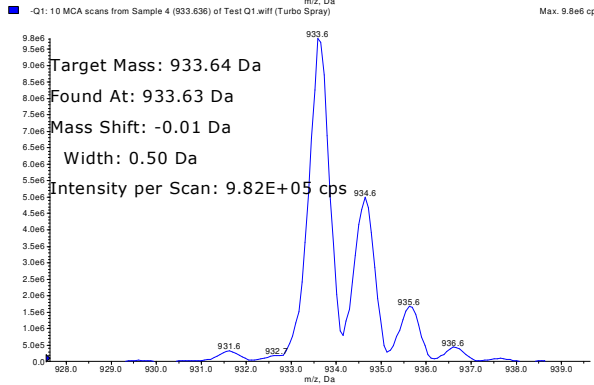
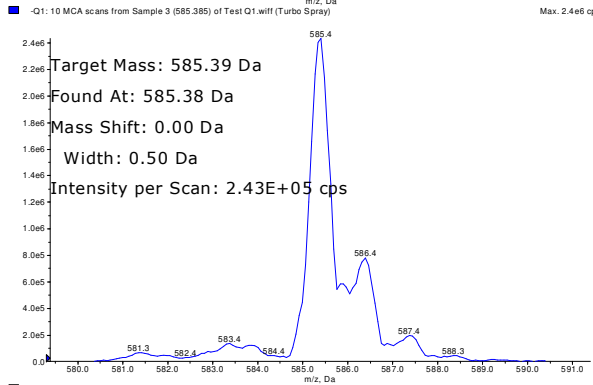
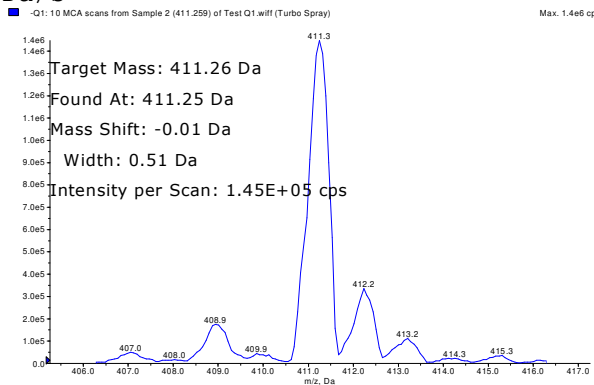
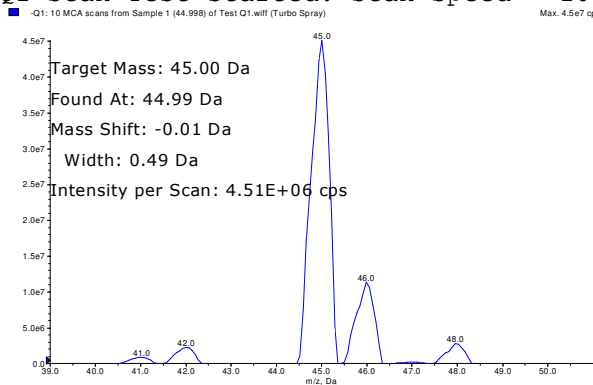
$$\text{Acid Factor} = \frac{\text{Molecular weight Acid}}{\text{Molecular weight Salt}}$$

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

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

Tune 2021-11-23 Q1 NEG @ 10Da/s

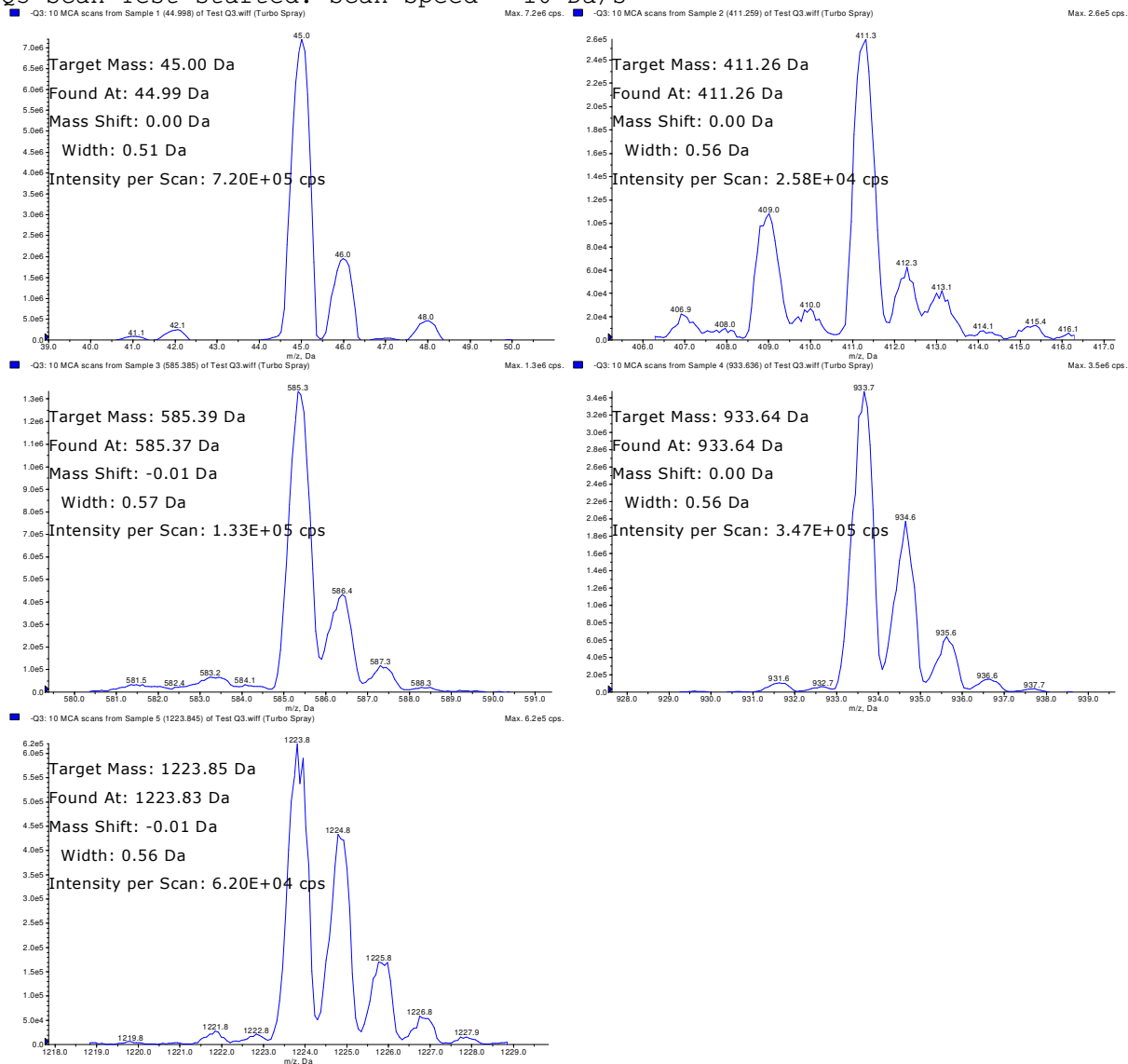
Q1 Scan Test started. Scan Speed = 10 Da/s



Target Mass	Found At	Delta	Width	Intensity	0.4<Width<0.6
45.00	44.99	-0.01	0.49	4.51E+06	PASS
411.26	411.25	-0.01	0.51	1.45E+05	PASS
585.39	585.38	0.00	0.50	2.43E+05	PASS
933.64	933.63	-0.01	0.50	9.82E+05	PASS
1223.85	1223.84	0.00	0.56	2.68E+05	PASS

Tune 2021-11-23 Q3 NEG @ 10Da/s

Q3 Scan Test started. Scan Speed = 10 Da/s



Target Mass	Found At	Delta	Width	Intensity	0.4<Width<0.6
45.00	44.99	0.00	0.51	7.20E+05	PASS
411.26	411.26	0.00	0.56	2.58E+04	PASS
585.39	585.37	-0.01	0.57	1.33E+05	PASS
933.64	933.64	0.00	0.56	3.47E+05	PASS
1223.85	1223.83	-0.01	0.56	6.20E+04	PASS

Analyte	( Q1 / Q3 )	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	( 213.0 / 169.0 )	13C4_PFBA_EIS	4.0000	1.0000	y = 0.43132 x (std. dev. = 0.01782) (weighting: None)	%RSE=4.1
PFPeA	( 263.0 / 219.0 )	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.46376 x (std. dev. = 0.01789) (weighting: None)	%RSE=3.9
PFHxA	( 313.0 / 269.0 )	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.52537 x (std. dev. = 0.02708) (weighting: None)	%RSE=5.2
PFHpA	( 363.0 / 319.0 )	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.53065 x (std. dev. = 0.03882) (weighting: None)	%RSE=7.3
PFOA	( 413.0 / 369.0 )	13C8_PFOA_EIS	1.0000	1.0000	y = 0.49905 x (std. dev. = 0.03069) (weighting: None)	%RSE=6.1
PFNA	( 463.0 / 419.0 )	13C9_PFNA_EIS	1.0000	1.0000	y = 0.94349 x (std. dev. = 0.06469) (weighting: None)	%RSE=6.9
PFDA	( 513.0 / 469.0 )	13C6_PFDA_EIS	1.0000	1.0000	y = 0.96720 x (std. dev. = 0.05348) (weighting: None)	%RSE=5.5
PFUnA	( 563.0 / 519.0 )	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.90666 x (std. dev. = 0.04111) (weighting: None)	%RSE=4.5
PFDaA	( 613.0 / 569.0 )	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.92894 x (std. dev. = 0.07071) (weighting: None)	%RSE=7.6
PFTrDA	( 663.0 / 619.0 )	13C2_PFDaA_EIS	1.0000	1.0000	y = 0.99060 x (std. dev. = 0.07407) (weighting: None)	%RSE=7.5
PFTeDA	( 713.0 / 669.0 )	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.92280 x (std. dev. = 0.04264) (weighting: None)	%RSE=4.6
PFHxDA	( 813.0 / 769.0 )	13C3_PFBs_EIS	4.0000	1.0000	y = 1.27235 x (std. dev. = 0.14733) (weighting: None)	%RSE=11.6
PFODA	( 913.0 / 869.0 )	13C3_PFBs_EIS	4.0000	1.0000	y = 0.81556 x (std. dev. = 0.07390) (weighting: None)	%RSE=9.1
PFBS	( 299.0 / 80.0 )	13C3_PFBs_EIS	1.0000	0.8847	y = 0.26992 x (std. dev. = 0.01201) (weighting: None)	%RSE=4.4
PFPeS	( 349.0 / 80.0 )	13C3_PFHxS_EIS	1.0000	0.9384	y = 1.07834 x (std. dev. = 0.05212) (weighting: None)	%RSE=4.8
PFHxS	( 399.0 / 80.0 )	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.87014 x (std. dev. = 0.04771) (weighting: None)	%RSE=5.5
PFHpS	( 449.0 / 80.0 )	13C8_PFOs_EIS	1.0000	0.9514	y = 0.41872 x (std. dev. = 0.06446) (weighting: None)	%RSE=15.4
PFOS	( 499.0 / 80.0 )	13C8_PFOs_EIS	1.0000	0.9275	y = 0.58595 x (std. dev. = 0.03136) (weighting: None)	%RSE=5.4
PFNS	( 549.0 / 80.0 )	13C8_PFOs_EIS	1.0000	0.9599	y = 0.47815 x (std. dev. = 0.05315) (weighting: None)	%RSE=11.1
PFDS	( 599.0 / 80.0 )	13C8_PFOs_EIS	1.0000	0.9631	y = 0.55187 x (std. dev. = 0.07406) (weighting: None)	%RSE=13.4
PFDoS	( 699.0 / 80.0 )	13C8_PFOs_EIS	1.0000	0.9696	y = 0.62737 x (std. dev. = 0.08489) (weighting: None)	%RSE=13.5
4:2FTS	( 327.0 / 307.0 )	13C2_4:2FTS_EIS	4.0000	0.9345	y = 2.99143 x (std. dev. = 0.18077) (weighting: None)	%RSE=6.0
6:2FTS	( 427.0 / 407.0 )	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.41008 x (std. dev. = 0.10454) (weighting: None)	%RSE=7.4
8:2FTS	( 527.0 / 507.0 )	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.32315 x (std. dev. = 0.15863) (weighting: None)	%RSE=12.0
PFSBA	( 297.9 / 78.0 )	13C8_PFOsA_EIS	4.0000	1.0000	y = 2.33073 x (std. dev. = 0.21154) (weighting: None)	%RSE=9.1
PFHxSA	( 397.9 / 78.0 )	13C8_PFOsA_EIS	4.0000	1.0000	y = 1.70861 x (std. dev. = 0.14497) (weighting: None)	%RSE=8.5
PFOSA	( 498.0 / 78.0 )	13C8_PFOsA_EIS	1.0000	1.0000	y = 0.41745 x (std. dev. = 0.01713) (weighting: None)	%RSE=4.1
NMeFOSA	( 512.0 / 219.0 )	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.95155 x (std. dev. = 0.11841) (weighting: None)	%RSE=6.1
NEiFOSA	( 526.0 / 219.0 )	D5_NEiFOSA_EIS	4.0000	1.0000	y = 2.15277 x (std. dev. = 0.07067) (weighting: None)	%RSE=3.3
NMeFOSAA	( 570.0 / 419.0 )	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.21933 x + 0.01632 (r = 0.99940) (weighting: 1 / x)	%RSE=7.4
NEiFOSAA	( 584.0 / 419.0 )	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.22477 x + -0.00226 (r = 0.99963) (weighting: 1 / x)	%RSE=10.3
NMeFOSE	( 616.0 / 59.0 )	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.22805 x (std. dev. = 0.01354) (weighting: None)	%RSE=5.9
NEiFOSE	( 630.0 / 59.0 )	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.20288 x (std. dev. = 0.01077) (weighting: None)	%RSE=5.3
HFPO-DA	( 285.0 / 169.0 )	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.12591 x (std. dev. = 0.00579) (weighting: None)	%RSE=4.6
ADONA	( 377.0 / 85.0 )	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.69948 x (std. dev. = 0.05893) (weighting: None)	%RSE=8.4
9CI-PF3ONS	( 531.0 / 351.0 )	13C3_HFPODA_EIS	2.0000	0.9333	y = 1.35368 x (std. dev. = 0.19371) (weighting: None)	%RSE=14.3
11CI-PF3OUDS	( 631.0 / 451.0 )	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.20603 x (std. dev. = 0.11540) (weighting: None)	%RSE=9.6
PFECHS	( 461.0 / 98.9 )	13C8_PFOs_EIS	4.0000	0.9239	y = 1.67083 x (std. dev. = 0.27064) (weighting: None)	%RSE=16.2
3:3FTCA	( 241.0 / 177.0 )	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.03409 x (std. dev. = 0.00424) (weighting: None)	%RSE=12.4
5:3FTCA	( 341.0 / 236.7 )	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.26973 x (std. dev. = 0.03125) (weighting: None)	%RSE=11.6
7:3FTCA	( 441.0 / 317.0 )	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.32041 x (std. dev. = 0.03198) (weighting: None)	%RSE=10.0
PFEESA	( 315.0 / 135.0 )	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.89669 x (std. dev. = 0.05880) (weighting: None)	%RSE=6.6
PFMPA	( 229.0 / 85.0 )	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.11863 x (std. dev. = 0.00708) (weighting: None)	%RSE=6.0
PFMBA	( 279.0 / 85.0 )	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.33421 x (std. dev. = 0.01842) (weighting: None)	%RSE=5.5
NFDHA	( 295.0 / 201.0 )	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.56027 x (std. dev. = 0.03584) (weighting: None)	%RSE=6.4
TDCA	( 499.0 / 80.0 )	13C8_PFOs_EIS	1.0000	1.0000	y = 0.59121 x (std. dev. = 0.03255) (weighting: None)	%RSE=5.5
13C3_PFBA_IIS	( 216.0 / 172.0 )	13C3_PFBA_IIS	1.0000	1.0000	y = 206073.0434 x	%RSD=11.8



Analyte	( Q1 / Q3 )	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C2_PFHxA_IIS	( 315.0 / 270.0 )	13C2_PFHxA_IIS	1.0000	1.0000	y = 144978.1066 x	%RSD=9.4
13C4_PFOA_IIS	( 417.0 / 372.0 )	13C4_PFOA_IIS	1.0000	1.0000	y = 272679.5131 x	%RSD=9.8
13C5_PFNA_IIS	( 468.0 / 423.0 )	13C5_PFNA_IIS	1.0000	1.0000	y = 250319.6856 x	%RSD=7.4
13C2_PFDA_IIS	( 515.0 / 470.1 )	13C2_PFDA_IIS	1.0000	1.0000	y = 237432.8591 x	%RSD=11.9
18O2_PFHxS_IIS	( 403.0 / 83.9 )	18O2_PFHxS_IIS	1.0000	1.0000	y = 381903.2791 x	%RSD=6.1
13C4_PFOS_IIS	( 503.0 / 79.9 )	13C4_PFOS_IIS	1.0000	1.0000	y = 476806.2750 x	%RSD=16.8
13C4_PFBA_EIS	( 217.0 / 172.0 )	13C3_PFBA_IIS	8.0000	1.0000	y = 8.5699 x	%RSD=2.1
13C5_PPFaA_EIS	( 268.0 / 223.0 )	13C2_PFHxA_IIS	4.0000	1.0000	y = 7.9090 x	%RSD=6.0
13C5_PFHxA_EIS	( 318.0 / 273.0 )	13C2_PFHxA_IIS	2.0000	1.0000	y = 4.4780 x	%RSD=5.8
13C4_PFHpA_EIS	( 367.0 / 322.0 )	13C2_PFHxA_IIS	2.0000	1.0000	y = 3.5345 x	%RSD=6.5
13C8_PFOA_EIS	( 421.0 / 376.0 )	13C4_PFOA_IIS	2.0000	1.0000	y = 2.3800 x	%RSD=3.8
13C9_PFNA_EIS	( 472.0 / 427.0 )	13C5_PFNA_IIS	1.0000	1.0000	y = 1.0381 x	%RSD=3.6
13C6_PFDA_EIS	( 519.0 / 474.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1864 x	%RSD=7.9
13C7_PFUaA_EIS	( 570.0 / 525.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1414 x	%RSD=10.0
13C2_PFDaA_EIS	( 615.0 / 570.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 0.9681 x	%RSD=11.5
13C2_PFTeDA_EIS	( 715.0 / 670.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1941 x	%RSD=8.5
13C3_PFBS_EIS	( 302.0 / 80.0 )	18O2_PFHxS_IIS	2.0000	1.0000	y = 3.8052 x	%RSD=4.0
13C3_PFHxS_EIS	( 402.0 / 80.0 )	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.6044 x	%RSD=5.3
13C8_PFOS_EIS	( 507.0 / 80.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 2.4981 x	%RSD=5.0
13C2_4:2FTS_EIS	( 329.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.3668 x	%RSD=6.5
13C2_6:2FTS_EIS	( 429.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.4550 x	%RSD=6.8
13C2_8:2FTS_EIS	( 529.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5140 x	%RSD=13.6
13C8_PFOA_EIS	( 506.0 / 78.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 2.8036 x	%RSD=10.9
D3_NMeFOSA_EIS	( 515.0 / 169.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 0.8680 x	%RSD=12.6
D5_NeIFOSA_EIS	( 531.0 / 169.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 0.8527 x	%RSD=9.8
D3_MeFOSAA_EIS	( 573.0 / 419.0 )	13C4_PFOS_IIS	4.0000	1.0000	y = 1.0432 x	%RSD=14.4
D5_EiFOSAA_EIS	( 589.0 / 419.0 )	13C4_PFOS_IIS	4.0000	1.0000	y = 0.8332 x	%RSD=11.5
D7_NMeFOSE_EIS	( 623.0 / 58.9 )	13C4_PFOS_IIS	20.0000	1.0000	y = 2.7500 x	%RSD=12.3
D9_NeIFOSE_EIS	( 639.0 / 58.9 )	13C4_PFOS_IIS	20.0000	1.0000	y = 3.4088 x	%RSD=10.1
13C3_HFPODA_EIS	( 287.0 / 169.0 )	13C2_PFHxA_IIS	8.0000	1.0000	y = 9.2189 x	%RSD=5.5

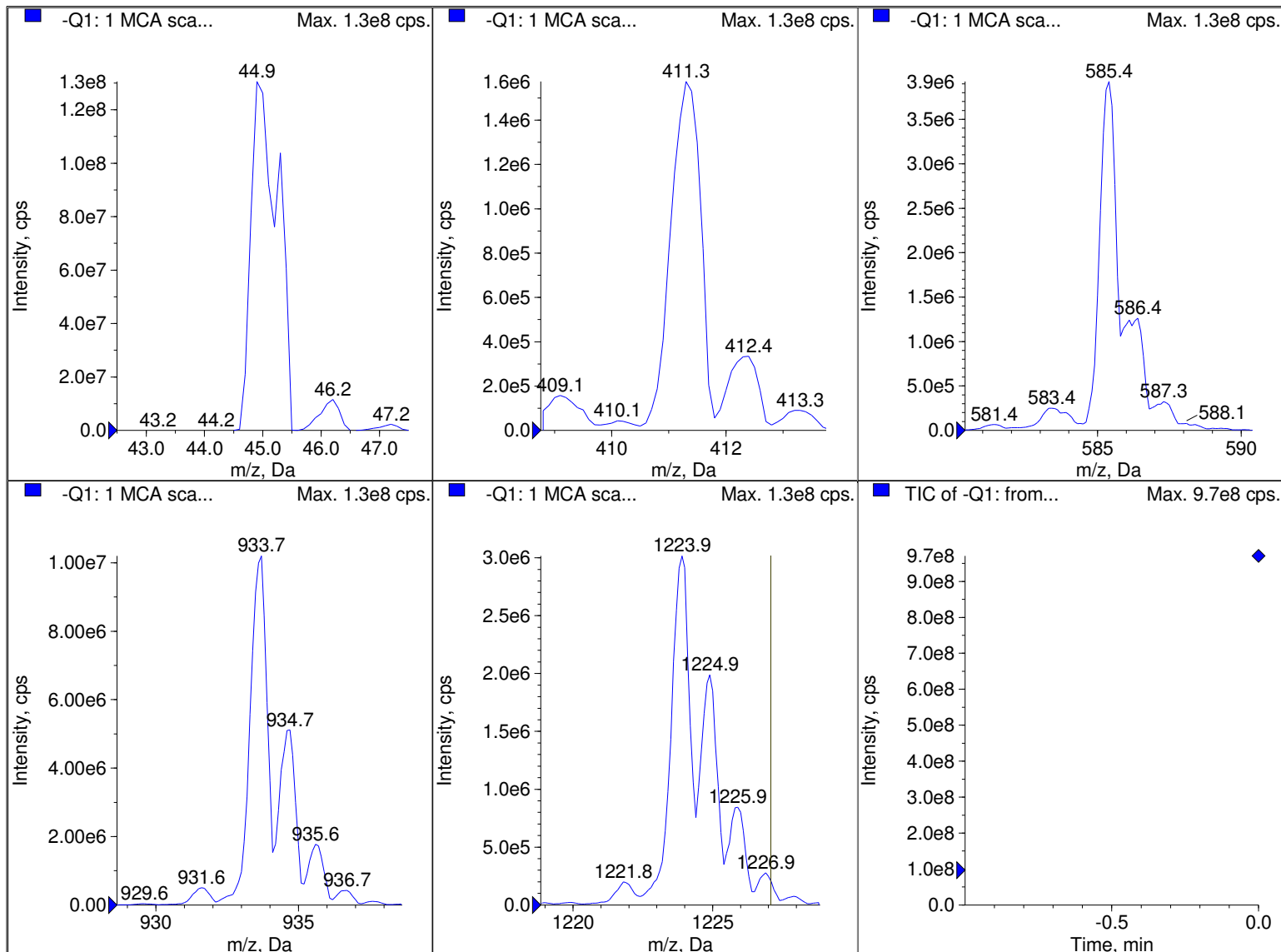
x= Concentration Analyte

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

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

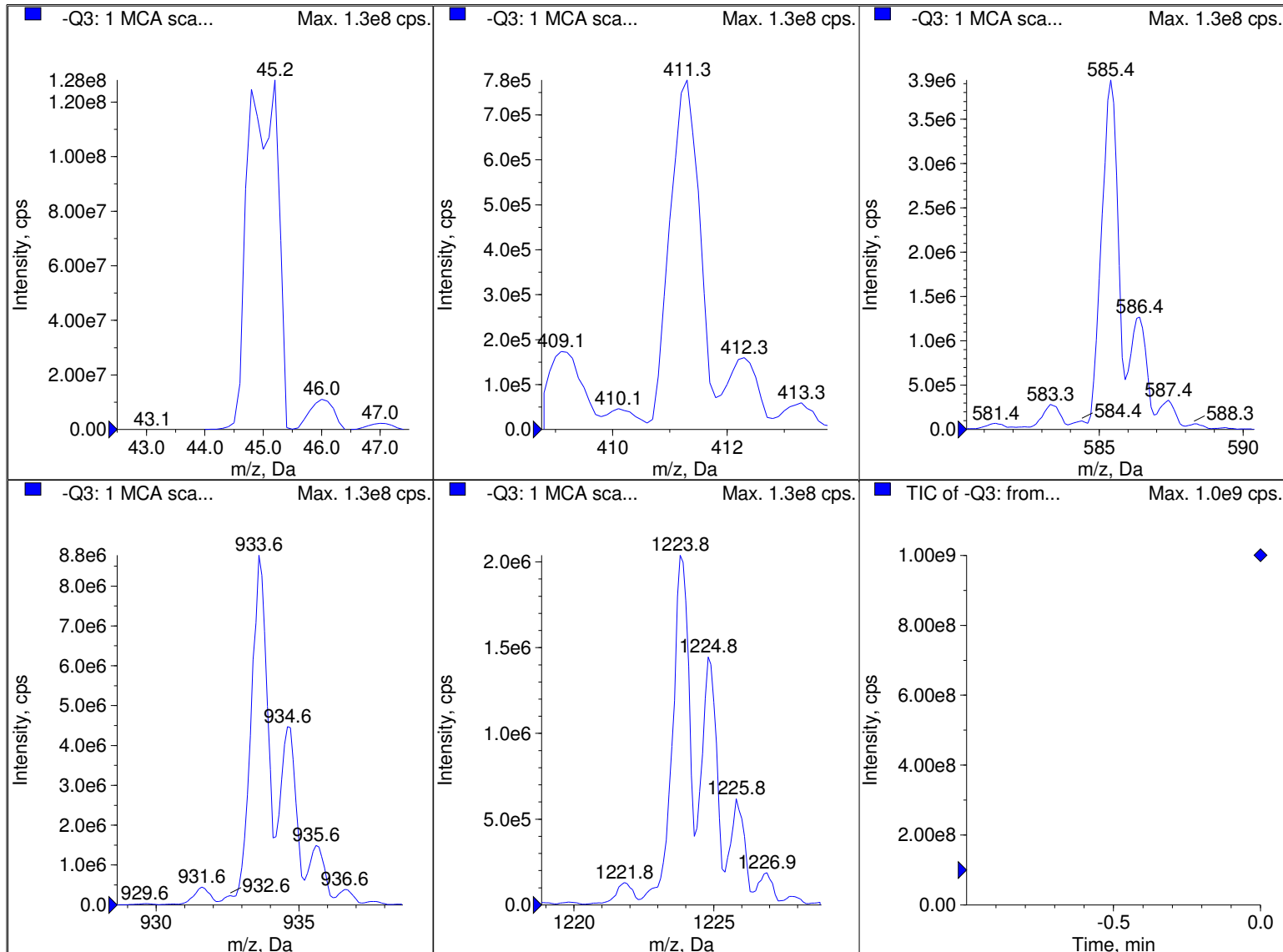
$$\text{Multiplier} = \frac{\text{Concentration of Analyte}}{\text{Concentration of PFOA}} \text{ in curve standard mix}$$

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



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: SC01530

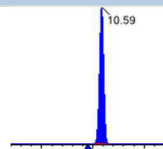
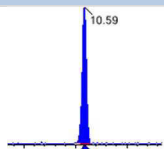
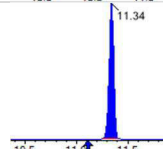
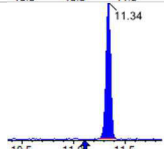
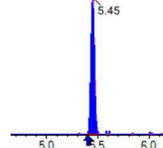
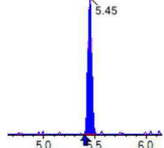
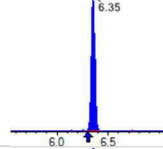
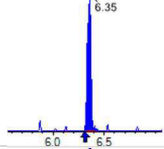
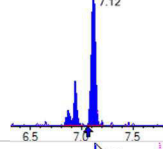
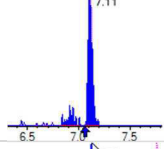
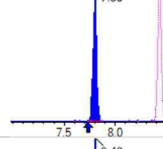
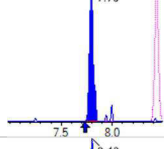
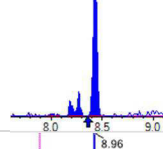
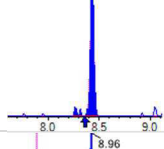
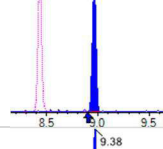
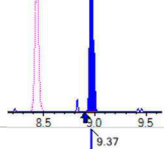
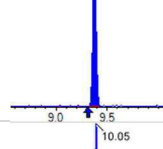
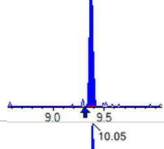
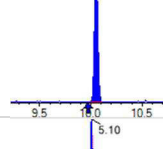
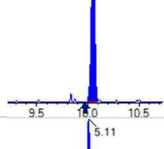
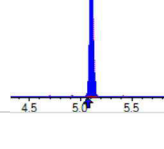
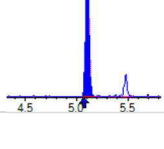


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (1)  
 Acquired: 2023/04/18 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 81044	(3.22, 1.00) (0.00, N/A, 0.0)	310.1	N/A 0.0 0.0	0.3806	N/A			
PFPeA	(263.0 / 219.0) 61478 (263.0 / 69.0) 573	(4.47, 1.00) (0.00, N/A, 0.6)	270.0 21.8	0.0093 79.4 79.4	0.2096	N/A			
PFHxA	(313.0 / 269.0) 37268 (313.0 / 119.0) 3346	(5.42, 1.00) (0.00, N/A, -0.1)	58.4 44.9	0.0898 107.6 107.6	0.1046	N/A			
PFHpA	(363.0 / 319.0) 32409 (363.0 / 169.0) 7526	(6.21, 1.00) (0.00, N/A, 0.2)	74.7 38.3	0.2322 83.8 83.8	0.1107	N/A			
PFOA	(413.0 / 369.0) 40195 (413.0 / 169.0) 10777	(6.91, 1.00) (0.00, N/A, -0.1)	74.1 26.8	0.2681 89.8 89.8	0.1085	N/A			
PFNA	(463.0 / 419.0) 29597 (463.0 / 169.0) 5537	(7.55, 1.00) (0.00, N/A, 0.8)	84.5 115.4	0.1871 92.4 92.4	0.1083	N/A			
PFDA	(513.0 / 469.0) 28112 (513.0 / 169.0) 2752	(8.17, 1.00) (0.00, N/A, 0.9)	126.2 50.3	0.0979 99.8 99.8	0.0911	N/A			
PFUnA	(563.0 / 519.0) 24332 (563.0 / 169.0) 3215	(8.74, 1.00) (0.00, N/A, 0.0)	127.7 60.8	0.1321 130.9 130.9	0.0941	N/A			
PFDoA	(613.0 / 569.0) 23195 (613.0 / 169.0) 3886	(9.19, 1.00) (0.00, N/A, 0.3)	318.2 41.6	0.1676 117.6 117.6	0.0989	N/A			
PFTTrDA	(663.0 / 619.0) 26230 (663.0 / 169.0) 7268	(9.56, 1.04) (N/A, 0.06, 0.3)	168.1 71.4	0.2771 134.4 134.4	0.1049	N/A			
PFTeDA	(713.0 / 669.0) 29523 (713.0 / 169.0) 6182	(9.90, 1.00) (0.00, N/A, 0.0)	216.5 74.6	0.2094 106.2 106.2	0.1010	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) 237122 (813.0 / 169.0) 35166	(10.59, 1.94) (N/A, 0.14, -0.1)	788.3 328.5	0.1483 99.3 99.3	0.4633	N/A			
PFODA	(913.0 / 869.0) 126932 (913.0 / 169.0) 32666	(11.34, 2.08) (N/A, 0.24, 0.1)	291.0 178.3	0.2574 97.7 97.7	0.3869	N/A			
PFBS	(299.0 / 80.0) 40206 (299.0 / 99.0) 30717	(5.45, 1.00) (0.00, N/A, -0.1)	227.5 218.7	0.7640 111.1 111.1	0.0819	N/A			
PFPeS	(349.0 / 80.0) 62298 (349.0 / 99.0) 19658	(6.35, 0.89) (N/A, 0.05, 0.0)	350.2 147.4	0.3156 89.2 89.2	0.0862	N/A			
PFHxS	(399.0 / 80.0) 60017 (399.0 / 99.0) 20739	(7.12, 1.00) (0.00, N/A, 0.3)	163773.7 1182404.4	0.3455 97.7 97.7	0.0999	N/A			
PFHpS	(449.0 / 80.0) 48075 (449.0 / 99.0) 14013	(7.80, 0.93) (N/A, 0.07, 0.5)	282.2 121.1	0.2915 104.3 104.3	0.0672	N/A			
PFOS	(499.0 / 80.0) 89156 (499.0 / 99.0) 16422	(8.43, 1.00) (0.00, N/A, 0.0)	14050.9 9029.7	0.1842 80.0 80.0	0.0868	N/A			M14 ABK 4/19/23
PFNS	(549.0 / 80.0) 65532 (549.0 / 99.0) 14968	(8.96, 1.06) (N/A, 0.07, 0.0)	311.7 98.3	0.2284 92.6 92.6	0.0810	N/A			
PFDS	(599.0 / 80.0) 70127 (599.0 / 99.0) 21991	(9.38, 1.11) (N/A, 0.06, 0.3)	354.8 133.9	0.3136 136.9 136.9	0.0753	N/A			
PFDoS	(699.0 / 80.0) 83038 (699.0 / 99.0) 16924	(10.05, 1.19) (N/A, 0.08, 0.2)	452.9 170.3	0.2038 89.3 89.3	0.0790	N/A			
4:2FTS	(327.0 / 307.0) 45910 (327.0 / 81.0) 30431	(5.10, 1.00) (0.00, N/A, -0.1)	423.1 116.8	0.6628 101.9 101.9	0.3930	N/A			



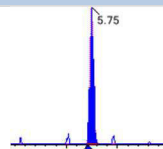
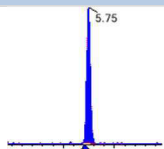
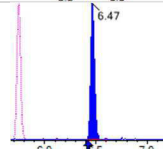
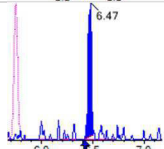
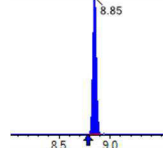
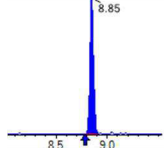
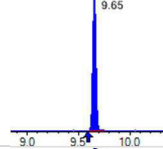
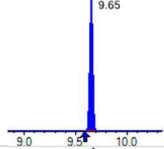
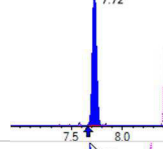
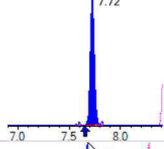
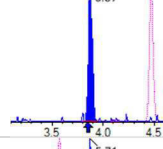
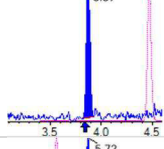
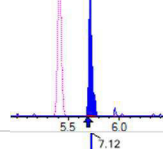
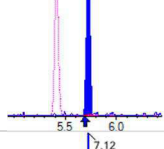
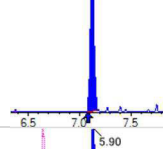
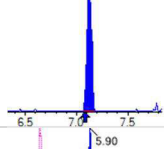
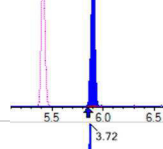
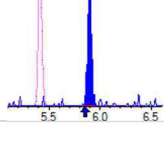
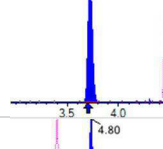
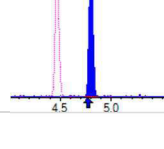


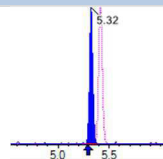
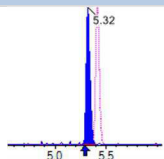
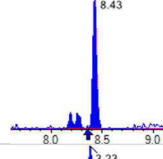
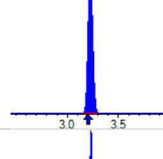
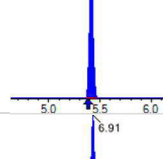
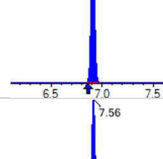
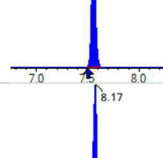
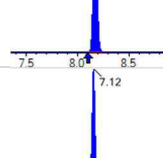
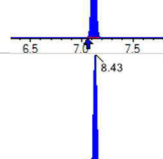
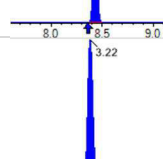
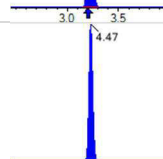
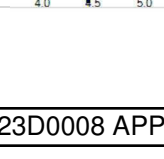
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (1)  
 Acquired: 2023/04/18 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 22034 (427.0 / 81.0) 22509	(6.59, 1.00) (0.00, N/A, -0.1)	183.1 122.5	1.0215 138.4 138.4	0.3284	N/A			
8:2FTS	(527.0 / 507.0) 26943 (527.0 / 81.0) 17519	(7.86, 1.00) (0.00, N/A, 0.1)	174.2 158.6	0.6502 96.1 96.1	0.4202	N/A			
PFSBA	(297.9 / 78.0) 330192 (297.9 / 278.0) 429	(5.70, 0.64) (N/A, 0.03, 0.3)	324.7 26.7	0.0013 81.3 81.3	0.4100	N/A			
PFHxSA	(397.9 / 78.0) 250946 (397.9 / 378.0) 1026	(7.57, 0.85) (N/A, 0.03, 1.0)	238.4 35.4	0.0041 96.6 96.6	0.4251	N/A			
PFOSA	(498.0 / 78.0) 54200 (498.0 / 478.0) 832	(8.93, 1.00) (0.00, N/A, -0.5)	253.2 28.0	0.0153 61.8 61.8	0.0939	N/A			
NMeFOSA	(512.0 / 219.0) 80309 (512.0 / 169.0) 69922	(9.87, 1.00) (0.00, N/A, 0.4)	3715.2 2894.3	0.8707 116.3 116.3	0.3723	N/A			
NEtFOSA	(526.0 / 219.0) 96583 (526.0 / 169.0) 110650	(10.08, 1.00) (0.00, N/A, 1.1)	440407.6 46568.9	1.1456 98.0 98.0	0.4083	N/A			
NMeFOSAA	(570.0 / 419.0) 17808 (570.0 / 483.0) 6572	(8.12, 1.00) (0.00, N/A, -0.5)	326.9 2395.0	0.3691 77.6 77.6	0.0944	N/A			MI5 DG 2023-04-19
NEtFOSAA	(584.0 / 419.0) 7796 (584.0 / 526.0) 5951	(8.38, 1.00) (0.00, N/A, -0.6)	2538.3 145.8	0.7634 128.3 128.3	0.0871	N/A			
NMeFOSE	(616.0 / 59.0) 34917	(9.79, 1.00) (0.01, N/A, 0.0)	489.9	N/A 0.0 0.0	0.4157	N/A			
NEtFOSE	(630.0 / 59.0) 35087	(10.01, 1.00) (0.01, N/A, 0.0)	2455.1	N/A 0.0 0.0	0.3847	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CVmin, $\Delta$ RT ion(s))	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 19611 (285.0 / 185.0) 81365	(5.75, 1.00) (0.01, N/A, 0.3)	130.5 348.4	4.1489 88.0 88.0	0.2163	N/A			
ADONA	(377.0 / 85.0) 100950 (377.0 / 251.0) 8709	(6.47, 1.13) (N/A, 0.04, -0.2)	213.9 41.0	0.0863 79.6 79.6	0.1890	N/A			
9CI-PF3ONS	(531.0 / 351.0) 193797 (533.0 / 353.0) 61428	(8.85, 1.54) (N/A, 0.07, 0.0)	495.9 162.1	0.3170 97.1 97.1	0.1856	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 189250 (633.0 / 453.0) 70730	(9.65, 1.68) (N/A, 0.07, 0.1)	682.9 358.4	0.3737 101.7 101.7	0.2056	N/A			
PFECHS	(461.0 / 98.9) 220451 (461.0 / 381.2) 75243	(7.72, 0.92) (N/A, 0.07, 0.1)	302.7 171.2	0.3413 89.5 89.5	0.3000	N/A			
3:3FTCA	(241.0 / 177.0) 3961 (241.0 / 117.0) 6465	(3.87, 0.87) (N/A, 0.03, 0.1)	145.9 75.3	1.6319 98.1 98.1	0.3674	N/A			
5:3FTCA	(341.0 / 236.7) 13783 (341.0 / 217.0) 36821	(5.71, 1.06) (N/A, 0.03, -0.7)	136.2 172.3	2.6714 148.3 148.3	0.3014	N/A			
7:3FTCA	(441.0 / 317.0) 19380 (441.0 / 337.0) 26704	(7.12, 1.32) (N/A, 0.04, -0.1)	126.7 148.9	1.3779 115.0 115.0	0.3567	N/A			
PFEESA	(315.0 / 135.0) 65622 (315.0 / 83.0) 19813	(5.90, 1.09) (N/A, 0.05, 0.2)	312.9 79.1	0.3019 106.2 106.2	0.1926	N/A			
PFMPA	(229.0 / 85.0) 15805	(3.72, 0.83) (N/A, 0.03, 0.0)	301.6	N/A 0.0 0.0	0.2106	N/A			
PFMBA	(279.0 / 85.0) 41528	(4.80, 1.07) (N/A, 0.04, 0.0)	268.5	N/A 0.0 0.0	0.1965	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 40383 (295.0 / 85.0) 41087	(5.32, 0.98) (N/A, 0.04, 0.1)	316.2 252.8	1.0174 104.6 104.6	0.2125	N/A			
TDCA	(499.0 / 80.0) 87165	(8.43, 1.00) (N/A, 0.07, 0.0)	14958.5	N/A 0.0 0.0	0.0907	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 235804	(3.23, N/A) (N/A, 0.02, N/A)	572.1	N/A	1.1443 [1.0000]	114.4% {114.8%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 163206	(5.41, N/A) (N/A, 0.04, N/A)	410.6	N/A	1.1257 [1.0000]	112.6% {108.7%}			
13C4_PFOA_IIS	(417.0 / 372.0) 323269	(6.91, N/A) (N/A, 0.05, N/A)	395.0	N/A	1.1855 [1.0000]	118.6% {116.5%}			
13C5_PFNA_IIS	(468.0 / 423.0) 278039	(7.56, N/A) (N/A, 0.06, N/A)	350.8	N/A	1.1107 [1.0000]	111.1% {110.5%}			
13C2_PFDA_IIS	(515.0 / 470.1) 281705	(8.17, N/A) (N/A, 0.07, N/A)	290.9	N/A	1.1865 [1.0000]	118.6% {107.2%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 394354	(7.12, N/A) (N/A, 0.06, N/A)	263.4	N/A	1.0326 [1.0000]	103.3% {98.9%}			
13C4_PFOS_IIS	(503.0 / 79.9) 630715	(8.43, N/A) (N/A, 0.07, N/A)	698.4	N/A	1.3228 [1.0000]	132.3% {138.9%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1974637	(3.22, N/A) (N/A, 0.02, N/A)	1148.3	N/A	7.8171 [8.0000]	97.7% {112.8%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 1264933	(4.47, N/A) (N/A, 0.03, N/A)	998.1	N/A	3.9198 [4.0000]	98.0% {108.2%}			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (1)  
 Acquired: 2023/04/18 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 678270	(5.41, N/A) (N/A, 0.04, N/A)	716.1	N/A	1.8561 [2.0000]	92.8% {101.3%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 551947	(6.21, N/A) (N/A, 0.04, N/A)	775.7	N/A	1.9137 [2.0000]	95.7% {103.6%}			
13C8_PFOA_EIS	(421.0 / 376.0) 742079	(6.91, N/A) (N/A, 0.05, N/A)	544.4	N/A	1.9291 [2.0000]	96.5% {115.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 289534	(7.56, N/A) (N/A, 0.06, N/A)	389.6	N/A	1.0032 [1.0000]	100.3% {108.0%}			
13C6_PFDA_EIS	(519.0 / 474.0) 319179	(8.17, N/A) (N/A, 0.07, N/A)	312.0	N/A	0.9550 [1.0000]	95.5% {114.4%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 285095	(8.74, N/A) (N/A, 0.07, N/A)	351.8	N/A	0.8866 [1.0000]	88.7% {105.0%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 252369	(9.19, N/A) (N/A, 0.06, N/A)	908.3	N/A	0.9254 [1.0000]	92.5% {110.9%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 316687	(9.90, N/A) (N/A, 0.07, N/A)	462.9	N/A	0.9415 [1.0000]	94.1% {111.9%}			
13C3_PFBS_EIS	(302.0 / 80.0) 1609089	(5.45, N/A) (N/A, 0.04, N/A)	529.5	N/A	2.1446 [2.0000]	107.2% {111.0%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 628889	(7.12, N/A) (N/A, 0.06, N/A)	412.6	N/A	1.9879 [2.0000]	99.4% {108.4%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1624993	(8.43, N/A) (N/A, 0.07, N/A)	892.5	N/A	2.0627 [2.0000]	103.1% {146.2%}			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (1)  
 Acquired: 2023/04/18 - 16:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 145984	(5.11, N/A) (N/A, 0.03, N/A)	540.3	N/A	4.0369 [4.0000]	100.9% {103.0%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 180660	(6.60, N/A) (N/A, 0.04, N/A)	548.3	N/A	4.0273 [4.0000]	100.7% {108.1%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 185759	(7.86, N/A) (N/A, 0.06, N/A)	311.6	N/A	3.6658 [4.0000]	91.6% {103.4%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 1382104	(8.93, N/A) (N/A, 0.02, N/A)	992.1	N/A	1.5632 [2.0000]	78.2% {102.1%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 442185	(9.87, N/A) (N/A, 0.01, N/A)	557.7	N/A	1.6154 [2.0000]	80.8% {105.4%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 439564	(10.09, N/A) (N/A, 0.01, N/A)	1039.2	N/A	1.6347 [2.0000]	81.7% {107.2%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 481003	(8.12, N/A) (N/A, 0.06, N/A)	528.4	N/A	2.9241 [4.0000]	73.1% {90.5%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 450261	(8.38, N/A) (N/A, 0.07, N/A)	289.2	N/A	3.4274 [4.0000]	85.7% {114.0%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1473314	(9.78, N/A) (N/A, 0.01, N/A)	1370.4	N/A	16.9886 [20.0000]	84.9% {108.8%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1798026	(10.00, N/A) (N/A, 0.01, N/A)	1529.0	N/A	16.7261 [20.0000]	83.6% {111.8%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1440060	(5.75, N/A) (N/A, 0.04, N/A)	1057.4	N/A	7.6569 [8.0000]	95.7% {105.9%}			

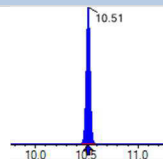
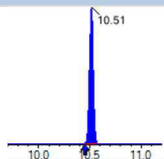
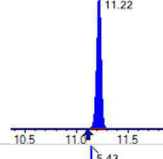
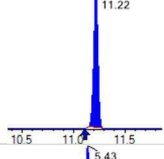
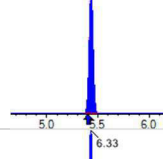
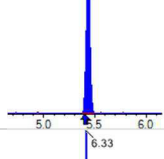
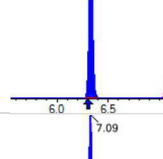
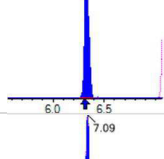
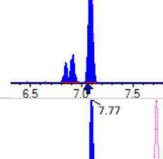
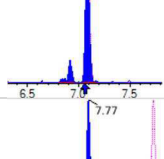
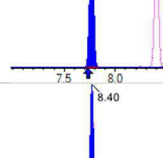
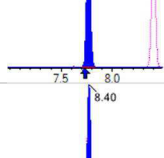
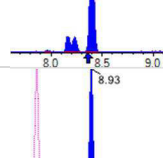
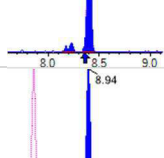
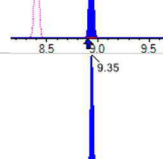
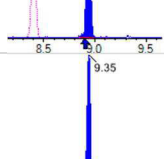
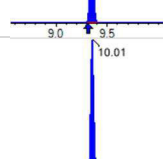
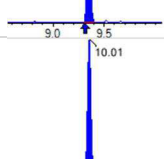
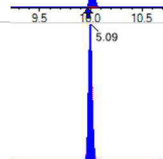
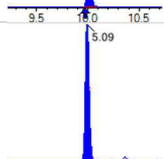
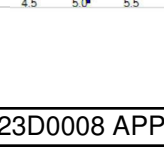
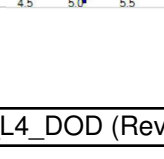


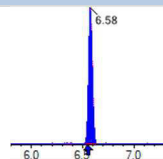
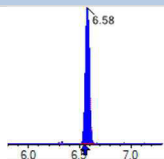
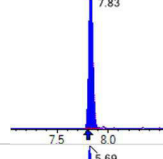
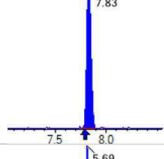
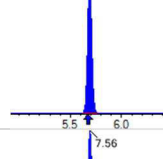
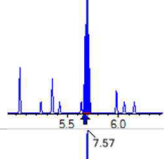
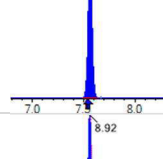
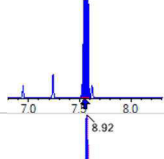
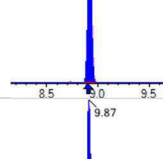
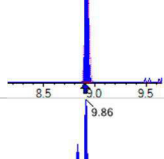
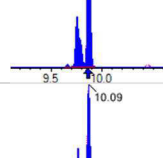
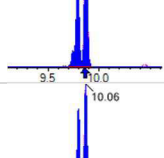
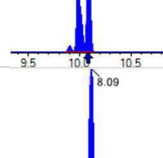
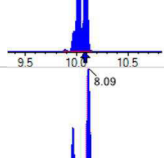
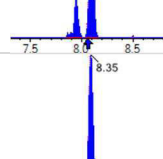
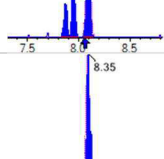
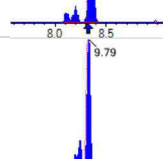
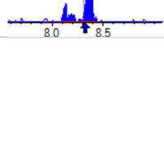
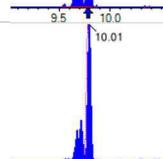
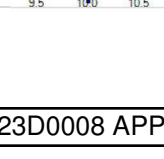
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

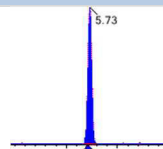
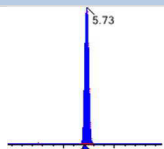
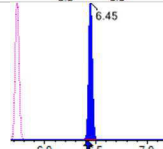
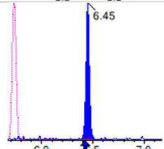
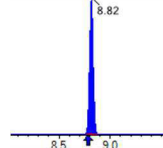
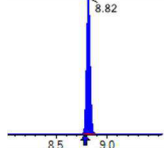
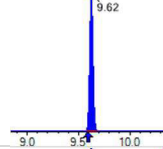
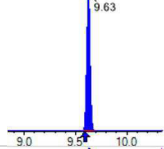
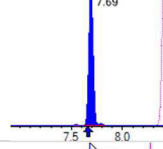
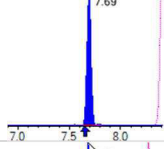
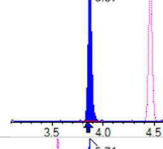
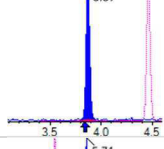
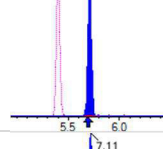
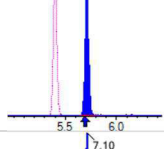
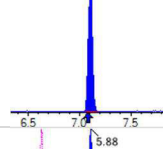
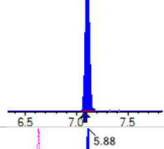
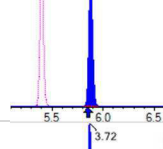
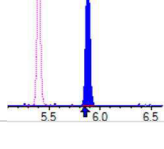
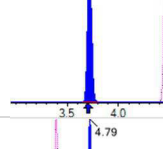
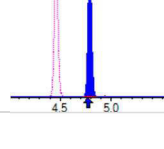
Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (2)  
 Acquired: 2023/04/18 - 17:08

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 409227	(3.22, 1.00) (0.00, N/A, 0.0)	645.5	N/A 0.0 0.0	1.9746	N/A			
PFPeA	(263.0 / 219.0) 288186 (263.0 / 69.0) 2929	(4.46, 1.00) (0.00, N/A, -0.4)	600.2 55.3	0.0102 86.6 86.6	0.9714	N/A			
PFHxA	(313.0 / 269.0) 182651 (313.0 / 119.0) 17807	(5.40, 1.00) (0.00, N/A, 0.0)	307.2 93.6	0.0975 116.8 116.8	0.4986	N/A			
PFHpA	(363.0 / 319.0) 134596 (363.0 / 169.0) 28138	(6.19, 1.00) (0.00, N/A, 0.1)	281.7 137.2	0.2091 75.4 75.4	0.4625	N/A			
PFOA	(413.0 / 369.0) 173486 (413.0 / 169.0) 44510	(6.89, 1.00) (0.00, N/A, 0.1)	177.0 104.1	0.2566 85.9 85.9	0.5178	N/A			
PFNA	(463.0 / 419.0) 113619 (463.0 / 169.0) 23398	(7.53, 1.00) (0.00, N/A, -0.1)	316.1 155.6	0.2059 101.7 101.7	0.4552	N/A			
PFDA	(513.0 / 469.0) 138604 (513.0 / 169.0) 13500	(8.14, 1.00) (0.00, N/A, 0.2)	287.4 119.3	0.0974 99.3 99.3	0.4786	N/A			
PFUnA	(563.0 / 519.0) 125963 (563.0 / 169.0) 14615	(8.71, 1.00) (0.00, N/A, 0.1)	352.0 169.3	0.1160 115.0 115.0	0.5163	N/A			
PFDoA	(613.0 / 569.0) 105240 (613.0 / 169.0) 12879	(9.16, 1.00) (0.00, N/A, 0.2)	523.1 143.5	0.1224 85.9 85.9	0.4814	N/A			
PFTrDA	(663.0 / 619.0) 109957 (663.0 / 169.0) 24537	(9.54, 1.04) (N/A, 0.03, 0.1)	661.3 287.5	0.2231 108.3 108.3	0.4716	N/A			
PFTeDA	(713.0 / 669.0) 135815 (713.0 / 169.0) 27981	(9.87, 1.00) (0.00, N/A, 0.0)	398.5 178.7	0.2060 104.5 104.5	0.5195	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) 1031409 (813.0 / 169.0) 158353	(10.51, 1.94) (N/A, 0.07, 0.0)	1549.5 1342.5	0.1535 102.8 102.8	2.0809	N/A			
PFODA	(913.0 / 869.0) 651567 (913.0 / 169.0) 162483	(11.22, 2.07) (N/A, 0.11, 0.1)	681.0 392.6	0.2494 94.7 94.7	2.0508	N/A			
PFBS	(299.0 / 80.0) 206369 (299.0 / 99.0) 154372	(5.43, 1.00) (0.00, N/A, 0.1)	393.2 320.1	0.7480 108.8 108.8	0.4341	N/A			
PFPeS	(349.0 / 80.0) 340465 (349.0 / 99.0) 111203	(6.33, 0.89) (N/A, 0.03, 0.2)	437.2 234.5	0.3266 92.3 92.3	0.4528	N/A			
PFHxS	(399.0 / 80.0) 274554 (399.0 / 99.0) 88679	(7.09, 1.00) (0.00, N/A, 0.0)	10310186.0 289633.1	0.3230 91.3 91.3	0.4393	N/A			
PFHpS	(449.0 / 80.0) 248657 (449.0 / 99.0) 75644	(7.77, 0.92) (N/A, 0.04, 0.1)	648.0 421.8	0.3042 108.9 108.9	0.3860	N/A			
PFOS	(499.0 / 80.0) 422407 (499.0 / 99.0) 102995	(8.40, 1.00) (0.00, N/A, -0.1)	2198.7 4371.0	0.2438 105.9 105.9	0.4568	N/A			M14 ABK 4/19/23
PFNS	(549.0 / 80.0) 282713 (549.0 / 99.0) 65800	(8.93, 1.06) (N/A, 0.04, -0.1)	936.5 285.8	0.2327 94.4 94.4	0.3878	N/A			
PFDS	(599.0 / 80.0) 327975 (599.0 / 99.0) 83370	(9.35, 1.11) (N/A, 0.03, 0.0)	593.5 374.9	0.2542 110.9 110.9	0.3911	N/A			
PFDoS	(699.0 / 80.0) 384076 (699.0 / 99.0) 99251	(10.01, 1.19) (N/A, 0.04, 0.0)	882.8 486.2	0.2584 113.3 113.3	0.4055	N/A			
4:2FTS	(327.0 / 307.0) 212324 (327.0 / 81.0) 138622	(5.09, 1.00) (0.00, N/A, 0.1)	622.3 332.9	0.6529 100.4 100.4	2.0091	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 127360 (427.0 / 81.0) 90613	(6.58, 1.00) (0.00, N/A, -0.1)	343.2 338.4	0.7115 96.4 96.4	1.9182	N/A			
8:2FTS	(527.0 / 507.0) 118005 (527.0 / 81.0) 90675	(7.83, 1.00) (0.00, N/A, 0.0)	304.2 293.6	0.7684 113.6 113.6	1.6150	N/A			
PFSBA	(297.9 / 78.0) 1651079 (297.9 / 278.0) 2829	(5.69, 0.64) (N/A, 0.02, -0.3)	507.3 41.4	0.0017 107.2 107.2	2.0027	N/A			
PFHxSA	(397.9 / 78.0) 1183599 (397.9 / 378.0) 3790	(7.56, 0.85) (N/A, 0.02, -0.3)	434.5 69.4	0.0032 75.7 75.7	1.9584	N/A			
PFOSA	(498.0 / 78.0) 283987 (498.0 / 478.0) 9188	(8.92, 1.00) (0.00, N/A, 0.1)	776.3 99.3	0.0324 130.3 130.3	0.4808	N/A			
NMeFOSA	(512.0 / 219.0) 409375 (512.0 / 169.0) 316422	(9.87, 1.00) (0.00, N/A, 0.8)	5857.5 18189.1	0.7729 103.2 103.2	2.0001	N/A			
NEtFOSA	(526.0 / 219.0) 442707 (526.0 / 169.0) 526191	(10.09, 1.00) (0.00, N/A, 1.4)	106261.8 25882.3	1.1886 101.6 101.6	1.9937	N/A			
NMeFOSAA	(570.0 / 419.0) 63571 (570.0 / 483.0) 28591	(8.09, 1.00) (0.00, N/A, 0.5)	1032539.9 91716.3	0.4498 94.5 94.5	0.5080	N/A			
NEtFOSAA	(584.0 / 419.0) 50778 (584.0 / 526.0) 30019	(8.35, 1.00) (0.00, N/A, -0.2)	1863827.3 11370.7	0.5912 99.3 99.3	0.6015	N/A			
NMeFOSE	(616.0 / 59.0) 156142	(9.79, 1.00) (0.01, N/A, 0.0)	1048.4	N/A 0.0 0.0	1.9951	N/A			
NEtFOSE	(630.0 / 59.0) 182079	(10.01, 1.00) (0.01, N/A, 0.0)	63673.4	N/A 0.0 0.0	2.0590	N/A			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 85065 (285.0 / 185.0) 400223	(5.73, 1.00) (0.00, N/A, 0.1)	456.9 601.7	4.7049 99.8 99.8	0.9720	N/A			
ADONA	(377.0 / 85.0) 482053 (377.0 / 251.0) 53529	(6.45, 1.12) (N/A, 0.02, -0.2)	412.2 146.2	0.1110 102.5 102.5	0.9347	N/A			
9CI-PF3ONS	(531.0 / 351.0) 965902 (533.0 / 353.0) 314744	(8.82, 1.54) (N/A, 0.04, 0.0)	315.2 360.8	0.3259 99.8 99.8	0.9581	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 800677 (633.0 / 453.0) 286197	(9.62, 1.68) (N/A, 0.04, -0.1)	1282.0 1126.7	0.3574 97.3 97.3	0.9009	N/A			
PFECHS	(461.0 / 98.9) 1097303 (461.0 / 381.2) 408772	(7.69, 0.92) (N/A, 0.04, 0.0)	478.3 498.2	0.3725 97.7 97.7	1.6581	N/A			
3:3FTCA	(241.0 / 177.0) 18984 (241.0 / 117.0) 30857	(3.87, 0.87) (N/A, 0.02, 0.0)	527.3 262.2	1.6254 97.7 97.7	1.7409	N/A			
5:3FTCA	(341.0 / 236.7) 92708 (341.0 / 217.0) 160637	(5.71, 1.06) (N/A, 0.02, -0.1)	405.5 423.8	1.7327 96.2 96.2	1.9717	N/A			
7:3FTCA	(441.0 / 317.0) 105396 (441.0 / 337.0) 128916	(7.11, 1.32) (N/A, 0.03, 0.1)	229.0 335.0	1.2232 102.1 102.1	1.8870	N/A			
PFEESA	(315.0 / 135.0) 292017 (315.0 / 83.0) 83968	(5.88, 1.09) (N/A, 0.03, -0.1)	815.1 293.3	0.2875 101.1 101.1	0.8336	N/A			
PFMPA	(229.0 / 85.0) 72253	(3.72, 0.83) (N/A, 0.02, 0.0)	709.8	N/A 0.0 0.0	0.9520	N/A			
PFMBA	(279.0 / 85.0) 203559	(4.79, 1.07) (N/A, 0.02, 0.0)	901.7	N/A 0.0 0.0	0.9521	N/A			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (2)  
 Acquired: 2023/04/18 - 17:08

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 185903 (295.0 / 85.0) 160856	(5.31, 0.98) (N/A, 0.02, -0.1)	652.3 703.9	0.8653 89.0 89.0	0.9517	N/A			
TDCA	(499.0 / 80.0) 414193	(8.40, 1.00) (N/A, 0.04, 0.0)	1214.5	N/A 0.0 0.0	0.4787	N/A			MI5 DG 2023-04-19
13C3_PFDA_IIS	(216.0 / 172.0) 216437	(3.22, N/A) (N/A, 0.02, N/A)	528.2	N/A	1.0503 [ 1.0000 ]	105.0% { 105.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 146047	(5.40, N/A) (N/A, 0.02, N/A)	446.9	N/A	1.0074 [ 1.0000 ]	100.7% { 97.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 283308	(6.88, N/A) (N/A, 0.03, N/A)	411.9	N/A	1.0390 [ 1.0000 ]	103.9% { 102.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 244905	(7.53, N/A) (N/A, 0.03, N/A)	368.9	N/A	0.9784 [ 1.0000 ]	97.8% { 97.3% }			
13C2_PFDA_IIS	(515.0 / 470.1) 218016	(8.14, N/A) (N/A, 0.04, N/A)	248.4	N/A	0.9182 [ 1.0000 ]	91.8% { 83.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 401560	(7.09, N/A) (N/A, 0.03, N/A)	249.2	N/A	1.0515 [ 1.0000 ]	105.1% { 100.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 528263	(8.40, N/A) (N/A, 0.04, N/A)	644.9	N/A	1.1079 [ 1.0000 ]	110.8% { 116.3% }			
13C4_PFDA_EIS	(217.0 / 172.0) 1921993	(3.22, N/A) (N/A, 0.02, N/A)	1007.4	N/A	8.2896 [ 8.0000 ]	103.6% { 109.8% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1279460	(4.46, N/A) (N/A, 0.02, N/A)	1197.2	N/A	4.4307 [ 4.0000 ]	110.8% { 109.4% }			

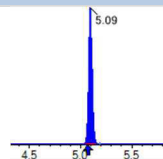
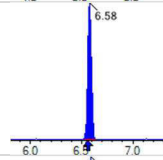
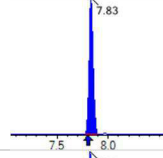
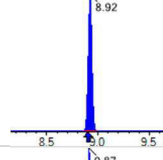
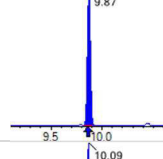
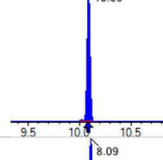
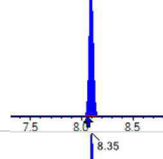
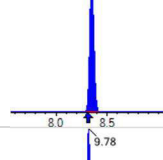
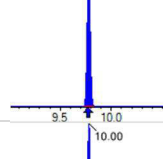
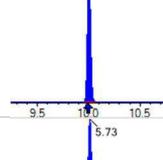
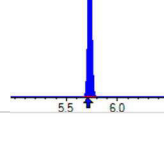


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (2)  
 Acquired: 2023/04/18 - 17:08

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 697275	(5.40, N/A) (N/A, 0.02, N/A)	609.1	N/A	2.1323 [2.0000]	106.6% {104.1%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 548389	(6.19, N/A) (N/A, 0.02, N/A)	1764.0	N/A	2.1247 [2.0000]	106.2% {102.9%}			
13C8_PFOA_EIS	(421.0 / 376.0) 671405	(6.88, N/A) (N/A, 0.03, N/A)	372.1	N/A	1.9915 [2.0000]	99.6% {104.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 264578	(7.53, N/A) (N/A, 0.03, N/A)	363.8	N/A	1.0407 [1.0000]	104.1% {98.7%}			
13C6_PFDA_EIS	(519.0 / 474.0) 299399	(8.14, N/A) (N/A, 0.04, N/A)	487.0	N/A	1.1575 [1.0000]	115.8% {107.3%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 269115	(8.71, N/A) (N/A, 0.04, N/A)	351.5	N/A	1.0814 [1.0000]	108.1% {99.1%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 235350	(9.16, N/A) (N/A, 0.03, N/A)	1134.6	N/A	1.1151 [1.0000]	111.5% {103.5%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 283323	(9.87, N/A) (N/A, 0.04, N/A)	430.3	N/A	1.0883 [1.0000]	108.8% {100.1%}			
13C3_PFBS_EIS	(302.0 / 80.0) 1558224	(5.43, N/A) (N/A, 0.03, N/A)	657.0	N/A	2.0396 [2.0000]	102.0% {107.5%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 654292	(7.09, N/A) (N/A, 0.03, N/A)	496.3	N/A	2.0311 [2.0000]	101.6% {112.8%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1463677	(8.40, N/A) (N/A, 0.04, N/A)	963.2	N/A	2.2183 [2.0000]	110.9% {131.7%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 132059	( 5.09, N/A ) ( N/A, 0.02, N/A )	397.1	N/A	3.5863 [ 4.0000 ]	89.7% { 93.2% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 178745	( 6.58, N/A ) ( N/A, 0.02, N/A )	453.9	N/A	3.9131 [ 4.0000 ]	97.8% { 107.0% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 211679	( 7.83, N/A ) ( N/A, 0.03, N/A )	321.0	N/A	4.1023 [ 4.0000 ]	102.6% { 117.8% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1414869	( 8.92, N/A ) ( N/A, 0.02, N/A )	1090.8	N/A	1.9106 [ 2.0000 ]	95.5% { 104.5% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 419523	( 9.87, N/A ) ( N/A, 0.01, N/A )	450.1	N/A	1.8298 [ 2.0000 ]	91.5% { 100.0% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 412589	( 10.09, N/A ) ( N/A, 0.01, N/A )	1121.1	N/A	1.8320 [ 2.0000 ]	91.6% { 100.6% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 497696	( 8.09, N/A ) ( N/A, 0.03, N/A )	664.3	N/A	3.6124 [ 4.0000 ]	90.3% { 93.7% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 381958	( 8.35, N/A ) ( N/A, 0.04, N/A )	388.1	N/A	3.4713 [ 4.0000 ]	86.8% { 96.7% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1372728	( 9.78, N/A ) ( N/A, 0.01, N/A )	1179.5	N/A	18.8986 [ 20.0000 ]	94.5% { 101.4% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1743502	( 10.00, N/A ) ( N/A, 0.01, N/A )	1735.4	N/A	19.3644 [ 20.0000 ]	96.8% { 108.4% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1390131	( 5.73, N/A ) ( N/A, 0.02, N/A )	780.4	N/A	8.2599 [ 8.0000 ]	103.2% { 102.2% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (3)  
 Acquired: 2023/04/18 - 17:24

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 808810	(3.21, 1.00) (0.00, N/A, 0.0)	876.2	N/A 0.0 0.0	4.0089	N/A			
PFPeA	(263.0 / 219.0) 560513 (263.0 / 69.0) 6498	(4.45, 1.00) (0.00, N/A, 0.1)	870.9 134.8	0.0116 98.8 98.8	1.9997	N/A			
PFHxA	(313.0 / 269.0) 359074 (313.0 / 119.0) 32751	(5.39, 1.00) (0.00, N/A, 0.0)	388.3 141.6	0.0912 109.3 109.3	1.0214	N/A			
PFHpA	(363.0 / 319.0) 277204 (363.0 / 169.0) 76658	(6.18, 1.00) (0.00, N/A, 0.1)	465.3 355.9	0.2765 99.7 99.7	1.0125	N/A			
PFOA	(413.0 / 369.0) 326078 (413.0 / 169.0) 100135	(6.87, 1.00) (0.00, N/A, 0.2)	256.5 218.0	0.3071 102.9 102.9	1.0110	N/A			
PFNA	(463.0 / 419.0) 250464 (463.0 / 169.0) 48420	(7.52, 1.00) (0.00, N/A, 0.1)	482.8 313.9	0.1933 95.5 95.5	0.9923	N/A			
PFDA	(513.0 / 469.0) 289357 (513.0 / 169.0) 29428	(8.12, 1.00) (0.00, N/A, -0.2)	405.2 129.7	0.1017 103.6 103.6	1.0695	N/A			
PFUnA	(563.0 / 519.0) 255358 (563.0 / 169.0) 25541	(8.69, 1.00) (0.00, N/A, 0.1)	260.4 245.9	0.1000 99.1 99.1	1.0571	N/A			
PFDoA	(613.0 / 569.0) 218736 (613.0 / 169.0) 28560	(9.15, 1.00) (0.00, N/A, 0.2)	1251.0 182.1	0.1306 91.7 91.7	0.9872	N/A			
PFTrDA	(663.0 / 619.0) 236677 (663.0 / 169.0) 52645	(9.52, 1.04) (N/A, 0.02, 0.0)	361.4 261.0	0.2224 107.9 107.9	1.0017	N/A			
PFTeDA	(713.0 / 669.0) 274025 (713.0 / 169.0) 49082	(9.85, 1.00) (0.00, N/A, -0.2)	577.4 186.0	0.1791 90.8 90.8	1.0420	N/A			

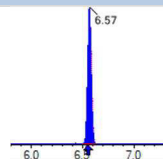
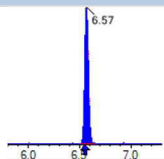
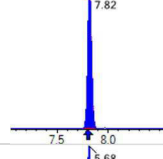
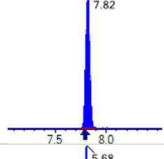
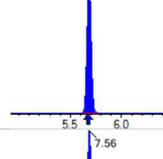
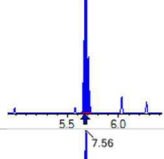
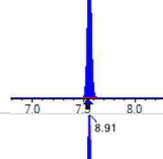
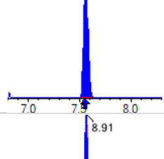
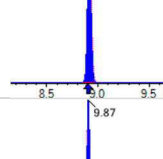
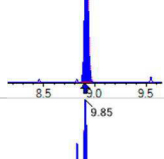
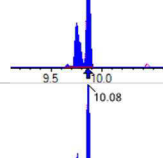
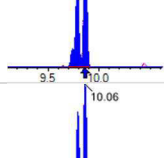
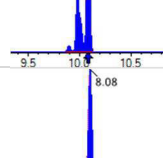
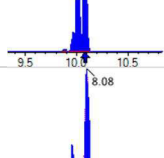
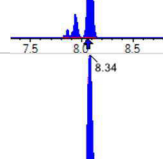
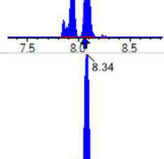
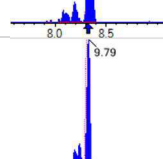
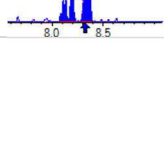
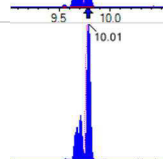
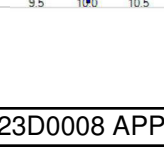


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (3)  
 Acquired: 2023/04/18 - 17:24

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) 2048337 ( 813.0 / 169.0 ) 304887	( 10.48 , 1.93 ) ( N/A , 0.03 , 0.0 )	2954.6 1627.1	0.1488 99.7 99.7	4.2184	N/A			
PFODA	( 913.0 / 869.0 ) 1350498 ( 913.0 / 169.0 ) 363422	( 11.16 , 2.06 ) ( N/A , 0.06 , 0.1 )	947.0 598.3	0.2691 102.2 102.2	4.3390	N/A			
PFBS	( 299.0 / 80.0 ) 414382 ( 299.0 / 99.0 ) 286931	( 5.42 , 1.00 ) ( 0.00 , N/A , 0.0 )	405.1 339.3	0.6924 100.7 100.7	0.8898	N/A			
PFPeS	( 349.0 / 80.0 ) 694708 ( 349.0 / 99.0 ) 242235	( 6.32 , 0.89 ) ( N/A , 0.02 , 0.2 )	753.0 396.9	0.3487 98.5 98.5	0.9908	N/A			
PFHxS	( 399.0 / 80.0 ) 553240 ( 399.0 / 99.0 ) 191532	( 7.07 , 1.00 ) ( 0.00 , N/A , -0.1 )	81381.4 385764.0	0.3462 97.8 97.8	0.9493	N/A			
PFHpS	( 449.0 / 80.0 ) 538331 ( 449.0 / 99.0 ) 152534	( 7.75 , 0.92 ) ( N/A , 0.02 , 0.1 )	716.6 391.5	0.2833 101.4 101.4	0.9971	N/A			
PFOS	( 499.0 / 80.0 ) 724635 ( 499.0 / 99.0 ) 165323	( 8.39 , 1.00 ) ( 0.00 , N/A , 0.0 )	17614.8 5494.7	0.2281 99.1 99.1	0.9350	N/A			
PFNS	( 549.0 / 80.0 ) 594227 ( 549.0 / 99.0 ) 147981	( 8.92 , 1.06 ) ( N/A , 0.02 , 0.0 )	865.5 542.2	0.2490 101.0 101.0	0.9724	N/A			
PFDS	( 599.0 / 80.0 ) 680851 ( 599.0 / 99.0 ) 164851	( 9.34 , 1.11 ) ( N/A , 0.02 , 0.0 )	1002.8 695.7	0.2421 105.7 105.7	0.9685	N/A			
PFDoS	( 699.0 / 80.0 ) 703127 ( 699.0 / 99.0 ) 174065	( 9.99 , 1.19 ) ( N/A , 0.02 , 0.0 )	738.1 573.3	0.2476 108.5 108.5	0.8858	N/A			
4:2FTS	( 327.0 / 307.0 ) 430067 ( 327.0 / 81.0 ) 278279	( 5.09 , 1.00 ) ( 0.00 , N/A , 0.1 )	976.4 678.8	0.6471 99.5 99.5	3.8246	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 254642 (427.0 / 81.0) 192156	(6.57, 1.00) (0.00, N/A, 0.0)	525.9 424.3	0.7546 102.2 102.2	4.0550	N/A			
8:2FTS	(527.0 / 507.0) 275483 (527.0 / 81.0) 179068	(7.82, 1.00) (0.00, N/A, -0.1)	482.5 539.4	0.6500 96.1 96.1	4.2912	N/A			
PFSBA	(297.9 / 78.0) 3408962 (297.9 / 278.0) 6444	(5.68, 0.64) (N/A, 0.01, 0.1)	793.7 96.0	0.0019 118.3 118.3	4.4053	N/A			
PFHxSA	(397.9 / 78.0) 2446467 (397.9 / 378.0) 9860	(7.56, 0.85) (N/A, 0.01, -0.2)	640.4 140.9	0.0040 95.3 95.3	4.3126	N/A			
PFOSA	(498.0 / 78.0) 565598 (498.0 / 478.0) 15069	(8.91, 1.00) (0.00, N/A, 0.0)	696.3 179.1	0.0266 107.3 107.3	1.0202	N/A			
NMeFOSA	(512.0 / 219.0) 810745 (512.0 / 169.0) 641008	(9.87, 1.00) (0.00, N/A, 0.8)	8854.9 627136.9	0.7906 105.6 105.6	4.3400	N/A			
NEtFOSA	(526.0 / 219.0) 894622 (526.0 / 169.0) 1088046	(10.08, 1.00) (0.00, N/A, 1.4)	30047.6 11262.9	1.2162 104.0 104.0	3.9874	N/A			
NMeFOSAA	(570.0 / 419.0) 121509 (570.0 / 483.0) 56837	(8.08, 1.00) (0.00, N/A, 0.0)	93969.5 118254.7	0.4678 98.3 98.3	1.0291	N/A			
NEtFOSAA	(584.0 / 419.0) 87279 (584.0 / 526.0) 52940	(8.34, 1.00) (0.01, N/A, 0.1)	3460438.3 2321.6	0.6066 101.9 101.9	1.0121	N/A			
NMeFOSE	(616.0 / 59.0) 283503	(9.79, 1.00) (0.02, N/A, 0.0)	1750.7	N/A 0.0 0.0	4.3139	N/A			
NEtFOSE	(630.0 / 59.0) 314245	(10.01, 1.00) (0.01, N/A, 0.0)	1564.7	N/A 0.0 0.0	3.9855	N/A			



Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL3  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18B (3)  
Acquired: 2023/04/18 - 17:24

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 173525 (285.0 / 185.0) 792732	(5.72, 1.00) (0.00, N/A, 0.0)	626.5 818.4	4.5684 96.9 96.9	2.0118	N/A			
ADONA	(377.0 / 85.0) 1031761 (377.0 / 251.0) 119666	(6.44, 1.13) (N/A, 0.02, 0.0)	378.2 179.5	0.1160 107.0 107.0	2.0297	N/A			
9CI-PF3ONS	(531.0 / 351.0) 2038315 (533.0 / 353.0) 665666	(8.80, 1.54) (N/A, 0.02, 0.0)	640.9 201.7	0.3266 100.0 100.0	2.0512	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 1779230 (633.0 / 453.0) 685444	(9.61, 1.68) (N/A, 0.02, -0.1)	1941.2 1708.1	0.3852 104.8 104.8	2.0312	N/A			
PFECHS	(461.0 / 98.9) 2187186 (461.0 / 381.2) 830500	(7.68, 0.92) (N/A, 0.02, 0.0)	541.1 376.8	0.3797 99.6 99.6	3.9432	N/A			
3:3FTCA	(241.0 / 177.0) 40518 (241.0 / 117.0) 62588	(3.86, 0.87) (N/A, 0.01, 0.0)	570.5 473.8	1.5447 92.9 92.9	3.9326	N/A			
5:3FTCA	(341.0 / 236.7) 197919 (341.0 / 217.0) 340767	(5.70, 1.06) (N/A, 0.01, 0.0)	422.8 611.6	1.7218 95.6 95.6	4.3862	N/A			
7:3FTCA	(441.0 / 317.0) 209994 (441.0 / 337.0) 249063	(7.10, 1.32) (N/A, 0.02, 0.0)	367.7 479.6	1.1860 99.0 99.0	3.9177	N/A			
PFEESA	(315.0 / 135.0) 606834 (315.0 / 83.0) 182344	(5.87, 1.09) (N/A, 0.02, 0.2)	814.2 414.2	0.3005 105.6 105.6	1.8052	N/A			
PFMPA	(229.0 / 85.0) 149919	(3.71, 0.83) (N/A, 0.01, 0.0)	838.8	N/A 0.0 0.0	2.0908	N/A			
PFMBA	(279.0 / 85.0) 403482	(4.78, 1.07) (N/A, 0.01, 0.0)	1021.0	N/A 0.0 0.0	1.9974	N/A			



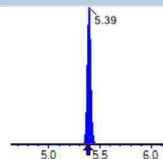
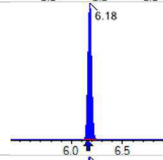
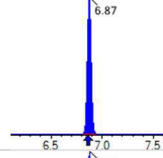
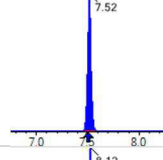
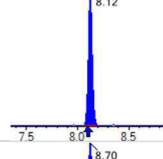
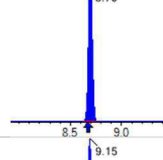
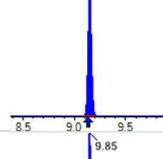
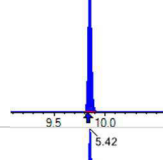
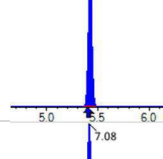
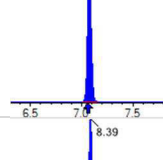
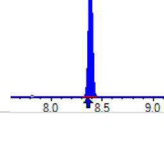


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (3)  
 Acquired: 2023/04/18 - 17:24

