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

March 21, 2023

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

RE: Red Hill AFFF Assessment Sampling
23C0113

Enclosed are the results of analyses for samples received by our laboratory on 3/14/2023. 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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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 extracted internal standard 13C2-4:2FTS recovered above the upper control limit in sample 02 - AF-RHMW17D-WGN01LF-2303W1.

The extracted internal standard 13C2-4:2FTS recovered above the upper control limit in the BCC0285-BS1.

The analytes PFPeS, PFHxS, and PFOS recovered above the upper control limit in the BCC0285-MRL1. The extracted internal standard 13C2-4:2FTS recovered above the upper control limit.

The analytes PFHxA, PFDoA, and PFEESA recovered above the upper control limit in the SC01082-LCV1.

The analytes 9CI-PF3ONS and 11CI-PF3OUDS recovered above the upper control limit in the SC01082-CCV2.

The analyte 11-CI- PF3OUDS recovered above the upper control limit in the SC01082-CCV3.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
23C0113-01	AF-RHMW17-WGN01LF-2303W1	Water	03/10/2023 13:35	03/14/2023
23C0113-02	AF-RHMW17D-WGN01LF-2303W1	Water	03/10/2023 12:15	03/14/2023
23C0113-03	AF-RHMW17D-WQFB01-2303W1	Water	03/10/2023 11:30	03/14/2023
23C0113-04	AF-RHMW17S-WGN01LF-2303W1	Water	03/10/2023 11:10	03/14/2023
23C0113-05	AF-RHMW17S-WQEB01-2303W1	Water	03/10/2023 14:45	03/14/2023

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Containers Received

Lab ID	Container Type	Count	Preservation Check
23C0113-01	500mL P	2	
23C0113-02	500mL P	2	
23C0113-03	500mL P	2	
23C0113-04	500mL P	2	
23C0113-05	500mL P	2	

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Sample Results

Sample: AF-RHMW17-WGN01LF-2303W1
23C0113-01 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	2.6	1.5	0.76	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEA	13	0.76	0.38	0.062	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXA	5.6	0.38	0.19	0.052	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPA	0.90	0.38	0.19	0.039	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOA	0.33 J	0.38	0.28	0.14	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNA	0.19 U	0.38	0.19	0.078	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDA	0.19 U	0.38	0.19	0.096	ng/L	03/18/23	1	EPA 1633	BCC0285
PFUnA	0.28 U	0.38	0.28	0.15	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOA	0.19 U	0.38	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTRDA	0.28 U	0.38	0.28	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTEDA	0.28 U	0.38	0.28	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
PFBS	0.21 J	0.38	0.19	0.035	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEs	0.19 U	0.38	0.19	0.060	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXS	0.44	0.38	0.19	0.030	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPS	0.19 U	0.38	0.19	0.049	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOS	1.1	0.38	0.19	0.060	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNS	0.19 U	0.38	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDS	0.28 U	0.38	0.28	0.14	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOS	0.19 U	0.38	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
4:2FTS	0.76 U	1.5	0.76	0.28	ng/L	03/18/23	1	EPA 1633	BCC0285
6:2FTS	12	1.5	0.76	0.30	ng/L	03/18/23	1	EPA 1633	BCC0285
8:2FTS	0.76 U	1.5	0.76	0.078	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOSA	0.35 J	0.38	0.19	0.099	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSA	0.76 U	1.5	0.76	0.45	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSA	0.76 U	1.5	0.76	0.39	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSAA	0.19 U	0.38	0.19	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSAA	0.19 U	0.38	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSE	1.1 U	1.5	1.1	0.96	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSE	1.1 U	1.5	1.1	0.99	ng/L	03/18/23	1	EPA 1633	BCC0285
HFPO-DA	0.38 U	0.76	0.38	0.17	ng/L	03/18/23	1	EPA 1633	BCC0285
ADONA	0.38 U	0.76	0.38	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFEESA	0.38 U	0.76	0.38	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMPA	0.38 U	0.76	0.38	0.051	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMBA	0.38 U	0.76	0.38	0.086	ng/L	03/18/23	1	EPA 1633	BCC0285
NFDHA	0.38 U	0.76	0.38	0.29	ng/L	03/18/23	1	EPA 1633	BCC0285
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
3:3FTCA	0.76 U	1.5	0.76	0.55	ng/L	03/18/23	1	EPA 1633	BCC0285
5:3FTCA	0.76 U	1.5	0.76	0.42	ng/L	03/18/23	1	EPA 1633	BCC0285
7:3FTCA	0.76 U	1.5	0.76	0.53	ng/L	03/18/23	1	EPA 1633	BCC0285
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Surrogate: 13C4-PFBA	87.5%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFPEA	97.4%		35-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFHXA	98.3%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C4-PFHPA	114%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	82.1%		60-140			03/18/23	1	EPA 1633	BCC0285

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Sample Results (Continued)

Sample: AF-RHMW17-WGN01LF-2303W1 (Continued) 23C0113-01 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	92.3%		55-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C6-PFDA	83.9%		50-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C7-PFUnA	81.7%		30-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFDOA	71.1%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFTEDA	55.4%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFBS	76.1%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFHXS	92.3%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOS	86.1%		45-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-4:2FTS	195%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-6:2FTS	135%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	187%		50-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	55.6%		30-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOA	30.1%		15-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOA	30.9%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOAA	134%		45-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOAA	122%		10-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D7-NMEFOSE	36.3%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: D9-NETFOSE	46.8%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-HFPO-DA	91.8%		25-160			03/18/23	1	EPA 1633	BCC0285

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Sample Results (Continued)

**Sample: AF-RHMW17D-WGN01LF-2303W1
23C0113-02 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.78 J	1.6	0.78	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEA	0.39 U	0.78	0.39	0.063	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXA	0.19 U	0.39	0.19	0.053	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPA	0.093 J	0.39	0.19	0.040	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOA	0.29 U	0.39	0.29	0.15	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNA	0.19 U	0.39	0.19	0.080	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDA	0.19 U	0.39	0.19	0.099	ng/L	03/18/23	1	EPA 1633	BCC0285
PFUnA	0.29 U	0.39	0.29	0.16	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOA	0.19 U	0.39	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTRDA	0.29 U	0.39	0.29	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTEDA	0.29 U	0.39	0.29	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
PFBS	0.19 U	0.39	0.19	0.036	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEs	0.19 U	0.39	0.19	0.061	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXS	0.25 J	0.39	0.19	0.031	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPS	0.19 U	0.39	0.19	0.050	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOS	0.34 J	0.39	0.19	0.062	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNS	0.19 U	0.39	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDS	0.29 U	0.39	0.29	0.15	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOS	0.19 U	0.39	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
4:2FTS	0.78 U	1.6	0.78	0.28	ng/L	03/18/23	1	EPA 1633	BCC0285
6:2FTS	2.9	1.6	0.78	0.31	ng/L	03/18/23	1	EPA 1633	BCC0285
8:2FTS	0.78 U	1.6	0.78	0.080	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOSA	0.19 U	0.39	0.19	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSA	0.78 U	1.6	0.78	0.46	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSA	0.78 U	1.6	0.78	0.40	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSAA	0.19 U	0.39	0.19	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSAA	0.19 U	0.39	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSE	1.2 U	1.6	1.2	0.99	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSE	1.2 U	1.6	1.2	1.0	ng/L	03/18/23	1	EPA 1633	BCC0285
HFPO-DA	0.39 U	0.78	0.39	0.17	ng/L	03/18/23	1	EPA 1633	BCC0285
ADONA	0.39 U	0.78	0.39	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFEESA	0.39 U	0.78	0.39	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMPA	0.49 J	0.78	0.39	0.053	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMBA	0.39 U	0.78	0.39	0.088	ng/L	03/18/23	1	EPA 1633	BCC0285
NFDHA	0.39 U	0.78	0.39	0.29	ng/L	03/18/23	1	EPA 1633	BCC0285
9CL-PF3ONS	0.39 U	0.78	0.39	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
11CL-PF3OUDS	0.39 U	0.78	0.39	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
3:3FTCA	0.78 U	1.6	0.78	0.56	ng/L	03/18/23	1	EPA 1633	BCC0285
5:3FTCA	0.78 U	1.6	0.78	0.43	ng/L	03/18/23	1	EPA 1633	BCC0285
7:3FTCA	0.78 U	1.6	0.78	0.54	ng/L	03/18/23	1	EPA 1633	BCC0285
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Surrogate: 13C4-PFBA	85.2%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFPEA	65.2%		35-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFHXA	84.5%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C4-PFHPA	86.2%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	86.3%		60-140			03/18/23	1	EPA 1633	BCC0285

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Sample Results (Continued)

Sample: AF-RHMW17D-WGN01LF-2303W1 (Continued)
23C0113-02 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	83.9%		55-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C6-PFDA	90.8%		50-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C7-PFUnA	125%		30-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFDOA	115%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFTEDA	98.6%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFBS	88.3%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFHXS	90.8%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOS	82.3%		45-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-4:2FTS	242% S2		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-4:2FTS	229% S2		60-200			03/18/23	10	EPA 1633	BCC0285
Surrogate: 13C2-6:2FTS	210% S2		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-6:2FTS	105%		60-200			03/18/23	10	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	209% S2		50-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	194%		50-200			03/18/23	10	EPA 1633	BCC0285
Surrogate: 13C8-PFOSA	60.6%		30-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOSA	34.4%		15-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOSA	32.4%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOSAA	59.7%		45-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOSAA	95.6%		10-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D7-NMEFOSE	33.1%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: D9-NETFOSE	43.2%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-HFPO-DA	89.3%		25-160			03/18/23	1	EPA 1633	BCC0285

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Project Manager: Watson Tanji

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Sample Results (Continued)

**Sample: AF-RHMW17D-WQFB01-2303W1
23C0113-03 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.75 U	1.5	0.75	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEA	0.38 U	0.75	0.38	0.061	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXA	0.19 U	0.38	0.19	0.052	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPA	0.069 J	0.38	0.19	0.039	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOA	0.28 U	0.38	0.28	0.14	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNA	0.19 U	0.38	0.19	0.077	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDA	0.19 U	0.38	0.19	0.095	ng/L	03/18/23	1	EPA 1633	BCC0285
PFUnA	0.28 U	0.38	0.28	0.15	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOA	0.19 U	0.38	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTRDA	0.28 U	0.38	0.28	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTEDA	0.28 U	0.38	0.28	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
PFBS	0.19 U	0.38	0.19	0.035	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEs	0.19 U	0.38	0.19	0.059	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXS	0.12 J	0.38	0.19	0.030	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPS	0.19 U	0.38	0.19	0.048	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOS	0.25 J	0.38	0.19	0.060	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNS	0.19 U	0.38	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDS	0.28 U	0.38	0.28	0.14	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOS	0.19 U	0.38	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
4:2FTS	0.75 U	1.5	0.75	0.27	ng/L	03/18/23	1	EPA 1633	BCC0285
6:2FTS	0.75 U IR2,	1.5	0.75	0.30	ng/L	03/18/23	1	EPA 1633	BCC0285
8:2FTS	0.75 U	1.5	0.75	0.077	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOSA	0.19 U	0.38	0.19	0.098	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSA	0.75 U	1.5	0.75	0.44	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSA	0.75 U	1.5	0.75	0.39	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSAA	0.19 U	0.38	0.19	0.099	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSAA	0.19 U	0.38	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSE	1.1 U	1.5	1.1	0.95	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSE	1.1 U	1.5	1.1	0.98	ng/L	03/18/23	1	EPA 1633	BCC0285
HFPO-DA	0.38 U	0.75	0.38	0.16	ng/L	03/18/23	1	EPA 1633	BCC0285
ADONA	0.38 U	0.75	0.38	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFEESA	0.38 U	0.75	0.38	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMPA	0.38 U	0.75	0.38	0.051	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMBA	0.38 U	0.75	0.38	0.085	ng/L	03/18/23	1	EPA 1633	BCC0285
NFDHA	0.38 U	0.75	0.38	0.28	ng/L	03/18/23	1	EPA 1633	BCC0285
9CL-PF3ONS	0.38 U	0.75	0.38	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
11CL-PF3OUDS	0.38 U	0.75	0.38	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
3:3FTCA	0.75 U	1.5	0.75	0.54	ng/L	03/18/23	1	EPA 1633	BCC0285
5:3FTCA	0.75 U	1.5	0.75	0.42	ng/L	03/18/23	1	EPA 1633	BCC0285
7:3FTCA	0.75 U	1.5	0.75	0.52	ng/L	03/18/23	1	EPA 1633	BCC0285
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Surrogate: 13C4-PFBA	81.3%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFPEA	88.0%		35-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFHXA	88.2%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C4-PFHPA	91.3%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	85.9%		60-140			03/18/23	1	EPA 1633	BCC0285