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 391806 (295.0 / 85.0) 348497	(5.30, 0.98) (N/A, 0.01, -0.1)	1034.6 776.5	0.8895 91.5 91.5	2.0902	N/A			
TDCA	(499.0 / 80.0) 748039	(8.38, 1.00) (N/A, 0.03, 0.0)	19901.0	N/A 0.0 0.0	1.0314	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 220149	(3.21, N/A) (N/A, 0.01, N/A)	567.2	N/A	1.0683 [ 1.0000 ]	106.8% { 107.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 149846	(5.39, N/A) (N/A, 0.02, N/A)	322.0	N/A	1.0336 [ 1.0000 ]	103.4% { 99.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 273321	(6.87, N/A) (N/A, 0.02, N/A)	372.4	N/A	1.0024 [ 1.0000 ]	100.2% { 98.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 253018	(7.52, N/A) (N/A, 0.02, N/A)	351.1	N/A	1.0108 [ 1.0000 ]	101.1% { 100.5% }			
13C2_PFDA_IIS	(515.0 / 470.1) 239822	(8.13, N/A) (N/A, 0.02, N/A)	323.3	N/A	1.0101 [ 1.0000 ]	101.0% { 91.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 394076	(7.08, N/A) (N/A, 0.02, N/A)	311.0	N/A	1.0319 [ 1.0000 ]	103.2% { 98.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 503144	(8.39, N/A) (N/A, 0.03, N/A)	415.8	N/A	1.0552 [ 1.0000 ]	105.5% { 110.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1871022	(3.21, N/A) (N/A, 0.01, N/A)	1187.5	N/A	7.9337 [ 8.0000 ]	99.2% { 106.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1208837	(4.45, N/A) (N/A, 0.01, N/A)	1313.8	N/A	4.0800 [ 4.0000 ]	102.0% { 103.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 669154	(5.39, N/A) (N/A, 0.02, N/A)	717.8	N/A	1.9945 [2.0000]	99.7% {99.9%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 515934	(6.18, N/A) (N/A, 0.02, N/A)	1008.3	N/A	1.9483 [2.0000]	97.4% {96.8%}			
13C8_PFOA_EIS	(421.0 / 376.0) 646311	(6.87, N/A) (N/A, 0.02, N/A)	456.7	N/A	1.9871 [2.0000]	99.4% {100.9%}			
13C9_PFNA_EIS	(472.0 / 427.0) 267531	(7.52, N/A) (N/A, 0.02, N/A)	250.3	N/A	1.0186 [1.0000]	101.9% {99.8%}			
13C6_PFDA_EIS	(519.0 / 474.0) 279731	(8.12, N/A) (N/A, 0.02, N/A)	234.6	N/A	0.9832 [1.0000]	98.3% {100.2%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 266421	(8.70, N/A) (N/A, 0.02, N/A)	164.3	N/A	0.9733 [1.0000]	97.3% {98.1%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 238524	(9.15, N/A) (N/A, 0.02, N/A)	855.5	N/A	1.0273 [1.0000]	102.7% {104.9%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 284970	(9.85, N/A) (N/A, 0.02, N/A)	359.3	N/A	0.9951 [1.0000]	99.5% {100.7%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1526527	(5.42, N/A) (N/A, 0.02, N/A)	663.1	N/A	2.0360 [2.0000]	101.8% {105.3%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 610137	(7.08, N/A) (N/A, 0.02, N/A)	399.2	N/A	1.9300 [2.0000]	96.5% {105.2%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1226790	(8.39, N/A) (N/A, 0.03, N/A)	580.9	N/A	1.9521 [2.0000]	97.6% {110.4%}			

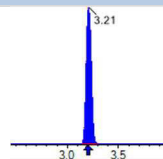
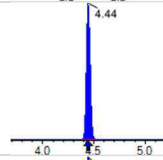
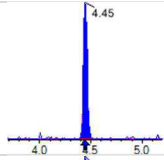
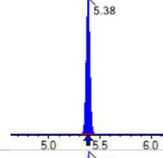
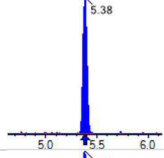
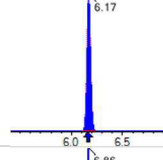
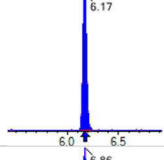
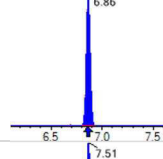
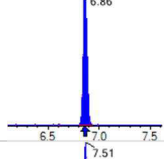
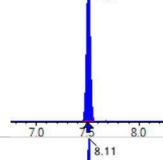
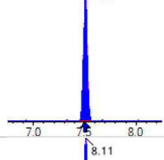
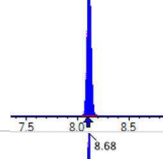
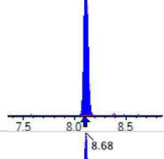
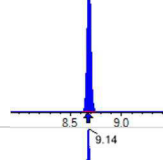
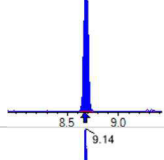
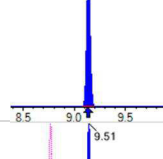
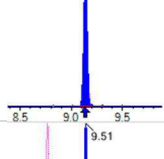
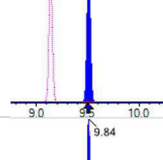
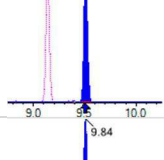
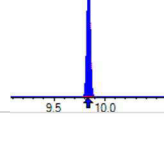
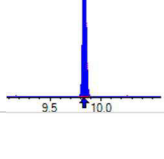


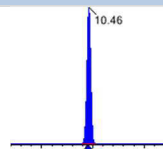
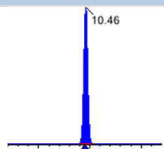
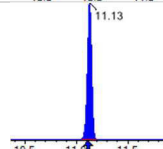
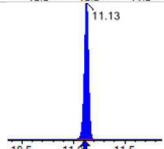
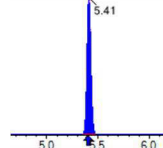
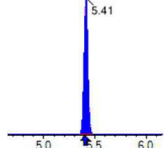
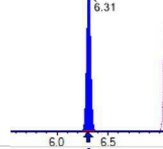
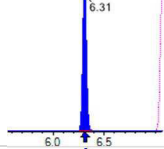
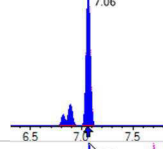
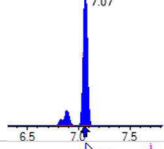
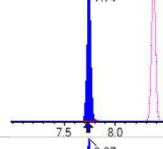
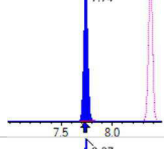
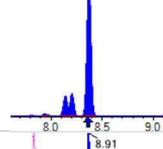
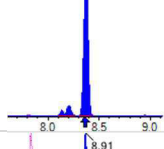
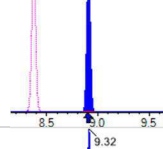
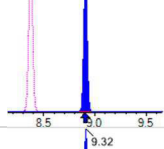
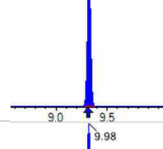
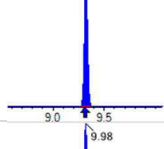
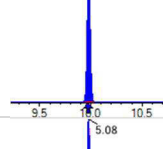
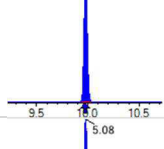
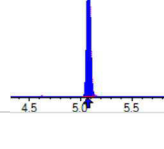
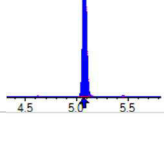
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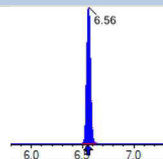
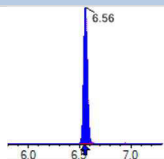
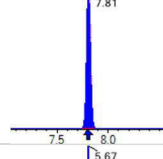
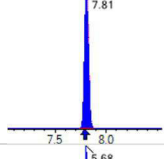
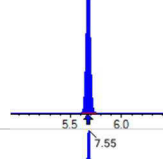
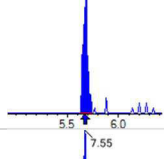
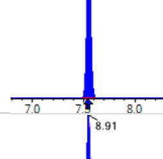
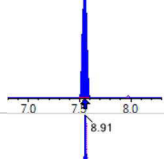
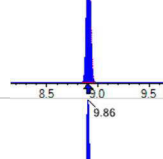
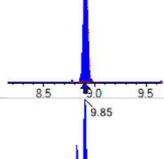
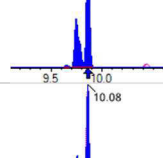
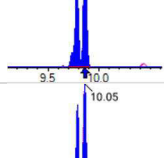
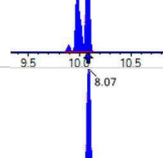
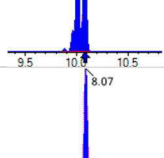
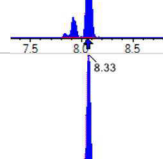
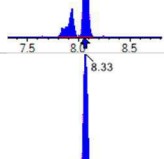
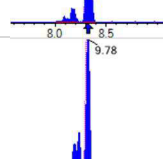
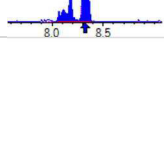
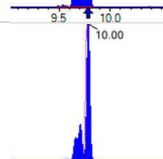
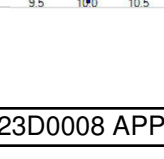
Sample I.D.: SC01530-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (3)  
 Acquired: 2023/04/18 - 17:24

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 140515	( 5.09, N/A ) ( N/A, 0.01, N/A )	585.1	N/A	3.8885 [ 4.0000 ]	97.2% { 99.1% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 169061	( 6.57, N/A ) ( N/A, 0.01, N/A )	335.8	N/A	3.7714 [ 4.0000 ]	94.3% { 101.2% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 185980	( 7.82, N/A ) ( N/A, 0.02, N/A )	335.9	N/A	3.6727 [ 4.0000 ]	91.8% { 103.5% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1328063	( 8.92, N/A ) ( N/A, 0.01, N/A )	964.6	N/A	1.8829 [ 2.0000 ]	94.1% { 98.1% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 382891	( 9.86, N/A ) ( N/A, 0.00, N/A )	416.8	N/A	1.7534 [ 2.0000 ]	87.7% { 91.3% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 416876	( 10.08, N/A ) ( N/A, 0.01, N/A )	1000.7	N/A	1.9434 [ 2.0000 ]	97.2% { 101.6% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 502030	( 8.08, N/A ) ( N/A, 0.02, N/A )	437.2	N/A	3.8257 [ 4.0000 ]	95.6% { 94.5% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 387505	( 8.33, N/A ) ( N/A, 0.02, N/A )	425.3	N/A	3.6976 [ 4.0000 ]	92.4% { 98.1% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1152693	( 9.77, N/A ) ( N/A, 0.00, N/A )	1102.3	N/A	16.6616 [ 20.0000 ]	83.3% { 85.1% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1554543	( 9.99, N/A ) ( N/A, 0.01, N/A )	1347.5	N/A	18.1277 [ 20.0000 ]	90.6% { 96.7% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1370145	( 5.72, N/A ) ( N/A, 0.02, N/A )	869.7	N/A	7.9347 [ 8.0000 ]	99.2% { 100.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1679395	(3.21, 1.00) (0.00, N/A, 0.0)	994.3	N/A 0.0 0.0	8.5131	N/A			
PFPeA	(263.0 / 219.0) 1166787 (263.0 / 69.0) 14800	(4.44, 1.00) (0.00, N/A, 0.0)	1167.2 170.7	0.0127 108.1 108.1	4.2456	N/A			
PFHxA	(313.0 / 269.0) 767281 (313.0 / 119.0) 66167	(5.38, 1.00) (0.00, N/A, 0.1)	469.2 282.1	0.0862 103.3 103.3	2.1721	N/A			
PFHpA	(363.0 / 319.0) 581694 (363.0 / 169.0) 152337	(6.17, 1.00) (0.00, N/A, 0.0)	823.5 466.5	0.2619 94.5 94.5	2.0779	N/A			
PFOA	(413.0 / 369.0) 695958 (413.0 / 169.0) 204090	(6.86, 1.00) (0.00, N/A, 0.1)	367.5 285.8	0.2933 98.2 98.2	2.0367	N/A			
PFNA	(463.0 / 419.0) 513434 (463.0 / 169.0) 103104	(7.51, 1.00) (0.00, N/A, 0.0)	783.8 453.9	0.2008 99.2 99.2	2.1150	N/A			
PFDA	(513.0 / 469.0) 588696 (513.0 / 169.0) 57792	(8.11, 1.00) (0.00, N/A, 0.1)	643.2 367.9	0.0982 100.0 100.0	1.9921	N/A			
PFUnA	(563.0 / 519.0) 519119 (563.0 / 169.0) 53519	(8.68, 1.00) (0.00, N/A, 0.0)	306.8 177.2	0.1031 102.2 102.2	2.0482	N/A			
PFDoA	(613.0 / 569.0) 469715 (613.0 / 169.0) 63043	(9.14, 1.00) (0.00, N/A, 0.0)	1683.1 422.5	0.1342 94.2 94.2	2.3316	N/A			
PFTrDA	(663.0 / 619.0) 488219 (663.0 / 169.0) 111882	(9.51, 1.04) (N/A, 0.01, 0.1)	915.0 658.9	0.2292 111.2 111.2	2.2726	N/A			
PFTeDA	(713.0 / 669.0) 579496 (713.0 / 169.0) 111988	(9.84, 1.00) (0.00, N/A, 0.1)	583.5 682.3	0.1933 98.0 98.0	2.0875	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) 4148225 (813.0 / 169.0) 627470	(10.46 , 1.93 ) ( N/A , 0.01 , 0.1)	3725.9 2869.7	0.1513 101.3 101.3	8.6116	N/A			
PFODA	(913.0 / 869.0) 2783367 (913.0 / 169.0) 735139	(11.13 , 2.06 ) ( N/A , 0.02 , 0.1)	1520.4 847.7	0.2641 100.3 100.3	9.0145	N/A			
PFBS	(299.0 / 80.0) 829774 (299.0 / 99.0) 618519	(5.41 , 1.00 ) ( 0.00 , N/A , -0.1)	550.1 522.2	0.7454 108.4 108.4	1.7960	N/A			
PFPeS	(349.0 / 80.0) 1436283 (349.0 / 99.0) 515915	(6.31 , 0.89 ) ( N/A , 0.01 , 0.1)	1144.2 796.3	0.3592 101.5 101.5	1.9455	N/A			
PFHxS	(399.0 / 80.0) 1164217 (399.0 / 99.0) 379545	(7.06 , 1.00 ) ( 0.00 , N/A , -0.1)	209879.6 3768.2	0.3260 92.1 92.1	1.8973	N/A			
PFHpS	(449.0 / 80.0) 1077188 (449.0 / 99.0) 322351	(7.74 , 0.92 ) ( N/A , 0.01 , 0.1)	870.7 389.2	0.2993 107.1 107.1	2.0403	N/A			
PFOS	(499.0 / 80.0) 1481836 (499.0 / 99.0) 336040	(8.37 , 1.00 ) ( 0.00 , N/A , 0.0)	25260.2 12968.8	0.2268 98.5 98.5	1.9553	N/A			
PFNS	(549.0 / 80.0) 1242191 (549.0 / 99.0) 311085	(8.91 , 1.06 ) ( N/A , 0.01 , 0.0)	976.8 713.0	0.2504 101.5 101.5	2.0787	N/A			
PFDS	(599.0 / 80.0) 1441599 (599.0 / 99.0) 350084	(9.32 , 1.11 ) ( N/A , 0.01 , 0.1)	1063.8 1031.5	0.2428 106.0 106.0	2.0972	N/A			
PFDoS	(699.0 / 80.0) 1724971 (699.0 / 99.0) 395829	(9.98 , 1.19 ) ( N/A , 0.01 , 0.0)	923.3 565.4	0.2295 100.6 100.6	2.2222	N/A			
4:2FTS	(327.0 / 307.0) 883964 (327.0 / 81.0) 572915	(5.08 , 1.00 ) ( 0.00 , N/A , 0.0)	1021.7 793.1	0.6481 99.7 99.7	7.8876	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 533964 (427.0 / 81.0) 387490	(6.56, 1.00) (0.00, N/A, 0.1)	547.0 471.2	0.7257 98.3 98.3	8.4206	N/A			
8:2FTS	(527.0 / 507.0) 557862 (527.0 / 81.0) 373426	(7.81, 1.00) (-0.01, N/A, 0.0)	345.5 398.8	0.6694 98.9 98.9	8.5053	N/A			
PFSBA	(297.9 / 78.0) 7197102 (297.9 / 278.0) 8761	(5.67, 0.64) (N/A, 0.01, -0.2)	1015.9 66.0	0.0012 76.2 76.2	8.8692	N/A			
PFHxSA	(397.9 / 78.0) 5168957 (397.9 / 378.0) 20207	(7.55, 0.85) (N/A, 0.01, 0.0)	762.1 227.8	0.0039 92.4 92.4	8.6892	N/A			
PFOSA	(498.0 / 78.0) 1195966 (498.0 / 478.0) 36208	(8.91, 1.00) (0.00, N/A, 0.0)	731.2 194.1	0.0303 121.9 121.9	2.0572	N/A			
NMeFOSA	(512.0 / 219.0) 1765306 (512.0 / 169.0) 1351710	(9.86, 1.00) (0.00, N/A, 0.8)	5878.0 4476.6	0.7657 102.2 102.2	8.4670	N/A			
NEtFOSA	(526.0 / 219.0) 1911248 (526.0 / 169.0) 2336380	(10.08, 1.00) (0.00, N/A, 1.6)	16737.2 9720.8	1.2224 104.5 104.5	8.3437	N/A			
NMeFOSAA	(570.0 / 419.0) 247943 (570.0 / 483.0) 108332	(8.07, 1.00) (0.00, N/A, -0.1)	10745.3 3806.5	0.4369 91.8 91.8	2.2585	N/A			
NEtFOSAA	(584.0 / 419.0) 173037 (584.0 / 526.0) 108010	(8.33, 1.00) (0.01, N/A, 0.2)	51895.1 1452.8	0.6242 104.9 104.9	1.9523	N/A			
NMeFOSE	(616.0 / 59.0) 601115	(9.78, 1.00) (0.01, N/A, 0.0)	2354.5	N/A 0.0 0.0	8.3421	N/A			
NEtFOSE	(630.0 / 59.0) 744714	(10.00, 1.00) (0.01, N/A, 0.0)	1922457.1	N/A 0.0 0.0	8.5112	N/A			

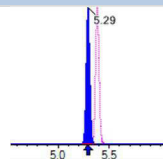
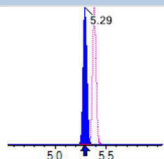
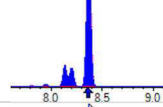
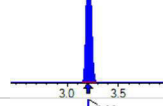
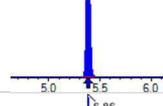
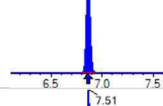
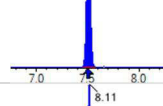
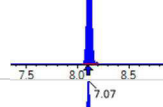
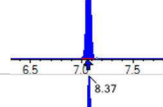
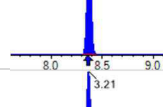
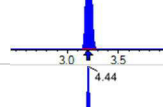
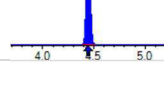


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (4)  
 Acquired: 2023/04/18 - 17:40

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 345711 (285.0 / 185.0) 1669505	(5.71, 1.00) (0.00, N/A, 0.0)	451.7 992.2	4.8292 102.5 102.5	3.9589	N/A			
ADONA	(377.0 / 85.0) 2139848 (377.0 / 251.0) 231100	(6.43, 1.13) (N/A, 0.01, 0.0)	652.2 199.7	0.1080 99.7 99.7	4.1581	N/A			
9CI-PF3ONS	(531.0 / 351.0) 4462693 (533.0 / 353.0) 1370148	(8.79, 1.54) (N/A, 0.01, 0.0)	569.1 523.9	0.3070 94.1 94.1	4.4360	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 3725027 (633.0 / 453.0) 1302124	(9.60, 1.68) (N/A, 0.01, 0.0)	1659.3 1204.7	0.3496 95.1 95.1	4.2004	N/A			
PFECHS	(461.0 / 98.9) 4844844 (461.0 / 381.2) 1688961	(7.66, 0.92) (N/A, 0.01, 0.0)	698.0 547.2	0.3486 91.4 91.4	8.9322	N/A			
3:3FTCA	(241.0 / 177.0) 83959 (241.0 / 117.0) 139383	(3.86, 0.87) (N/A, 0.01, 0.1)	663.8 680.3	1.6601 99.8 99.8	8.3114	N/A			
5:3FTCA	(341.0 / 236.7) 396131 (341.0 / 217.0) 695734	(5.69, 1.06) (N/A, 0.01, 0.0)	490.2 596.4	1.7563 97.5 97.5	8.7368	N/A			
7:3FTCA	(441.0 / 317.0) 429229 (441.0 / 337.0) 562749	(7.09, 1.32) (N/A, 0.01, -0.1)	434.1 391.5	1.3111 109.4 109.4	7.9695	N/A			
PFEESA	(315.0 / 135.0) 1312386 (315.0 / 83.0) 366531	(5.86, 1.09) (N/A, 0.01, 0.0)	656.0 605.4	0.2793 98.2 98.2	3.8853	N/A			
PFMPA	(229.0 / 85.0) 304930	(3.70, 0.83) (N/A, 0.01, 0.0)	1048.1	N/A 0.0 0.0	4.3375	N/A			
PFMBA	(279.0 / 85.0) 872692	(4.77, 1.07) (N/A, 0.01, 0.0)	1444.1	N/A 0.0 0.0	4.4064	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 826415 (295.0 / 85.0) 758989	(5.29, 0.98) (N/A, 0.01, 0.0)	929.3 958.0	0.9184 94.4 94.4	4.3875	N/A			
TDCA	(499.0 / 80.0) 1463275	(8.37, 1.00) (N/A, 0.01, 0.0)	6711.2	N/A 0.0 0.0	2.0632	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 216876	(3.21, N/A) (N/A, 0.01, N/A)	601.6	N/A	1.0524 [ 1.0000 ]	105.2% { 105.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 158117	(5.38, N/A) (N/A, 0.01, N/A)	336.4	N/A	1.0906 [ 1.0000 ]	109.1% { 105.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 283258	(6.86, N/A) (N/A, 0.01, N/A)	587.0	N/A	1.0388 [ 1.0000 ]	103.9% { 102.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 266161	(7.51, N/A) (N/A, 0.01, N/A)	515.8	N/A	1.0633 [ 1.0000 ]	106.3% { 105.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 253929	(8.11, N/A) (N/A, 0.01, N/A)	436.5	N/A	1.0695 [ 1.0000 ]	106.9% { 96.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 403677	(7.07, N/A) (N/A, 0.01, N/A)	481.9	N/A	1.0570 [ 1.0000 ]	105.7% { 101.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 489650	(8.37, N/A) (N/A, 0.01, N/A)	519.6	N/A	1.0269 [ 1.0000 ]	102.7% { 107.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1829467	(3.21, N/A) (N/A, 0.01, N/A)	1102.2	N/A	7.8745 [ 8.0000 ]	98.4% { 104.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1185203	(4.44, N/A) (N/A, 0.01, N/A)	1243.8	N/A	3.7910 [ 4.0000 ]	94.8% { 101.4% }			





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (4)  
 Acquired: 2023/04/18 - 17:40

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 672373	(5.38, N/A) (N/A, 0.01, N/A)	934.7	N/A	1.8992 [ 2.0000 ]	95.0% { 100.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 527553	(6.17, N/A) (N/A, 0.01, N/A)	1322.7	N/A	1.8880 [ 2.0000 ]	94.4% { 99.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 684737	(6.86, N/A) (N/A, 0.01, N/A)	423.6	N/A	2.0314 [ 2.0000 ]	101.6% { 106.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 257292	(7.51, N/A) (N/A, 0.01, N/A)	378.1	N/A	0.9312 [ 1.0000 ]	93.1% { 96.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 305530	(8.11, N/A) (N/A, 0.01, N/A)	189.5	N/A	1.0142 [ 1.0000 ]	101.4% { 109.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 279549	(8.68, N/A) (N/A, 0.01, N/A)	188.2	N/A	0.9645 [ 1.0000 ]	96.4% { 102.9% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 216863	(9.14, N/A) (N/A, 0.01, N/A)	1407.6	N/A	0.8822 [ 1.0000 ]	88.2% { 95.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 300835	(9.84, N/A) (N/A, 0.01, N/A)	452.2	N/A	0.9922 [ 1.0000 ]	99.2% { 106.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1514364	(5.41, N/A) (N/A, 0.01, N/A)	515.7	N/A	1.9718 [ 2.0000 ]	98.6% { 104.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 642431	(7.07, N/A) (N/A, 0.01, N/A)	577.7	N/A	1.9838 [ 2.0000 ]	99.2% { 110.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1199635	(8.37, N/A) (N/A, 0.01, N/A)	434.7	N/A	1.9615 [ 2.0000 ]	98.1% { 107.9% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (4)  
 Acquired: 2023/04/18 - 17:40

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 140043	( 5.08 , N/A ) ( N/A , 0.01 , N/A )	518.9	N/A	3.7832 [ 4.0000 ]	94.6% { 98.8% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 170715	( 6.56 , N/A ) ( N/A , 0.00 , N/A )	457.5	N/A	3.7177 [ 4.0000 ]	92.9% { 102.2% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 190014	( 7.81 , N/A ) ( N/A , 0.01 , N/A )	432.2	N/A	3.6632 [ 4.0000 ]	91.6% { 105.8% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1392649	( 8.91 , N/A ) ( N/A , 0.01 , N/A )	582.7	N/A	2.0289 [ 2.0000 ]	101.4% { 102.9% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 427336	( 9.86 , N/A ) ( N/A , 0.00 , N/A )	392.9	N/A	2.0109 [ 2.0000 ]	100.5% { 101.9% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 425617	( 10.08 , N/A ) ( N/A , 0.00 , N/A )	960.7	N/A	2.0388 [ 2.0000 ]	101.9% { 103.8% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 484571	( 8.07 , N/A ) ( N/A , 0.01 , N/A )	405.3	N/A	3.7944 [ 4.0000 ]	94.9% { 91.2% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 396370	( 8.32 , N/A ) ( N/A , 0.01 , N/A )	365.6	N/A	3.8864 [ 4.0000 ]	97.2% { 100.3% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1263898	( 9.77 , N/A ) ( N/A , 0.00 , N/A )	1357.2	N/A	18.7724 [ 20.0000 ]	93.9% { 93.4% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1725114	( 9.99 , N/A ) ( N/A , 0.00 , N/A )	1888.1	N/A	20.6711 [ 20.0000 ]	103.4% { 107.3% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1387135	( 5.71 , N/A ) ( N/A , 0.01 , N/A )	1170.2	N/A	7.6129 [ 8.0000 ]	95.2% { 102.0% }			



Chemist: ABK  
Instrument: Saphira

Sample I.D.: SC01530-CAL5  
DF, IV: 1, 10.0µL

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18B (5)

Type: Sciex Q3 5500

Acquisition Method: 1633 2023-04-18.dam

Acquired: 2023/04/18 - 17:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 3584141	(3.20, 1.00) (0.00, N/A, 0.0)	1416.8	N/A 0.0 0.0	18.9871	N/A			
PFPeA	(263.0 / 219.0) 2598694 (263.0 / 69.0) 30489	(4.44, 1.00) (0.00, N/A, 0.0)	1456.6 370.2	0.0117 100.0 100.0	9.5842	N/A			
PFHxA	(313.0 / 269.0) 1616813 (313.0 / 119.0) 134923	(5.38, 1.00) (0.00, N/A, 0.0)	856.3 508.5	0.0834 100.0 100.0	4.5963	N/A			
PFHpA	(363.0 / 319.0) 1234145 (363.0 / 169.0) 342150	(6.16, 1.00) (0.00, N/A, 0.0)	763.7 988.9	0.2772 100.0 100.0	4.3644	N/A			
PFOA	(413.0 / 369.0) 1430217 (413.0 / 169.0) 427014	(6.86, 1.00) (0.00, N/A, 0.0)	448.0 336.7	0.2986 100.0 100.0	4.4722	N/A			
PFNA	(463.0 / 419.0) 1131077 (463.0 / 169.0) 229058	(7.50, 1.00) (0.00, N/A, -0.1)	908.0 533.0	0.2025 100.0 100.0	4.4723	N/A			
PFDA	(513.0 / 469.0) 1288463 (513.0 / 169.0) 126440	(8.10, 1.00) (0.00, N/A, 0.0)	500.0 452.2	0.0981 100.0 100.0	4.7740	N/A			
PFUnA	(563.0 / 519.0) 1148910 (563.0 / 169.0) 115918	(8.67, 1.00) (0.00, N/A, 0.0)	628.0 246.3	0.1009 100.0 100.0	4.6656	N/A			
PFDoA	(613.0 / 569.0) 961123 (613.0 / 169.0) 136920	(9.13, 1.00) (0.00, N/A, 0.0)	1297.2 517.0	0.1425 100.0 100.0	4.5485	N/A			
PFTrDA	(663.0 / 619.0) 1007779 (663.0 / 169.0) 207732	(9.50, 1.04) (N/A, 0.00, 0.1)	1283.2 476.1	0.2061 100.0 100.0	4.4725	N/A			
PFTeDA	(713.0 / 669.0) 1204031 (713.0 / 169.0) 237474	(9.83, 1.00) (0.00, N/A, 0.0)	800.2 551.8	0.1972 100.0 100.0	4.6088	N/A			

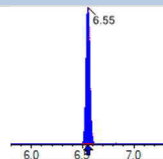
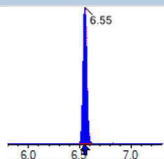
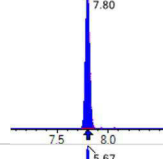
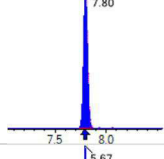
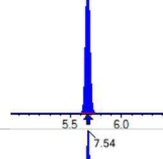
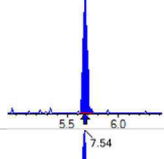
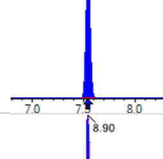
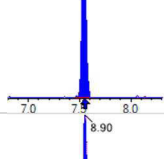
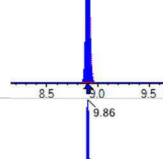
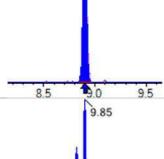
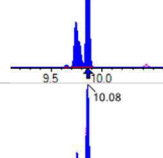
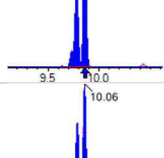
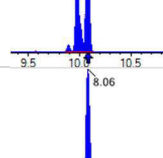
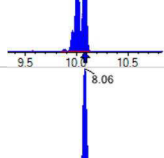
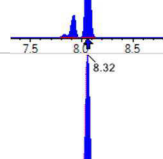
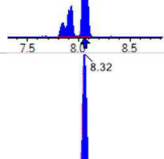
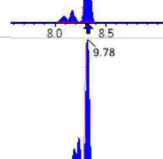
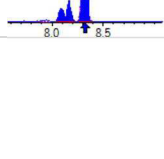
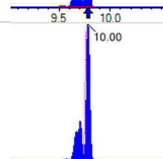
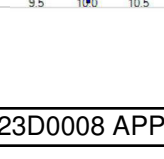


Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL5  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18B (5)  
Acquired: 2023/04/18 - 17:56

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) 8688577 ( 813.0 / 169.0 ) 1297095	( 10.45 , 1.93 ) ( N/A , 0.00 , 0.0 )	3268.1 2982.7	0.1493 100.0 100.0	18.8406	N/A			
PFODA	( 913.0 / 869.0 ) 5906267 ( 913.0 / 169.0 ) 1555380	( 11.11 , 2.05 ) ( N/A , 0.00 , 0.0 )	1752.1 1174.6	0.2633 100.0 100.0	19.9807	N/A			
PFBS	( 299.0 / 80.0 ) 1877047 ( 299.0 / 99.0 ) 1290247	( 5.41 , 1.00 ) ( 0.00 , N/A , 0.0 )	622.6 546.2	0.6874 100.0 100.0	4.2438	N/A			
PFPeS	( 349.0 / 80.0 ) 3278329 ( 349.0 / 99.0 ) 1160358	( 6.30 , 0.89 ) ( N/A , 0.00 , 0.0 )	913.3 1037.9	0.3539 100.0 100.0	4.9182	N/A			
PFHxS	( 399.0 / 80.0 ) 2355995 ( 399.0 / 99.0 ) 833593	( 7.06 , 1.00 ) ( 0.00 , N/A , 0.1 )	221805.4 175688.4	0.3538 100.0 100.0	4.2523	N/A			
PFHpS	( 449.0 / 80.0 ) 2454523 ( 449.0 / 99.0 ) 685778	( 7.73 , 0.92 ) ( N/A , 0.00 , 0.1 )	1048.2 740.6	0.2794 100.0 100.0	5.0185	N/A			
PFOS	( 499.0 / 80.0 ) 2975778 ( 499.0 / 99.0 ) 685249	( 8.36 , 1.00 ) ( 0.00 , N/A , 0.0 )	19507.7 121828.8	0.2303 100.0 100.0	4.2385	N/A			
PFNS	( 549.0 / 80.0 ) 2733038 ( 549.0 / 99.0 ) 674094	( 8.90 , 1.06 ) ( N/A , 0.00 , 0.0 )	1320.9 1058.5	0.2466 100.0 100.0	4.9370	N/A			
PFDS	( 599.0 / 80.0 ) 3153293 ( 599.0 / 99.0 ) 722464	( 9.31 , 1.11 ) ( N/A , 0.00 , 0.0 )	1460.1 1091.2	0.2291 100.0 100.0	4.9518	N/A			
PFDoS	( 699.0 / 80.0 ) 3599418 ( 699.0 / 99.0 ) 821081	( 9.97 , 1.19 ) ( N/A , 0.00 , 0.0 )	1019.5 837.0	0.2281 100.0 100.0	5.0055	N/A			
4:2FTS	( 327.0 / 307.0 ) 1951799 ( 327.0 / 81.0 ) 1269408	( 5.07 , 1.00 ) ( 0.00 , N/A , 0.0 )	981.0 1061.4	0.6504 100.0 100.0	17.2089	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 1206994 (427.0 / 81.0) 891058	(6.55, 1.00) (0.00, N/A, 0.0)	797.2 526.6	0.7382 100.0 100.0	19.4471	N/A			
8:2FTS	(527.0 / 507.0) 1206896 (527.0 / 81.0) 816544	(7.80, 1.00) (0.00, N/A, 0.0)	652.7 657.0	0.6766 100.0 100.0	19.4645	N/A			
PFSBA	(297.9 / 78.0) 15214285 (297.9 / 278.0) 24315	(5.67, 0.64) (N/A, 0.00, -0.2)	903.3 186.7	0.0016 100.0 100.0	19.2854	N/A			
PFHxSA	(397.9 / 78.0) 10981101 (397.9 / 378.0) 46458	(7.54, 0.85) (N/A, 0.00, 0.0)	946.1 212.9	0.0042 100.0 100.0	18.9877	N/A			
PFOSA	(498.0 / 78.0) 2726709 (498.0 / 478.0) 67717	(8.90, 1.00) (-0.01, N/A, 0.0)	988.4 295.7	0.0248 100.0 100.0	4.8244	N/A			
NMeFOSA	(512.0 / 219.0) 3905755 (512.0 / 169.0) 2925130	(9.86, 1.00) (0.00, N/A, 0.8)	2460061.6 5603.7	0.7489 100.0 100.0	19.0809	N/A			
NEtFOSA	(526.0 / 219.0) 4119688 (526.0 / 169.0) 4818271	(10.08, 1.00) (0.00, N/A, 1.2)	11832.1 9599.2	1.1696 100.0 100.0	18.6633	N/A			
NMeFOSAA	(570.0 / 419.0) 531386 (570.0 / 483.0) 252860	(8.06, 1.00) (0.00, N/A, 0.1)	14909.1 28979.1	0.4758 100.0 100.0	4.4858	N/A			
NEtFOSAA	(584.0 / 419.0) 414308 (584.0 / 526.0) 246601	(8.32, 1.00) (0.01, N/A, 0.0)	17924.5 4735.2	0.5952 100.0 100.0	4.6755	N/A			
NMeFOSE	(616.0 / 59.0) 1377571	(9.78, 1.00) (0.01, N/A, 0.0)	29841524.6	N/A 0.0 0.0	17.8470	N/A			
NEtFOSE	(630.0 / 59.0) 1508287	(10.00, 1.00) (0.01, N/A, 0.0)	43846563.4	N/A 0.0 0.0	18.4904	N/A			

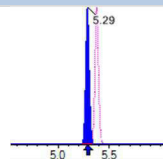
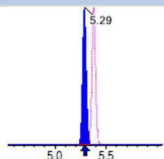
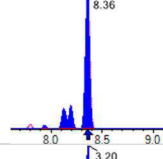
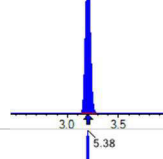
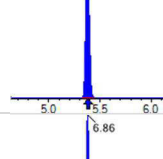
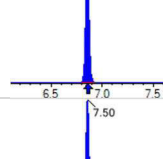
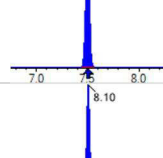
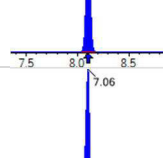
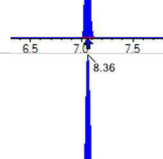
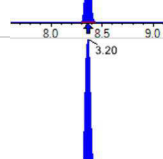
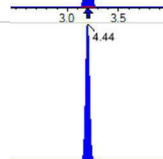
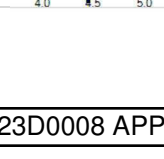


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (5)  
 Acquired: 2023/04/18 - 17:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 798070 (285.0 / 185.0) 3761001	(5.70, 1.00) (0.00, N/A, 0.0)	965.7 927.8	4.7126 100.0 100.0	9.3245	N/A			
ADONA	(377.0 / 85.0) 4632968 (377.0 / 251.0) 502108	(6.42, 1.13) (N/A, 0.00, 0.0)	687.4 294.4	0.1084 100.0 100.0	9.1852	N/A			
9CI-PF3ONS	(531.0 / 351.0) 9429428 (533.0 / 353.0) 3078027	(8.78, 1.54) (N/A, 0.00, 0.0)	713.5 496.1	0.3264 100.0 100.0	9.5632	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 7543693 (633.0 / 453.0) 2772585	(9.59, 1.68) (N/A, 0.00, 0.0)	2008.2 1145.0	0.3675 100.0 100.0	8.6790	N/A			
PFECHS	(461.0 / 98.9) 10061797 (461.0 / 381.2) 3837820	(7.65, 0.92) (N/A, 0.00, 0.0)	595.5 517.2	0.3814 100.0 100.0	20.0248	N/A			
3:3FTCA	(241.0 / 177.0) 175297 (241.0 / 117.0) 291525	(3.85, 0.87) (N/A, 0.00, 0.1)	1177.6 1064.4	1.6630 100.0 100.0	17.5890	N/A			
5:3FTCA	(341.0 / 236.7) 832671 (341.0 / 217.0) 1499872	(5.69, 1.06) (N/A, 0.00, 0.0)	598.1 876.4	1.8013 100.0 100.0	18.4419	N/A			
7:3FTCA	(441.0 / 317.0) 976418 (441.0 / 337.0) 1170111	(7.08, 1.32) (N/A, 0.00, 0.0)	487.6 597.2	1.1984 100.0 100.0	18.2052	N/A			
PFEESA	(315.0 / 135.0) 2776559 (315.0 / 83.0) 789716	(5.85, 1.09) (N/A, 0.00, 0.0)	925.4 994.4	0.2844 100.0 100.0	8.2545	N/A			
PFMPA	(229.0 / 85.0) 637804	(3.69, 0.83) (N/A, 0.00, 0.0)	1349.3	N/A 0.0 0.0	9.1956	N/A			
PFMBA	(279.0 / 85.0) 1799511	(4.77, 1.07) (N/A, 0.00, 0.0)	1569.5	N/A 0.0 0.0	9.2094	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 1707605 (295.0 / 85.0) 1660533	(5.29, 0.98) (N/A, 0.00, 0.0)	1329.9 1226.1	0.9724 100.0 100.0	9.1040	N/A			
TDCA	(499.0 / 80.0) 3124048	(8.36, 1.00) (N/A, 0.00, 0.0)	8370.7	N/A 0.0 0.0	4.7549	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 205477	(3.20, N/A) (N/A, 0.00, N/A)	507.9	N/A	0.9971 [ 1.0000 ]	99.7% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 150136	(5.38, N/A) (N/A, 0.00, N/A)	703.2	N/A	1.0356 [ 1.0000 ]	103.6% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 277401	(6.86, N/A) (N/A, 0.00, N/A)	396.3	N/A	1.0173 [ 1.0000 ]	101.7% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 251675	(7.50, N/A) (N/A, 0.00, N/A)	427.6	N/A	1.0054 [ 1.0000 ]	100.5% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 262798	(8.10, N/A) (N/A, 0.00, N/A)	281.3	N/A	1.1068 [ 1.0000 ]	110.7% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 398846	(7.06, N/A) (N/A, 0.00, N/A)	419.9	N/A	1.0444 [ 1.0000 ]	104.4% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 454043	(8.36, N/A) (N/A, 0.00, N/A)	431.8	N/A	0.9523 [ 1.0000 ]	95.2% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1750602	(3.20, N/A) (N/A, 0.00, N/A)	1263.7	N/A	7.9531 [ 8.0000 ]	99.4% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1169324	(4.44, N/A) (N/A, 0.00, N/A)	1031.1	N/A	3.9390 [ 4.0000 ]	98.5% { 100.0% }			



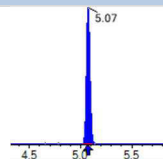
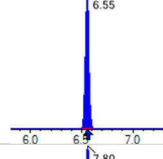
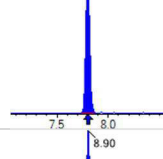
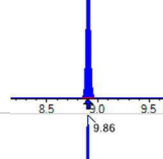
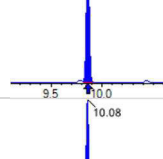
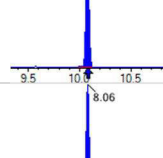
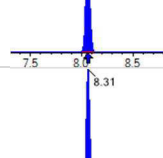
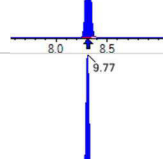
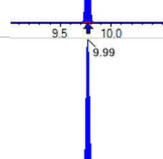
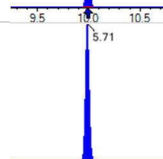
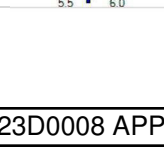
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

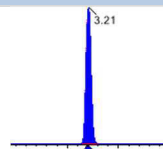
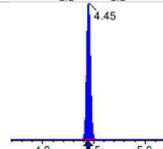
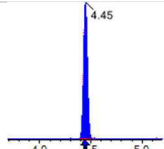
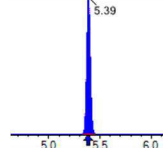
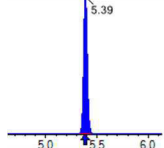
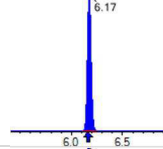
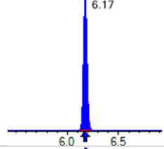
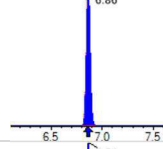
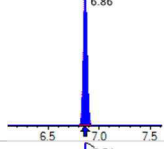
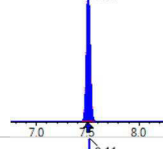
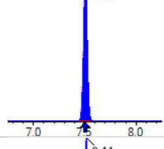
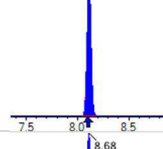
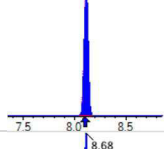
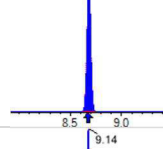
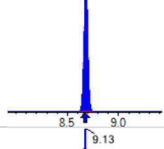
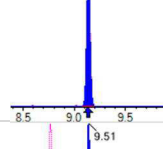
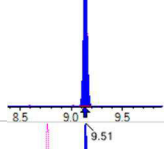
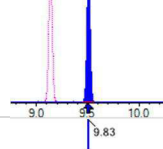
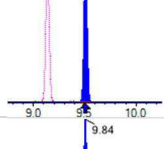
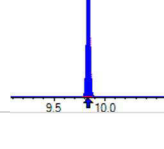
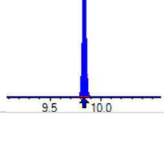
Sample I.D.: SC01530-CAL5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (5)  
 Acquired: 2023/04/18 - 17:56

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 669562	(5.38, N/A) (N/A, 0.00, N/A)	671.1	N/A	1.9918 [2.0000]	99.6% {100.0%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 532879	(6.16, N/A) (N/A, 0.00, N/A)	795.9	N/A	2.0084 [2.0000]	100.4% {100.0%}			
13C8_PFOA_EIS	(421.0 / 376.0) 640834	(6.86, N/A) (N/A, 0.00, N/A)	473.8	N/A	1.9413 [2.0000]	97.1% {100.0%}			
13C9_PFNA_EIS	(472.0 / 427.0) 268057	(7.50, N/A) (N/A, 0.00, N/A)	681.7	N/A	1.0260 [1.0000]	102.6% {100.0%}			
13C6_PFDA_EIS	(519.0 / 474.0) 279041	(8.10, N/A) (N/A, 0.00, N/A)	361.2	N/A	0.8950 [1.0000]	89.5% {100.0%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 271599	(8.67, N/A) (N/A, 0.00, N/A)	328.8	N/A	0.9054 [1.0000]	90.5% {100.0%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 227467	(9.13, N/A) (N/A, 0.00, N/A)	567.7	N/A	0.8941 [1.0000]	89.4% {100.0%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 283105	(9.83, N/A) (N/A, 0.00, N/A)	489.1	N/A	0.9022 [1.0000]	90.2% {100.0%}			
13C3_PFBS_EIS	(302.0 / 80.0) 1449794	(5.41, N/A) (N/A, 0.00, N/A)	672.6	N/A	1.9106 [2.0000]	95.5% {100.0%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 580053	(7.06, N/A) (N/A, 0.00, N/A)	429.8	N/A	1.8129 [2.0000]	90.6% {100.0%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1111315	(8.36, N/A) (N/A, 0.00, N/A)	399.2	N/A	1.9596 [2.0000]	98.0% {100.0%}			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 141728	(5.07, N/A) (N/A, 0.00, N/A)	484.2	N/A	3.8751 [4.0000]	96.9% {100.0%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 167090	(6.55, N/A) (N/A, 0.00, N/A)	426.5	N/A	3.6829 [4.0000]	92.1% {100.0%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 179628	(7.80, N/A) (N/A, 0.00, N/A)	357.0	N/A	3.5049 [4.0000]	87.6% {100.0%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 1353913	(8.90, N/A) (N/A, 0.00, N/A)	660.6	N/A	2.1272 [2.0000]	106.4% {100.0%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 419552	(9.86, N/A) (N/A, 0.00, N/A)	573.0	N/A	2.1291 [2.0000]	106.5% {100.0%}			
D5_NEtFOSA_EIS	(531.0 / 169.0) 410146	(10.08, N/A) (N/A, 0.00, N/A)	881.3	N/A	2.1188 [2.0000]	105.9% {100.0%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 531293	(8.06, N/A) (N/A, 0.00, N/A)	574.7	N/A	4.4866 [4.0000]	112.2% {100.0%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 395089	(8.31, N/A) (N/A, 0.00, N/A)	427.4	N/A	4.1776 [4.0000]	104.4% {100.0%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1353867	(9.77, N/A) (N/A, 0.00, N/A)	1294.6	N/A	21.6857 [20.0000]	108.4% {100.0%}			
D9_NEtFOSE_EIS	(639.0 / 58.9) 1608261	(9.99, N/A) (N/A, 0.00, N/A)	1532.2	N/A	20.7822 [20.0000]	103.9% {100.0%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1359548	(5.71, N/A) (N/A, 0.00, N/A)	976.6	N/A	7.8582 [8.0000]	98.2% {100.0%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 6890436	(3.21, 1.00) (0.00, N/A, 0.0)	1292.5	N/A 0.0 0.0	40.8127	N/A			
PFPeA	(263.0 / 219.0) 5017304 (263.0 / 69.0) 59112	(4.45, 1.00) (0.00, N/A, 0.0)	1511.6 620.2	0.0118 100.4 100.4	19.5380	N/A			
PFHxA	(313.0 / 269.0) 3200830 (313.0 / 119.0) 278013	(5.39, 1.00) (0.00, N/A, 0.0)	864.9 500.2	0.0869 104.1 104.1	9.9451	N/A			
PFHpA	(363.0 / 319.0) 2560647 (363.0 / 169.0) 704420	(6.17, 1.00) (0.00, N/A, 0.0)	1176.6 932.0	0.2751 99.2 99.2	10.2821	N/A			
PFOA	(413.0 / 369.0) 2896645 (413.0 / 169.0) 901367	(6.86, 1.00) (0.00, N/A, 0.0)	685.2 553.0	0.3112 104.2 104.2	9.2404	N/A			
PFNA	(463.0 / 419.0) 2358436 (463.0 / 169.0) 454722	(7.51, 1.00) (0.00, N/A, -0.1)	699.3 396.9	0.1928 95.2 95.2	9.8867	N/A			
PFDA	(513.0 / 469.0) 2561203 (513.0 / 169.0) 254302	(8.11, 1.00) (0.00, N/A, -0.1)	751.6 432.5	0.0993 101.2 101.2	10.3809	N/A			
PFUnA	(563.0 / 519.0) 2292741 (563.0 / 169.0) 250635	(8.68, 1.00) (0.00, N/A, -0.1)	708.9 401.2	0.1093 108.3 108.3	9.7219	N/A			
PFDoA	(613.0 / 569.0) 1998856 (613.0 / 169.0) 299865	(9.14, 1.00) (0.00, N/A, 0.0)	1272.3 1094.6	0.1500 105.3 105.3	10.2262	N/A			
PFTrDA	(663.0 / 619.0) 2168691 (663.0 / 169.0) 448682	(9.51, 1.04) (N/A, 0.01, 0.0)	1447.4 955.9	0.2069 100.4 100.4	10.4045	N/A			
PFTeDA	(713.0 / 669.0) 2507800 (713.0 / 169.0) 450782	(9.83, 1.00) (0.00, N/A, 0.0)	794.9 712.8	0.1798 91.1 91.1	10.1564	N/A			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL6  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (6)  
 Acquired: 2023/04/18 - 18:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) 15925396 ( 813.0 / 169.0 ) 2439569	( 10.45 , 1.93 ) ( N/A , 0.00 , 0.0 )	3254.5 3105.2	0.1532 102.6 102.6	36.4993	N/A			
PFODA	( 913.0 / 869.0 ) 11213166 ( 913.0 / 169.0 ) 3002473	( 11.10 , 2.05 ) ( N/A , 0.00 , 0.0 )	2021.4 1595.3	0.2678 101.7 101.7	40.0936	N/A			
PFBS	( 299.0 / 80.0 ) 3878519 ( 299.0 / 99.0 ) 282252	( 5.42 , 1.00 ) ( 0.00 , N/A , 0.0 )	596.0 788.2	0.7277 105.9 105.9	9.2681	N/A			
PFPeS	( 349.0 / 80.0 ) 6680233 ( 349.0 / 99.0 ) 2335485	( 6.31 , 0.89 ) ( N/A , 0.01 , -0.1 )	754.6 1080.3	0.3496 98.8 98.8	9.4340	N/A			
PFHxS	( 399.0 / 80.0 ) 5248711 ( 399.0 / 99.0 ) 1776901	( 7.06 , 1.00 ) ( 0.00 , N/A , 0.0 )	28543.6 334444.5	0.3385 95.7 95.7	8.9177	N/A			
PFHpS	( 449.0 / 80.0 ) 4710802 ( 449.0 / 99.0 ) 1414780	( 7.74 , 0.92 ) ( N/A , 0.01 , 0.1 )	1190.5 929.2	0.3003 107.5 107.5	10.4751	N/A			
PFOS	( 499.0 / 80.0 ) 6020897 ( 499.0 / 99.0 ) 1420454	( 8.37 , 1.00 ) ( 0.00 , N/A , -0.1 )	55513.9 4530.1	0.2359 102.5 102.5	9.3269	N/A			
PFNS	( 549.0 / 80.0 ) 5311119 ( 549.0 / 99.0 ) 1361197	( 8.91 , 1.06 ) ( N/A , 0.01 , 0.0 )	1309.8 1045.7	0.2563 103.9 103.9	10.4343	N/A			
PFDS	( 599.0 / 80.0 ) 6182363 ( 599.0 / 99.0 ) 1434786	( 9.32 , 1.11 ) ( N/A , 0.01 , 0.1 )	1191.1 931.3	0.2321 101.3 101.3	10.5588	N/A			
PFDoS	( 699.0 / 80.0 ) 7282086 ( 699.0 / 99.0 ) 1681567	( 9.98 , 1.19 ) ( N/A , 0.01 , 0.0 )	1124.2 808.6	0.2309 101.2 101.2	11.0136	N/A			
4:2FTS	( 327.0 / 307.0 ) 4045148 ( 327.0 / 81.0 ) 2591149	( 5.08 , 1.00 ) ( 0.00 , N/A , 0.1 )	1208.4 1178.6	0.6406 98.5 98.5	36.6844	N/A			



Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL6  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18B (6)  
Acquired: 2023/04/18 - 18:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 2264472 ( 427.0 / 81.0 ) 1693408	( 6.56 , 1.00 ) ( 0.00 , N/A , 0.0 )	588.4 862.5	0.7478 101.3 101.3	36.0145	N/A			
8:2FTS	( 527.0 / 507.0 ) 2403131 ( 527.0 / 81.0 ) 1654535	( 7.81 , 1.00 ) ( 0.00 , N/A , 0.0 )	832.8 681.4	0.6885 101.8 101.8	39.0267	N/A			
PFSBA	( 297.9 / 78.0 ) 28265627 ( 297.9 / 278.0 ) 48709	( 5.68 , 0.64 ) ( N/A , 0.01 , 0.1 )	830.1 200.4	0.0017 107.8 107.8	38.0518	N/A			
PFHxSA	( 397.9 / 78.0 ) 21676889 ( 397.9 / 378.0 ) 85660	( 7.55 , 0.85 ) ( N/A , 0.01 , 0.0 )	921.5 161.1	0.0040 93.4 93.4	39.8072	N/A			
PFOSA	( 498.0 / 78.0 ) 5398127 ( 498.0 / 478.0 ) 127994	( 8.91 , 1.00 ) ( -0.01 , N/A , -0.1 )	1295.1 480.4	0.0237 95.5 95.5	10.1435	N/A			
NMeFOSA	( 512.0 / 219.0 ) 7779256 ( 512.0 / 169.0 ) 5924301	( 9.87 , 1.00 ) ( 0.00 , N/A , 1.1 )	5960168.2 5125.1	0.7616 101.7 101.7	38.4149	N/A			
NEtFOSA	( 526.0 / 219.0 ) 8597079 ( 526.0 / 169.0 ) 10246389	( 10.09 , 1.00 ) ( 0.00 , N/A , 1.5 )	11449.6 8523.9	1.1918 101.9 101.9	40.2680	N/A			
NMeFOSAA	( 570.0 / 419.0 ) 1016044 ( 570.0 / 483.0 ) 465545	( 8.07 , 1.00 ) ( 0.00 , N/A , 0.0 )	6778.1 8043761.5	0.4582 96.3 96.3	9.7033	N/A			
NEtFOSAA	( 584.0 / 419.0 ) 844598 ( 584.0 / 526.0 ) 479613	( 8.33 , 1.00 ) ( 0.01 , N/A , 0.0 )	26118.3 93069.3	0.5679 95.4 95.4	9.7843	N/A			
NMeFOSE	( 616.0 / 59.0 ) 2788483	( 9.79 , 1.00 ) ( 0.01 , N/A , 0.0 )	577907792.0	N/A 0.0 0.0	38.8669	N/A			
NEtFOSE	( 630.0 / 59.0 ) 3106997	( 10.01 , 1.00 ) ( 0.01 , N/A , 0.0 )	45902448.8	N/A 0.0 0.0	37.6533	N/A			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL6  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (6)  
 Acquired: 2023/04/18 - 18:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 1534807 (285.0 / 185.0) 7619802	(5.71, 1.00) (0.00, N/A, 0.0)	840.4 1263.0	4.9647 105.3 105.3	19.4112	N/A			
ADONA	(377.0 / 85.0) 9256784 (377.0 / 251.0) 992849	(6.43, 1.13) (N/A, 0.01, 0.0)	716.3 483.9	0.1073 99.0 99.0	19.8656	N/A			
9CI-PF3ONS	(531.0 / 351.0) 17982724 (533.0 / 353.0) 5995717	(8.79, 1.54) (N/A, 0.01, 0.0)	571.4 732.2	0.3334 102.1 102.1	19.7417	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 14916382 (633.0 / 453.0) 5440459	(9.59, 1.68) (N/A, 0.01, 0.0)	2277.3 1297.0	0.3647 99.2 99.2	18.5763	N/A			
PFECHS	(461.0 / 98.9) 19615859 (461.0 / 381.2) 7783670	(7.66, 0.92) (N/A, 0.01, 0.1)	837.0 522.1	0.3968 104.0 104.0	42.4580	N/A			
3:3FTCA	(241.0 / 177.0) 371461 (241.0 / 117.0) 621219	(3.86, 0.87) (N/A, 0.01, 0.0)	1548.7 1529.7	1.6724 100.6 100.6	39.3540	N/A			
5:3FTCA	(341.0 / 236.7) 1681672 (341.0 / 217.0) 3062348	(5.70, 1.06) (N/A, 0.01, 0.1)	792.2 1168.3	1.8210 101.1 101.1	40.7074	N/A			
7:3FTCA	(441.0 / 317.0) 1983743 (441.0 / 337.0) 2326591	(7.09, 1.32) (N/A, 0.01, 0.0)	611.8 519.7	1.1728 97.9 97.9	40.4245	N/A			
PFEESA	(315.0 / 135.0) 5709003 (315.0 / 83.0) 1621012	(5.86, 1.09) (N/A, 0.01, 0.1)	1374.2 760.9	0.2839 99.8 99.8	18.5500	N/A			
PFMPA	(229.0 / 85.0) 1231329	(3.70, 0.83) (N/A, 0.01, 0.0)	1355.9	N/A 0.0 0.0	18.7446	N/A			
PFMBA	(279.0 / 85.0) 3727818	(4.78, 1.07) (N/A, 0.01, 0.0)	1678.4	N/A 0.0 0.0	20.1437	N/A			

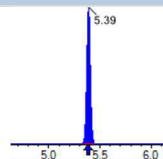
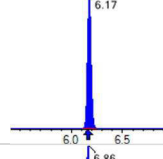
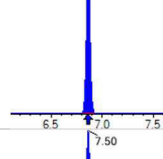
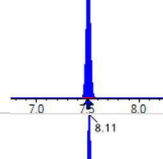
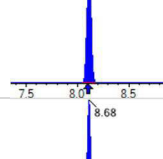
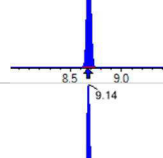
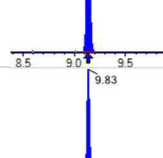
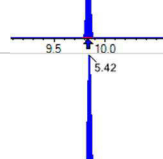
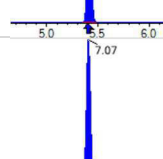
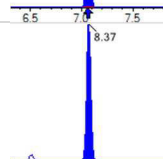
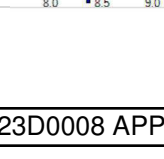


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL6  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (6)  
 Acquired: 2023/04/18 - 18:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 3403456 (295.0 / 85.0) 3221470	(5.30, 0.98) (N/A, 0.01, 0.0)	1215.7 1140.4	0.9465 97.3 97.3	19.8318	N/A			
TDCA	(499.0 / 80.0) 6183606	(8.37, 1.00) (N/A, 0.01, 0.0)	15304.0	N/A 0.0 0.0	10.2359	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 183371	(3.21, N/A) (N/A, 0.01, N/A)	464.8	N/A	0.8898 [ 1.0000 ]	89.0% { 89.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 140651	(5.39, N/A) (N/A, 0.01, N/A)	367.8	N/A	0.9702 [ 1.0000 ]	97.0% { 93.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 258771	(6.87, N/A) (N/A, 0.01, N/A)	283.4	N/A	0.9490 [ 1.0000 ]	94.9% { 93.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 251893	(7.51, N/A) (N/A, 0.01, N/A)	391.1	N/A	1.0063 [ 1.0000 ]	100.6% { 100.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 216193	(8.11, N/A) (N/A, 0.01, N/A)	542.9	N/A	0.9105 [ 1.0000 ]	91.1% { 82.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 352815	(7.07, N/A) (N/A, 0.01, N/A)	498.2	N/A	0.9238 [ 1.0000 ]	92.4% { 88.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 409356	(8.37, N/A) (N/A, 0.01, N/A)	409.3	N/A	0.8585 [ 1.0000 ]	85.9% { 90.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1565709	(3.21, N/A) (N/A, 0.01, N/A)	1129.0	N/A	7.9707 [ 8.0000 ]	99.6% { 89.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1107458	(4.45, N/A) (N/A, 0.01, N/A)	1079.0	N/A	3.9822 [ 4.0000 ]	99.6% { 94.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 612620	(5.39, N/A) (N/A, 0.01, N/A)	782.2	N/A	1.9453 [ 2.0000 ]	97.3% { 91.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 469309	(6.17, N/A) (N/A, 0.01, N/A)	870.4	N/A	1.8881 [ 2.0000 ]	94.4% { 88.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 628153	(6.86, N/A) (N/A, 0.01, N/A)	451.1	N/A	2.0399 [ 2.0000 ]	102.0% { 98.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 252832	(7.50, N/A) (N/A, 0.01, N/A)	434.3	N/A	0.9669 [ 1.0000 ]	96.7% { 94.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 255089	(8.11, N/A) (N/A, 0.01, N/A)	302.1	N/A	0.9945 [ 1.0000 ]	99.5% { 91.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 260110	(8.68, N/A) (N/A, 0.01, N/A)	156.0	N/A	1.0541 [ 1.0000 ]	105.4% { 95.8% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 210416	(9.14, N/A) (N/A, 0.01, N/A)	644.3	N/A	1.0053 [ 1.0000 ]	100.5% { 92.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 267576	(9.83, N/A) (N/A, 0.00, N/A)	866.3	N/A	1.0365 [ 1.0000 ]	103.7% { 94.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1371695	(5.42, N/A) (N/A, 0.01, N/A)	531.2	N/A	2.0435 [ 2.0000 ]	102.2% { 94.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 616199	(7.07, N/A) (N/A, 0.01, N/A)	475.6	N/A	2.1771 [ 2.0000 ]	108.9% { 106.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1021828	(8.37, N/A) (N/A, 0.01, N/A)	374.5	N/A	1.9985 [ 2.0000 ]	99.9% { 91.9% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL6  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (6)  
 Acquired: 2023/04/18 - 18:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 137793	( 5.08 , N/A ) ( N/A , 0.01 , N/A )	598.8	N/A	4.2590 [ 4.0000 ]	106.5% { 97.2% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 169274	( 6.56 , N/A ) ( N/A , 0.01 , N/A )	478.6	N/A	4.2178 [ 4.0000 ]	105.4% { 101.3% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 178387	( 7.81 , N/A ) ( N/A , 0.01 , N/A )	442.4	N/A	3.9348 [ 4.0000 ]	98.4% { 99.3% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1274830	( 8.92 , N/A ) ( N/A , 0.01 , N/A )	836.6	N/A	2.2216 [ 2.0000 ]	111.1% { 94.2% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 415066	( 9.87 , N/A ) ( N/A , 0.01 , N/A )	375.8	N/A	2.3363 [ 2.0000 ]	116.8% { 98.9% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 396692	( 10.08 , N/A ) ( N/A , 0.01 , N/A )	961.4	N/A	2.2730 [ 2.0000 ]	113.7% { 96.7% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 473782	( 8.07 , N/A ) ( N/A , 0.01 , N/A )	491.3	N/A	4.4377 [ 4.0000 ]	110.9% { 89.2% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 384440	( 8.32 , N/A ) ( N/A , 0.01 , N/A )	403.7	N/A	4.5088 [ 4.0000 ]	112.7% { 97.3% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1258394	( 9.78 , N/A ) ( N/A , 0.01 , N/A )	1034.3	N/A	22.3568 [ 20.0000 ]	111.8% { 92.9% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1626890	( 10.00 , N/A ) ( N/A , 0.01 , N/A )	1830.2	N/A	23.3178 [ 20.0000 ]	116.6% { 101.2% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1255981	( 5.72 , N/A ) ( N/A , 0.01 , N/A )	936.7	N/A	7.7491 [ 8.0000 ]	96.9% { 92.4% }			



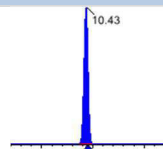
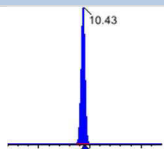
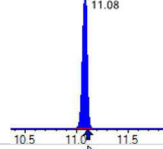
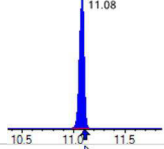
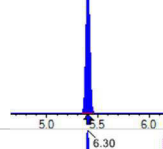
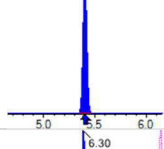
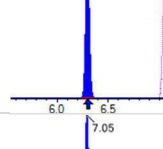
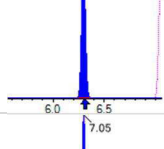
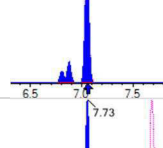
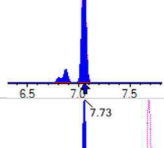
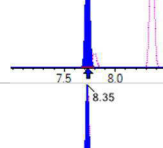
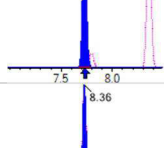
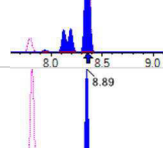
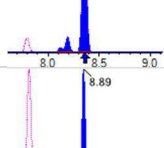
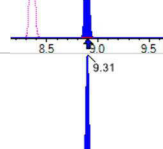
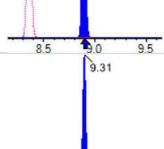
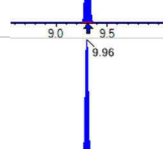
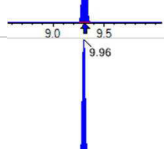
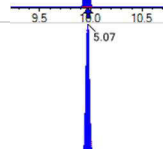
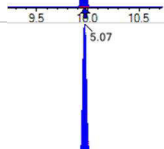
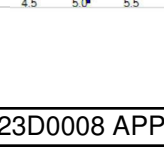
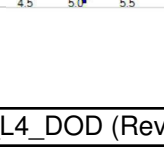


Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL7  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18B (7)  
Acquired: 2023/04/18 - 18:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 12710058	(3.20, 1.00) (0.00, N/A, 0.0)	1354.7	N/A 0.0 0.0	82.0098	N/A			
PFPeA	(263.0 / 219.0) 9730294 (263.0 / 69.0) 110112	(4.44, 1.00) (0.00, N/A, 0.0)	1394.8 513.5	0.0113 96.5 96.5	40.6370	N/A			
PFHxA	(313.0 / 269.0) 6257296 (313.0 / 119.0) 550194	(5.37, 1.00) (0.00, N/A, 0.0)	1143.9 571.5	0.0879 105.4 105.4	19.3901	N/A			
PFHpA	(363.0 / 319.0) 5152199 (363.0 / 169.0) 1355024	(6.16, 1.00) (0.00, N/A, 0.1)	1804.0 1007.7	0.2630 94.9 94.9	19.5670	N/A			
PFOA	(413.0 / 369.0) 6168706 (413.0 / 169.0) 1735920	(6.85, 1.00) (0.00, N/A, 0.0)	760.8 534.3	0.2814 94.3 94.3	20.2060	N/A			
PFNA	(463.0 / 419.0) 4782582 (463.0 / 169.0) 941785	(7.49, 1.00) (0.00, N/A, 0.0)	816.7 842.3	0.1969 97.2 97.2	20.3935	N/A			
PFDA	(513.0 / 469.0) 4960532 (513.0 / 169.0) 453995	(8.10, 1.00) (0.00, N/A, 0.2)	970.2 444.3	0.0915 93.3 93.3	21.0646	N/A			
PFUnA	(563.0 / 519.0) 4884804 (563.0 / 169.0) 524624	(8.67, 1.00) (0.00, N/A, 0.1)	756.2 431.5	0.1074 106.4 106.4	20.4452	N/A			
PFDoA	(613.0 / 569.0) 4029215 (613.0 / 169.0) 574340	(9.12, 1.00) (0.00, N/A, 0.0)	1700.4 958.3	0.1425 100.1 100.1	18.9887	N/A			
PFTrDA	(663.0 / 619.0) 4367315 (663.0 / 169.0) 899398	(9.49, 1.04) (N/A, -0.01, 0.0)	1249.5 887.3	0.2059 99.9 99.9	19.3010	N/A			
PFTeDA	(713.0 / 669.0) 4805628 (713.0 / 169.0) 902031	(9.82, 1.00) (0.00, N/A, 0.1)	1107.0 780.1	0.1877 95.2 95.2	19.6407	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) 27565163 (813.0 / 169.0) 4430607	(10.43, 1.93) (N/A, -0.01, 0.0)	4533.6 3127.7	0.1607 107.7 107.7	65.2628	N/A			
PFODA	(913.0 / 869.0) 21063117 (913.0 / 169.0) 5424913	(11.08, 2.05) (N/A, -0.02, 0.0)	1902.8 1517.3	0.2576 97.8 97.8	77.8000	N/A			
PFBS	(299.0 / 80.0) 7609834 (299.0 / 99.0) 5397355	(5.40, 1.00) (0.00, N/A, 0.0)	822.1 972.1	0.7093 103.2 103.2	18.7851	N/A			
PFPeS	(349.0 / 80.0) 13095963 (349.0 / 99.0) 4684715	(6.30, 0.89) (N/A, 0.00, 0.0)	1160.5 993.3	0.3577 101.1 101.1	18.9571	N/A			
PFHxS	(399.0 / 80.0) 10006180 (399.0 / 99.0) 3436138	(7.05, 1.00) (0.00, N/A, 0.0)	23994.8 82198.3	0.3434 97.1 97.1	17.4261	N/A			
PFHpS	(449.0 / 80.0) 9416119 (449.0 / 99.0) 2725862	(7.73, 0.92) (N/A, 0.00, 0.1)	930.5 611.0	0.2895 103.6 103.6	21.6318	N/A			
PFOS	(499.0 / 80.0) 12363460 (499.0 / 99.0) 2766844	(8.35, 1.00) (0.00, N/A, -0.1)	16584.6 224851.2	0.2238 97.2 97.2	19.7867	N/A			
PFNS	(549.0 / 80.0) 10209013 (549.0 / 99.0) 2545997	(8.89, 1.06) (N/A, -0.01, 0.0)	1080.5 877.0	0.2494 101.1 101.1	20.7214	N/A			
PFDS	(599.0 / 80.0) 12616080 (599.0 / 99.0) 3010223	(9.31, 1.11) (N/A, -0.01, 0.0)	1663.4 1507.0	0.2386 104.1 104.1	22.2609	N/A			
PFDoS	(699.0 / 80.0) 14097411 (699.0 / 99.0) 3375721	(9.96, 1.19) (N/A, -0.01, 0.0)	1057.3 727.8	0.2395 105.0 105.0	22.0279	N/A			
4:2FTS	(327.0 / 307.0) 8263291 (327.0 / 81.0) 5422078	(5.07, 1.00) (0.00, N/A, 0.1)	1156.9 1339.8	0.6562 100.9 100.9	72.7939	N/A			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL7  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (7)  
 Acquired: 2023/04/18 - 18:28

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 4840726 ( 427.0 / 81.0 ) 3567472	( 6.55 , 1.00 ) ( 0.00 , N/A , 0.0 )	1011.9 956.2	0.7370 99.8 99.8	74.9284	N/A			
8:2FTS	( 527.0 / 507.0 ) 5205701 ( 527.0 / 81.0 ) 3410557	( 7.80 , 1.00 ) ( 0.00 , N/A , 0.0 )	756.8 918.1	0.6552 96.8 96.8	76.5070	N/A			
PFSBA	( 297.9 / 78.0 ) 47405703 ( 297.9 / 278.0 ) 94002	( 5.67 , 0.64 ) ( N/A , 0.00 , 0.2 )	943.3 205.2	0.0020 124.1 124.1	67.8463	N/A			
PFHxSA	( 397.9 / 78.0 ) 34800536 ( 397.9 / 378.0 ) 153469	( 7.54 , 0.85 ) ( N/A , 0.00 , 0.0 )	865.5 240.0	0.0044 104.2 104.2	67.9408	N/A			
PFOSA	( 498.0 / 78.0 ) 10637267 ( 498.0 / 478.0 ) 270024	( 8.90 , 1.00 ) ( 0.00 , N/A , 0.0 )	1170.3 583.1	0.0254 102.2 102.2	21.2497	N/A			
NMeFOSA	( 512.0 / 219.0 ) 15460842 ( 512.0 / 169.0 ) 11997127	( 9.86 , 1.00 ) ( 0.00 , N/A , 1.2 )	142959761.7 5007.4	0.7760 103.6 103.6	85.0499	N/A			
NEtFOSA	( 526.0 / 219.0 ) 16424670 ( 526.0 / 169.0 ) 19031157	( 10.07 , 1.00 ) ( 0.00 , N/A , 1.2 )	10091.8 8459.6	1.1587 99.1 99.1	81.6456	N/A			
NMeFOSAA	( 570.0 / 419.0 ) 2062699 ( 570.0 / 483.0 ) 929430	( 8.06 , 1.00 ) ( 0.00 , N/A , 0.0 )	6575.6 20347.6	0.4506 94.7 94.7	20.1219	N/A			
NEtFOSAA	( 584.0 / 419.0 ) 1674681 ( 584.0 / 526.0 ) 958138	( 8.31 , 1.00 ) ( 0.00 , N/A , -0.1 )	5221.7 1349468.3	0.5721 96.1 96.1	20.4921	N/A			
NMeFOSE	( 616.0 / 59.0 ) 5689104	( 9.78 , 1.00 ) ( 0.01 , N/A , 0.0 )	62352.9	N/A 0.0 0.0	76.2853	N/A			
NEtFOSE	( 630.0 / 59.0 ) 6032592	( 10.00 , 1.00 ) ( 0.01 , N/A , 0.0 )	32052.2	N/A 0.0 0.0	84.8643	N/A			

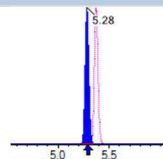
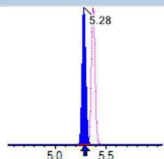
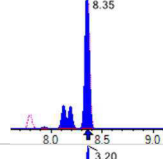
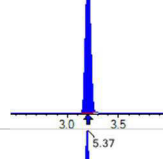
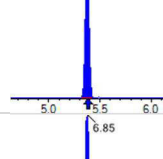
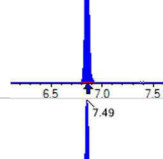
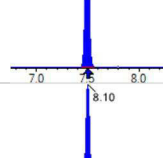
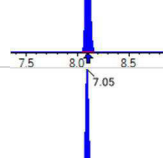
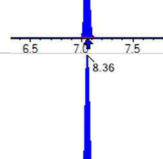
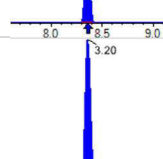
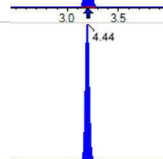
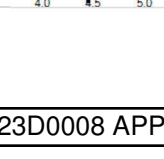


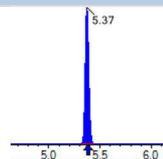
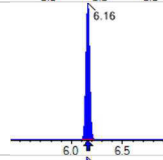
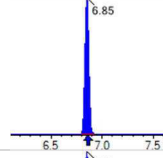
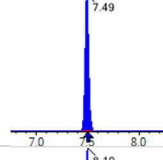
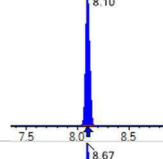
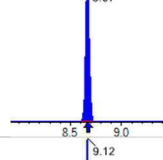
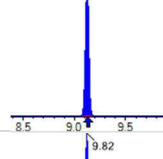
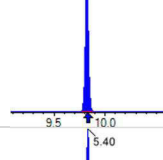
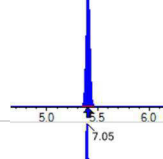
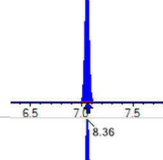
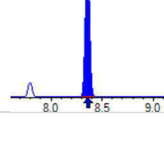
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL7  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (7)  
 Acquired: 2023/04/18 - 18:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 3255689 (285.0 / 185.0) 14173085	(5.70, 1.00) (0.00, N/A, 0.0)	1113.2 1040.1	4.3533 92.4 92.4	40.2334	N/A			
ADONA	(377.0 / 85.0) 17413053 (377.0 / 251.0) 1983672	(6.42, 1.13) (N/A, 0.00, 0.0)	918.7 451.7	0.1139 105.1 105.1	36.5143	N/A			
9CI-PF3ONS	(531.0 / 351.0) 31233416 (533.0 / 353.0) 11636954	(8.77, 1.54) (N/A, -0.01, 0.0)	531.6 696.2	0.3726 114.1 114.1	33.5039	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 26670426 (633.0 / 453.0) 10570447	(9.58, 1.68) (N/A, -0.01, 0.0)	1494.1 1985.7	0.3963 107.8 107.8	32.4543	N/A			
PFECHS	(461.0 / 98.9) 33943185 (461.0 / 381.2) 14520043	(7.65, 0.92) (N/A, 0.00, 0.0)	627.7 730.3	0.4278 112.2 112.2	75.9036	N/A			
3:3FTCA	(241.0 / 177.0) 756815 (241.0 / 117.0) 1251578	(3.85, 0.87) (N/A, 0.00, 0.0)	1281.1 1769.1	1.6537 99.4 99.4	85.9907	N/A			
5:3FTCA	(341.0 / 236.7) 3530346 (341.0 / 217.0) 5979578	(5.68, 1.06) (N/A, 0.00, 0.0)	901.0 1430.1	1.6938 94.0 94.0	85.2308	N/A			
7:3FTCA	(441.0 / 317.0) 4182612 (441.0 / 337.0) 5104201	(7.08, 1.32) (N/A, 0.00, 0.0)	755.5 828.1	1.2203 101.8 101.8	85.0070	N/A			
PFEESA	(315.0 / 135.0) 10888059 (315.0 / 83.0) 3236998	(5.85, 1.09) (N/A, 0.00, 0.0)	819.2 1294.8	0.2973 104.5 104.5	35.2843	N/A			
PFMPA	(229.0 / 85.0) 2435249	(3.69, 0.83) (N/A, 0.00, 0.0)	1752.9	N/A 0.0 0.0	39.7586	N/A			
PFMBA	(279.0 / 85.0) 7209927	(4.76, 1.07) (N/A, 0.00, 0.0)	2035.8	N/A 0.0 0.0	41.7832	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 6848074 (295.0 / 85.0) 6475819	(5.28, 0.98) (N/A, 0.00, 0.0)	1201.5 1325.8	0.9456 97.2 97.2	39.7977	N/A			
TDCA	(499.0 / 80.0) 12537193	(8.35, 1.00) (N/A, 0.00, 0.0)	12117.8	N/A 0.0 0.0	21.4408	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 164397	(3.20, N/A) (N/A, 0.00, N/A)	425.7	N/A	0.7978 [ 1.0000 ]	79.8% { 80.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 124505	(5.37, N/A) (N/A, 0.00, N/A)	409.2	N/A	0.8588 [ 1.0000 ]	85.9% { 82.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 238509	(6.85, N/A) (N/A, 0.00, N/A)	310.4	N/A	0.8747 [ 1.0000 ]	87.5% { 86.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 241930	(7.49, N/A) (N/A, 0.00, N/A)	343.3	N/A	0.9665 [ 1.0000 ]	96.6% { 96.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 194808	(8.10, N/A) (N/A, 0.00, N/A)	242.6	N/A	0.8205 [ 1.0000 ]	82.0% { 74.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 359294	(7.05, N/A) (N/A, -0.01, N/A)	420.9	N/A	0.9408 [ 1.0000 ]	94.1% { 90.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 418889	(8.36, N/A) (N/A, -0.01, N/A)	346.8	N/A	0.8785 [ 1.0000 ]	87.9% { 92.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1437280	(3.20, N/A) (N/A, 0.00, N/A)	899.1	N/A	8.1613 [ 8.0000 ]	102.0% { 82.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1032621	(4.44, N/A) (N/A, 0.00, N/A)	948.7	N/A	4.1946 [ 4.0000 ]	104.9% { 88.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 614248	(5.37, N/A) (N/A, -0.01, N/A)	669.8	N/A	2.2034 [2.0000]	110.2% {91.7%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 496201	(6.16, N/A) (N/A, 0.00, N/A)	672.7	N/A	2.2552 [2.0000]	112.8% {93.1%}			
13C8_PFOA_EIS	(421.0 / 376.0) 611749	(6.85, N/A) (N/A, 0.00, N/A)	492.4	N/A	2.1554 [2.0000]	107.8% {95.5%}			
13C9_PFNA_EIS	(472.0 / 427.0) 248560	(7.49, N/A) (N/A, -0.01, N/A)	433.9	N/A	0.9897 [1.0000]	99.0% {92.7%}			
13C6_PFDA_EIS	(519.0 / 474.0) 243477	(8.10, N/A) (N/A, 0.00, N/A)	397.4	N/A	1.0535 [1.0000]	105.3% {87.3%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 263518	(8.67, N/A) (N/A, -0.01, N/A)	291.2	N/A	1.1851 [1.0000]	118.5% {97.0%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 228422	(9.12, N/A) (N/A, 0.00, N/A)	853.0	N/A	1.2112 [1.0000]	121.1% {100.4%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 265148	(9.82, N/A) (N/A, -0.01, N/A)	598.8	N/A	1.1399 [1.0000]	114.0% {93.7%}			
13C3_PFBS_EIS	(302.0 / 80.0) 1327843	(5.40, N/A) (N/A, 0.00, N/A)	561.7	N/A	1.9425 [2.0000]	97.1% {91.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 601158	(7.05, N/A) (N/A, -0.01, N/A)	403.2	N/A	2.0857 [2.0000]	104.3% {103.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 989054	(8.36, N/A) (N/A, 0.00, N/A)	215.5	N/A	1.8904 [2.0000]	94.5% {89.0%}			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL7  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (7)  
 Acquired: 2023/04/18 - 18:28

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 141851	( 5.07, N/A ) ( N/A, 0.00, N/A )	507.1	N/A	4.3054 [ 4.0000 ]	107.6% { 100.1% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 173926	( 6.55, N/A ) ( N/A, -0.01, N/A )	413.5	N/A	4.2555 [ 4.0000 ]	106.4% { 104.1% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 197118	( 7.80, N/A ) ( N/A, 0.00, N/A )	549.0	N/A	4.2695 [ 4.0000 ]	106.7% { 109.7% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1199148	( 8.90, N/A ) ( N/A, 0.00, N/A )	839.4	N/A	2.0421 [ 2.0000 ]	102.1% { 88.6% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 372597	( 9.86, N/A ) ( N/A, 0.00, N/A )	190.9	N/A	2.0495 [ 2.0000 ]	102.5% { 88.8% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 373788	( 10.07, N/A ) ( N/A, -0.01, N/A )	844.6	N/A	2.0930 [ 2.0000 ]	104.7% { 91.1% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 465659	( 8.06, N/A ) ( N/A, 0.00, N/A )	418.4	N/A	4.2623 [ 4.0000 ]	106.6% { 87.6% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 363763	( 8.31, N/A ) ( N/A, 0.00, N/A )	276.9	N/A	4.1692 [ 4.0000 ]	104.2% { 92.1% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1308070	( 9.76, N/A ) ( N/A, 0.00, N/A )	1100.5	N/A	22.7105 [ 20.0000 ]	113.6% { 96.6% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1401519	( 9.98, N/A ) ( N/A, -0.01, N/A )	1700.5	N/A	19.6305 [ 20.0000 ]	98.2% { 87.1% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1285396	( 5.70, N/A ) ( N/A, 0.00, N/A )	949.7	N/A	8.9591 [ 8.0000 ]	112.0% { 94.5% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL8  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (8)  
 Acquired: 2023/04/18 - 18:44

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 ]	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			NR,
PFPeA	(263.0 / 219.0) 20699321 (263.0 / 69.0) 236740	(4.44, 1.00) (0.00, N/A, 0.0)	1401.2 643.2	0.0114 97.5 97.5	96.8178	N/A			
PFHxA	(313.0 / 269.0) 14305994 (313.0 / 119.0) 1277734	(5.37, 1.00) (0.00, N/A, 0.0)	1537.9 977.0	0.0893 107.0 107.0	48.3109	N/A			
PFHpA	(363.0 / 319.0) 12224898 (363.0 / 169.0) 3283177	(6.16, 1.00) (0.00, N/A, 0.0)	1568.9 1424.4	0.2686 96.9 96.9	51.8783	N/A			
PFOA	(413.0 / 369.0) 14210181 (413.0 / 169.0) 4312613	(6.85, 1.00) (0.00, N/A, -0.1)	758.5 754.2	0.3035 101.6 101.6	51.0497	N/A			
PFNA	(463.0 / 419.0) 11352687 (463.0 / 169.0) 2212362	(7.49, 1.00) (0.00, N/A, 0.0)	1060.5 784.4	0.1949 96.2 96.2	52.6826	N/A			
PFDA	(513.0 / 469.0) 12874373 (513.0 / 169.0) 1228527	(8.09, 1.00) (0.00, N/A, 0.0)	873.2 592.3	0.0954 97.2 97.2	51.0219	N/A			
PFUnA	(563.0 / 519.0) 11608166 (563.0 / 169.0) 1204191	(8.66, 1.00) (0.00, N/A, 0.1)	743.7 529.9	0.1037 102.8 102.8	50.8695	N/A			
PFDoA	(613.0 / 569.0) 9937800 (613.0 / 169.0) 1402317	(9.12, 1.00) (0.00, N/A, 0.0)	1271.7 1342.7	0.1411 99.1 99.1	50.6547	N/A			
PFTTrDA	(663.0 / 619.0) 10141568 (663.0 / 169.0) 2158527	(9.49, 1.04) (N/A, -0.01, 0.0)	1521.2 1539.2	0.2128 103.3 103.3	48.4758	N/A			
PFTeDA	(713.0 / 669.0) 10939325 (713.0 / 169.0) 2204018	(9.82, 1.00) (0.00, N/A, 0.0)	1112.7 873.1	0.2015 102.2 102.2	47.2816	N/A			





Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01530-CAL8  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18B (8)  
Acquired: 2023/04/18 - 18:44

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) 42734450 (913.0 / 169.0) 11550480	(11.07, 2.05) (N/A, -0.04, 0.1)	1777.9 1947.0	0.2703 102.6 102.6	164.3768	N/A			
PFBS	(299.0 / 80.0) 17272132 (299.0 / 99.0) 12338233	(5.40, 1.00) (0.00, N/A, 0.0)	848.5 898.6	0.7143 103.9 103.9	44.4006	N/A			
PFPeS	(349.0 / 80.0) 28990833 (349.0 / 99.0) 11508458	(6.30, 0.89) (N/A, -0.01, 0.0)	1326.1 1110.5	0.3970 112.2 112.2	45.0446	N/A			
PFHxS	(399.0 / 80.0) 24035988 (399.0 / 99.0) 8414720	(7.05, 1.00) (0.00, N/A, 0.1)	17441.5 36207.6	0.3501 98.9 98.9	44.9306	N/A			
PFHpS	(449.0 / 80.0) 20807493 (449.0 / 99.0) 6299455	(7.72, 0.92) (N/A, -0.01, 0.0)	1133.0 1085.4	0.3027 108.4 108.4	50.8516	N/A			
PFOS	(499.0 / 80.0) 28061025 (499.0 / 99.0) 6607784	(8.35, 1.00) (0.00, N/A, 0.0)	14009.2 3305533.4	0.2355 102.3 102.3	47.7750	N/A			
PFNS	(549.0 / 80.0) 23512759 (549.0 / 99.0) 6422652	(8.89, 1.06) (N/A, -0.01, 0.0)	984.9 739.4	0.2732 110.7 110.7	50.7694	N/A			
PFDS	(599.0 / 80.0) 26455315 (599.0 / 99.0) 6982027	(9.30, 1.11) (N/A, -0.01, 0.0)	1640.5 1607.7	0.2639 115.2 115.2	49.6588	N/A			
PFDoS	(699.0 / 80.0) 28725420 (699.0 / 99.0) 7640832	(9.96, 1.19) (N/A, -0.01, 0.0)	1269.1 965.7	0.2660 116.6 116.6	47.7489	N/A			
4:2FTS	(327.0 / 307.0) 18867277 (327.0 / 81.0) 11987275	(5.07, 1.00) (0.00, N/A, 0.0)	1335.8 1480.6	0.6353 97.7 97.7	171.9229	N/A			

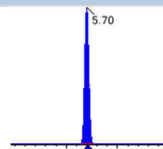
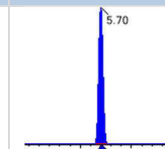
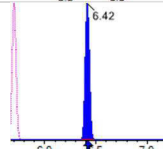
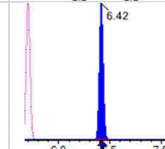
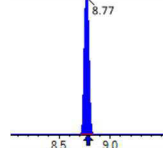
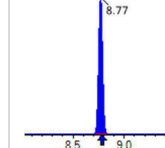
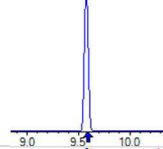
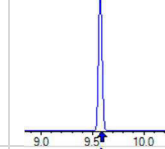
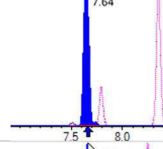
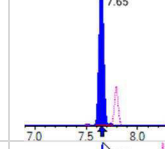
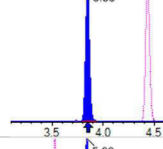
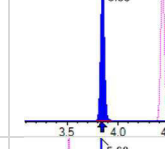
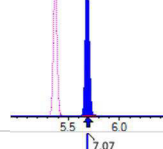
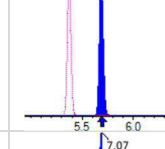
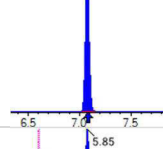
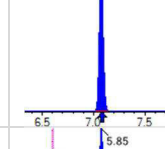
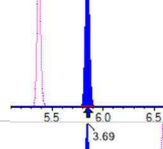
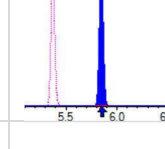
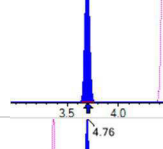
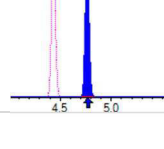


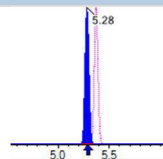
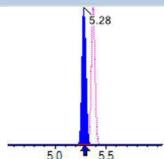
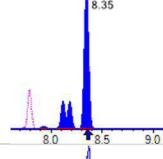
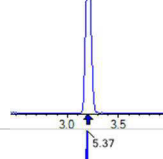
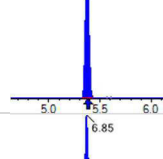
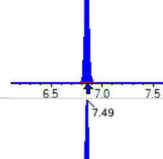
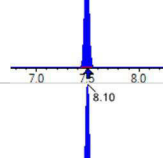
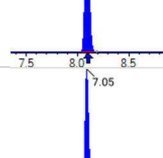
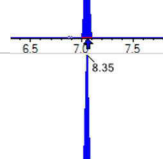
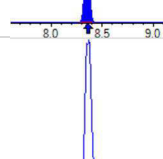
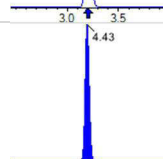
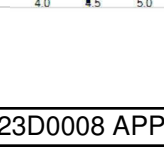
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

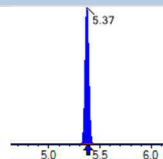
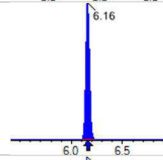
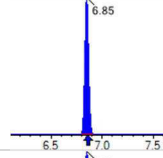
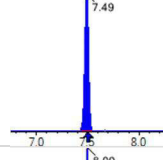
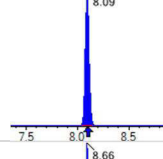
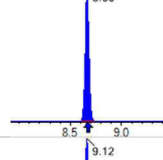
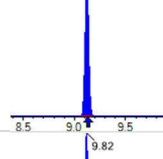
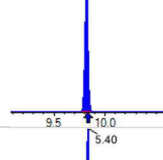
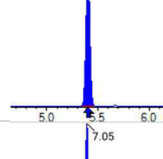
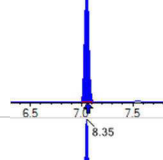
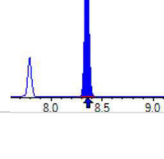
Sample I.D.: SC01530-CAL8  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

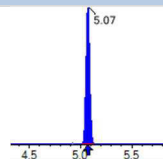
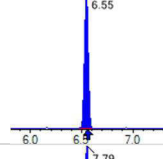
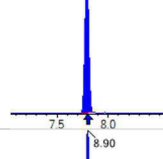
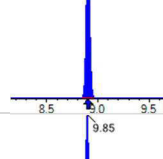
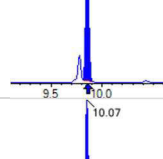
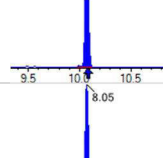
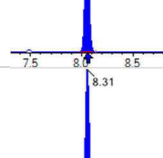
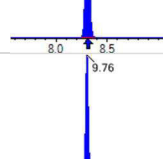
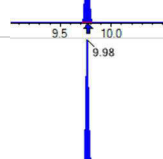
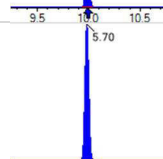
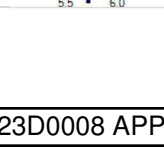
Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (8)  
 Acquired: 2023/04/18 - 18:44

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 12251180 ( 427.0 / 81.0 ) 9328608	( 6.54 , 1.00 ) ( 0.00 , N/A , 0.0 )	925.4 1170.9	0.7614 103.1 103.1	187.3429	N/A			
8:2FTS	( 527.0 / 507.0 ) 12375800 ( 527.0 / 81.0 ) 8916357	( 7.79 , 1.00 ) ( 0.00 , N/A , 0.1 )	919.0 961.4	0.7205 106.5 106.5	153.4332	N/A			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOSA	( 498.0 / 78.0 ) 24956464 ( 498.0 / 478.0 ) 641359	( 8.90 , 1.00 ) ( 0.00 , N/A , 0.0 )	1253.4 699.2	0.0257 103.5 103.5	50.4231	N/A			
NMeFOSA	( 512.0 / 219.0 ) 34766705 ( 512.0 / 169.0 ) 26849420	( 9.85 , 1.00 ) ( 0.00 , N/A , 1.5 )	67526.1 896759.1	0.7723 103.1 103.1	189.6843	N/A			
NEtFOSA	( 526.0 / 219.0 ) 35427702 ( 526.0 / 169.0 ) 42534557	( 10.06 , 1.00 ) ( -0.01 , N/A , 1.1 )	7979.8 7151.0	1.2006 102.7 102.7	196.4454	N/A			
NMeFOSAA	( 570.0 / 419.0 ) 5114482 ( 570.0 / 483.0 ) 2345896	( 8.05 , 1.00 ) ( 0.00 , N/A , 0.1 )	2418789.5 3299.5	0.4587 96.4 96.4	50.3989	N/A			
NEtFOSAA	( 584.0 / 419.0 ) 4149885 ( 584.0 / 526.0 ) 2395065	( 8.31 , 1.00 ) ( 0.00 , N/A , 0.0 )	6147.0 4827.9	0.5771 97.0 97.0	49.9952	N/A			
NMeFOSE	( 616.0 / 59.0 ) 13395605	( 9.77 , 1.00 ) ( 0.01 , N/A , 0.0 )	107700.3	N/A 0.0 0.0	204.8804	N/A			
NEtFOSE	( 630.0 / 59.0 ) 14366170	( 10.00 , 1.00 ) ( 0.01 , N/A , 0.0 )	114507.9	N/A 0.0 0.0	204.3393	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 7668918 (285.0 / 185.0) 28271963	(5.70, 1.00) (0.00, N/A, 0.0)	1157.0 1325.0	3.6866 78.2 78.2	104.1908	N/A			
ADONA	(377.0 / 85.0) 33969359 (377.0 / 251.0) 4571650	(6.42, 1.13) (N/A, -0.01, 0.0)	886.4 689.0	0.1346 124.2 124.2	78.3118	N/A			
9CI-PF3ONS	(531.0 / 351.0) 56351266 (533.0 / 353.0) 25872824	(8.77, 1.54) (N/A, -0.01, 0.0)	413.5 571.3	0.4591 140.7 140.7	66.4555	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			
PFECHS	(461.0 / 98.9) 58670254 (461.0 / 381.2) 29027513	(7.64, 0.92) (N/A, -0.01, -0.1)	360.9 562.5	0.4948 129.7 129.7	139.5700	N/A			
3:3FTCA	(241.0 / 177.0) 1965770 (241.0 / 117.0) 3149658	(3.85, 0.87) (N/A, 0.00, 0.0)	2265.0 2380.3	1.6023 96.3 96.3	250.1487	N/A			
5:3FTCA	(341.0 / 236.7) 8110867 (341.0 / 217.0) 13136345	(5.68, 1.06) (N/A, 0.00, -0.1)	1067.6 1275.5	1.6196 89.9 89.9	213.3932	N/A			
7:3FTCA	(441.0 / 317.0) 10887408 (441.0 / 337.0) 12320691	(7.07, 1.32) (N/A, -0.01, 0.0)	816.6 770.6	1.1316 94.4 94.4	241.1379	N/A			
PFEESA	(315.0 / 135.0) 23619566 (315.0 / 83.0) 7485492	(5.85, 1.09) (N/A, -0.01, 0.0)	1091.8 1507.6	0.3169 111.4 111.4	83.4136	N/A			
PFMPA	(229.0 / 85.0) 5546640	(3.69, 0.83) (N/A, 0.00, 0.0)	1632.8	N/A 0.0 0.0	101.4196	N/A			
PFMBA	(279.0 / 85.0) 15293063	(4.76, 1.07) (N/A, 0.00, 0.0)	1936.7	N/A 0.0 0.0	99.2588	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 14947917 (295.0 / 85.0) 14037627	(5.28, 0.98) (N/A, 0.00, 0.0)	1204.6 1707.3	0.9391 96.6 96.6	94.6683	N/A			
TDCA	(499.0 / 80.0) 28192901	(8.35, 1.00) (N/A, -0.01, 0.0)	13511.0	N/A 0.0 0.0	51.2914	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A	0.0000 [ 1.0000 ]	0.0% { 0.0% }			NR,IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 127317	(5.37, N/A) (N/A, 0.00, N/A)	500.3	N/A	0.8782 [ 1.0000 ]	87.8% { 84.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 243597	(6.85, N/A) (N/A, -0.01, N/A)	235.1	N/A	0.8933 [ 1.0000 ]	89.3% { 87.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 214936	(7.49, N/A) (N/A, -0.01, N/A)	179.5	N/A	0.8586 [ 1.0000 ]	85.9% { 85.4% }			
13C2_PFDA_IIS	(515.0 / 470.1) 232191	(8.10, N/A) (N/A, -0.01, N/A)	345.4	N/A	0.9779 [ 1.0000 ]	97.8% { 88.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 350603	(7.05, N/A) (N/A, -0.01, N/A)	448.5	N/A	0.9180 [ 1.0000 ]	91.8% { 87.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 380390	(8.35, N/A) (N/A, -0.01, N/A)	299.1	N/A	0.7978 [ 1.0000 ]	79.8% { 83.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A	0.0000 [ 8.0000 ]	0.0% { 0.0% }			NR,S1,
13C5_PFPeA_EIS	(268.0 / 223.0) 922013	(4.43, N/A) (N/A, 0.00, N/A)	839.6	N/A	3.6626 [ 4.0000 ]	91.6% { 78.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 563651	(5.37, N/A) (N/A, -0.01, N/A)	1202.6	N/A	1.9773 [ 2.0000 ]	98.9% { 84.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 444067	(6.16, N/A) (N/A, -0.01, N/A)	611.9	N/A	1.9736 [ 2.0000 ]	98.7% { 83.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 557784	(6.85, N/A) (N/A, -0.01, N/A)	389.4	N/A	1.9242 [ 2.0000 ]	96.2% { 87.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 228398	(7.49, N/A) (N/A, -0.01, N/A)	287.9	N/A	1.0237 [ 1.0000 ]	102.4% { 85.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 260886	(8.09, N/A) (N/A, -0.01, N/A)	308.2	N/A	0.9471 [ 1.0000 ]	94.7% { 93.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 251687	(8.66, N/A) (N/A, -0.01, N/A)	248.8	N/A	0.9496 [ 1.0000 ]	95.0% { 92.7% }			
13C2_PFDaA_EIS	(615.0 / 570.0) 211195	(9.12, N/A) (N/A, -0.01, N/A)	693.3	N/A	0.9395 [ 1.0000 ]	94.0% { 92.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 250722	(9.82, N/A) (N/A, -0.01, N/A)	720.1	N/A	0.9043 [ 1.0000 ]	90.4% { 88.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1275092	(5.40, N/A) (N/A, 0.00, N/A)	615.6	N/A	1.9115 [ 2.0000 ]	95.6% { 87.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 560068	(7.05, N/A) (N/A, -0.01, N/A)	446.6	N/A	1.9913 [ 2.0000 ]	99.6% { 96.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 929728	(8.35, N/A) (N/A, -0.01, N/A)	122.7	N/A	1.9568 [ 2.0000 ]	97.8% { 83.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 137135	(5.07, N/A) (N/A, 0.00, N/A)	480.2	N/A	4.2655 [4.0000]	106.6% {96.8%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 176052	(6.55, N/A) (N/A, -0.01, N/A)	736.8	N/A	4.4143 [4.0000]	110.4% {105.4%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 233669	(7.79, N/A) (N/A, -0.01, N/A)	59.4	N/A	5.1867 [4.0000]	129.7% {130.1%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 1185631	(8.90, N/A) (N/A, 0.00, N/A)	651.1	N/A	2.2235 [2.0000]	111.2% {87.6%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 375674	(9.85, N/A) (N/A, -0.01, N/A)	140.6	N/A	2.2756 [2.0000]	113.8% {89.5%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 335091	(10.07, N/A) (N/A, -0.01, N/A)	635.4	N/A	2.0663 [2.0000]	103.3% {81.7%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 462002	(8.05, N/A) (N/A, -0.01, N/A)	373.3	N/A	4.6568 [4.0000]	116.4% {87.0%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 369365	(8.31, N/A) (N/A, -0.01, N/A)	228.1	N/A	4.6618 [4.0000]	116.5% {93.5%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1146807	(9.76, N/A) (N/A, -0.01, N/A)	1435.4	N/A	21.9258 [20.0000]	109.6% {84.7%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1386146	(9.98, N/A) (N/A, -0.01, N/A)	1647.9	N/A	21.3802 [20.0000]	106.9% {86.2%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1169191	(5.70, N/A) (N/A, 0.00, N/A)	775.7	N/A	7.9691 [8.0000]	99.6% {86.0%}			

**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2315001**Laboratory ID:** SC01366-SCV1**Sequence:** SC01366**Standard ID:** 23C0366

<b>ANALYTE</b>	<b>EXPECTED (ng/mL)</b>	<b>FOUND (ng/mL)</b>	<b>% DRIFT</b>	<b>QC LIMIT</b>
PFBA	8.00	8.71	8.9	30.00
PFPEA	4.00	4.40	10.0	30.00
PFHXA	2.00	2.06	3.1	30.00
PFHPA	2.00	2.38	18.8	30.00
PFOA	2.00	2.12	6.1	30.00
PFNA	2.00	2.01	0.4	30.00
PFDA	2.00	1.96	-1.8	30.00
PFUnA	2.00	1.96	-2.2	30.00
PFDOA	2.00	2.31	15.6	30.00
PFTRDA	2.00	2.26	13.1	30.00
PFTEDA	2.00	2.34	16.8	30.00
PFBS	1.77	1.97	11.1	30.00
PFPEs	1.88	2.05	9.1	30.00
PFHXS	1.83	1.93	5.5	30.00
PFHPS	1.91	2.04	6.8	30.00
PFOS	1.86	1.86	-0.1	30.00
PFNS	1.92	2.06	7.4	30.00
PFDS	1.93	2.15	11.6	30.00
PFDOS	1.94	2.08	7.1	30.00
4:2FTS	7.50	7.62	1.6	30.00
6:2FTS	7.60	8.60	13.2	30.00
8:2FTS	7.68	8.09	5.3	30.00
PFOSA	2.00	2.18	9.2	30.00
NMeFOSA	8.00	9.10	13.7	30.00
NEtFOSA	8.00	7.46	-6.8	30.00
NMeFOSAA	2.00	2.19	9.5	30.00
NEtFOSAA	2.00	2.25	12.7	30.00

**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2315001**Laboratory ID:** SC01366-SCV1**Sequence:** SC01366**Standard ID:** 23C0366

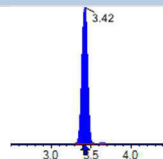
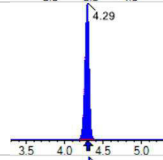
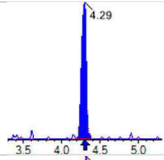
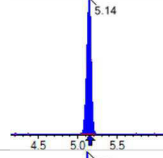
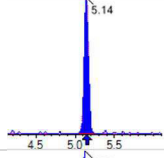
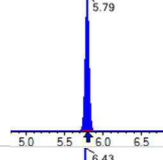
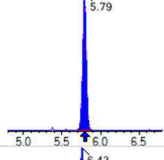
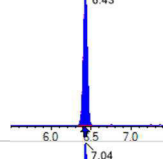
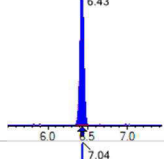
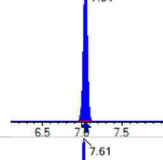
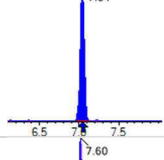
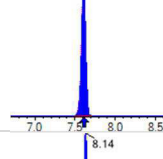
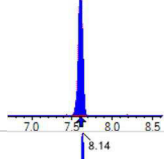
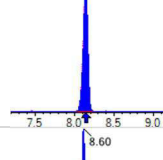
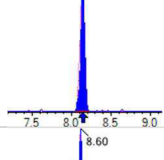
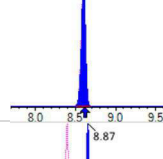
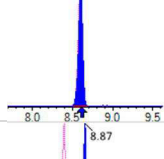
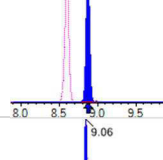
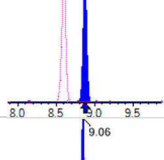
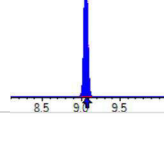
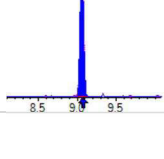
NMeFOSE	8.00	9.16	14.5	30.00
NEtFOSE	8.00	8.96	12.0	30.00
HFPO-DA	4.00	4.60	14.9	30.00
ADONA	3.78	4.80	27.0	30.00
PFEESA	3.56	4.20	17.9	30.00
PFMPA	4.00	4.56	14.0	30.00
PFMBA	4.00	4.75	18.7	30.00
NFDHA	4.00	4.62	15.5	30.00
9CL-PF3ONS	3.74	4.33	15.8	30.00
11CL-PF3OUDS	3.78	4.39	16.2	30.00
3:3FTCA	8.00	8.33	4.1	30.00
5:3FTCA	8.00	9.29	16.1	30.00
7:3FTCA	8.00	8.39	4.8	30.00
13C4-PFBA	8.00	7.50	-6.2	30.00
13C5-PFPEA	4.00	3.98	-0.6	30.00
13C5-PFHXA	2.00	2.01	0.5	30.00
13C4-PFHPA	2.00	1.95	-2.4	30.00
13C8-PFOA	2.00	1.78	-11.1	30.00
13C9-PFNA	1.00	1.05	4.9	30.00
13C6-PFDA	1.00	0.987	-1.3	30.00
13C7-PFUnA	1.00	1.08	8.0	30.00
13C2-PFDOA	1.00	0.976	-2.4	30.00
13C2-PFTEDA	1.00	0.916	-8.4	30.00
13C3-PFBS	2.00	1.88	-5.9	30.00
13C3-PFHXS	2.00	1.86	-7.2	30.00
13C8-PFOS	2.00	1.77	-11.7	30.00
13C2-4:2FTS	4.00	4.19	4.7	30.00
13C2-6:2FTS	4.00	3.66	-8.4	30.00
13C2-8:2FTS	4.00	3.48	-13.0	30.00



**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2315001**Laboratory ID:** SC01366-SCV1**Sequence:** SC01366**Standard ID:** 23C0366

13C8-PFOSA	2.00	1.72	-13.8	30.00
D3-NMEFOSA	2.00	1.69	-15.5	30.00
D5-NETFOSA	2.00	1.88	-6.1	30.00
D3-NMEFOSAA	4.00	3.66	-8.5	30.00
D5-NETFOSAA	4.00	3.30	-17.4	30.00
D7-NMEFOSE	20.0	17.4	-13.0	30.00
D9-NETFOSAE	20.0	18.5	-7.6	30.00
13C3-HFPO-DA	8.00	7.88	-1.5	30.00

\* Values outside of QC limits

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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) 974387	(3.42, 1.00) (0.00, N/A, 0.0)	207.1	N/A 0.0 0.0	8.7107	N/A			
PFPeA	(263.0 / 219.0) 864381 (263.0 / 69.0) 11187	(4.29, 1.00) (0.00, N/A, 0.2)	2399.6 222.7	0.0129 105.1 105.1	4.4003	N/A			
PFHxA	(313.0 / 269.0) 507916 (313.0 / 119.0) 50251	(5.14, 1.00) (0.00, N/A, 0.2)	1543.9 3348.5	0.0989 97.9 97.9	2.0618	N/A			
PFHpA	(363.0 / 319.0) 507612 (363.0 / 169.0) 153481	(5.79, 1.00) (0.00, N/A, 0.0)	17472.9 7554.6	0.3024 101.9 101.9	2.3760	N/A			
PFOA	(413.0 / 369.0) 635762 (413.0 / 169.0) 214976	(6.43, 1.00) (0.00, N/A, 0.1)	1341.1 9545.0	0.3381 100.5 100.5	2.1217	N/A			
PFNA	(463.0 / 419.0) 565319 (463.0 / 169.0) 130545	(7.04, 1.00) (0.00, N/A, 0.1)	5446.9 3579.8	0.2309 102.7 102.7	2.0071	N/A			
PFDA	(513.0 / 469.0) 653192 (513.0 / 169.0) 84467	(7.61, 1.00) (0.00, N/A, 0.1)	1443.2 150387.6	0.1293 107.4 107.4	1.9640	N/A			
PFUnA	(563.0 / 519.0) 620603 (563.0 / 169.0) 81958	(8.14, 1.00) (0.00, N/A, 0.0)	1434.4 1047.7	0.1321 127.9 127.9	1.9553	N/A			
PFDoA	(613.0 / 569.0) 581986 (613.0 / 169.0) 96646	(8.60, 1.00) (0.00, N/A, -0.1)	1909.9 1175.5	0.1661 111.1 111.1	2.3128	N/A			
PFTrDA	(663.0 / 619.0) 527154 (663.0 / 169.0) 139194	(8.87, 1.03) (N/A, -0.01, -0.1)	1946.0 1086.6	0.2640 103.0 103.0	2.2626	N/A			
PFTeDA	(713.0 / 669.0) 545061 (713.0 / 169.0) 114112	(9.06, 1.00) (0.00, N/A, 0.0)	1744.1 727.0	0.2094 105.0 105.0	2.3355	N/A			

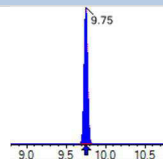
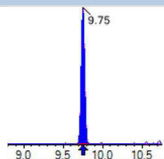
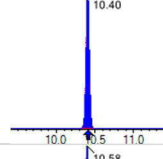
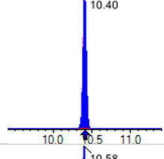
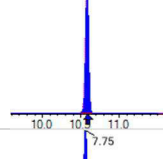
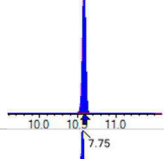
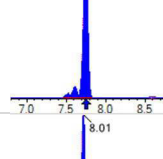
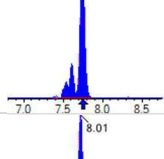
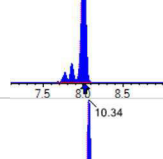
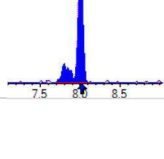
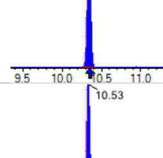
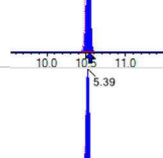
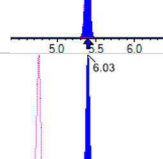
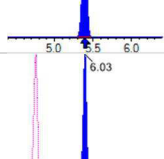
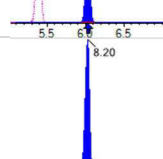
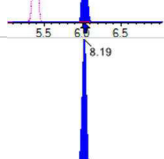
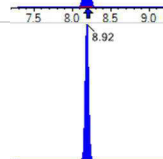
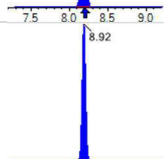
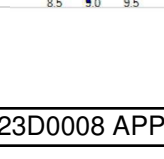
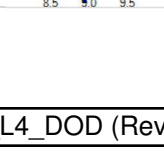


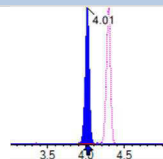
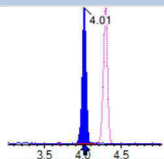
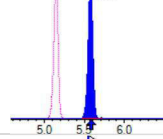
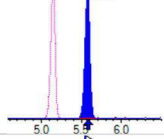
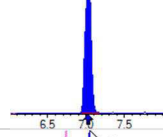
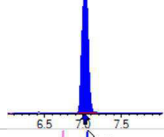
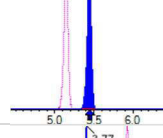
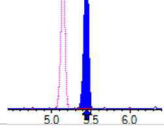
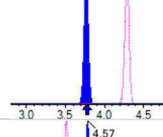
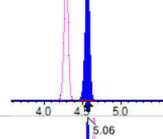
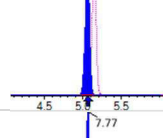
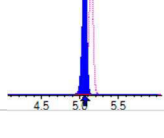
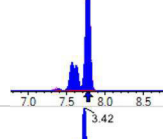
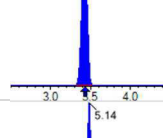
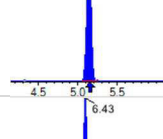
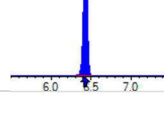
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 Instrument: Saphira  
 Type: Sciex Q3 5500

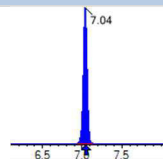
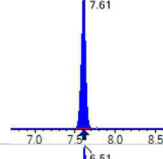
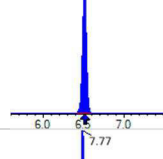
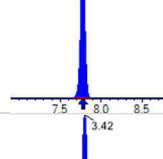
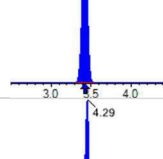
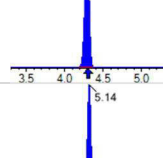
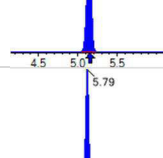
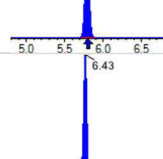
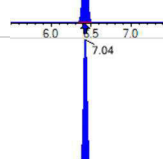
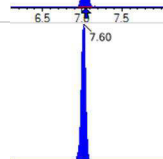
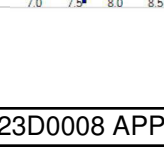
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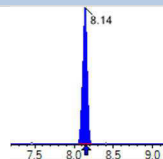
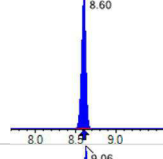
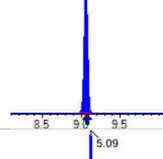
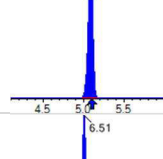
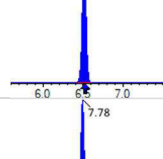
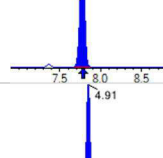
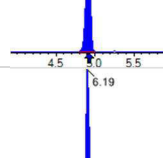
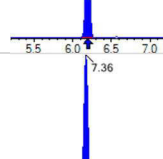
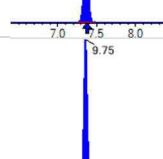
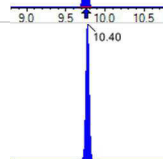
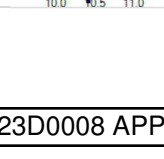
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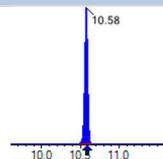
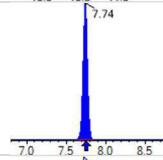
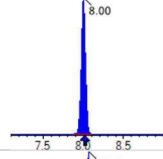
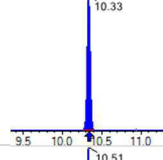
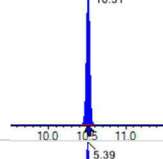
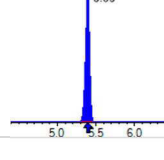
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 806702 (299.0 / 99.0) 515984	(5.09, 1.00) (0.00, N/A, -0.1)	57642.7 3342.8	0.6396 97.5 97.5	1.9667	N/A			
PFPeS	(349.0 / 80.0) 1487348 (349.0 / 99.0) 546876	(5.81, 0.89) (N/A, 0.00, 0.0)	1904499.1 17314.3	0.3677 108.2 108.2	2.0516	N/A			
PFHxS	(399.0 / 80.0) 1147292 (399.0 / 99.0) 409371	(6.51, 1.00) (0.00, N/A, 0.0)	1686.2 7848.3	0.3568 99.7 99.7	1.9307	N/A			
PFHpS	(449.0 / 80.0) 1439766 (449.0 / 99.0) 406390	(7.17, 0.92) (N/A, 0.00, 0.0)	19427297.5 12657854.1	0.2823 100.4 100.4	2.0396	N/A			
PFOS	(499.0 / 80.0) 1787589 (499.0 / 99.0) 421486	(7.78, 1.00) (0.00, N/A, 0.1)	110095.4 3973.0	0.2358 108.6 108.6	1.8574	N/A			
PFNS	(549.0 / 80.0) 1750061 (549.0 / 99.0) 456211	(8.33, 1.07) (N/A, -0.01, 0.1)	25143.3 81121.7	0.2607 102.4 102.4	2.0627	N/A			
PFDS	(599.0 / 80.0) 2212460 (599.0 / 99.0) 504836	(8.73, 1.12) (N/A, -0.01, 0.0)	5734.3 6429.8	0.2282 95.4 95.4	2.1529	N/A			
PFDoS	(699.0 / 80.0) 1721070 (699.0 / 99.0) 401335	(9.13, 1.17) (N/A, -0.01, 0.1)	3259.1 1436.0	0.2332 104.1 104.1	2.0782	N/A			
4:2FTS	(327.0 / 307.0) 1369029 (327.0 / 81.0) 786889	(4.91, 1.00) (0.00, N/A, -0.1)	2353.3 1790.9	0.5748 95.3 95.3	7.6217	N/A			
6:2FTS	(427.0 / 407.0) 901610 (427.0 / 81.0) 641806	(6.19, 1.00) (0.00, N/A, 0.0)	3947.1 2839.2	0.7118 100.3 100.3	8.6038	N/A			
8:2FTS	(527.0 / 507.0) 910191 (527.0 / 81.0) 679896	(7.36, 1.00) (0.00, N/A, 0.1)	3182.7 3825.1	0.7470 97.7 97.7	8.0889	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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) 2592347 (498.0 / 478.0) 58387	(9.75, 1.00) (0.00, N/A, 0.0)	4509.6 770.9	0.0225 92.2 92.2	2.1848	N/A			
NMeFOSA	(512.0 / 219.0) 2316479 (512.0 / 169.0) 1683648	(10.40, 1.00) (0.00, N/A, 0.0)	8916.2 5515.1	0.7268 85.6 85.6	9.0960	N/A			
NEIFOSA	(526.0 / 219.0) 2282363 (526.0 / 169.0) 2344865	(10.58, 1.00) (0.01, N/A, 0.0)	7619.6 8829.3	1.0274 81.6 81.6	7.4566	N/A			
NMeFOSAA	(570.0 / 419.0) 332875 (570.0 / 483.0) 163075	(7.75, 1.00) (0.00, N/A, 0.1)	23833.8 276.1	0.4899 95.3 95.3	2.1895	N/A			
NEIFOSAA	(584.0 / 419.0) 270614 (584.0 / 526.0) 158082	(8.01, 1.00) (0.01, N/A, -0.1)	451.5 685.0	0.5842 95.6 95.6	2.2541	N/A			
NMeFOSE	(616.0 / 59.0) 976496	(10.34, 1.00) (0.01, N/A, 0.0)	1934.7	N/A 0.0 0.0	9.1607	N/A			
NEtFOSE	(630.0 / 59.0) 1266539	(10.53, 1.00) (0.01, N/A, 0.0)	1682.0	N/A 0.0 0.0	8.9615	N/A			
HFPO-DA	(285.0 / 169.0) 563567 (285.0 / 185.0) 1534676	(5.39, 1.00) (0.00, N/A, 0.0)	1702.6 2930.1	2.7231 92.9 92.9	4.5960	N/A			
ADONA	(377.0 / 85.0) 2152743 (377.0 / 251.0) 204197	(6.03, 1.12) (N/A, 0.00, 0.0)	3642.8 7925.4	0.0949 91.4 91.4	4.8022	N/A			
9CI-Pf3ONS	(531.0 / 351.0) 5755614 (533.0 / 353.0) 1815685	(8.20, 1.52) (N/A, 0.00, 0.1)	3586.6 2539.0	0.3155 97.8 97.8	4.3309	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 3847923 (633.0 / 453.0) 1351492	(8.92, 1.65) (N/A, -0.01, 0.0)	3378.0 2831.4	0.3512 102.9 102.9	4.3939	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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) 69980 (241.0 / 117.0) 106123	(4.01, 0.94) (N/A, 0.00, 0.1)	1278.6 633.9	1.5165 98.5 98.5	8.3277	N/A			
5:3FTCA	(341.0 / 236.7) 396011 (341.0 / 217.0) 617845	(5.57, 1.08) (N/A, -0.01, 0.0)	1327.7 985.5	1.5602 83.4 83.4	9.2910	N/A			
7:3FTCA	(441.0 / 317.0) 651016 (441.0 / 337.0) 541519	(7.03, 1.37) (N/A, 0.00, 0.1)	1149.6 1742.4	0.8318 101.0 101.0	8.3869	N/A			
PFEESA	(315.0 / 135.0) 1357379 (315.0 / 83.0) 281173	(5.44, 1.06) (N/A, 0.00, 0.0)	5161.4 646.9	0.2071 86.6 86.6	4.1980	N/A			
PFMPA	(229.0 / 85.0) 199875	(3.77, 0.88) (N/A, 0.00, 0.0)	3191.8	N/A 0.0 0.0	4.5599	N/A			
PFMBA	(279.0 / 85.0) 651283	(4.57, 1.06) (N/A, -0.01, 0.0)	3863.6	N/A 0.0 0.0	4.7477	N/A			
NFDHA	(295.0 / 201.0) 574450 (295.0 / 85.0) 568619	(5.06, 0.98) (N/A, 0.00, 0.0)	3850.6 3233.6	0.9898 101.4 101.4	4.6211	N/A			
TDCA	(499.0 / 80.0) 1668507	(7.77, 1.00) (N/A, 0.00, 0.0)	19655.9	N/A 0.0 0.0	2.0625	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 127910	(3.42, N/A) (N/A, 0.00, N/A)	1553.1	N/A	1.1220 [ 1.0000 ]	112.2% { 119.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 133161	(5.14, N/A) (N/A, -0.01, N/A)	19818.0	N/A	0.9649 [ 1.0000 ]	96.5% { 115.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 329554	(6.43, N/A) (N/A, 0.00, N/A)	2821.0	N/A	1.0610 [ 1.0000 ]	106.1% { 118.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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
13C5_PFNA_IIS	(468.0 / 423.0) 304916	(7.04, N/A) (N/A, 0.00, N/A)	3402.8	N/A	1.0343 [ 1.0000 ]	103.4% { 111.7% }			
13C2_PFDA_IIS	(515.0 / 470.1) 311572	(7.61, N/A) (N/A, 0.00, N/A)	2255.7	N/A	1.0051 [ 1.0000 ]	100.5% { 113.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 467501	(6.51, N/A) (N/A, 0.00, N/A)	3682.8	N/A	1.0422 [ 1.0000 ]	104.2% { 111.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 787042	(7.77, N/A) (N/A, 0.00, N/A)	2274.5	N/A	1.1309 [ 1.0000 ]	113.1% { 129.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1029345	(3.42, N/A) (N/A, 0.00, N/A)	4731.8	N/A	7.5037 [ 8.0000 ]	93.8% { 109.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 836286	(4.29, N/A) (N/A, -0.01, N/A)	2951.5	N/A	3.9780 [ 4.0000 ]	99.4% { 101.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 511894	(5.14, N/A) (N/A, 0.00, N/A)	3221.7	N/A	2.0092 [ 2.0000 ]	100.5% { 105.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 498081	(5.79, N/A) (N/A, 0.00, N/A)	2773.3	N/A	1.9523 [ 2.0000 ]	97.6% { 99.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 603381	(6.43, N/A) (N/A, 0.00, N/A)	12365.4	N/A	1.7786 [ 2.0000 ]	88.9% { 107.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 311694	(7.04, N/A) (N/A, 0.00, N/A)	10781.4	N/A	1.0493 [ 1.0000 ]	104.9% { 115.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 335812	(7.60, N/A) (N/A, 0.00, N/A)	291137.1	N/A	0.9867 [ 1.0000 ]	98.7% { 101.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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
13C7_PFUa_EIS	(570.0 / 525.0) 354265	(8.14, N/A) (N/A, -0.01, N/A)	1801.9	N/A	1.0798 [ 1.0000 ]	108.0% { 111.6% }			
13C2_PFDa_EIS	(615.0 / 570.0) 289570	(8.60, N/A) (N/A, 0.00, N/A)	3052.9	N/A	0.9760 [ 1.0000 ]	97.6% { 108.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 260269	(9.06, N/A) (N/A, -0.01, N/A)	1641.3	N/A	0.9159 [ 1.0000 ]	91.6% { 92.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1148846	(5.09, N/A) (N/A, 0.00, N/A)	2310.3	N/A	1.8815 [ 2.0000 ]	94.1% { 106.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 811056	(6.51, N/A) (N/A, 0.00, N/A)	2965.2	N/A	1.8558 [ 2.0000 ]	92.8% { 101.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1692266	(7.78, N/A) (N/A, 0.00, N/A)	1632.4	N/A	1.7662 [ 2.0000 ]	88.3% { 107.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 234154	(4.91, N/A) (N/A, -0.01, N/A)	1608.6	N/A	4.1892 [ 4.0000 ]	104.7% { 118.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 271826	(6.19, N/A) (N/A, 0.00, N/A)	1022.9	N/A	3.6636 [ 4.0000 ]	91.6% { 102.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 317954	(7.36, N/A) (N/A, 0.00, N/A)	4626.0	N/A	3.4811 [ 4.0000 ]	87.0% { 97.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2794537	(9.75, N/A) (N/A, -0.01, N/A)	4848.6	N/A	1.7238 [ 2.0000 ]	86.2% { 102.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 621475	(10.40, N/A) (N/A, -0.01, N/A)	2388.7	N/A	1.6902 [ 2.0000 ]	84.5% { 102.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ 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
D5_NEiFOSA_EIS	(531.0 / 169.0) 565092	(10.58, N/A) (N/A, -0.01, N/A)	3278.7	N/A	1.8771 [ 2.0000 ]	93.9% { 108.5% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 735773	(7.74, N/A) (N/A, 0.00, N/A)	2324.3	N/A	3.6596 [ 4.0000 ]	91.5% { 112.2% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 545566	(8.00, N/A) (N/A, 0.00, N/A)	465073.6	N/A	3.3043 [ 4.0000 ]	82.6% { 101.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2054677	(10.33, N/A) (N/A, -0.01, N/A)	1586.7	N/A	17.3935 [ 20.0000 ]	87.0% { 104.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2888224	(10.51, N/A) (N/A, -0.01, N/A)	1625.5	N/A	18.4772 [ 20.0000 ]	92.4% { 111.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1030046	(5.39, N/A) (N/A, 0.00, N/A)	2326.0	N/A	7.8788 [ 8.0000 ]	98.5% { 100.2% }			



**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2316009**Laboratory ID:** SC01530-SCV1**Sequence:** SC01530**Standard ID:** 23D0357

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	8.50	6.2	30.00
PFPEA	4.00	4.37	9.3	30.00
PFHXA	2.00	2.14	7.0	30.00
PFHPA	2.00	2.07	3.6	30.00
PFOA	2.00	1.98	-1.1	30.00
PFNA	2.00	2.34	17.1	30.00
PFDA	2.00	2.20	9.8	30.00
PFUnA	2.00	2.09	4.6	30.00
PFDOA	2.00	1.97	-1.7	30.00
PFTRDA	2.00	1.90	-4.8	30.00
PFTEDA	2.00	2.06	3.2	30.00
PFBS	1.77	1.92	8.4	30.00
PFPEs	1.88	2.05	8.8	30.00
PFHXS	1.83	1.82	-0.8	30.00
PFHPS	1.91	2.24	17.2	30.00
PFOS	1.86	1.86	0.04	30.00
PFNS	1.92	2.26	17.5	30.00
PFDS	1.93	2.27	17.8	30.00
PFDOS	1.94	2.25	15.9	30.00
4:2FTS	7.50	7.66	2.1	30.00
6:2FTS	7.60	8.82	16.1	30.00
8:2FTS	7.68	8.74	13.8	30.00
PFOSA	2.00	2.14	7.0	30.00
NMeFOSA	8.00	8.05	0.6	30.00
NEtFOSA	8.00	7.09	-11.3	30.00
NMeFOSAA	2.00	2.15	7.7	30.00
NEtFOSAA	2.00	2.30	14.8	30.00

**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2316009**Laboratory ID:** SC01530-SCV1**Sequence:** SC01530**Standard ID:** 23D0357

NMeFOSE	8.00	8.11	1.3	30.00
NEtFOSE	8.00	8.21	2.7	30.00
HFPO-DA	4.00	4.30	7.5	30.00
ADONA	3.78	4.25	12.5	30.00
PFEESA	3.56	3.73	4.6	30.00
PFMPA	4.00	4.13	3.3	30.00
PFMBA	4.00	4.72	18.1	30.00
NFDHA	4.00	4.33	8.2	30.00
9CL-PF3ONS	3.74	4.37	16.8	30.00
11CL-PF3OUDS	3.78	4.86	28.6	30.00
3:3FTCA	8.00	8.99	12.3	30.00
5:3FTCA	8.00	8.31	3.8	30.00
7:3FTCA	8.00	7.92	-1.0	30.00
13C4-PFBA	8.00	8.14	1.8	30.00
13C5-PFPEA	4.00	3.66	-8.5	30.00
13C5-PFHXA	2.00	1.99	-0.3	30.00
13C4-PFHPA	2.00	1.94	-2.8	30.00
13C8-PFOA	2.00	1.97	-1.6	30.00
13C9-PFNA	1.00	0.960	-4.0	30.00
13C6-PFDA	1.00	1.05	5.0	30.00
13C7-PFUnA	1.00	1.11	11.0	30.00
13C2-PFDOA	1.00	1.12	12.2	30.00
13C2-PFTEDA	1.00	1.09	9.4	30.00
13C3-PFBS	2.00	1.94	-3.2	30.00
13C3-PFHXS	2.00	1.91	-4.6	30.00
13C8-PFOS	2.00	2.01	0.7	30.00
13C2-4:2FTS	4.00	3.90	-2.6	30.00
13C2-6:2FTS	4.00	3.48	-12.9	30.00
13C2-8:2FTS	4.00	3.39	-15.1	30.00

**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2316009**Laboratory ID:** SC01530-SCV1**Sequence:** SC01530**Standard ID:** 23D0357

13C8-PFOSA	2.00	2.20	9.8	30.00
D3-NMEFOSA	2.00	2.24	12.0	30.00
D5-NETFOSA	2.00	2.32	15.9	30.00
D3-NMEFOSAA	4.00	4.33	8.2	30.00
D5-NETFOSAA	4.00	4.20	5.0	30.00
D7-NMEFOSE	20.0	21.7	8.5	30.00
D9-NETFOSSE	20.0	23.4	16.9	30.00
13C3-HFPO-DA	8.00	7.90	-1.2	30.00

\* Values outside of QC limits

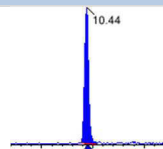
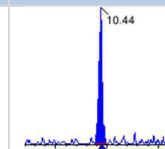
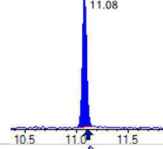
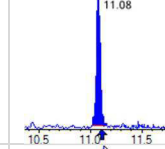
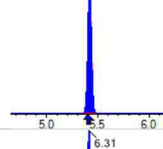
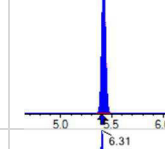
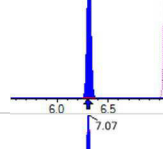
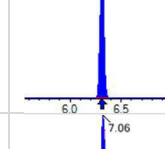
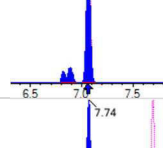
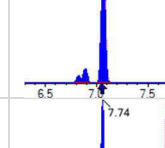
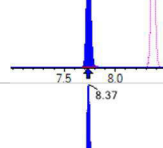
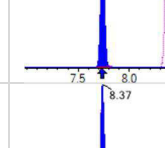
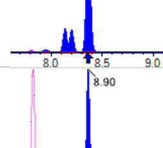
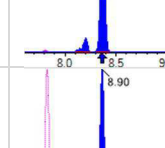
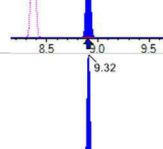
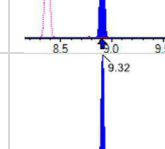
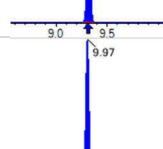
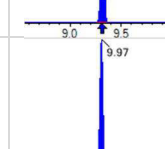
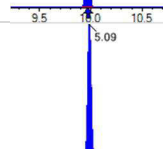
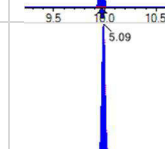
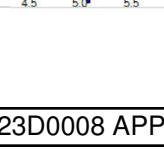
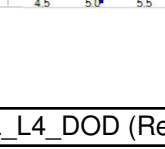


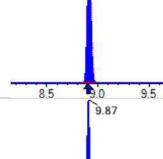
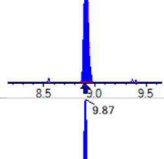
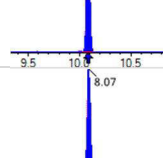
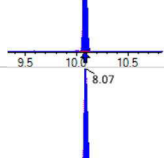
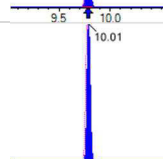
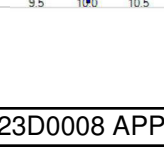
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (10)  
 Acquired: 2023/04/18 - 19:15

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1574681	(3.23, 1.00) (0.00, N/A, 0.0)	977.1	N/A 0.0 0.0	8.4952	N/A			
PFPeA	(263.0 / 219.0) 1059299 (263.0 / 69.0) 12432	(4.46, 1.00) (0.00, N/A, 0.1)	825.0 333.8	0.0117 100.0 100.0	4.3731	N/A			
PFHxA	(313.0 / 269.0) 724425 (313.0 / 119.0) 61430	(5.39, 1.00) (0.00, N/A, 0.0)	501.5 332.6	0.0848 101.6 101.6	2.1405	N/A			
PFHpA	(363.0 / 319.0) 545407 (363.0 / 169.0) 151237	(6.17, 1.00) (0.00, N/A, 0.0)	711.3 550.4	0.2773 100.0 100.0	2.0729	N/A			
PFOA	(413.0 / 369.0) 623102 (413.0 / 169.0) 194534	(6.87, 1.00) (0.00, N/A, -0.1)	374.1 272.8	0.3122 104.6 104.6	1.9779	N/A			
PFNA	(463.0 / 419.0) 509447 (463.0 / 169.0) 96360	(7.51, 1.00) (0.00, N/A, 0.0)	759.4 330.1	0.1891 93.4 93.4	2.3422	N/A			
PFDA	(513.0 / 469.0) 561800 (513.0 / 169.0) 51616	(8.11, 1.00) (0.00, N/A, 0.0)	595.3 188.5	0.0919 93.6 93.6	2.1951	N/A			
PFUnA	(563.0 / 519.0) 510148 (563.0 / 169.0) 56224	(8.68, 1.00) (0.00, N/A, -0.1)	373.6 271.0	0.1102 109.2 109.2	2.0912	N/A			
PFDoA	(613.0 / 569.0) 421688 (613.0 / 169.0) 63755	(9.13, 1.00) (0.00, N/A, -0.1)	993.7 540.8	0.1512 106.1 106.1	1.9669	N/A			
PFTrDA	(663.0 / 619.0) 435269 (663.0 / 169.0) 98325	(9.50, 1.04) (N/A, 0.00, 0.0)	598.7 614.9	0.2259 109.6 109.6	1.9039	N/A			
PFTeDA	(713.0 / 669.0) 528503 (713.0 / 169.0) 99890	(9.83, 1.00) (0.00, N/A, 0.0)	579.5 431.4	0.1890 95.8 95.8	2.0645	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) 27485 ( 813.0 / 169.0 ) 3457	( 10.44 , 1.93 ) ( N/A , -0.01 , -0.1)	261.2 72.6	0.1258 84.2 84.2	0.0607	N/A			
PFODA	( 913.0 / 869.0 ) 23897 ( 913.0 / 169.0 ) 5979	( 11.08 , 2.04 ) ( N/A , -0.03 , 0.1)	232.1 100.5	0.2502 95.0 95.0	0.0823	N/A			
PFBS	( 299.0 / 80.0 ) 832788 ( 299.0 / 99.0 ) 571129	( 5.42 , 1.00 ) ( 0.00 , N/A , 0.0)	446.6 549.2	0.6858 99.8 99.8	1.9178	N/A			
PFPeS	( 349.0 / 80.0 ) 1391530 ( 349.0 / 99.0 ) 467267	( 6.31 , 0.89 ) ( N/A , 0.01 , -0.1)	1018.0 772.8	0.3358 94.9 94.9	2.0463	N/A			
PFHxS	( 399.0 / 80.0 ) 1026256 ( 399.0 / 99.0 ) 355178	( 7.07 , 1.00 ) ( 0.00 , N/A , 0.1)	188848.2 2115.9	0.3461 97.8 97.8	1.8156	N/A			
PFHpS	( 449.0 / 80.0 ) 1037684 ( 449.0 / 99.0 ) 283494	( 7.74 , 0.93 ) ( N/A , 0.01 , 0.0)	635.3 639.3	0.2732 97.8 97.8	2.2385	N/A			
PFOS	( 499.0 / 80.0 ) 1238187 ( 499.0 / 99.0 ) 265434	( 8.37 , 1.00 ) ( 0.00 , N/A , 0.0)	6505.9 628588.3	0.2144 93.1 93.1	1.8608	N/A			
PFNS	( 549.0 / 80.0 ) 1183435 ( 549.0 / 99.0 ) 299772	( 8.90 , 1.06 ) ( N/A , 0.01 , 0.0)	1249.1 583.7	0.2533 102.7 102.7	2.2556	N/A			
PFDS	( 599.0 / 80.0 ) 1372157 ( 599.0 / 99.0 ) 333818	( 9.32 , 1.11 ) ( N/A , 0.00 , 0.0)	956.9 1281.9	0.2433 106.2 106.2	2.2735	N/A			
PFDoS	( 699.0 / 80.0 ) 1533066 ( 699.0 / 99.0 ) 366791	( 9.97 , 1.19 ) ( N/A , 0.00 , 0.0)	641.3 571.2	0.2393 104.9 104.9	2.2494	N/A			
4:2FTS	( 327.0 / 307.0 ) 845948 ( 327.0 / 81.0 ) 529312	( 5.09 , 1.00 ) ( 0.00 , N/A , 0.0)	1149.4 707.6	0.6257 96.2 96.2	7.6570	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 501865 (427.0 / 81.0) 377733	(6.56, 1.00) (0.00, N/A, 0.1)	530.3 359.6	0.7527 102.0 102.0	8.8246	N/A			
8:2FTS	(527.0 / 507.0) 508598 (527.0 / 81.0) 357854	(7.81, 1.00) (0.00, N/A, 0.1)	653.0 479.8	0.7036 104.0 104.0	8.7416	N/A			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOSA	(498.0 / 78.0) 1151725 (498.0 / 478.0) 35772	(8.91, 1.00) (0.00, N/A, -0.1)	825.9 248.0	0.0311 125.1 125.1	2.1408	N/A			
NMeFOSA	(512.0 / 219.0) 1597845 (512.0 / 169.0) 1033246	(9.87, 1.00) (0.00, N/A, 0.0)	11183.7 11378.2	0.6466 86.3 86.3	8.0460	N/A			
NEtFOSA	(526.0 / 219.0) 1579469 (526.0 / 169.0) 1702692	(10.08, 1.00) (0.00, N/A, 0.0)	26609.6 20078.1	1.0780 92.2 92.2	7.0927	N/A			
NMeFOSAA	(570.0 / 419.0) 230931 (570.0 / 483.0) 107580	(8.07, 1.00) (0.00, N/A, 0.1)	3615.4 125920.2	0.4659 97.9 97.9	2.1530	N/A			
NEtFOSAA	(584.0 / 419.0) 188365 (584.0 / 526.0) 107408	(8.33, 1.00) (0.01, N/A, 0.1)	27603.9 285868.7	0.5702 95.8 95.8	2.2964	N/A			
NMeFOSE	(616.0 / 59.0) 577762	(9.79, 1.00) (0.01, N/A, 0.0)	8792.1	N/A 0.0 0.0	8.1063	N/A			
NEtFOSE	(630.0 / 59.0) 695260	(10.01, 1.00) (0.01, N/A, 0.0)	7701.6	N/A 0.0 0.0	8.2146	N/A			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (10)  
 Acquired: 2023/04/18 - 19:15

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 355830 (285.0 / 185.0) 1635369	(5.72, 1.00) (0.00, N/A, 0.1)	735.7 897.0	4.5959 97.5 97.5	4.3005	N/A			
ADONA	(377.0 / 85.0) 2072938 (377.0 / 251.0) 233600	(6.43, 1.12) (N/A, 0.01, 0.1)	540.0 167.2	0.1127 104.0 104.0	4.2511	N/A			
9CI-PF3ONS	(531.0 / 351.0) 4162203 (533.0 / 353.0) 1267408	(8.78, 1.54) (N/A, 0.01, 0.1)	812.8 473.6	0.3045 93.3 93.3	4.3665	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 4084530 (633.0 / 453.0) 1441690	(9.59, 1.68) (N/A, 0.00, 0.0)	1092.4 1212.5	0.3530 96.0 96.0	4.8609	N/A			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
3:3FTCA	(241.0 / 177.0) 80015 (241.0 / 117.0) 130515	(3.87, 0.87) (N/A, 0.02, 0.0)	811.8 776.6	1.6311 98.1 98.1	8.9869	N/A			
5:3FTCA	(341.0 / 236.7) 360844 (341.0 / 217.0) 624177	(5.70, 1.06) (N/A, 0.01, 0.1)	552.9 570.8	1.7298 96.0 96.0	8.3068	N/A			
7:3FTCA	(441.0 / 317.0) 408601 (441.0 / 337.0) 501606	(7.09, 1.32) (N/A, 0.01, 0.0)	486.9 323.1	1.2276 102.4 102.4	7.9185	N/A			
PFEESA	(315.0 / 135.0) 1205541 (315.0 / 83.0) 339470	(5.86, 1.09) (N/A, 0.01, 0.0)	676.6 591.8	0.2816 99.0 99.0	3.7252	N/A			
PFMPA	(229.0 / 85.0) 256138	(3.72, 0.83) (N/A, 0.02, 0.0)	972.0	N/A 0.0 0.0	4.1337	N/A			
PFMBA	(279.0 / 85.0) 824370	(4.78, 1.07) (N/A, 0.02, 0.0)	1225.9	N/A 0.0 0.0	4.7225	N/A			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (10)  
 Acquired: 2023/04/18 - 19:15

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 780998 (295.0 / 85.0) 690127	(5.30, 0.98) (N/A, 0.01, 0.1)	1035.4 929.0	0.8836 90.9 90.9	4.3279	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 197060	(3.23, N/A) (N/A, 0.03, N/A)	609.8	N/A	0.9563 [ 1.0000 ]	95.6% { 95.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 144344	(5.39, N/A) (N/A, 0.01, N/A)	261.8	N/A	0.9956 [ 1.0000 ]	99.6% { 96.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 269614	(6.87, N/A) (N/A, 0.01, N/A)	358.5	N/A	0.9888 [ 1.0000 ]	98.9% { 97.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 231406	(7.51, N/A) (N/A, 0.01, N/A)	377.2	N/A	0.9244 [ 1.0000 ]	92.4% { 91.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 212422	(8.11, N/A) (N/A, 0.01, N/A)	401.3	N/A	0.8947 [ 1.0000 ]	89.5% { 80.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 386476	(7.07, N/A) (N/A, 0.01, N/A)	459.1	N/A	1.0120 [ 1.0000 ]	101.2% { 96.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 418805	(8.37, N/A) (N/A, 0.01, N/A)	371.5	N/A	0.8784 [ 1.0000 ]	87.8% { 92.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1719022	(3.23, N/A) (N/A, 0.03, N/A)	1083.5	N/A	8.1432 [ 8.0000 ]	101.8% { 98.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1044635	(4.45, N/A) (N/A, 0.02, N/A)	1158.6	N/A	3.6602 [ 4.0000 ]	91.5% { 89.3% }			





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (10)  
 Acquired: 2023/04/18 - 19:15

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 644181	(5.39, N/A) (N/A, 0.01, N/A)	631.8	N/A	1.9932 [ 2.0000 ]	99.7% { 96.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 495828	(6.17, N/A) (N/A, 0.01, N/A)	704.5	N/A	1.9438 [ 2.0000 ]	97.2% { 93.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 631261	(6.86, N/A) (N/A, 0.01, N/A)	466.4	N/A	1.9676 [ 2.0000 ]	98.4% { 98.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 230539	(7.51, N/A) (N/A, 0.01, N/A)	305.6	N/A	0.9597 [ 1.0000 ]	96.0% { 86.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 264617	(8.11, N/A) (N/A, 0.01, N/A)	261.3	N/A	1.0500 [ 1.0000 ]	105.0% { 94.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 269058	(8.68, N/A) (N/A, 0.01, N/A)	307.6	N/A	1.1097 [ 1.0000 ]	111.0% { 99.1% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 230792	(9.13, N/A) (N/A, 0.01, N/A)	715.6	N/A	1.1223 [ 1.0000 ]	112.2% { 101.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 277412	(9.83, N/A) (N/A, 0.00, N/A)	636.4	N/A	1.0937 [ 1.0000 ]	109.4% { 98.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1423342	(5.42, N/A) (N/A, 0.01, N/A)	880.3	N/A	1.9357 [ 2.0000 ]	96.8% { 98.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 591766	(7.07, N/A) (N/A, 0.01, N/A)	439.6	N/A	1.9087 [ 2.0000 ]	95.4% { 102.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1053279	(8.37, N/A) (N/A, 0.01, N/A)	503.5	N/A	2.0135 [ 2.0000 ]	100.7% { 94.8% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (10)  
 Acquired: 2023/04/18 - 19:15

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 138057	( 5.09, N/A ) ( N/A, 0.01, N/A )	608.0	N/A	3.8956 [ 4.0000 ]	97.4% { 97.4% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 153106	( 6.56, N/A ) ( N/A, 0.01, N/A )	356.1	N/A	3.4826 [ 4.0000 ]	87.1% { 91.6% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 168550	( 7.81, N/A ) ( N/A, 0.01, N/A )	400.7	N/A	3.3940 [ 4.0000 ]	84.9% { 93.8% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1288775	( 8.92, N/A ) ( N/A, 0.01, N/A )	967.1	N/A	2.1952 [ 2.0000 ]	109.8% { 95.2% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 407038	( 9.87, N/A ) ( N/A, 0.01, N/A )	491.1	N/A	2.2394 [ 2.0000 ]	112.0% { 97.0% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 413771	( 10.08, N/A ) ( N/A, 0.01, N/A )	772.2	N/A	2.3174 [ 2.0000 ]	115.9% { 100.9% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 472699	( 8.07, N/A ) ( N/A, 0.01, N/A )	448.9	N/A	4.3276 [ 4.0000 ]	108.2% { 89.0% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 366541	( 8.32, N/A ) ( N/A, 0.01, N/A )	350.1	N/A	4.2018 [ 4.0000 ]	105.0% { 92.8% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1250129	( 9.77, N/A ) ( N/A, 0.01, N/A )	779.4	N/A	21.7089 [ 20.0000 ]	108.5% { 92.3% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1668716	( 9.99, N/A ) ( N/A, 0.01, N/A )	1557.5	N/A	23.3777 [ 20.0000 ]	116.9% { 103.8% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1314337	( 5.72, N/A ) ( N/A, 0.01, N/A )	1251.0	N/A	7.9017 [ 8.0000 ]	98.8% { 96.7% }			

# 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 / 6069

Calibration: 2316009

Laboratory ID: SC01534-LCV1

Sequence: SC01534

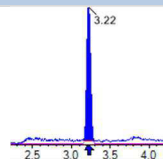
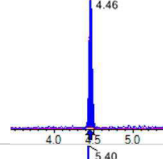
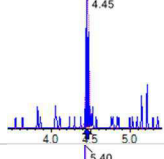
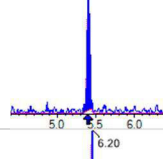
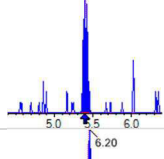
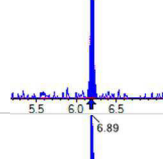
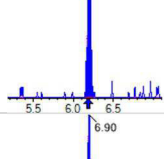
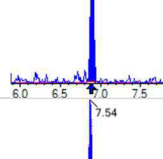
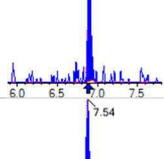
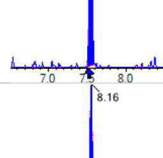
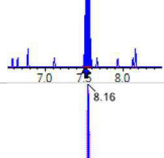
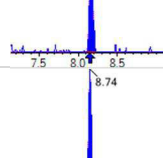
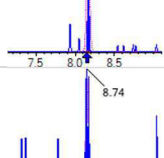
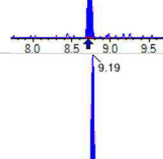
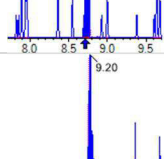
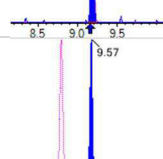
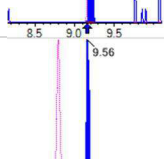
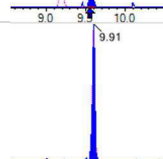
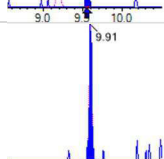
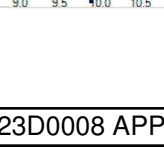
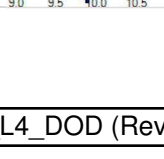
Standard ID: 23D0348

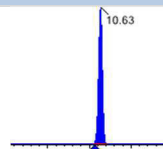
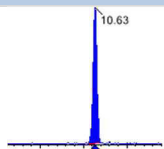
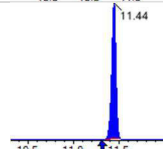
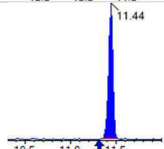
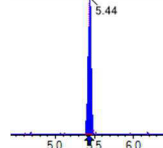
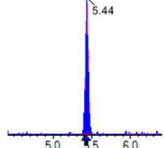
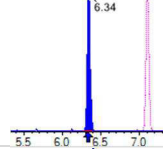
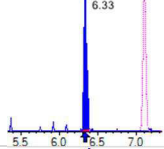
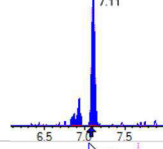
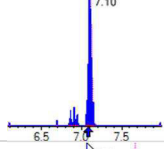
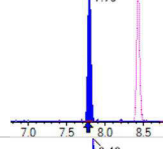
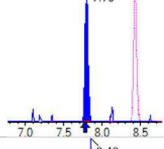
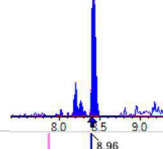
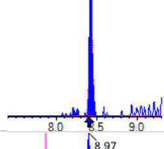
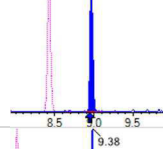
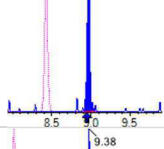
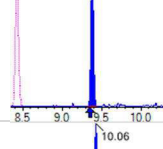
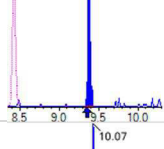
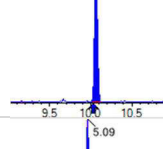
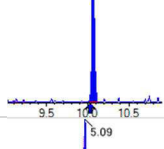
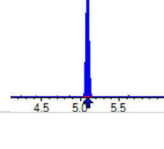
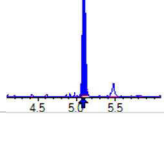
ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.395	-1.3	30.00
PFPEA	0.200	0.203	1.6	30.00
PFHXA	0.100	0.106	5.9	30.00
PFHPA	0.100	0.0987	-1.3	30.00
PFOA	0.100	0.117	16.6	30.00
PFNA	0.100	0.0925	-7.5	30.00
PFDA	0.100	0.0937	-6.3	30.00
PFUnA	0.100	0.0929	-7.1	30.00
PFDOA	0.100	0.0901	-9.9	30.00
PFTRDA	0.100	0.102	1.8	30.00
PFTEDA	0.100	0.103	2.9	30.00
PFBS	0.0885	0.0785	-11.3	30.00
PFPEs	0.0940	0.104	10.7	30.00
PFHXS	0.0915	0.0985	7.7	30.00
PFHPS	0.0955	0.0964	0.9	30.00
PFOS	0.0930	0.0963	3.6	30.00
PFNS	0.0960	0.0994	3.6	30.00
PFDS	0.0965	0.0945	-2.1	30.00
PFDOS	0.0970	0.0967	-0.3	30.00
4:2FTS	0.375	0.409	9.0	30.00
6:2FTS	0.380	0.415	9.1	30.00
8:2FTS	0.384	0.423	10.2	30.00
PFOSA	0.100	0.111	10.9	30.00
NMeFOSA	0.400	0.362	-9.6	30.00
NEtFOSA	0.400	0.365	-8.6	30.00
NMeFOSAA	0.100	0.0429	-57.1 *	30.00
NEtFOSAA	0.100	0.0764	-23.6	30.00
NMeFOSE	0.400	0.323	-19.2	30.00

**LOW-CONCENTRATION CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling / 6069**Calibration:** 2316009**Laboratory ID:** SC01534-LCV1**Sequence:** SC01534**Standard ID:** 23D0348

NEtFOSE	0.400	0.365	-8.8	30.00
HFPO-DA	0.200	0.168	-16.1	30.00
ADONA	0.189	0.184	-2.6	30.00
PFEESA	0.178	0.174	-2.0	30.00
PFMPA	0.200	0.187	-6.4	30.00
PFMBA	0.200	0.197	-1.5	30.00
NFDHA	0.200	0.172	-14.1	30.00
9CL-PF3ONS	0.187	0.202	7.8	30.00
11CL-PF3OUDS	0.189	0.201	6.3	30.00
3:3FTCA	0.400	0.374	-6.5	30.00
5:3FTCA	0.400	0.457	14.2	30.00
7:3FTCA	0.400	0.425	6.2	30.00

\* Values outside of QC limits

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 69247	(3.22, 1.00) (0.00, N/A, 0.0)	338.4	N/A 0.0 0.0	0.3948 [0.4000]	98.7%			
PFPeA	(263.0 / 219.0) 51428 (263.0 / 69.0) 728	(4.46, 1.00) (0.00, N/A, 0.5)	205.8 44.8	0.0141 120.6 121.5	0.2031 [0.2000]	101.6%			
PFHxA	(313.0 / 269.0) 33078 (313.0 / 119.0) 3743	(5.40, 1.00) (0.00, N/A, 0.0)	72.2 96.4	0.1132 135.6 130.9	0.1059 [0.1000]	105.9%			
PFHpA	(363.0 / 319.0) 24666 (363.0 / 169.0) 9508	(6.20, 1.00) (0.00, N/A, -0.2)	81.9 84.8	0.3855 139.0 139.9	0.0987 [0.1000]	98.7%			
PFOA	(413.0 / 369.0) 37906 (413.0 / 169.0) 11769	(6.89, 1.00) (0.00, N/A, -0.1)	67.6 38.7	0.3105 104.0 105.9	0.1166 [0.1000]	116.6%			
PFNA	(463.0 / 419.0) 21845 (463.0 / 169.0) 6067	(7.54, 1.00) (0.00, N/A, -0.1)	122.4 68.0	0.2777 137.1 140.0	0.0925 [0.1000]	92.5%			
PFDA	(513.0 / 469.0) 24427 (513.0 / 169.0) 2984	(8.16, 1.00) (0.00, N/A, 0.0)	106.0 72.9	0.1222 124.5 132.5	0.0937 [0.1000]	93.7%			
PFUnA	(563.0 / 519.0) 21669 (563.0 / 169.0) 1904	(8.74, 1.00) (0.00, N/A, -0.2)	127.8 69.1	0.0879 87.1 80.3	0.0929 [0.1000]	92.9%			
PFDoA	(613.0 / 569.0) 19316 (613.0 / 169.0) 3158	(9.19, 1.00) (0.00, N/A, -0.3)	187.1 32.5	0.1635 114.8 111.7	0.0901 [0.1000]	90.1%			
PFTTrDA	(663.0 / 619.0) 23280 (663.0 / 169.0) 5905	(9.57, 1.04) (N/A, 0.02, 0.2)	173.0 106.2	0.2536 123.1 117.0	0.1018 [0.1000]	101.8%			
PFTeDA	(713.0 / 669.0) 29084 (713.0 / 169.0) 3154	(9.91, 1.00) (0.00, N/A, 0.1)	221.7 52.3	0.1085 55.0 57.0	0.1029 [0.1000]	102.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) 213315 (813.0 / 169.0) 30516	(10.63, 1.96) (N/A, 0.08, 0.0)	632.2 286.8	0.1431 95.8 97.2	0.4743 [0.4000]	118.6%			
PFODA	(913.0 / 869.0) 122028 (913.0 / 169.0) 31225	(11.44, 2.10) (N/A, 0.13, 0.1)	216.6 110.8	0.2559 97.2 93.7	0.4233 [0.4000]	105.8%			
PFBS	(299.0 / 80.0) 33842 (299.0 / 99.0) 28739	(5.44, 1.00) (0.00, N/A, 0.3)	206.8 160.2	0.8492 123.5 113.5	0.0785 [0.0885]	88.7%			
PFPeS	(349.0 / 80.0) 70953 (349.0 / 99.0) 21566	(6.34, 0.89) (N/A, 0.01, 0.3)	408.8 116.7	0.3039 85.9 83.5	0.1041 [0.0938]	110.9%			
PFHxS	(399.0 / 80.0) 55814 (399.0 / 99.0) 17494	(7.11, 1.00) (0.00, N/A, 0.4)	2819.0 64.1	0.3134 88.6 91.5	0.0985 [0.0911]	108.1%			M4 ABK 4/19/23
PFHpS	(449.0 / 80.0) 49877 (449.0 / 99.0) 16316	(7.79, 0.92) (N/A, 0.02, -0.2)	319.6 104.1	0.3271 117.1 114.9	0.0964 [0.0951]	101.3%			
PFOS	(499.0 / 80.0) 71569 (499.0 / 99.0) 17181	(8.42, 1.00) (0.00, N/A, -0.2)	738.3 1000.8	0.2401 104.2 96.4	0.0963 [0.0927]	103.8%			M4 ABK 4/19/23
PFNS	(549.0 / 80.0) 58261 (549.0 / 99.0) 12158	(8.96, 1.06) (N/A, 0.02, -0.2)	317.2 82.9	0.2087 84.6 87.3	0.0994 [0.0960]	103.6%			
PFDS	(599.0 / 80.0) 63673 (599.0 / 99.0) 13685	(9.38, 1.11) (N/A, 0.03, 0.2)	194.7 116.1	0.2149 93.8 97.0	0.0945 [0.0963]	98.1%			
PFDoS	(699.0 / 80.0) 73576 (699.0 / 99.0) 19327	(10.06, 1.19) (N/A, 0.03, -0.2)	450.8 200.6	0.2627 115.2 112.6	0.0967 [0.0970]	99.7%			
4:2FTS	(327.0 / 307.0) 41022 (327.0 / 81.0) 28102	(5.09, 1.00) (0.00, N/A, -0.1)	390.0 127.9	0.6850 105.3 107.4	0.4087 [0.3738]	109.3%			



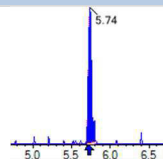
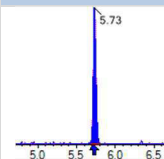
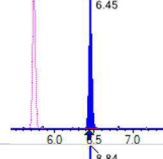
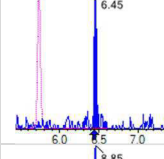
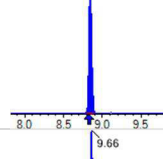
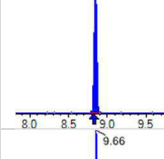
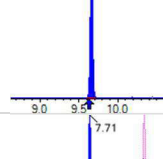
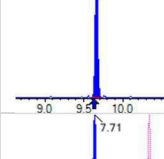
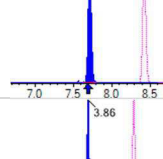
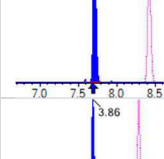
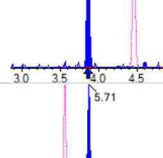
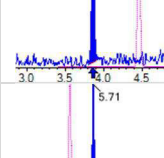
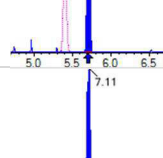
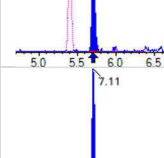
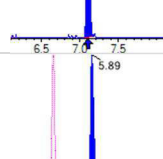
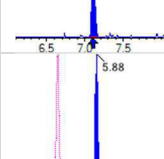
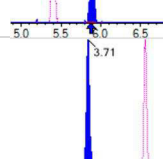
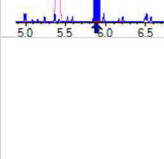
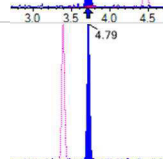
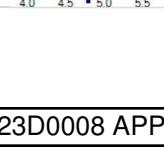


Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01534-LCV1  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18C (2)  
Acquired: 2023/04/18 - 21:36

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 24324 (427.0 / 81.0) 15815	(6.58, 1.00) (0.00, N/A, -0.1)	106.7 119.2	0.6502 88.1 89.0	0.4146 [0.3796]	109.2%			
8:2FTS	(527.0 / 507.0) 26102 (527.0 / 81.0) 15551	(7.85, 1.00) (0.00, N/A, 0.0)	140.6 158.5	0.5958 88.1 87.5	0.4233 [0.3833]	110.4%			
PFSBA	(297.9 / 78.0) 304282 (297.9 / 278.0) 429	(5.68, 0.64) (N/A, 0.00, 0.8)	286.4 20.2	0.0014 88.3 96.2	0.3999 [0.4000]	100.0%			
PFHxSA	(397.9 / 78.0) 203059 (397.9 / 378.0) 1195	(7.55, 0.85) (N/A, 0.00, 0.1)	254.9 26.4	0.0059 139.1 156.7	0.3641 [0.4000]	91.0%			
PFOSA	(498.0 / 78.0) 60428 (498.0 / 478.0) 825	(8.91, 1.00) (0.00, N/A, -0.3)	211.9 212.2	0.0136 54.9 55.5	0.1109 [0.1000]	110.9%			
NMeFOSA	(512.0 / 219.0) 74152 (512.0 / 169.0) 64176	(9.85, 1.00) (0.00, N/A, 0.8)	34913.4 2641.1	0.8655 115.6 113.2	0.3616 [0.4000]	90.4%			
NEtFOSA	(526.0 / 219.0) 85182 (526.0 / 169.0) 101422	(10.06, 1.00) (0.00, N/A, 1.4)	41833.5 18379.0	1.1907 101.8 97.6	0.3654 [0.4000]	91.4%			
NMeFOSAA	(570.0 / 419.0) 12360 (570.0 / 483.0) 6508	(8.11, 1.00) (0.00, N/A, 6.6)	888.3 228544.1	0.5265 110.6 103.1	0.0429 [0.1000]	42.9%			CV1,MI5 DG 2023-04-19
NEtFOSAA	(584.0 / 419.0) 7392 (584.0 / 526.0) 6023	(8.38, 1.00) (0.01, N/A, 0.1)	286.1 1998.1	0.8148 136.9 151.0	0.0764 [0.1000]	76.4%			IR2,MI5 DG 2023-04-19
NMeFOSE	(616.0 / 59.0) 23812	(9.77, 1.00) (0.01, N/A, 0.0)	250.0	N/A 0.0 0.0	0.3232 [0.4000]	80.8%			
NEtFOSE	(630.0 / 59.0) 29602	(9.99, 1.00) (0.01, N/A, 0.0)	278.0	N/A 0.0 0.0	0.3647 [0.4000]	91.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 13110 (285.0 / 185.0) 80202	(5.74, 1.00) (0.00, N/A, 0.2)	120.2 267.4	6.1178 129.8 122.2	0.1679 [0.2000]	83.9%			
ADONA	(377.0 / 85.0) 84768 (377.0 / 251.0) 10647	(6.45, 1.13) (N/A, 0.01, 0.0)	158.0 39.4	0.1256 115.9 116.7	0.1842 [0.1885]	97.7%			
9CI-PF3ONS	(531.0 / 351.0) 181367 (533.0 / 353.0) 65116	(8.84, 1.54) (N/A, 0.02, -0.2)	235.6 448.9	0.3590 110.0 112.3	0.2016 [0.1867]	108.0%			
11CI-PF3OUDS	(631.0 / 451.0) 159378 (633.0 / 453.0) 67593	(9.66, 1.68) (N/A, 0.03, 0.1)	805.6 347.7	0.4241 115.4 118.3	0.2009 [0.1886]	106.5%			
PFECHS	(461.0 / 98.9) 207594 (461.0 / 381.2) 79649	(7.71, 0.92) (N/A, 0.02, 0.0)	225.0 364.1	0.3837 100.6 106.3	0.3904 [0.3695]	105.6%			
3:3FTCA	(241.0 / 177.0) 3481 (241.0 / 117.0) 5552	(3.86, 0.87) (N/A, 0.00, 0.1)	166.2 54.2	1.5949 95.9 93.8	0.3741 [0.4000]	93.5%			
5:3FTCA	(341.0 / 236.7) 18321 (341.0 / 217.0) 33861	(5.71, 1.06) (N/A, 0.01, 0.4)	134.2 150.4	1.8482 102.6 104.5	0.4569 [0.4000]	114.2%			
7:3FTCA	(441.0 / 317.0) 20226 (441.0 / 337.0) 22485	(7.11, 1.32) (N/A, 0.01, 0.2)	108.3 210.3	1.1117 92.8 95.7	0.4246 [0.4000]	106.2%			
PFEESA	(315.0 / 135.0) 52107 (315.0 / 83.0) 15854	(5.89, 1.09) (N/A, 0.02, 0.2)	172.2 116.7	0.3043 107.0 102.9	0.1744 [0.1785]	97.7%			
PFMPA	(229.0 / 85.0) 12130	(3.71, 0.83) (N/A, 0.00, 0.0)	229.9	N/A 0.0 0.0	0.1873 [0.2000]	93.6%			
PFMBA	(279.0 / 85.0) 35931	(4.79, 1.07) (N/A, 0.01, 0.0)	276.6	N/A 0.0 0.0	0.1969 [0.2000]	98.5%			