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Project Manager: Watson Tanji

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Sample Results (Continued)

Sample: AF-RHMW17D-WQFB01-2303W1 (Continued)
23C0113-03 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	92.7%		55-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C6-PFDA	88.8%		50-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C7-PFUnA	80.6%		30-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFDOA	83.8%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFTEDA	66.5%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFBS	87.0%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFHXS	86.9%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOS	81.9%		45-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-4:2FTS	176%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-6:2FTS	104%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	98.0%		50-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	114%		50-200			03/18/23	10	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	59.0%		30-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOA	25.3%		15-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOA	26.6%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOA	87.4%		45-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOA	66.9%		10-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D7-NMEFOE	35.3%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: D9-NETFOE	44.5%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-HFPO-DA	88.7%		25-160			03/18/23	1	EPA 1633	BCC0285

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Sample Results (Continued)

**Sample: AF-RHMW17S-WGN01LF-2303W1
23C0113-04 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	3.7	1.5	0.77	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEA	1.0	0.77	0.39	0.063	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXA	1.4	0.39	0.19	0.053	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPA	0.80	0.39	0.19	0.040	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOA	0.96	0.39	0.29	0.15	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNA	0.28 J IR2,	0.39	0.19	0.079	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDA	0.19 U	0.39	0.19	0.098	ng/L	03/18/23	1	EPA 1633	BCC0285
PFUnA	0.29 U	0.39	0.29	0.15	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOA	0.19 U	0.39	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTRDA	0.29 U	0.39	0.29	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTEDA	0.29 U	0.39	0.29	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
PFBS	0.43	0.39	0.19	0.035	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEs	0.19 U	0.39	0.19	0.060	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXS	0.40	0.39	0.19	0.031	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPS	0.19 U	0.39	0.19	0.049	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOS	1.1	0.39	0.19	0.061	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNS	0.19 U	0.39	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDS	0.29 U	0.39	0.29	0.15	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOS	0.19 U	0.39	0.19	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
4:2FTS	0.77 U	1.5	0.77	0.28	ng/L	03/18/23	1	EPA 1633	BCC0285
6:2FTS	1.6	1.5	0.77	0.30	ng/L	03/18/23	1	EPA 1633	BCC0285
8:2FTS	0.77 U	1.5	0.77	0.079	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOSA	0.12 J	0.39	0.19	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSA	0.77 U	1.5	0.77	0.46	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSA	0.77 U	1.5	0.77	0.40	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSAA	0.19 U	0.39	0.19	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSAA	0.19 U	0.39	0.19	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSE	1.2 U	1.5	1.2	0.98	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSE	1.2 U	1.5	1.2	1.0	ng/L	03/18/23	1	EPA 1633	BCC0285
HFPO-DA	0.39 U	0.77	0.39	0.17	ng/L	03/18/23	1	EPA 1633	BCC0285
ADONA	0.39 U	0.77	0.39	0.12	ng/L	03/18/23	1	EPA 1633	BCC0285
PFEESA	0.39 U	0.77	0.39	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMPA	0.39 U	0.77	0.39	0.052	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMBA	0.39 U	0.77	0.39	0.088	ng/L	03/18/23	1	EPA 1633	BCC0285
NFDHA	0.39 U	0.77	0.39	0.29	ng/L	03/18/23	1	EPA 1633	BCC0285
9CL-PF3ONS	0.39 U	0.77	0.39	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
11CL-PF3OUDS	0.39 U	0.77	0.39	0.20	ng/L	03/18/23	1	EPA 1633	BCC0285
3:3FTCA	0.77 U	1.5	0.77	0.55	ng/L	03/18/23	1	EPA 1633	BCC0285
5:3FTCA	0.77 U	1.5	0.77	0.43	ng/L	03/18/23	1	EPA 1633	BCC0285
7:3FTCA	0.77 U	1.5	0.77	0.53	ng/L	03/18/23	1	EPA 1633	BCC0285
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Surrogate: 13C4-PFBA	70.4%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFPEA	57.5%		35-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFHXA	77.8%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C4-PFHPA	82.5%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	83.8%		60-140			03/18/23	1	EPA 1633	BCC0285

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Sample Results

(Continued)

Sample: AF-RHMW17S-WGN01LF-2303W1 (Continued)

23C0113-04 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	80.9%		55-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C6-PFDA	83.5%		50-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C7-PFUnA	74.5%		30-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFDOA	65.2%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFTEDA	53.8%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFBS	74.6%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFHXS	86.6%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOS	84.2%		45-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-4:2FTS	190%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-6:2FTS	163%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	217% S2		50-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	103%		50-200			03/18/23	10	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	54.7%		30-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOA	34.0%		15-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOA	33.1%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOSAA	119%		45-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOSAA	92.9%		10-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D7-NMEFOSE	36.9%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: D9-NETFOSE	47.6%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-HFPO-DA	84.5%		25-160			03/18/23	1	EPA 1633	BCC0285

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Sample Results (Continued)

**Sample: AF-RHMW17S-WQEB01-2303W1
23C0113-05 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.72 U	1.4	0.72	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEA	0.36 U	0.72	0.36	0.058	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXA	0.18 U	0.36	0.18	0.049	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPA	0.18 U	0.36	0.18	0.037	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOA	0.27 U	0.36	0.27	0.14	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNA	0.18 U	0.36	0.18	0.073	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDA	0.18 U	0.36	0.18	0.091	ng/L	03/18/23	1	EPA 1633	BCC0285
PFUnA	0.27 U	0.36	0.27	0.14	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOA	0.18 U	0.36	0.18	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTRDA	0.27 U	0.36	0.27	0.18	ng/L	03/18/23	1	EPA 1633	BCC0285
PFTEDA	0.27 U	0.36	0.27	0.18	ng/L	03/18/23	1	EPA 1633	BCC0285
PFBS	0.18 U	0.36	0.18	0.033	ng/L	03/18/23	1	EPA 1633	BCC0285
PFPEs	0.18 U	0.36	0.18	0.056	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHXS	0.18 U	0.36	0.18	0.028	ng/L	03/18/23	1	EPA 1633	BCC0285
PFHPS	0.18 U	0.36	0.18	0.046	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOS	0.19 J	0.36	0.18	0.057	ng/L	03/18/23	1	EPA 1633	BCC0285
PFNS	0.18 U	0.36	0.18	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDS	0.27 U	0.36	0.27	0.14	ng/L	03/18/23	1	EPA 1633	BCC0285
PFDOS	0.18 U	0.36	0.18	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
4:2FTS	0.72 U	1.4	0.72	0.26	ng/L	03/18/23	1	EPA 1633	BCC0285
6:2FTS	0.72 U	1.4	0.72	0.28	ng/L	03/18/23	1	EPA 1633	BCC0285
8:2FTS	0.72 U	1.4	0.72	0.074	ng/L	03/18/23	1	EPA 1633	BCC0285
PFOSA	0.18 U	0.36	0.18	0.093	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSA	0.72 U	1.4	0.72	0.42	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSA	0.72 U	1.4	0.72	0.37	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSAA	0.18 U	0.36	0.18	0.095	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSAA	0.18 U	0.36	0.18	0.10	ng/L	03/18/23	1	EPA 1633	BCC0285
NMeFOSE	1.1 U	1.4	1.1	0.91	ng/L	03/18/23	1	EPA 1633	BCC0285
NEtFOSE	1.1 U	1.4	1.1	0.94	ng/L	03/18/23	1	EPA 1633	BCC0285
HFPO-DA	0.36 U	0.72	0.36	0.16	ng/L	03/18/23	1	EPA 1633	BCC0285
ADONA	0.36 U	0.72	0.36	0.11	ng/L	03/18/23	1	EPA 1633	BCC0285
PFEESA	0.36 U	0.72	0.36	0.098	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMPA	0.36 U	0.72	0.36	0.048	ng/L	03/18/23	1	EPA 1633	BCC0285
PFMBA	0.36 U	0.72	0.36	0.081	ng/L	03/18/23	1	EPA 1633	BCC0285
NFDHA	0.36 U	0.72	0.36	0.27	ng/L	03/18/23	1	EPA 1633	BCC0285
9CL-PF3ONS	0.36 U	0.72	0.36	0.19	ng/L	03/18/23	1	EPA 1633	BCC0285
11CL-PF3OUDS	0.36 U	0.72	0.36	0.18	ng/L	03/18/23	1	EPA 1633	BCC0285
3:3FTCA	0.72 U	1.4	0.72	0.51	ng/L	03/18/23	1	EPA 1633	BCC0285
5:3FTCA	0.72 U	1.4	0.72	0.40	ng/L	03/18/23	1	EPA 1633	BCC0285
7:3FTCA	0.72 U	1.4	0.72	0.50	ng/L	03/18/23	1	EPA 1633	BCC0285
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Surrogate: 13C4-PFBA	83.2%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFPEA	91.4%		35-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C5-PFHXA	101%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C4-PFHPA	94.5%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	90.1%		60-140			03/18/23	1	EPA 1633	BCC0285

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Sample Results (Continued)

Sample: AF-RHMW17S-WQEB01-2303W1 (Continued) 23C0113-05 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	93.0%		55-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C6-PFDA	101%		50-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C7-PFUnA	81.1%		30-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFDOA	78.1%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-PFTEDA	66.5%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFBS	90.6%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-PFHXS	91.0%		55-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOS	85.4%		45-140			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-4:2FTS	198%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-6:2FTS	163%		60-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C2-8:2FTS	191%		50-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C8-PFOA	59.9%		30-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOA	29.4%		15-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOA	28.9%		10-130			03/18/23	1	EPA 1633	BCC0285
Surrogate: D3-NMEFOA	112%		45-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D5-NETFOA	68.9%		10-200			03/18/23	1	EPA 1633	BCC0285
Surrogate: D7-NMEFOSE	33.9%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: D9-NETFOSE	40.5%		10-150			03/18/23	1	EPA 1633	BCC0285
Surrogate: 13C3-HFPO-DA	91.5%		25-160			03/18/23	1	EPA 1633	BCC0285

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

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

Reported: 03/21/2023 19:11

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: BCC0285 - EPA 1633

Blank (BCC0285-BLK1)

Prepared: 03/15/23 10:17 Analyzed: 03/18/23 02:48

	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	0.20 U	0.40	0.20	0.10
NMeFOSA	0.80 U	1.6	0.80	0.47
NEtFOSA	0.80 U	1.6	0.80	0.41
NMeFOSAA	0.20 U	0.40	0.20	0.11
NEtFOSAA	0.20 U	0.40	0.20	0.11
NMeFOSE	1.2 U	1.6	1.2	1.0
NEtFOSE	1.2 U	1.6	1.2	1.0
HFPO-DA	0.40 U	0.80	0.40	0.17
ADONA	0.40 U	0.80	0.40	0.12
PFEESA	0.40 U	0.80	0.40	0.11
PFMPA	0.40 U	0.80	0.40	0.054
PFMBA	0.40 U	0.80	0.40	0.091
NFDHA	0.40 U	0.80	0.40	0.30
9CL-PF3ONS	0.40 U	0.80	0.40	0.21
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21
3:3FTCA	0.80 U	1.6	0.80	0.57
5:3FTCA	0.80 U	1.6	0.80	0.44
7:3FTCA	0.80 U	1.6	0.80	0.55

Surrogates

13C4-PFBA	27.9	32.0	87.1	10-130
13C5-PFPEA	14.8	16.0	92.3	35-150
13C5-PFHXA	8.19	8.00	102	55-150

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Project: Red Hill AFFF Assessment Sampling
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Reported: 03/21/2023 19:11

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Blank (BCC0285-BLK1)						Prepared: 03/15/23 10:17 Analyzed: 03/18/23 02:48				
	ng/L									
<i>Surrogates</i>										
13C4-PFHPA	9.42				8.00		118	55-150		
13C8-PFOA	7.31				8.00		91.3	60-140		
13C9-PFNA	3.56				4.00		89.0	55-140		
13C6-PFDA	3.50				4.00		87.6	50-140		
13C7-PFUnA	3.06				4.00		76.5	30-140		
13C2-PFDOA	3.71				4.00		92.8	10-150		
13C2-PFTEDA	3.05				4.00		76.2	10-130		
13C3-PFBS	6.70				8.00		83.7	55-150		
13C3-PFHXS	6.96				8.00		87.0	55-150		
13C8-PFOS	7.24				8.00		90.5	45-140		
13C2-4:2FTS	31.1				16.0		194	60-200		
13C2-6:2FTS	16.0				16.0		100	60-200		
13C2-8:2FTS	22.1				16.0		138	50-200		
13C8-PFOA	5.58				8.00		69.7	30-130		
D3-NMEFOSA	2.48				8.00		30.9	15-130		
D5-NETFOSA	2.53				8.00		31.6	10-130		
D3-NMEFOSAA	15.4				16.0		96.4	45-200		
D5-NETFOSAA	12.1				16.0		75.5	10-200		
D7-NMEFOSE	33.4				80.0		41.8	10-150		
D9-NETFOSSE	42.5				80.0		53.1	10-150		
13C3-HFPO-DA	30.2				32.0		94.4	25-160		

LCS (BCC0285-BS1)

Prepared: 03/15/23 10:17 Analyzed: 03/18/23 03:01

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
PFBA	17.4				16.0		109	58-148		
PFPEA	8.77				8.00		110	54-152		
PFHXA	4.03				4.00		101	55-152		
PFHPA	4.12				4.00		103	54-154		
PFOA	4.49				4.00		112	52-161		
PFNA	3.97				4.00		99.2	59-149		
PFDA	4.12				4.00		103	52-147		
PFUnA	4.29				4.00		107	48-159		
PFDOA	4.19				4.00		105	64-142		
PFTRDA	4.32				4.00		108	49-148		
PFTEDA	4.10				4.00		102	47-161		
PFBS	3.91				3.54		110	62-144		
PFPEA	4.91				3.76		131	59-151		
PFHXS	3.52				3.66		96.1	57-146		
PFHPS	3.13				3.82		82.1	55-152		
PFOS	3.56				3.72		95.6	58-149		
PFNS	3.91				3.84		102	52-148		
PFDS	3.14				3.86		81.4	51-147		
PFDOS	3.11				3.88		80.2	36-145		
4:2FTS	16.1				15.0		108	67-146		
6:2FTS	16.8				15.2		111	61-151		
8:2FTS	16.5				15.4		108	63-152		
PFOSA	4.60				4.00		115	61-148		

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

Reported: 03/21/2023 19:11

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (BCC0285-BS1)						Prepared: 03/15/23 10:17 Analyzed: 03/18/23 03:01				
	ng/L									
NMeFOSA	16.6				16.0		104	63-145		
NETFOSA	16.3				16.0		102	65-139		
NMeFOSAA	3.26				4.00		81.6	58-144		
NETFOSAA	4.43				4.00		111	59-146		
NMeFOSE	16.5				16.0		103	71-136		
NETFOSE	16.0				16.0		100	69-137		
HFPO-DA	9.17				8.00		115	63-144		
ADONA	8.44				7.56		112	68-146		
PFEESA	8.10				7.12		114	56-151		
PFMPA	8.61				8.00		108	51-145		
PFMBA	7.58				8.00		94.7	55-148		
NFDHA	7.65				8.00		95.6	48-161		
9CL-PF3ONS	9.91				7.48		132	56-156		
11CL-PF3OUDS	9.65				7.56		128	46-156		
3:3FTCA	17.1				16.0		107	62-129		
5:3FTCA	14.0				16.0		87.2	63-134		
7:3FTCA	17.7				16.0		111	50-138		
Surrogates										
13C4-PFBA	27.1				32.0		84.7	10-130		
13C5-PFPEA	18.9				16.0		118	35-150		
13C5-PFHXA	9.90				8.00		124	55-150		
13C4-PFHFA	10.9				8.00		136	55-150		
13C8-PFOA	6.83				8.00		85.4	60-140		
13C9-PFNA	3.76				4.00		94.0	55-140		
13C6-PFDA	3.77				4.00		94.3	50-140		
13C7-PFUnA	3.52				4.00		88.1	30-140		
13C2-PFDOA	3.70				4.00		92.5	10-150		
13C2-PFTEDA	3.13				4.00		78.2	10-130		
13C3-PFBS	6.96				8.00		87.1	55-150		
13C3-PFHXS	7.66				8.00		95.7	55-150		
13C8-PFOS	7.00				8.00		87.5	45-140		
13C2-4:2FTS	34.6 S2				16.0		216	60-200		
13C2-6:2FTS	15.7				16.0		97.9	60-200		
13C2-8:2FTS	19.3				16.0		121	50-200		
13C8-PFOSA	4.90				8.00		61.2	30-130		
D3-NMEFOSA	3.00				8.00		37.4	15-130		
D5-NETFOSA	3.01				8.00		37.6	10-130		
D3-NMEFOSAA	15.7				16.0		98.0	45-200		
D5-NETFOSAA	11.5				16.0		72.0	10-200		
D7-NMEFOSE	32.9				80.0		41.1	10-150		
D9-NETFOSAE	41.6				80.0		52.0	10-150		
13C3-HFPO-DA	38.2				32.0		119	25-160		

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Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MRL Check (BCC0285-MRL1)						Prepared: 03/15/23 10:17 Analyzed: 03/18/23 03:14				
	ng/L									
PFBA	1.69				1.60		106	44-157		
PFPEA	0.866				0.800		108	57-148		
PFHXA	0.522				0.400		131	62-149		
PFHPA	0.444				0.400		111	56-150		
PFOA	0.598				0.400		150	57-161		
PFNA	0.419				0.400		105	53-157		
PFDA	0.392 J IR2,				0.400		97.9	43-158		
PFUnA	0.363 J				0.400		90.8	50-155		
PFDOA	0.352 J				0.400		87.9	60-141		
PFTEDA	0.425				0.400		106	52-140		
PFTEDA	0.441				0.400		110	52-156		
PFBS	0.428				0.354		121	63-145		
PFPEA	0.562 BS2				0.376		150	58-144		
PFHXS	0.991 BS2				0.366		271	44-158		
PFHPS	0.338 J				0.382		88.4	51-150		
PFOS	1.16 BS2				0.372		311	43-162		
PFNS	0.364 J				0.384		94.8	46-151		
PFDS	0.329 J				0.386		85.1	50-144		
PFDOS	0.257 J				0.388		66.1	30-138		
4:2FTS	1.53 J				1.50		102	52-158		
6:2FTS	1.50 J				1.52		98.7	48-158		
8:2FTS	1.56 J				1.54		102	46-165		
PFOSA	0.464				0.400		116	47-163		
NMeFOSA	1.49 J				1.60		93.0	54-155		
NETFOSA	1.33 J				1.60		83.2	49-156		
NMeFOSAA	0.336 J				0.400		84.0	32-160		
NETFOSAA	0.333 J				0.400		83.3	51-154		
NMeFOSE	1.65				1.60		103	56-151		
NETFOSE	1.59 J				1.60		99.2	60-147		
HFPO-DA	0.808				0.800		101	58-154		
ADONA	0.783 J				0.756		104	61-148		
PFEESA	0.708 J				0.712		99.4	56-144		
PFMPA	0.800 J				0.800		100	48-150		
PFMBA	0.796 J				0.800		99.5	49-154		
NFDHA	0.925				0.800		116	47-160		
9CL-PF3ONS	0.944				0.748		126	44-167		
11CL-PF3OUDS	1.09				0.756		144	36-158		
3:3FTCA	1.57 J				1.60		97.9	32-161		
5:3FTCA	1.36 J				1.60		85.0	39-156		
7:3FTCA	1.73				1.60		108	36-149		
Surrogates										
13C4-PFBA	27.8				32.0		86.8	10-130		
13C5-PFPEA	17.7				16.0		111	35-150		
13C5-PFHXA	9.62				8.00		120	55-150		
13C4-PFHPA	10.5				8.00		131	55-150		
13C8-PFOA	7.31				8.00		91.4	60-140		
13C9-PFNA	3.38				4.00		84.5	55-140		

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Reported: 03/21/2023 19:11

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MRL Check (BCC0285-MRL1)						Prepared: 03/15/23 10:17 Analyzed: 03/18/23 03:14				
	ng/L									
Surrogates										
13C6-PFDA	3.53				4.00		88.3	50-140		
13C7-PFUnA	3.28				4.00		82.0	30-140		
13C2-PFDOA	3.23				4.00		80.7	10-150		
13C2-PFTEDA	2.84				4.00		70.9	10-130		
13C3-PFBS	6.47				8.00		80.9	55-150		
13C3-PFHXS	7.10				8.00		88.7	55-150		
13C8-PFOS	6.86				8.00		85.7	45-140		
13C2-4:2FTS	33.0 S2				16.0		206	60-200		
13C2-6:2FTS	16.4				16.0		103	60-200		
13C2-8:2FTS	17.4				16.0		109	50-200		
13C8-PFOA	4.88				8.00		60.9	30-130		
D3-NMEFOA	2.67				8.00		33.4	15-130		
D5-NETFOA	2.80				8.00		35.0	10-130		
D3-NMEFOSAA	13.8				16.0		86.4	45-200		
D5-NETFOSAA	10.2				16.0		63.9	10-200		
D7-NMEFOSE	33.0				80.0		41.2	10-150		
D9-NETFOSE	42.2				80.0		52.8	10-150		
13C3-HFPO-DA	36.5				32.0		114	25-160		

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Reported: 03/21/2023 19:11

Notes and Definitions

Item	Definition
BS2	Blank spike recovered above the upper control limit
CV1	Calibration verification recovered below the lower control limit
CV2	Calibration verification recovered above the upper control limit
IR2	Ion ratio above the upper control limit
IS1	Internal standard recovered below the lower control limit
J	Estimated value
S1	Surrogate recovered below the lower control limit
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).	



AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES

A METIRI GROUP COMPANY

WORK ORDER

23C0113

Printed: 03/21/2023 7:11 pm

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

Report To:

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

Invoice To:

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

Date Received: 03/14/2023 09:55 AM

Logged In By: Megan Salata

Date Due: 03/21/2023 (5.00 day TAT)

Received By: Megan Salata

Analysis	Comments
----------	----------

23C0113-01 AF-RHMW17-WGN01LF-2303W1 [Water] Sampled 3/10/2023 1:35:00PM

1633 NONE "Report relevant surrogates"

23C0113-02 AF-RHMW17D-WGN01LF-2303W1 [Water] Sampled 3/10/2023 12:15:00PM

1633 NONE "Report relevant surrogates"

23C0113-03 AF-RHMW17D-WQFB01-2303W1 [Water] Sampled 3/10/2023 11:30:00AM

1633 NONE "Report relevant surrogates"

23C0113-04 AF-RHMW17S-WGN01LF-2303W1 [Water] Sampled 3/10/2023 11:10:00AM

1633 NONE "Report relevant surrogates"

23C0113-05 AF-RHMW17S-WQEB01-2303W1 [Water] Sampled 3/10/2023 2:45:00PM

1633 NONE "Report relevant surrogates"

23C0113 Sample Receipt Log

Default Cooler

Samples Received at: **3.0°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



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. 2303W1AFAL10

23C0113

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

Project Name/Number CTO N6274223F0104 / 60697810	Purchase Order Number	Sampler (Print) Olivia Shively	Sampler (Signature)	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix			Analysis Requested/Method Number	Date Shipped:
									Aq	Sed	Soil		
AF-RHMW17-WGN01F-2303W1		RHMW17	[Signature]		3/16/23	1335	HST	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Turnaround Requested: Check one
 Standard 2-3 wk One week 3 days 24/48 Hrs. Other: **5 day TAT**

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

Relinquished by: **James Mason** Date: **3/13/23** Time: **12:50**
 Relinquished by: **James Mason** Date: **3/14/23** Time: **09:55**

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. 2303W1AFAL12

PLEASE PRINT

Report to: **AECOM**
 Company Name: **1001 Bishop St ste1600**
 Address: **Honolulu, HI 96813**
 Attn: **Watson Tanji / Katie Abbott**
 Email: **watson.tanji@aecom.com/katie.abbott@aecom.com**
 Phone: 808-954-4512 / 303-796-4624
 Fax:

Invoice to: **AECOM**
 PLEASE PRINT
 Company Name:
 Address:
 Attn: **Sheree Smith**
 Email: **USAPimaging@aecom.com**
 Phone:
 Fax:

Project Name/Number	Sampler (Print)	Sampler (Signature)	Location	Date Collected	Time Collected	Time Zone	No. of Containers			Matrix			Analysis Requested/Method Number			Date Shipped:	Carrier:	Waybill No.:	Comments: EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW
							Ag	Sed.	Soil	PFAS EPA Draft 1633	Other	Return to client	Disposal by Lab (30-day retention)						
AF-RHMW17S-WGN01LF-2303W1	BHMW17S	<i>Olga Shively</i>		3/10/23	1110	HST	2	✓				✓							
AF-RHMW17S-WQEB01-2303W1	RHMW17S	<i>Olga</i>		3/10/23	1445	HST	2	✓				✓							

Turnaround Requested: Check one
 Standard 2-3 wk One week 3 days 24/48 Hrs. Other: **5 day TAT**

Relinquished by sampler: *Olga* Date: 3/10/23 Time: 1455
 Received by: *James Mason* Date: 3/13/23 Time: 1250

Relinquished by: *Olga* Date: 3/10/23
 Received by: *James Mason* Date: 3/13/23 Time: 1250

Relinquished by: *Olga* Date: 3/10/23
 Received by: *James Mason* Date: 3/13/23 Time: 1250

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: MA Date 3/13/23
1250

PFAS

SAMPLE DATA

FORM I ANALYSIS DATA SHEET

AF-RHMW17-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-01
		File ID:	S2023-03-17B (42)
Sampled:	03/10/23 13:35	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 10:19
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	526.66 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	2.6	1.5	0.76	0.20	
PFPEA	13	0.76	0.38	0.062	
PFHXA	5.6	0.38	0.19	0.052	
PFHPA	0.90	0.38	0.19	0.039	
PFOA	0.33 J	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	0.21 J	0.38	0.19	0.035	
PFPEs	0.19 U	0.38	0.19	0.060	
PFHXS	0.44	0.38	0.19	0.030	
PFHPS	0.19 U	0.38	0.19	0.049	
PFOS	1.1	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	12	1.5	0.76	0.30	
8:2FTS	0.76 U	1.5	0.76	0.078	
PFOSA	0.35 J	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-RHMW17-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-01
		File ID:	S2023-03-17B (42)
Sampled:	03/10/23 13:35	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 10:19
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	526.66 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (42)
 Acquired: 2023/03/18 - 10:19

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 115418	(3.57, 1.00) (0.00, N/A, 0.0)	149.9	N/A 0.0 0.0	0.6956	N/A			
PFPeA	(263.0 / 219.0) 816630 (263.0 / 69.0) 10375	(4.52, 1.00) (0.00, N/A, 0.0)	1048.8 67.0	0.0127 112.2 105.8	3.3561	N/A			
PFHxA	(313.0 / 269.0) 439530 (313.0 / 119.0) 42529	(5.50, 1.00) (0.00, N/A, 0.1)	631.9 502.6	0.0968 91.9 95.2	1.4679	N/A			
PFHpA	(363.0 / 319.0) 74303 (363.0 / 169.0) 18662	(6.29, 1.00) (0.00, N/A, -0.2)	231.4 8690.1	0.2512 77.0 76.2	0.2361	N/A			
PFOA	(413.0 / 369.0) 33076 (413.0 / 169.0) 14666	(6.98, 1.00) (0.01, N/A, 0.2)	74.4 139.1	0.4434 127.2 126.4	0.0866	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			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 27182 (299.0 / 99.0) 16841	(5.47, 1.00) (0.00, N/A, 0.2)	81.8 112.9	0.6196 105.6 108.1	0.0566	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) 101915 (399.0 / 99.0) 37003	(7.11, 1.00) (-0.01, N/A, 0.3)	203.3 28769.7	0.3631 105.9 107.3	0.1159	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) 397818 (499.0 / 99.0) 73034	(8.33, 1.00) (-0.01, N/A, 0.0)	144.9 73.8	0.1836 84.8 80.2	0.2985	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) 481366 (427.0 / 81.0) 363705	(6.71, 1.00) (0.00, N/A, 0.1)	2165.4 1049.0	0.7556 109.4 97.8	3.0545	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			

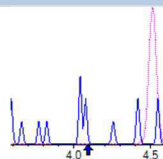
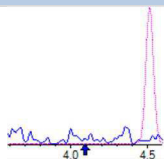
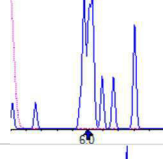
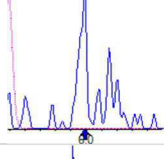
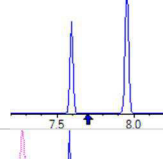
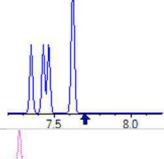
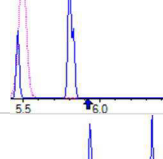
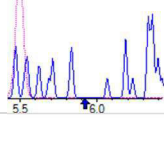
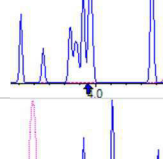
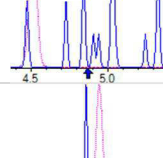
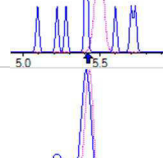
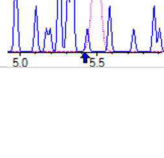
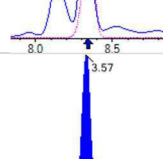
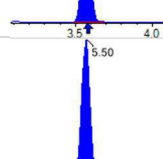
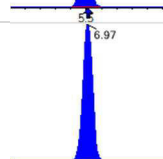
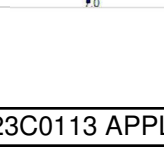


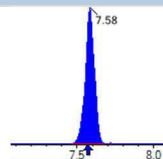
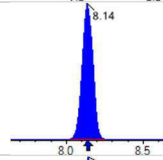
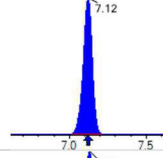
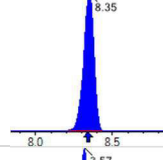
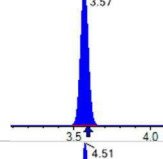
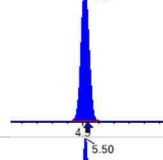
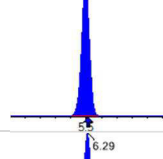
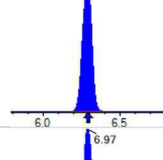
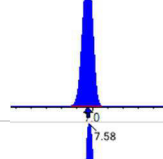
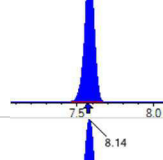
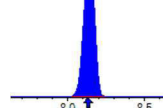
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

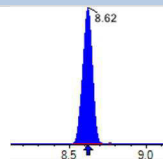
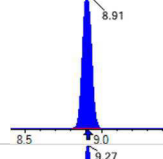
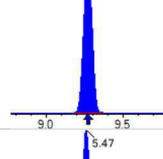
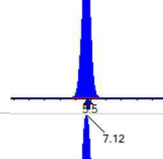
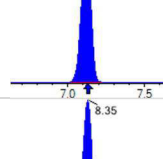
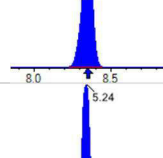
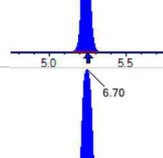
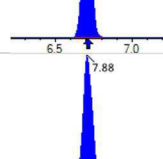
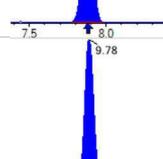
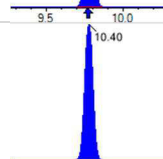
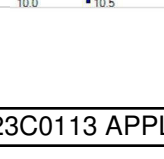
Sample I.D.: 23C0113-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

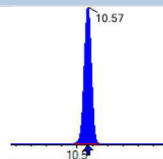
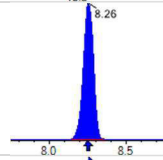
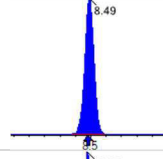
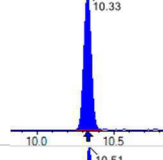
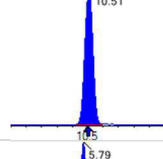
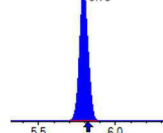
Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (42)
 Acquired: 2023/03/18 - 10:19

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 100086 (498.0 / 478.0) 1066	(9.77, 1.00) (-0.01, N/A, -0.4)	72.2 8.3	0.0107 47.9 42.1	0.0923	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 192860	(3.57, N/A) (N/A, -0.02, N/A)	1517.3	N/A	0.9004 [1.0000]	90.0% { 126.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 245762	(5.50, N/A) (N/A, -0.02, N/A)	1932.7	N/A	0.7825 [1.0000]	78.3% { 130.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 471810	(6.97, N/A) (N/A, 0.00, N/A)	2793.1	N/A	1.0216 [1.0000]	102.2% { 126.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 460851	(7.58, N/A) (N/A, 0.00, N/A)	198160.0	N/A	1.1043 [1.0000]	110.4% { 128.5% }			
13C2_PFDA_IIS	(515.0 / 470.1) 457525	(8.14, N/A) (N/A, 0.00, N/A)	238.8	N/A	1.1392 [1.0000]	113.9% { 117.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 616739	(7.12, N/A) (N/A, 0.00, N/A)	3362.3	N/A	0.9084 [1.0000]	90.8% { 128.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1023439	(8.35, N/A) (N/A, 0.01, N/A)	1029.2	N/A	1.1927 [1.0000]	119.3% { 123.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1607516	(3.57, N/A) (N/A, -0.02, N/A)	6349.5	N/A	7.0039 [8.0000]	87.5% { 102.8% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1106525	(4.51, N/A) (N/A, -0.02, N/A)	3337.5	N/A	3.8975 [4.0000]	97.4% { 86.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 673638	(5.50, N/A) (N/A, -0.02, N/A)	3290.3	N/A	1.9665 [2.0000]	98.3% { 86.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 746009	(6.29, N/A) (N/A, 0.00, N/A)	3607.1	N/A	2.2862 [2.0000]	114.3% { 100.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 842043	(6.97, N/A) (N/A, 0.00, N/A)	2412.5	N/A	1.6427 [2.0000]	82.1% { 89.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 451922	(7.58, N/A) (N/A, 0.00, N/A)	4002.7	N/A	0.9229 [1.0000]	92.3% { 97.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 462030	(8.14, N/A) (N/A, 0.01, N/A)	2119.3	N/A	0.8391 [1.0000]	83.9% { 89.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 501810	(8.62, N/A) (N/A, 0.01, N/A)	1800.6	N/A	0.8174 [1.0000]	81.7% { 100.5% }			
13C2_PFDa_EIS	(615.0 / 570.0) 381509	(8.91, N/A) (N/A, 0.00, N/A)	2877.9	N/A	0.7109 [1.0000]	71.1% { 90.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 313616	(9.27, N/A) (N/A, 0.00, N/A)	1545.4	N/A	0.5541 [1.0000]	55.4% { 78.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1487711	(5.47, N/A) (N/A, -0.01, N/A)	2129.7	N/A	1.5226 [2.0000]	76.1% { 86.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1171859	(7.12, N/A) (N/A, 0.00, N/A)	2119.2	N/A	1.8468 [2.0000]	92.3% { 101.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2362471	(8.35, N/A) (N/A, 0.01, N/A)	1585.1	N/A	1.7217 [2.0000]	86.1% { 90.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 483462	(5.24, N/A) (N/A, -0.01, N/A)	1341.5	N/A	7.8007 [4.0000]	195.0% { 204.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 438835	(6.70, N/A) (N/A, 0.00, N/A)	1499.0	N/A	5.3930 [4.0000]	134.8% { 145.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 658022	(7.88, N/A) (N/A, 0.00, N/A)	1239.8	N/A	7.4646 [4.0000]	186.6% { 162.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2612037	(9.78, N/A) (N/A, 0.00, N/A)	3609.9	N/A	1.1129 [2.0000]	55.6% { 74.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 361535	(10.40, N/A) (N/A, 0.00, N/A)	1445.3	N/A	0.6021 [2.0000]	30.1% { 45.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 337506	(10.57, N/A) (N/A, 0.00, N/A)	2033.5	N/A	0.6175 [2.0000]	30.9% { 45.4% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 1257282	(8.26, N/A) (N/A, 0.01, N/A)	2119.1	N/A	5.3582 [4.0000]	134.0% { 136.1% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 1287734	(8.49, N/A) (N/A, 0.01, N/A)	24328.7	N/A	4.8969 [4.0000]	122.4% { 161.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1355930	(10.33, N/A) (N/A, 0.00, N/A)	1294.8	N/A	7.2562 [20.0000]	36.3% { 47.0% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2064496	(10.51, N/A) (N/A, 0.00, N/A)	1354.3	N/A	9.3605 [20.0000]	46.8% { 58.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1389764	(5.79, N/A) (N/A, -0.02, N/A)	3047.3	N/A	7.3467 [8.0000]	91.8% { 85.9% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-02
		File ID:	S2023-03-17B (44)
Sampled:	03/10/23 12:15	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 10:45
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	513.3 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