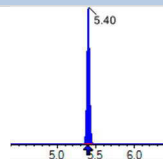
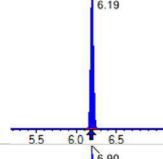
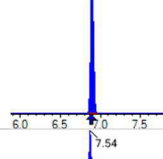
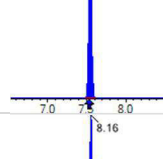
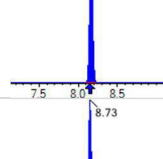
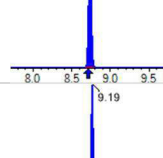
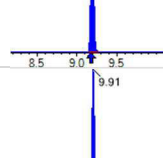
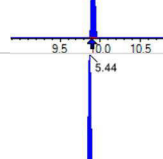
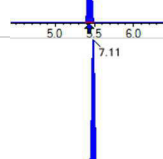
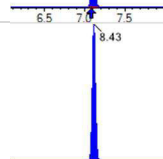
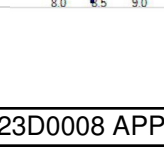


Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01534-LCV1  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18C (2)  
Acquired: 2023/04/18 - 21:36

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 28613 (295.0 / 85.0) 32700	(5.31, 0.98) (N/A, 0.01, 0.1)	225.7 212.2	1.1428 117.5 122.2	0.1718 [ 0.2000 ]	85.9%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 0.1000 ]	N/A%			CV2.
13C3_PFBA_IIS	(216.0 / 172.0) 194834	(3.22, N/A) (N/A, 0.00, N/A)	621.7	N/A	0.9455 [ 1.0000 ]	94.5% { 100.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 139626	(5.40, N/A) (N/A, 0.00, N/A)	493.8	N/A	0.9631 [ 1.0000 ]	96.3% { 99.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 315160	(6.90, N/A) (N/A, 0.01, N/A)	301.5	N/A	1.1558 [ 1.0000 ]	115.6% { 114.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 247336	(7.55, N/A) (N/A, 0.02, N/A)	498.1	N/A	0.9881 [ 1.0000 ]	98.8% { 104.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 238560	(8.16, N/A) (N/A, 0.02, N/A)	435.9	N/A	1.0047 [ 1.0000 ]	100.5% { 98.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 381696	(7.11, N/A) (N/A, 0.02, N/A)	203.4	N/A	0.9995 [ 1.0000 ]	99.9% { 102.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 482154	(8.43, N/A) (N/A, 0.03, N/A)	470.2	N/A	1.0112 [ 1.0000 ]	101.1% { 81.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1626571	(3.22, N/A) (N/A, 0.00, N/A)	1346.7	N/A	7.7933 [ 8.0000 ]	97.4% { 100.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1091803	(4.46, N/A) (N/A, 0.00, N/A)	1208.2	N/A	3.9547 [ 4.0000 ]	98.9% { 98.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 594664	(5.40, N/A) (N/A, 0.01, N/A)	727.6	N/A	1.9022 [2.0000]	95.1% {99.9%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 470867	(6.19, N/A) (N/A, 0.01, N/A)	865.2	N/A	1.9083 [2.0000]	95.4% {106.3%}			
13C8_PFOA_EIS	(421.0 / 376.0) 651156	(6.90, N/A) (N/A, 0.02, N/A)	521.0	N/A	1.7363 [2.0000]	86.8% {104.3%}			
13C9_PFNA_EIS	(472.0 / 427.0) 250314	(7.54, N/A) (N/A, 0.02, N/A)	780.2	N/A	0.9749 [1.0000]	97.5% {105.0%}			
13C6_PFDA_EIS	(519.0 / 474.0) 269564	(8.16, N/A) (N/A, 0.02, N/A)	297.9	N/A	0.9524 [1.0000]	95.2% {97.7%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 257380	(8.73, N/A) (N/A, 0.02, N/A)	297.5	N/A	0.9452 [1.0000]	94.5% {101.9%}			
13C2_PFDaA_EIS	(615.0 / 570.0) 230765	(9.19, N/A) (N/A, 0.02, N/A)	769.0	N/A	0.9992 [1.0000]	99.9% {108.9%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 306263	(9.91, N/A) (N/A, 0.03, N/A)	385.9	N/A	1.0751 [1.0000]	107.5% {113.9%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1413862	(5.44, N/A) (N/A, 0.01, N/A)	532.0	N/A	1.9469 [2.0000]	97.3% {98.5%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 593189	(7.11, N/A) (N/A, 0.02, N/A)	554.6	N/A	1.9373 [2.0000]	96.9% {97.6%}			
13C8_PFOS_EIS	(507.0 / 80.0) 1176217	(8.43, N/A) (N/A, 0.02, N/A)	536.6	N/A	1.9531 [2.0000]	97.7% {82.9%}			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-LCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (2)  
 Acquired: 2023/04/18 - 21:36

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 125432	( 5.09, N/A ) ( N/A, 0.01, N/A )	493.7	N/A	3.5836 [ 4.0000 ]	89.6% { 89.8% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 157940	( 6.58, N/A ) ( N/A, 0.01, N/A )	340.4	N/A	3.6376 [ 4.0000 ]	90.9% { 92.8% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 178627	( 7.85, N/A ) ( N/A, 0.02, N/A )	318.4	N/A	3.6420 [ 4.0000 ]	91.0% { 104.2% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 1305703	( 8.91, N/A ) ( N/A, 0.00, N/A )	1231.7	N/A	1.9318 [ 2.0000 ]	96.6% { 98.0% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 420348	( 9.85, N/A ) ( N/A, 0.00, N/A )	465.9	N/A	2.0088 [ 2.0000 ]	100.4% { 102.8% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 433114	( 10.07, N/A ) ( N/A, 0.00, N/A )	947.7	N/A	2.1070 [ 2.0000 ]	105.4% { 109.9% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 480532	( 8.11, N/A ) ( N/A, 0.02, N/A )	381.9	N/A	3.8213 [ 4.0000 ]	95.5% { 98.9% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 495443	( 8.37, N/A ) ( N/A, 0.02, N/A )	518.2	N/A	4.9333 [ 4.0000 ]	123.3% { 126.0% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1292296	( 9.76, N/A ) ( N/A, 0.00, N/A )	1093.8	N/A	19.4927 [ 20.0000 ]	97.5% { 105.3% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1600328	( 9.98, N/A ) ( N/A, 0.00, N/A )	1337.3	N/A	19.4740 [ 20.0000 ]	97.4% { 102.5% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1240603	( 5.73, N/A ) ( N/A, 0.01, N/A )	778.7	N/A	7.7104 [ 8.0000 ]	96.4% { 98.6% }			

# 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: 23D0353

Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810  
 Calibration: 2316009  
 Sequence: SC01534

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01534-CCV1	PFBA	20.0	18.8	94.0	ng/mL	+/- 30.00%
	PFPEA	10.0	9.30	93.0	ng/mL	+/- 30.00%
	PFHXA	5.00	4.85	97.1	ng/mL	+/- 30.00%
	PFHPA	5.00	4.72	94.4	ng/mL	+/- 30.00%
	PFOA	5.00	4.64	92.9	ng/mL	+/- 30.00%
	PFNA	5.00	4.84	96.7	ng/mL	+/- 30.00%
	PFDA	5.00	4.59	91.9	ng/mL	+/- 30.00%
	PFUnA	5.00	4.71	94.2	ng/mL	+/- 30.00%
	PFDOA	5.00	4.67	93.4	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.69	93.8	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.66	93.3	ng/mL	+/- 30.00%
	PFBS	4.42	4.08	92.2	ng/mL	+/- 30.00%
	PFPEs	4.70	4.45	94.7	ng/mL	+/- 30.00%
	PFHXS	4.58	4.07	88.9	ng/mL	+/- 30.00%
	PFHPS	4.78	3.63	75.8	ng/mL	+/- 30.00%
	PFOS	4.65	4.05	87.1	ng/mL	+/- 30.00%
	PFNS	4.80	3.67	76.5	ng/mL	+/- 30.00%
	PFDS	4.82	3.79	78.7	ng/mL	+/- 30.00%
	PFDOS	4.85	3.76	77.5	ng/mL	+/- 30.00%
	4:2FTS	18.8	17.3	92.3	ng/mL	+/- 30.00%
	6:2FTS	19.0	18.0	94.5	ng/mL	+/- 30.00%
	8:2FTS	19.2	19.1	99.7	ng/mL	+/- 30.00%
	PFOSA	5.00	4.67	93.3	ng/mL	+/- 30.00%
	NMeFOSA	20.0	18.5	92.3	ng/mL	+/- 30.00%
	NEtFOSA	20.0	19.2	96.0	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.07	101	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.34	107	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.4	91.9	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.5	92.4	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.15	91.5	ng/mL	+/- 30.00%



# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Instrument ID:	Saphira	Calibration:	2316009
Standard ID:	23D0353	Sequence:	SC01534

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01534-CCV1	ADONA	9.45	9.56	101	ng/mL	+/- 30.00%
	PFEESA	8.90	8.64	97.1	ng/mL	+/- 30.00%
	PFMPA	10.0	9.00	90.0	ng/mL	+/- 30.00%
	PFMBA	10.0	9.49	94.9	ng/mL	+/- 30.00%
	NFDHA	10.0	9.98	99.8	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	9.84	105	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.44	99.9	ng/mL	+/- 30.00%
	3:3FTCA	20.0	17.8	89.0	ng/mL	+/- 30.00%
	5:3FTCA	20.0	20.2	101	ng/mL	+/- 30.00%
	7:3FTCA	20.0	20.0	99.8	ng/mL	+/- 30.00%



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (3)  
 Acquired: 2023/04/18 - 21:52

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 3276966	(3.22, 1.00) (0.00, N/A, 0.0)	8337.4	N/A 0.0 0.0	18.8066 [ 20.0000 ]	94.0%			
PFPeA	(263.0 / 219.0) 2396452 (263.0 / 69.0) 27912	(4.46, 1.00) (0.00, N/A, 0.0)	1189.8 321.0	0.0116 99.3 100.0	9.2986 [ 10.0000 ]	93.0%			
PFHxA	(313.0 / 269.0) 1517617 (313.0 / 119.0) 131218	(5.39, 1.00) (0.00, N/A, 0.0)	693.8 370.8	0.0865 103.6 100.0	4.8550 [ 5.0000 ]	97.1%			
PFHpA	(363.0 / 319.0) 1109954 (363.0 / 169.0) 305835	(6.18, 1.00) (0.00, N/A, -0.1)	989.1 661.6	0.2755 99.4 100.0	4.7215 [ 5.0000 ]	94.4%			
PFOA	(413.0 / 369.0) 1447276 (413.0 / 169.0) 424201	(6.88, 1.00) (0.00, N/A, 0.0)	516.2 411.8	0.2931 98.2 100.0	4.6443 [ 5.0000 ]	92.9%			
PFNA	(463.0 / 419.0) 1088092 (463.0 / 169.0) 215863	(7.52, 1.00) (0.00, N/A, 0.0)	735.3 465.7	0.1984 98.0 100.0	4.8355 [ 5.0000 ]	96.7%			
PFDA	(513.0 / 469.0) 1226114 (513.0 / 169.0) 113051	(8.14, 1.00) (0.00, N/A, 0.0)	605.1 377.1	0.0922 94.0 100.0	4.5947 [ 5.0000 ]	91.9%			
PFUnA	(563.0 / 519.0) 1078014 (563.0 / 169.0) 118054	(8.71, 1.00) (0.00, N/A, 0.0)	414.9 325.6	0.1095 108.5 100.0	4.7094 [ 5.0000 ]	94.2%			
PFDoA	(613.0 / 569.0) 918852 (613.0 / 169.0) 134468	(9.17, 1.00) (0.00, N/A, 0.2)	1223.6 262.4	0.1463 102.7 100.0	4.6693 [ 5.0000 ]	93.4%			
PFTrDA	(663.0 / 619.0) 983795 (663.0 / 169.0) 213256	(9.54, 1.04) (N/A, 0.00, 0.0)	1232.9 758.5	0.2168 105.2 100.0	4.6882 [ 5.0000 ]	93.8%			
PFTeDA	(713.0 / 669.0) 1157785 (713.0 / 169.0) 220195	(9.88, 1.00) (0.00, N/A, 0.1)	889.5 463.0	0.1902 96.4 100.0	4.6647 [ 5.0000 ]	93.3%			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (3)  
 Acquired: 2023/04/18 - 21:52

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) 8898876 ( 813.0 / 169.0 ) 1309944	( 10.56 , 1.95 ) ( N/A , 0.00 , 0.0 )	1991.6 1125.3	0.1472 98.6 100.0	19.4832 [ 20.0000 ]	97.4%			
PFODA	( 913.0 / 869.0 ) 5174035 ( 913.0 / 169.0 ) 1413608	( 11.31 , 2.08 ) ( N/A , 0.00 , 0.0 )	1080.2 742.2	0.2732 103.7 100.0	17.6729 [ 20.0000 ]	88.4%			
PFBS	( 299.0 / 80.0 ) 1785604 ( 299.0 / 99.0 ) 1335802	( 5.43 , 1.00 ) ( 0.00 , N/A , 0.1 )	12410.9 586.8	0.7481 108.8 100.0	4.0761 [ 4.4237 ]	92.1%			
PFPeS	( 349.0 / 80.0 ) 3107717 ( 349.0 / 99.0 ) 1131832	( 6.33 , 0.89 ) ( N/A , 0.00 , 0.1 )	971.0 938.6	0.3642 102.9 100.0	4.4497 [ 4.6919 ]	94.8%			
PFHxS	( 399.0 / 80.0 ) 2364675 ( 399.0 / 99.0 ) 810270	( 7.09 , 1.00 ) ( 0.00 , N/A , 0.0 )	53214.7 164115.5	0.3427 96.8 100.0	4.0734 [ 4.5549 ]	89.4%			
PFHpS	( 449.0 / 80.0 ) 2262769 ( 449.0 / 99.0 ) 644272	( 7.77 , 0.92 ) ( N/A , 0.00 , 0.0 )	828.3 659.8	0.2847 101.9 100.0	3.6252 [ 4.7570 ]	76.2%			
PFOS	( 499.0 / 80.0 ) 3629313 ( 499.0 / 99.0 ) 903364	( 8.40 , 1.00 ) ( 0.00 , N/A , 0.0 )	5228.4 6229.7	0.2489 108.1 100.0	4.0507 [ 4.6375 ]	87.3%			
PFNS	( 549.0 / 80.0 ) 2592509 ( 549.0 / 99.0 ) 619384	( 8.94 , 1.06 ) ( N/A , 0.00 , 0.0 )	1306.1 771.6	0.2389 96.9 100.0	3.6697 [ 4.7994 ]	76.5%			
PFDS	( 599.0 / 80.0 ) 3083725 ( 599.0 / 99.0 ) 683478	( 9.36 , 1.11 ) ( N/A , 0.00 , 0.0 )	1172.1 698.1	0.2216 96.7 100.0	3.7946 [ 4.8155 ]	78.8%			
PFDoS	( 699.0 / 80.0 ) 3449138 ( 699.0 / 99.0 ) 804543	( 10.03 , 1.19 ) ( N/A , 0.00 , 0.0 )	1393.8 966.4	0.2333 102.3 100.0	3.7585 [ 4.8478 ]	77.5%			
4:2FTS	( 327.0 / 307.0 ) 1939081 ( 327.0 / 81.0 ) 1237154	( 5.09 , 1.00 ) ( 0.00 , N/A , 0.1 )	1109.8 984.8	0.6380 98.1 100.0	17.3494 [ 18.6906 ]	92.8%			

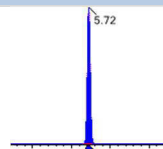
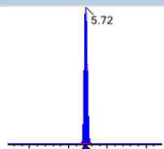
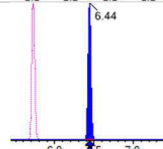
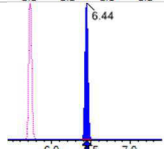
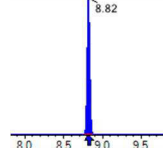
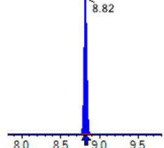
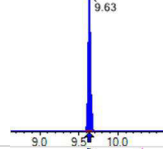
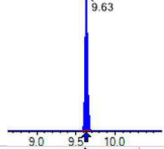
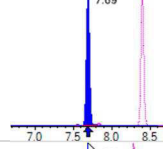
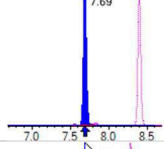
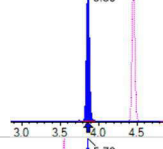
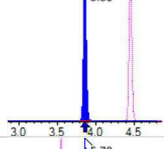
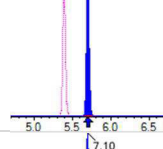
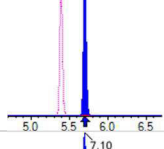
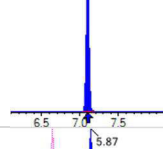
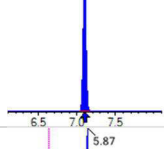
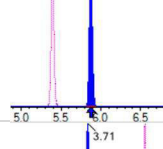
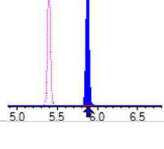
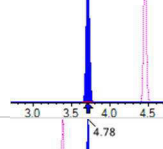
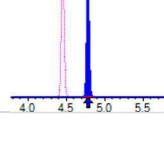


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (3)  
 Acquired: 2023/04/18 - 21:52

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 1135131 ( 427.0 / 81.0 ) 829333	( 6.57 , 1.00 ) ( 0.00 , N/A , 0.0 )	750.7 624.3	0.7306 99.0 100.0	17.9608 [ 18.9808 ]	94.6%			
8:2FTS	( 527.0 / 507.0 ) 1133289 ( 527.0 / 81.0 ) 771639	( 7.83 , 1.00 ) ( 0.00 , N/A , 0.0 )	510.8 499.0	0.6809 100.6 100.0	19.1474 [ 19.1658 ]	99.9%			
PFSBA	( 297.9 / 78.0 ) 14571208 ( 297.9 / 278.0 ) 21377	( 5.68 , 0.64 ) ( N/A , 0.00 , 0.0 )	920.1 170.9	0.0015 91.8 100.0	18.7663 [ 20.0000 ]	93.8%			
PFHxSA	( 397.9 / 78.0 ) 10317381 ( 397.9 / 378.0 ) 38740	( 7.55 , 0.85 ) ( N/A , 0.00 , 0.0 )	947.1 154.9	0.0038 88.8 100.0	18.1260 [ 20.0000 ]	90.6%			
PFOSA	( 498.0 / 78.0 ) 2595541 ( 498.0 / 478.0 ) 63809	( 8.90 , 1.00 ) ( 0.00 , N/A , 0.1 )	791.9 211.8	0.0246 99.0 100.0	4.6659 [ 5.0000 ]	93.3%			
NMeFOSA	( 512.0 / 219.0 ) 3685053 ( 512.0 / 169.0 ) 2818162	( 9.85 , 1.00 ) ( 0.00 , N/A , 1.0 )	3969.6 4069.6	0.7648 102.1 100.0	18.4641 [ 20.0000 ]	92.3%			
NEtFOSA	( 526.0 / 219.0 ) 4074529 ( 526.0 / 169.0 ) 4972971	( 10.07 , 1.00 ) ( 0.00 , N/A , 1.4 )	9288.8 9564.7	1.2205 104.4 100.0	19.2090 [ 20.0000 ]	96.0%			
NMeFOSAA	( 570.0 / 419.0 ) 548134 ( 570.0 / 483.0 ) 280001	( 8.09 , 1.00 ) ( 0.00 , N/A , 0.0 )	474094.7 5933094.9	0.5108 107.4 100.0	5.0697 [ 5.0000 ]	101.4%			
NEtFOSAA	( 584.0 / 419.0 ) 470833 ( 584.0 / 526.0 ) 254014	( 8.36 , 1.00 ) ( 0.01 , N/A , 0.1 )	17726.8 7572.7	0.5395 90.6 100.0	5.3381 [ 5.0000 ]	106.8%			
NMeFOSE	( 616.0 / 59.0 ) 1285616	( 9.77 , 1.00 ) ( 0.01 , N/A , 0.0 )	31824304.9	N/A 0.0 0.0	18.3745 [ 20.0000 ]	91.9%			
NEtFOSE	( 630.0 / 59.0 ) 1463446	( 10.00 , 1.00 ) ( 0.01 , N/A , 0.0 )	213612.2	N/A 0.0 0.0	18.4751 [ 20.0000 ]	92.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 724144 (285.0 / 185.0) 3625367	(5.72, 1.00) (0.00, N/A, 0.0)	789.8 1219.0	5.0064 106.2 100.0	9.1458 [ 10.0000 ]	91.5%			
ADONA	(377.0 / 85.0) 4462615 (377.0 / 251.0) 480461	(6.44, 1.13) (N/A, 0.00, 0.0)	705.5 303.0	0.1077 99.3 100.0	9.5638 [ 9.4270 ]	101.5%			
9CI-PF3ONS	(531.0 / 351.0) 8976936 (533.0 / 353.0) 2871093	(8.82, 1.54) (N/A, 0.00, 0.0)	773.9 582.7	0.3198 98.0 100.0	9.8414 [ 9.3325 ]	105.5%			
11CI-PF3OUDS	(631.0 / 451.0) 7592266 (633.0 / 453.0) 2720798	(9.63, 1.68) (N/A, 0.00, 0.0)	1833.1 1721.8	0.3584 97.5 100.0	9.4420 [ 9.4321 ]	100.1%			
PFECHS	(461.0 / 98.9) 10218837 (461.0 / 381.2) 3688200	(7.69, 0.92) (N/A, 0.00, 0.1)	648.6 594.1	0.3609 94.6 100.0	15.9362 [ 18.4771 ]	86.2%			
3:3FTCA	(241.0 / 177.0) 168643 (241.0 / 117.0) 286846	(3.86, 0.87) (N/A, 0.00, 0.0)	949.0 1154.4	1.7009 102.3 100.0	17.8027 [ 20.0000 ]	89.0%			
5:3FTCA	(341.0 / 236.7) 808779 (341.0 / 217.0) 1429963	(5.70, 1.06) (N/A, 0.00, 0.0)	794.1 780.5	1.7681 98.2 100.0	20.1577 [ 20.0000 ]	100.8%			
7:3FTCA	(441.0 / 317.0) 950952 (441.0 / 337.0) 1104853	(7.10, 1.32) (N/A, 0.00, 0.0)	756.6 692.7	1.1618 97.0 100.0	19.9525 [ 20.0000 ]	99.8%			
PFEESA	(315.0 / 135.0) 2583435 (315.0 / 83.0) 763980	(5.87, 1.09) (N/A, 0.00, -0.1)	793.0 1060.5	0.2957 104.0 100.0	8.6429 [ 8.9246 ]	96.8%			
PFMPA	(229.0 / 85.0) 593561	(3.71, 0.83) (N/A, 0.00, 0.0)	1163.5	N/A 0.0 0.0	9.0034 [ 10.0000 ]	90.0%			
PFMBA	(279.0 / 85.0) 1763439	(4.78, 1.07) (N/A, 0.00, 0.0)	1381.6	N/A 0.0 0.0	9.4948 [ 10.0000 ]	94.9%			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (3)  
 Acquired: 2023/04/18 - 21:52

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 1663252 (295.0 / 85.0) 1555869	(5.30, 0.98) (N/A, 0.00, 0.0)	1395.9 1048.9	0.9354 96.2 100.0	9.9788 [ 10.0000 ]	99.8%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 5.0000 ]	N/A%			CV2.
13C3_PFBA_IIS	(216.0 / 172.0) 194489	(3.22, N/A) (N/A, 0.00, N/A)	578.2	N/A	0.9438 [ 1.0000 ]	94.4% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 140557	(5.40, N/A) (N/A, 0.00, N/A)	413.3	N/A	0.9695 [ 1.0000 ]	97.0% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 275704	(6.88, N/A) (N/A, 0.00, N/A)	422.2	N/A	1.0111 [ 1.0000 ]	101.1% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 237750	(7.53, N/A) (N/A, 0.00, N/A)	413.7	N/A	0.9498 [ 1.0000 ]	95.0% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 243043	(8.14, N/A) (N/A, 0.00, N/A)	144.6	N/A	1.0236 [ 1.0000 ]	102.4% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 372165	(7.09, N/A) (N/A, 0.00, N/A)	475.9	N/A	0.9745 [ 1.0000 ]	97.5% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 588721	(8.40, N/A) (N/A, 0.00, N/A)	563.1	N/A	1.2347 [ 1.0000 ]	123.5% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1615929	(3.22, N/A) (N/A, 0.00, N/A)	1053.1	N/A	7.7560 [ 8.0000 ]	97.0% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1111440	(4.45, N/A) (N/A, 0.00, N/A)	1017.0	N/A	3.9992 [ 4.0000 ]	100.0% { 100.0% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (3)  
 Acquired: 2023/04/18 - 21:52

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 594993	(5.39, N/A) (N/A, 0.00, N/A)	527.1	N/A	1.8906 [ 2.0000 ]	94.5% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 443015	(6.18, N/A) (N/A, 0.00, N/A)	986.0	N/A	1.7835 [ 2.0000 ]	89.2% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 624436	(6.88, N/A) (N/A, 0.00, N/A)	452.3	N/A	1.9033 [ 2.0000 ]	95.2% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 238501	(7.53, N/A) (N/A, 0.00, N/A)	275.6	N/A	0.9664 [ 1.0000 ]	96.6% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 275902	(8.14, N/A) (N/A, 0.00, N/A)	425.9	N/A	0.9569 [ 1.0000 ]	95.7% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 252472	(8.71, N/A) (N/A, 0.00, N/A)	328.3	N/A	0.9101 [ 1.0000 ]	91.0% { 100.0% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 211838	(9.17, N/A) (N/A, 0.00, N/A)	427.6	N/A	0.9003 [ 1.0000 ]	90.0% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 268964	(9.88, N/A) (N/A, 0.00, N/A)	410.7	N/A	0.9268 [ 1.0000 ]	92.7% { 100.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1435906	(5.43, N/A) (N/A, 0.00, N/A)	310.6	N/A	2.0279 [ 2.0000 ]	101.4% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 607758	(7.09, N/A) (N/A, 0.00, N/A)	644.7	N/A	2.0357 [ 2.0000 ]	101.8% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1418227	(8.40, N/A) (N/A, 0.00, N/A)	680.5	N/A	1.9287 [ 2.0000 ]	96.4% { 100.0% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (3)  
 Acquired: 2023/04/18 - 21:52

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 139664	( 5.09, N/A ) ( N/A, 0.00, N/A )	422.6	N/A	4.0925 [ 4.0000 ]	102.3% { 100.0% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 170145	( 6.57, N/A ) ( N/A, 0.00, N/A )	525.3	N/A	4.0190 [ 4.0000 ]	100.5% { 100.0% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 171466	( 7.83, N/A ) ( N/A, 0.00, N/A )	463.4	N/A	3.5855 [ 4.0000 ]	89.6% { 100.0% }			
13C8_PFOA_EIS	( 506.0 / 78.0 ) 1332554	( 8.91, N/A ) ( N/A, 0.00, N/A )	796.4	N/A	1.6147 [ 2.0000 ]	80.7% { 100.0% }			
D3_NMeFOA_EIS	( 515.0 / 169.0 ) 409068	( 9.85, N/A ) ( N/A, 0.00, N/A )	417.1	N/A	1.6010 [ 2.0000 ]	80.1% { 100.0% }			
D5_NEtFOA_EIS	( 531.0 / 169.0 ) 394126	( 10.07, N/A ) ( N/A, 0.00, N/A )	839.5	N/A	1.5703 [ 2.0000 ]	78.5% { 100.0% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 485825	( 8.09, N/A ) ( N/A, 0.00, N/A )	515.2	N/A	3.1641 [ 4.0000 ]	79.1% { 100.0% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 393153	( 8.35, N/A ) ( N/A, 0.00, N/A )	519.0	N/A	3.2061 [ 4.0000 ]	80.2% { 100.0% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1227227	( 9.76, N/A ) ( N/A, 0.00, N/A )	1139.7	N/A	15.1604 [ 20.0000 ]	75.8% { 100.0% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 1561744	( 9.98, N/A ) ( N/A, 0.00, N/A )	1486.7	N/A	15.5644 [ 20.0000 ]	77.8% { 100.0% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1257723	( 5.72, N/A ) ( N/A, 0.00, N/A )	910.5	N/A	7.7650 [ 8.0000 ]	97.1% { 100.0% }			



# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Instrument ID: Saphira  
 Standard ID: 23D0353

Work Order: 23D0008  
 Project: Red Hill AFFF Assessment Sampling / 60697810  
 Calibration: 2316009  
 Sequence: SC01534

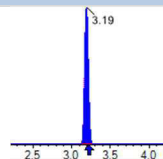
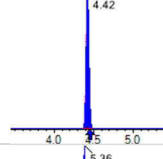
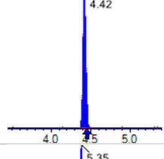
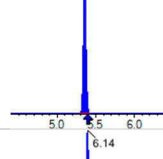
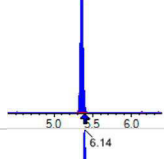
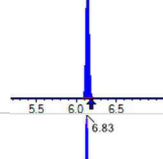
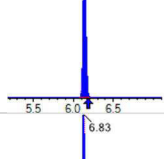
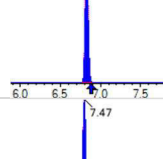
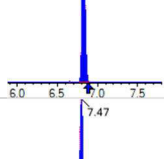
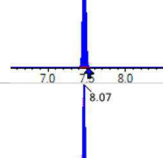
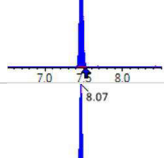
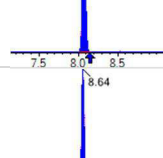
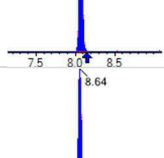
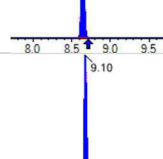
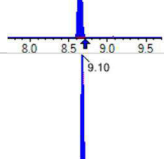
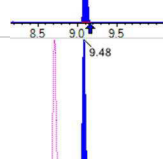
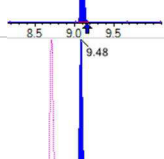
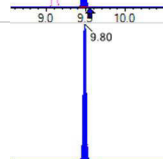
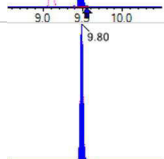
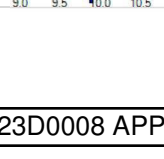
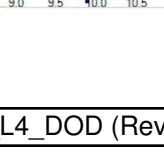
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01534-CCV2	PFBA	20.0	19.0	94.9	ng/mL	+/- 30.00%
	PFPEA	10.0	9.44	94.4	ng/mL	+/- 30.00%
	PFHXA	5.00	4.60	91.9	ng/mL	+/- 30.00%
	PFHPA	5.00	4.38	87.7	ng/mL	+/- 30.00%
	PFOA	5.00	4.41	88.3	ng/mL	+/- 30.00%
	PFNA	5.00	4.97	99.4	ng/mL	+/- 30.00%
	PFDA	5.00	4.87	97.4	ng/mL	+/- 30.00%
	PFUnA	5.00	5.04	101	ng/mL	+/- 30.00%
	PFDOA	5.00	4.44	88.7	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.47	89.5	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.62	92.4	ng/mL	+/- 30.00%
	PFBS	4.42	4.10	92.7	ng/mL	+/- 30.00%
	PFPEs	4.70	4.66	99.1	ng/mL	+/- 30.00%
	PFHXS	4.58	4.23	92.4	ng/mL	+/- 30.00%
	PFHPS	4.78	5.20	109	ng/mL	+/- 30.00%
	PFOS	4.65	4.56	98.1	ng/mL	+/- 30.00%
	PFNS	4.80	5.45	113	ng/mL	+/- 30.00%
	PFDS	4.82	5.12	106	ng/mL	+/- 30.00%
	PFDOS	4.85	4.96	102	ng/mL	+/- 30.00%
	4:2FTS	18.8	16.6	88.3	ng/mL	+/- 30.00%
	6:2FTS	19.0	18.0	94.5	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.5	96.6	ng/mL	+/- 30.00%
	PFOSA	5.00	4.83	96.5	ng/mL	+/- 30.00%
	NMeFOSA	20.0	17.8	88.9	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.1	90.7	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.54	90.8	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.92	98.3	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.3	91.3	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.5	92.5	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.51	95.1	ng/mL	+/- 30.00%

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Instrument ID:	Saphira	Calibration:	2316009
Standard ID:	23D0353	Sequence:	SC01534

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01534-CCV2	ADONA	9.45	9.39	99.4	ng/mL	+/- 30.00%
	PFEESA	8.90	7.69	86.4	ng/mL	+/- 30.00%
	PFMPA	10.0	8.94	89.4	ng/mL	+/- 30.00%
	PFMBA	10.0	9.20	92.0	ng/mL	+/- 30.00%
	NFDHA	10.0	9.22	92.2	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	9.75	104	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	8.64	91.5	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.1	90.4	ng/mL	+/- 30.00%
	5:3FTCA	20.0	18.5	92.3	ng/mL	+/- 30.00%
	7:3FTCA	20.0	17.4	87.1	ng/mL	+/- 30.00%

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 3253390	(3.19, 1.00) (0.00, N/A, 0.0)	10277.8	N/A 0.0 0.0	18.9832 [ 20.0000 ]	94.9%			
PFPeA	(263.0 / 219.0) 2412845 (263.0 / 69.0) 27283	(4.42, 1.00) (0.00, N/A, 0.1)	996.1 502.7	0.0113 96.4 97.1	9.4418 [ 10.0000 ]	94.4%			
PFHxA	(313.0 / 269.0) 1549499 (313.0 / 119.0) 133217	(5.36, 1.00) (0.00, N/A, 0.1)	819.9 617.2	0.0860 103.0 99.4	4.5972 [ 5.0000 ]	91.9%			
PFHpA	(363.0 / 319.0) 1124261 (363.0 / 169.0) 310434	(6.14, 1.00) (0.00, N/A, 0.0)	1036.0 786.3	0.2761 99.6 100.2	4.3834 [ 5.0000 ]	87.7%			
PFOA	(413.0 / 369.0) 1342283 (413.0 / 169.0) 404811	(6.83, 1.00) (0.00, N/A, 0.1)	416.5 347.2	0.3016 101.0 102.9	4.4138 [ 5.0000 ]	88.3%			
PFNA	(463.0 / 419.0) 1094670 (463.0 / 169.0) 221668	(7.47, 1.00) (0.00, N/A, -0.1)	961.4 464.3	0.2025 100.0 102.1	4.9692 [ 5.0000 ]	99.4%			
PFDA	(513.0 / 469.0) 1272945 (513.0 / 169.0) 117830	(8.07, 1.00) (0.00, N/A, 0.2)	514.3 225.3	0.0926 94.3 100.4	4.8705 [ 5.0000 ]	97.4%			
PFUnA	(563.0 / 519.0) 1143403 (563.0 / 169.0) 122463	(8.64, 1.00) (0.00, N/A, 0.0)	728.3 298.6	0.1071 106.2 97.8	5.0371 [ 5.0000 ]	100.7%			
PFDoA	(613.0 / 569.0) 858517 (613.0 / 169.0) 132822	(9.10, 1.00) (0.00, N/A, 0.1)	1715.7 526.5	0.1547 108.6 105.7	4.4357 [ 5.0000 ]	88.7%			
PFTrDA	(663.0 / 619.0) 923210 (663.0 / 169.0) 214761	(9.48, 1.04) (N/A, -0.07, 0.0)	917.2 672.5	0.2326 112.9 107.3	4.4730 [ 5.0000 ]	89.5%			
PFTeDA	(713.0 / 669.0) 1138707 (713.0 / 169.0) 212205	(9.80, 1.00) (0.00, N/A, 0.1)	648.2 640.7	0.1864 94.5 98.0	4.6187 [ 5.0000 ]	92.4%			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (22)  
 Acquired: 2023/04/19 - 02:54

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) 7617348 ( 813.0 / 169.0 ) 1170124	( 10.40 , 1.93 ) ( N/A , -0.16 , 0.0 )	4160.0 2415.0	0.1536 102.9 104.4	17.0394 [ 20.0000 ]	85.2%			
PFODA	( 913.0 / 869.0 ) 6172659 ( 913.0 / 169.0 ) 1573295	( 11.02 , 2.05 ) ( N/A , -0.29 , 0.1 )	2157.7 1740.8	0.2549 96.8 93.3	21.5414 [ 20.0000 ]	107.7%			
PFBS	( 299.0 / 80.0 ) 1756038 ( 299.0 / 99.0 ) 1258012	( 5.38 , 1.00 ) ( 0.00 , N/A , 0.0 )	512.1 584.6	0.7164 104.2 95.8	4.0956 [ 4.4237 ]	92.6%			
PFPeS	( 349.0 / 80.0 ) 3124203 ( 349.0 / 99.0 ) 1121377	( 6.27 , 0.89 ) ( N/A , -0.05 , 0.0 )	750.2 1070.2	0.3589 101.4 98.6	4.6562 [ 4.6919 ]	99.2%			
PFHxS	( 399.0 / 80.0 ) 2358928 ( 399.0 / 99.0 ) 805304	( 7.02 , 1.00 ) ( 0.00 , N/A , 0.0 )	7472.4 34427.3	0.3414 96.5 99.6	4.2296 [ 4.5549 ]	92.9%			
PFHpS	( 449.0 / 80.0 ) 2213082 ( 449.0 / 99.0 ) 630366	( 7.70 , 0.92 ) ( N/A , -0.07 , 0.0 )	947.2 590.9	0.2848 101.9 100.0	5.1957 [ 4.7570 ]	109.2%			
PFOS	( 499.0 / 80.0 ) 2787912 ( 499.0 / 99.0 ) 646943	( 8.32 , 1.00 ) ( 0.00 , N/A , 0.1 )	11436.2 19472.0	0.2321 100.8 93.2	4.5597 [ 4.6375 ]	98.3%			
PFNS	( 549.0 / 80.0 ) 2626050 ( 549.0 / 99.0 ) 633691	( 8.87 , 1.07 ) ( N/A , -0.07 , 0.0 )	1470.5 715.0	0.2413 97.8 101.0	5.4471 [ 4.7994 ]	113.5%			
PFDS	( 599.0 / 80.0 ) 2837707 ( 599.0 / 99.0 ) 647998	( 9.29 , 1.12 ) ( N/A , -0.07 , 0.0 )	1388.5 1095.9	0.2284 99.7 103.0	5.1170 [ 4.8155 ]	106.3%			
PFDoS	( 699.0 / 80.0 ) 3104486 ( 699.0 / 99.0 ) 695202	( 9.94 , 1.19 ) ( N/A , -0.09 , 0.1 )	990.2 710.6	0.2239 98.2 96.0	4.9573 [ 4.8478 ]	102.3%			
4:2FTS	( 327.0 / 307.0 ) 1919669 ( 327.0 / 81.0 ) 1262681	( 5.05 , 1.00 ) ( 0.00 , N/A , 0.1 )	732.1 967.7	0.6578 101.1 103.1	16.6077 [ 18.6906 ]	88.9%			

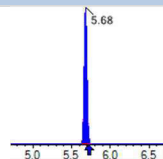
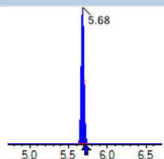
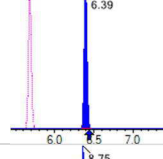
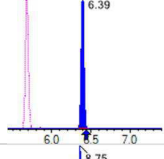
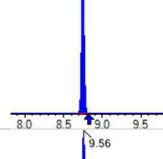
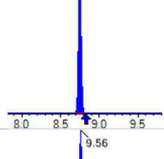
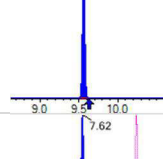
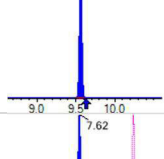
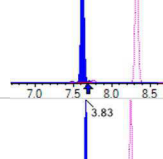
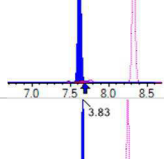
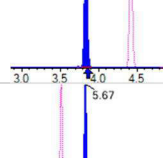
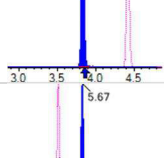
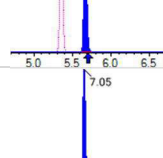
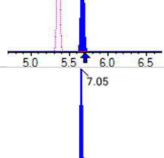
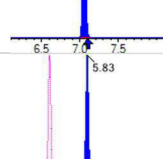
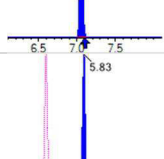
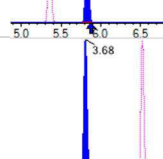
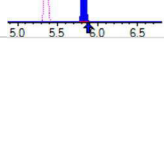
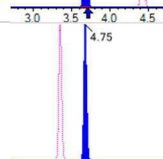
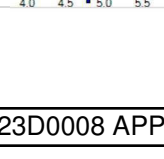


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (22)  
 Acquired: 2023/04/19 - 02:54

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 1089788 ( 427.0 / 81.0 ) 832016	( 6.52 , 1.00 ) ( 0.00 , N/A , 0.0 )	525.0 628.0	0.7635 103.4 104.5	17.9625 [ 18.9808 ]	94.6%			
8:2FTS	( 527.0 / 507.0 ) 1189636 ( 527.0 / 81.0 ) 789331	( 7.77 , 1.00 ) ( 0.00 , N/A , 0.1 )	846.7 622.1	0.6635 98.1 97.4	18.5454 [ 19.1658 ]	96.8%			
PFSBA	( 297.9 / 78.0 ) 14295178 ( 297.9 / 278.0 ) 23033	( 5.65 , 0.64 ) ( N/A , -0.02 , -0.1 )	735.3 150.6	0.0016 100.8 109.8	18.9362 [ 20.0000 ]	94.7%			
PFHxSA	( 397.9 / 78.0 ) 10574996 ( 397.9 / 378.0 ) 42811	( 7.52 , 0.85 ) ( N/A , -0.03 , 0.1 )	823.1 210.8	0.0040 95.7 107.8	19.1088 [ 20.0000 ]	95.5%			
PFOSA	( 498.0 / 78.0 ) 2610597 ( 498.0 / 478.0 ) 69070	( 8.88 , 1.00 ) ( 0.00 , N/A , 0.0 )	931.4 486.5	0.0265 106.5 107.6	4.8269 [ 5.0000 ]	96.5%			
NMeFOSA	( 512.0 / 219.0 ) 3492972 ( 512.0 / 169.0 ) 2783959	( 9.85 , 1.00 ) ( 0.00 , N/A , 1.4 )	5396.7 3945.1	0.7970 106.4 104.2	17.7773 [ 20.0000 ]	88.9%			
NEtFOSA	( 526.0 / 219.0 ) 3966772 ( 526.0 / 169.0 ) 4912691	( 10.07 , 1.00 ) ( 0.00 , N/A , 1.9 )	8899.6 9831.6	1.2385 105.9 101.5	18.1495 [ 20.0000 ]	90.7%			
NMeFOSAA	( 570.0 / 419.0 ) 528904 ( 570.0 / 483.0 ) 237571	( 8.03 , 1.00 ) ( 0.00 , N/A , -0.2 )	36884.8 44005.0	0.4492 94.4 87.9	4.5401 [ 5.0000 ]	90.8%			
NEtFOSAA	( 584.0 / 419.0 ) 419995 ( 584.0 / 526.0 ) 239440	( 8.29 , 1.00 ) ( 0.00 , N/A , -0.1 )	53745.9 35671.4	0.5701 95.8 105.7	4.9165 [ 5.0000 ]	98.3%			
NMeFOSE	( 616.0 / 59.0 ) 1306462	( 9.77 , 1.00 ) ( 0.01 , N/A , 0.0 )	4669.2	N/A 0.0 0.0	18.2688 [ 20.0000 ]	91.3%			
NEtFOSE	( 630.0 / 59.0 ) 1449866	( 9.99 , 1.00 ) ( 0.01 , N/A , 0.0 )	214481.1	N/A 0.0 0.0	18.4975 [ 20.0000 ]	92.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 756841 (285.0 / 185.0) 3683460	(5.68, 1.00) (0.00, N/A, 0.0)	672.7 987.4	4.8669 103.3 97.2	9.5119 [ 10.0000 ]	95.1%			
ADONA	(377.0 / 85.0) 4405329 (377.0 / 251.0) 461014	(6.39, 1.13) (N/A, -0.05, 0.0)	695.6 369.9	0.1046 96.6 97.2	9.3947 [ 9.4270 ]	99.7%			
9CI-PF3ONS	(531.0 / 351.0) 8933146 (533.0 / 353.0) 2856803	(8.75, 1.54) (N/A, -0.07, 0.0)	622.9 600.9	0.3198 98.0 100.0	9.7454 [ 9.3325 ]	104.4%			
11CI-PF3OUDS	(631.0 / 451.0) 6984752 (633.0 / 453.0) 2506823	(9.56, 1.68) (N/A, -0.07, 0.0)	2164.4 1140.4	0.3589 97.6 100.1	8.6439 [ 9.4321 ]	91.6%			
PFECHS	(461.0 / 98.9) 10062088 (461.0 / 381.2) 3541489	(7.62, 0.92) (N/A, -0.07, 0.0)	614.5 374.0	0.3520 92.3 97.5	22.9945 [ 18.4771 ]	124.4%			
3:3FTCA	(241.0 / 177.0) 169887 (241.0 / 117.0) 280793	(3.83, 0.87) (N/A, -0.03, 0.1)	1001.6 1191.7	1.6528 99.4 97.2	18.0865 [ 20.0000 ]	90.4%			
5:3FTCA	(341.0 / 236.7) 798883 (341.0 / 217.0) 1392759	(5.67, 1.06) (N/A, -0.03, 0.1)	609.4 620.4	1.7434 96.8 98.6	18.4660 [ 20.0000 ]	92.3%			
7:3FTCA	(441.0 / 317.0) 895667 (441.0 / 337.0) 1085140	(7.05, 1.32) (N/A, -0.04, 0.0)	534.8 544.5	1.2115 101.1 104.3	17.4287 [ 20.0000 ]	87.1%			
PFEESA	(315.0 / 135.0) 2477092 (315.0 / 83.0) 728384	(5.83, 1.09) (N/A, -0.05, -0.1)	751.4 656.7	0.2940 103.4 99.4	7.6857 [ 8.9246 ]	86.1%			
PFMPA	(229.0 / 85.0) 584333	(3.68, 0.83) (N/A, -0.03, 0.0)	1195.7	N/A 0.0 0.0	8.9388 [ 10.0000 ]	89.4%			
PFMBA	(279.0 / 85.0) 1693509	(4.75, 1.07) (N/A, -0.04, 0.0)	1796.0	N/A 0.0 0.0	9.1958 [ 10.0000 ]	92.0%			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (22)  
 Acquired: 2023/04/19 - 02:54

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 1656620 (295.0 / 85.0) 1509016	(5.26, 0.98) (N/A, -0.04, 0.1)	734.3 1192.3	0.9109 93.7 97.4	9.2177 [ 10.0000 ]	92.2%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 5.0000 ]	N/A%			CV2.
13C3_PFBA_IIS	(216.0 / 172.0) 190572	(3.19, N/A) (N/A, -0.03, N/A)	503.8	N/A	0.9248 [ 1.0000 ]	92.5% { 98.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 146988	(5.35, N/A) (N/A, -0.04, N/A)	649.1	N/A	1.0139 [ 1.0000 ]	101.4% { 104.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 279649	(6.83, N/A) (N/A, -0.06, N/A)	352.9	N/A	1.0256 [ 1.0000 ]	102.6% { 101.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 238009	(7.47, N/A) (N/A, -0.06, N/A)	574.2	N/A	0.9508 [ 1.0000 ]	95.1% { 100.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 234408	(8.07, N/A) (N/A, -0.07, N/A)	241.3	N/A	0.9873 [ 1.0000 ]	98.7% { 96.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 378657	(7.03, N/A) (N/A, -0.06, N/A)	451.2	N/A	0.9915 [ 1.0000 ]	99.2% { 101.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 396691	(8.33, N/A) (N/A, -0.07, N/A)	440.5	N/A	0.8320 [ 1.0000 ]	83.2% { 67.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1589376	(3.19, N/A) (N/A, -0.02, N/A)	1207.1	N/A	7.7854 [ 8.0000 ]	97.3% { 98.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1102069	(4.42, N/A) (N/A, -0.03, N/A)	917.4	N/A	3.7920 [ 4.0000 ]	94.8% { 99.2% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (22)  
 Acquired: 2023/04/19 - 02:54

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 641553	(5.36, N/A) (N/A, -0.04, N/A)	836.8	N/A	1.9494 [ 2.0000 ]	97.5% { 107.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 483332	(6.14, N/A) (N/A, -0.04, N/A)	331.3	N/A	1.8607 [ 2.0000 ]	93.0% { 109.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 609384	(6.83, N/A) (N/A, -0.05, N/A)	344.5	N/A	1.8312 [ 2.0000 ]	91.6% { 97.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 233487	(7.47, N/A) (N/A, -0.06, N/A)	454.1	N/A	0.9450 [ 1.0000 ]	94.5% { 97.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 270221	(8.07, N/A) (N/A, -0.07, N/A)	396.9	N/A	0.9717 [ 1.0000 ]	97.2% { 97.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 250363	(8.64, N/A) (N/A, -0.07, N/A)	461.7	N/A	0.9357 [ 1.0000 ]	93.6% { 99.2% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 208354	(9.10, N/A) (N/A, -0.06, N/A)	855.5	N/A	0.9181 [ 1.0000 ]	91.8% { 98.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 267169	(9.80, N/A) (N/A, -0.08, N/A)	810.6	N/A	0.9545 [ 1.0000 ]	95.5% { 99.3% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1405407	(5.38, N/A) (N/A, -0.04, N/A)	629.6	N/A	1.9508 [ 2.0000 ]	97.5% { 97.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 583892	(7.02, N/A) (N/A, -0.06, N/A)	457.3	N/A	1.9222 [ 2.0000 ]	96.1% { 96.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 967818	(8.32, N/A) (N/A, -0.08, N/A)	412.8	N/A	1.9533 [ 2.0000 ]	97.7% { 68.2% }			





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (22)  
 Acquired: 2023/04/19 - 02:54

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 144441	( 5.05, N/A ) ( N/A, -0.03, N/A )	554.5	N/A	4.1599 [ 4.0000 ]	104.0% { 103.4% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 163334	( 6.53, N/A ) ( N/A, -0.04, N/A )	383.2	N/A	3.7920 [ 4.0000 ]	94.8% { 96.0% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 185834	( 7.77, N/A ) ( N/A, -0.06, N/A )	391.0	N/A	3.8193 [ 4.0000 ]	95.5% { 108.4% }			
13C8_PFOA_EIS	( 506.0 / 78.0 ) 1295583	( 8.89, N/A ) ( N/A, -0.02, N/A )	694.0	N/A	2.3298 [ 2.0000 ]	116.5% { 97.2% }			
D3_NMeFOA_EIS	( 515.0 / 169.0 ) 402726	( 9.85, N/A ) ( N/A, 0.00, N/A )	414.0	N/A	2.3392 [ 2.0000 ]	117.0% { 98.4% }			
D5_NEtFOA_EIS	( 531.0 / 169.0 ) 406102	( 10.07, N/A ) ( N/A, 0.00, N/A )	790.7	N/A	2.4012 [ 2.0000 ]	120.1% { 103.0% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 522589	( 8.03, N/A ) ( N/A, -0.06, N/A )	477.0	N/A	5.0511 [ 4.0000 ]	126.3% { 107.6% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 380838	( 8.28, N/A ) ( N/A, -0.06, N/A )	418.4	N/A	4.6091 [ 4.0000 ]	115.2% { 96.9% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1254338	( 9.76, N/A ) ( N/A, 0.00, N/A )	1042.3	N/A	22.9962 [ 20.0000 ]	115.0% { 102.2% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 1545377	( 9.98, N/A ) ( N/A, 0.00, N/A )	1355.5	N/A	22.8567 [ 20.0000 ]	114.3% { 99.0% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1263920	( 5.68, N/A ) ( N/A, -0.04, N/A )	616.6	N/A	7.4619 [ 8.0000 ]	93.3% { 100.5% }			

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## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01530  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01530-ICB1	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: SC01530  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01530-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	7.96	ng/mL		
	13C5-PFPEA	4.34	ng/mL		
	13C5-PFHXA	1.85	ng/mL		
	13C4-PFHPA	2.11	ng/mL		
	13C8-PFOA	2.06	ng/mL		
	13C9-PFNA	0.919	ng/mL		
	13C6-PFDA	0.974	ng/mL		
	13C7-PFUnA	0.885	ng/mL		
	13C2-PFDOA	0.980	ng/mL		
	13C2-PFTEDA	0.973	ng/mL		
	13C3-PFBS	1.68	ng/mL		
	13C3-PFHXS	1.98	ng/mL		
	13C8-PFOS	1.95	ng/mL		
	13C2-4:2FTS	3.93	ng/mL		
	13C2-6:2FTS	3.89	ng/mL		
	13C2-8:2FTS	3.59	ng/mL		
	13C8-PFOSA	2.06	ng/mL		
	D3-NMEFOSA	2.32	ng/mL		
	D5-NETFOSA	2.37	ng/mL		
	D3-NMEFOSAA	4.50	ng/mL		
	D5-NETFOSAA	4.58	ng/mL		
	D7-NMEFOSE	23.8	ng/mL		
	D9-NETFOSSE	22.1	ng/mL		
	13C3-HFPO-DA	7.69	ng/mL		



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (9)  
 Acquired: 2023/04/18 - 18:59

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 ]	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			
PFTTrDA	(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.: SC01530-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (9)  
 Acquired: 2023/04/18 - 18:59

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	( 813.0 / 769.0 ) 37108 ( 813.0 / 169.0 ) 5369	( 10.43 , 1.93 ) ( N/A , -0.02 , 0.1)	248.2 101.3	0.1447 96.9 96.9	0.0998	N/A			
PFODA	( 913.0 / 869.0 ) 38426 ( 913.0 / 169.0 ) 9998	( 11.07 , 2.05 ) ( N/A , -0.04 , 0.0)	229.9 137.6	0.2602 98.8 98.8	0.1613	N/A			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (9)  
 Acquired: 2023/04/18 - 18:59

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			



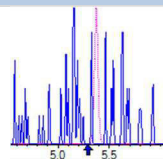
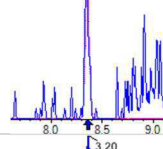
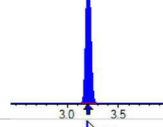
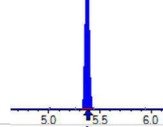
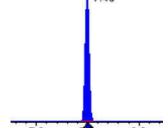
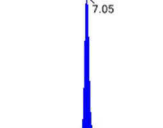
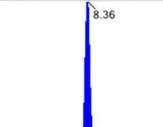
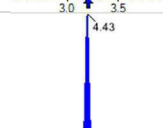


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (9)  
 Acquired: 2023/04/18 - 18:59

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 196476	(3.20, N/A) (N/A, 0.00, N/A)	543.5	N/A	0.9534 [ 1.0000 ]	95.3% { 95.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 130198	(5.37, N/A) (N/A, 0.00, N/A)	581.4	N/A	0.8981 [ 1.0000 ]	89.8% { 86.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 253584	(6.85, N/A) (N/A, 0.00, N/A)	239.3	N/A	0.9300 [ 1.0000 ]	93.0% { 91.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 234571	(7.49, N/A) (N/A, 0.00, N/A)	531.0	N/A	0.9371 [ 1.0000 ]	93.7% { 93.2% }			
13C2_PFDA_IIS	(515.0 / 470.1) 238093	(8.10, N/A) (N/A, 0.00, N/A)	296.8	N/A	1.0028 [ 1.0000 ]	100.3% { 90.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 366093	(7.05, N/A) (N/A, -0.01, N/A)	286.3	N/A	0.9586 [ 1.0000 ]	95.9% { 91.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 388331	(8.36, N/A) (N/A, 0.00, N/A)	395.3	N/A	0.8144 [ 1.0000 ]	81.4% { 85.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1674556	(3.20, N/A) (N/A, 0.00, N/A)	1208.0	N/A	7.9562 [ 8.0000 ]	99.5% { 95.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1118156	(4.43, N/A) (N/A, 0.00, N/A)	1074.4	N/A	4.3435 [ 4.0000 ]	108.6% { 95.6% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (9)  
 Acquired: 2023/04/18 - 18:59

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 540122	(5.37, N/A) (N/A, 0.00, N/A)	631.4	N/A	1.8528 [2.0000]	92.6% {80.7%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 485609	(6.16, N/A) (N/A, 0.00, N/A)	722.9	N/A	2.1105 [2.0000]	105.5% {91.1%}			
13C8_PFOA_EIS	(421.0 / 376.0) 620535	(6.85, N/A) (N/A, 0.00, N/A)	489.7	N/A	2.0564 [2.0000]	102.8% {96.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 223850	(7.49, N/A) (N/A, 0.00, N/A)	417.3	N/A	0.9193 [1.0000]	91.9% {83.5%}			
13C6_PFDA_EIS	(519.0 / 474.0) 275147	(8.10, N/A) (N/A, 0.00, N/A)	420.5	N/A	0.9741 [1.0000]	97.4% {98.6%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 240400	(8.67, N/A) (N/A, 0.00, N/A)	348.8	N/A	0.8846 [1.0000]	88.5% {88.5%}			
13C2_PFDoA_EIS	(615.0 / 570.0) 225896	(9.13, N/A) (N/A, 0.00, N/A)	665.2	N/A	0.9800 [1.0000]	98.0% {99.3%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 276619	(9.82, N/A) (N/A, -0.01, N/A)	602.1	N/A	0.9730 [1.0000]	97.3% {97.7%}			
13C3_PFBS_EIS	(302.0 / 80.0) 1168555	(5.40, N/A) (N/A, 0.00, N/A)	442.5	N/A	1.6777 [2.0000]	83.9% {80.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 581311	(7.05, N/A) (N/A, -0.01, N/A)	408.6	N/A	1.9794 [2.0000]	99.0% {100.2%}			
13C8_PFOS_EIS	(507.0 / 80.0) 947916	(8.36, N/A) (N/A, 0.00, N/A)	446.7	N/A	1.9543 [2.0000]	97.7% {85.3%}			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01530-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18B (9)  
 Acquired: 2023/04/18 - 18:59

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 131820	( 5.07, N/A ) ( N/A, 0.00, N/A )	678.3	N/A	3.9267 [ 4.0000 ]	98.2% { 93.0% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 161844	( 6.55, N/A ) ( N/A, 0.00, N/A )	465.3	N/A	3.8864 [ 4.0000 ]	97.2% { 96.9% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 168724	( 7.80, N/A ) ( N/A, 0.00, N/A )	574.0	N/A	3.5867 [ 4.0000 ]	89.7% { 93.9% }			
13C8_PFOA_EIS	( 506.0 / 78.0 ) 1121157	( 8.91, N/A ) ( N/A, 0.00, N/A )	681.3	N/A	2.0596 [ 2.0000 ]	103.0% { 82.8% }			
D3_NMeFOA_EIS	( 515.0 / 169.0 ) 390228	( 9.86, N/A ) ( N/A, 0.00, N/A )	487.1	N/A	2.3154 [ 2.0000 ]	115.8% { 93.0% }			
D5_NEtFOA_EIS	( 531.0 / 169.0 ) 391781	( 10.08, N/A ) ( N/A, 0.00, N/A )	1063.8	N/A	2.3664 [ 2.0000 ]	118.3% { 95.5% }			
D3_MeFOA_EIS	( 573.0 / 419.0 ) 456155	( 8.06, N/A ) ( N/A, 0.00, N/A )	508.2	N/A	4.5039 [ 4.0000 ]	112.6% { 85.9% }			
D5_EtFOA_EIS	( 589.0 / 419.0 ) 370469	( 8.31, N/A ) ( N/A, 0.00, N/A )	399.8	N/A	4.5802 [ 4.0000 ]	114.5% { 93.8% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1270165	( 9.77, N/A ) ( N/A, 0.00, N/A )	1174.5	N/A	23.7877 [ 20.0000 ]	118.9% { 93.8% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 1463616	( 9.99, N/A ) ( N/A, 0.00, N/A )	1859.4	N/A	22.1135 [ 20.0000 ]	110.6% { 91.0% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1153651	( 5.70, N/A ) ( N/A, -0.01, N/A )	634.4	N/A	7.6892 [ 8.0000 ]	96.1% { 84.9% }			

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01534  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01534-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: SC01534  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01534-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	7.83	ng/mL		
	13C5-PFPEA	4.09	ng/mL		
	13C5-PFHXA	1.85	ng/mL		
	13C4-PFHPA	1.89	ng/mL		
	13C8-PFOA	1.98	ng/mL		
	13C9-PFNA	0.941	ng/mL		
	13C6-PFDA	0.973	ng/mL		
	13C7-PFUnA	0.999	ng/mL		
	13C2-PFDOA	1.13	ng/mL		
	13C2-PFTEDA	1.22	ng/mL		
	13C3-PFBS	2.16	ng/mL		
	13C3-PFHXS	1.91	ng/mL		
	13C8-PFOS	2.05	ng/mL		
	13C2-4:2FTS	4.03	ng/mL		
	13C2-6:2FTS	3.84	ng/mL		
	13C2-8:2FTS	3.85	ng/mL		
	13C8-PFOSA	2.43	ng/mL		
	D3-NMEFOSA	2.54	ng/mL		
	D5-NETFOSA	2.62	ng/mL		
	D3-NMEFOSAA	4.76	ng/mL		
	D5-NETFOSAA	5.64	ng/mL		
	D7-NMEFOSE	25.5	ng/mL		
	D9-NETFOSSE	25.3	ng/mL		
	13C3-HFPO-DA	7.89	ng/mL		



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (1)  
 Acquired: 2023/04/18 - 21:20

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	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.: SC01534-CCB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (1)  
 Acquired: 2023/04/18 - 21:20

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			





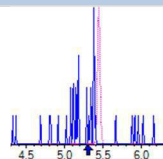
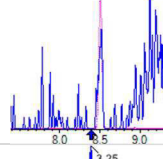
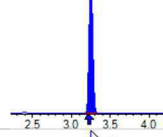
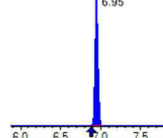
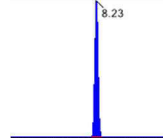

Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

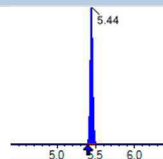
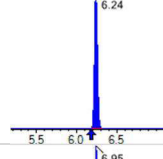
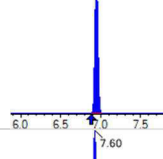
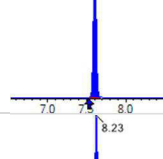
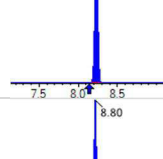
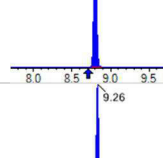
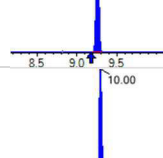
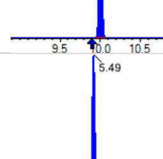
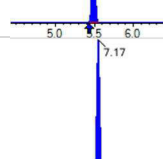
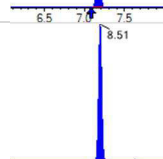
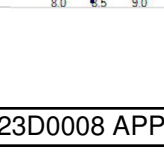
Sample I.D.: SC01534-CCB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (1)  
 Acquired: 2023/04/18 - 21:20

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 204316	(3.25, N/A) (N/A, 0.03, N/A)	599.8	N/A	0.9915 [1.0000]	99.1% {105.1%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 144256	(5.44, N/A) (N/A, 0.05, N/A)	310.0	N/A	0.9950 [1.0000]	99.5% {102.6%}			
13C4_PFOA_IIS	(417.0 / 372.0) 282297	(6.95, N/A) (N/A, 0.06, N/A)	331.8	N/A	1.0353 [1.0000]	103.5% {102.4%}			
13C5_PFNA_IIS	(468.0 / 423.0) 261928	(7.61, N/A) (N/A, 0.08, N/A)	399.1	N/A	1.0464 [1.0000]	104.6% {110.2%}			
13C2_PFDA_IIS	(515.0 / 470.1) 246567	(8.23, N/A) (N/A, 0.09, N/A)	244.0	N/A	1.0385 [1.0000]	103.8% {101.5%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 368825	(7.17, N/A) (N/A, 0.08, N/A)	382.9	N/A	0.9658 [1.0000]	96.6% {99.1%}			
13C4_PFOS_IIS	(503.0 / 79.9) 390855	(8.51, N/A) (N/A, 0.10, N/A)	347.6	N/A	0.8197 [1.0000]	82.0% {66.4%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1712840	(3.25, N/A) (N/A, 0.03, N/A)	1272.4	N/A	7.8258 [8.0000]	97.8% {106.0%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 1166144	(4.50, N/A) (N/A, 0.04, N/A)	1342.2	N/A	4.0884 [4.0000]	102.2% {104.9%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 598296	(5.44, N/A) (N/A, 0.05, N/A)	381.4	N/A	1.8524 [2.0000]	92.6% {100.6%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 481665	(6.24, N/A) (N/A, 0.06, N/A)	490.7	N/A	1.8894 [2.0000]	94.5% {108.7%}			
13C8_PFOA_EIS	(421.0 / 376.0) 666431	(6.95, N/A) (N/A, 0.07, N/A)	355.1	N/A	1.9839 [2.0000]	99.2% {106.7%}			
13C9_PFNA_EIS	(472.0 / 427.0) 255787	(7.60, N/A) (N/A, 0.08, N/A)	460.1	N/A	0.9407 [1.0000]	94.1% {107.2%}			
13C6_PFDA_EIS	(519.0 / 474.0) 284491	(8.23, N/A) (N/A, 0.09, N/A)	549.6	N/A	0.9725 [1.0000]	97.3% {103.1%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 281289	(8.80, N/A) (N/A, 0.09, N/A)	352.3	N/A	0.9995 [1.0000]	99.9% {111.4%}			
13C2_PFDaA_EIS	(615.0 / 570.0) 269196	(9.26, N/A) (N/A, 0.09, N/A)	905.0	N/A	1.1277 [1.0000]	112.8% {127.1%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 359408	(10.00, N/A) (N/A, 0.12, N/A)	441.8	N/A	1.2207 [1.0000]	122.1% {133.6%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1514573	(5.49, N/A) (N/A, 0.06, N/A)	599.2	N/A	2.1584 [2.0000]	107.9% {105.5%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 563778	(7.17, N/A) (N/A, 0.08, N/A)	399.0	N/A	1.9055 [2.0000]	95.3% {92.8%}			
13C8_PFOS_EIS	(507.0 / 80.0) 999765	(8.51, N/A) (N/A, 0.10, N/A)	613.7	N/A	2.0479 [2.0000]	102.4% {70.5%}			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (1)  
 Acquired: 2023/04/18 - 21:20

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 136415	(5.13, N/A) (N/A, 0.04, N/A)	613.3	N/A	4.0334 [4.0000]	100.8% {97.7%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 161145	(6.63, N/A) (N/A, 0.06, N/A)	430.8	N/A	3.8409 [4.0000]	96.0% {94.7%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 182501	(7.91, N/A) (N/A, 0.08, N/A)	526.7	N/A	3.8508 [4.0000]	96.3% {106.4%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 1333833	(8.93, N/A) (N/A, 0.02, N/A)	917.3	N/A	2.4344 [2.0000]	121.7% {100.1%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 430245	(9.86, N/A) (N/A, 0.00, N/A)	462.5	N/A	2.5363 [2.0000]	126.8% {105.2%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 436486	(10.07, N/A) (N/A, 0.00, N/A)	930.3	N/A	2.6194 [2.0000]	131.0% {110.7%}			S2,
D3_MeFOSAA_EIS	(573.0 / 419.0) 485330	(8.17, N/A) (N/A, 0.08, N/A)	390.2	N/A	4.7610 [4.0000]	119.0% {99.9%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 459280	(8.43, N/A) (N/A, 0.08, N/A)	440.3	N/A	5.6415 [4.0000]	141.0% {116.8%}			S2,
D7_NMeFOSE_EIS	(623.0 / 58.9) 1371508	(9.76, N/A) (N/A, 0.00, N/A)	1281.7	N/A	25.5198 [20.0000]	127.6% {111.8%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1687730	(9.98, N/A) (N/A, 0.00, N/A)	1552.4	N/A	25.3349 [20.0000]	126.7% {108.1%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1311873	(5.78, N/A) (N/A, 0.06, N/A)	1345.5	N/A	7.8917 [8.0000]	98.6% {104.3%}			

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01534  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01534-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: SC01534  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01534-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	7.83	ng/mL		
	13C5-PFPEA	3.96	ng/mL		
	13C5-PFHXA	1.94	ng/mL		
	13C4-PFHPA	1.93	ng/mL		
	13C8-PFOA	2.02	ng/mL		
	13C9-PFNA	1.00	ng/mL		
	13C6-PFDA	0.941	ng/mL		
	13C7-PFUnA	0.983	ng/mL		
	13C2-PFDOA	0.919	ng/mL		
	13C2-PFTEDA	1.03	ng/mL		
	13C3-PFBS	2.15	ng/mL		
	13C3-PFHXS	2.02	ng/mL		
	13C8-PFOS	1.94	ng/mL		
	13C2-4:2FTS	4.31	ng/mL		
	13C2-6:2FTS	4.17	ng/mL		
	13C2-8:2FTS	4.10	ng/mL		
	13C8-PFOSA	1.95	ng/mL		
	D3-NMEFOSA	1.81	ng/mL		
	D5-NETFOSA	1.99	ng/mL		
	D3-NMEFOSAA	3.64	ng/mL		
	D5-NETFOSAA	3.49	ng/mL		
	D7-NMEFOSE	18.7	ng/mL		
	D9-NETFOSSE	18.8	ng/mL		
	13C3-HFPO-DA	7.73	ng/mL		



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (6)  
 Acquired: 2023/04/18 - 22:40

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 ]	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.: SC01534-CCB2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (6)  
 Acquired: 2023/04/18 - 22:40

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

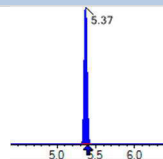
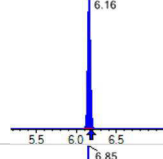
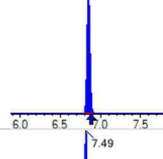
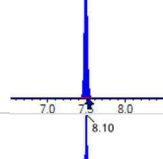
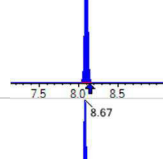
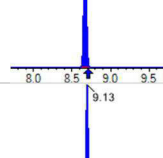
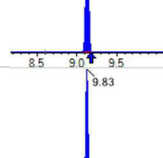
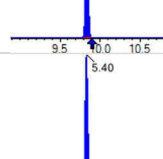
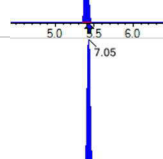
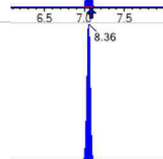
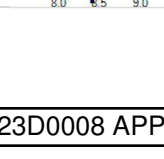


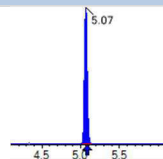
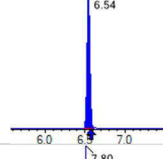
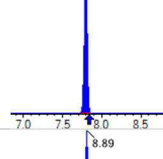
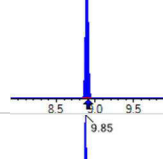
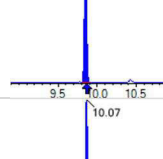
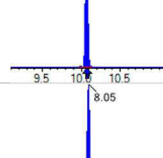
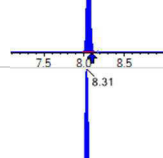
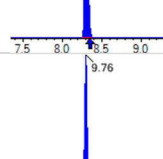
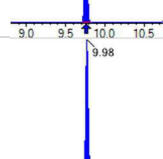
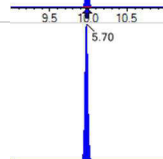
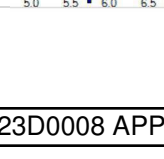
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (6)  
 Acquired: 2023/04/18 - 22:40

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 205452	(3.20, N/A) (N/A, -0.02, N/A)	484.2	N/A	0.9970 [ 1.0000 ]	99.7% { 105.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 148909	(5.37, N/A) (N/A, -0.03, N/A)	460.4	N/A	1.0271 [ 1.0000 ]	102.7% { 105.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 258643	(6.85, N/A) (N/A, -0.03, N/A)	282.5	N/A	0.9485 [ 1.0000 ]	94.9% { 93.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 244157	(7.49, N/A) (N/A, -0.04, N/A)	538.6	N/A	0.9754 [ 1.0000 ]	97.5% { 102.7% }			
13C2_PFDA_IIS	(515.0 / 470.1) 231573	(8.10, N/A) (N/A, -0.04, N/A)	422.0	N/A	0.9753 [ 1.0000 ]	97.5% { 95.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 362505	(7.05, N/A) (N/A, -0.04, N/A)	392.2	N/A	0.9492 [ 1.0000 ]	94.9% { 97.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 504231	(8.36, N/A) (N/A, -0.04, N/A)	469.2	N/A	1.0575 [ 1.0000 ]	105.8% { 85.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1723421	(3.20, N/A) (N/A, -0.02, N/A)	1182.4	N/A	7.8306 [ 8.0000 ]	97.9% { 106.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1165118	(4.43, N/A) (N/A, -0.02, N/A)	928.6	N/A	3.9572 [ 4.0000 ]	98.9% { 104.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 645891	(5.37, N/A) (N/A, -0.02, N/A)	492.0	N/A	1.9372 [ 2.0000 ]	96.9% { 108.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 507222	(6.16, N/A) (N/A, -0.03, N/A)	949.7	N/A	1.9275 [ 2.0000 ]	96.4% { 114.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 623173	(6.85, N/A) (N/A, -0.03, N/A)	522.8	N/A	2.0247 [ 2.0000 ]	101.2% { 99.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 254302	(7.49, N/A) (N/A, -0.04, N/A)	278.4	N/A	1.0034 [ 1.0000 ]	100.3% { 106.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 258531	(8.10, N/A) (N/A, -0.04, N/A)	223.1	N/A	0.9410 [ 1.0000 ]	94.1% { 93.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 259868	(8.67, N/A) (N/A, -0.04, N/A)	105.0	N/A	0.9831 [ 1.0000 ]	98.3% { 102.9% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 206095	(9.13, N/A) (N/A, -0.04, N/A)	630.7	N/A	0.9193 [ 1.0000 ]	91.9% { 97.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 284728	(9.83, N/A) (N/A, -0.05, N/A)	664.2	N/A	1.0297 [ 1.0000 ]	103.0% { 105.9% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1485902	(5.40, N/A) (N/A, -0.03, N/A)	795.7	N/A	2.1544 [ 2.0000 ]	107.7% { 103.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 587370	(7.05, N/A) (N/A, -0.04, N/A)	272.8	N/A	2.0198 [ 2.0000 ]	101.0% { 96.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1222897	(8.36, N/A) (N/A, -0.04, N/A)	548.8	N/A	1.9417 [ 2.0000 ]	97.1% { 86.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 143300	(5.07, N/A) (N/A, -0.02, N/A)	460.7	N/A	4.3109 [4.0000]	107.8% {102.6%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 172123	(6.54, N/A) (N/A, -0.03, N/A)	368.3	N/A	4.1741 [4.0000]	104.4% {101.2%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 190790	(7.80, N/A) (N/A, -0.04, N/A)	689.3	N/A	4.0959 [4.0000]	102.4% {111.3%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 1378204	(8.89, N/A) (N/A, -0.02, N/A)	963.6	N/A	1.9498 [2.0000]	97.5% {103.4%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 396898	(9.85, N/A) (N/A, 0.00, N/A)	357.4	N/A	1.8137 [2.0000]	90.7% {97.0%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 427149	(10.07, N/A) (N/A, 0.00, N/A)	1015.7	N/A	1.9870 [2.0000]	99.4% {108.4%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 478045	(8.05, N/A) (N/A, -0.04, N/A)	378.0	N/A	3.6351 [4.0000]	90.9% {98.4%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 366385	(8.31, N/A) (N/A, -0.04, N/A)	329.0	N/A	3.4885 [4.0000]	87.2% {93.2%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1298433	(9.76, N/A) (N/A, 0.00, N/A)	1014.4	N/A	18.7277 [20.0000]	93.6% {105.8%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1615548	(9.98, N/A) (N/A, 0.00, N/A)	1604.3	N/A	18.7984 [20.0000]	94.0% {103.4%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1327056	(5.70, N/A) (N/A, -0.03, N/A)	926.7	N/A	7.7335 [8.0000]	96.7% {105.5%}			

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01534  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01534-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: SC01534  
 Calibration: 2316009

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01534-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	7.87	ng/mL		
	13C5-PFPEA	4.09	ng/mL		
	13C5-PFHXA	1.91	ng/mL		
	13C4-PFHPA	1.91	ng/mL		
	13C8-PFOA	1.79	ng/mL		
	13C9-PFNA	0.951	ng/mL		
	13C6-PFDA	0.926	ng/mL		
	13C7-PFUnA	0.973	ng/mL		
	13C2-PFDOA	0.907	ng/mL		
	13C2-PFTEDA	0.942	ng/mL		
	13C3-PFBS	2.03	ng/mL		
	13C3-PFHXS	2.05	ng/mL		
	13C8-PFOS	2.04	ng/mL		
	13C2-4:2FTS	4.21	ng/mL		
	13C2-6:2FTS	4.03	ng/mL		
	13C2-8:2FTS	4.25	ng/mL		
	13C8-PFOSA	2.46	ng/mL		
	D3-NMEFOSA	2.46	ng/mL		
	D5-NETFOSA	2.54	ng/mL		
	D3-NMEFOSAA	4.80	ng/mL		
	D5-NETFOSAA	4.56	ng/mL		
	D7-NMEFOSE	25.5	ng/mL		
	D9-NETFOSE	23.9	ng/mL		
	13C3-HFPO-DA	7.88	ng/mL		





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (23)  
 Acquired: 2023/04/19 - 03:10

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 ]	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.: SC01534-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (23)  
 Acquired: 2023/04/19 - 03:10

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (23)  
 Acquired: 2023/04/19 - 03:10

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (23)  
 Acquired: 2023/04/19 - 03:10

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 196780	(3.19, N/A) (N/A, -0.03, N/A)	521.3	N/A	0.9549 [ 1.0000 ]	95.5% { 101.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 139063	(5.36, N/A) (N/A, -0.04, N/A)	559.6	N/A	0.9592 [ 1.0000 ]	95.9% { 98.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 275095	(6.83, N/A) (N/A, -0.06, N/A)	514.1	N/A	1.0089 [ 1.0000 ]	100.9% { 99.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 237798	(7.47, N/A) (N/A, -0.06, N/A)	522.6	N/A	0.9500 [ 1.0000 ]	95.0% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 233206	(8.07, N/A) (N/A, -0.07, N/A)	306.5	N/A	0.9822 [ 1.0000 ]	98.2% { 96.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 351307	(7.02, N/A) (N/A, -0.06, N/A)	283.7	N/A	0.9199 [ 1.0000 ]	92.0% { 94.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 368782	(8.32, N/A) (N/A, -0.08, N/A)	222.1	N/A	0.7734 [ 1.0000 ]	77.3% { 62.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1658845	(3.19, N/A) (N/A, -0.03, N/A)	1034.2	N/A	7.8693 [ 8.0000 ]	98.4% { 102.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1125579	(4.42, N/A) (N/A, -0.03, N/A)	978.7	N/A	4.0936 [ 4.0000 ]	102.3% { 101.3% }			

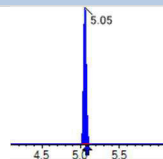
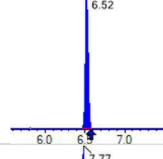
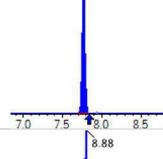
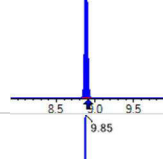
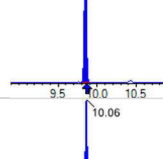
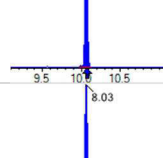
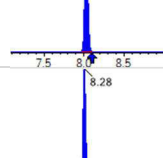
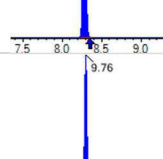
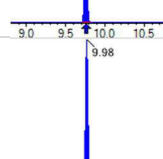
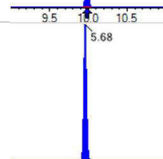
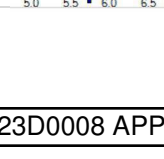


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (23)  
 Acquired: 2023/04/19 - 03:10