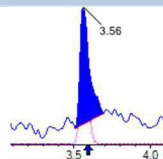
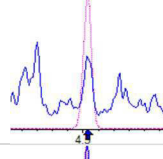
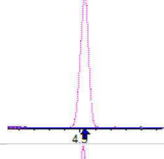
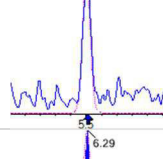
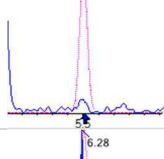
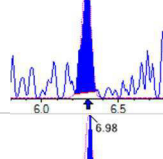
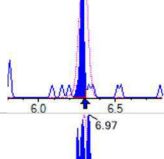
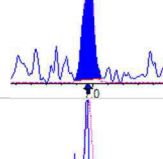
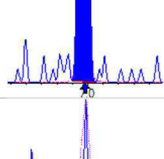
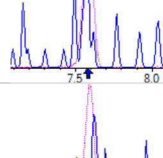
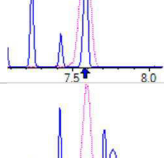
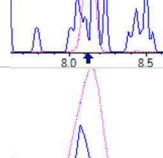
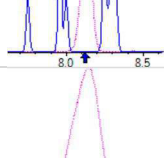
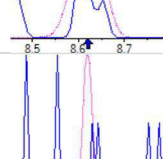
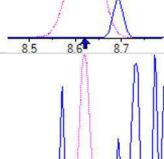
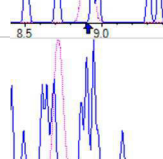
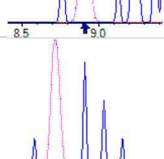
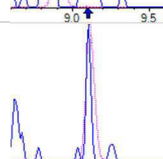
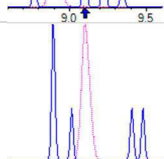
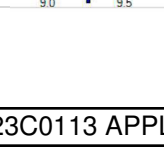
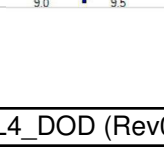
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.78 J	1.6	0.78	0.20	
PFPEA	0.39 U	0.78	0.39	0.063	
PFHXA	0.19 U	0.39	0.19	0.053	
PFHPA	0.093 J	0.39	0.19	0.040	
PFOA	0.29 U	0.39	0.29	0.15	
PFNA	0.19 U	0.39	0.19	0.080	
PFDA	0.19 U	0.39	0.19	0.099	
PFUnA	0.29 U	0.39	0.29	0.16	
PFDOA	0.19 U	0.39	0.19	0.11	
PFTRDA	0.29 U	0.39	0.29	0.20	
PFTEDA	0.29 U	0.39	0.29	0.19	
PFBS	0.19 U	0.39	0.19	0.036	
PFPEs	0.19 U	0.39	0.19	0.061	
PFHXS	0.25 J	0.39	0.19	0.031	
PFHPS	0.19 U	0.39	0.19	0.050	
PFOS	0.34 J	0.39	0.19	0.062	
PFNS	0.19 U	0.39	0.19	0.12	
PFDS	0.29 U	0.39	0.29	0.15	
PFDOS	0.19 U	0.39	0.19	0.12	
4:2FTS	0.78 U	1.6	0.78	0.28	
6:2FTS	2.9	1.6	0.78	0.31	
8:2FTS	0.78 U	1.6	0.78	0.080	
PFOSA	0.19 U	0.39	0.19	0.10	
NMeFOSA	0.78 U	1.6	0.78	0.46	
NEtFOSA	0.78 U	1.6	0.78	0.40	
NMeFOSAA	0.19 U	0.39	0.19	0.10	
NEtFOSAA	0.19 U	0.39	0.19	0.11	
NMeFOSE	1.2 U	1.6	1.2	0.99	
NEtFOSE	1.2 U	1.6	1.2	1.0	
HFPO-DA	0.39 U	0.78	0.39	0.17	

FORM I ANALYSIS DATA SHEET

AF-RHMW17D-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-02
		File ID:	S2023-03-17B (44)
Sampled:	03/10/23 12:15	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 10:45
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	513.3 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.39 U	0.78	0.39	0.12	
PFEESA	0.39 U	0.78	0.39	0.11	
PFMPA	0.49 J	0.78	0.39	0.053	
PFMBA	0.39 U	0.78	0.39	0.088	
NFDHA	0.39 U	0.78	0.39	0.29	
9CL-PF3ONS	0.39 U	0.78	0.39	0.20	
11CL-PF3OUDS	0.39 U	0.78	0.39	0.20	
3:3FTCA	0.78 U	1.6	0.78	0.56	
5:3FTCA	0.78 U	1.6	0.78	0.43	
7:3FTCA	0.78 U	1.6	0.78	0.54	

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 19164	(3.56, 1.00) (0.00, N/A, 0.0)	29.2	N/A 0.0 0.0	0.2009	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) 6350 (363.0 / 169.0) 2133	(6.29, 1.00) (0.00, N/A, 0.7)	24.3 303.5	0.3359 103.1 101.9	0.0238	N/A			
PFOA	(413.0 / 369.0) 14405 (413.0 / 169.0) 6990	(6.98, 1.00) (0.00, N/A, 0.5)	37.6 35.1	0.4853 139.2 138.3	0.0364	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			



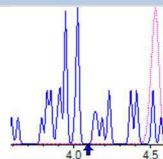
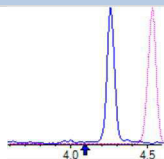
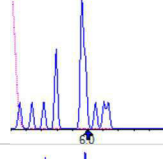
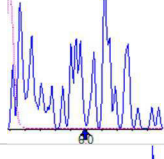
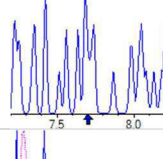
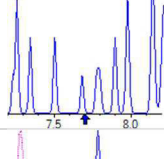
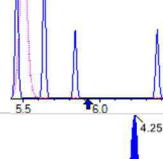
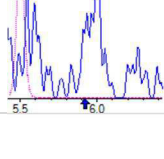
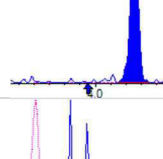
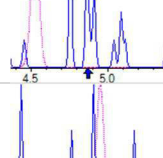
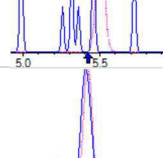
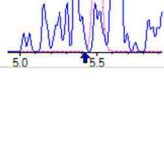
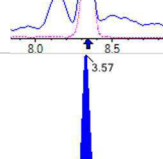
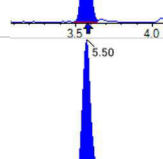
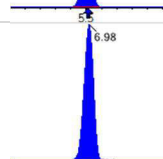
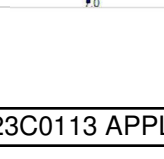
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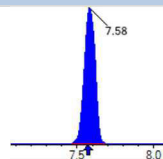
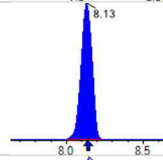
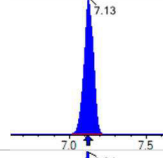
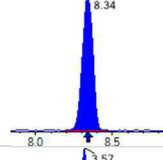
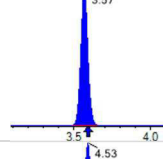
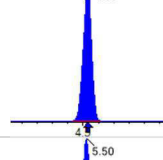
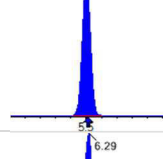
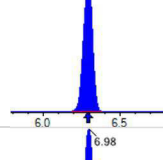
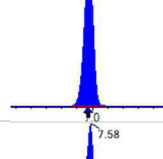
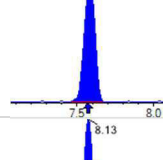
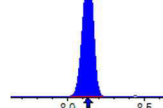
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 Acquisition Method: 1633 2023-03-07.dam

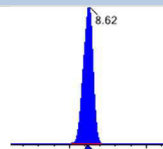
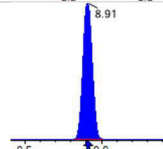
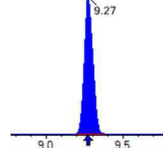
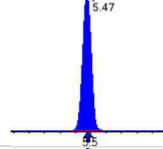
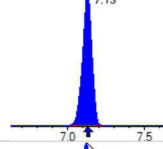
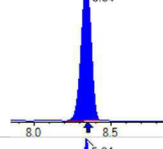
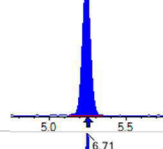
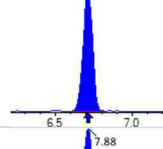
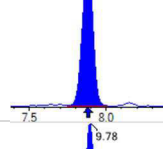
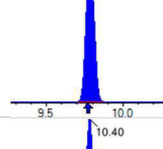
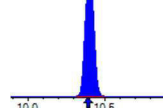
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 Path: S2023-03-13B (44)
 Acquired: 2023/03/18 - 10:45

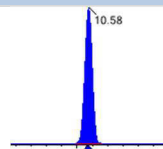
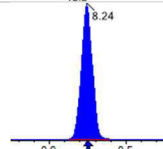
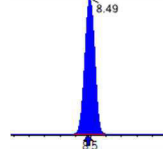
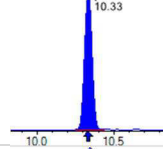
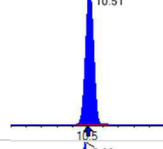
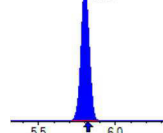
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A 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) 53109 (399.0 / 99.0) 15432	(7.12, 1.00) (-0.01, N/A, 0.0)	56.4 128.3	0.2906 84.8 85.9	0.0637	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) 115447 (499.0 / 99.0) 20858	(8.33, 1.00) (-0.01, N/A, 0.8)	80.3 28.7	0.1807 83.5 78.9	0.0882	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) 177799 (427.0 / 81.0) 123301	(6.71, 1.00) (0.00, N/A, 0.2)	763.7 221.4	0.6935 100.4 89.7	0.7515	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 25044 (498.0 / 478.0) 770	(9.78 , 1.00) (0.00 , N/A , 2.6)	32.5 9.2	0.0307 138.3 121.5	0.0207	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) 5943	(4.25, 0.94) (N/A, 0.30, 0.0)	145.9	N/A 0.0 0.0	0.1261	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) 113907	(3.57, N/A) (N/A, -0.03, N/A)	781.2	N/A	0.5318 [1.0000]	53.2% { 75.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 276403	(5.50, N/A) (N/A, -0.01, N/A)	1730.3	N/A	0.8801 [1.0000]	88.0% { 147.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 465276	(6.98, N/A) (N/A, 0.00, N/A)	1639.5	N/A	1.0075 [1.0000]	100.7% { 125.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 410593	(7.58, N/A) (N/A, 0.00, N/A)	1742.0	N/A	0.9839 [1.0000]	98.4% { 114.5% }			
13C2_PFDA_IIS	(515.0 / 470.1) 296814	(8.13, N/A) (N/A, -0.01, N/A)	2389.2	N/A	0.7390 [1.0000]	73.9% { 76.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 595156	(7.13, N/A) (N/A, 0.01, N/A)	1868.1	N/A	0.8766 [1.0000]	87.7% { 124.3% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1050610	(8.34, N/A) (N/A, 0.00, N/A)	644.6	N/A	1.2244 [1.0000]	122.4% { 126.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 923952	(3.57, N/A) (N/A, -0.02, N/A)	5197.4	N/A	6.8160 [8.0000]	85.2% { 59.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 832409	(4.53, N/A) (N/A, 0.00, N/A)	3224.7	N/A	2.6070 [4.0000]	65.2% { 65.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 651383	(5.50, N/A) (N/A, -0.01, N/A)	4200.1	N/A	1.6908 [2.0000]	84.5% { 84.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 633062	(6.29, N/A) (N/A, 0.00, N/A)	1808.6	N/A	1.7250 [2.0000]	86.2% { 85.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 872515	(6.98, N/A) (N/A, 0.00, N/A)	2895.1	N/A	1.7261 [2.0000]	86.3% { 92.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 366228	(7.58, N/A) (N/A, 0.01, N/A)	1016.2	N/A	0.8394 [1.0000]	83.9% { 78.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 324201	(8.13, N/A) (N/A, 0.00, N/A)	1513.9	N/A	0.9075 [1.0000]	90.8% { 62.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 496903	(8.62, N/A) (N/A, 0.01, N/A)	1590.6	N/A	1.2476 [1.0000]	124.8% { 99.5% }			
13C2_PFDa_EIS	(615.0 / 570.0) 400727	(8.91, N/A) (N/A, 0.00, N/A)	1626.0	N/A	1.1510 [1.0000]	115.1% { 94.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 362117	(9.27, N/A) (N/A, 0.00, N/A)	1862.4	N/A	0.9862 [1.0000]	98.6% { 90.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1665490	(5.47, N/A) (N/A, -0.01, N/A)	1204.0	N/A	1.7664 [2.0000]	88.3% { 97.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1112324	(7.13, N/A) (N/A, 0.01, N/A)	305.0	N/A	1.8166 [2.0000]	90.8% { 96.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2319504	(8.34, N/A) (N/A, 0.00, N/A)	887.2	N/A	1.6467 [2.0000]	82.3% { 89.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 578849	(5.24, N/A) (N/A, -0.01, N/A)	909.4	N/A	9.6785 [4.0000]	242.0% { 244.8% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 658788	(6.71, N/A) (N/A, 0.00, N/A)	684.7	N/A	8.3897 [4.0000]	209.7% { 218.8% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 712741	(7.88, N/A) (N/A, 0.00, N/A)	544.5	N/A	8.3785 [4.0000]	209.5% { 176.1% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 2921116	(9.78, N/A) (N/A, 0.01, N/A)	3688.0	N/A	1.2124 [2.0000]	60.6% { 82.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 424215	(10.40, N/A) (N/A, 0.01, N/A)	1683.5	N/A	0.6882 [2.0000]	34.4% { 53.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 363396	(10.58, N/A) (N/A, 0.01, N/A)	1897.1	N/A	0.6476 [2.0000]	32.4% { 48.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 574912	(8.24, N/A) (N/A, -0.01, N/A)	1445.2	N/A	2.3868 [4.0000]	59.7% { 62.2% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 1032334	(8.49, N/A) (N/A, 0.01, N/A)	4584.7	N/A	3.8242 [4.0000]	95.6% { 129.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1271098	(10.33, N/A) (N/A, 0.01, N/A)	1271.8	N/A	6.6263 [20.0000]	33.1% { 44.1% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 1955947	(10.51, N/A) (N/A, 0.01, N/A)	1387.2	N/A	8.6389 [20.0000]	43.2% { 55.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1520106	(5.80, N/A) (N/A, -0.01, N/A)	3446.8	N/A	7.1449 [8.0000]	89.3% { 93.9% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	23C0113-02RE1	File ID:	S2023-03-17B (45)
Sampled:	03/10/23 12:15	Prepared:	03/15/23 10:17	Analyzed:	03/18/23 10:58
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	513.3 mL / 2 mL			Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082	Calibration:	2310010

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 5575	(3.61, 1.00) (0.02, N/A, 0.0)	15.6	N/A 0.0 0.0	0.0313	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			



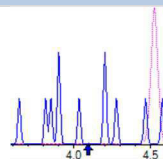
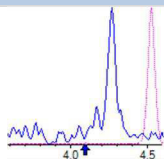
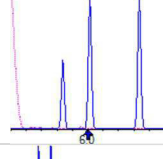
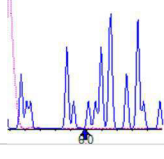
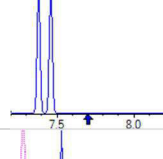
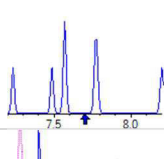
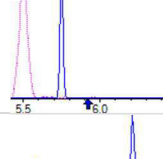
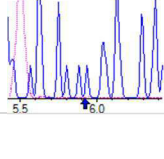
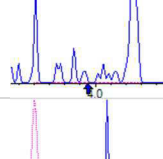
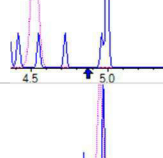
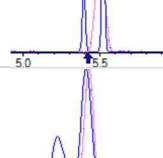
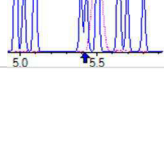
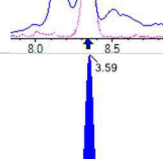
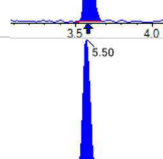
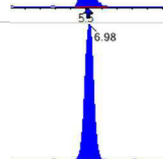
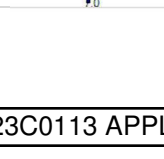
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 Instrument: Saphira
 Type: Sciex Q3 5500

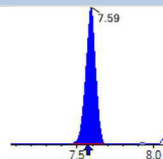
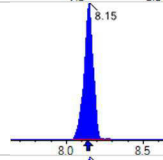
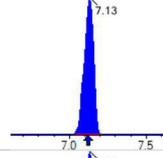
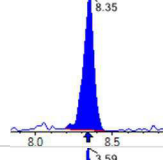
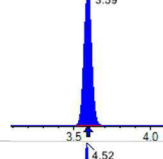
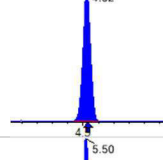
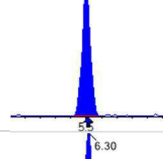
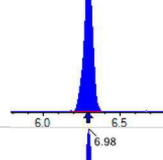
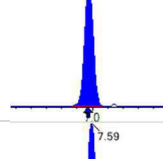
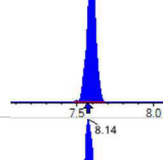
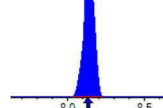
Sample I.D.: 23C0113-02RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-07.dam

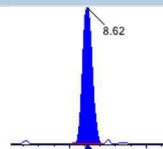
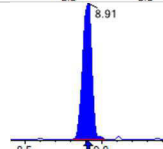
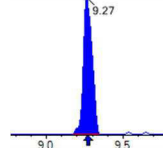
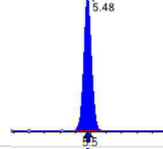
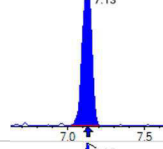
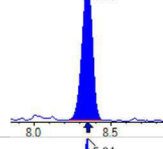
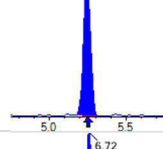
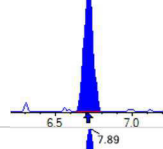
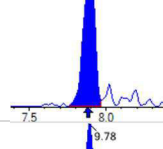
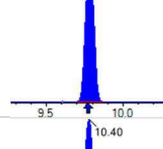
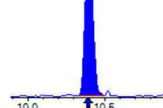
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 Path: S2023-03-13B (45)
 Acquired: 2023/03/18 - 10:58

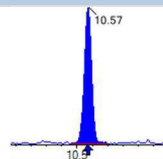
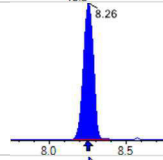
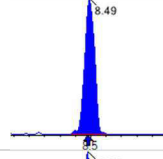
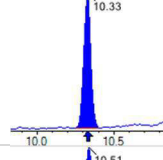
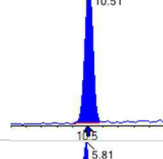
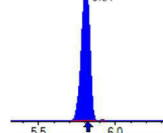
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A 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) 8225 (427.0 / 81.0) 8575	(6.70, 1.00) (-0.01, N/A, -1.0)	86.8 61.6	1.0426 150.9 134.9	0.0743	N/A			IR2,
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 20812	(3.59, N/A) (N/A, 0.00, N/A)	334.7	N/A	0.9716 [1.0000]	97.2% { 13.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 30383	(5.50, N/A) (N/A, -0.01, N/A)	3612.7	N/A	0.9674 [1.0000]	96.7% { 16.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 44862	(6.98, N/A) (N/A, 0.01, N/A)	2180.6	N/A	0.9714 [1.0000]	97.1% { 12.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 46915	(7.59, N/A) (N/A, 0.01, N/A)	2399.1	N/A	1.1242 [1.0000]	112.4% { 13.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 53898	(8.15, N/A) (N/A, 0.01, N/A)	927.9	N/A	1.3420 [1.0000]	134.2% { 13.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 55738	(7.13, N/A) (N/A, 0.01, N/A)	11240.8	N/A	0.8210 [1.0000]	82.1% { 11.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 109921	(8.35, N/A) (N/A, 0.01, N/A)	141.8	N/A	1.2810 [1.0000]	128.1% { 13.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 172807	(3.59, N/A) (N/A, 0.00, N/A)	2212.9	N/A	0.6977 [0.8000]	87.2% { 11.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 123186	(4.52, N/A) (N/A, -0.01, N/A)	1009.3	N/A	0.3510 [0.4000]	87.7% { 9.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 72848	(5.50, N/A) (N/A, -0.01, N/A)	622.2	N/A	0.1720 [0.2000]	86.0% { 9.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 86868	(6.30, N/A) (N/A, 0.01, N/A)	28423.6	N/A	0.2153 [0.2000]	107.7% { 11.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 81401	(6.98, N/A) (N/A, 0.00, N/A)	20909.5	N/A	0.1670 [0.2000]	83.5% { 8.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 42286	(7.59, N/A) (N/A, 0.02, N/A)	230.9	N/A	0.0848 [0.1000]	84.8% { 9.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 60796	(8.14, N/A) (N/A, 0.00, N/A)	2719.1	N/A	0.0937 [0.1000]	93.7% { 11.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 51950	(8.62, N/A) (N/A, 0.00, N/A)	348.7	N/A	0.0718 [0.1000]	71.8% {10.4%}			
13C2_PFDa_EIS	(615.0 / 570.0) 47532	(8.91, N/A) (N/A, 0.00, N/A)	360.2	N/A	0.0752 [0.1000]	75.2% {11.2%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 34544	(9.27, N/A) (N/A, 0.00, N/A)	354.5	N/A	0.0518 [0.1000]	51.8% {8.6%}			
13C3_PFBs_EIS	(302.0 / 80.0) 173323	(5.48, N/A) (N/A, -0.01, N/A)	634.3	N/A	0.1963 [0.2000]	98.1% {10.1%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 114732	(7.13, N/A) (N/A, 0.01, N/A)	207.2	N/A	0.2001 [0.2000]	100.0% {9.9%}			
13C8_PFOS_EIS	(507.0 / 80.0) 283811	(8.35, N/A) (N/A, 0.01, N/A)	244.6	N/A	0.1926 [0.2000]	96.3% {10.9%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 51350	(5.24, N/A) (N/A, -0.01, N/A)	322.2	N/A	0.9168 [0.4000]	229.2% {21.7%}			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 30816	(6.72, N/A) (N/A, 0.01, N/A)	226.3	N/A	0.4190 [0.4000]	104.8% {10.2%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 61967	(7.89, N/A) (N/A, 0.01, N/A)	109.7	N/A	0.7778 [0.4000]	194.5% {15.3%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 326394	(9.78, N/A) (N/A, 0.00, N/A)	1003.5	N/A	0.1295 [0.2000]	64.7% {9.3%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 49642	(10.40, N/A) (N/A, 0.00, N/A)	380.9	N/A	0.0770 [0.2000]	38.5% {6.3%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 37977	(10.57, N/A) (N/A, 0.00, N/A)	341.8	N/A	0.0647 [0.2000]	32.3% { 5.1% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 155029	(8.26, N/A) (N/A, 0.00, N/A)	1751.2	N/A	0.6151 [0.4000]	153.8% { 16.8% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 85463	(8.49, N/A) (N/A, 0.01, N/A)	1048.0	N/A	0.3026 [0.4000]	75.6% { 10.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 164816	(10.33, N/A) (N/A, 0.00, N/A)	222.7	N/A	0.8212 [2.0000]	41.1% { 5.7% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 197343	(10.51, N/A) (N/A, 0.00, N/A)	320.8	N/A	0.8331 [2.0000]	41.7% { 5.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 158167	(5.81, N/A) (N/A, 0.00, N/A)	4401.2	N/A	0.6763 [0.8000]	84.5% { 9.8% }			