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 596158	(5.35, N/A) (N/A, -0.04, N/A)	704.6	N/A	1.9147 [ 2.0000 ]	95.7% { 100.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 469593	(6.14, N/A) (N/A, -0.05, N/A)	1463.7	N/A	1.9108 [ 2.0000 ]	95.5% { 106.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 586077	(6.83, N/A) (N/A, -0.05, N/A)	350.0	N/A	1.7903 [ 2.0000 ]	89.5% { 93.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 234794	(7.46, N/A) (N/A, -0.06, N/A)	563.6	N/A	0.9512 [ 1.0000 ]	95.1% { 98.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 256225	(8.07, N/A) (N/A, -0.07, N/A)	393.7	N/A	0.9261 [ 1.0000 ]	92.6% { 92.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 258987	(8.64, N/A) (N/A, -0.07, N/A)	166.7	N/A	0.9729 [ 1.0000 ]	97.3% { 102.6% }			
13C2_PFDaA_EIS	(615.0 / 570.0) 204795	(9.10, N/A) (N/A, -0.07, N/A)	828.5	N/A	0.9071 [ 1.0000 ]	90.7% { 96.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 262213	(9.80, N/A) (N/A, -0.08, N/A)	667.6	N/A	0.9416 [ 1.0000 ]	94.2% { 97.5% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1355266	(5.38, N/A) (N/A, -0.04, N/A)	753.5	N/A	2.0277 [ 2.0000 ]	101.4% { 94.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 578909	(7.02, N/A) (N/A, -0.06, N/A)	434.1	N/A	2.0542 [ 2.0000 ]	102.7% { 95.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 940018	(8.32, N/A) (N/A, -0.08, N/A)	528.4	N/A	2.0408 [ 2.0000 ]	102.0% { 66.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 135578	(5.05, N/A) (N/A, -0.03, N/A)	383.0	N/A	4.2086 [ 4.0000 ]	105.2% { 97.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 160991	(6.52, N/A) (N/A, -0.05, N/A)	290.2	N/A	4.0286 [ 4.0000 ]	100.7% { 94.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 191786	(7.77, N/A) (N/A, -0.06, N/A)	477.0	N/A	4.2485 [ 4.0000 ]	106.2% { 111.9% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1274268	(8.88, N/A) (N/A, -0.02, N/A)	533.1	N/A	2.4649 [ 2.0000 ]	123.2% { 95.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 394367	(9.85, N/A) (N/A, -0.01, N/A)	546.8	N/A	2.4640 [ 2.0000 ]	123.2% { 96.4% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 399397	(10.06, N/A) (N/A, -0.01, N/A)	892.6	N/A	2.5403 [ 2.0000 ]	127.0% { 101.3% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 461755	(8.03, N/A) (N/A, -0.06, N/A)	471.9	N/A	4.8009 [ 4.0000 ]	120.0% { 95.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 350513	(8.28, N/A) (N/A, -0.07, N/A)	382.5	N/A	4.5631 [ 4.0000 ]	114.1% { 89.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1295490	(9.76, N/A) (N/A, -0.01, N/A)	1199.9	N/A	25.5481 [ 20.0000 ]	127.7% { 105.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1501803	(9.98, N/A) (N/A, -0.01, N/A)	1094.9	N/A	23.8932 [ 20.0000 ]	119.5% { 96.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1262082	(5.68, N/A) (N/A, -0.04, N/A)	981.4	N/A	7.8757 [ 8.0000 ]	98.4% { 100.3% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01368-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-07A  
 Path: S2023-04-07B (4)  
 Acquired: 2023/04/07 - 16:56

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) 2599428 (413.0 / 169.0) 887506	(6.42, 1.00) (0.00, N/A, 0.0)	2008.0 3681.8	0.3414 101.5 106.9	8.2433	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			
PFTTrDA	(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.: SC01368-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-28.dam

Quant Method: 1633 - S2023-04-07A  
 Path: S2023-04-07B (4)  
 Acquired: 2023/04/07 - 16:56

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 ) 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			

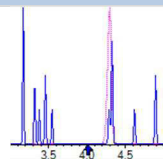
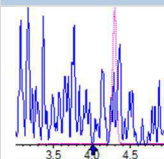
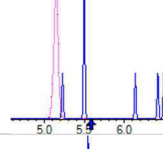
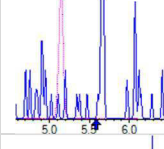
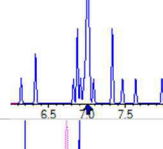
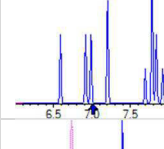
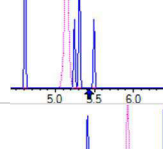
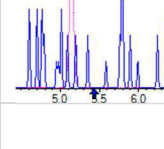
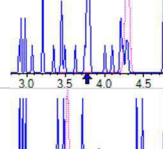
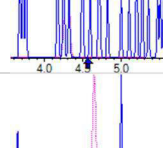
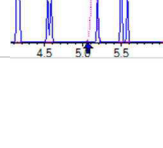
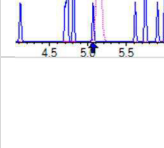
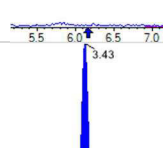
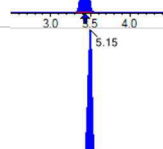
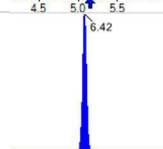
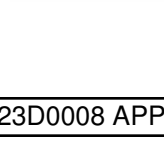


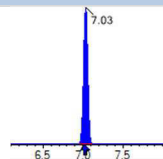
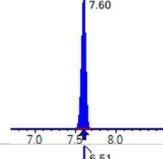
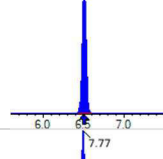
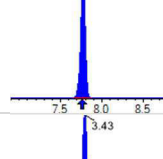
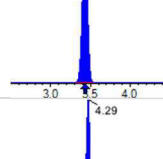
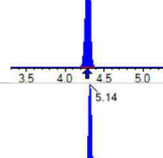
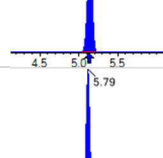
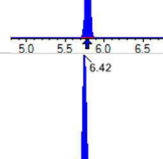
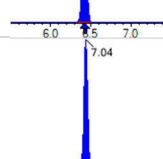
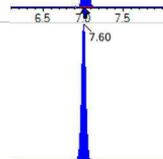
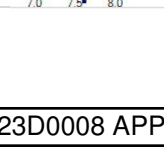
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

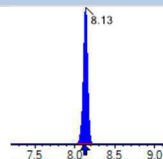
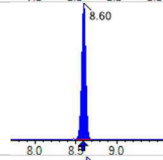
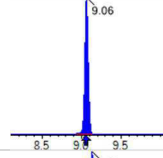
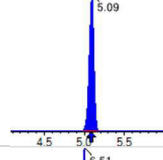
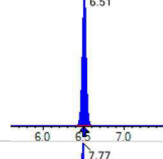
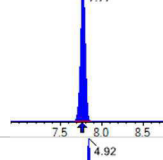
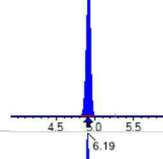
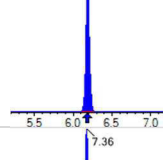
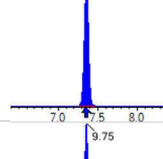
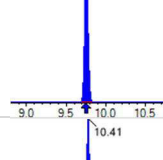
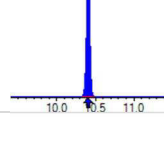
Sample I.D.: SC01368-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-28.dam

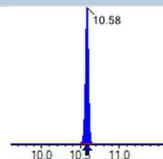
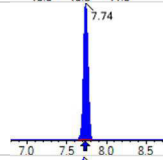
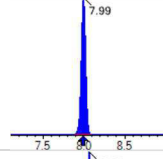
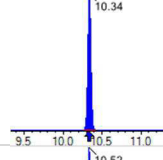
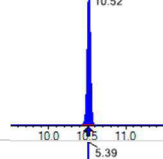
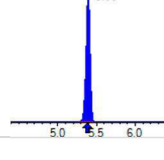
Quant Method: 1633 - S2023-04-07A  
 Path: S2023-04-07B (4)  
 Acquired: 2023/04/07 - 16:56

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
PFOSA	( 498.0 / 78.0 ) 13029124 ( 498.0 / 478.0 ) 315426	( 9.75 , 1.00 ) ( 0.00 , N/A , 0.0 )	3373.6 1345.1	0.0242 99.1 104.2	10.1335	N/A			
NMeFOSA	( 512.0 / 219.0 ) 2701971 ( 512.0 / 169.0 ) 2282737	( 10.41 , 1.00 ) ( 0.00 , N/A , 1.4 )	4370.8 5712.3	0.8448 99.5 99.2	9.6705	N/A			
NEtFOSA	( 526.0 / 219.0 ) 2958777 ( 526.0 / 169.0 ) 3730047	( 10.58 , 1.00 ) ( -0.01 , N/A , 0.8 )	4419.7 6486.7	1.2607 100.1 98.2	8.8419	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 ) 1235453	( 10.35 , 1.00 ) ( 0.01 , N/A , 0.0 )	1807.5	N/A 0.0 0.0	9.9613	N/A			
NEtFOSE	( 630.0 / 59.0 ) 1528301	( 10.53 , 1.00 ) ( 0.01 , N/A , 0.0 )	1122.0	N/A 0.0 0.0	9.6613	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.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 128037	(3.43, N/A) (N/A, 0.00, N/A)	1766.1	N/A	1.1231 [ 1.0000 ]	112.3% { 120.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 128768	(5.15, N/A) (N/A, 0.01, N/A)	3248.8	N/A	0.9331 [ 1.0000 ]	93.3% { 105.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 309884	(6.42, N/A) (N/A, 0.01, N/A)	2620.6	N/A	0.9977 [ 1.0000 ]	99.8% { 115.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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
13C5_PFNA_IIS	(468.0 / 423.0) 326432	(7.03, N/A) (N/A, 0.01, N/A)	2574.1	N/A	1.1073 [1.0000]	110.7% {113.1%}			
13C2_PFDA_IIS	(515.0 / 470.1) 325694	(7.60, N/A) (N/A, 0.01, N/A)	31877.6	N/A	1.0506 [1.0000]	105.1% {108.1%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 453924	(6.51, N/A) (N/A, 0.01, N/A)	1807.4	N/A	1.0119 [1.0000]	101.2% {105.6%}			
13C4_PFOS_IIS	(503.0 / 79.9) 707870	(7.77, N/A) (N/A, 0.01, N/A)	2197.2	N/A	1.0172 [1.0000]	101.7% {109.9%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1117251	(3.43, N/A) (N/A, 0.00, N/A)	4542.7	N/A	8.1364 [8.0000]	101.7% {113.6%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 959475	(4.29, N/A) (N/A, 0.01, N/A)	3157.2	N/A	4.7196 [4.0000]	118.0% {115.0%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 539729	(5.14, N/A) (N/A, 0.01, N/A)	2504.7	N/A	2.1908 [2.0000]	109.5% {113.4%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 586967	(5.79, N/A) (N/A, 0.01, N/A)	1738.8	N/A	2.3792 [2.0000]	119.0% {116.4%}			
13C8_PFOA_EIS	(421.0 / 376.0) 634980	(6.42, N/A) (N/A, 0.01, N/A)	3814.4	N/A	1.9906 [2.0000]	99.5% {103.9%}			
13C9_PFNA_EIS	(472.0 / 427.0) 314865	(7.04, N/A) (N/A, 0.01, N/A)	27490.2	N/A	0.9901 [1.0000]	99.0% {106.5%}			
13C6_PFDA_EIS	(519.0 / 474.0) 362911	(7.60, N/A) (N/A, 0.01, N/A)	2560.0	N/A	1.0201 [1.0000]	102.0% {102.9%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ 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
13C7_PFUa_EIS	(570.0 / 525.0) 378921	(8.13, N/A) (N/A, 0.01, N/A)	52387.5	N/A	1.1048 [ 1.0000 ]	110.5% { 121.7% }			
13C2_PFDa_EIS	(615.0 / 570.0) 290238	(8.60, N/A) (N/A, 0.01, N/A)	1530.9	N/A	0.9358 [ 1.0000 ]	93.6% { 104.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 321592	(9.06, N/A) (N/A, 0.01, N/A)	1272.9	N/A	1.0826 [ 1.0000 ]	108.3% { 121.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1269608	(5.09, N/A) (N/A, 0.01, N/A)	2699.7	N/A	2.1415 [ 2.0000 ]	107.1% { 107.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 841693	(6.51, N/A) (N/A, 0.01, N/A)	3054.1	N/A	1.9835 [ 2.0000 ]	99.2% { 108.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1784772	(7.77, N/A) (N/A, 0.01, N/A)	2966.5	N/A	2.0710 [ 2.0000 ]	103.6% { 113.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 241922	(4.92, N/A) (N/A, 0.01, N/A)	1330.2	N/A	4.4576 [ 4.0000 ]	111.4% { 119.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 288476	(6.19, N/A) (N/A, 0.00, N/A)	29583.1	N/A	4.0043 [ 4.0000 ]	100.1% { 115.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 328266	(7.36, N/A) (N/A, 0.01, N/A)	2528.2	N/A	3.7015 [ 4.0000 ]	92.5% { 101.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3028144	(9.75, N/A) (N/A, 0.01, N/A)	5063.7	N/A	2.0768 [ 2.0000 ]	103.8% { 106.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 681831	(10.41, N/A) (N/A, 0.01, N/A)	2578.7	N/A	2.0618 [ 2.0000 ]	103.1% { 110.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ 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
D5_NEiFOSA_EIS	(531.0 / 169.0) 617787	(10.58, N/A) (N/A, 0.01, N/A)	3129.4	N/A	2.2816 [ 2.0000 ]	114.1% { 113.0% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 765165	(7.74, N/A) (N/A, 0.01, N/A)	2944.6	N/A	4.2315 [ 4.0000 ]	105.8% { 113.8% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 607336	(7.99, N/A) (N/A, 0.01, N/A)	4694.5	N/A	4.0898 [ 4.0000 ]	102.2% { 109.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2390630	(10.34, N/A) (N/A, 0.01, N/A)	2477.4	N/A	22.5009 [ 20.0000 ]	112.5% { 116.2% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3232690	(10.52, N/A) (N/A, 0.01, N/A)	2244.5	N/A	22.9940 [ 20.0000 ]	115.0% { 119.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1127650	(5.39, N/A) (N/A, 0.01, N/A)	2971.8	N/A	8.9197 [ 8.0000 ]	111.5% { 114.4% }			

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
PFOS	( 499.0 / 80.0 ) 29384 ( 499.0 / 99.0 ) N/A	( 7.40 , 0.95 ) ( -0.37 , N/A , #Value! )	21.6	N/A 0.0 0.0	0.0284	N/A			
TDCA	( 499.0 / 80.0 ) 7178984	( 6.16 , 0.79 ) ( N/A , #Value! , 0.0 )	16495.8	N/A 0.0 0.0	8.2508	N/A			

*R.T.PFOS – R.T.TDCA > 1 minute*

7.40 - 6.16 = 1.24 Pass



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (4)  
 Acquired: 2023/04/18 - 22:08

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 ]	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) 23418 (363.0 / 169.0) 4452	(6.17, 1.00) (0.00, N/A, 0.1)	47.3 44.2	0.1901 68.6 69.0	0.0814	N/A			
PFOA	(413.0 / 369.0) 2915309 (413.0 / 169.0) 902567	(6.86, 1.00) (0.00, N/A, -0.1)	12715.2 8650.9	0.3096 103.7 105.6	8.0281	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.: SC01534-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (4)  
 Acquired: 2023/04/18 - 22:08

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (4)  
 Acquired: 2023/04/18 - 22:08

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOSA	(498.0 / 78.0) 6177629 (498.0 / 478.0) 161658	(8.89, 1.00) (-0.01, N/A, -0.2)	38991.4 642.0	0.0262 105.4 106.4	10.1503	N/A			
NMeFOSA	(512.0 / 219.0) 2001207 (512.0 / 169.0) 1541904	(9.85, 1.00) (0.00, N/A, 1.2)	40087977.5 9776.1	0.7705 102.9 100.7	8.7527	N/A			
NEtFOSA	(526.0 / 219.0) 2167774 (526.0 / 169.0) 2663468	(10.07, 1.00) (0.00, N/A, 1.7)	13171.7 8722.2	1.2287 105.1 100.7	8.3941	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) 816149	(9.77, 1.00) (0.01, N/A, 0.0)	2938.9	N/A 0.0 0.0	9.4519	N/A			
NEtFOSE	(630.0 / 59.0) 891641	(9.99, 1.00) (0.01, N/A, 0.0)	2495.7	N/A 0.0 0.0	9.8416	N/A			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (4)  
 Acquired: 2023/04/18 - 22:08

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (4)  
 Acquired: 2023/04/18 - 22:08

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 239133	(3.21, N/A) (N/A, -0.01, N/A)	545.0	N/A	1.1604 [ 1.0000 ]	116.0% { 123.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 178978	(5.38, N/A) (N/A, -0.02, N/A)	525.5	N/A	1.2345 [ 1.0000 ]	123.5% { 127.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 298694	(6.86, N/A) (N/A, -0.02, N/A)	487.1	N/A	1.0954 [ 1.0000 ]	109.5% { 108.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 292369	(7.51, N/A) (N/A, -0.02, N/A)	548.8	N/A	1.1680 [ 1.0000 ]	116.8% { 123.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 274711	(8.12, N/A) (N/A, -0.02, N/A)	342.1	N/A	1.1570 [ 1.0000 ]	115.7% { 113.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 431190	(7.07, N/A) (N/A, -0.02, N/A)	515.1	N/A	1.1291 [ 1.0000 ]	112.9% { 115.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 713552	(8.38, N/A) (N/A, -0.02, N/A)	661.5	N/A	1.4965 [ 1.0000 ]	149.7% { 121.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1963110	(3.21, N/A) (N/A, 0.00, N/A)	1173.4	N/A	7.6633 [ 8.0000 ]	95.8% { 121.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1297693	(4.44, N/A) (N/A, -0.01, N/A)	1149.7	N/A	3.6670 [ 4.0000 ]	91.7% { 116.8% }			

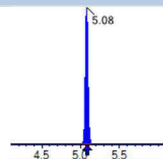
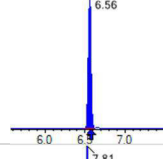
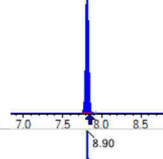
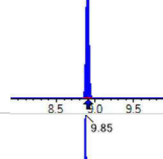
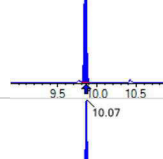
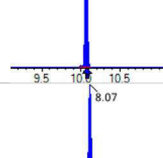
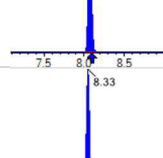
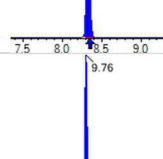
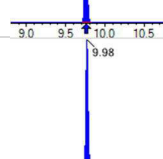
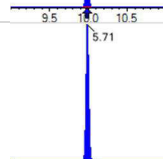
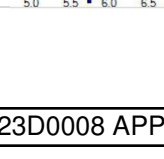


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01534-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (4)  
 Acquired: 2023/04/18 - 22:08

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 712300	(5.38, N/A) (N/A, -0.01, N/A)	890.2	N/A	1.7775 [ 2.0000 ]	88.9% { 119.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 541874	(6.17, N/A) (N/A, -0.01, N/A)	663.6	N/A	1.7132 [ 2.0000 ]	85.7% { 122.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 727666	(6.86, N/A) (N/A, -0.02, N/A)	447.3	N/A	2.0472 [ 2.0000 ]	102.4% { 116.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 272769	(7.51, N/A) (N/A, -0.02, N/A)	589.8	N/A	0.8987 [ 1.0000 ]	89.9% { 114.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 314945	(8.12, N/A) (N/A, -0.02, N/A)	452.7	N/A	0.9663 [ 1.0000 ]	96.6% { 114.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 302027	(8.69, N/A) (N/A, -0.02, N/A)	264.5	N/A	0.9632 [ 1.0000 ]	96.3% { 119.6% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 248546	(9.15, N/A) (N/A, -0.02, N/A)	948.6	N/A	0.9346 [ 1.0000 ]	93.5% { 117.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 305451	(9.86, N/A) (N/A, -0.03, N/A)	459.8	N/A	0.9312 [ 1.0000 ]	93.1% { 113.6% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1658965	(5.41, N/A) (N/A, -0.01, N/A)	526.7	N/A	2.0222 [ 2.0000 ]	101.1% { 115.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 661952	(7.07, N/A) (N/A, -0.02, N/A)	374.9	N/A	1.9137 [ 2.0000 ]	95.7% { 108.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1684882	(8.38, N/A) (N/A, -0.02, N/A)	637.0	N/A	1.8905 [ 2.0000 ]	94.5% { 118.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 155241	(5.08, N/A) (N/A, -0.01, N/A)	608.4	N/A	3.9262 [4.0000]	98.2% {111.2%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 184400	(6.56, N/A) (N/A, -0.01, N/A)	793.0	N/A	3.7595 [4.0000]	94.0% {108.4%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 218713	(7.81, N/A) (N/A, -0.02, N/A)	378.7	N/A	3.9474 [4.0000]	98.7% {127.6%}			
13C8_PFOSA_EIS	(506.0 / 78.0) 1457939	(8.90, N/A) (N/A, -0.01, N/A)	901.8	N/A	1.4575 [2.0000]	72.9% {109.4%}			
D3_NMeFOSEA_EIS	(515.0 / 169.0) 468631	(9.85, N/A) (N/A, 0.00, N/A)	458.8	N/A	1.5133 [2.0000]	75.7% {114.6%}			
D5_NEiFOSEA_EIS	(531.0 / 169.0) 479844	(10.07, N/A) (N/A, 0.00, N/A)	1029.0	N/A	1.5773 [2.0000]	78.9% {121.7%}			
D3_MeFOSAA_EIS	(573.0 / 419.0) 524642	(8.07, N/A) (N/A, -0.02, N/A)	538.0	N/A	2.8191 [4.0000]	70.5% {108.0%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 430376	(8.33, N/A) (N/A, -0.02, N/A)	145.2	N/A	2.8957 [4.0000]	72.4% {109.5%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1514534	(9.76, N/A) (N/A, 0.00, N/A)	1101.6	N/A	15.4365 [20.0000]	77.2% {123.4%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1786250	(9.98, N/A) (N/A, 0.00, N/A)	1282.4	N/A	14.6875 [20.0000]	73.4% {114.4%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1543164	(5.71, N/A) (N/A, -0.01, N/A)	1166.9	N/A	7.4821 [8.0000]	93.5% {122.7%}			

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
PFOS	( 499.0 / 80.0 ) 34980 ( 499.0 / 99.0 ) 1542314	( 7.94 , 0.95 ) ( -0.42 , N/A , -24.9 )	66.4	44.0910 19147.1 18151.3	0.0534	N/A			
TDCA	( 499.0 / 80.0 ) 2365910	( 6.38 , 0.76 ) ( N/A , #Value! , 0.0 )	36666.6	N/A 0.0 0.0	3.8591	N/A			

*R.T.PFOS – R.T.TDCA > 1 minute*

7.94 - 6.38 = 1.57 Pass

# QUALITY CONTROL RAW DATA



# ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-BLK1
Sampled:		Prepared:	04/17/23 11:15
Solids:		Preparation:	EPA 1633
Batch:	BCD0235	Sequence:	SC01534
Column:	1	Calibration:	2316009
		Instrument:	Saphira

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	0.30 U	0.40	0.30	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	0.30 U	0.40	0.30	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	0.30 U	0.40	0.30	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	0.30 U	0.40	0.30	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	0.246 J	0.40	0.20	0.10	B, J
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:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-BLK1
Sampled:		Prepared:	04/17/23 11:15
Solids:		Preparation:	EPA 1633
Batch:	BCD0235	Sequence:	SC01534
Column:	1	Calibration:	2316009
			Instrument: Saphira

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.: BCD0235-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (7)  
 Acquired: 2023/04/18 - 22:56

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 ]	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.: BCD0235-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (7)  
 Acquired: 2023/04/18 - 22:56

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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			
PFODA	(913.0 / 869.0) N/A (913.0 / 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			
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			

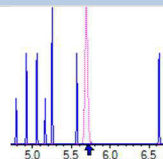
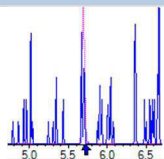
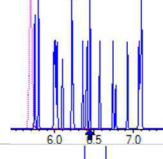
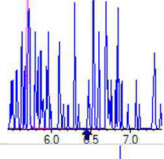
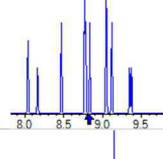
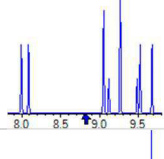
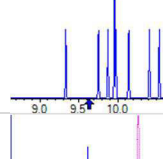
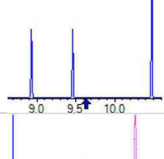
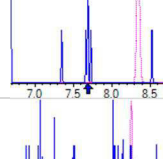
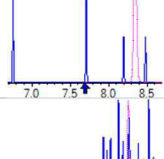
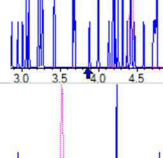
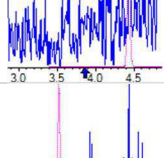
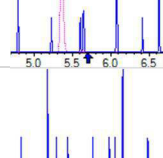
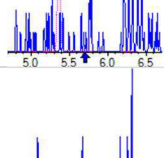
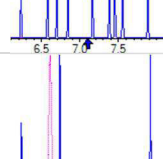
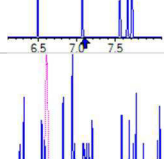
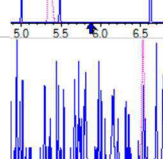
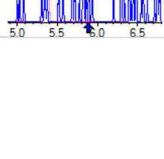
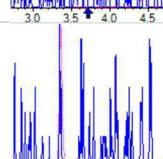
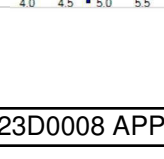


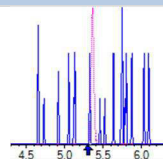
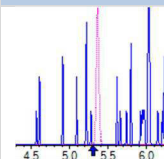
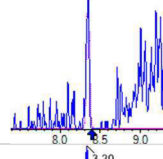
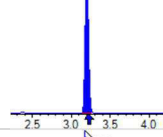
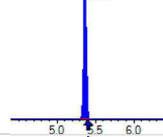
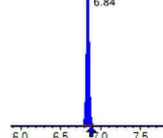
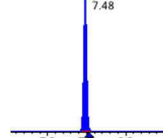
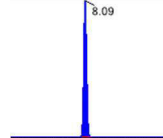
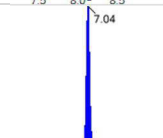
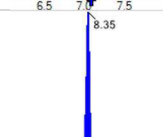
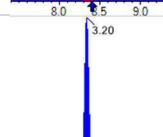
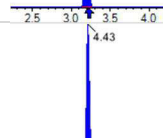
Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

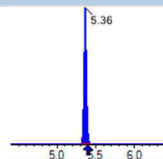
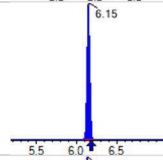
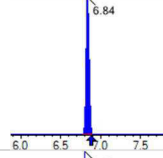
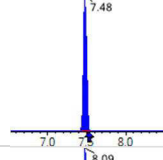
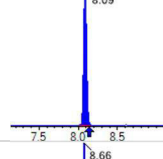
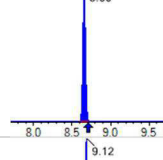
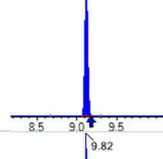
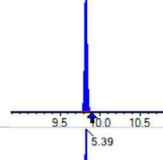
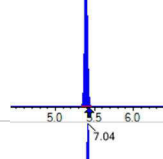
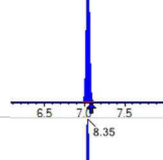
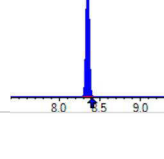
Sample I.D.: BCD0235-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (7)  
 Acquired: 2023/04/18 - 22:56

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOSA	(498.0 / 78.0) 25516 (498.0 / 478.0) 690	(8.88, 1.00) (0.00, N/A, -1.0)	25.8 26.1	0.0270 108.9 110.0	0.0616	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			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
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			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 213958	(3.20, N/A) (N/A, -0.02, N/A)	674.0	N/A	1.0383 [ 1.0000 ]	103.8% { 110.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 153453	(5.36, N/A) (N/A, -0.03, N/A)	349.4	N/A	1.0585 [ 1.0000 ]	105.8% { 109.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 286196	(6.84, N/A) (N/A, -0.04, N/A)	365.2	N/A	1.0496 [ 1.0000 ]	105.0% { 103.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 268129	(7.48, N/A) (N/A, -0.05, N/A)	402.8	N/A	1.0711 [ 1.0000 ]	107.1% { 112.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 260230	(8.09, N/A) (N/A, -0.05, N/A)	426.1	N/A	1.0960 [ 1.0000 ]	109.6% { 107.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 375644	(7.04, N/A) (N/A, -0.05, N/A)	209.8	N/A	0.9836 [ 1.0000 ]	98.4% { 100.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 509209	(8.35, N/A) (N/A, -0.05, N/A)	477.4	N/A	1.0680 [ 1.0000 ]	106.8% { 86.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1736805	(3.20, N/A) (N/A, -0.02, N/A)	1354.7	N/A	7.5777 [ 8.0000 ]	94.7% { 107.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1152763	(4.43, N/A) (N/A, -0.03, N/A)	1249.2	N/A	3.7993 [ 4.0000 ]	95.0% { 103.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 651450	(5.36, N/A) (N/A, -0.03, N/A)	598.2	N/A	1.8960 [ 2.0000 ]	94.8% { 109.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 470132	(6.15, N/A) (N/A, -0.04, N/A)	778.9	N/A	1.7336 [ 2.0000 ]	86.7% { 106.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 610034	(6.84, N/A) (N/A, -0.04, N/A)	357.8	N/A	1.7912 [ 2.0000 ]	89.6% { 97.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 245658	(7.48, N/A) (N/A, -0.05, N/A)	357.5	N/A	0.8826 [ 1.0000 ]	88.3% { 103.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 264095	(8.09, N/A) (N/A, -0.05, N/A)	371.0	N/A	0.8554 [ 1.0000 ]	85.5% { 95.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 258424	(8.66, N/A) (N/A, -0.05, N/A)	294.6	N/A	0.8700 [ 1.0000 ]	87.0% { 102.4% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 208576	(9.12, N/A) (N/A, -0.05, N/A)	860.4	N/A	0.8279 [ 1.0000 ]	82.8% { 98.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 247518	(9.82, N/A) (N/A, -0.06, N/A)	483.6	N/A	0.7966 [ 1.0000 ]	79.7% { 92.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1520832	(5.39, N/A) (N/A, -0.03, N/A)	490.8	N/A	2.1280 [ 2.0000 ]	106.4% { 105.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 587611	(7.04, N/A) (N/A, -0.05, N/A)	322.2	N/A	1.9500 [ 2.0000 ]	97.5% { 96.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1161022	(8.35, N/A) (N/A, -0.05, N/A)	694.7	N/A	1.8255 [ 2.0000 ]	91.3% { 81.9% }			





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (7)  
 Acquired: 2023/04/18 - 22:56

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 144413	( 5.06, N/A ) ( N/A, -0.02, N/A )	473.2	N/A	4.1924 [ 4.0000 ]	104.8% { 103.4% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 166809	( 6.53, N/A ) ( N/A, -0.04, N/A )	497.2	N/A	3.9037 [ 4.0000 ]	97.6% { 98.0% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 343996	( 7.78, N/A ) ( N/A, -0.05, N/A )	621.9	N/A	7.1266 [ 4.0000 ]	178.2% { 200.6% }			
13C8_PFOSA_EIS	( 506.0 / 78.0 ) 992250	( 8.89, N/A ) ( N/A, -0.02, N/A )	571.2	N/A	1.3901 [ 2.0000 ]	69.5% { 74.5% }			
D3_NMeFOSA_EIS	( 515.0 / 169.0 ) 172509	( 9.85, N/A ) ( N/A, -0.01, N/A )	242.7	N/A	0.7806 [ 2.0000 ]	39.0% { 42.2% }			
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 166798	( 10.06, N/A ) ( N/A, -0.01, N/A )	605.4	N/A	0.7683 [ 2.0000 ]	38.4% { 42.3% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 487966	( 8.04, N/A ) ( N/A, -0.05, N/A )	359.3	N/A	3.6743 [ 4.0000 ]	91.9% { 100.4% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 362982	( 8.30, N/A ) ( N/A, -0.05, N/A )	265.6	N/A	3.4223 [ 4.0000 ]	85.6% { 92.3% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 704201	( 9.75, N/A ) ( N/A, -0.01, N/A )	806.3	N/A	10.0576 [ 20.0000 ]	50.3% { 57.4% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 846841	( 9.97, N/A ) ( N/A, -0.01, N/A )	1067.5	N/A	9.7575 [ 20.0000 ]	48.8% { 54.2% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1304396	( 5.69, N/A ) ( N/A, -0.03, N/A )	922.1	N/A	7.3764 [ 8.0000 ]	92.2% { 103.7% }			

# ANALYSIS DATA SHEET

## LCS

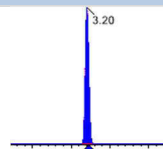
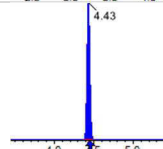
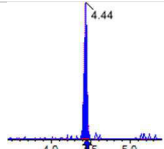
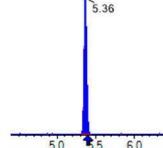
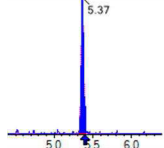
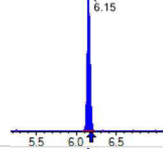
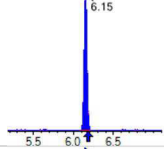
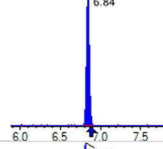
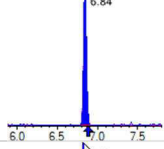
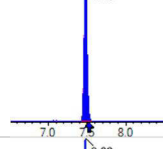
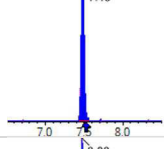
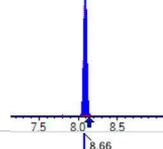
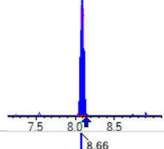
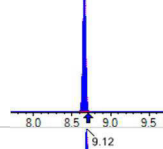
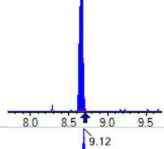
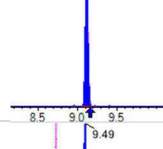
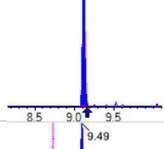
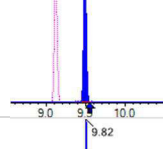
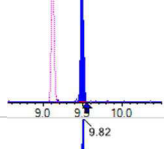
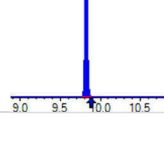
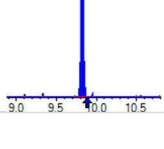
Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-BS1
Sampled:		Prepared:	04/17/23 11:15
Solids:		Preparation:	EPA 1633
Batch:	BCD0235	Sequence:	SC01534
Column:	1	Calibration:	2316009
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	16.3	1.6	0.21	
PFPEA	8.13	0.80	0.065	
PFHXA	4.24	0.40	0.055	
PFHPA	3.81	0.40	0.041	
PFOA	3.95	0.40	0.15	
PFNA	4.16	0.40	0.082	
PFDA	4.11	0.40	0.10	
PFUnA	3.79	0.40	0.16	
PFDOA	4.03	0.40	0.11	
PFTRDA	4.07	0.40	0.20	
PFTEDA	4.19	0.40	0.20	
PFBS	3.46	0.40	0.037	
PFPEs	3.82	0.40	0.063	
PFHXS	3.80	0.40	0.032	MI4
PFHPS	4.42	0.40	0.051	
PFOS	4.07	0.40	0.064	
PFNS	3.95	0.40	0.12	
PFDS	4.13	0.40	0.15	
PFDOS	3.69	0.40	0.12	
4:2FTS	14.8	1.6	0.29	
6:2FTS	16.5	1.6	0.31	
8:2FTS	15.5	1.6	0.082	
PFOSA	4.20	0.40	0.10	
NMeFOSA	16.2	1.6	0.47	
NEtFOSA	16.1	1.6	0.41	
NMeFOSAA	3.97	0.40	0.11	
NEtFOSAA	3.85	0.40	0.11	
NMeFOSE	15.5	1.6	1.0	
NEtFOSE	15.7	1.6	1.0	
HFPO-DA	7.54	0.80	0.17	

**ANALYSIS DATA SHEET****LCS**

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-BS1
Sampled:		Prepared:	04/17/23 11:15
Solids:		Preparation:	EPA 1633
Batch:	BCD0235	Sequence:	SC01534
Column:	1	Calibration:	2316009
			Instrument: Saphira

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	7.94	0.80	0.12	
PFEESA	7.29	0.80	0.11	
PFMPA	7.46	0.80	0.054	
PFMBA	8.33	0.80	0.091	
NFDHA	7.97	0.80	0.30	
9CL-PF3ONS	8.09	0.80	0.21	
11CL-PF3OUDS	8.37	0.80	0.21	
3:3FTCA	14.4	1.6	0.57	
5:3FTCA	16.5	1.6	0.44	
7:3FTCA	15.3	1.6	0.55	

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 808872	(3.20, 1.00) (0.00, N/A, 0.0)	3391.2	N/A 0.0 0.0	4.0655 [4.0000]	101.6%			
PFPeA	(263.0 / 219.0) 590309 (263.0 / 69.0) 7258	(4.43, 1.00) (0.00, N/A, -0.3)	748.2 129.9	0.0123 104.8 105.6	2.0313 [2.0000]	101.6%			
PFHxA	(313.0 / 269.0) 382166 (313.0 / 119.0) 32716	(5.36, 1.00) (0.00, N/A, 0.0)	480.9 183.9	0.0856 102.6 99.0	1.0610 [1.0000]	106.1%			
PFHpA	(363.0 / 319.0) 285956 (363.0 / 169.0) 82969	(6.15, 1.00) (0.00, N/A, 0.0)	614.7 386.4	0.2901 104.7 105.3	0.9523 [1.0000]	95.2%			
PFOA	(413.0 / 369.0) 334895 (413.0 / 169.0) 104493	(6.84, 1.00) (0.00, N/A, 0.0)	280.0 278.9	0.3120 104.5 106.5	0.9880 [1.0000]	98.8%			
PFNA	(463.0 / 419.0) 279741 (463.0 / 169.0) 52617	(7.48, 1.00) (0.00, N/A, -0.1)	389.1 257.3	0.1881 92.9 94.8	1.0406 [1.0000]	104.1%			
PFDA	(513.0 / 469.0) 280231 (513.0 / 169.0) 30006	(8.09, 1.00) (0.00, N/A, 0.2)	511.6 246.1	0.1071 109.1 116.1	1.0271 [1.0000]	102.7%			
PFUnA	(563.0 / 519.0) 247992 (563.0 / 169.0) 27444	(8.66, 1.00) (0.00, N/A, 0.0)	439.6 203.7	0.1107 109.7 101.1	0.9483 [1.0000]	94.8%			
PFDoA	(613.0 / 569.0) 202106 (613.0 / 169.0) 29489	(9.12, 1.00) (0.00, N/A, -0.1)	448.0 224.3	0.1459 102.4 99.7	1.0067 [1.0000]	100.7%			
PFTrDA	(663.0 / 619.0) 217676 (663.0 / 169.0) 47398	(9.49, 1.04) (N/A, -0.05, 0.0)	646.7 281.8	0.2177 105.6 100.5	1.0168 [1.0000]	101.7%			
PFTeDA	(713.0 / 669.0) 274325 (713.0 / 169.0) 48070	(9.82, 1.00) (0.00, N/A, 0.0)	697.1 216.2	0.1752 88.8 92.1	1.0477 [1.0000]	104.8%			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (8)  
 Acquired: 2023/04/18 - 23:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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 [4.0000]	N/A%			BS2,
PFODA	(913.0 / 869.0) N/A (913.0 / 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 [4.0000]	N/A%			BS2,
PFBS	(299.0 / 80.0) 435451 (299.0 / 99.0) 331222	(5.40, 1.00) (0.00, N/A, 0.1)	508.6 486.7	0.7606 110.7 101.7	0.8649 [0.8847]	97.8%			
PFPeS	(349.0 / 80.0) 734412 (349.0 / 99.0) 267268	(6.29, 0.89) (N/A, -0.04, 0.1)	807.7 421.7	0.3639 102.8 99.9	0.9552 [0.9384]	101.8%			
PFHxS	(399.0 / 80.0) 607232 (399.0 / 99.0) 205247	(7.04, 1.00) (0.00, N/A, 0.0)	6032.6 153.3	0.3380 95.5 98.6	0.9502 [0.9110]	104.3%			M14 ABK 4/19/23
PFHpS	(449.0 / 80.0) 584562 (449.0 / 99.0) 177682	(7.72, 0.92) (N/A, -0.05, 0.1)	617.1 337.4	0.3040 108.8 106.8	1.1046 [0.9514]	116.1%			
PFOS	(499.0 / 80.0) 772951 (499.0 / 99.0) 170100	(8.35, 1.00) (0.00, N/A, -0.1)	12583.2 7775.1	0.2201 95.6 88.4	1.0175 [0.9275]	109.7%			
PFNS	(549.0 / 80.0) 591722 (549.0 / 99.0) 148256	(8.89, 1.06) (N/A, -0.05, -0.1)	664.3 752.6	0.2505 101.6 104.9	0.9879 [0.9599]	102.9%			
PFDS	(599.0 / 80.0) 711092 (599.0 / 99.0) 186990	(9.30, 1.11) (N/A, -0.05, 0.0)	1127.0 1100.3	0.2630 114.8 118.6	1.0320 [0.9631]	107.2%			
PFDoS	(699.0 / 80.0) 717024 (699.0 / 99.0) 171655	(9.96, 1.19) (N/A, -0.07, 0.0)	789.1 603.3	0.2394 104.9 102.6	0.9215 [0.9696]	95.0%			
4:2FTS	(327.0 / 307.0) 465008 (327.0 / 81.0) 288167	(5.06, 1.00) (0.00, N/A, 0.0)	1088.0 592.4	0.6197 95.3 97.1	3.7068 [3.7381]	99.2%			

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	( 427.0 / 407.0 ) 283044 ( 427.0 / 81.0 ) 215375	( 6.54 , 1.00 ) ( 0.00 , N/A , 0.0 )	479.9 512.2	0.7609 103.1 104.1	4.1334 [ 3.7962 ]	108.9%			
8:2FTS	( 527.0 / 507.0 ) 488937 ( 527.0 / 81.0 ) 360530	( 7.78 , 1.00 ) ( 0.00 , N/A , 0.0 )	434.0 345.8	0.7374 109.0 108.3	3.8742 [ 3.8332 ]	101.1%			
PFSBA	( 297.9 / 78.0 ) N/A ( 297.9 / 278.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000 [ 4.0000 ]	N/A%			BS2,
PFHxSA	( 397.9 / 78.0 ) N/A ( 397.9 / 378.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000 [ 4.0000 ]	N/A%			BS2,
PFOSA	( 498.0 / 78.0 ) 488721 ( 498.0 / 478.0 ) 12440	( 8.89 , 1.00 ) ( 0.00 , N/A , 0.1 )	549.9 184.3	0.0255 102.5 103.5	1.0500 [ 1.0000 ]	105.0%			
NMeFOSA	( 512.0 / 219.0 ) 388917 ( 512.0 / 169.0 ) 300850	( 9.85 , 1.00 ) ( 0.00 , N/A , 0.8 )	3865.5 10208.1	0.7736 103.3 101.2	4.0526 [ 4.0000 ]	101.3%			
NEtFOSA	( 526.0 / 219.0 ) 426189 ( 526.0 / 169.0 ) 517769	( 10.07 , 1.00 ) ( 0.00 , N/A , 1.9 )	7615.8 26999.2	1.2092 103.4 99.1	4.0370 [ 4.0000 ]	100.9%			
NMeFOSAA	( 570.0 / 419.0 ) 123536 ( 570.0 / 483.0 ) 57927	( 8.05 , 1.00 ) ( 0.00 , N/A , 0.1 )	1595182.2 124170.6	0.4689 98.5 91.8	0.9915 [ 1.0000 ]	99.1%			
NEtFOSAA	( 584.0 / 419.0 ) 84734 ( 584.0 / 526.0 ) 52838	( 8.31 , 1.00 ) ( 0.01 , N/A , 0.0 )	28332.8 8182.1	0.6236 104.8 115.6	0.9629 [ 1.0000 ]	96.3%			
NMeFOSE	( 616.0 / 59.0 ) 189914	( 9.76 , 1.00 ) ( 0.01 , N/A , 0.0 )	1253.1	N/A 0.0 0.0	3.8723 [ 4.0000 ]	96.8%			
NEtFOSE	( 630.0 / 59.0 ) 211848	( 9.99 , 1.00 ) ( 0.01 , N/A , 0.0 )	1332.3	N/A 0.0 0.0	3.9296 [ 4.0000 ]	98.2%			



Chemist: ABK  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: BCD0235-BS1  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
Path: S2023-04-18C (8)  
Acquired: 2023/04/18 - 23:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 170363 (285.0 / 185.0) 859956	(5.69, 1.00) (0.00, N/A, 0.0)	746.7 707.0	5.0478 107.1 100.8	1.8842 [2.0000]	94.2%			
ADONA	(377.0 / 85.0) 1057216 (377.0 / 251.0) 123977	(6.41, 1.13) (N/A, -0.03, -0.1)	524.0 189.5	0.1173 108.2 108.9	1.9841 [1.8854]	105.2%			
9CI-PF3ONS	(531.0 / 351.0) 2106341 (533.0 / 353.0) 678414	(8.77, 1.54) (N/A, -0.05, 0.1)	534.3 572.0	0.3221 98.7 100.7	2.0222 [1.8665]	108.3%			
11CI-PF3OUDS	(631.0 / 451.0) 1920611 (633.0 / 453.0) 695546	(9.58, 1.68) (N/A, -0.05, 0.1)	1280.6 710.3	0.3621 98.5 101.1	2.0917 [1.8864]	110.9%			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000 [3.6954]	N/A%			BS2,
3:3FTCA	(241.0 / 177.0) 38420 (241.0 / 117.0) 65030	(3.84, 0.87) (N/A, -0.02, 0.0)	696.7 541.1	1.6926 101.8 99.5	3.5968 [4.0000]	89.9%			
5:3FTCA	(341.0 / 236.7) 190802 (341.0 / 217.0) 335726	(5.68, 1.06) (N/A, -0.02, 0.1)	419.8 484.5	1.7596 97.7 99.5	4.1272 [4.0000]	103.2%			
7:3FTCA	(441.0 / 317.0) 209594 (441.0 / 337.0) 267263	(7.06, 1.32) (N/A, -0.03, 0.0)	325.5 413.4	1.2751 106.4 109.8	3.8166 [4.0000]	95.4%			
PFEESA	(315.0 / 135.0) 627604 (315.0 / 83.0) 185831	(5.84, 1.09) (N/A, -0.03, -0.1)	602.8 465.3	0.2961 104.1 100.1	1.8222 [1.7849]	102.1%			
PFMPA	(229.0 / 85.0) 138703	(3.69, 0.83) (N/A, -0.02, 0.0)	1040.0	N/A 0.0 0.0	1.8658 [2.0000]	93.3%			
PFMBA	(279.0 / 85.0) 436031	(4.76, 1.07) (N/A, -0.02, 0.0)	1169.5	N/A 0.0 0.0	2.0820 [2.0000]	104.1%			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (8)  
 Acquired: 2023/04/18 - 23:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 382813 (295.0 / 85.0) 371442	(5.27, 0.98) (N/A, -0.03, -0.1)	682.9 798.7	0.9703 99.8 103.7	1.9933 [2.0000]	99.7%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [1.0000]	N/A%			BS2,
13C3_PFBA_IIS	(216.0 / 172.0) 209758	(3.20, N/A) (N/A, -0.02, N/A)	746.5	N/A	1.0179 [1.0000]	101.8% {107.9%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 156947	(5.36, N/A) (N/A, -0.03, N/A)	499.0	N/A	1.0826 [1.0000]	108.3% {111.7%}			
13C4_PFOA_IIS	(417.0 / 372.0) 276196	(6.84, N/A) (N/A, -0.04, N/A)	241.6	N/A	1.0129 [1.0000]	101.3% {100.2%}			
13C5_PFNA_IIS	(468.0 / 423.0) 253120	(7.48, N/A) (N/A, -0.04, N/A)	476.3	N/A	1.0112 [1.0000]	101.1% {106.5%}			
13C2_PFDA_IIS	(515.0 / 470.1) 245894	(8.09, N/A) (N/A, -0.05, N/A)	418.3	N/A	1.0356 [1.0000]	103.6% {101.2%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 420867	(7.04, N/A) (N/A, -0.05, N/A)	276.0	N/A	1.1020 [1.0000]	110.2% {113.1%}			
13C4_PFOS_IIS	(503.0 / 79.9) 496552	(8.35, N/A) (N/A, -0.05, N/A)	501.9	N/A	1.0414 [1.0000]	104.1% {84.3%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1845121	(3.20, N/A) (N/A, -0.02, N/A)	1159.9	N/A	8.2114 [8.0000]	102.6% {114.2%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 1253268	(4.43, N/A) (N/A, -0.02, N/A)	1104.2	N/A	4.0386 [4.0000]	101.0% {112.8%}			





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (8)  
 Acquired: 2023/04/18 - 23:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 685575	(5.37, N/A) (N/A, -0.03, N/A)	825.5	N/A	1.9509 [ 2.0000 ]	97.5% { 115.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 565875	(6.15, N/A) (N/A, -0.03, N/A)	1166.9	N/A	2.0402 [ 2.0000 ]	102.0% { 127.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 679245	(6.84, N/A) (N/A, -0.04, N/A)	299.9	N/A	2.0667 [ 2.0000 ]	103.3% { 108.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 284934	(7.48, N/A) (N/A, -0.04, N/A)	203.9	N/A	1.0844 [ 1.0000 ]	108.4% { 119.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 282096	(8.09, N/A) (N/A, -0.05, N/A)	222.3	N/A	0.9670 [ 1.0000 ]	96.7% { 102.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 288447	(8.66, N/A) (N/A, -0.05, N/A)	229.0	N/A	1.0277 [ 1.0000 ]	102.8% { 114.2% }			
13C2_PFDaA_EIS	(615.0 / 570.0) 216112	(9.12, N/A) (N/A, -0.05, N/A)	737.6	N/A	0.9078 [ 1.0000 ]	90.8% { 102.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 283738	(9.82, N/A) (N/A, -0.06, N/A)	603.3	N/A	0.9664 [ 1.0000 ]	96.6% { 105.5% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1650200	(5.40, N/A) (N/A, -0.03, N/A)	804.0	N/A	2.0609 [ 2.0000 ]	103.0% { 114.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 669031	(7.04, N/A) (N/A, -0.04, N/A)	388.6	N/A	1.9816 [ 2.0000 ]	99.1% { 110.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1202476	(8.35, N/A) (N/A, -0.05, N/A)	475.1	N/A	1.9388 [ 2.0000 ]	96.9% { 84.8% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (8)  
 Acquired: 2023/04/18 - 23:12

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	( 329.0 / 81.0 ) 156761	( 5.06 , N/A ) ( N/A , -0.02 , N/A )	555.1	N/A	4.0619 [ 4.0000 ]	101.5% { 112.2% }			
13C2_6:2FTS_EIS	( 429.0 / 81.0 ) 184353	( 6.54 , N/A ) ( N/A , -0.03 , N/A )	419.8	N/A	3.8507 [ 4.0000 ]	96.3% { 108.4% }			
13C2_8:2FTS_EIS	( 529.0 / 81.0 ) 365614	( 7.78 , N/A ) ( N/A , -0.05 , N/A )	442.5	N/A	6.7606 [ 4.0000 ]	169.0% { 213.2% }			
13C8_PFOA_EIS	( 506.0 / 78.0 ) 1115001	( 8.89 , N/A ) ( N/A , -0.02 , N/A )	898.1	N/A	1.6018 [ 2.0000 ]	80.1% { 83.7% }			
D3_NMeFOA_EIS	( 515.0 / 169.0 ) 196697	( 9.85 , N/A ) ( N/A , -0.01 , N/A )	318.2	N/A	0.9127 [ 2.0000 ]	45.6% { 48.1% }			
D5_NEtFOA_EIS	( 531.0 / 169.0 ) 197080	( 10.06 , N/A ) ( N/A , -0.01 , N/A )	593.8	N/A	0.9310 [ 2.0000 ]	46.5% { 50.0% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 528430	( 8.04 , N/A ) ( N/A , -0.05 , N/A )	542.9	N/A	4.0804 [ 4.0000 ]	102.0% { 108.8% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 395632	( 8.30 , N/A ) ( N/A , -0.05 , N/A )	350.8	N/A	3.8252 [ 4.0000 ]	95.6% { 100.6% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 860244	( 9.75 , N/A ) ( N/A , -0.01 , N/A )	911.0	N/A	12.5995 [ 20.0000 ]	63.0% { 70.1% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 1062907	( 9.98 , N/A ) ( N/A , -0.01 , N/A )	1314.7	N/A	12.5592 [ 20.0000 ]	62.8% { 68.1% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1436236	( 5.69 , N/A ) ( N/A , -0.03 , N/A )	936.4	N/A	7.9412 [ 8.0000 ]	99.3% { 114.2% }			

**ANALYSIS DATA SHEET****MRL Check**

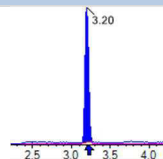
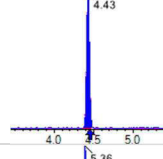
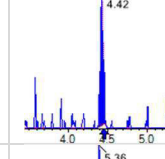
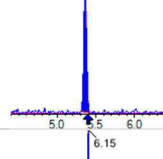
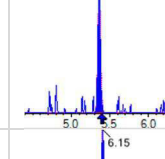
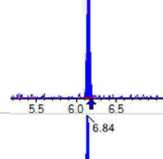
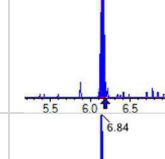
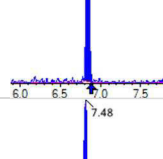
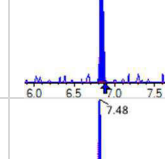
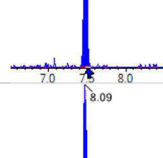
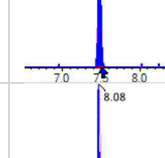
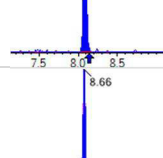
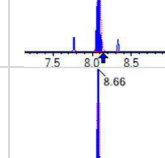
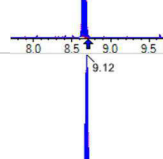
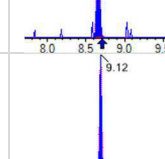
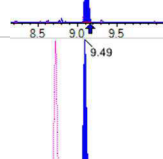
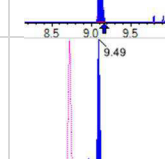
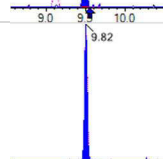
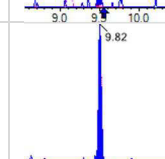
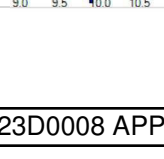
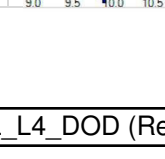
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Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-MRL1
Sampled:		File ID:	S2023-04-18C (9)
		Prepared:	04/17/23 11:15
		Analyzed:	04/18/23 23:28
Solids:		Preparation:	EPA 1633
		Dilution:	1
Batch:	BCD0235	Sequence:	SC01534
		Calibration:	2316009
		Instrument:	Saphira
Column:	1		

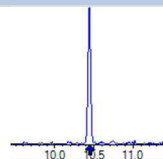
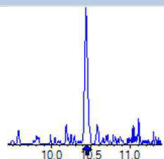
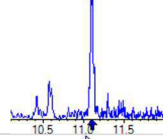
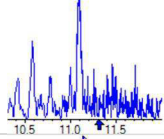
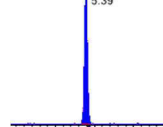
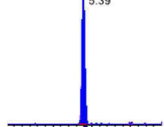
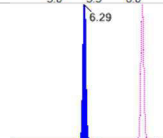
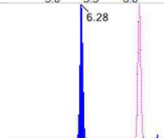
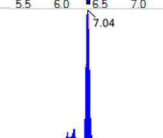
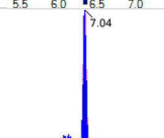
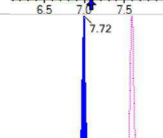
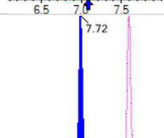
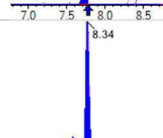
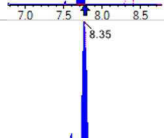
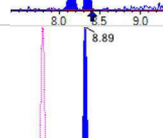
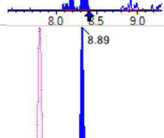
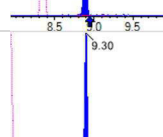
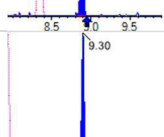
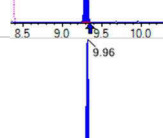
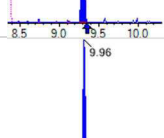
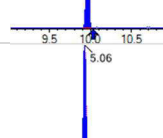
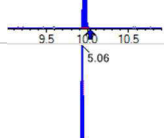
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	2.94	1.6	0.21	
PFPEA	1.41	0.80	0.065	
PFHXA	0.797	0.40	0.055	
PFHPA	0.652	0.40	0.041	
PFOA	0.762	0.40	0.15	
PFNA	0.738	0.40	0.082	
PFDA	0.772	0.40	0.10	
PFUnA	0.714	0.40	0.16	
PFDOA	0.755	0.40	0.11	
PFTRDA	0.685	0.40	0.20	
PFTEDA	0.722	0.40	0.20	IR2
PFBS	0.696	0.40	0.037	
PFPEs	0.730	0.40	0.063	
PFHXS	0.731	0.40	0.032	MI4
PFHPS	0.880	0.40	0.051	
PFOS	0.694	0.40	0.064	
PFNS	0.780	0.40	0.12	
PFDS	0.808	0.40	0.15	
PFDOS	0.617	0.40	0.12	
4:2FTS	3.14	1.6	0.29	
6:2FTS	2.96	1.6	0.31	
8:2FTS	3.08	1.6	0.082	
PFOSA	0.850	0.40	0.10	
NMeFOSA	2.76	1.6	0.47	
NEtFOSA	2.93	1.6	0.41	
NMeFOSAA	0.471	0.40	0.11	MI4
NEtFOSAA	0.681	0.40	0.11	MI4
NMeFOSE	3.12	1.6	1.0	
NEtFOSE	3.12	1.6	1.0	
HFPO-DA	1.66	0.80	0.17	

**ANALYSIS DATA SHEET****MRL Check**

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Matrix:	Water	Laboratory ID:	BCD0235-MRL1
Sampled:		File ID:	S2023-04-18C (9)
Solids:		Prepared:	04/17/23 11:15
Batch:	BCD0235	Analyzed:	04/18/23 23:28
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2316009
		Instrument:	Saphira
		Sequence:	SC01534

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	1.57	0.80	0.12	
PFEESA	1.23	0.80	0.11	
PFMPA	1.37	0.80	0.054	
PFMBA	1.49	0.80	0.091	
NFDHA	1.46	0.80	0.30	
9CL-PF3ONS	1.43	0.80	0.21	
11CL-PF3OUDS	1.36	0.80	0.21	
3:3FTCA	2.49	1.6	0.57	
5:3FTCA	3.39	1.6	0.44	
7:3FTCA	2.93	1.6	0.55	

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 158380	(3.20, 1.00) (0.00, N/A, 0.0)	817.5	N/A 0.0 0.0	0.7339 [0.8000]	91.7%			
PFPeA	(263.0 / 219.0) 106805 (263.0 / 69.0) 1353	(4.43, 1.00) (0.00, N/A, 0.3)	381.0 45.6	0.0127 107.9 108.7	0.3531 [0.4000]	88.3%			
PFHxA	(313.0 / 269.0) 75325 (313.0 / 119.0) 7110	(5.36, 1.00) (0.00, N/A, 0.0)	157.0 53.9	0.0944 113.1 109.2	0.1993 [0.2000]	99.6%			
PFHpA	(363.0 / 319.0) 49129 (363.0 / 169.0) 15745	(6.15, 1.00) (0.00, N/A, -0.2)	144.9 103.3	0.3205 115.6 116.3	0.1629 [0.2000]	81.5%			
PFOA	(413.0 / 369.0) 66194 (413.0 / 169.0) 17489	(6.84, 1.00) (0.00, N/A, 0.1)	109.6 104.9	0.2642 88.5 90.1	0.1905 [0.2000]	95.3%			
PFNA	(463.0 / 419.0) 49304 (463.0 / 169.0) 12569	(7.48, 1.00) (0.00, N/A, 0.0)	112.8 225.6	0.2549 125.9 128.5	0.1844 [0.2000]	92.2%			
PFDA	(513.0 / 469.0) 57065 (513.0 / 169.0) 4007	(8.09, 1.00) (0.00, N/A, 0.5)	193.2 104.8	0.0702 71.6 76.2	0.1931 [0.2000]	96.5%			
PFUnA	(563.0 / 519.0) 43894 (563.0 / 169.0) 4312	(8.66, 1.00) (0.00, N/A, 0.1)	256.8 66.4	0.0982 97.4 89.7	0.1784 [0.2000]	89.2%			
PFDoA	(613.0 / 569.0) 39278 (613.0 / 169.0) 5617	(9.12, 1.00) (0.00, N/A, 0.1)	226.8 123.3	0.1430 100.4 97.7	0.1888 [0.2000]	94.4%			
PFTTrDA	(663.0 / 619.0) 38015 (663.0 / 169.0) 7393	(9.49, 1.04) (N/A, -0.06, 0.1)	259.8 72.4	0.1945 94.3 89.7	0.1714 [0.2000]	85.7%			
PFTeDA	(713.0 / 669.0) 46200 (713.0 / 169.0) 13574	(9.82, 1.00) (0.00, N/A, 0.0)	363.7 170.6	0.2938 149.0 154.5	0.1806 [0.2000]	90.3%			IR2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFHxDA	(813.0 / 769.0) N/A (813.0 / 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 [0.8000]	N/A%			BS2,
PFODA	(913.0 / 869.0) N/A (913.0 / 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 [0.8000]	N/A%			BS2,
PFBS	(299.0 / 80.0) 87976 (299.0 / 99.0) 57266	(5.39, 1.00) (0.00, N/A, 0.0)	228.9 291.6	0.6509 94.7 87.0	0.1741 [0.1769]	98.4%			
PFPeS	(349.0 / 80.0) 134342 (349.0 / 99.0) 55924	(6.29, 0.89) (N/A, -0.04, 0.1)	408.7 219.9	0.4163 117.6 114.3	0.1825 [0.1877]	97.2%			
PFHxS	(399.0 / 80.0) 111855 (399.0 / 99.0) 36194	(7.04, 1.00) (0.00, N/A, 0.0)	147.4 127.6	0.3236 91.5 94.4	0.1828 [0.1822]	100.3%			M14 ABK 4/19/23
PFHpS	(449.0 / 80.0) 115490 (449.0 / 99.0) 32135	(7.72, 0.92) (N/A, -0.05, 0.1)	507.3 172.0	0.2782 99.6 97.7	0.2201 [0.1903]	115.7%			
PFOS	(499.0 / 80.0) 130682 (499.0 / 99.0) 33585	(8.34, 1.00) (0.00, N/A, -0.2)	4217.9 1764.0	0.2570 111.6 103.3	0.1735 [0.1855]	93.5%			
PFNS	(549.0 / 80.0) 115735 (549.0 / 99.0) 29932	(8.89, 1.06) (N/A, -0.05, 0.0)	353.5 231.3	0.2586 104.9 108.3	0.1949 [0.1920]	101.5%			
PFDS	(599.0 / 80.0) 138053 (599.0 / 99.0) 32186	(9.30, 1.11) (N/A, -0.05, 0.1)	494.6 251.6	0.2331 101.8 105.2	0.2021 [0.1926]	104.9%			
PFDoS	(699.0 / 80.0) 119028 (699.0 / 99.0) 29439	(9.96, 1.19) (N/A, -0.07, 0.2)	388.9 395.4	0.2473 108.4 106.0	0.1543 [0.1939]	79.6%			
4:2FTS	(327.0 / 307.0) 96018 (327.0 / 81.0) 64918	(5.06, 1.00) (0.00, N/A, 0.0)	789.5 246.4	0.6761 104.0 106.0	0.7844 [0.7476]	104.9%			

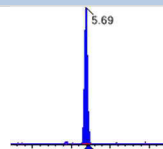
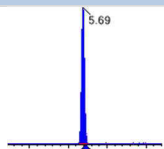
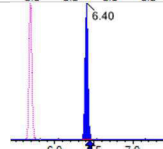
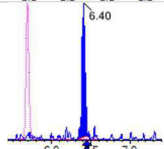
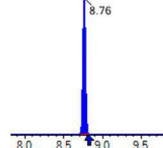
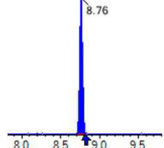
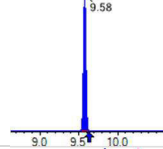
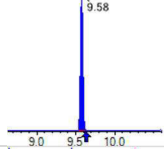
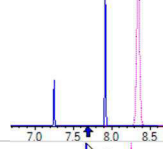
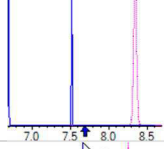
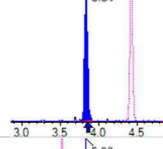
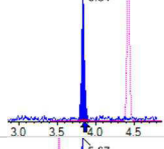
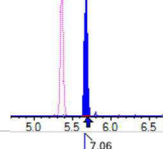
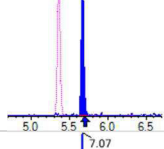
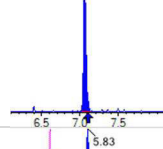
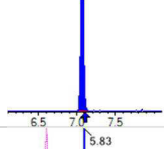
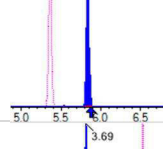
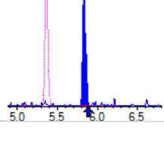
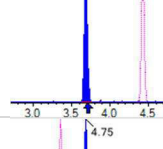
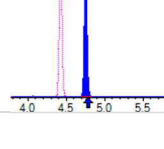


Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-MRL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (9)  
 Acquired: 2023/04/18 - 23:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
6:2FTS	(427.0 / 407.0) 49506 (427.0 / 81.0) 35248	(6.53, 1.00) (0.00, N/A, -0.1)	236.8 184.4	0.7120 96.4 97.5	0.7409 [0.7592]	97.6%			
8:2FTS	(527.0 / 507.0) 110841 (527.0 / 81.0) 83354	(7.78, 1.00) (0.00, N/A, -0.1)	526.2 555.6	0.7520 111.2 110.4	0.7706 [0.7666]	100.5%			
PFSBA	(297.9 / 78.0) N/A (297.9 / 278.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000 [0.8000]	N/A%			BS2,
PFHxSA	(397.9 / 78.0) N/A (397.9 / 378.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000 [0.8000]	N/A%			BS2,
PFOSA	(498.0 / 78.0) 99214 (498.0 / 478.0) 1923	(8.88, 1.00) (0.00, N/A, 0.5)	306.6 49.8	0.0194 78.0 78.8	0.2126 [0.2000]	106.3%			
NMeFOSA	(512.0 / 219.0) 85927 (512.0 / 169.0) 59514	(9.85, 1.00) (0.00, N/A, 1.6)	329533.0 3596.1	0.6926 92.5 90.6	0.6888 [0.8000]	86.1%			
NEtFOSA	(526.0 / 219.0) 98025 (526.0 / 169.0) 114829	(10.07, 1.00) (0.00, N/A, 2.0)	36849.1 2394.7	1.1714 100.2 96.0	0.7318 [0.8000]	91.5%			
NMeFOSAA	(570.0 / 419.0) 21649 (570.0 / 483.0) 7745	(8.05, 1.00) (0.00, N/A, -0.3)	486.0 172.0	0.3577 75.2 70.0	0.1179 [0.2000]	58.9%			M14 ABK 4/19/23
NEtFOSAA	(584.0 / 419.0) 14143 (584.0 / 526.0) 11335	(8.31, 1.00) (0.01, N/A, 0.2)	1497.2 820.7	0.8015 134.7 148.6	0.1702 [0.2000]	85.1%			M14 ABK 4/19/23
NMeFOSE	(616.0 / 59.0) 36429	(9.76, 1.00) (0.01, N/A, 0.0)	383.4	N/A 0.0 0.0	0.7794 [0.8000]	97.4%			
NEtFOSE	(630.0 / 59.0) 38668	(9.99, 1.00) (0.01, N/A, 0.0)	13383.1	N/A 0.0 0.0	0.7802 [0.8000]	97.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
HFPO-DA	(285.0 / 169.0) 37362 (285.0 / 185.0) 162485	(5.69, 1.00) (0.00, N/A, 0.0)	308.7 554.6	4.3490 92.3 86.9	0.4138 [0.4000]	103.5%			
ADONA	(377.0 / 85.0) 208777 (377.0 / 251.0) 24472	(6.40, 1.13) (N/A, -0.04, 0.0)	289.3 65.0	0.1172 108.2 108.9	0.3924 [0.3771]	104.1%			
9CI-PF3ONS	(531.0 / 351.0) 372916 (533.0 / 353.0) 123910	(8.76, 1.54) (N/A, -0.06, 0.1)	310.9 231.5	0.3323 101.8 103.9	0.3585 [0.3733]	96.0%			
11CI-PF3OUDS	(631.0 / 451.0) 312047 (633.0 / 453.0) 120024	(9.58, 1.68) (N/A, -0.06, 0.0)	1301.4 656.9	0.3846 104.7 107.3	0.3403 [0.3773]	90.2%			
PFECHS	(461.0 / 98.9) N/A (461.0 / 381.2) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000 [0.7391]	N/A%			BS2,
3:3FTCA	(241.0 / 177.0) 6910 (241.0 / 117.0) 11762	(3.84, 0.87) (N/A, -0.02, 0.1)	199.8 128.1	1.7022 102.4 100.1	0.6214 [0.8000]	77.7%			
5:3FTCA	(341.0 / 236.7) 41161 (341.0 / 217.0) 64003	(5.68, 1.06) (N/A, -0.02, 0.3)	295.8 215.9	1.5550 86.3 87.9	0.8484 [0.8000]	106.0%			
7:3FTCA	(441.0 / 317.0) 42208 (441.0 / 337.0) 48477	(7.06, 1.32) (N/A, -0.04, -0.3)	195.1 202.1	1.1485 95.8 98.9	0.7324 [0.8000]	91.5%			
PFEESA	(315.0 / 135.0) 111405 (315.0 / 83.0) 30905	(5.83, 1.09) (N/A, -0.04, 0.2)	577.4 145.5	0.2774 97.5 93.8	0.3082 [0.3570]	86.3%			
PFMPA	(229.0 / 85.0) 26476	(3.69, 0.83) (N/A, -0.02, 0.0)	478.7	N/A 0.0 0.0	0.3421 [0.4000]	85.5%			
PFMBA	(279.0 / 85.0) 81292	(4.75, 1.07) (N/A, -0.03, 0.0)	661.4	N/A 0.0 0.0	0.3729 [0.4000]	93.2%			





Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-MRL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (9)  
 Acquired: 2023/04/18 - 23:28

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
NFDHA	(295.0 / 201.0) 73440 (295.0 / 85.0) 64680	(5.27, 0.98) (N/A, -0.03, 0.0)	360.5 347.3	0.8807 90.6 94.2	0.3644 [ 0.4000 ]	91.1%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 0.2000 ]	N/A%			BS2,
13C3_PFBA_IIS	(216.0 / 172.0) 228503	(3.20, N/A) (N/A, -0.02, N/A)	746.9	N/A	1.1088 [ 1.0000 ]	110.9% { 117.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 167762	(5.36, N/A) (N/A, -0.03, N/A)	502.6	N/A	1.1572 [ 1.0000 ]	115.7% { 119.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 286499	(6.84, N/A) (N/A, -0.04, N/A)	267.8	N/A	1.0507 [ 1.0000 ]	105.1% { 103.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 274818	(7.48, N/A) (N/A, -0.05, N/A)	434.4	N/A	1.0979 [ 1.0000 ]	109.8% { 115.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 263240	(8.09, N/A) (N/A, -0.05, N/A)	325.3	N/A	1.1087 [ 1.0000 ]	110.9% { 108.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 409051	(7.04, N/A) (N/A, -0.05, N/A)	531.1	N/A	1.0711 [ 1.0000 ]	107.1% { 109.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 485149	(8.35, N/A) (N/A, -0.05, N/A)	345.5	N/A	1.0175 [ 1.0000 ]	101.7% { 82.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2001375	(3.20, N/A) (N/A, -0.02, N/A)	1479.7	N/A	8.1762 [ 8.0000 ]	102.2% { 123.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1304631	(4.43, N/A) (N/A, -0.03, N/A)	1068.4	N/A	3.9331 [ 4.0000 ]	98.3% { 117.4% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-MRL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (9)  
 Acquired: 2023/04/18 - 23:28

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFHxA_EIS	(318.0 / 273.0) 719480	(5.36, N/A) (N/A, -0.03, N/A)	645.1	N/A	1.9154 [ 2.0000 ]	95.8% { 120.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 568310	(6.15, N/A) (N/A, -0.04, N/A)	662.2	N/A	1.9169 [ 2.0000 ]	95.8% { 128.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 696130	(6.84, N/A) (N/A, -0.04, N/A)	590.6	N/A	2.0419 [ 2.0000 ]	102.1% { 111.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 283321	(7.48, N/A) (N/A, -0.05, N/A)	554.5	N/A	0.9931 [ 1.0000 ]	99.3% { 118.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 305548	(8.09, N/A) (N/A, -0.05, N/A)	221.2	N/A	0.9784 [ 1.0000 ]	97.8% { 110.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 271355	(8.66, N/A) (N/A, -0.05, N/A)	200.4	N/A	0.9031 [ 1.0000 ]	90.3% { 107.5% }			
13C2_PFDoA_EIS	(615.0 / 570.0) 223946	(9.12, N/A) (N/A, -0.05, N/A)	741.5	N/A	0.8787 [ 1.0000 ]	87.9% { 105.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 277201	(9.82, N/A) (N/A, -0.06, N/A)	550.6	N/A	0.8819 [ 1.0000 ]	88.2% { 103.1% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1656266	(5.39, N/A) (N/A, -0.04, N/A)	657.1	N/A	2.1282 [ 2.0000 ]	106.4% { 115.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 640543	(7.04, N/A) (N/A, -0.05, N/A)	350.5	N/A	1.9520 [ 2.0000 ]	97.6% { 105.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1192110	(8.35, N/A) (N/A, -0.06, N/A)	585.8	N/A	1.9673 [ 2.0000 ]	98.4% { 84.1% }			



Chemist: ABK  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCD0235-MRL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-04-18.dam

Quant Method: 1633 - S2023-04-18B  
 Path: S2023-04-18C (9)  
 Acquired: 2023/04/18 - 23:28

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 ]	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_4:2FTS_EIS	(329.0 / 81.0) 152961	(5.06, N/A) (N/A, -0.03, N/A)	654.4	N/A	4.0779 [ 4.0000 ]	101.9% { 109.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 179897	(6.54, N/A) (N/A, -0.03, N/A)	364.1	N/A	3.8662 [ 4.0000 ]	96.7% { 105.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 416684	(7.78, N/A) (N/A, -0.05, N/A)	908.2	N/A	7.9275 [ 4.0000 ]	198.2% { 243.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1117864	(8.89, N/A) (N/A, -0.02, N/A)	552.1	N/A	1.6437 [ 2.0000 ]	82.2% { 83.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 255695	(9.85, N/A) (N/A, -0.01, N/A)	371.1	N/A	1.2144 [ 2.0000 ]	60.7% { 62.5% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 248875	(10.06, N/A) (N/A, -0.01, N/A)	711.2	N/A	1.2032 [ 2.0000 ]	60.2% { 63.1% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 513409	(8.04, N/A) (N/A, -0.05, N/A)	417.8	N/A	4.0576 [ 4.0000 ]	101.4% { 105.7% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 392807	(8.30, N/A) (N/A, -0.05, N/A)	353.5	N/A	3.8872 [ 4.0000 ]	97.2% { 99.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 819813	(9.76, N/A) (N/A, -0.01, N/A)	726.4	N/A	12.2895 [ 20.0000 ]	61.4% { 66.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 977117	(9.98, N/A) (N/A, -0.01, N/A)	1491.1	N/A	11.8169 [ 20.0000 ]	59.1% { 62.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1434188	(5.69, N/A) (N/A, -0.04, N/A)	964.4	N/A	7.4186 [ 8.0000 ]	92.7% { 114.0% }			

# PREPARATION BATCH SUMMARY

## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23D0008
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling / 60697810
Batch:	BCD0235	Batch Matrix:	Water
		Preparation:	EPA 1633

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT mL	FINAL VOL. mL
AF-RHMW04-WGN01LF-2304W1	23D0008-01RE2	04/17/23 11:15	542.31	2.00
AF-RHMW04-WGN01LF-2304W1	23D0008-01RE3	04/17/23 11:15	542.31	2.00
AF-RHMW06-WGN01LF-2304W1	23D0008-02RE2	04/17/23 11:15	528.05	2.00
AF-RHMW06-WGN01LF-2304W1	23D0008-02RE3	04/17/23 11:15	528.05	2.00
AF-RHMW16-WGN01LF-2304W1	23D0008-03RE2	04/17/23 11:15	541.78	2.00
AF-RHMW16-WGN01LF-2304W1	23D0008-03RE3	04/17/23 11:15	541.78	2.00
AF-RHMW12A-WGN01LF-2304W1	23D0008-04RE2	04/17/23 11:15	527.67	2.00
AF-RHMW12A-WGN01LF-2304W1	23D0008-04RE3	04/17/23 11:15	527.67	2.00
AF-RHMW12A-WGFD01LF-2304W1	23D0008-05RE2	04/17/23 11:15	526.48	2.00
AF-RHMW12A-WGFD01LF-2304W1	23D0008-05RE3	04/17/23 11:15	526.48	2.00
Blank	BCD0235-BLK1	04/17/23 11:15	500.00	2.00
LCS	BCD0235-BS1	04/17/23 11:15	500.00	2.00
MRL Check	BCD0235-MRL1	04/17/23 11:15	500.00	2.00

# PREPARATION BENCH SHEET

## Organics

BCD0235

Print Date/Time: 04/19/2023 5:01 pm

**Matrix: Water**

**Prepared using: PFAS - EPA 1633**

Analyses		Spiking Solution(s)			Surrogate Solution(s)				
1633		23C0549 PFAS - MIX 1633 10ng/mL			23D0206 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
23D0008-01RE2	AF-RHMW04-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	542.31	2		200	Re-extract added 4/11/2023 by HGH
23D0008-01RE3	AF-RHMW04-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	542.31	2		200	Re-extract added 4/11/2023 by HGH
23D0008-02RE2	AF-RHMW06-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	528.05	2		200	Re-extract added 4/11/2023 by HGH
23D0008-02RE3	AF-RHMW06-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	528.05	2		200	Re-extract added 4/11/2023 by HGH
23D0008-03RE2	AF-RHMW16-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	541.78	2		200	Re-extract added 4/11/2023 by HGH
23D0008-03RE3	AF-RHMW16-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	541.78	2		200	Re-extract added 4/11/2023 by HGH
23D0008-04RE2	AF-RHMW12A-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	527.67	2		200	Re-extract added 4/11/2023 by HGH
23D0008-04RE3	AF-RHMW12A-WGN01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	527.67	2		200	Re-extract added 4/11/2023 by HGH
23D0008-05RE2	AF-RHMW12A-WGFD01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	526.48	2		200	Re-extract added 4/11/2023 by HGH
23D0008-05RE3	AF-RHMW12A-WGFD01LF-2304W1	04/11/2023	05/01/2023	4/17/2023 11:15:00AM	526.48	2		200	Re-extract added 4/11/2023 by HGH
23D0056-02RE3	AF-RHMW02-WGN01LF-2304W1	04/14/2023	05/04/2023	4/17/2023 11:15:00AM	572.06	2		200	"Report relevant surrogates"
23D0056-02RE4	AF-RHMW02-WGN01LF-2304W1	04/14/2023	05/04/2023	4/17/2023 11:15:00AM	572.06	2		200	"Report relevant surrogates"
BCD0235-BLK1	Blank			4/17/2023 11:15:00AM	500	2	0	200	
BCD0235-BS1	LCS			4/17/2023 11:15:00AM	500	2	200	200	
BCD0235-MRL1	MRL Check			4/17/2023 11:15:00AM	500	2	40	200	

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date

# PREPARATION BENCH SHEET

## Organics

BCD0235

(Continued)

Print Date/Time: 04/19/2023 5:01 pm

**Matrix: Water**

**Analyses**  
1633

**Spiking Solution(s)**  
23C0549 PFAS - MIX 1633 10ng/mL

Start Date/Time \_\_\_\_\_

Stop Date/Time \_\_\_\_\_

**Prepared using: PFAS - EPA 1633**

**Surrogate Solution(s)**  
23D0206 MPFAC-HIF-ES 20.0ng/mL

Reagents	Standard	Description	LotNum
	22C0296	Envi-carb	122395
	23C0006	Reagent - 0.05MFA wash	X
	23C0468	Reagent -0.3M Formic Acid	M13H051
	23C0469	Am. Ac. preservative	*

Batch Comments:

Spiked by: LYA 4/17/23 11:15

Witness:PAF

Balance #: N/A

Cartridge:Agilent

Concentration: 4/18/23 7:55-8:52

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: SC01530  
 Calibration: 2316009

SDG:  
 Project: Red Hill AFFF Assessment Sampling / 60697810  
 Instrument: Saphira

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SC01530-CAL1	S2023-04-18B (1)	04/18/23 16:52
Cal Standard	SC01530-CAL2	S2023-04-18B (2)	04/18/23 17:08
Cal Standard	SC01530-CAL3	S2023-04-18B (3)	04/18/23 17:24
Cal Standard	SC01530-CAL4	S2023-04-18B (4)	04/18/23 17:40
Cal Standard	SC01530-CAL5	S2023-04-18B (5)	04/18/23 17:56
Cal Standard	SC01530-CAL6	S2023-04-18B (6)	04/18/23 18:12
Cal Standard	SC01530-CAL7	S2023-04-18B (7)	04/18/23 18:28
Cal Standard	SC01530-CAL8	S2023-04-18B (8)	04/18/23 18:44
Initial Cal Blank	SC01530-ICB1	S2023-04-18B (9)	04/18/23 18:59
Secondary Cal Check	SC01530-SCV1	S2023-04-18B (10)	04/18/23 19:15

# INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01534  
 Calibration: 2316009

SDG:  
 Project: Red Hill AFFF Assessment Sampling / 60697810  
 Instrument: Saphira

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SC01534-CCB1	S2023-04-18C (1)	04/18/23 21:20
Low Cal Check	SC01534-LCV1	S2023-04-18C (2)	04/18/23 21:36
Calibration Check	SC01534-CCV1	S2023-04-18C (3)	04/18/23 21:52
Performance Mix	SC01534-PEM1	S2023-04-18C (4)	04/18/23 22:08
Performance Mix	SC01534-PEM2	S2023-04-18C (5)	04/18/23 22:24
Calibration Blank	SC01534-CCB2	S2023-04-18C (6)	04/18/23 22:40
Blank	BCD0235-BLK1	S2023-04-18C (7)	04/18/23 22:56
LCS	BCD0235-BS1	S2023-04-18C (8)	04/18/23 23:12
MRL Check	BCD0235-MRL1	S2023-04-18C (9)	04/18/23 23:28
AF-RHMW04-WGN01LF-2304W1	23D0008-01RE2	S2023-04-18C (10)	04/18/23 23:43
AF-RHMW04-WGN01LF-2304W1	23D0008-01RE3	S2023-04-18C (11)	04/18/23 23:59
AF-RHMW06-WGN01LF-2304W1	23D0008-02RE2	S2023-04-18C (12)	04/19/23 00:15
AF-RHMW06-WGN01LF-2304W1	23D0008-02RE3	S2023-04-18C (13)	04/19/23 00:31
AF-RHMW16-WGN01LF-2304W1	23D0008-03RE2	S2023-04-18C (14)	04/19/23 00:47
AF-RHMW16-WGN01LF-2304W1	23D0008-03RE3	S2023-04-18C (15)	04/19/23 01:03
AF-RHMW12A-WGN01LF-2304W1	23D0008-04RE2	S2023-04-18C (16)	04/19/23 01:19
AF-RHMW12A-WGN01LF-2304W1	23D0008-04RE3	S2023-04-18C (17)	04/19/23 01:35
AF-RHMW12A-WGFD01LF-2304W1	23D0008-05RE2	S2023-04-18C (18)	04/19/23 01:50
AF-RHMW12A-WGFD01LF-2304W1	23D0008-05RE3	S2023-04-18C (19)	04/19/23 02:06
Calibration Check	SC01534-CCV2	S2023-04-18C (22)	04/19/23 02:54
Calibration Blank	SC01534-CCB3	S2023-04-18C (23)	04/19/23 03:10