FORM I ANALYSIS DATA SHEET

AF-RHMW17D-WQFB01-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-03
		File ID:	S2023-03-17B (46)
Sampled:	03/10/23 11:30	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 11:11
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	531.91 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.75 U	1.5	0.75	0.20	
PFPEA	0.38 U	0.75	0.38	0.061	
PFHXA	0.19 U	0.38	0.19	0.052	
PFHPA	0.069 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	0.077	
PFDA	0.19 U	0.38	0.19	0.095	
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	0.12 J	0.38	0.19	0.030	
PFHPS	0.19 U	0.38	0.19	0.048	
PFOS	0.25 J	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	0.75 U	1.5	0.75	0.27	
6:2FTS	0.75 U	1.5	0.75	0.30	IR2,
8:2FTS	0.75 U	1.5	0.75	0.077	
PFOSA	0.19 U	0.38	0.19	0.098	
NMeFOSA	0.75 U	1.5	0.75	0.44	
NEtFOSA	0.75 U	1.5	0.75	0.39	
NMeFOSAA	0.19 U	0.38	0.19	0.099	
NEtFOSAA	0.19 U	0.38	0.19	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.95	
NEtFOSE	1.1 U	1.5	1.1	0.98	
HFPO-DA	0.38 U	0.75	0.38	0.16	

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WQFB01-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-03
		File ID:	S2023-03-17B (46)
Sampled:	03/10/23 11:30	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 11:11
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	531.91 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.38 U	0.75	0.38	0.12	
PFEESA	0.38 U	0.75	0.38	0.10	
PFMPA	0.38 U	0.75	0.38	0.051	
PFMBA	0.38 U	0.75	0.38	0.085	
NFDHA	0.38 U	0.75	0.38	0.28	
9CL-PF3ONS	0.38 U	0.75	0.38	0.20	
11CL-PF3OUDS	0.38 U	0.75	0.38	0.19	
3:3FTCA	0.75 U	1.5	0.75	0.54	
5:3FTCA	0.75 U	1.5	0.75	0.42	
7:3FTCA	0.75 U	1.5	0.75	0.52	



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-03
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (46)
 Acquired: 2023/03/18 - 11:11

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) 5451 (363.0 / 169.0) 2152	(6.31, 1.00) (0.02, N/A, 0.5)	32.5 1411.7	0.3948 121.1 119.8	0.0183	N/A			
PFOA	(413.0 / 369.0) 9718 (413.0 / 169.0) 2672	(6.99, 1.00) (0.02, N/A, -0.5)	33.7 12.6	0.2749 78.9 78.3	0.0244	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-03
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (46)
 Acquired: 2023/03/18 - 11:11

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) 29066 (399.0 / 99.0) 5848	(7.12 , 1.00) (-0.01 , N/A , -0.7)	699.2 262013.0	0.2012 58.7 59.5	0.0318	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) 100094 (499.0 / 99.0) 23761	(8.34 , 1.00) (0.00 , N/A , 0.3)	59.6 45.2	0.2374 109.7 103.7	0.0672	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) 5878 (427.0 / 81.0) 6698	(6.72 , 1.00) (0.01 , N/A , -0.1)	504.0 41.8	1.1396 164.9 147.5	0.0436	N/A			IR2,
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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-03
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (46)
 Acquired: 2023/03/18 - 11:11

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 29698 (498.0 / 478.0) 1175	(9.78, 1.00) (0.00, N/A, 1.6)	63.9 7.2	0.0396 178.0 156.4	0.0220	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

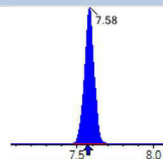
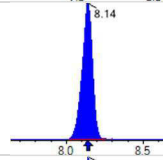
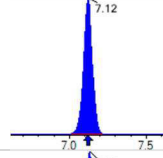
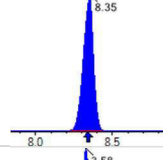
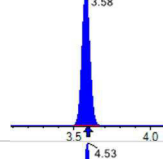
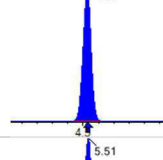
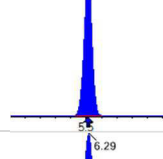
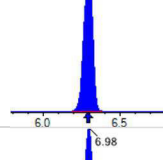
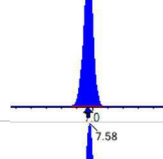
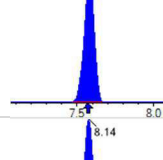
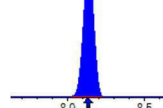


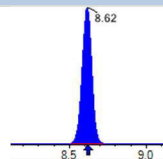
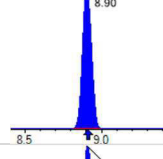
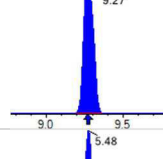
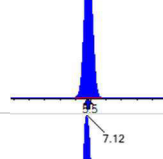
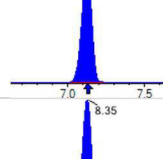
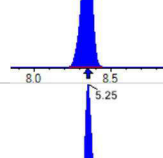
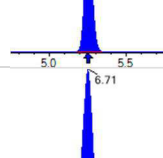
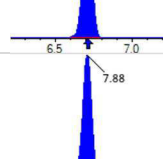
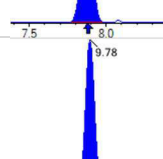
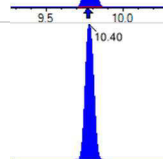
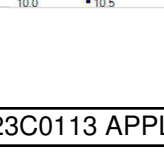
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

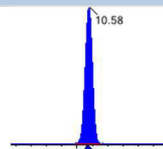
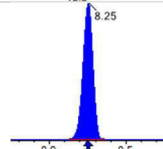
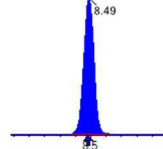
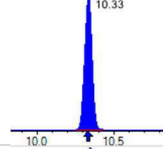
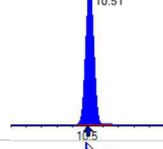
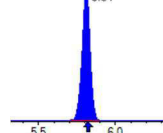
Sample I.D.: 23C0113-03
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (46)
 Acquired: 2023/03/18 - 11:11

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 207409	(3.58, N/A) (N/A, -0.01, N/A)	2138.8	N/A	0.9683 [1.0000]	96.8% { 136.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 290943	(5.51, N/A) (N/A, 0.00, N/A)	3480.6	N/A	0.9264 [1.0000]	92.6% { 154.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 469697	(6.98, N/A) (N/A, 0.00, N/A)	3506.3	N/A	1.0171 [1.0000]	101.7% { 126.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 457757	(7.58, N/A) (N/A, 0.00, N/A)	28171.8	N/A	1.0969 [1.0000]	109.7% { 127.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 444365	(8.14, N/A) (N/A, 0.00, N/A)	24709.8	N/A	1.1064 [1.0000]	110.6% { 114.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 680465	(7.12, N/A) (N/A, 0.00, N/A)	3170.0	N/A	1.0023 [1.0000]	100.2% { 142.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1202892	(8.35, N/A) (N/A, 0.01, N/A)	1537.3	N/A	1.4019 [1.0000]	140.2% { 144.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1605998	(3.58, N/A) (N/A, -0.01, N/A)	6521.3	N/A	6.5065 [8.0000]	81.3% { 102.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1183176	(4.53, N/A) (N/A, 0.00, N/A)	4058.0	N/A	3.5203 [4.0000]	88.0% { 92.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 715075	(5.51, N/A) (N/A, 0.00, N/A)	3521.4	N/A	1.7633 [2.0000]	88.2% { 92.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 705085	(6.29, N/A) (N/A, 0.00, N/A)	2352.4	N/A	1.8252 [2.0000]	91.3% { 94.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 876638	(6.98, N/A) (N/A, 0.00, N/A)	4986.5	N/A	1.7179 [2.0000]	85.9% { 92.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 450884	(7.58, N/A) (N/A, 0.00, N/A)	2385.3	N/A	0.9270 [1.0000]	92.7% { 96.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 474678	(8.14, N/A) (N/A, 0.00, N/A)	3006.5	N/A	0.8876 [1.0000]	88.8% { 91.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 480551	(8.62, N/A) (N/A, 0.00, N/A)	2801.7	N/A	0.8059 [1.0000]	80.6% { 96.2% }			
13C2_PFDa_EIS	(615.0 / 570.0) 436571	(8.90, N/A) (N/A, 0.00, N/A)	2364.6	N/A	0.8376 [1.0000]	83.8% { 103.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 365587	(9.27, N/A) (N/A, 0.00, N/A)	2531.6	N/A	0.6650 [1.0000]	66.5% { 91.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1874809	(5.48, N/A) (N/A, 0.00, N/A)	5992.7	N/A	1.7391 [2.0000]	87.0% { 109.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1217296	(7.12, N/A) (N/A, 0.00, N/A)	2547.7	N/A	1.7387 [2.0000]	86.9% { 105.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2641617	(8.35, N/A) (N/A, 0.00, N/A)	1981.2	N/A	1.6379 [2.0000]	81.9% { 101.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 482277	(5.25, N/A) (N/A, 0.00, N/A)	2870.8	N/A	7.0528 [4.0000]	176.3% { 204.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 375207	(6.71, N/A) (N/A, 0.00, N/A)	2155.2	N/A	4.1793 [4.0000]	104.5% { 124.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 381333	(7.88, N/A) (N/A, 0.00, N/A)	1260.7	N/A	3.9207 [4.0000]	98.0% { 94.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3254914	(9.78, N/A) (N/A, 0.01, N/A)	4537.2	N/A	1.1799 [2.0000]	59.0% { 92.3% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 357350	(10.40, N/A) (N/A, 0.01, N/A)	2119.5	N/A	0.5063 [2.0000]	25.3% { 45.4% }			

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 341416	(10.58 , N/A) (N/A , 0.01 , N/A)	2147.2	N/A	0.5314 [2.0000]	26.6% { 45.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 964646	(8.25 , N/A) (N/A , 0.00 , N/A)	2359.0	N/A	3.4978 [4.0000]	87.4% { 104.4% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 827425	(8.49 , N/A) (N/A , 0.00 , N/A)	13947.8	N/A	2.6771 [4.0000]	66.9% { 103.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1550929	(10.33 , N/A) (N/A , 0.01 , N/A)	1557.5	N/A	7.0615 [20.0000]	35.3% { 53.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2307942	(10.51 , N/A) (N/A , 0.01 , N/A)	1546.5	N/A	8.9031 [20.0000]	44.5% { 65.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1589133	(5.81 , N/A) (N/A , 0.00 , N/A)	4580.6	N/A	7.0961 [8.0000]	88.7% { 98.2% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW17D-WQFB01-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	23C0113-03RE1	File ID:	S2023-03-17B (47)
Sampled:	03/10/23 11:30	Prepared:	03/15/23 10:17	Analyzed:	03/18/23 11:24
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	531.91 mL / 2 mL			Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082	Calibration:	2310010



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-03RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (47)
 Acquired: 2023/03/18 - 11:24

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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			

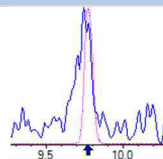
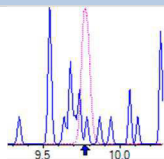
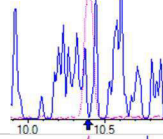
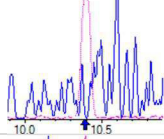
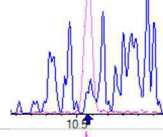
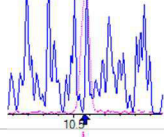
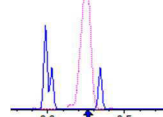
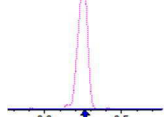
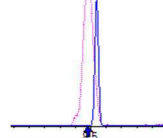
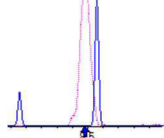
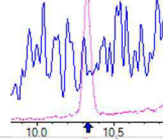
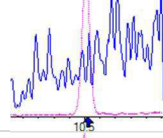
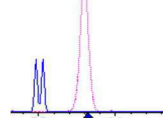
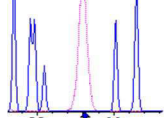
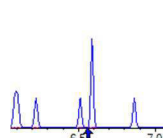
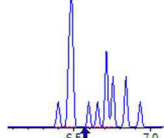
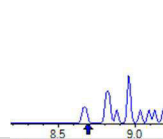
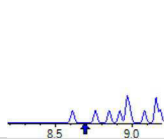
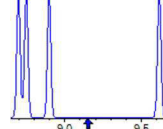
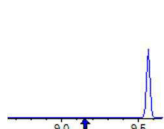