# SAMPLE DATA

# ANALYSIS DATA SHEET

Laboratory:

Client:

Matrix:

Sampled:

% Solids:

SDG:

Project:

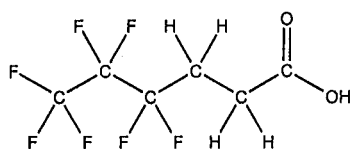
Laboratory ID:



# 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  $^{19}\text{F}$  NMR.

**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

**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:**

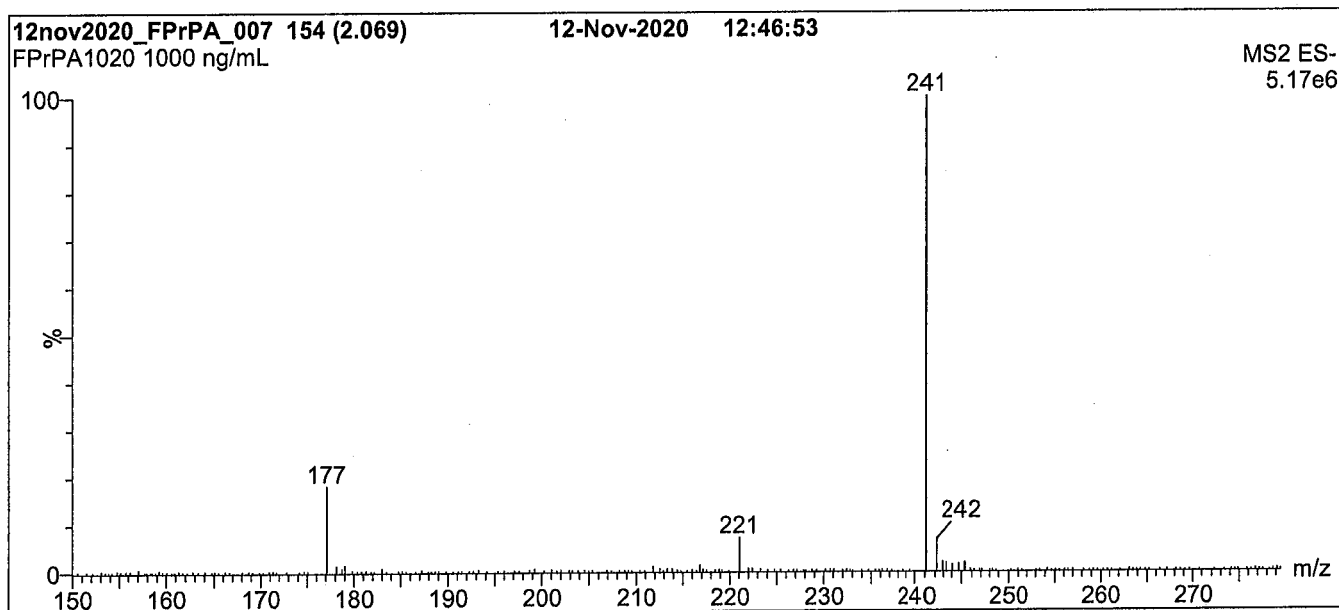
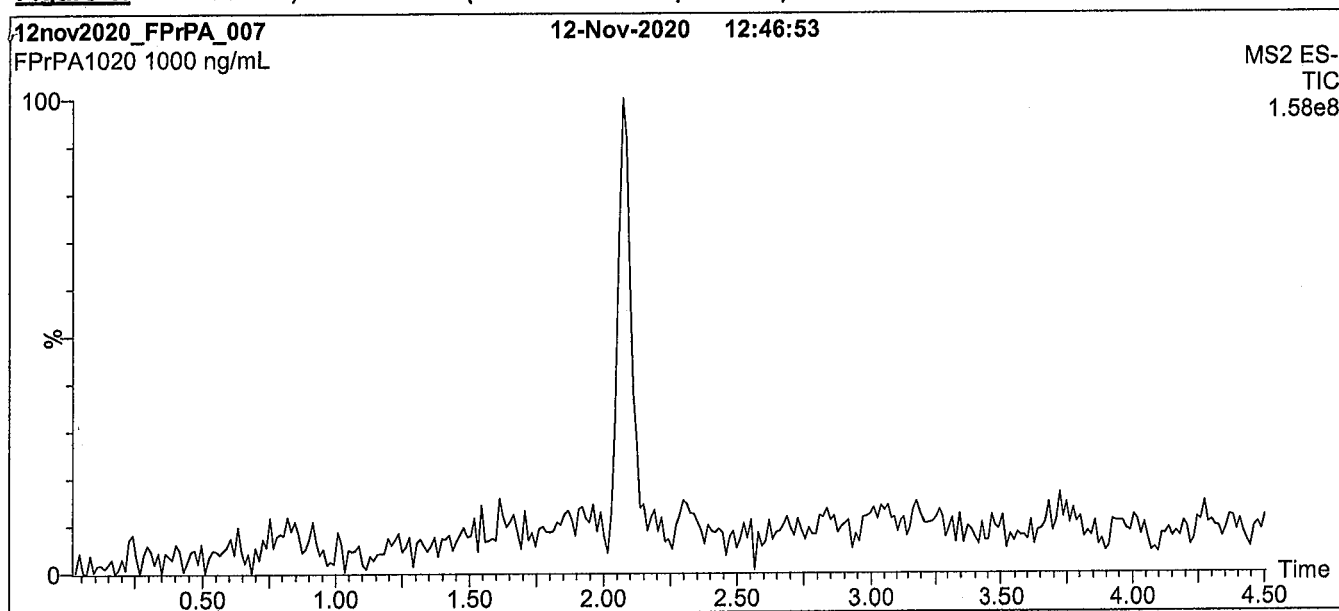
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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-ASQ 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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

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

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H<sub>2</sub>O / 40% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)

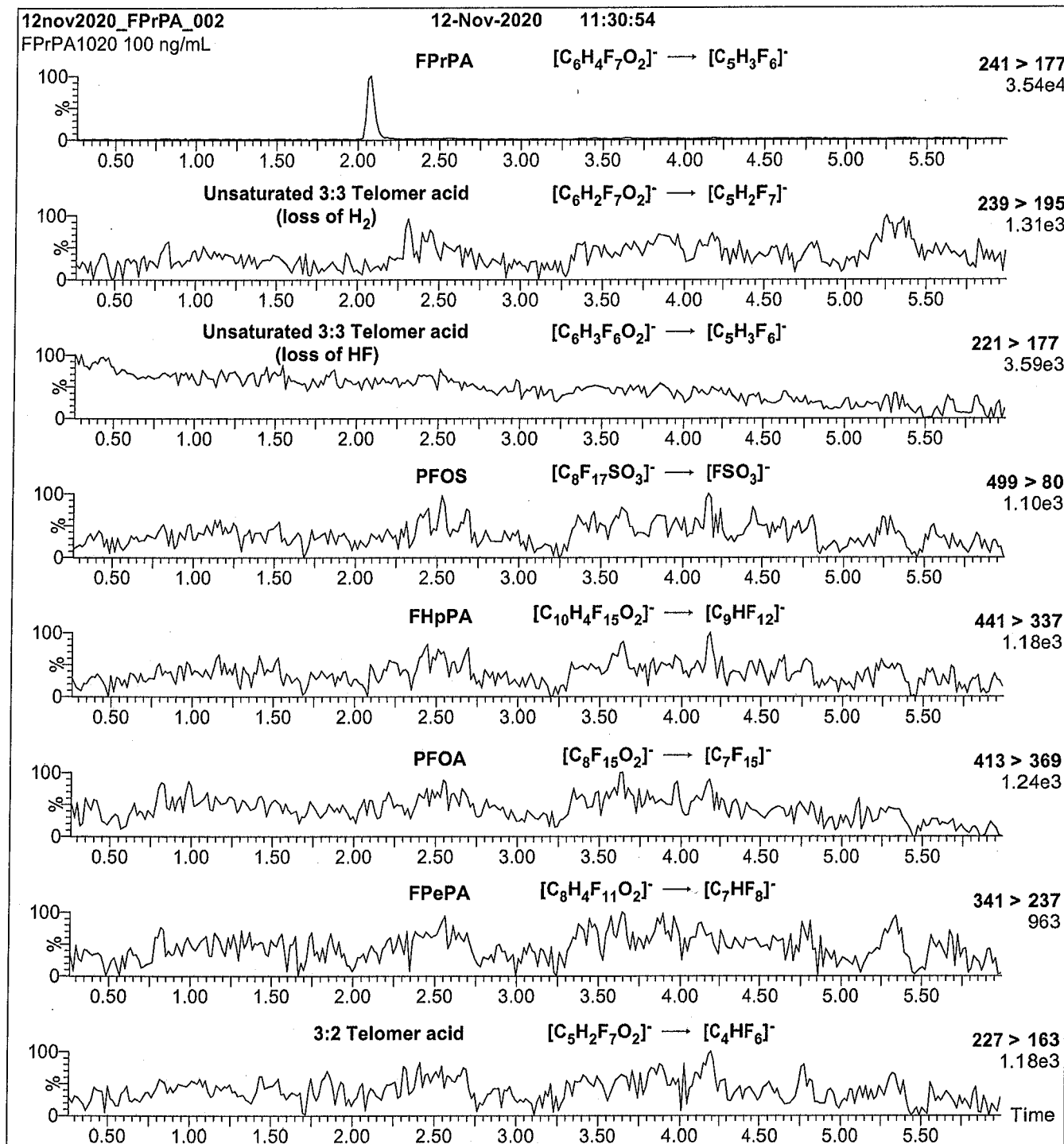
Capillary Voltage (kV) = 0.50

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  $\mu$ 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		

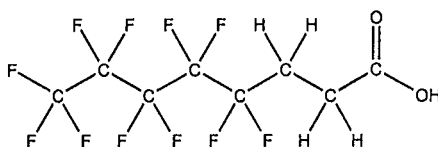
<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
3:3 FTA		113507-82-7	50	ug/mL



# 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  $^{19}\text{F}$  NMR.

**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

**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:**

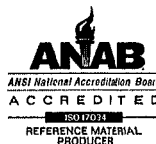
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

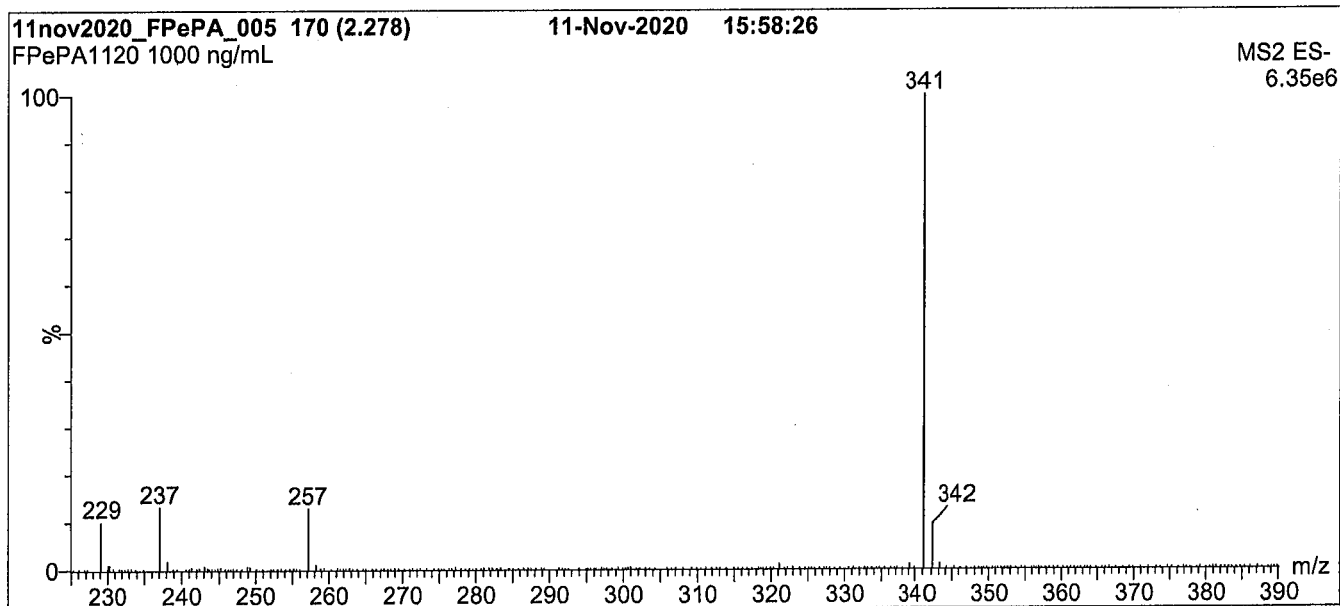
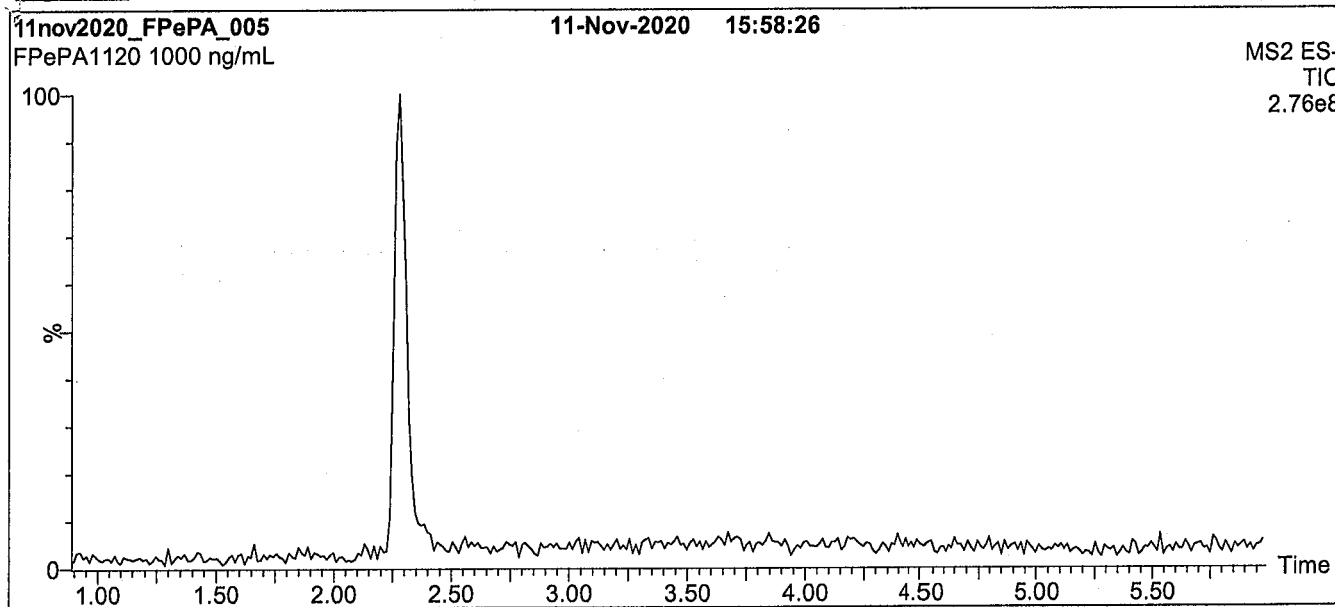
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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-ASQ 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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

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

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

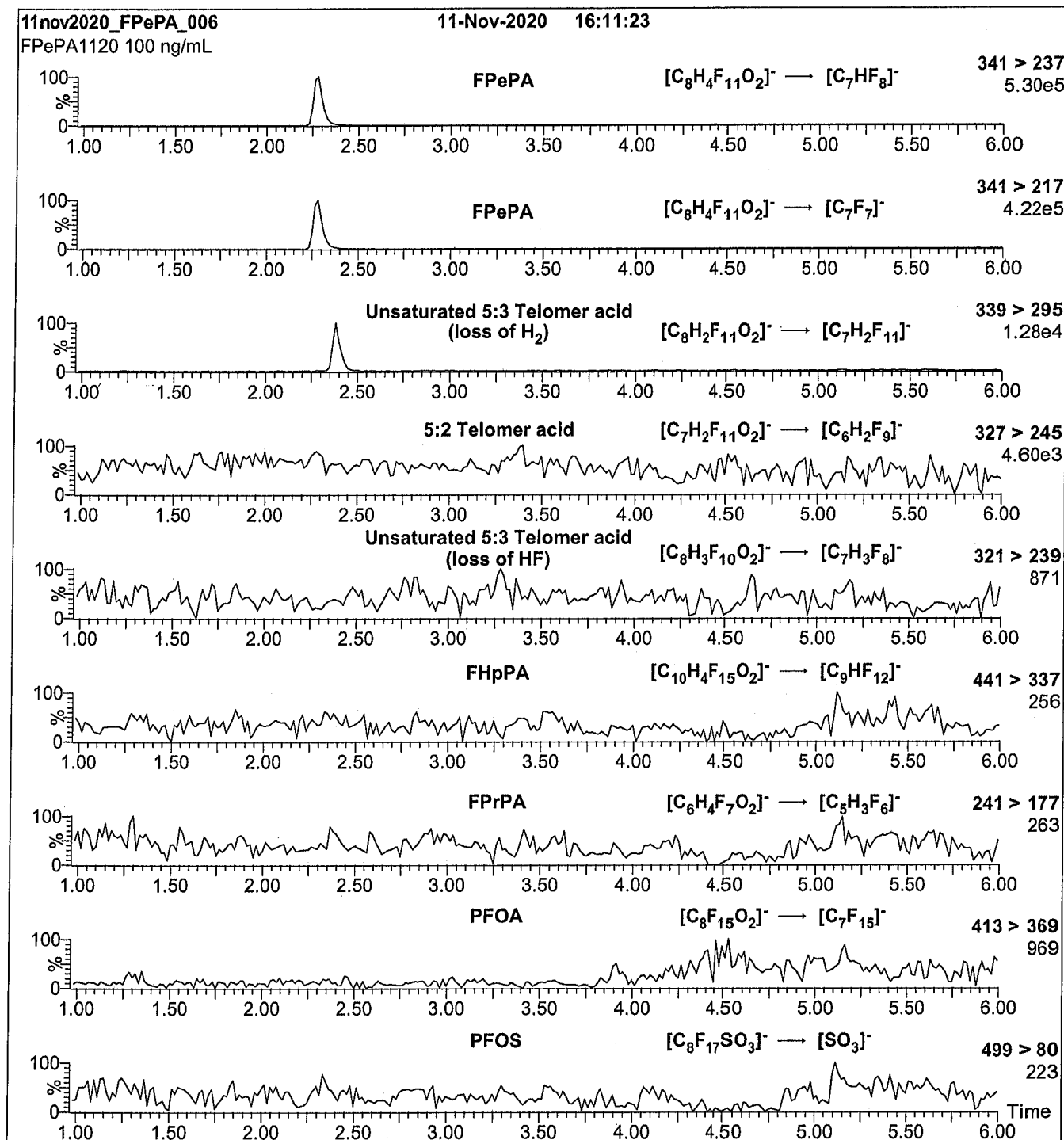
Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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  $\mu$ 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		

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

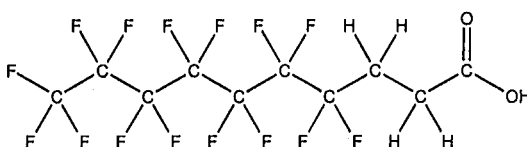


# WELLINGTON LABORATORIES

## 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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**HANDLING:**

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**SYNTHESIS / CHARACTERIZATION:**

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**EXPIRY DATE / PERIOD OF VALIDITY:**

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

**LIMITED WARRANTY:**

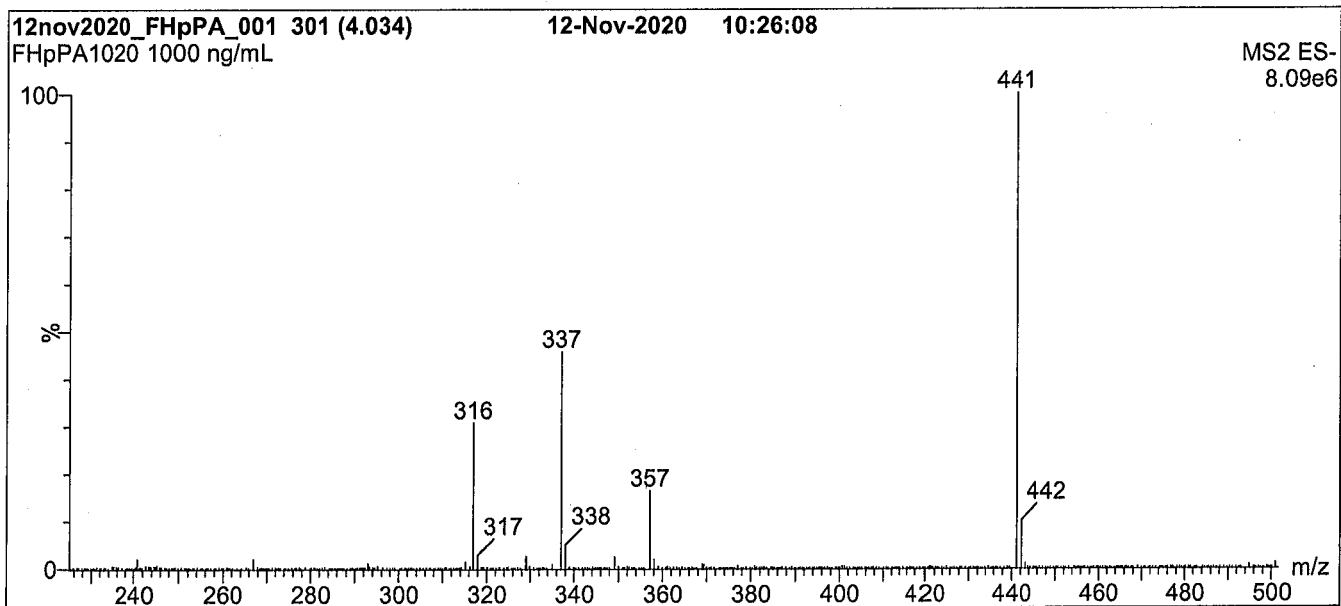
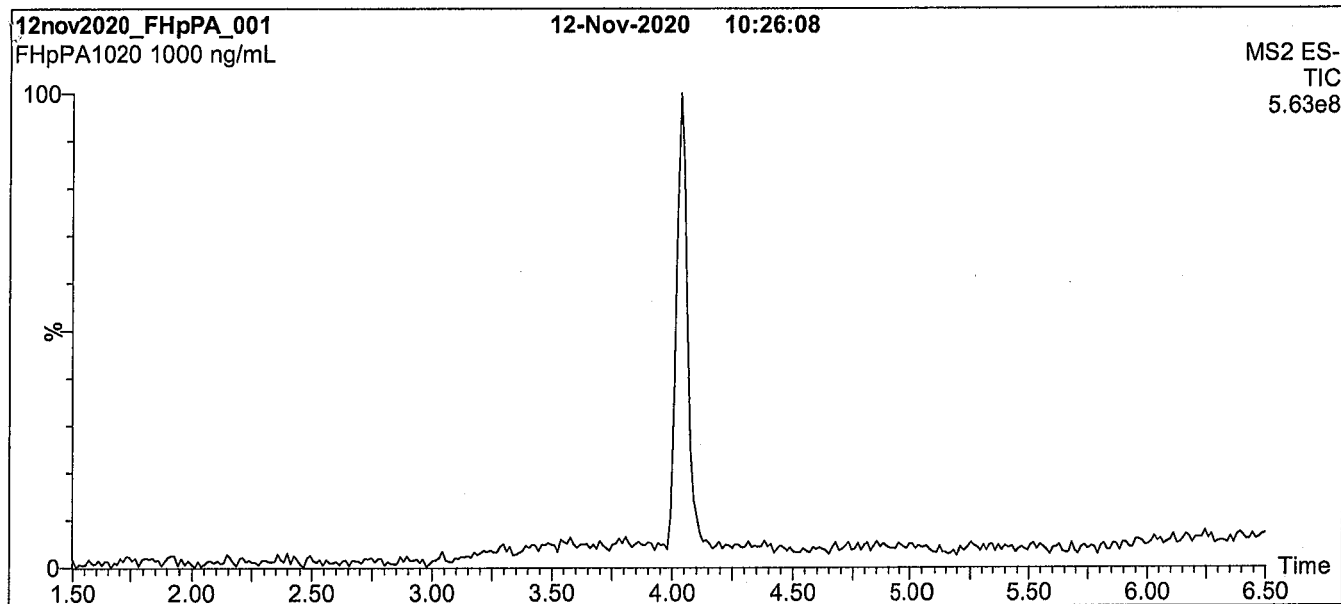
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

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



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

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

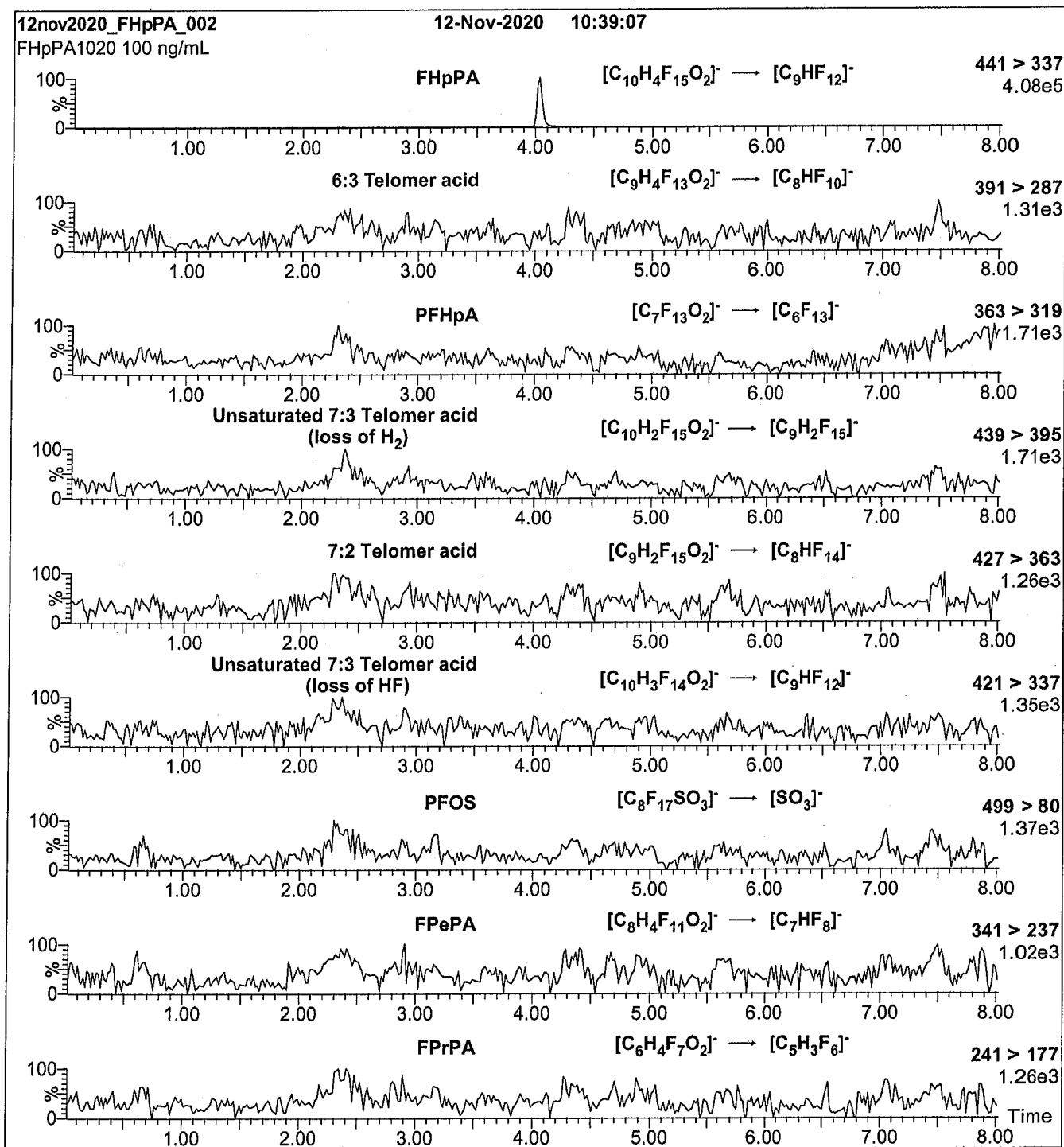
Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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  $\mu$ 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		

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

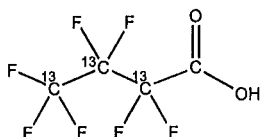


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M3PFBA **LOT NUMBER:** M3PFBA0721  
**COMPOUND:** Perfluoro-n-(2,3,4-<sup>13</sup>C<sub>3</sub>)butanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>3</sub><sup>12</sup>CHF<sub>7</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 217.02  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
 (2,3,4-<sup>13</sup>C<sub>3</sub>)  
**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-(<sup>13</sup>C<sub>3</sub>)propanoic acid and also contains ~1.0% of perfluoro-n-(1,2,3,4-<sup>13</sup>C<sub>4</sub>)butanoic acid due to the naturally occurring isotopic abundance of <sup>13</sup>C 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  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

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**LIMITED WARRANTY:**

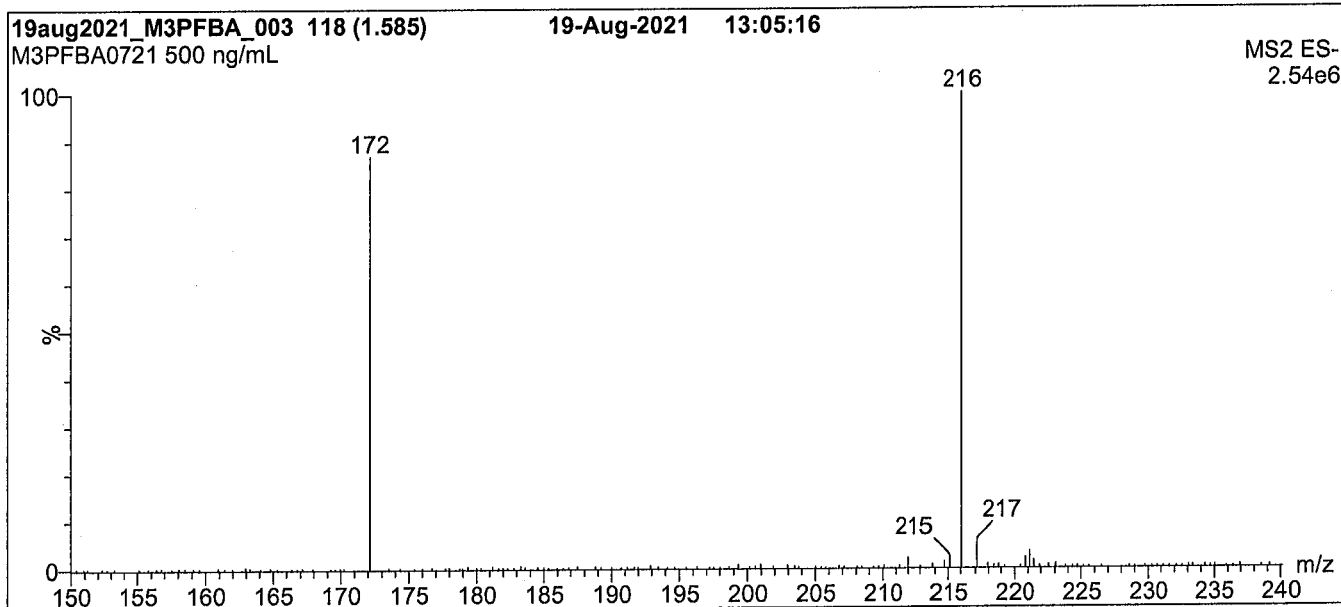
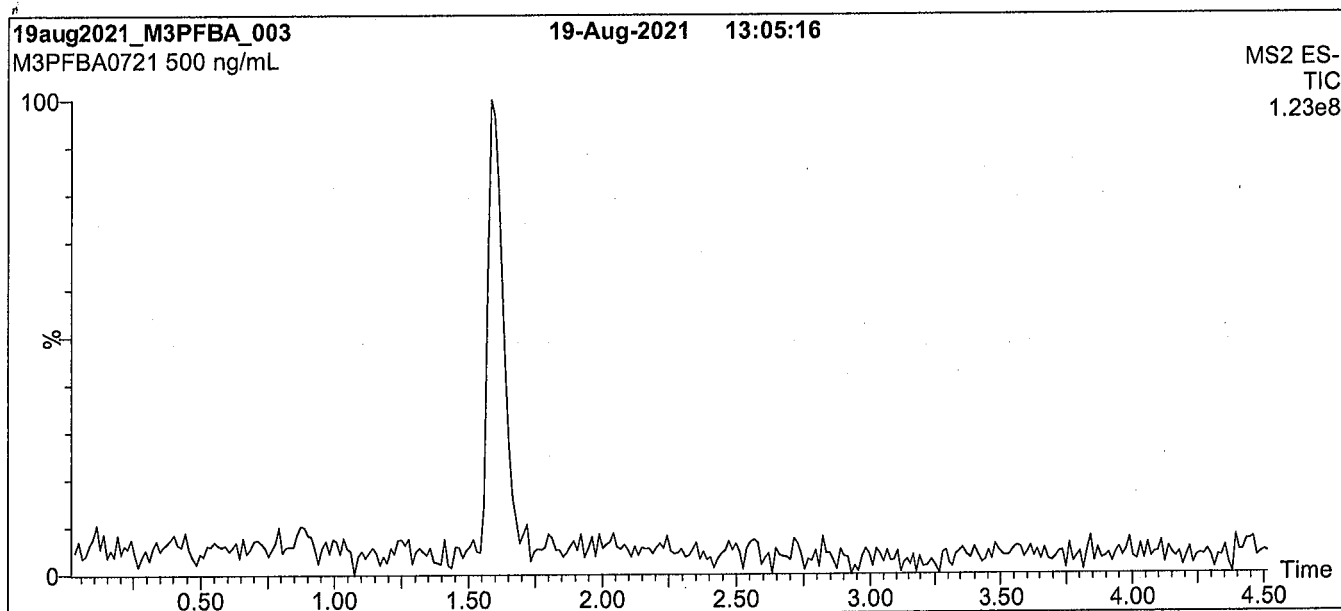
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**Figure 1: M3PFBA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

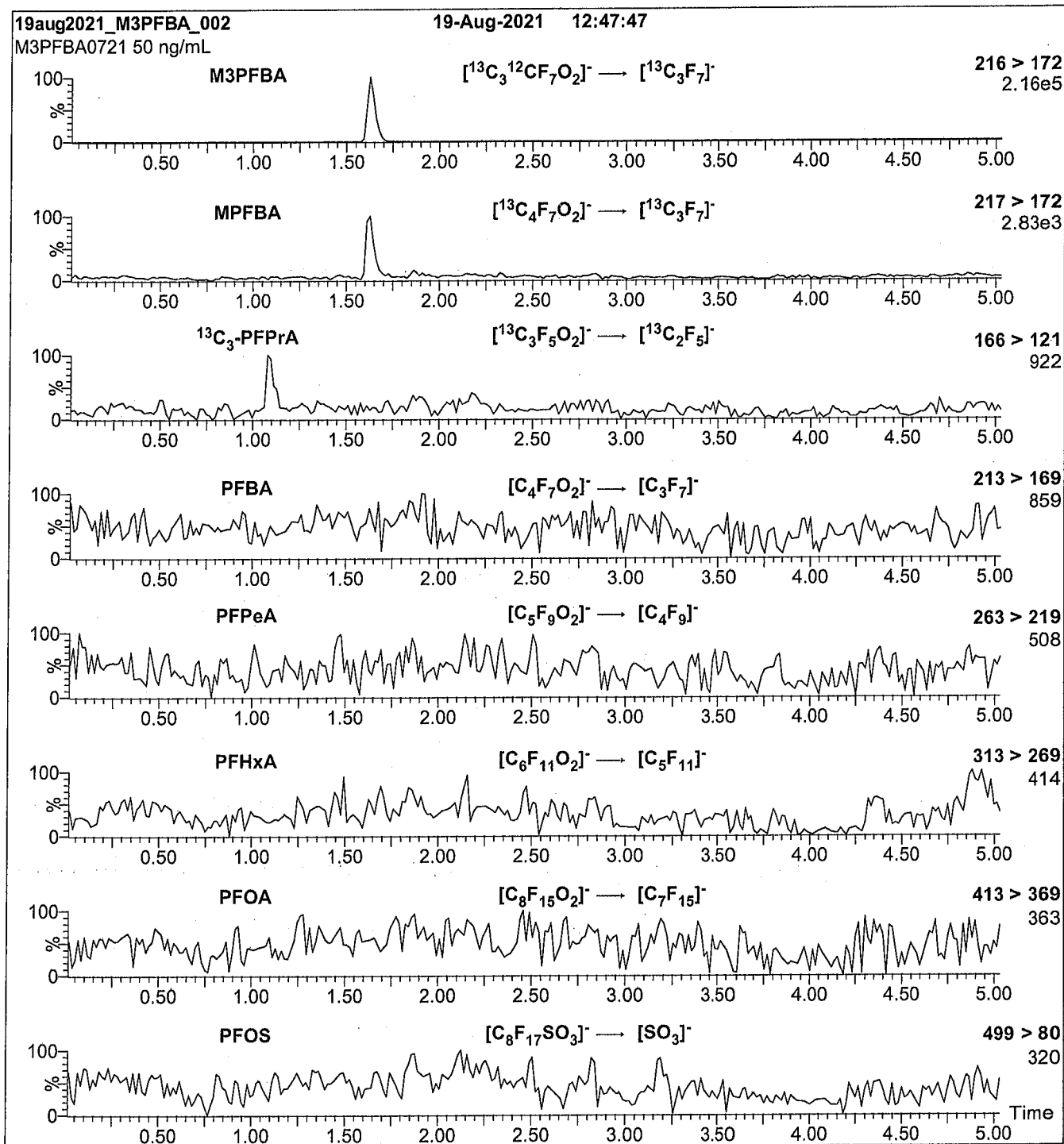
Mobile phase: Gradient  
Start: 60% H<sub>2</sub>O / 40% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.5 min.  
Time: 12 min

Flow: 300  $\mu$ 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:**

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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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**LIMITED WARRANTY:**

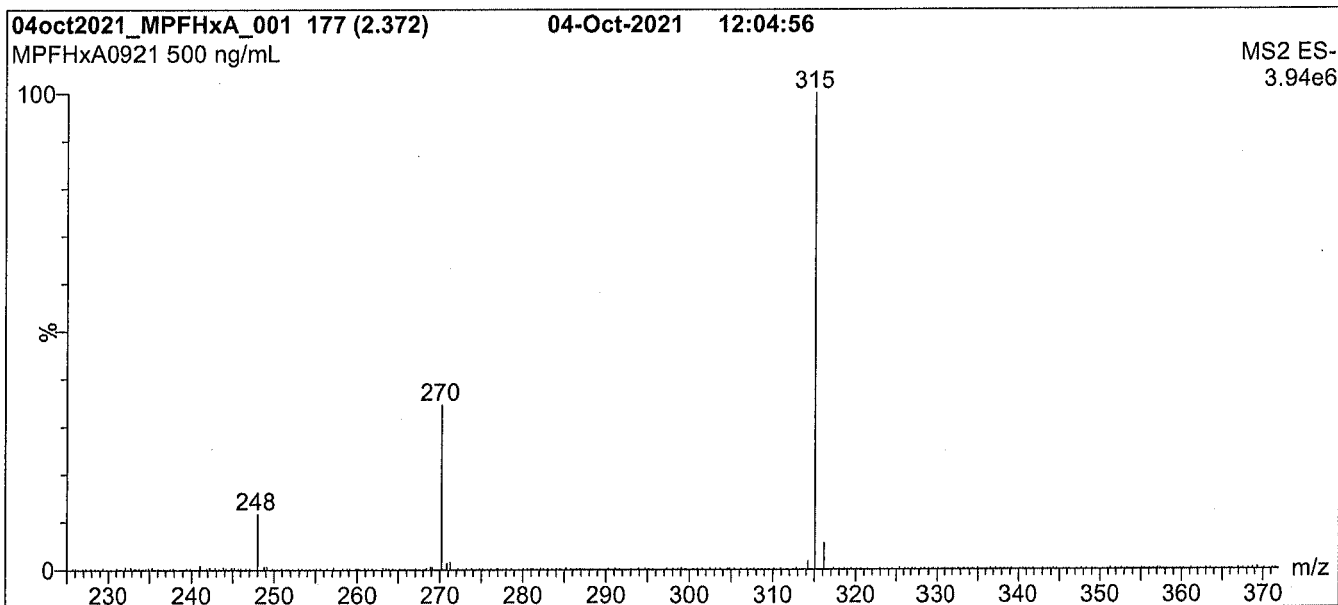
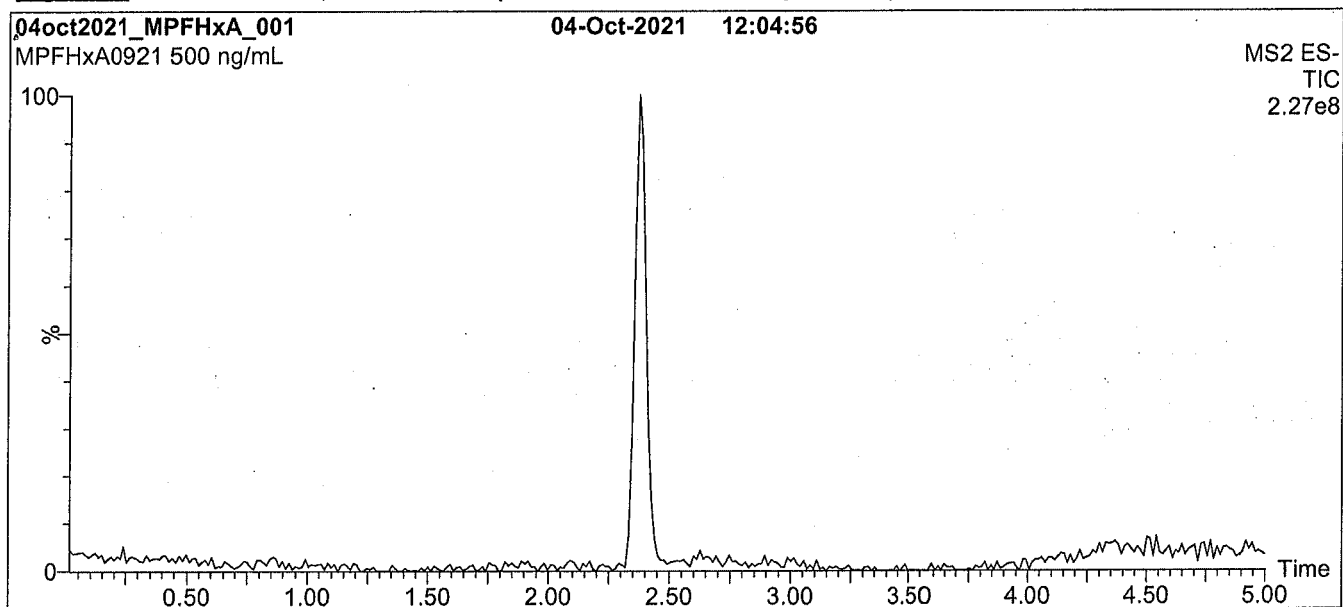
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**Figure 1: MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

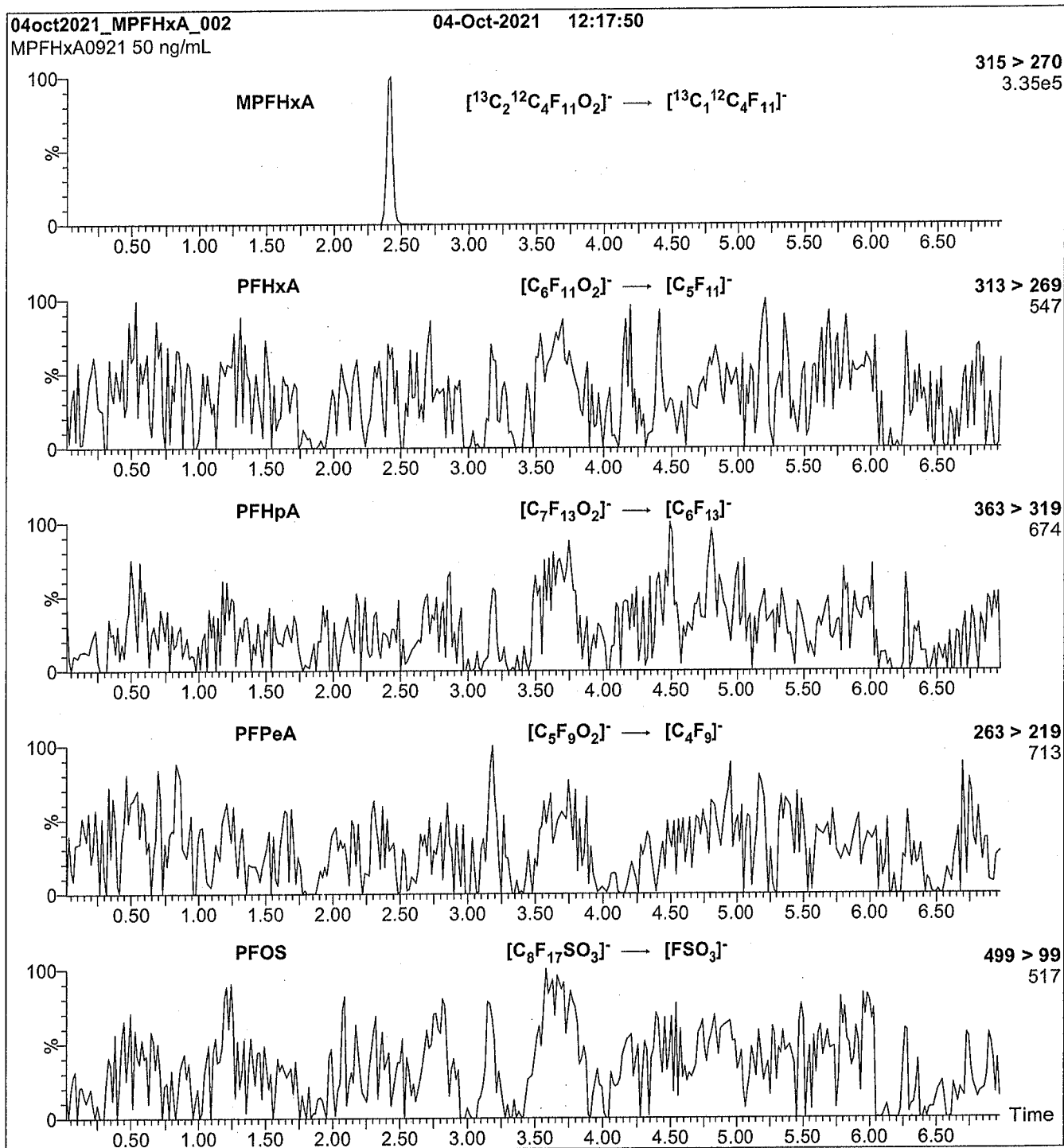
Mobile phase: Gradient  
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for  
2 min before returning to initial conditions in 1 min.  
Time: 12 min

Flow: 300  $\mu$ 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 (°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

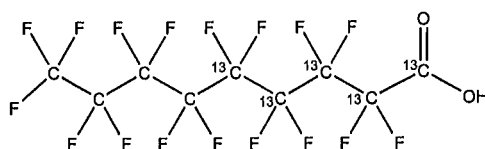
Analyte	Parent	CAS Number	Concentration	Units
13C2-PFHxA		13C2-PFHxA	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

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



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>5</sub><sup>12</sup>C<sub>4</sub>HF<sub>17</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 469.04  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (1,2,3,4,5-<sup>13</sup>C<sub>5</sub>)  
**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:**

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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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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**LIMITED WARRANTY:**

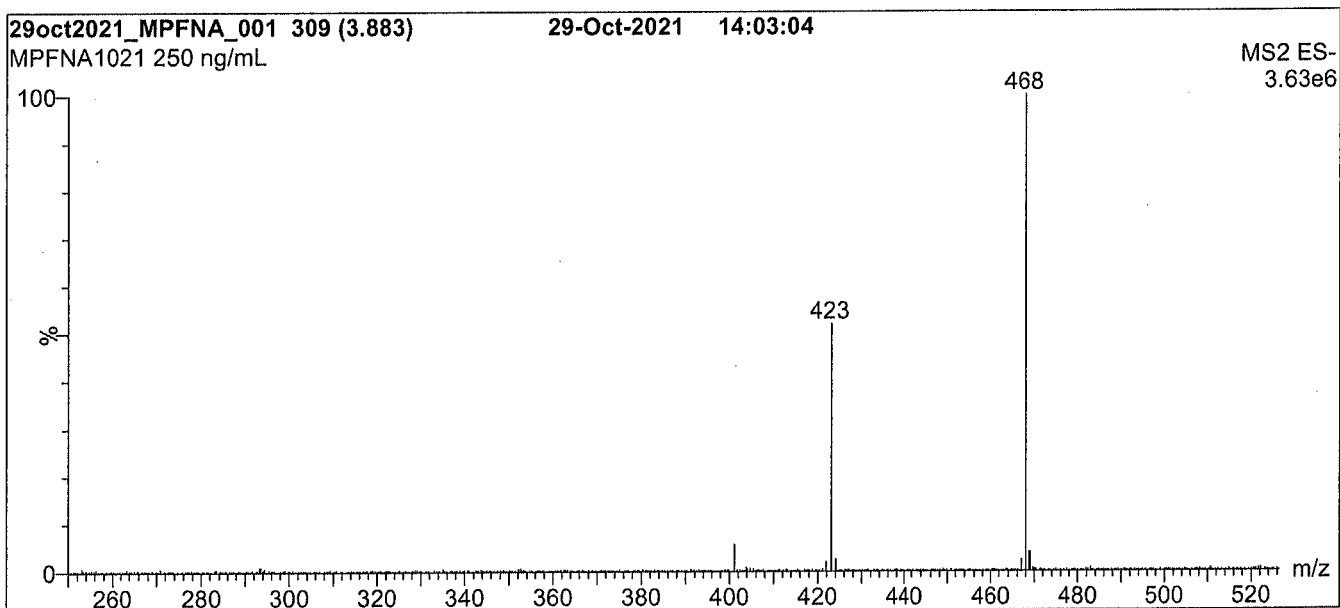
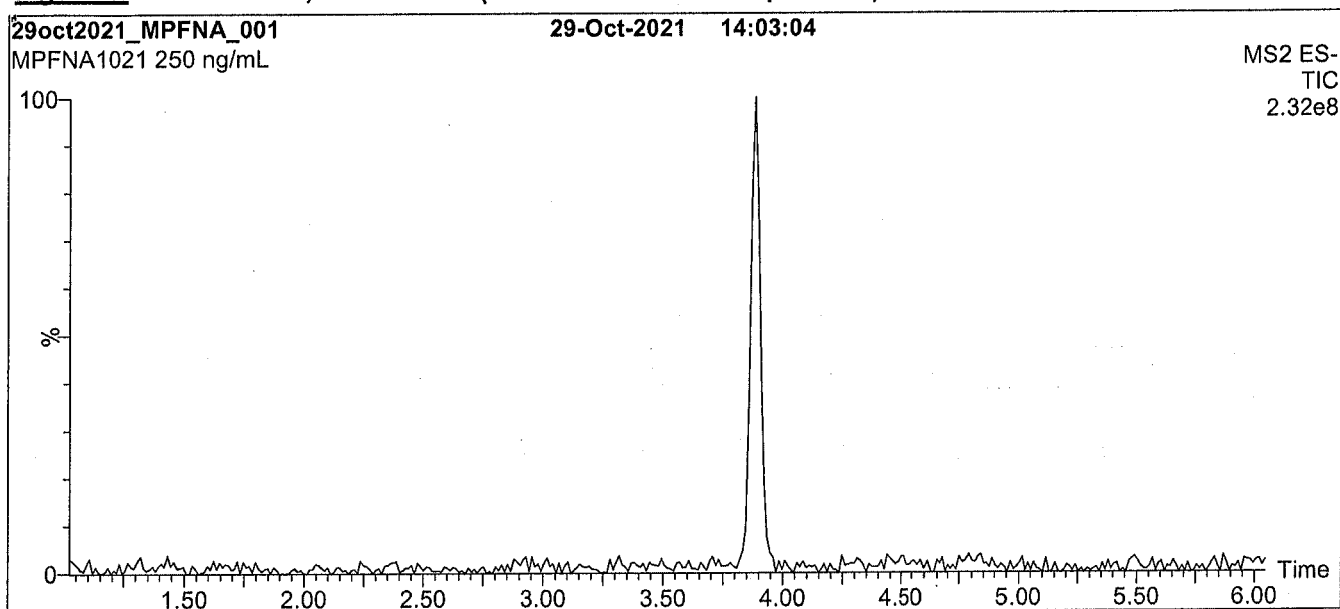
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**QUALITY MANAGEMENT:**

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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 RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

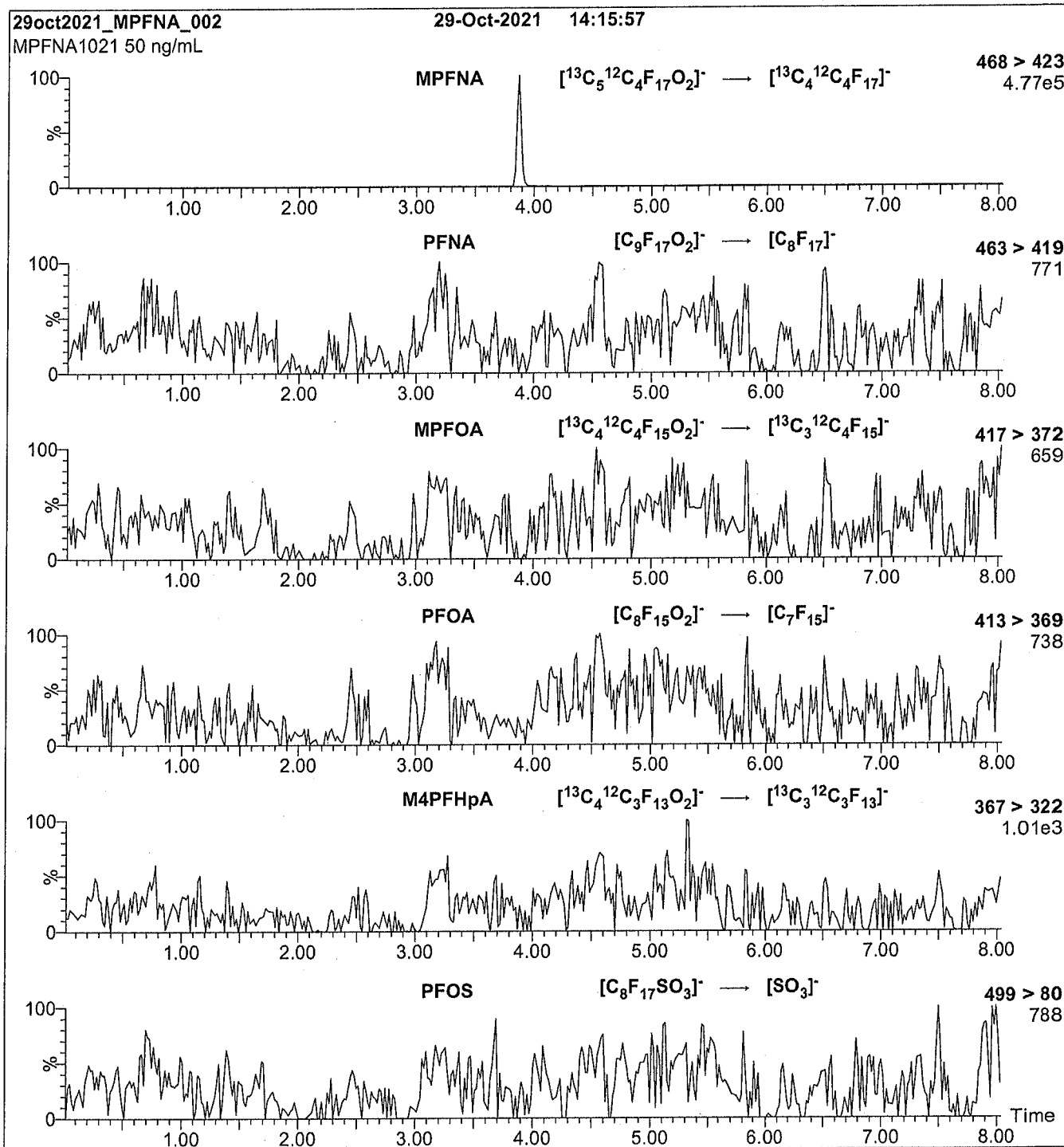
Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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
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Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

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



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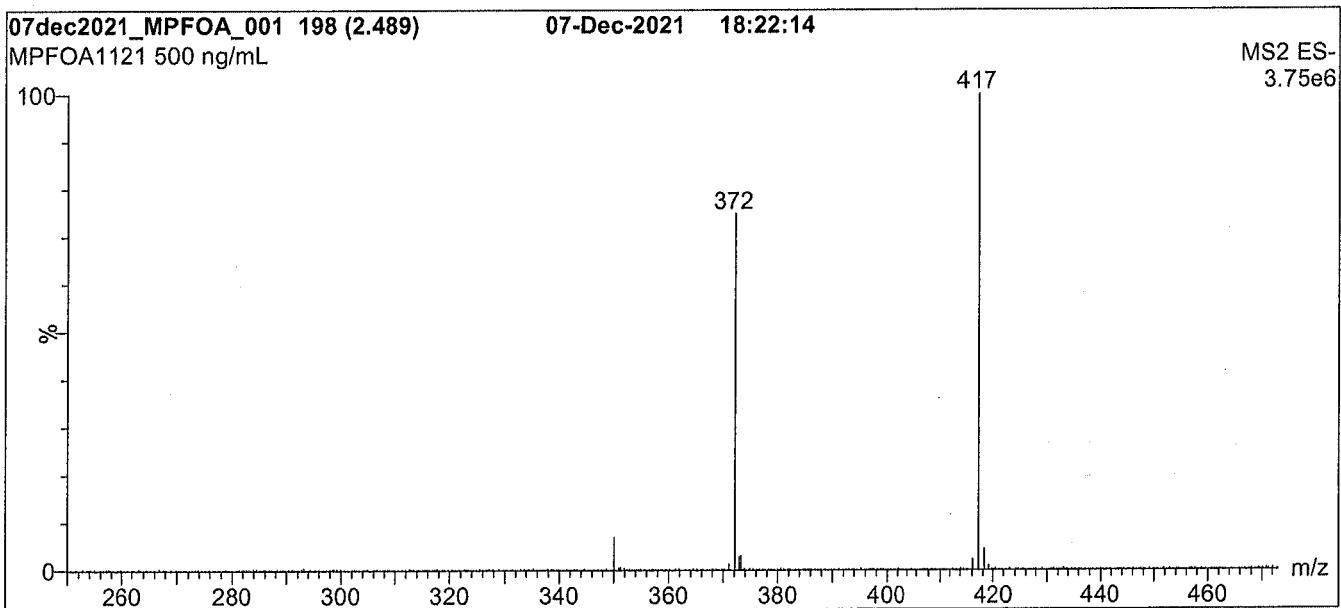
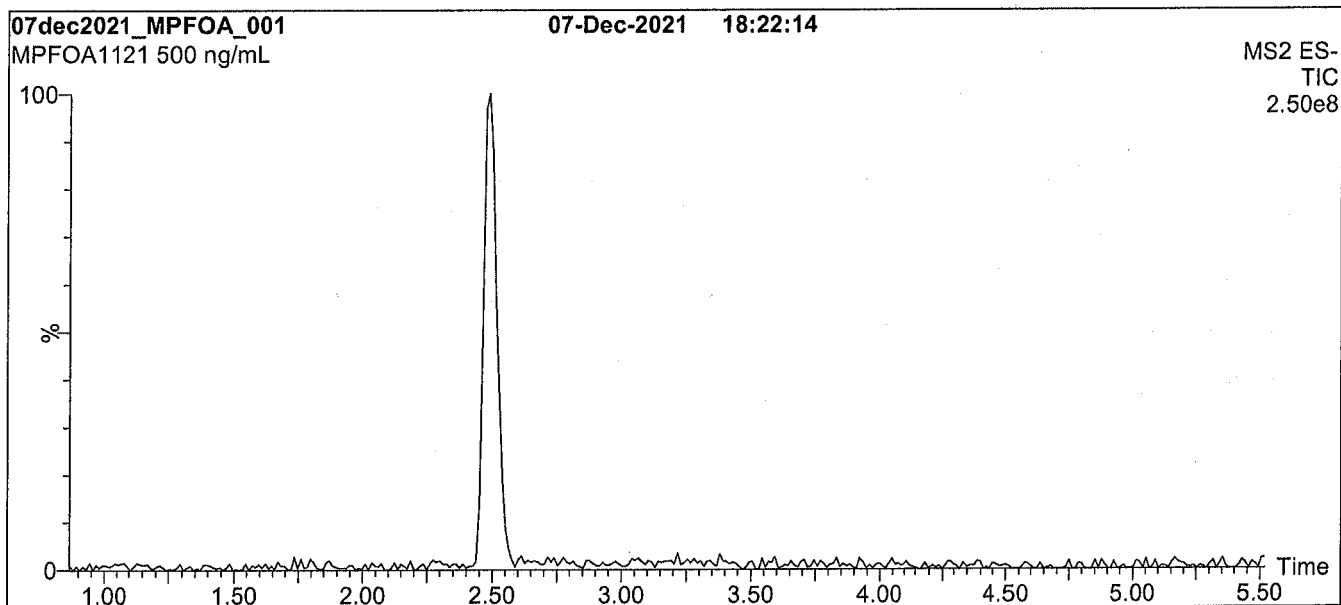
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**Figure 1: MPFOA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc 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

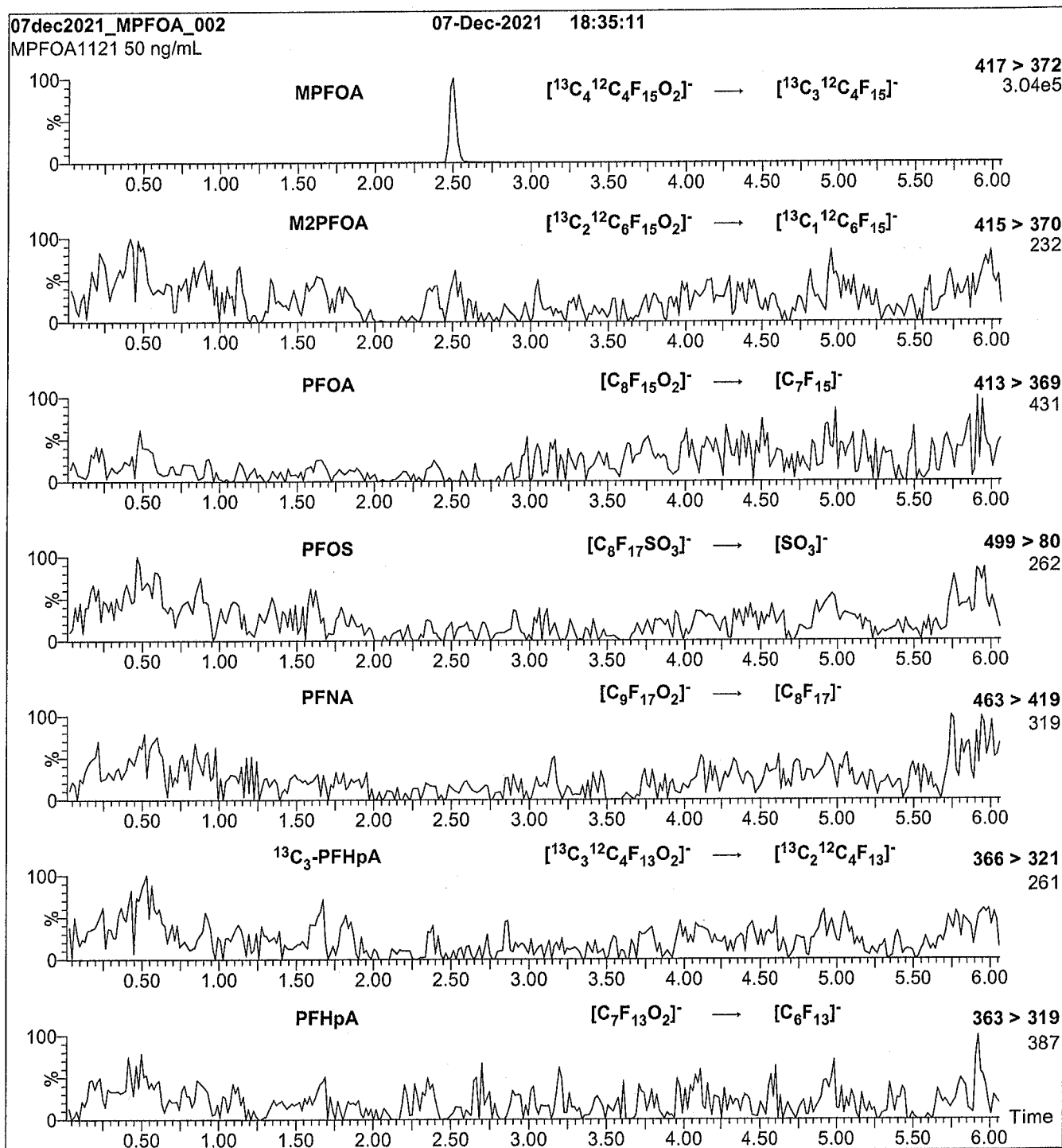
Flow: 300  $\mu$ L/min

**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



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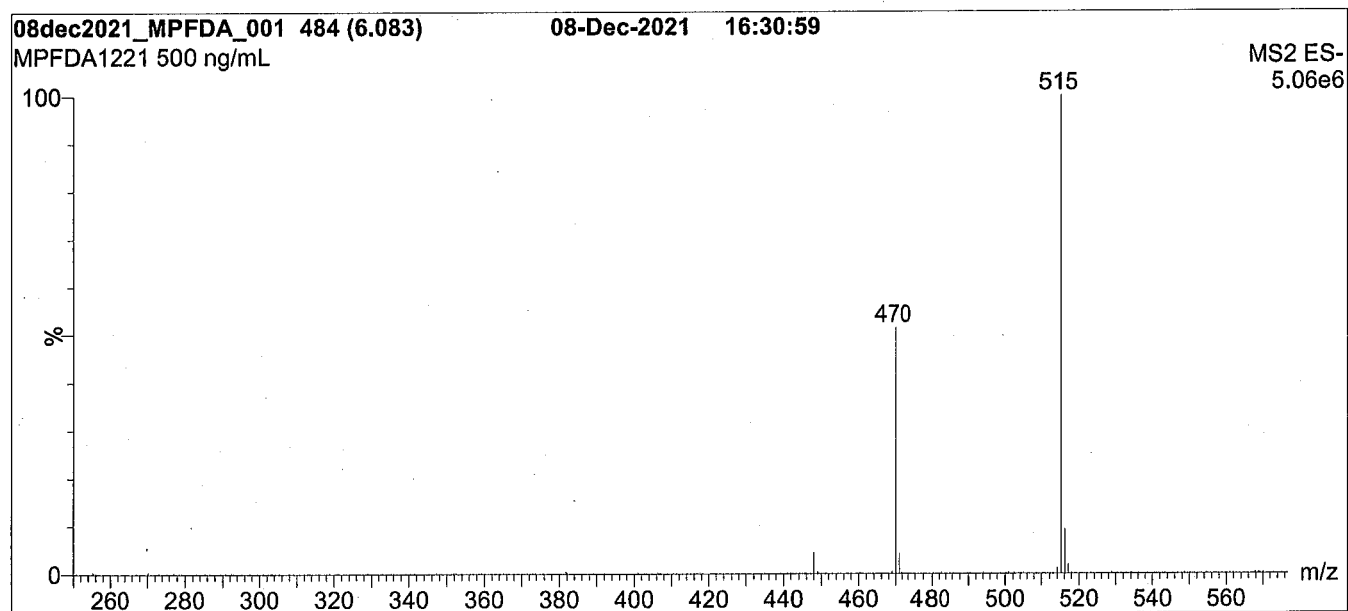
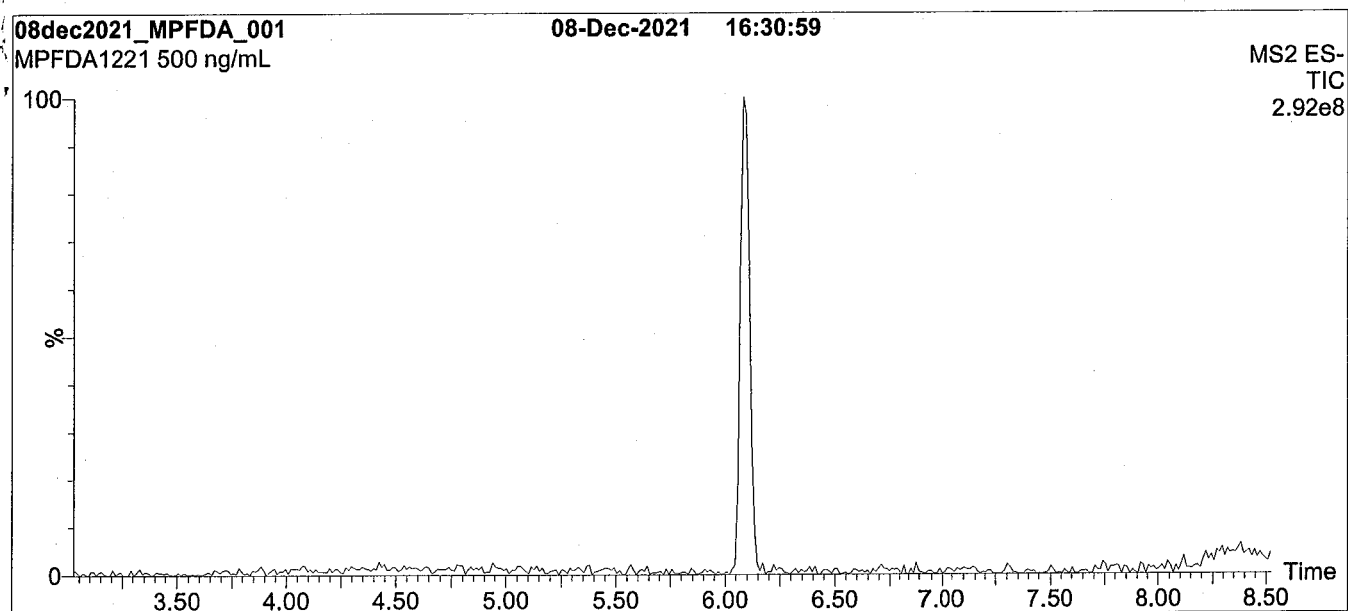
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Waters Xevo TQ-S micro MS

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Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

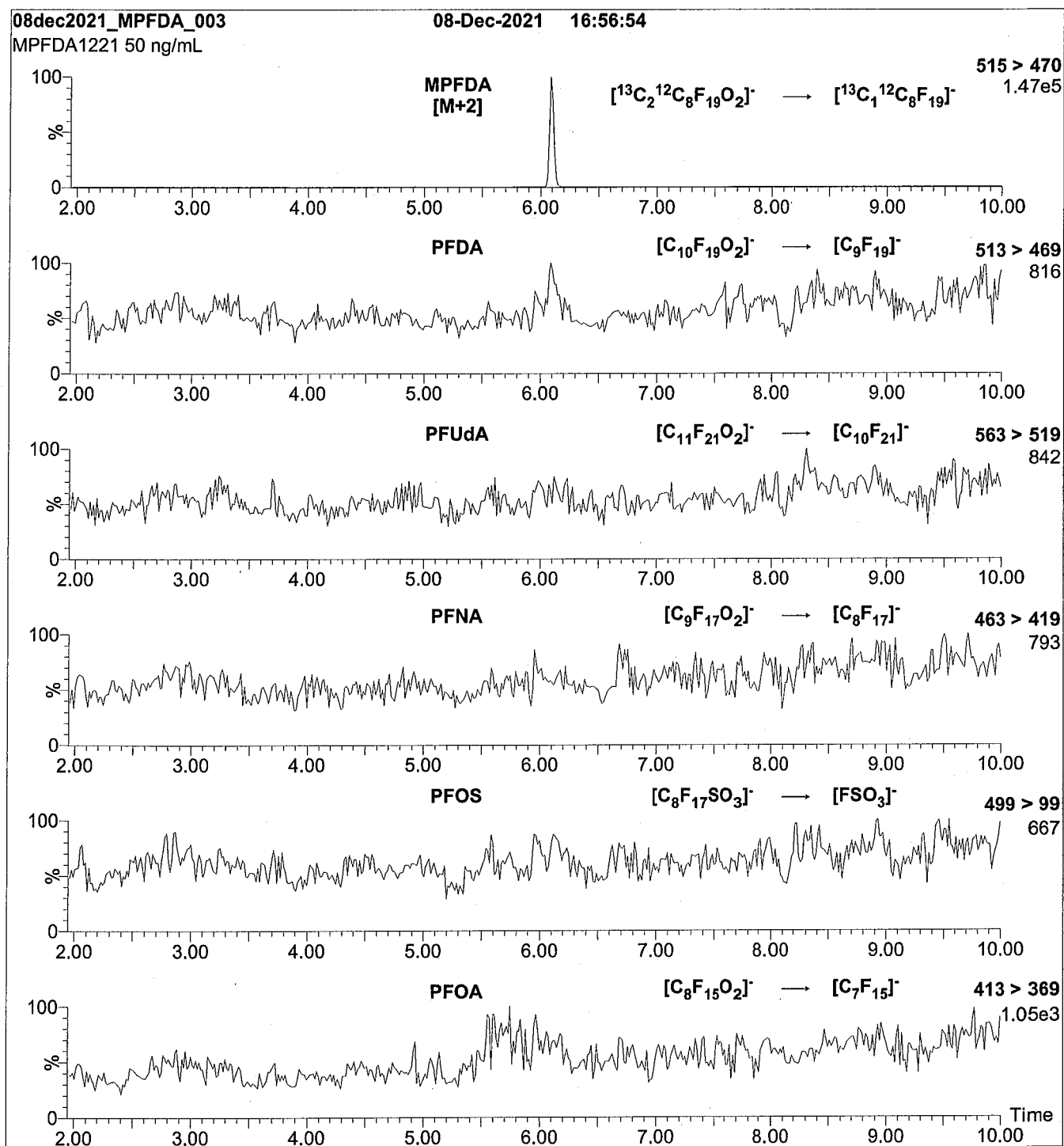
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for  
1 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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  $\mu$ L/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

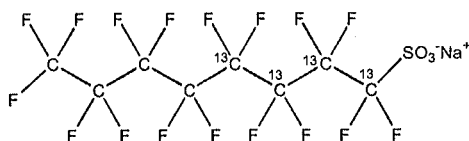


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOS **LOT NUMBER:** MPFOS0821  
**COMPOUND:** Sodium perfluoro-1-(1,2,3,4-<sup>13</sup>C<sub>4</sub>)octanesulfonate

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



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **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% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 08/18/2021 (1,2,3,4-<sup>13</sup>C<sub>4</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 08/18/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

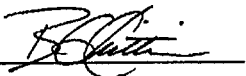
### DOCUMENTATION/ DATA ATTACHED:

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-(<sup>13</sup>C<sub>3</sub>)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:**

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:**

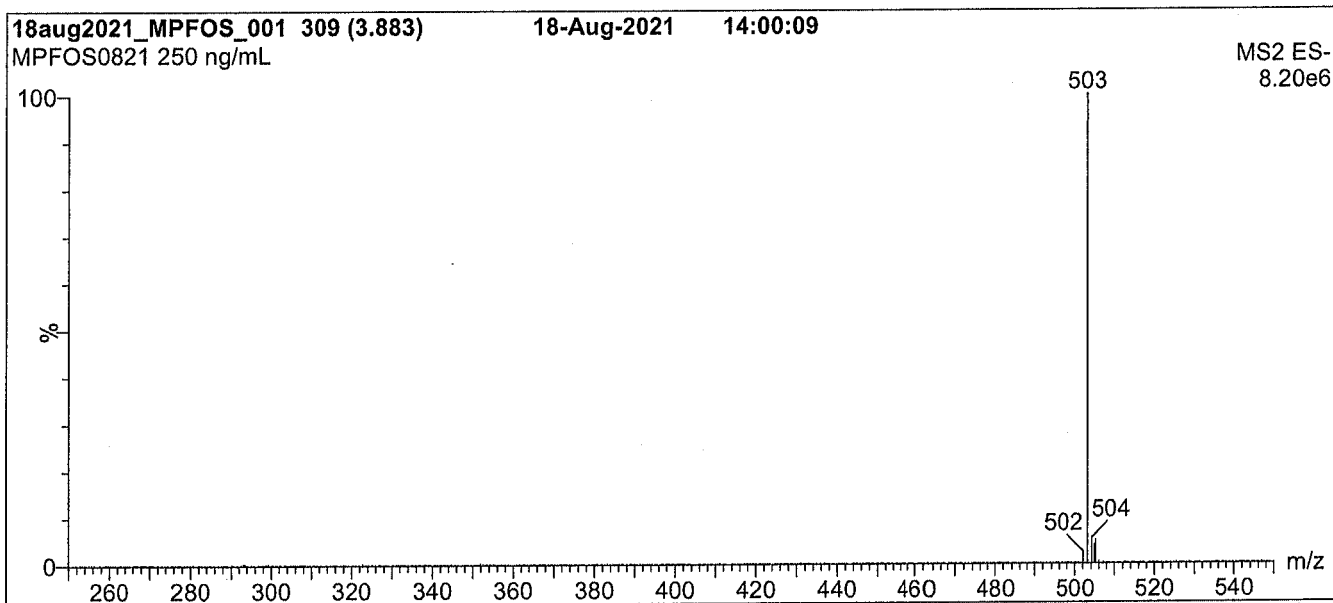
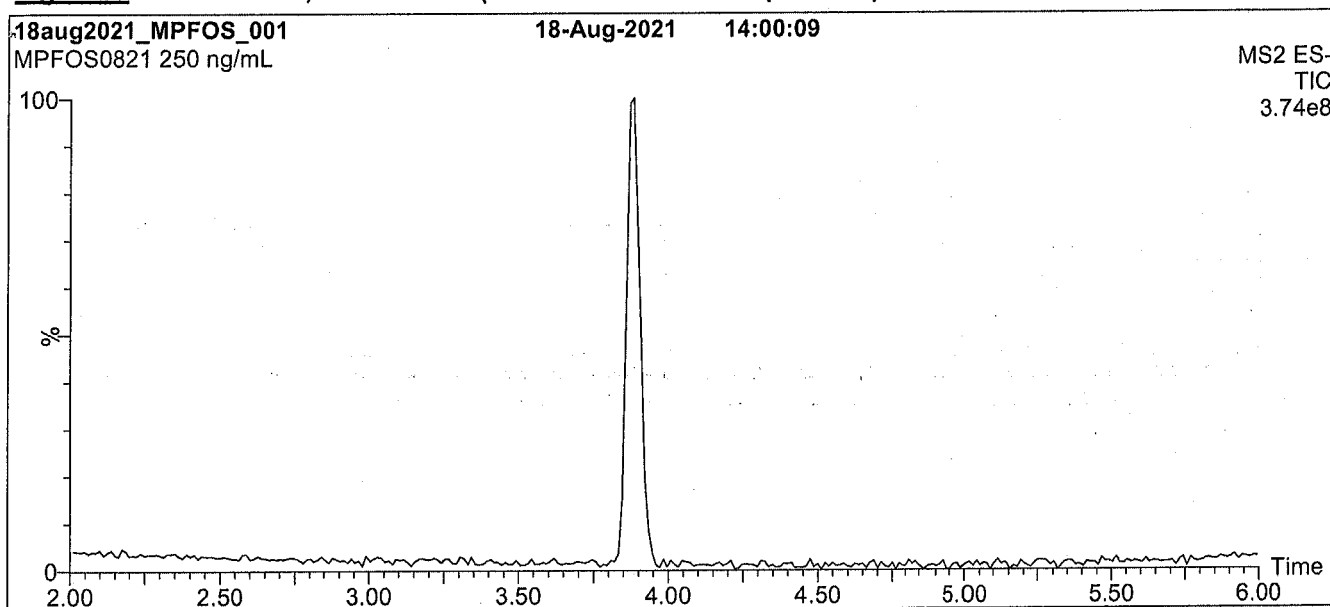
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**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 RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

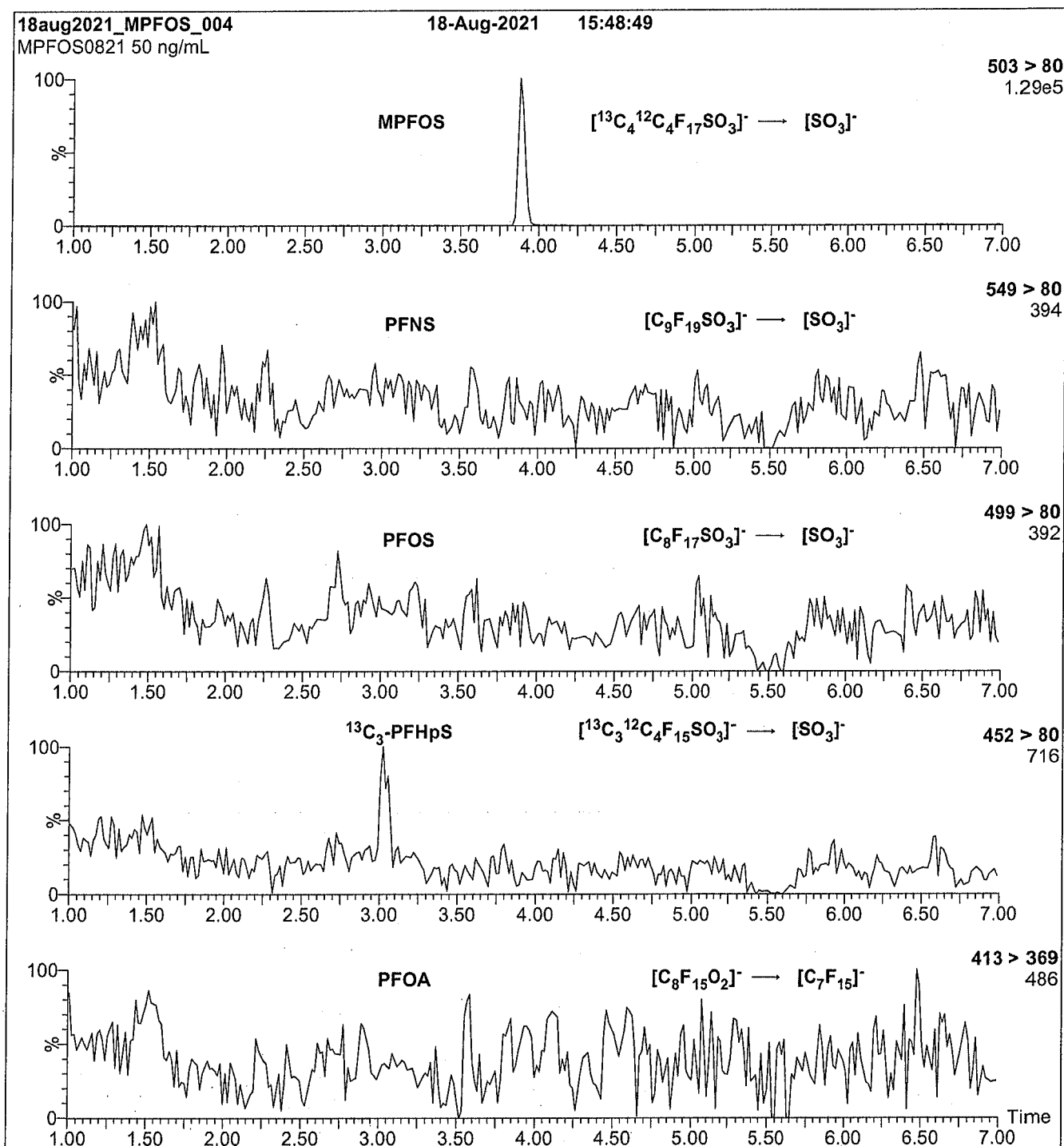
Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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: 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

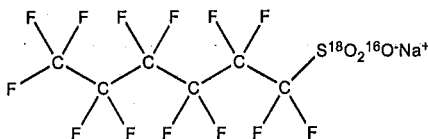


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxS **LOT NUMBER:** MPFHxS1021  
**COMPOUND:** Sodium perfluoro-1-hexane(<sup>18</sup>O<sub>2</sub>)sulfonate

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



**MOLECULAR FORMULA:** C<sub>6</sub>F<sub>13</sub>S<sup>18</sup>O<sub>2</sub><sup>16</sup>ONa **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% (<sup>18</sup>O<sub>2</sub>)  
**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 (C<sub>6</sub>F<sub>13</sub>S<sup>18</sup>O<sub>2</sub><sup>16</sup>O) has been observed to be up to 10% lower than for PFHxS (C<sub>6</sub>F<sub>13</sub>S<sup>16</sup>O<sub>3</sub>) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane(<sup>18</sup>O<sub>2</sub>)sulfonate (<sup>18</sup>O<sub>2</sub>-PFOS) and ~0.3% of sodium perfluoro-1-heptane(<sup>18</sup>O<sub>2</sub>)sulfonate (<sup>18</sup>O<sub>2</sub>-PFHpS).
- Due to the isotopic purity of the starting material (<sup>18</sup>O<sub>2</sub> >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)

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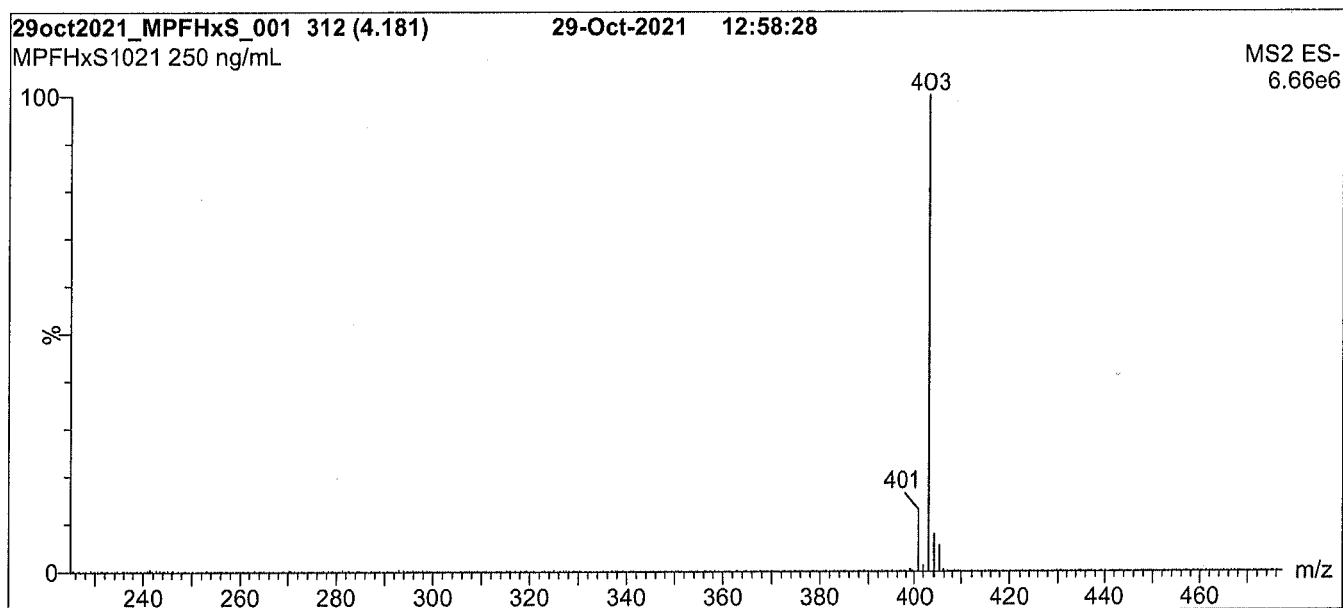
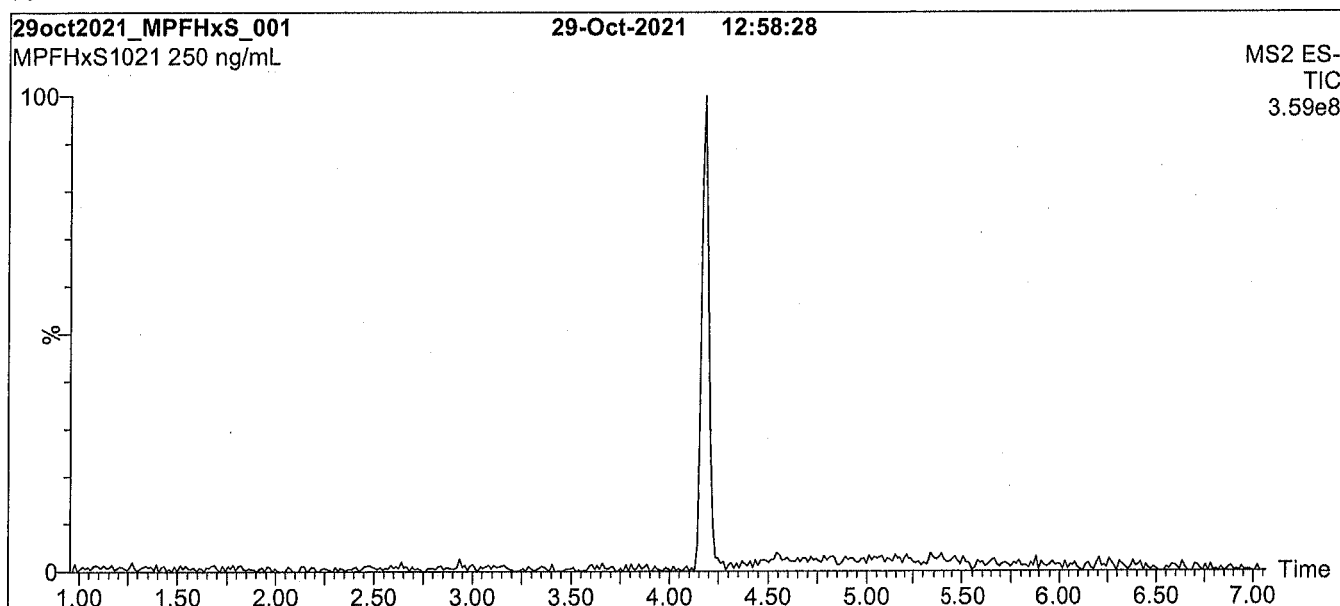
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**Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

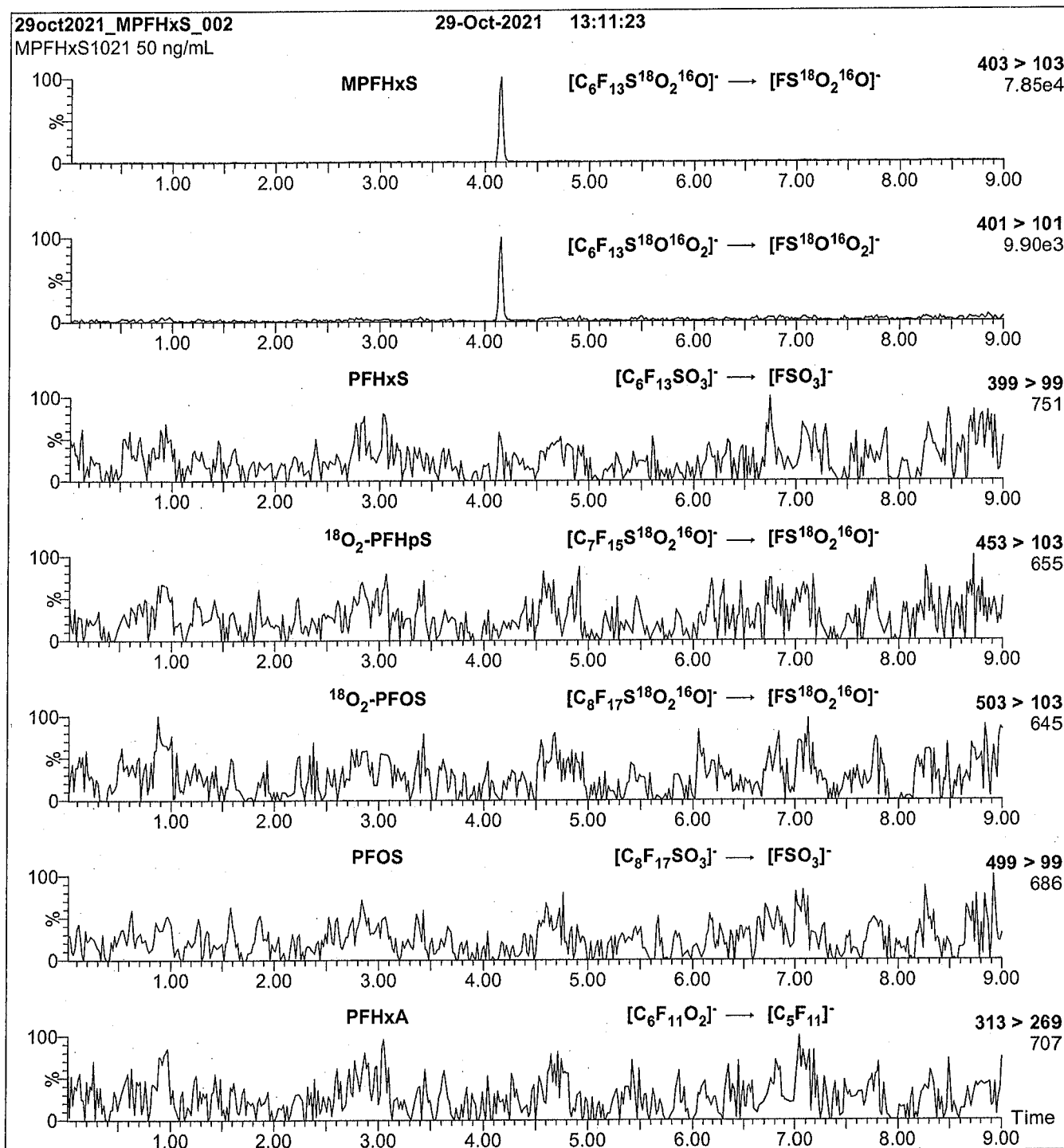
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for  
1 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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 (°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  $\mu$ 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

# Calbiochem®



## Certificate of Analysis

### Taurodeoxycholic Acid, Sodium Salt - CAS 1180-95-6 - Calbiochem

**Batch Number:** 3761825  
**Material Number:** 580221-5GM  
**Molecular Formula:** C<sub>26</sub>H<sub>44</sub>NO<sub>6</sub>S · Na  
**Molecular Weight:** 521.7  
**CAS Number:** 1180-95-6

**Quality Release Date:** 05 OCT 2021  
**Recommended Retest Date:** 30 SEP 2023

### Analytical Data

Test	Tolerance	Result
<b>Solubility:</b>		H <sub>2</sub> O (100 mg/ml)
<b>Chloride:</b>		<0.01%
<b>Loss on drying:</b>	≤5.0 %	0.1%
<b>Color:</b>		White
<b>Form:</b>		Powder
<b>TLC:</b>	≥95.0 %	≥95.00%
<b>IR:</b>		Conforms to reference
<b>Optical rotation:</b>	35.0 ° - 39.0 °	+36.38°
<b>Water by Karl Fischer:</b>	≤5.0 %	2.86%
<b>Carbon:</b>	≥0.00 %	57.78%
<b>Hydrogen:</b>	≥0.00 %	8.32 %
<b>Nitrogen:</b>	≥0.00 %	2.77 %

**Storage and Handling:** +15°C to +30°C

This lot conforms to specifications established by EMD Millipore Corporation for this product.

Issued by **Jamie Thomas**

This document has been electronically produced and is valid without a signature

Quality Control/ Assurance Signature

05 OCT 2021

Date

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**Technical Support All Other Countries - Contact Your Local Office**

**FOR RESEARCH USE ONLY.**

Not for use in diagnostic procedures. Not for human or animal consumption. Purchase of this product does not include any right to resell or transfer, either as a stand-alone product or as a component of another product. Any use of this Product for purpose other than research is strictly prohibited.

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Darmstadt, Germany

580221-5GM/09-MAY-2018/EA

# Analytical Standard Record

**22A0123**

Description:	PFAS Taurodeoxycholic Acid, Sodium Salt	Expires:	09/30/2023
Standard Type:	Other	Prepared:	10/05/2021
Solvent:	n/a	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:54 by DAG

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
TAURODEOXYCHOLIC ACID		516-50-7	1	ug/mL

# Analytical Standard Record

**22A0123**

Description:	PFAS Taurodeoxycholic Acid, Sodium Salt	Expires:	09/30/2023
Standard Type:	Other	Prepared:	10/05/2021
Solvent:	n/a	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:54 by DAG

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
TAURODEOXYCHOLIC ACID		516-50-7	1	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	(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	(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	(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

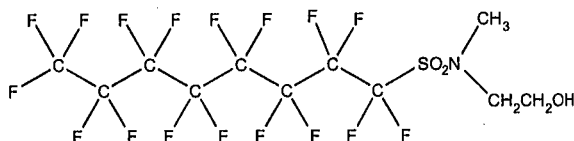


# WELLINGTON LABORATORIES

## 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<sub>11</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>3</sub>S **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:**

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

**SYNTHESIS / CHARACTERIZATION:**

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

**HOMOGENEITY:**

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

**UNCERTAINTY:**

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The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  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:**

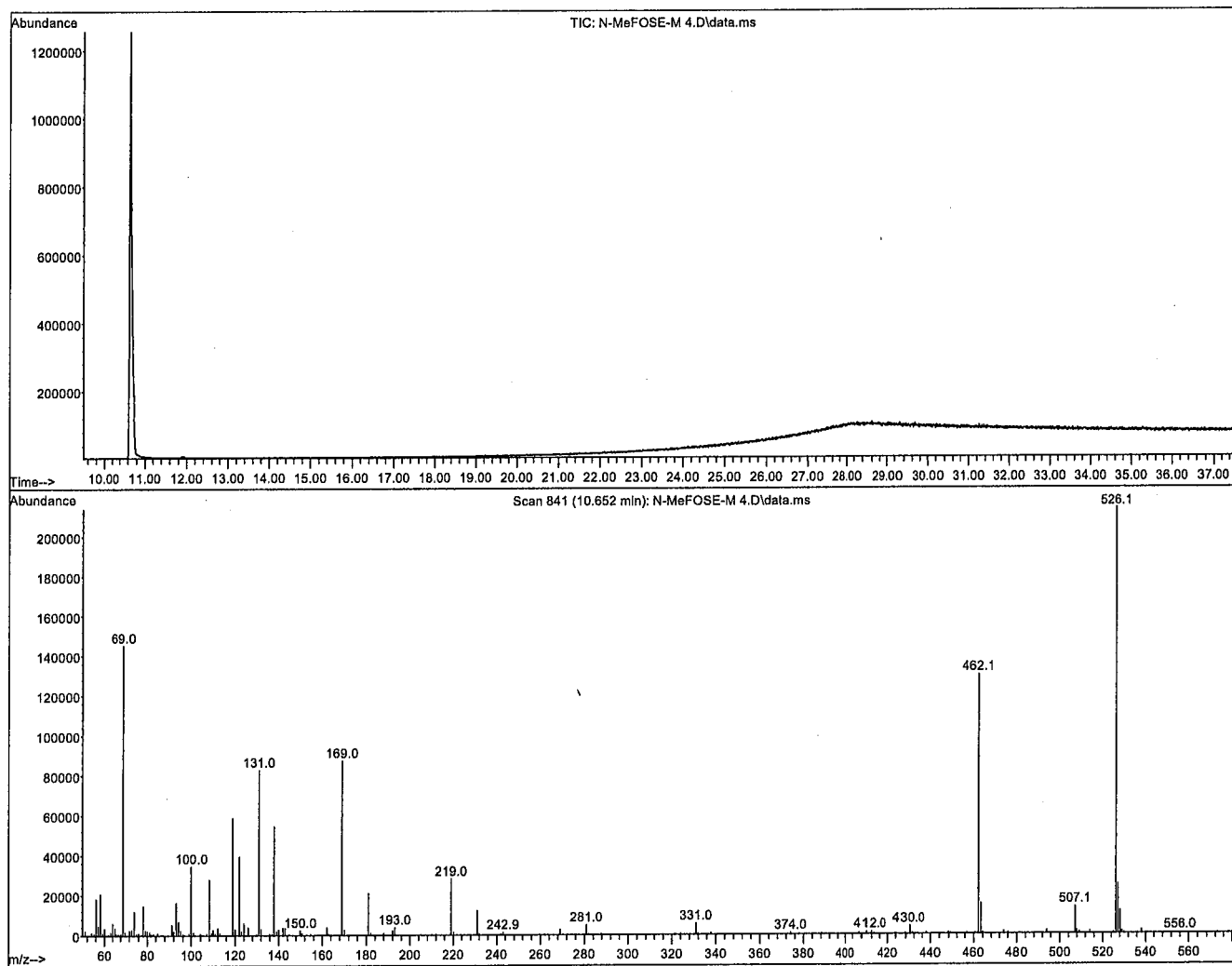
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

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

Agilent 7890A HRGC  
 Agilent 5975C MSD

**Chromatographic Conditions:**

Column: 30 m DB-5 (0.25 mm id, 0.25  $\mu$ m film thickness) Agilent J&W

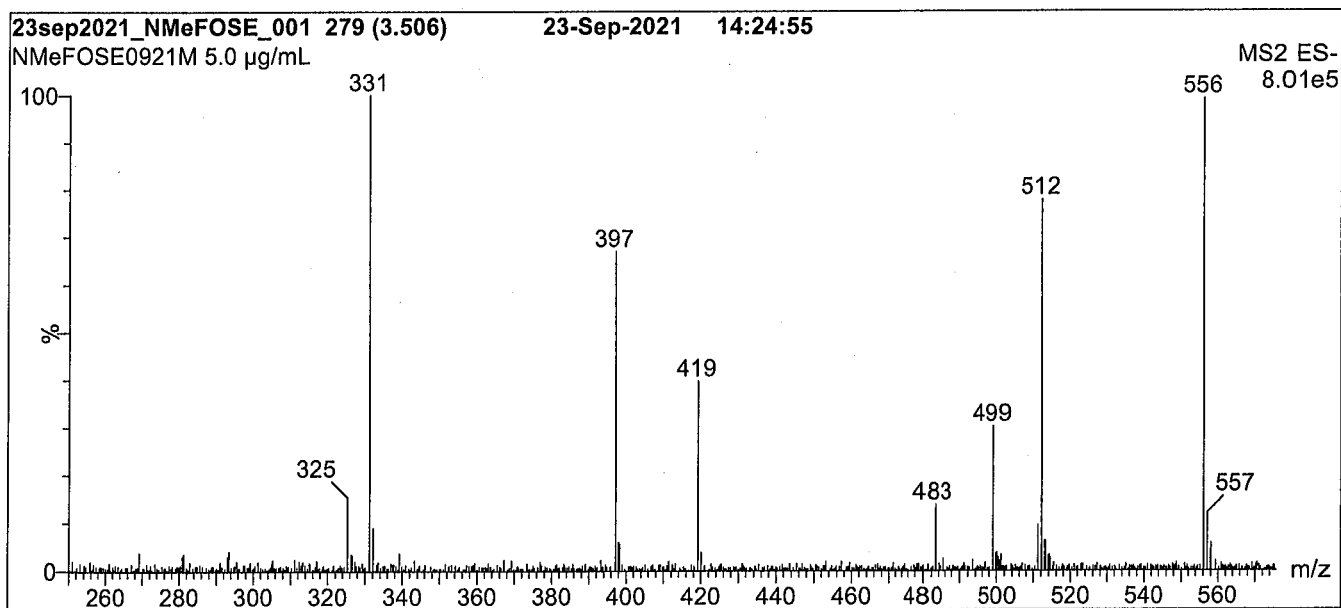
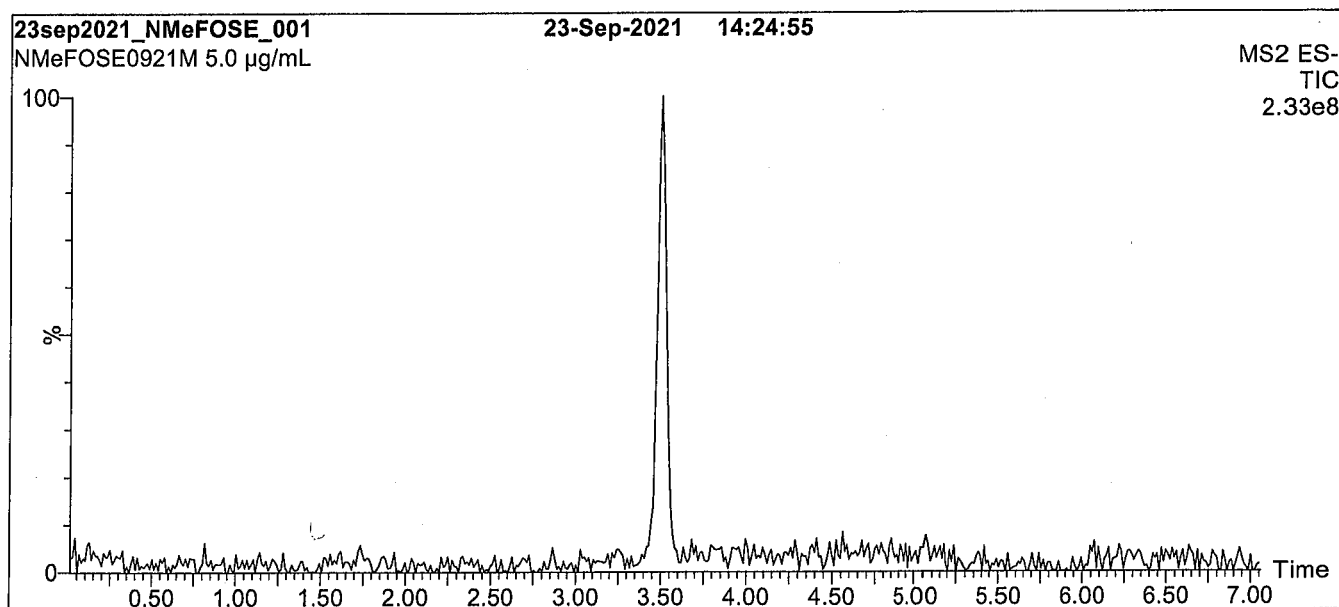
Flow: Constant at 1 mL/min

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 RP<sub>18</sub>  
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H<sub>2</sub>O / 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)

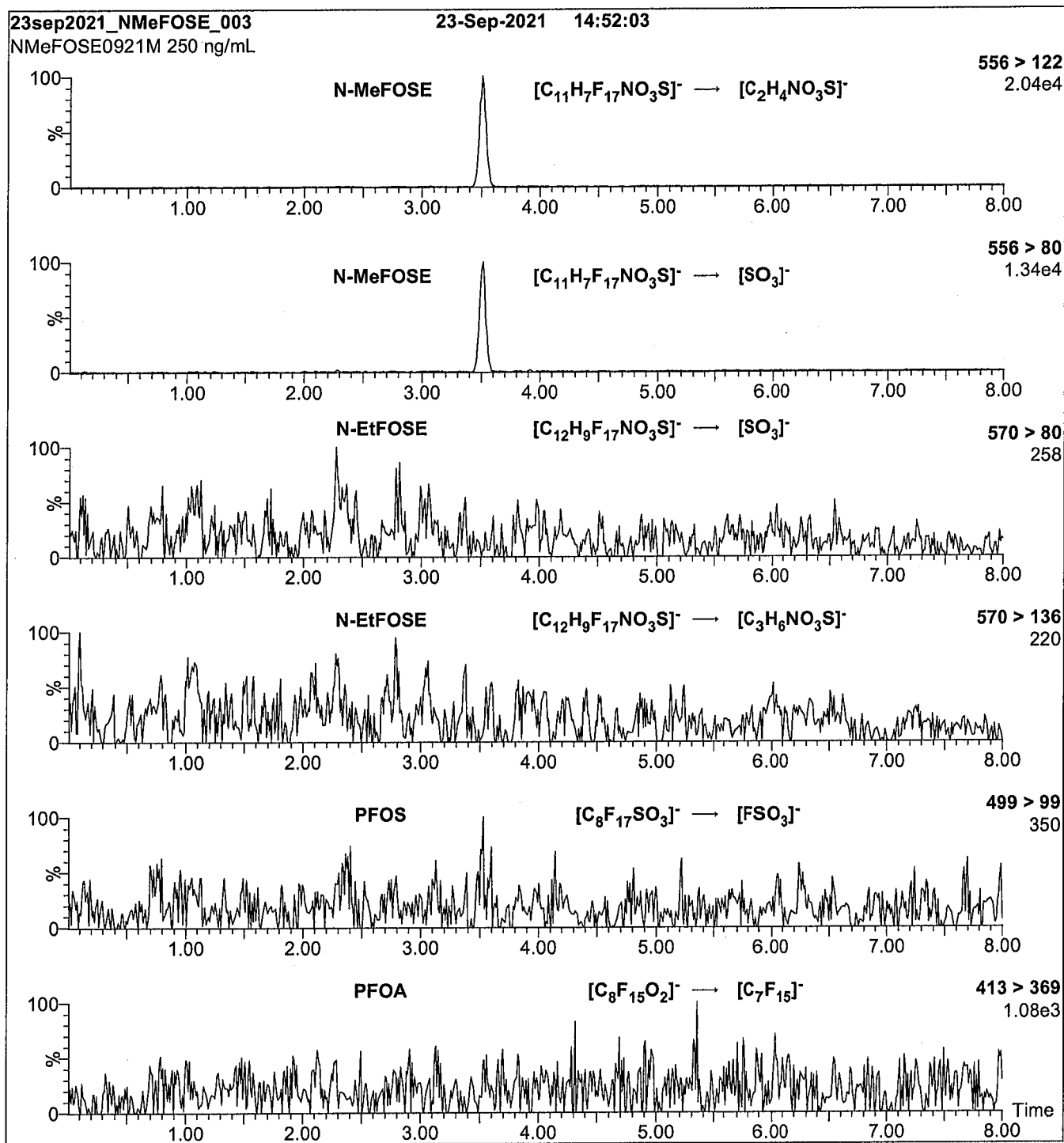
Source: Electrospray (negative)

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  $\mu$ 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:**

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:**

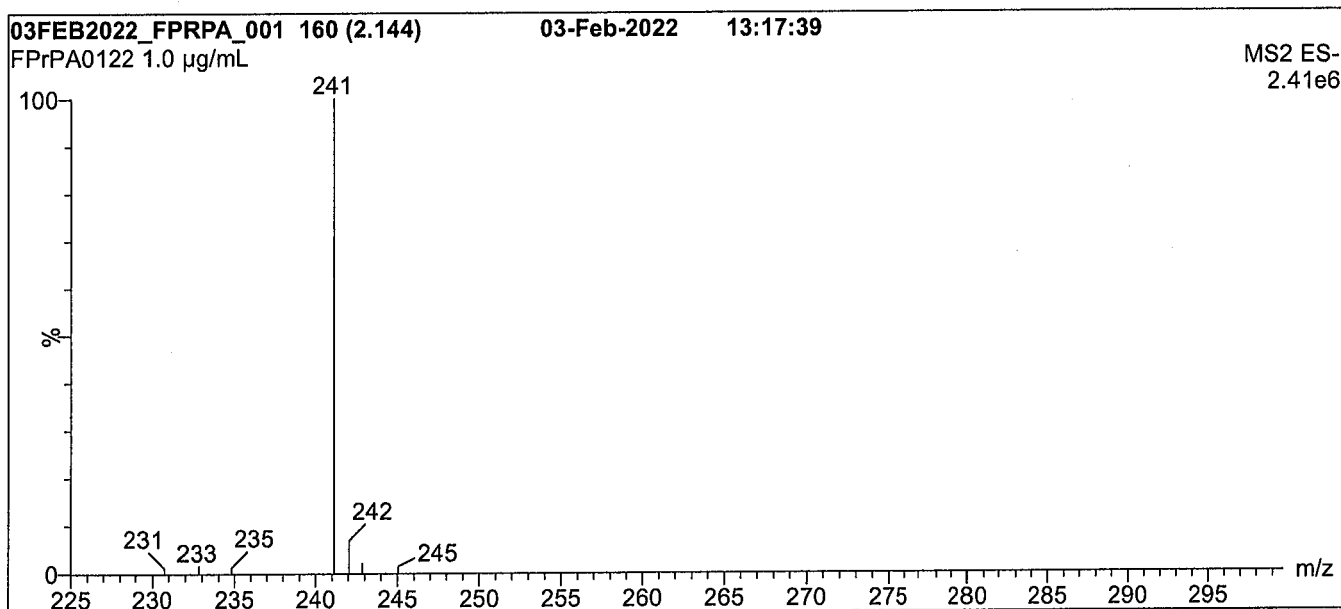
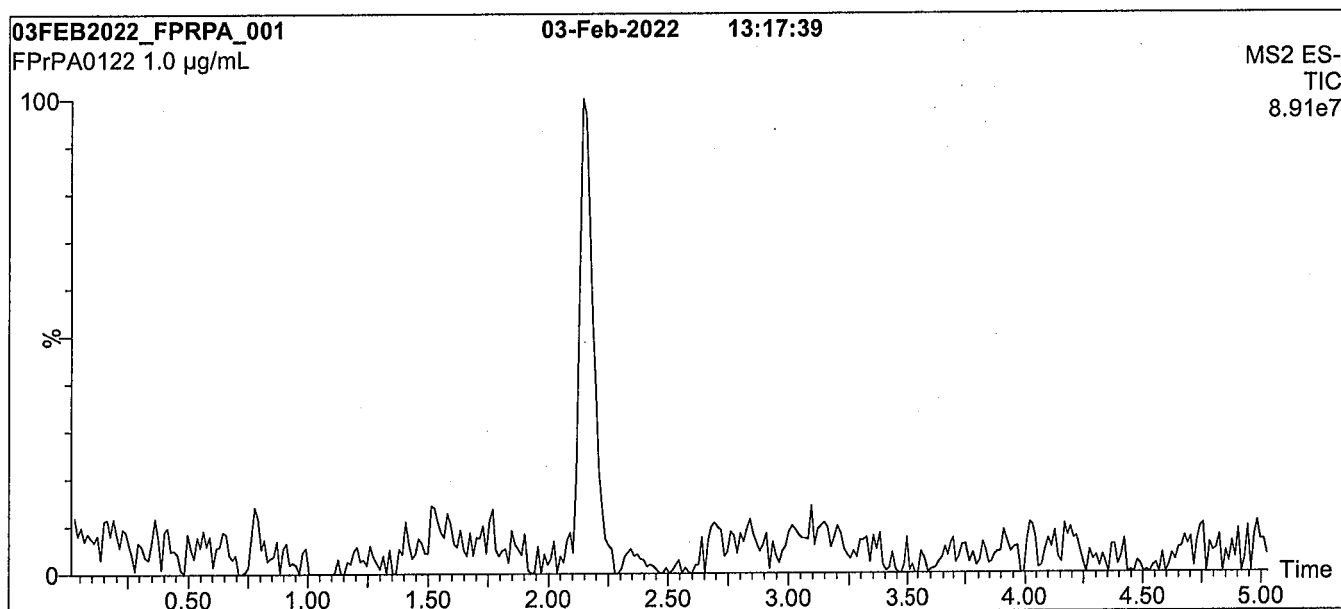
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**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 RP<sub>18</sub>  
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H<sub>2</sub>O / 40% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc 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)

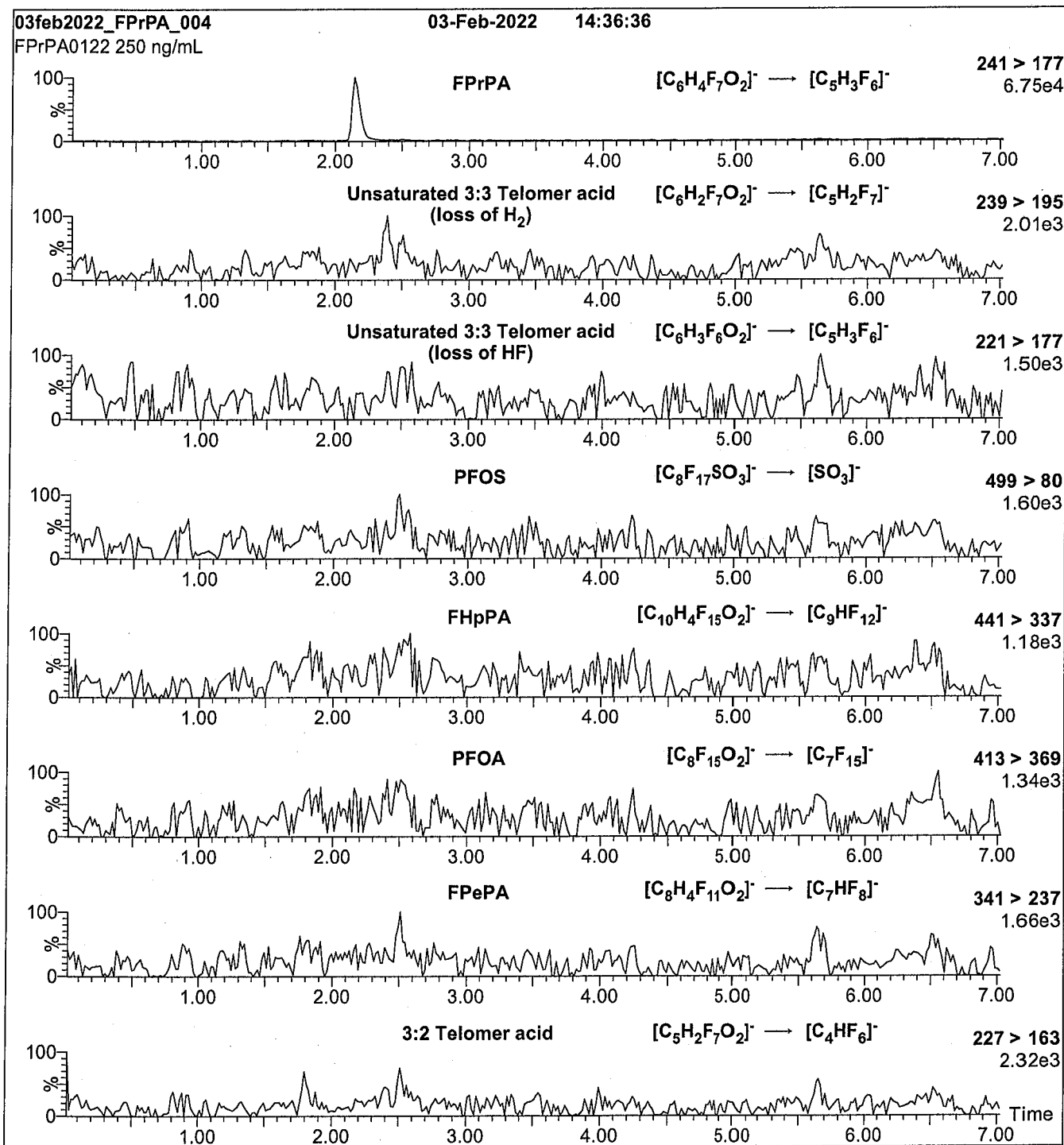
Source: Electrospray (negative)

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  $\mu$ 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

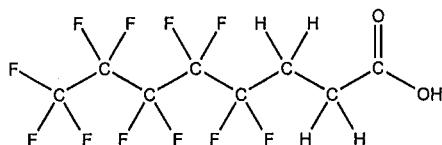


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FPePA **LOT NUMBER:** FPePA1221  
**COMPOUND:** 3-Perfluoropentyl propanoic acid **22C0309**

**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) 01/05/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 01/05/2027  
**RECOMMENDED STORAGE:** Refrigerate ampoule

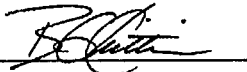
### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.5% of the unsaturated 5:3 telomer acid ( $C_8H_3F_{11}O_2$ ) as an impurity determined by  $^1\text{H}$  NMR.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim, General Manager

Date: 01/06/2022  
 (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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**LIMITED WARRANTY:**

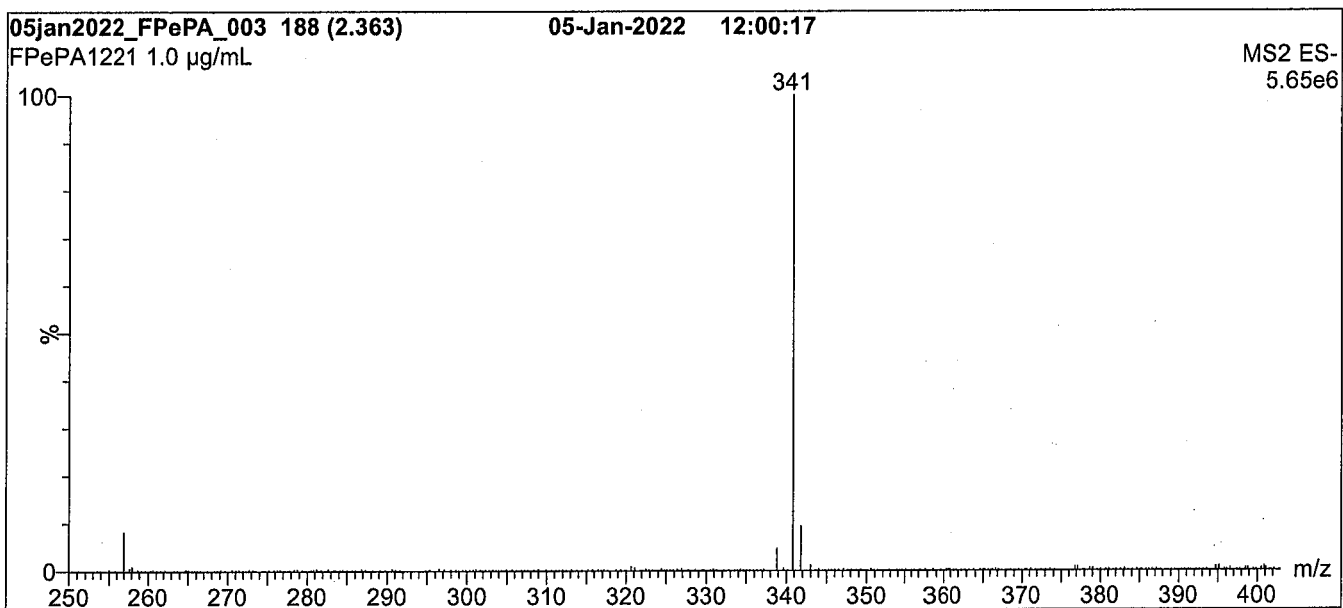
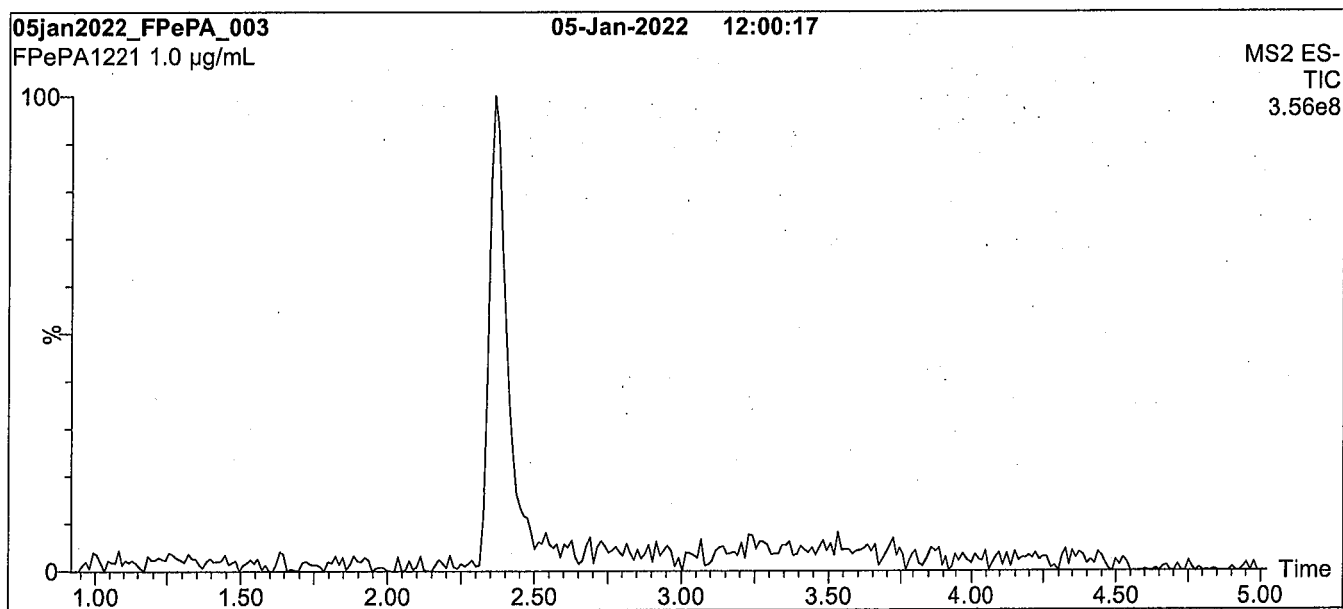
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**QUALITY MANAGEMENT:**

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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 RP<sub>18</sub>  
 1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc 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

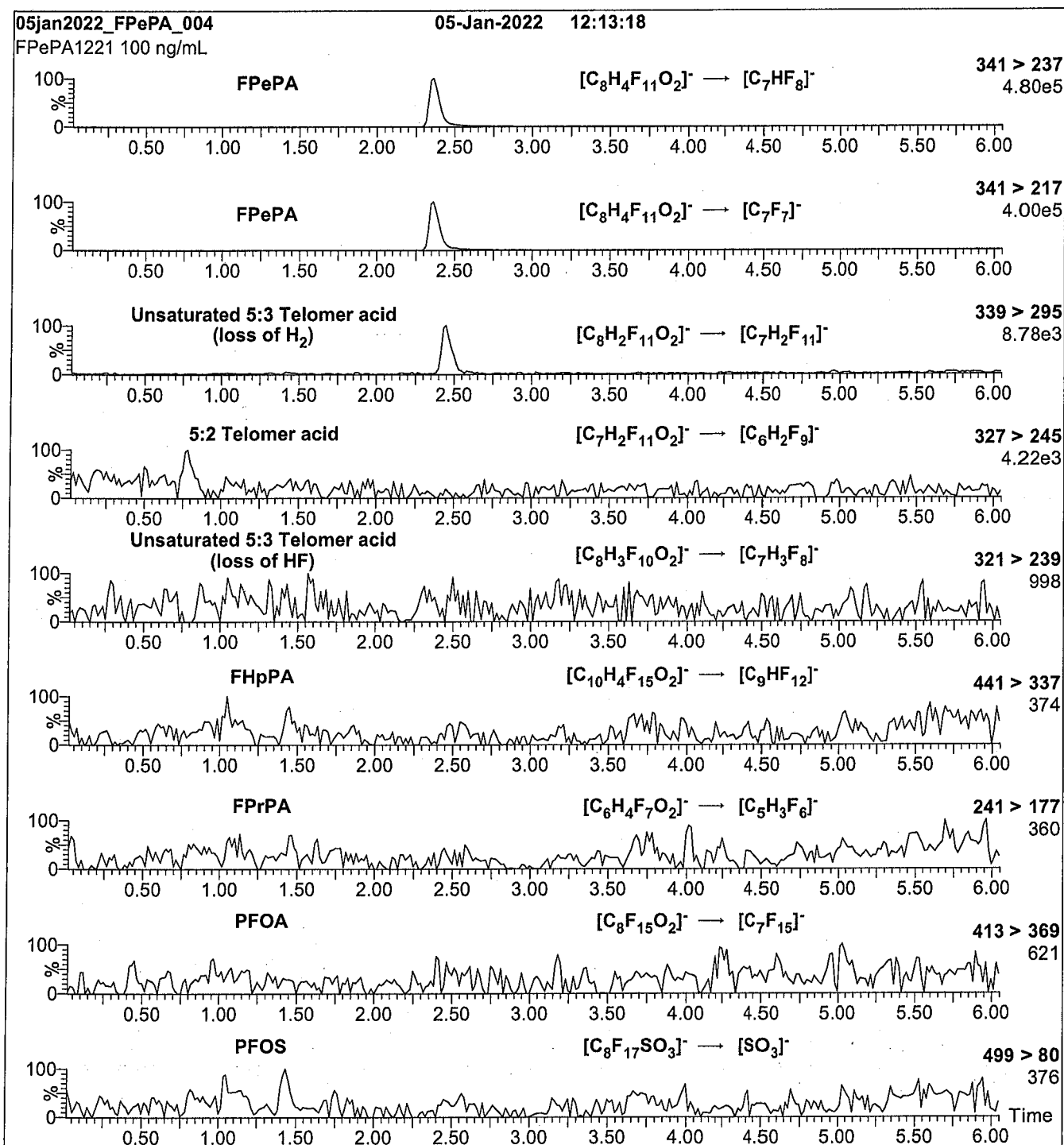
Flow: 300 µL/min

**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  $\mu$ 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

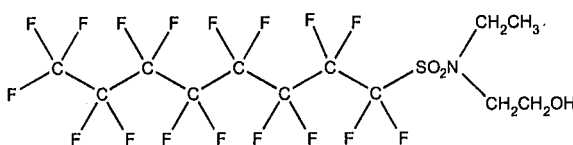
Analyte	Parent	CAS Number	Concentration	Units
5:3FTCA		914637-49-3	50	ug/mL



# 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:** C<sub>12</sub>H<sub>10</sub>F<sub>17</sub>NO<sub>3</sub>S **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

**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:**

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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.

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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:**

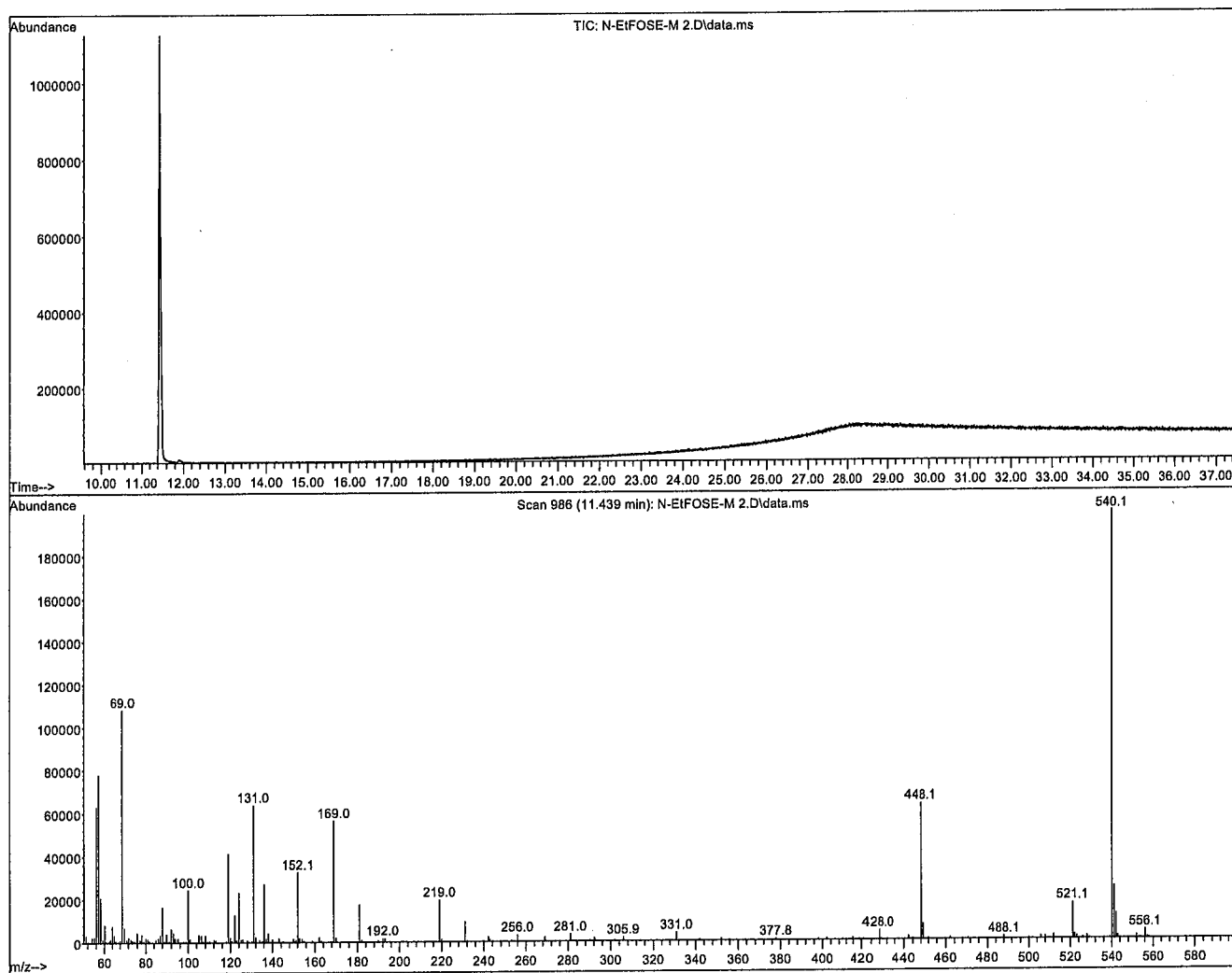
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto: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  $\mu$ m film thickness) Agilent J&W

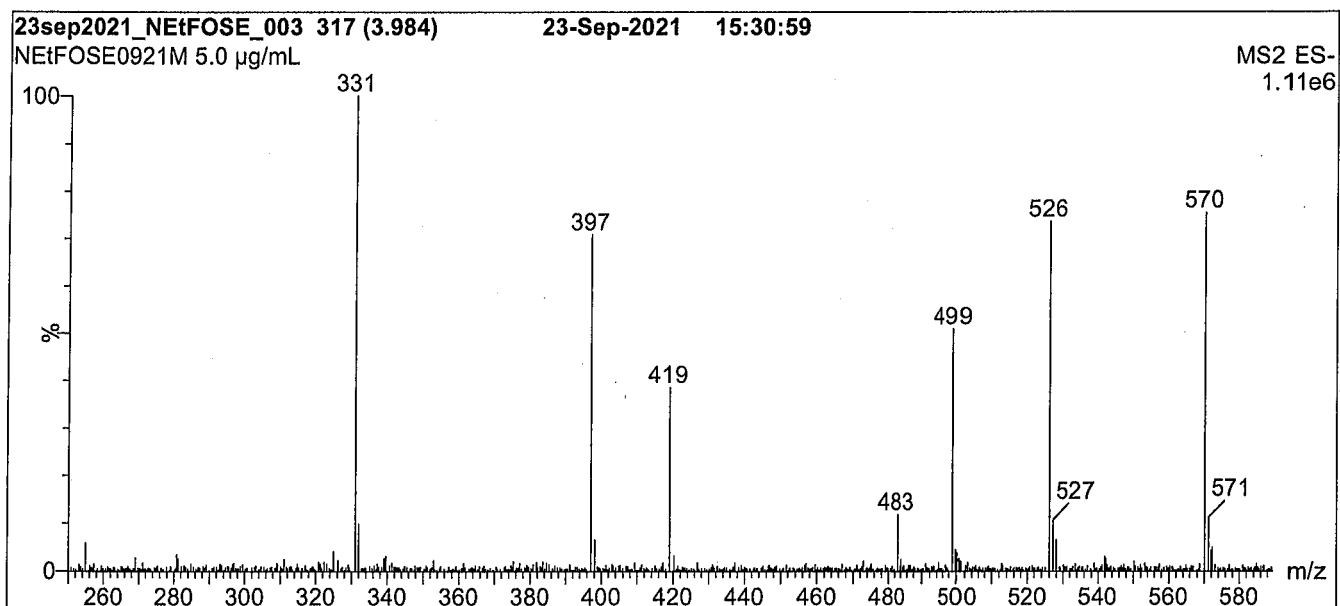
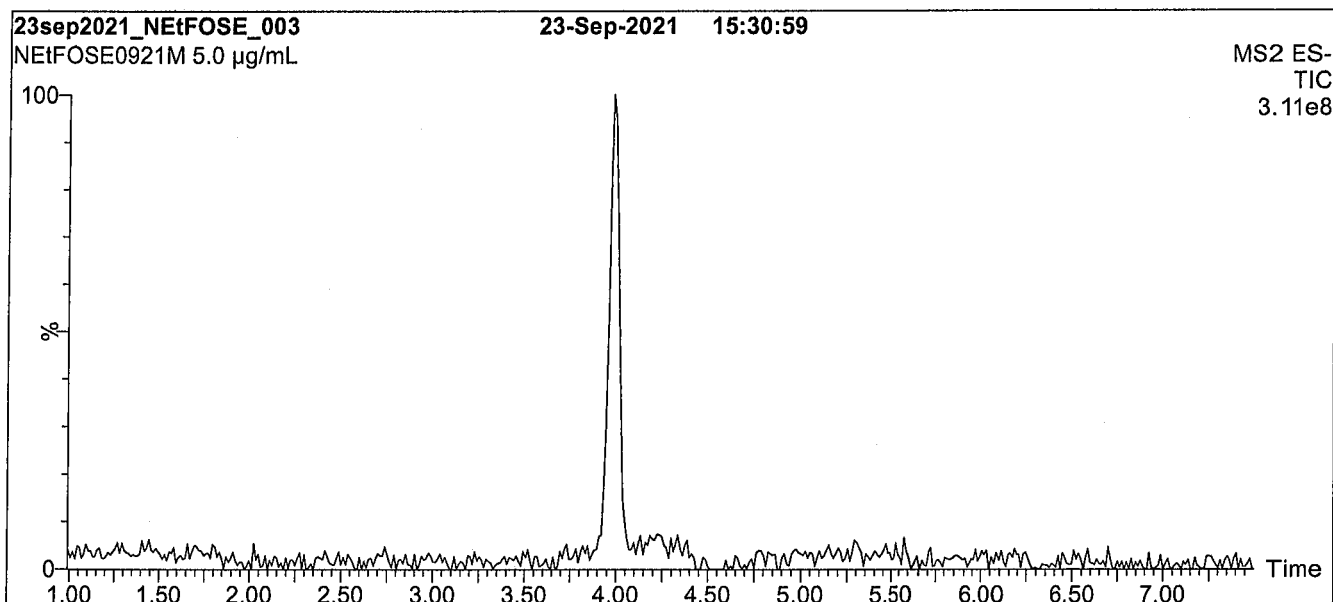
Flow: Constant at 1 mL/min

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 RP<sub>18</sub>  
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

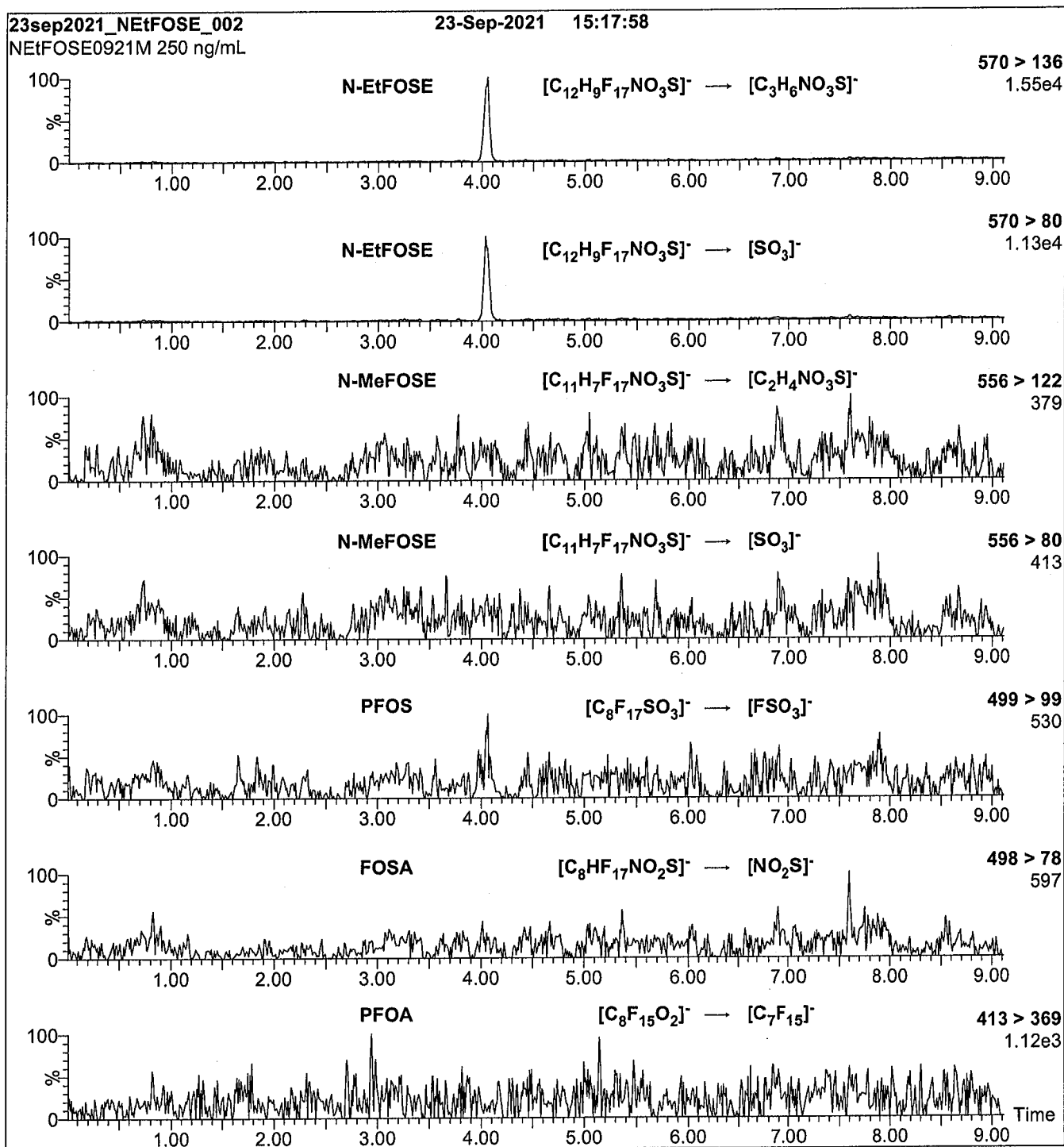
Start: 30% H<sub>2</sub>O / 70% MeOH  
Ramp to 90% organic over 8 min and hold for  
1.5 min before returning to initial conditions in 1 min.  
Time: 12 min

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  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 32





# Analytical Standard Record

**22C0310**

Description:	PFAS - SAS NETFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NETFOSE0921M)
Final Volume (mls):	1	Department:	NETFOSE0921M)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NETFOSE		1691-99-2	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:**

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

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

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:**

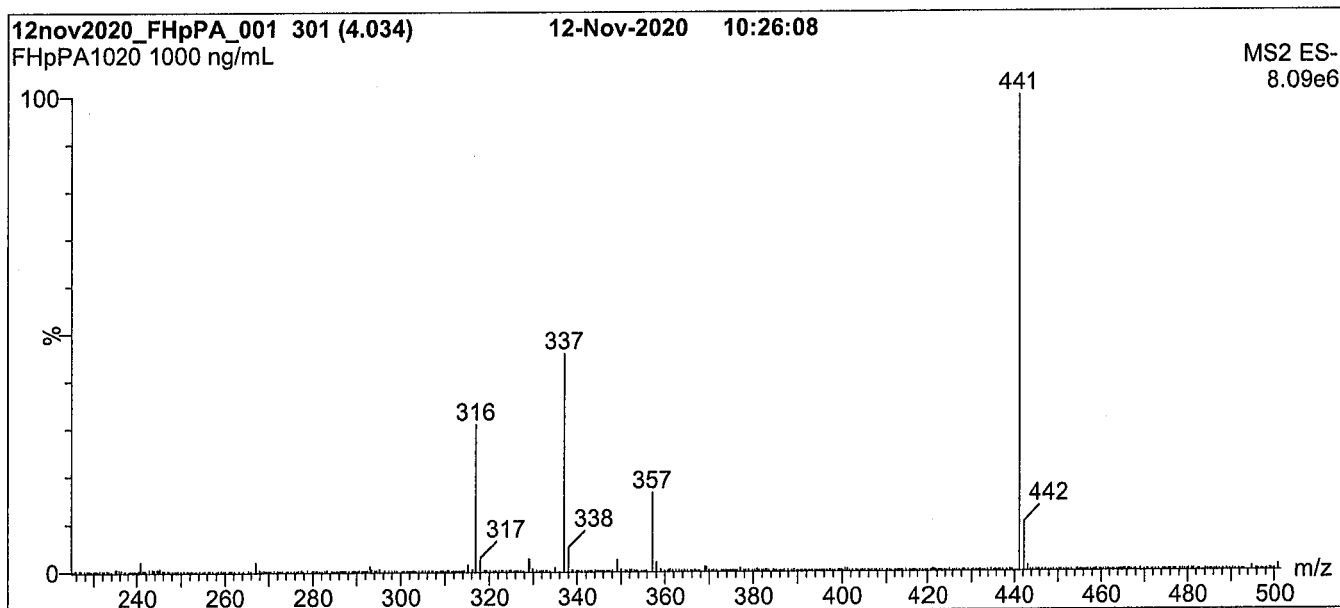
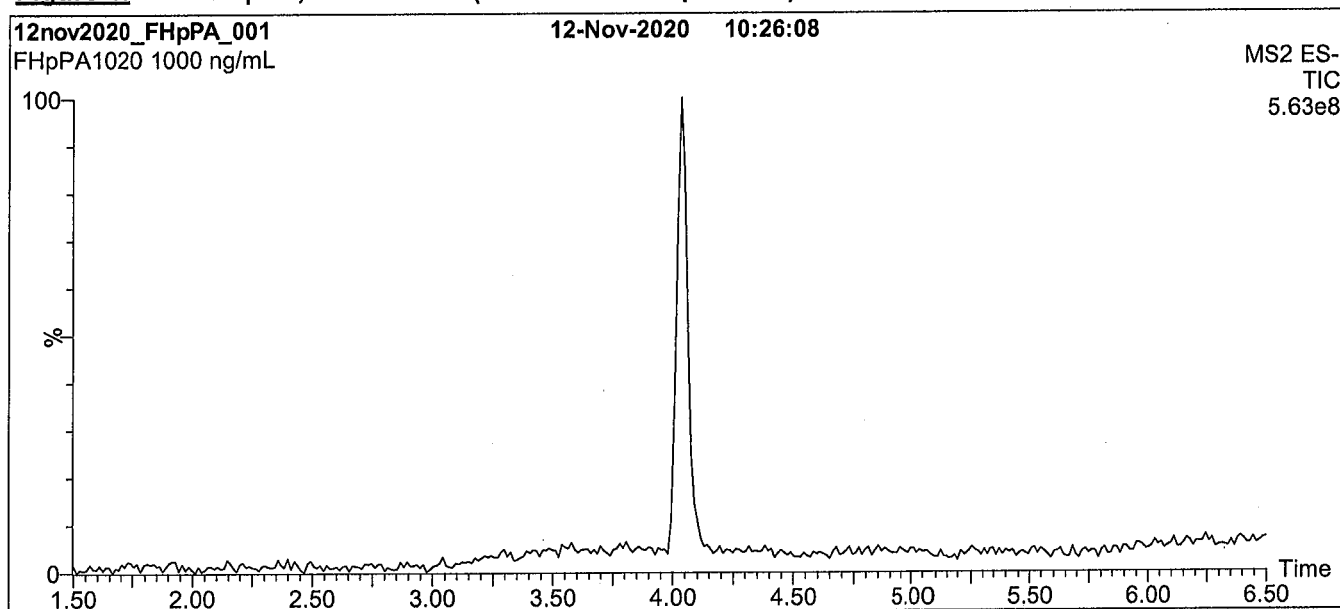
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\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**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 RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

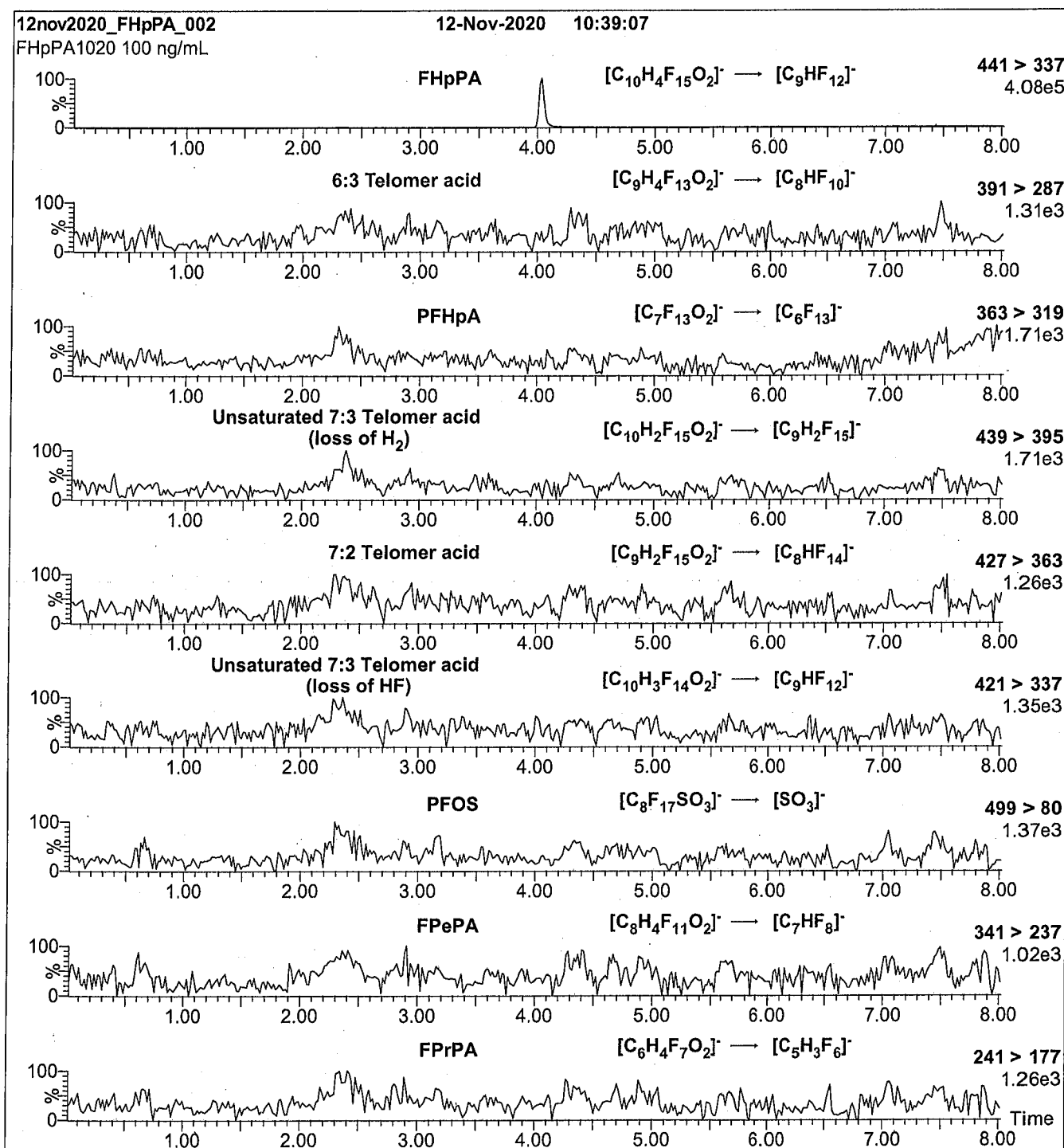
Source: Electrospray (negative)

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  $\mu$ 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:	FHhS
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#: FHpPA1020)
Final Volume (mls):	1	Department:	FHhS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

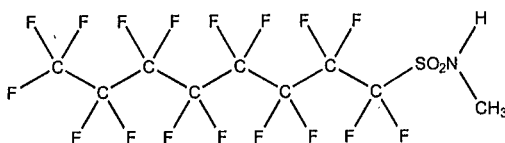
Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL



# 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:**  $C_9H_4F_{17}NO_2S$       **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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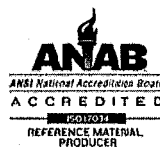
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**LIMITED WARRANTY:**

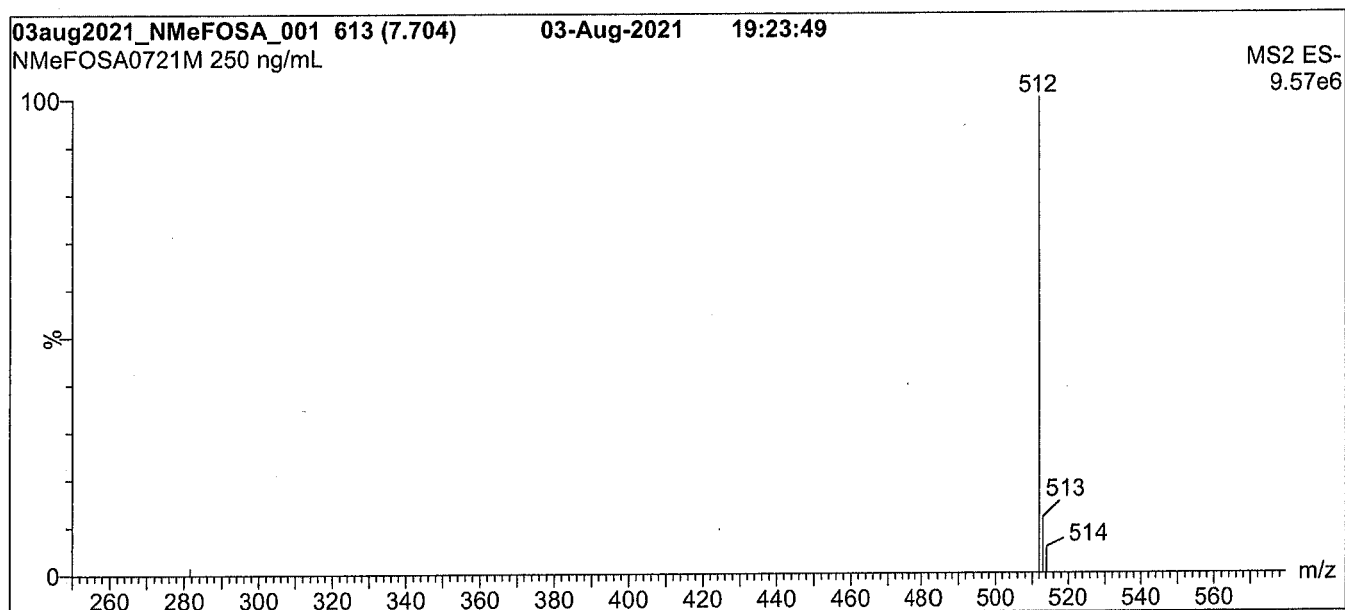
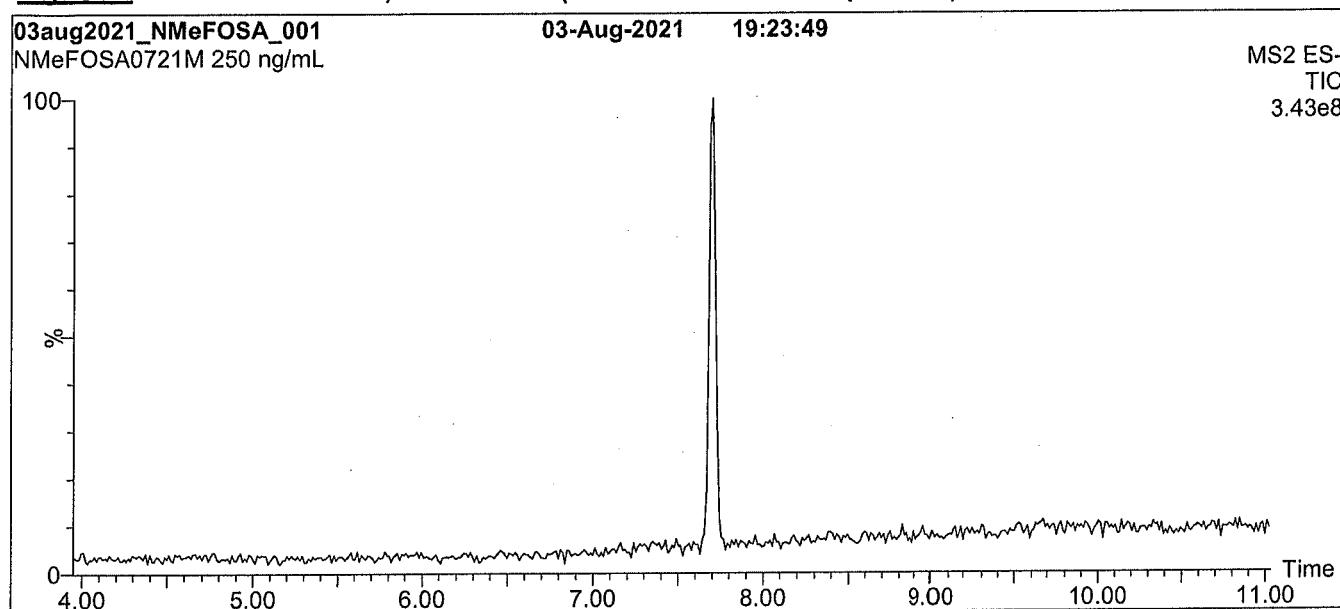
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**Figure 1: N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

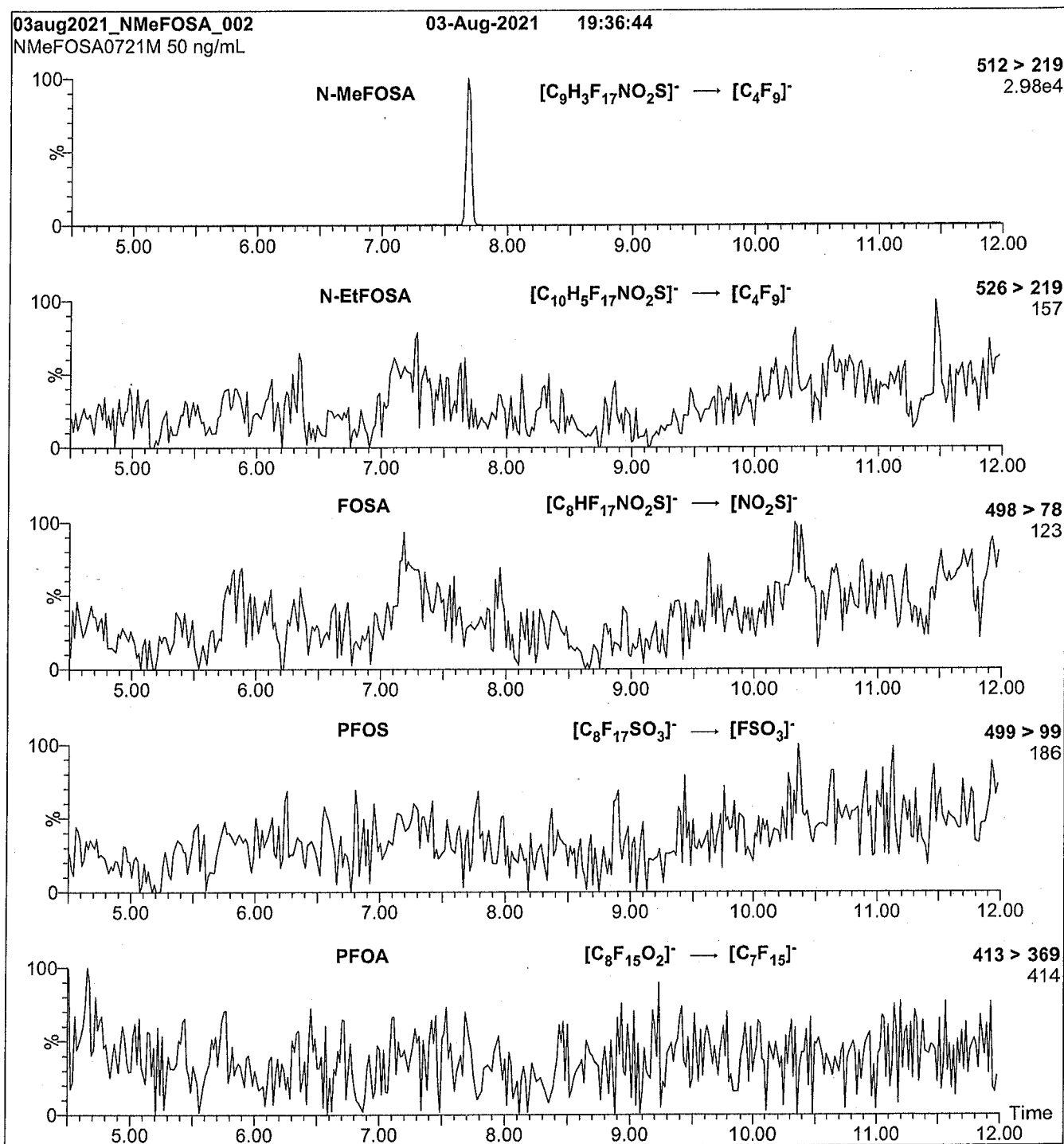
Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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  $\mu$ 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

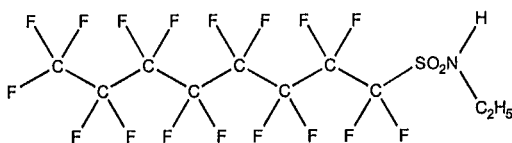
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL



# 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<sub>10</sub>H<sub>6</sub>F<sub>17</sub>NO<sub>2</sub>S      **MOLECULAR WEIGHT:** 527.20  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL      **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 08/12/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 08/12/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.

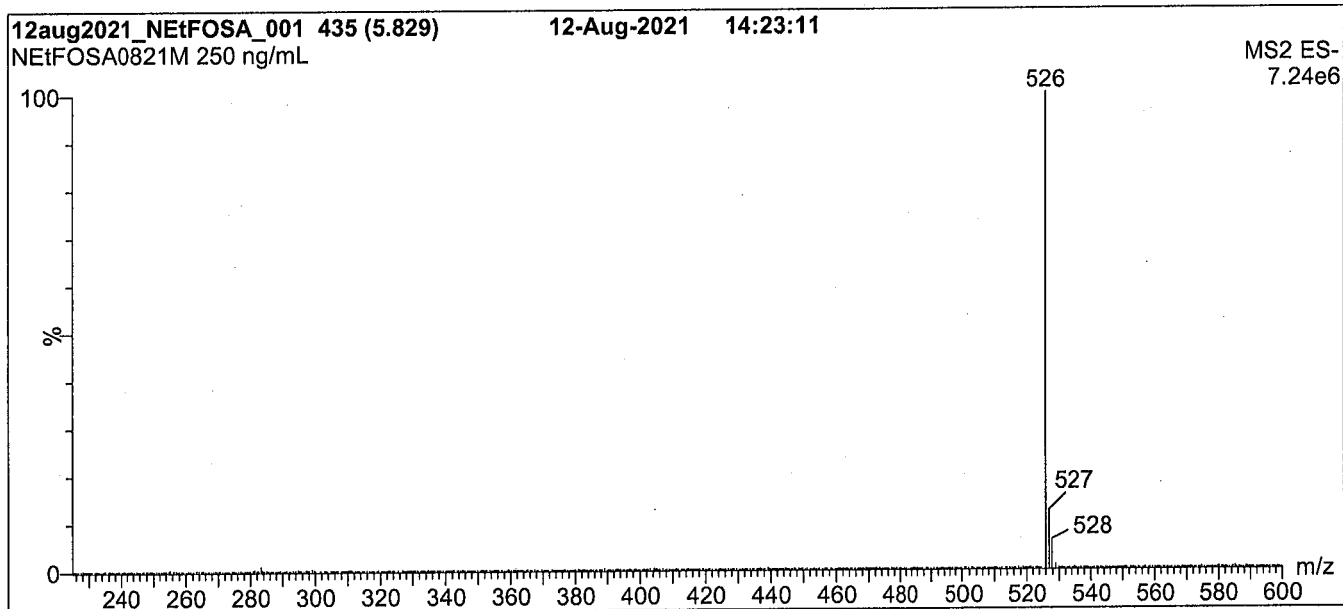
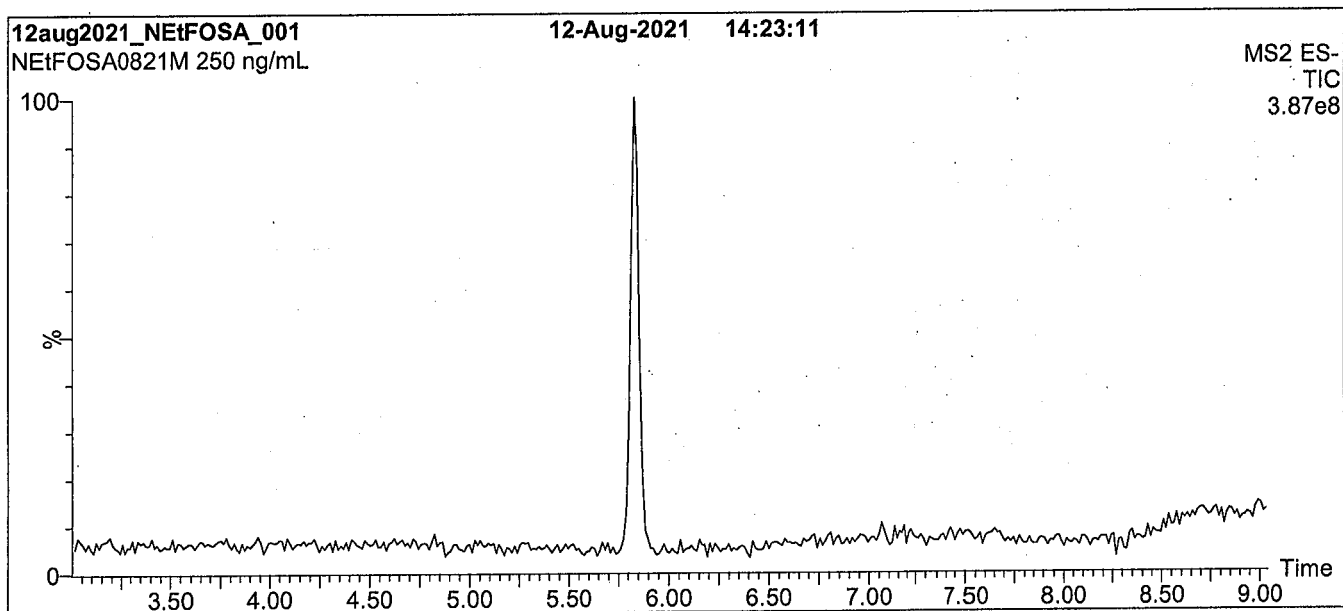
**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By: \_\_\_\_\_

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 RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase: Gradient**

Start: 30% H<sub>2</sub>O / 70% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ 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.

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**INTENDED USE:**

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**HANDLING:**

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

**SYNTHESIS / CHARACTERIZATION:**

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

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, 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:**

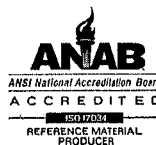
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXF; Components and Concentrations (ng/mL;  $\pm$  5% in Methanol/Water (<1%))**

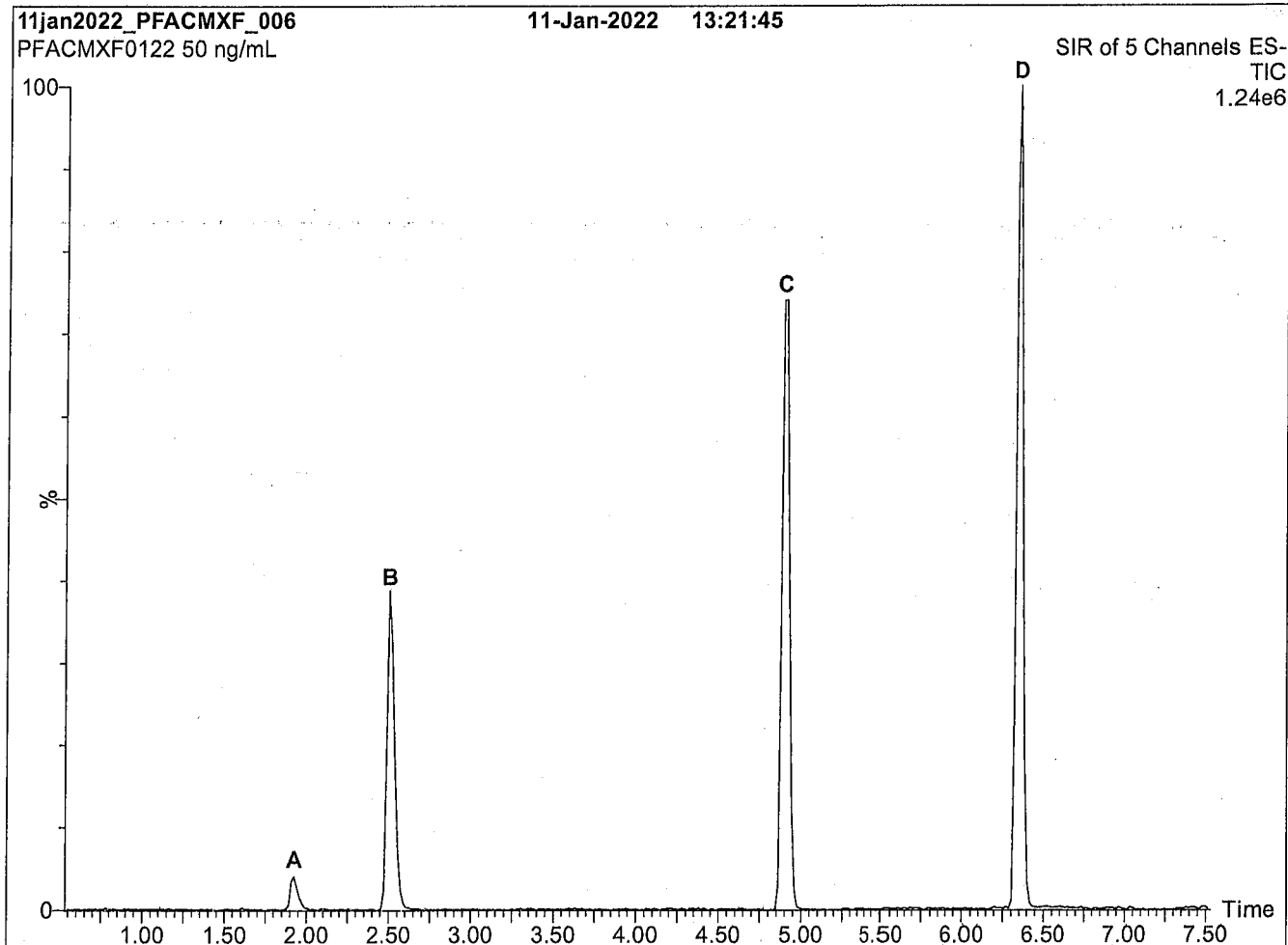
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	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 RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

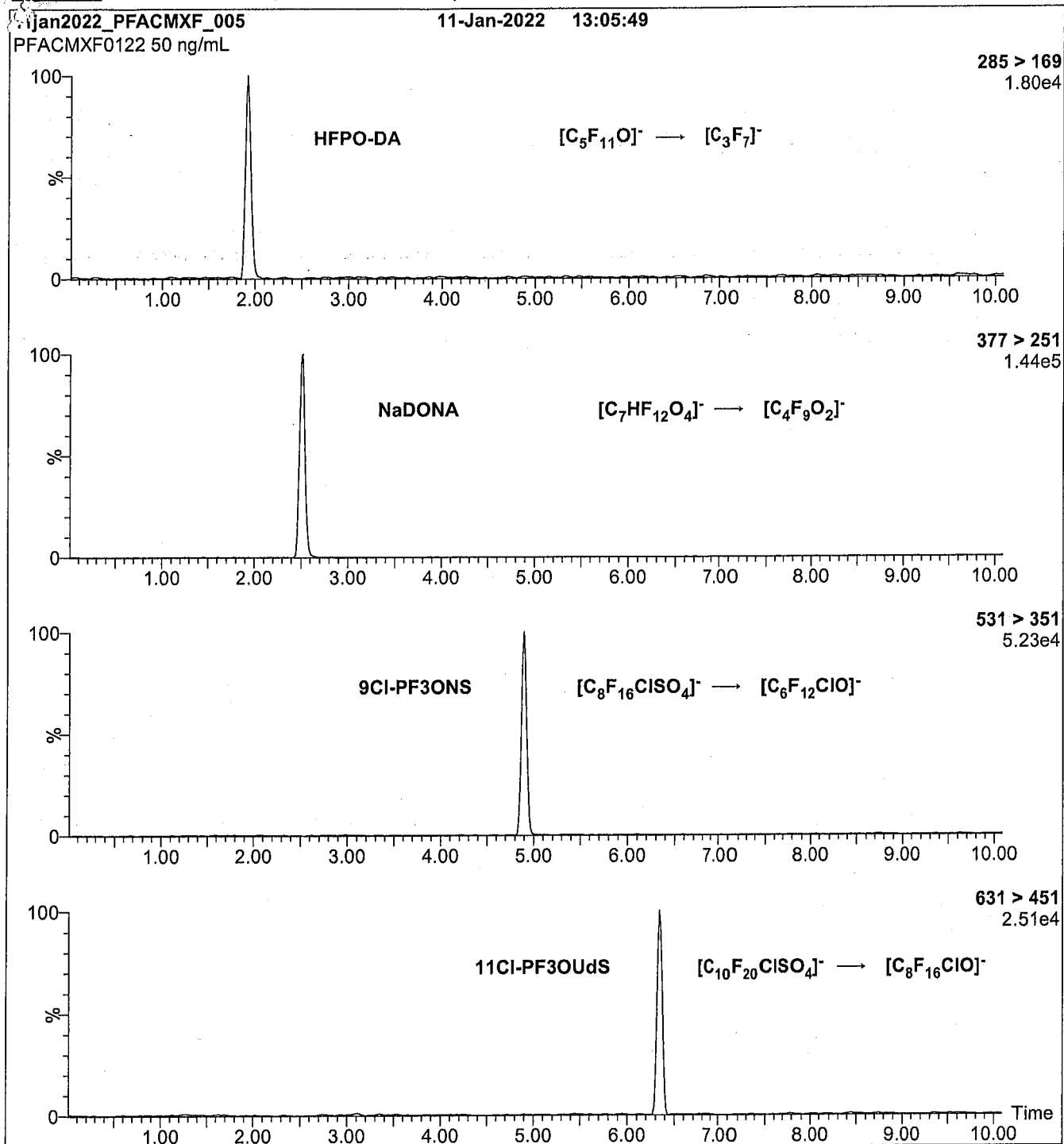
Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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  $\mu$ 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 (C<sub>4</sub>-C<sub>14</sub>), eight native perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>5</sub>, C<sub>7</sub>, C<sub>9</sub>, C<sub>10</sub> and C<sub>12</sub> linear; C<sub>6</sub> and C<sub>8</sub> 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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$x_1, x_2, \dots, x_n$  on which it depends is:

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**EXPIRY DATE / PERIOD OF VALIDITY:**

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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	PFTTrDA	1.00		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00		29
Perfluoro-1-octanesulfonamide	FOSA	1.00		25
N-methylperfluorooctanesulfonamidoacetic acid <sup>a</sup>	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: $\Sigma$ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup>	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: $\Sigma$ 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-pentanesulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate <sup>c</sup>	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: $\Sigma$ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate <sup>d</sup>	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: $\Sigma$ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate	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

<sup>a</sup> See Table B for percent composition of linear and branched N-MeFOSAA isomers.

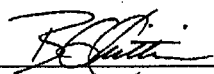
<sup>b</sup> See Table C for percent composition of linear and branched N-EtFOSAA isomers.

<sup>c</sup> See Table D for percent composition of linear and branched PFHxSK isomers.

<sup>d</sup> 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 <sup>19</sup>F-NMR)\*

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$	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 <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> 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  $^{19}\text{F}$ -NMR)\***

Isomer	Compound	Structure	Percent Composition by $^{19}\text{F}$ -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.

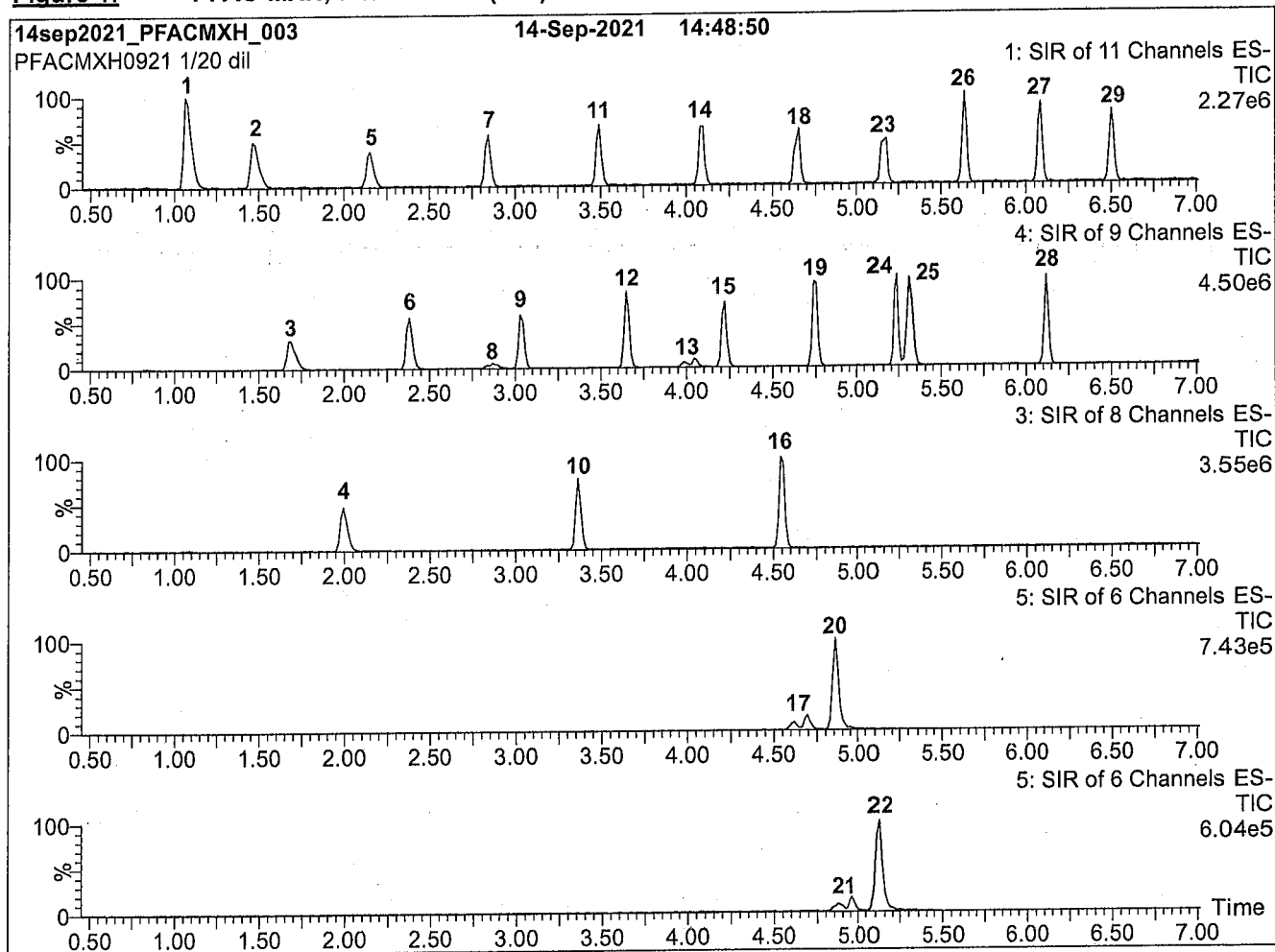
\*\* Systematic Name: Potassium perfluorohexane-2-sulfonate.

**Table E: PFOSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )K <sup>+</sup>   CF <sub>3</sub>	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF <sub>2</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	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 RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

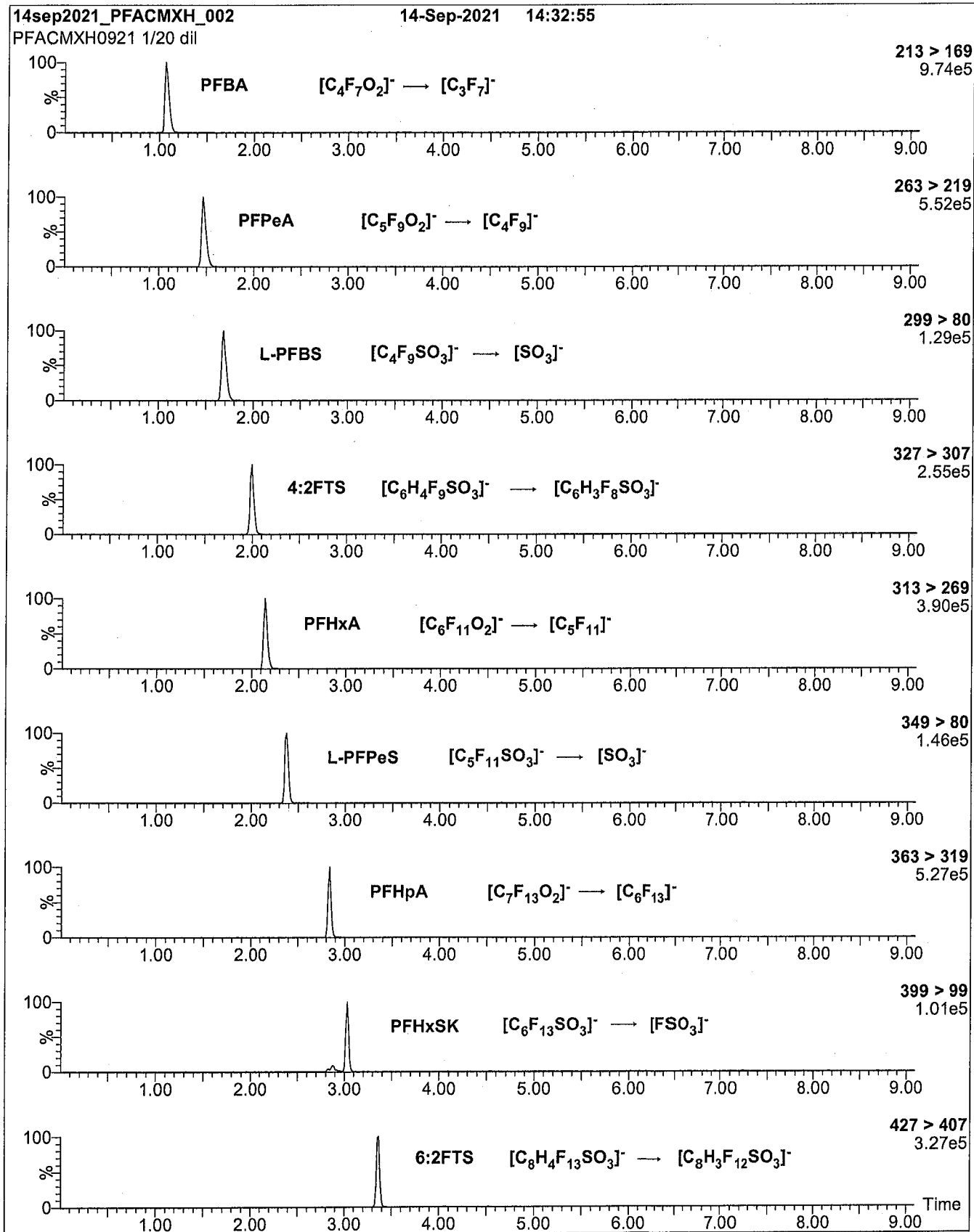
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for 2 min  
before returning to initial conditions in 1 min.  
Time: 15 min

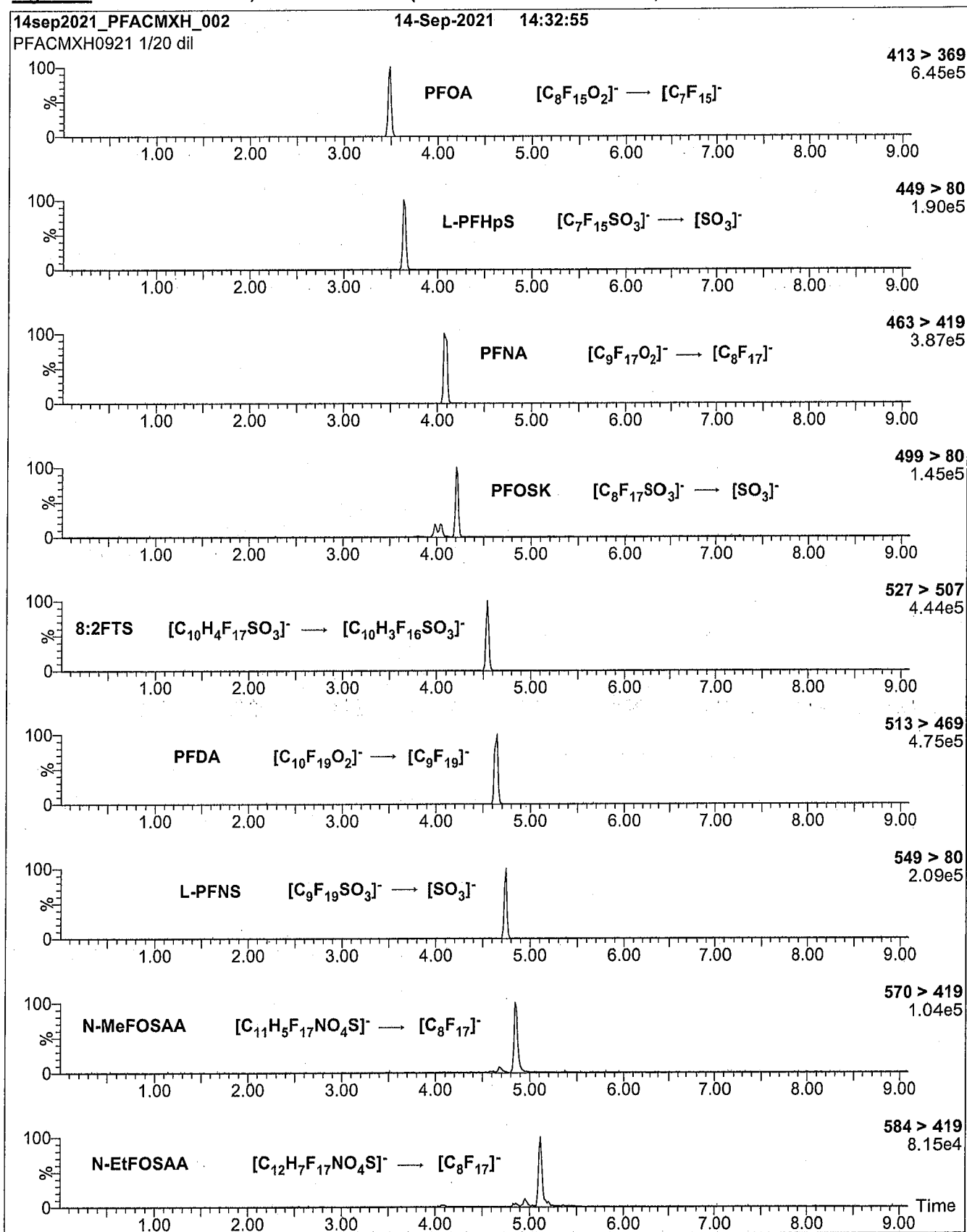
Flow: 300  $\mu$ L/min

**MS Parameters:**

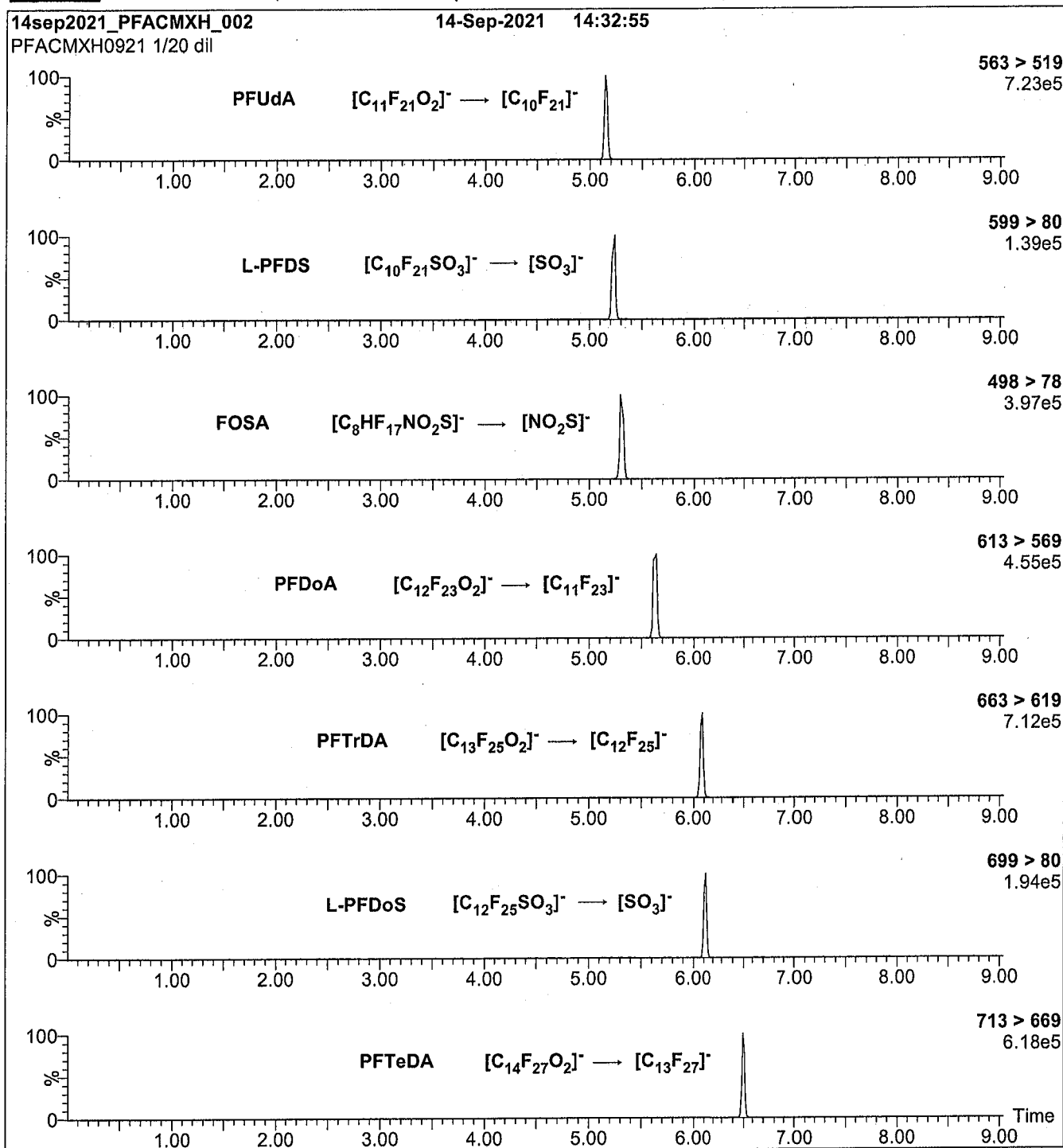
Experiment: SIR

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  $\mu$ 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**

**PRODUCT CODE:** PFAC-MXG  
**LOT NUMBER:** PFACMXG0222  
**SOLVENT(S):** Methanol/Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 02/07/2022  
**LAST TESTED:** (mm/dd/yyyy) 02/22/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 02/22/2027  
**RECOMMENDED STORAGE:** 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.

**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](mailto: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).



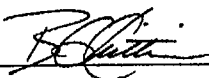
\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXG; Components and Concentrations (ng/mL;  $\pm$  5% in methanol/water (<1%))**

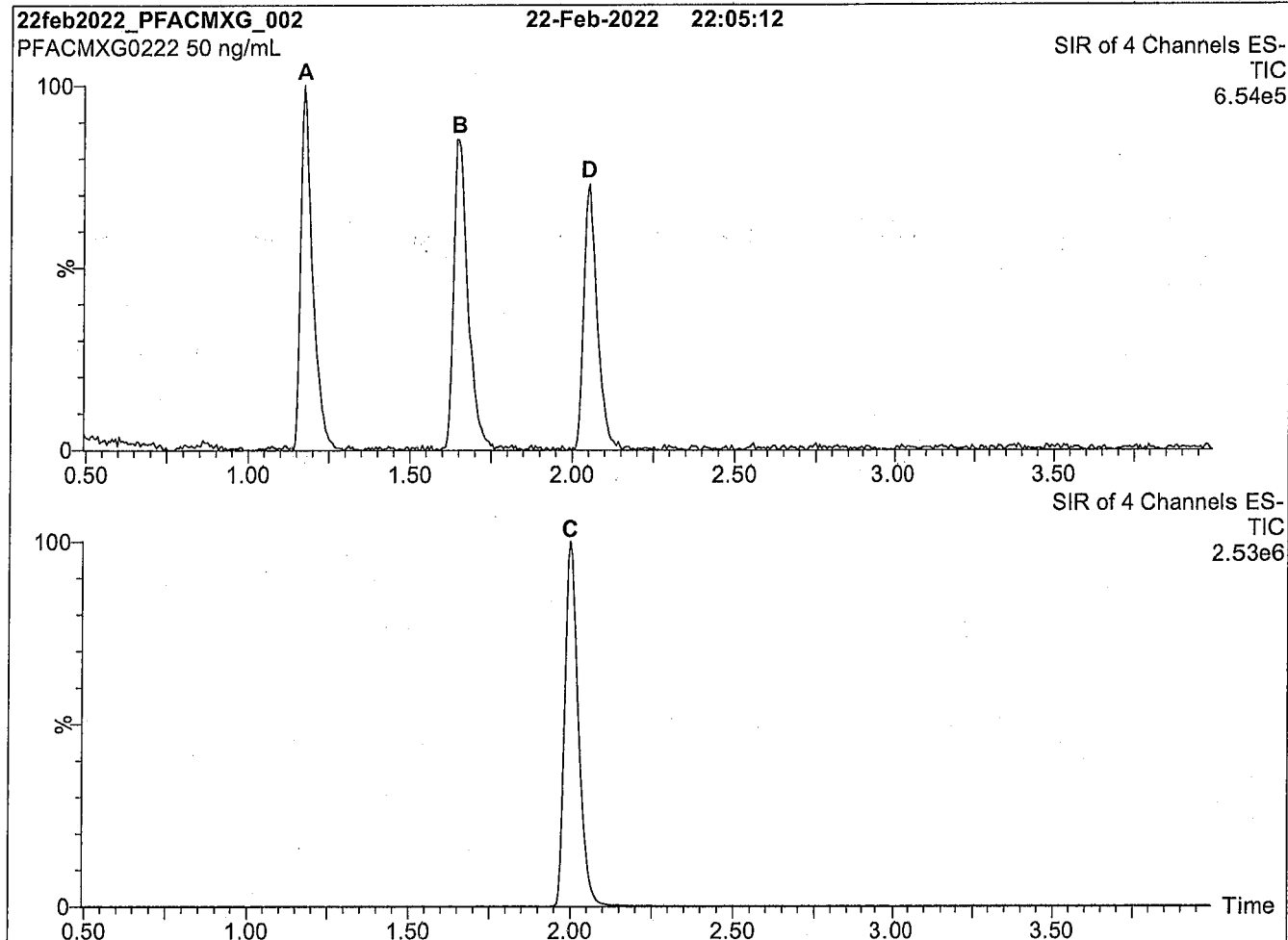
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 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 RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

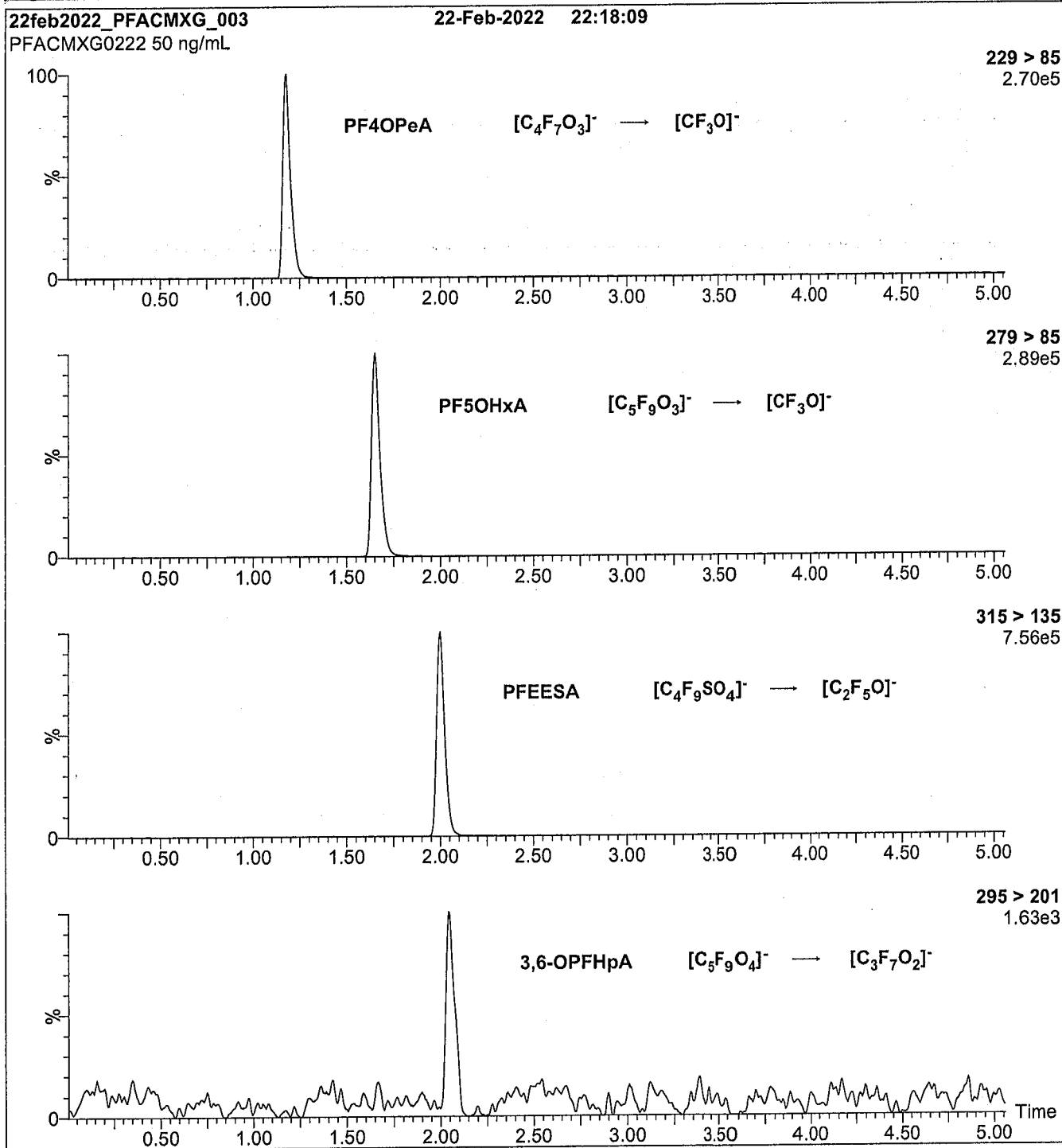
Mobile phase: Gradient  
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

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

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 8-48 (variable)





# Analytical Standard Record

<b>22F0061</b>
----------------

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

22F0445

Description:	TDCA 1000ug/mL	Expires:	09/19/2023
Standard Type:	Other	Prepared:	01/12/2022
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	11/14/2022 14:31 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID	22A0123	516-50-7	1000	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0123	PFAS Taurodeoxycholic Acid, Sodium Salt neat	10/09/2021	Calbiochem	3761825	09/30/2023	06/22/2022 13:01 by DAG	25000

# Analytical Standard Record

**22F0446**

Description:	TCDA 100ug/mL	Expires:	09/19/2023
Standard Type:	Other	Prepared:	01/13/2022
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	3	Department:	PFAS
Vials:	1	Last Edit:	06/22/2022 13:05 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID	22F0445	516-50-7	100	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22F0445	TCDA 1000ug/mL	01/12/2022	Calbiochem	3761825	09/19/2023	06/22/2022 13:05 by DAG	0.3

# 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

# Analytical Standard Record

**22J0297**

Description:	T-PFOA	Expires:	01/27/2027
Standard Type:	Other	Prepared:	01/27/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFOA0122)
Vials:	1	Last Edit:	10/18/2022 12:59 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOA		335-67-1	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** T-PFOA **LOT NUMBER:** TPFOA0122  
**COMPOUND:** Ammonium perfluorooctanoate (Technical Grade)  
**STRUCTURE:** (see Table A) **CAS #:** 3825-26-1  
 (for linear ammonium perfluorooctanoate)  
**MOLECULAR FORMULA:**  $C_8F_{15}O_2NH_4$   
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  (gravimetric)  
**CHEMICAL PURITY:** Technical material  
**SOLVENT(S):** Methanol/Water (<1%)  
**LAST TESTED:** (mm/dd/yyyy) 01/27/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 01/27/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

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

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**Certified By:**   
 B.G. Chittim, General Manager **Date:** 01/27/2022  
 (mm/dd/yyyy)

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**Table A: T-PFOA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

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

\* Percent Composition was determined by <sup>19</sup>F-NMR. The percentages displayed are of total ammonium perfluorooctanoate isomers only (isomers are labelled in Figure 4).

# Analytical Standard Record

**22J0298**

Description:	br-FOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	09/14/2022
Solvent:	Isopropanol	Prepared By:	Wellington Laboratories (Lot#: PFOSA0922)
Final Volume (mls):	1	Department:	PFOSA
Vials:	1	Last Edit:	10/18/2022 13:03 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOSA		754-91-6	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### br-FOSA

#### Perfluorooctanesulfonamide Isomeric Mix

<b><u>PRODUCT CODE:</u></b>	br-FOSA
<b><u>LOT NUMBER:</u></b>	brFOSA0922
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Isopropanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/14/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/07/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

The chemical purity has been determined to be ≥98% perfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

#### **DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (SIR)  
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

#### **ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 754-91-6 (for linear isomer).

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**Table A: br-FOSA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	Perfluoro-1-octanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>7</sub> SO <sub>2</sub> NH <sub>2</sub>	66.6
2	Perfluoro-1-methyl-1-heptanesulfonamide**	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>5</sub> CF(SO <sub>2</sub> NH <sub>2</sub> )   CF <sub>3</sub>	0.8
3	Perfluoro-2-methyl-1-heptanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>4</sub> CF(CF <sub>3</sub> )SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	0.3
4	Perfluoro-3-methyl-1-heptanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>3</sub> CF(CF <sub>3</sub> ) <sub>2</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	4.2
5	Perfluoro-4-methyl-1-heptanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>2</sub> CF(CF <sub>3</sub> ) <sub>2</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	3.5
6	Perfluoro-5-methyl-1-heptanesulfonamide	CF <sub>3</sub> CF <sub>2</sub> CF(CF <sub>3</sub> ) <sub>4</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	7.8
7	Perfluoro-6-methyl-1-heptanesulfonamide	CF <sub>3</sub> CF(CF <sub>3</sub> ) <sub>5</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	16.8
8	Perfluoro-5,5-dimethyl-1-hexanesulfonamide	CF <sub>3</sub>   CF <sub>3</sub> C(CF <sub>3</sub> ) <sub>4</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	0.2

\* Percent of total perfluorooctanesulfonamide isomers only.

\*\* Systematic Name: Perfluoro-2-octanesulfonamide.

Certified By:   
B.G. Chittim, General Manager

Date: 11/15/2022  
(mm/dd/yyyy)

# Analytical Standard Record

**22J0298**

Description:	br-FOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	09/14/2022
Solvent:	Isopropanol	Prepared By:	Wellington Laboratories (Lot#: PFOSA0922)
Final Volume (mls):	1	Department:	PFOSA
Vials:	1	Last Edit:	10/18/2022 13:03 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOSA		754-91-6	50	ug/mL

# Analytical Standard Record

**22J0301**

Description:	br-NMeFOSA	Expires:	08/23/2027
Standard Type:	Other	Prepared:	08/23/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSA0822)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:37 by HGH

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



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### br-NMeFOSA

#### N-Methylperfluorooctanesulfonamide Isomeric Mix

<b><u>PRODUCT CODE:</u></b>	br-NMeFOSA
<b><u>LOT NUMBER:</u></b>	brNMeFOSA0822
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	08/18/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	08/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	08/23/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

#### **DESCRIPTION:**

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

#### **DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (SIR)  
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

#### **ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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**Table A: br-NMeFOSA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	N-Methylperfluoro-1-octanesulfonamide	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NH}\begin{array}{c}   \\ \text{CH}_3 \end{array}$	72.3
2	N-Methylperfluoro-3-methyl-1-heptanesulfonamide	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NH}\begin{array}{c}   \\ \text{CH}_3 \end{array}$	2.1
3	N-Methylperfluoro-4-methyl-1-heptanesulfonamide	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NH}\begin{array}{c}   \\ \text{CH}_3 \end{array}$	2.6
4	N-Methylperfluoro-5-methyl-1-heptanesulfonamide	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NH}\begin{array}{c}   \\ \text{CH}_3 \end{array}$	6.7
5	N-Methylperfluoro-6-methyl-1-heptanesulfonamide	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NH}\begin{array}{c}   \\ \text{CH}_3 \end{array}$	16.2
6	N-Methylperfluoro-5,5-dimethyl-1-hexanesulfonamide	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NH} \\   \\ \text{CH}_3 \end{array}$	0.04

\* Percent of total N-methylperfluorooctanesulfonamide isomers only.

Certified By: \_\_\_\_\_



B.G. Chittim, General Manager

Date: 11/15/2022  
(mm/dd/yyyy)



# Analytical Standard Record

<b>22J0301</b>
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Description:	br-NMeFOSA	Expires:	08/23/2027
Standard Type:	Other	Prepared:	08/23/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSA0822)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:37 by HGH

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

# Analytical Standard Record

<b>22J0302</b>
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Description:	br-NETFOA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NETFOA0922)
Final Volume (mls):	1	Department:	PPAS
Vials:	1	Last Edit:	10/18/2022 13:38 by HGH

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



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**br-NEtFOSA**

**N-Ethylperfluorooctanesulfonamide**  
**Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NEtFOSA
<b><u>LOT NUMBER:</u></b>	brNEtFOSA0922
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	08/23/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/07/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS Data (SIR)  
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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**Table A: br-NEtFOSA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	N-Ethylperfluoro-1-octanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NH} \\   \\ \text{CH}_2\text{CH}_3 \end{array}$	73.8
2	N-Ethylperfluoro-1-methyl-1-heptanesulfonamide**	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_5\text{CF}\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	0.1
3	N-Ethylperfluoro-3-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	2.3
4	N-Ethylperfluoro-4-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	2.6
5	N-Ethylperfluoro-5-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	6.2
6	N-Ethylperfluoro-6-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	14.8
7	N-Ethylperfluoro-5,5-dimethyl-1-hexanesulfonamide	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	0.2

\* Percent of total N-ethylperfluorooctanesulfonamide isomers only.

\*\* Systematic Name: N-Ethylperfluoro-2-octanesulfonamide.

Certified By:   
B.G. Chittim, General Manager

Date: 11/15/2022  
(mm/dd/yyyy)

# Analytical Standard Record

**22J0303**

Description:	br-NMeFOSE	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSE0922)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:41 by HGH

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



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**br-NMeFOSE**

**2-(N-Methylperfluorooctanesulfonamido)ethanol  
Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NMeFOSE
<b><u>LOT NUMBER:</u></b>	brNMeFOSE0922
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/02/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 3: LC/MS Data (SIR)  
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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**Table A: br-NMeFOSE; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	2-(N-Methylperfluoro-1-octanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad  $ $\quad \quad \quad \text{CH}_3$	67.6
2	2-(N-Methylperfluoro-3-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	3.9
3	2-(N-Methylperfluoro-4-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	3.2
4	2-(N-Methylperfluoro-5-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	7.7
5	2-(N-Methylperfluoro-6-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	17.5
6	2-(N-Methylperfluoro-5,5-dimethyl-1-hexanesulfonamido)ethanol	$\text{CF}_3$ $ $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $  \quad \quad \quad  $ $\text{CF}_3 \quad \quad \quad \text{CH}_3$	0.2

\* Percent of total 2-(N-methylperfluorooctanesulfonamido)ethanol isomers only.

Certified By: \_\_\_\_\_

B.G. Chittim, General Manager

Date: 11/14/2022

(mm/dd/yyyy)

# Analytical Standard Record

**22J0304**

Description:	br-NETFOSE	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NETFOSE1022)
Final Volume (mls):	1	Department:	PPAS
Vials:	1	Last Edit:	10/18/2022 13:43 by HGH

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





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**br-NEtFOSE**

**2-(N-Ethylperfluorooctanesulfonamido)ethanol  
Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NEtFOSE
<b><u>LOT NUMBER:</u></b>	brNEtFOSE1022
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/12/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 3: LC/MS Data (SIR)  
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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**Table A: br-NEtFOSE; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	2-(N-Ethylperfluoro-1-octanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad  $ $\quad \quad \quad \text{CH}_2\text{CH}_3$	64.6
2	2-(N-Ethylperfluoro-2-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_4\text{CF}(\text{CF}_2)\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	0.2
3	2-(N-Ethylperfluoro-3-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	4.1
4	2-(N-Ethylperfluoro-4-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	4.3
5	2-(N-Ethylperfluoro-5-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	8.8
6	2-(N-Ethylperfluoro-6-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	17.8
7	2-(N-Ethylperfluoro-5,5-dimethyl-1-hexanesulfonamido)ethanol	$\text{CF}_3$ $ $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $  \quad \quad \quad  $ $\text{CF}_3 \quad \quad \quad \text{CH}_2\text{CH}_3$	0.3

\* Percent of total 2-(N-ethylperfluorooctanesulfonamido)ethanol isomers only.

Certified By: \_\_\_\_\_

B.G. Chittim, General Manager

Date: 11/14/2022

(mm/dd/yyyy)

# Analytical Standard Record

22J0420

Description:	PFAS RES-MIX 1000ng/mL	Expires:	04/24/2023
Standard Type:	Other	Prepared:	10/26/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	10/26/2022 10:16 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOA	22J0297	335-67-1	1	ug/mL
PFOSA	22J0298	754-91-6	1	ug/mL
NMeFOSA	22J0301	31506-32-8	1	ug/mL
NEtFOSA	22J0302	4151-50-2	1	ug/mL
NMeFOSE	22J0303	24448-09-7	1	ug/mL
NEtFOSE	22J0304	1691-99-2	1	ug/mL

## Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22J0297	T-PFOA	01/27/2022	Wellington Laboratories	TPFOA0122	01/27/2027	10/18/2022 12:59	by HGH 0.02
22J0298	br-FOSA	09/14/2022	Wellington Laboratories	br-FOSA0922	10/07/2027	10/18/2022 13:03	by HGH 0.02
22J0301	br-NMeFOSA	08/23/2022	Wellington Laboratories	beNMeFOSA0822	08/23/2027	10/18/2022 13:37	by HGH 0.02
22J0302	br-NEtFOSA	10/07/2022	Wellington Laboratories	beNEtFOSA0922	10/07/2027	10/18/2022 13:38	by HGH 0.02
22J0303	br-NMeFOSE	10/07/2022	Wellington Laboratories	beNMeFOSE0922	10/07/2027	10/26/2022 10:16	by HGH 0.02
22J0304	br-NEtFOSE	10/07/2022	Wellington Laboratories	beNEtFOSE1022	10/07/2027	10/18/2022 13:43	by HGH 0.02

# 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:**

<b>Standard</b>	<b>Description</b>	<b>Prepared</b>	<b>Prepared By</b>	<b>Lot Nbr</b>	<b>Expires</b>	<b>Last Edit</b>	<b>(mls)</b>
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

<b>22K0180</b>
----------------

Description:	PFAS - MIX MXF 2 ug/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFASMXF0122)
Vials:	1	Last Edit:	11/08/2022 13:30 by ABK

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

# Analytical Standard Record

**22K0181**

Description:	PFAS - MIX MXG 2 ug/mL	Expires:	02/22/2027
Standard Type:	Analyte Spike	Prepared:	02/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFASMXG0222)
Vials:	1	Last Edit:	11/08/2022 13:31 by ABK

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

**22K0182**

Description:	PFAS - MIX MXH 1 ug/mL	Expires:	08/08/2027
Standard Type:	Analyte Spike	Prepared:	08/05/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS(MXH0822)
Vials:	1	Last Edit:	11/08/2022 13:35 by ABK

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

**23A0022**

Description:	PFOS 0.4mg/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:14 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0024	1763-23-1	400	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0024	PFOS 40%	01/04/2023	Sigma-Aldrich	0000100807	11/10/2023	01/04/2023 11:14 by DAG	0.04

# Analytical Standard Record

**23A0024**

Description:	PFOS 40%	Expires:	11/10/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	methanol 77283	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:14 by DAG
Comments:	neat-77283		

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
PFOS		1763-23-1	400000	ug/g

# Analytical Standard Record

**23A0025**

Description:	PFOS 0.4ug/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:18 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0022	1763-23-1	0.4	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0022	PFOS 0.4mg/ml	01/04/2023	In house	3761825	07/03/2023	01/04/2023 11:14 by DAG	0.04

# Analytical Standard Record

**23A0025**

Description:	PFOS 0.4ug/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:18 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0022	1763-23-1	0.4	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0022	PFOS 0.4mg/ml	01/04/2023	In house	3761825	07/03/2023	01/04/2023 11:14 by DAG	0.04

# Analytical Standard Record

<b>23A0201</b>
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Description:	PFAS - MIX MXG 2 ug/mL	Expires:	12/01/2027
Standard Type:	Other	Prepared:	11/30/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS MXG1122)
Vials:	1	Last Edit:	01/11/2023 14:56 by PAF
Lot Number:	PFACMXG1122		

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



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PFAC-MXG**

**Native Perfluoroalkyl Ether Carboxylic  
Acids and Sulfonate Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXG
<b><u>LOT NUMBER:</u></b>	PFACMXG1122
<b><u>SOLVENT(S):</u></b>	Methanol/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	11/30/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	12/01/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	12/01/2027
<b><u>RECOMMENDED STORAGE:</u></b>	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.

**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](mailto: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: 12/09/2022  
(mm/dd/yyyy)

# Analytical Standard Record

**23A0205**

Description:	PFAS - MIX MXF 2 ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFASMXF0122)
Vials:	1	Last Edit:	01/11/2023 14:59 by PAF
Lot Number:	PFACMXF0122		

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**

**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**

**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)

# Analytical Standard Record

**23A0207**

Description:	PFAS - MIX MXH 1 ug/mL	Expires:	08/08/2027
Standard Type:	Other	Prepared:	08/05/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFACMXH0822)
Vials:	1	Last Edit:	01/11/2023 15:06 by PAF
Lot Number:	PFACMXH0822		

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-MXH

#### Native PFAS Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	PFAC-MXH
<b><u>LOT NUMBER:</u></b>	PFACMXH0822
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (2%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	08/05/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	08/08/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	08/08/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>14</sub>), eight native perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>5</sub>, C<sub>7</sub>, C<sub>9</sub>, C<sub>10</sub> and C<sub>12</sub> linear; C<sub>6</sub> and C<sub>8</sub> 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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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**Table A: PFAC-MXH; Components and Concentrations**  
(ng/mL, ± 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	PFTTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		23
N-methylperfluorooctanesulfonamidoacetic acid <sup>a</sup>	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: ∑ branched isomers	240		17
N-ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup>	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: ∑ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate <sup>c</sup>	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate <sup>d</sup>	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	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-perfluorodecanesulfonate	8:2FTS	4000	3840	16

<sup>a</sup> See Table B for percent composition of linear and branched N-MeFOSAA isomers.

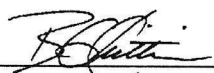
<sup>b</sup> See Table C for percent composition of linear and branched N-EtFOSAA isomers.

<sup>c</sup> See Table D for percent composition of linear and branched PFHxSK isomers.

<sup>d</sup> 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

**23A0371**

Description: PFAS - MIX 1633 200ng/mL  
 Standard Type: Analyte Spike  
 Solvent: MeOH 62244  
 Final Volume (mls): 5  
 Vials: 1

Expires: 07/18/2023  
 Prepared: 01/19/2023  
 Prepared By: Dipti Gokal  
 Department: PFAS  
 Last Edit: 01/19/2023 14:21 by HGH

Analyte	Parent	CAS Number	Concentration	Units
3:3FTCA	21L0004	113507-82-7	0.8	ug/mL
5:3FTCA	21L0005	914637-49-3	0.8	ug/mL
7:3FTCA	21L0007	812-70-4	0.8	ug/mL
NMeFOSA	22J0301	31506-32-8	0.8	ug/mL
NEtFOSA	22J0302	4151-50-2	0.8	ug/mL
NMeFOSE	22J0303	24448-09-7	0.8	ug/mL
NEtFOSE	22J0304	1691-99-2	0.8	ug/mL
11CL-PF3OUDS	22K0180	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22K0180	756426-58-1	0.374	ug/mL
ADONA	22K0180	919005-14-4	0.378	ug/mL
HFPO-DA	22K0180	13252-13-6	0.4	ug/mL
NFDHA	22K0181	151772-58-6	0.4	ug/mL
PFEESA	22K0181	113507-82-7	0.356	ug/mL
PFMBA	22K0181	863090-89-5	0.4	ug/mL
PFMPA	22K0181	377-73-1	0.4	ug/mL
4:2FTS	22K0182	757124-72-4	0.75	ug/mL
6:2FTS	22K0182	27619-97-2	0.76	ug/mL
8:2FTS	22K0182	39108-34-4	0.768	ug/mL
NEtFOSAA	22K0182	2991-50-6	0.2	ug/mL
NMeFOSAA	22K0182	2355-31-9	0.2	ug/mL
PFBA	22K0182	375-22-4	0.8	ug/mL
PFBS	22K0182	375-73-5	0.177	ug/mL
PFDA	22K0182	335-76-2	0.2	ug/mL
PFDOA	22K0182	307-55-1	0.2	ug/mL
PFDOS	22K0182	79780-39-5	0.194	ug/mL
PFDS	22K0182	335-77-3	0.193	ug/mL
PFHPA	22K0182	375-85-9	0.2	ug/mL
PFHPS	22K0182	375-92-8	0.191	ug/mL
PFHXA	22K0182	307-24-4	0.2	ug/mL
PFHXS	22K0182	355-46-4	0.183	ug/mL
PFNA	22K0182	375-95-1	0.2	ug/mL
PFNS	22K0182	68259-12-1	0.192	ug/mL
PFOA	22K0182	335-67-1	0.2	ug/mL
PFOS	22K0182	1763-23-1	0.186	ug/mL
PFOSA	22K0182	754-91-6	0.2	ug/mL
PFPEA	22K0182	2706-90-3	0.4	ug/mL
PFPEs	22K0182	630402-22-1	0.188	ug/mL
PFTEDA	22K0182	376-06-7	0.2	ug/mL
PFTRDA	22K0182	72629-94-8	0.2	ug/mL
PFUnA	22K0182	2058-94-8	0.2	ug/mL

# Analytical Standard Record

23A0371

**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
21L0004	PFAS - SAS 3:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPrPA1020	11/12/2025	10/31/2022 14:39	by DAG	0.08
21L0005	PFAS - SAS 5:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	11/11/2025	10/31/2022 14:41	by DAG	0.08
21L0007	PFAS - SAS 7:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FHpPA1020	11/12/2025	10/31/2022 14:42	by DAG	0.08
22J0301	br-NMeFOSA	08/23/2022	Wellington Laboratories	beNMeFOSA0822	08/23/2027	10/18/2022 13:37	by HGH	0.08
22J0302	br-NEtFOSA	10/07/2022	Wellington Laboratories	beNEtFOSA0922	10/07/2027	10/18/2022 13:38	by HGH	0.08
22J0303	br-NMeFOSE	10/07/2022	Wellington Laboratories	beNMeFOSE0922	10/07/2027	10/26/2022 10:16	by HGH	0.08
22J0304	br-NEtFOSE	10/07/2022	Wellington Laboratories	beNEtFOSE1022	10/07/2027	10/18/2022 13:43	by HGH	0.08
22K0180	PFAS - MIX MXF 2 ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	11/08/2022 16:39	by DAG	1
22K0181	PFAS - MIX MXG 2 ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	11/08/2022 16:39	by DAG	1
22K0182	PFAS - MIX MXH 1 ug/mL	08/05/2022	Wellington Laboratories	PFACMXH0822	08/08/2027	11/08/2022 16:38	by DAG	1

# Analytical Standard Record

**23A0390**

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	01/23/2023 15:26 by ABK
Lot Number:	MPFACHIFES1022		

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-PFHHPA		13C4-PFHHPA	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

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-ES
<b><u>LOT NUMBER:</u></b>	MPFACHIFES1022
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (1%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/28/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	11/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	11/23/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual  $^{13}\text{C}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 99\%$ . The individual  $^2\text{H}$ -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-( <sup>13</sup> C <sub>4</sub> )butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C <sub>5</sub> )pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C <sub>5</sub> )hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C <sub>6</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>7</sub> )undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		17
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C <sub>3</sub> )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- <sup>13</sup> C <sub>3</sub> )butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C <sub>3</sub> )hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )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

**23A0419**

Description:	PFAS - SAS PFHxDA 50ug/mL	Expires:	02/23/2027
Standard Type:	Analyte Spike	Prepared:	02/23/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFHxDA0222)
Vials:	1	Last Edit:	01/24/2023 13:23 by ABK
Lot Number:	PFHxDA0222		
Comments:	PFHxDA (Perfluoro-n-hexadecanoic acid) CAS: 67905-19-5		

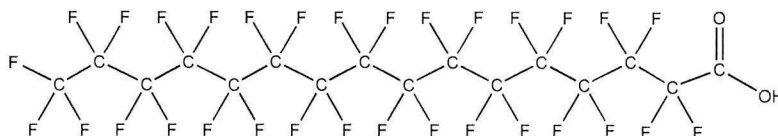
Analyte	Parent	CAS Number	Concentration	Units
				ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxDA **LOT NUMBER:** PFHxDA0222  
**COMPOUND:** Perfluoro-n-hexadecanoic acid  
**STRUCTURE:** **CAS #:** 67905-19-5



**MOLECULAR FORMULA:**  $C_{16}HF_{31}O_2$  **MOLECULAR WEIGHT:** 814.13  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/23/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 02/23/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

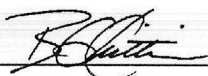
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### 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: 03/08/2022  
 (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:**

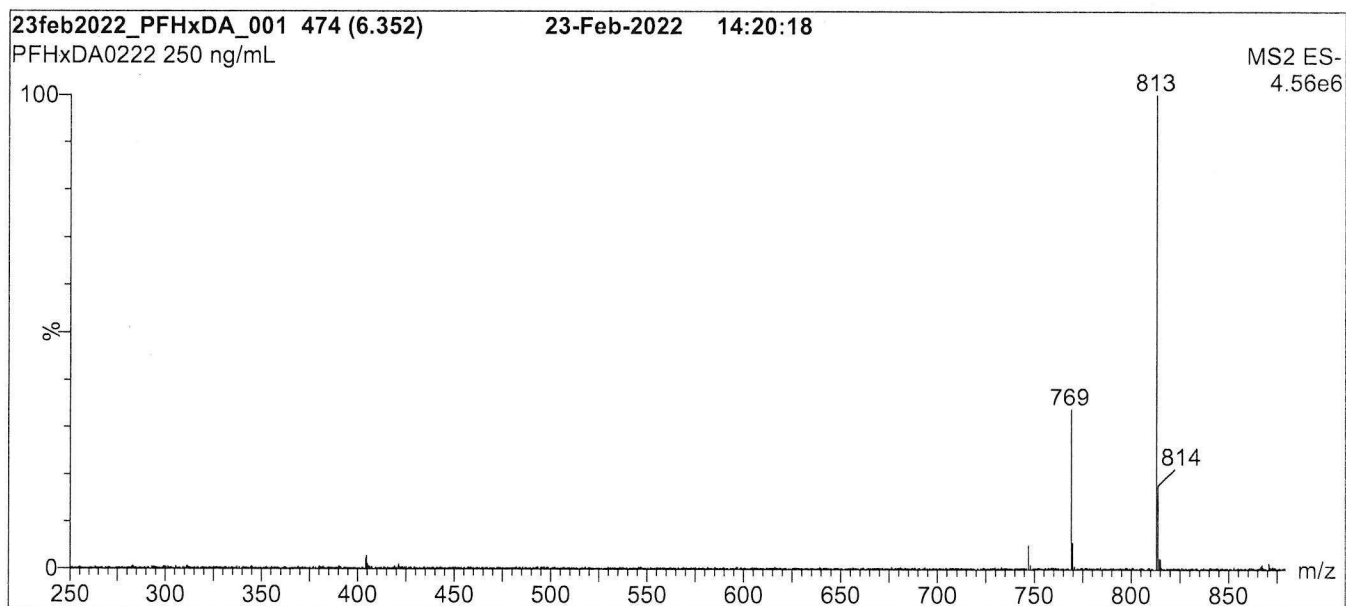
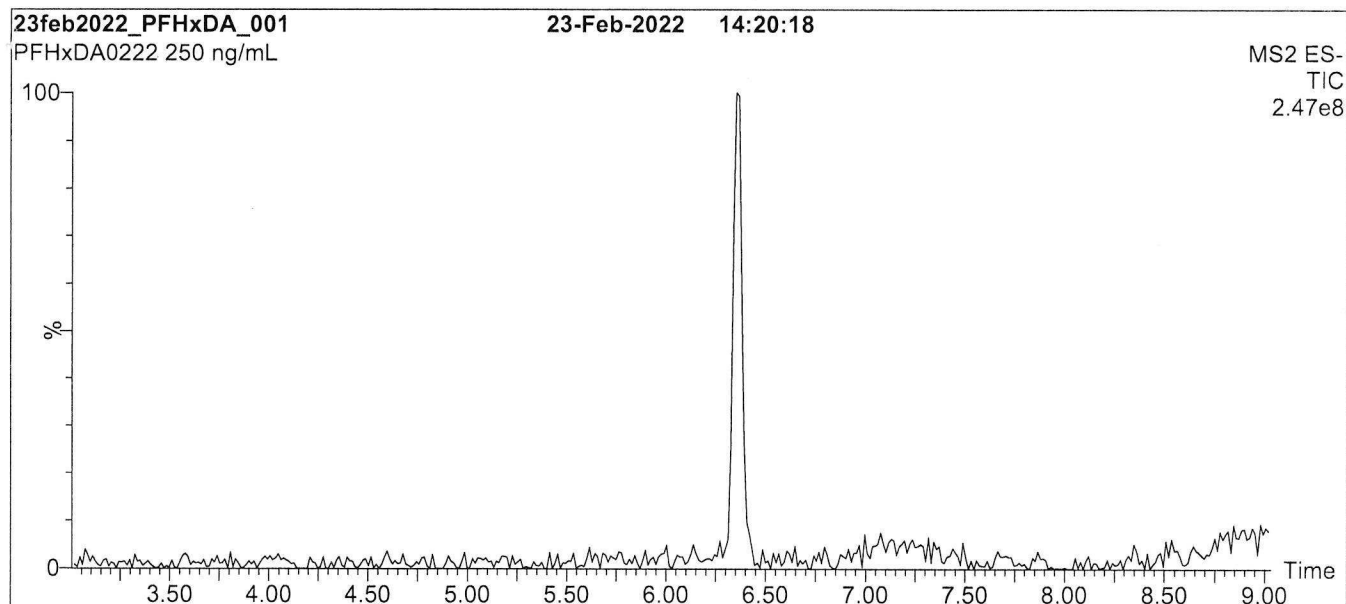
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

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

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

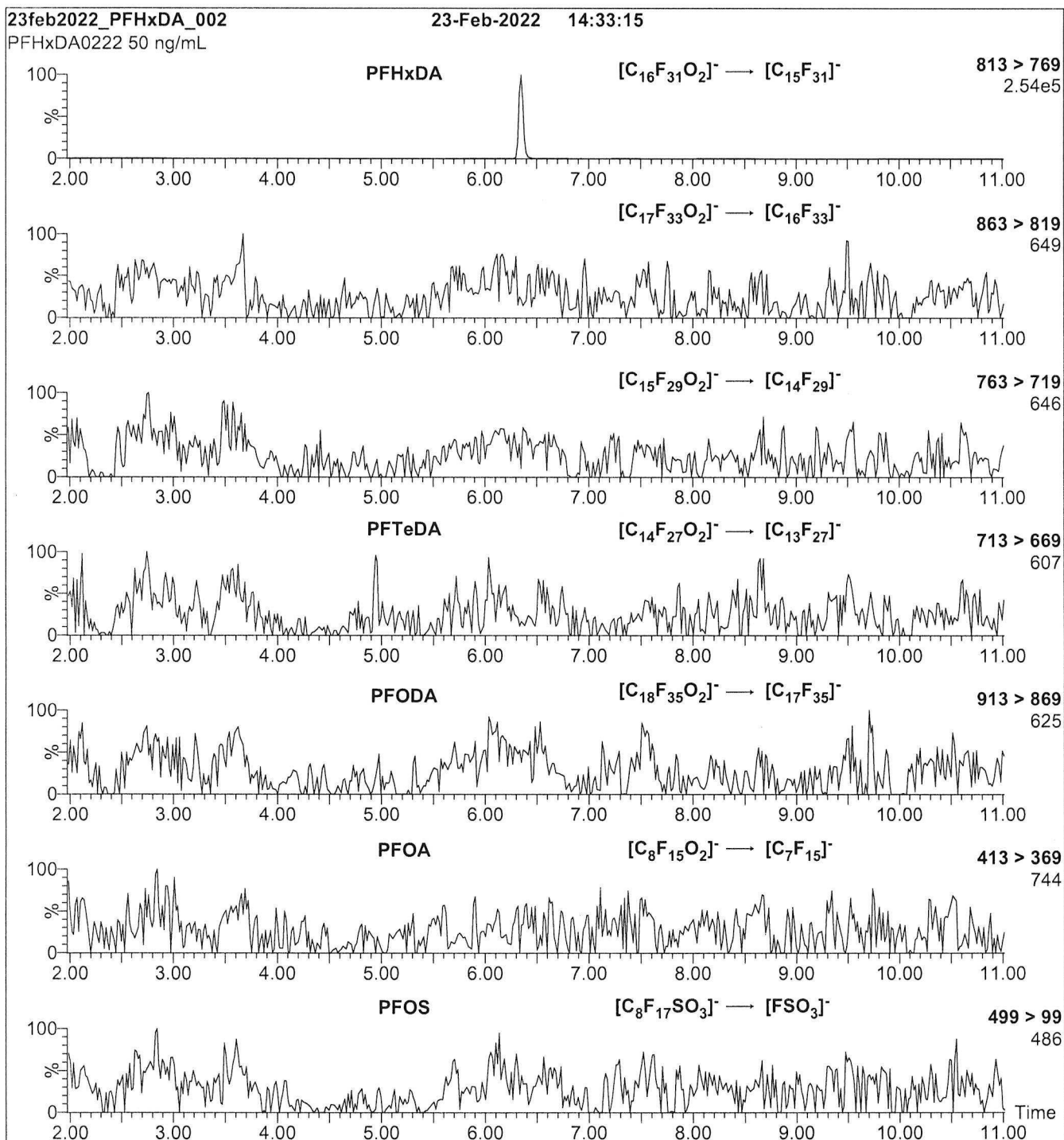
Start: 30% H<sub>2</sub>O / 70% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ 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:** PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (PFHxDA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 14

# Analytical Standard Record

**23A0420**

Description:	PFAS - SAS PFODA 50ug/mL	Expires:	07/05/2027
Standard Type:	Analyte Spike	Prepared:	07/05/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS (Lot# PFODA0622)
Vials:	1	Last Edit:	01/24/2023 13:25 by ABK
Lot Number:	PFODA0622		
Comments:	PFODA (Perfluoro-n-octadecanoic acid) CAS: 16517-11-6		

Analyte	Parent	CAS Number	Concentration	Units
				ug/mL

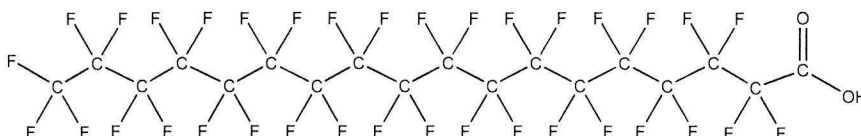




# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFODA **LOT NUMBER:** PFODA0622  
**COMPOUND:** Perfluoro-n-octadecanoic acid  
**STRUCTURE:** **CAS #:** 16517-11-6



**MOLECULAR FORMULA:**  $C_{18}HF_{35}O_2$  **MOLECULAR WEIGHT:** 914.14  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 07/05/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 07/05/2027  
**RECOMMENDED STORAGE:** Store ampoule at ambient temperature in a dark place


### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim, General Manager **Date:** 07/05/2022  
 (mm/dd/yyyy)

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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 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:**

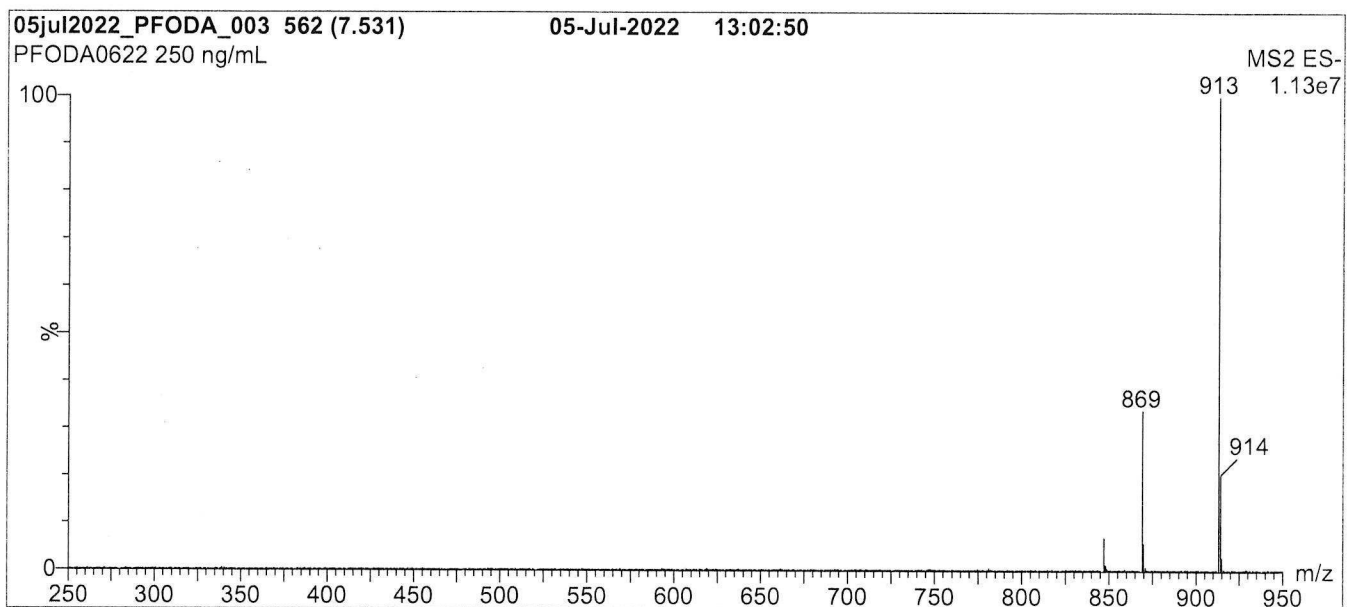
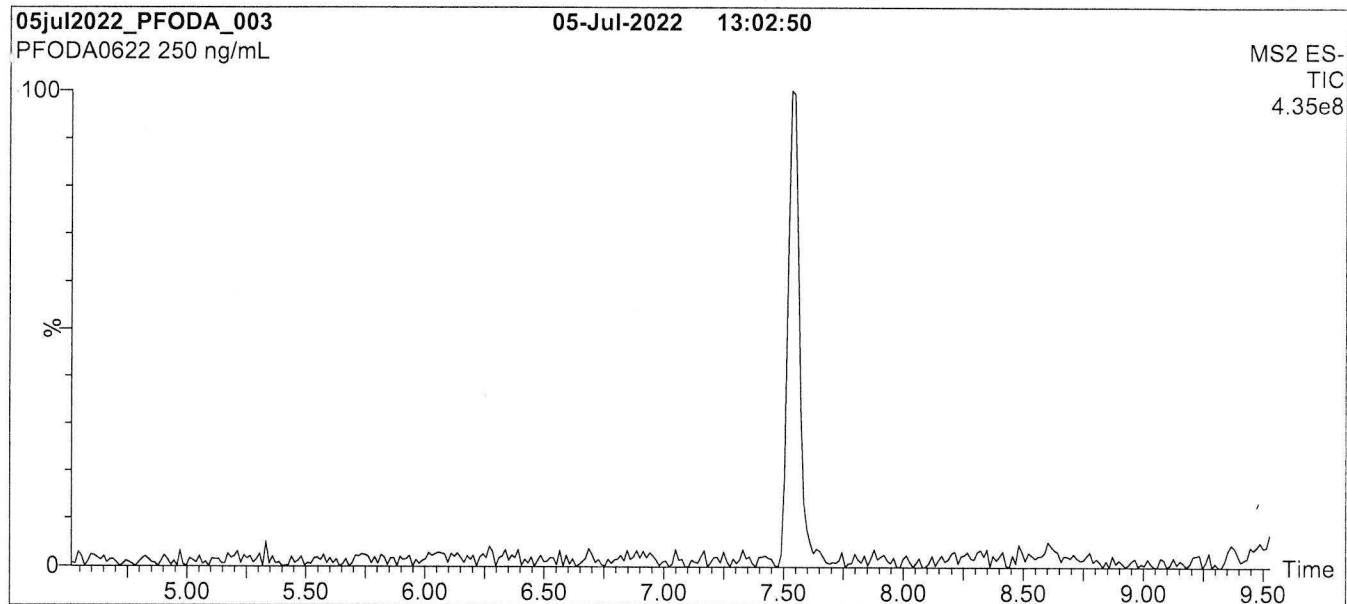
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**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](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

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

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

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H<sub>2</sub>O / 70% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (250 - 950 amu)

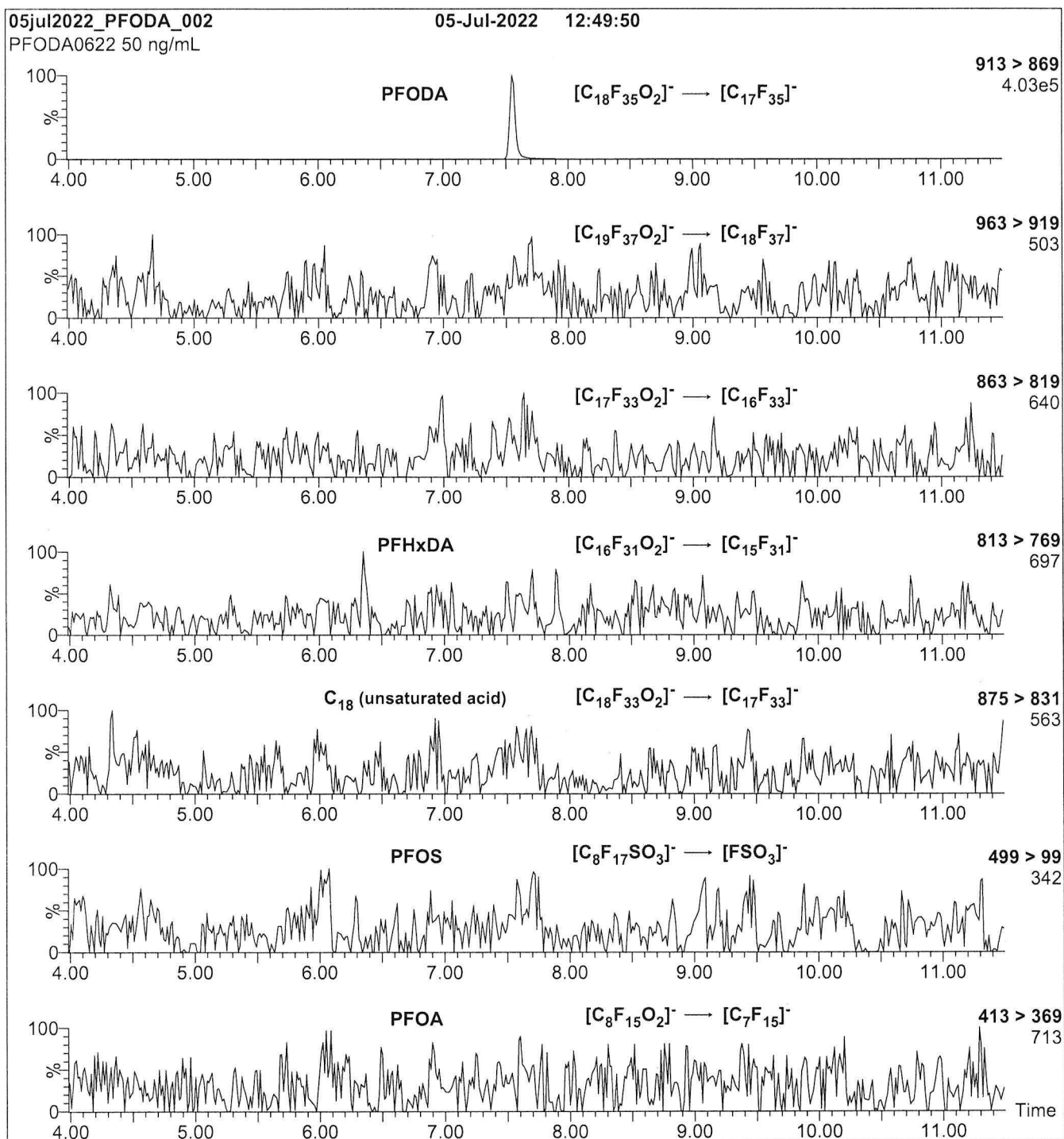
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

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

Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (PFODA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.20e-3

Collision Energy (eV) = 15



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PFAC-MXG**

**Native Perfluoroalkyl Ether Carboxylic  
Acids and Sulfonate Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXG
<b><u>LOT NUMBER:</u></b>	PFACMXG1122
<b><u>SOLVENT(S):</u></b>	Methanol/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	11/30/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	12/01/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	12/01/2027
<b><u>RECOMMENDED STORAGE:</u></b>	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: 12/09/2022  
(mm/dd/yyyy)



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXF

#### Native Replacement PFAS Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	PFAC-MXF
<b><u>LOT NUMBER:</u></b>	PFACMXF0122
<b><u>SOLVENT(S):</u></b>	Methanol / Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	01/10/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	01/11/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	01/11/2025
<b><u>RECOMMENDED STORAGE:</u></b>	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.

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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)





# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### PFAC-MXH

#### Native PFAS Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	PFAC-MXH
<b><u>LOT NUMBER:</u></b>	PFACMXH0822
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (2%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	08/05/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	08/08/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	08/08/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>14</sub>), eight native perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>5</sub>, C<sub>7</sub>, C<sub>9</sub>, C<sub>10</sub> and C<sub>12</sub> linear; C<sub>6</sub> and C<sub>8</sub> 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 PFH<sub>x</sub>SK  
 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	PFTTrDA	1000		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		23
N-methylperfluorooctanesulfonamidoacetic acid <sup>a</sup>	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: $\Sigma$ branched isomers	240		17
N-ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup>	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: $\Sigma$ 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 <sup>c</sup>	PFHxSK: linear isomer	811	741	9
	PFHxSK: $\Sigma$ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctadisulfonate <sup>d</sup>	PFOSK: linear isomer	788	732	15
	PFOSK: $\Sigma$ 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-perfluorohexadisulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctadisulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecadisulfonate	8:2FTS	4000	3840	16

<sup>a</sup> See Table B for percent composition of linear and branched N-MeFOSAA isomers.

<sup>b</sup> See Table C for percent composition of linear and branched N-EtFOSAA isomers.

<sup>c</sup> See Table D for percent composition of linear and branched PFHxSK isomers.

<sup>d</sup> 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

**23C0075**

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022)
Vials:	1	Last Edit:	03/05/2023 10:17 by ABK
Lot Number:	MPFACHIFES1022		

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-PFHHPA		13C4-PFHHPA	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

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-ES
<b><u>LOT NUMBER:</u></b>	MPFACHIFES1022
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (1%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/28/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	11/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	11/23/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual  $^{13}\text{C}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 99\%$ . The individual  $^2\text{H}$ -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-( <sup>13</sup> C <sub>4</sub> )butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C <sub>5</sub> )pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C <sub>5</sub> )hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C <sub>6</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>7</sub> )undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		17
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C <sub>3</sub> )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- <sup>13</sup> C <sub>3</sub> )butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C <sub>3</sub> )hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )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

**23C0078**

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	03/05/2023 10:19 by ABK
Lot Number:	MPFACHIFES1022		

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-PFHHPA		13C4-PFHHPA	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

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-ES
<b><u>LOT NUMBER:</u></b>	MPFACHIFES1022
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (1%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/28/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	11/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	11/23/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual  $^{13}\text{C}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 99\%$ . The individual  $^2\text{H}$ -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-( <sup>13</sup> C <sub>4</sub> )butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C <sub>5</sub> )pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C <sub>5</sub> )hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C <sub>6</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>7</sub> )undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		17
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C <sub>3</sub> )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- <sup>13</sup> C <sub>3</sub> )butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C <sub>3</sub> )hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )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

**23C0080**

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	03/05/2023 10:21 by ABK
Lot Number:	MPFACHIFES1022		

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

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-ES
<b><u>LOT NUMBER:</u></b>	MPFACHIFES1022
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (1%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/28/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	11/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	11/23/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual  $^{13}\text{C}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 99\%$ . The individual  $^2\text{H}$ -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-( <sup>13</sup> C <sub>4</sub> )butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C <sub>5</sub> )pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C <sub>5</sub> )hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C <sub>6</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>7</sub> )undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		17
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C <sub>3</sub> )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- <sup>13</sup> C <sub>3</sub> )butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C <sub>3</sub> )hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )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)

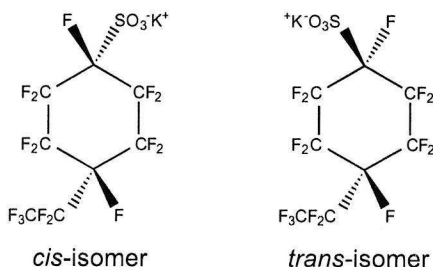


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFECHS **LOT NUMBER:** PFECHS0222  
**COMPOUND:** Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

**STRUCTURE:** **CAS #:** 335-24-0



**MOLECULAR FORMULA:**  $C_8F_{15}SO_3K$  **MOLECULAR WEIGHT:** 500.22  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL (K salt) **SOLVENT(S):** Methanol  
 46.2 ± 2.3 µg/mL (PFECHS acid)  
 46.1 ± 2.3 µg/mL (PFECHS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 03/28/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 03/28/2027  
**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 a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

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Certified By:   
 B.G. Chittim, General Manager

Date: 03/30/2022  
 (mm/dd/yyyy)

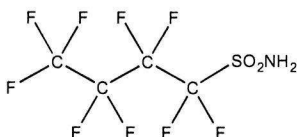
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# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FBSA-I **LOT NUMBER:** FBSA0123I  
**COMPOUND:** Perfluoro-1-butananesulfonamide  
**STRUCTURE:** **CAS #:** 30334-69-1



**MOLECULAR FORMULA:** C<sub>4</sub>H<sub>2</sub>F<sub>9</sub>NO<sub>2</sub>S **MOLECULAR WEIGHT:** 299.11  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Isopropanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/01/2023  
**EXPIRY DATE:** (mm/dd/yyyy) 02/01/2028  
**RECOMMENDED STORAGE:** Refrigerate ampoule

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 02/02/2023  
 B.G. Chittim, General Manager (mm/dd/yyyy)

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# Analytical Standard Record

**23C0439**

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	03/27/2023 10:49 by ABK
Lot Number:	MPFACHIFES1022		

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

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-ES
<b><u>LOT NUMBER:</u></b>	MPFACHIFES1022
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (1%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/28/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	11/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	11/23/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual  $^{13}\text{C}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 99\%$ . The individual  $^2\text{H}$ -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.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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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-( <sup>13</sup> C <sub>4</sub> )butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C <sub>5</sub> )pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C <sub>5</sub> )hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C <sub>6</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>7</sub> )undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		17
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C <sub>3</sub> )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- <sup>13</sup> C <sub>3</sub> )butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C <sub>3</sub> )hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )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)