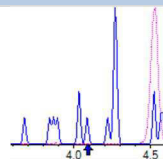
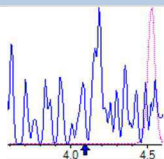
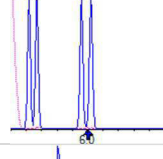
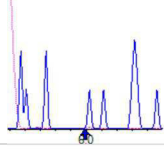
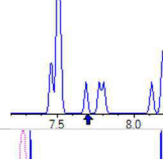
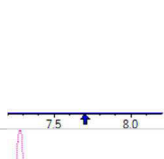
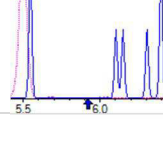
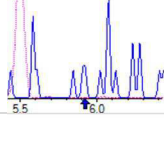
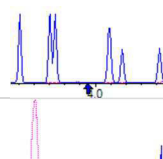
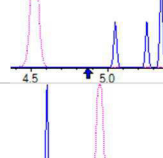
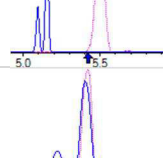
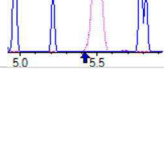
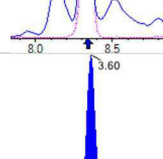
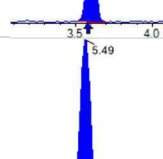
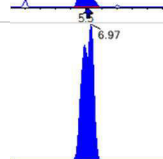
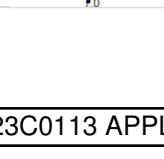
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

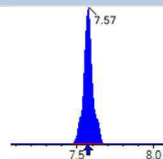
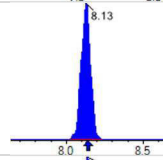
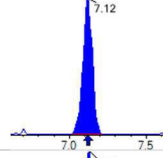
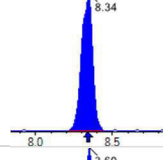
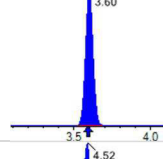
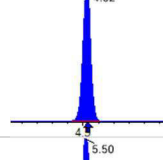
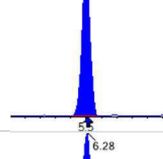
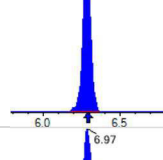
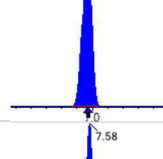
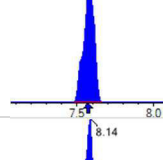
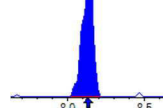
Sample I.D.: 23C0113-03RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-07.dam

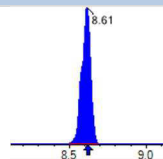
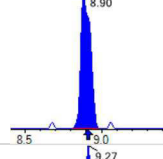
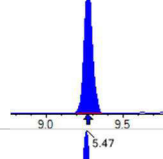
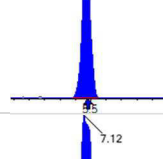
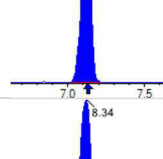
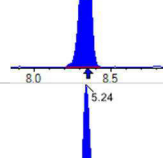
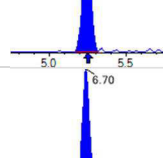
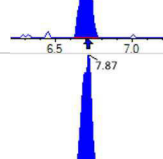
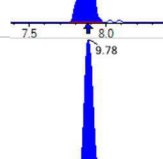
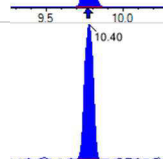
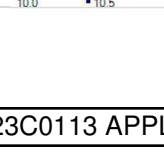
Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (47)
 Acquired: 2023/03/18 - 11:24

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 20665	(3.60, N/A) (N/A, 0.01, N/A)	448.8	N/A	0.9647 [1.0000]	96.5% { 13.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 24367	(5.49, N/A) (N/A, -0.02, N/A)	683.5	N/A	0.7758 [1.0000]	77.6% { 13.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 42819	(6.97, N/A) (N/A, 0.00, N/A)	1028.4	N/A	0.9272 [1.0000]	92.7% { 11.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 38382	(7.57, N/A) (N/A, -0.01, N/A)	170.0	N/A	0.9197 [1.0000]	92.0% { 10.7% }			
13C2_PFDA_IIS	(515.0 / 470.1) 47295	(8.13, N/A) (N/A, -0.01, N/A)	330.7	N/A	1.1776 [1.0000]	117.8% { 12.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 56048	(7.12, N/A) (N/A, 0.00, N/A)	458.0	N/A	0.8255 [1.0000]	82.6% { 11.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 99971	(8.34, N/A) (N/A, 0.00, N/A)	444.5	N/A	1.1651 [1.0000]	116.5% { 12.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 162433	(3.60, N/A) (N/A, 0.01, N/A)	2462.1	N/A	0.6605 [0.8000]	82.6% { 10.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 111354	(4.52, N/A) (N/A, -0.01, N/A)	1185.8	N/A	0.3956 [0.4000]	98.9% { 8.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 67993	(5.50, N/A) (N/A, -0.01, N/A)	1496.9	N/A	0.2002 [0.2000]	100.1% { 8.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 63602	(6.28, N/A) (N/A, -0.01, N/A)	392.2	N/A	0.1966 [0.2000]	98.3% { 8.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 85000	(6.97, N/A) (N/A, -0.01, N/A)	240605.0	N/A	0.1827 [0.2000]	91.4% { 9.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 40649	(7.58, N/A) (N/A, 0.00, N/A)	349.6	N/A	0.0997 [0.1000]	99.7% { 8.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 45825	(8.14, N/A) (N/A, 0.00, N/A)	2770.1	N/A	0.0805 [0.1000]	80.5% { 8.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 40732	(8.61, N/A) (N/A, 0.00, N/A)	8574.6	N/A	0.0642 [0.1000]	64.2% {8.2%}			
13C2_PFDa_EIS	(615.0 / 570.0) 35496	(8.90, N/A) (N/A, -0.01, N/A)	1382.3	N/A	0.0640 [0.1000]	64.0% {8.4%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 43068	(9.27, N/A) (N/A, 0.00, N/A)	579.1	N/A	0.0736 [0.1000]	73.6% {10.7%}			
13C3_PFBs_EIS	(302.0 / 80.0) 150702	(5.47, N/A) (N/A, -0.01, N/A)	947.5	N/A	0.1697 [0.2000]	84.9% {8.8%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 116800	(7.12, N/A) (N/A, 0.00, N/A)	3645.3	N/A	0.2025 [0.2000]	101.3% {10.1%}			
13C8_PFOS_EIS	(507.0 / 80.0) 251825	(8.34, N/A) (N/A, -0.01, N/A)	713.3	N/A	0.1879 [0.2000]	93.9% {9.7%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 32913	(5.24, N/A) (N/A, -0.01, N/A)	404.7	N/A	0.5844 [0.4000]	146.1% {13.9%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 22332	(6.70, N/A) (N/A, -0.01, N/A)	521.4	N/A	0.3020 [0.4000]	75.5% {7.4%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 36557	(7.87, N/A) (N/A, 0.00, N/A)	667.9	N/A	0.4563 [0.4000]	114.1% {9.0%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 289047	(9.78, N/A) (N/A, 0.00, N/A)	1079.5	N/A	0.1261 [0.2000]	63.0% {8.2%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 39772	(10.40, N/A) (N/A, 0.00, N/A)	260.1	N/A	0.0678 [0.2000]	33.9% {5.1%}			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-03RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (47)
 Acquired: 2023/03/18 - 11:24

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 36393	(10.57 , N/A) (N/A , 0.00 , N/A)	349.8	N/A	0.0682 [0.2000]	34.1% { 4.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 77092	(8.25 , N/A) (N/A , 0.00 , N/A)	4079.5	N/A	0.3363 [0.4000]	84.1% { 8.3% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 76967	(8.48 , N/A) (N/A , 0.00 , N/A)	197207.4	N/A	0.2996 [0.4000]	74.9% { 9.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 178030	(10.33 , N/A) (N/A , 0.00 , N/A)	156.9	N/A	0.9753 [2.0000]	48.8% { 6.2% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 233160	(10.51 , N/A) (N/A , 0.00 , N/A)	365.4	N/A	1.0822 [2.0000]	54.1% { 6.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 139764	(5.80 , N/A) (N/A , -0.01 , N/A)	1085.3	N/A	0.7452 [0.8000]	93.1% { 8.6% }			

FORM I ANALYSIS DATA SHEET

AF-RHMW17S-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-04
		File ID:	S2023-03-17B (48)
Sampled:	03/10/23 11:10	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 11:37
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	518.54 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	3.7	1.5	0.77	0.20	
PFPEA	1.0	0.77	0.39	0.063	
PFHXA	1.4	0.39	0.19	0.053	
PFHPA	0.80	0.39	0.19	0.040	
PFOA	0.96	0.39	0.29	0.15	
PFNA	0.28 J	0.39	0.19	0.079	IR2,
PFDA	0.19 U	0.39	0.19	0.098	
PFUnA	0.29 U	0.39	0.29	0.15	
PFDOA	0.19 U	0.39	0.19	0.11	
PFTRDA	0.29 U	0.39	0.29	0.20	
PFTEDA	0.29 U	0.39	0.29	0.19	
PFBS	0.43	0.39	0.19	0.035	
PFPEs	0.19 U	0.39	0.19	0.060	
PFHXS	0.40	0.39	0.19	0.031	
PFHPS	0.19 U	0.39	0.19	0.049	
PFOS	1.1	0.39	0.19	0.061	
PFNS	0.19 U	0.39	0.19	0.12	
PFDS	0.29 U	0.39	0.29	0.15	
PFDOS	0.19 U	0.39	0.19	0.12	
4:2FTS	0.77 U	1.5	0.77	0.28	
6:2FTS	1.6	1.5	0.77	0.30	
8:2FTS	0.77 U	1.5	0.77	0.079	
PFOSA	0.12 J	0.39	0.19	0.10	
NMeFOSA	0.77 U	1.5	0.77	0.46	
NEtFOSA	0.77 U	1.5	0.77	0.40	
NMeFOSAA	0.19 U	0.39	0.19	0.10	
NEtFOSAA	0.19 U	0.39	0.19	0.11	
NMeFOSE	1.2 U	1.5	1.2	0.98	
NEtFOSE	1.2 U	1.5	1.2	1.0	
HFPO-DA	0.39 U	0.77	0.39	0.17	

FORM I

ANALYSIS DATA SHEET

AF-RHMW17S-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-04
		File ID:	S2023-03-17B (48)
Sampled:	03/10/23 11:10	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 11:37
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	518.54 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.39 U	0.77	0.39	0.12	
PFEESA	0.39 U	0.77	0.39	0.11	
PFMPA	0.39 U	0.77	0.39	0.052	
PFMBA	0.39 U	0.77	0.39	0.088	
NFDHA	0.39 U	0.77	0.39	0.29	
9CL-PF3ONS	0.39 U	0.77	0.39	0.20	
11CL-PF3OUDS	0.39 U	0.77	0.39	0.20	
3:3FTCA	0.77 U	1.5	0.77	0.55	
5:3FTCA	0.77 U	1.5	0.77	0.43	
7:3FTCA	0.77 U	1.5	0.77	0.53	



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (48)
 Acquired: 2023/03/18 - 11:37

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) 38949	(3.57, 1.00) (0.00, N/A, 0.0)	79.5	N/A 0.0 0.0	0.9660	N/A			
PFPeA	(263.0 / 219.0) 39731 (263.0 / 69.0) N/A	(4.52, 1.00) (0.00, N/A, #Value!)	68.9 N/A	N/A 0.0 0.0	0.2705	N/A			
PFHxA	(313.0 / 269.0) 85467 (313.0 / 119.0) 5822	(5.50, 1.00) (0.00, N/A, 0.2)	111.4 38.1	0.0681 64.7 67.0	0.3527	N/A			
PFHpA	(363.0 / 319.0) 48036 (363.0 / 169.0) 13743	(6.29, 1.00) (0.00, N/A, -0.2)	93.3 768.0	0.2861 87.8 86.8	0.2067	N/A			
PFOA	(413.0 / 369.0) 92182 (413.0 / 169.0) 30666	(6.97, 1.00) (0.00, N/A, 0.6)	137.2 121.6	0.3327 95.4 94.8	0.2481	N/A			
PFNA	(463.0 / 419.0) 24793 (463.0 / 169.0) 7949	(7.58, 1.00) (0.00, N/A, -0.7)	133.2 201458.9	0.3206 137.0 161.2	0.0728	N/A			IR2,
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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (48)
 Acquired: 2023/03/18 - 11:37

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) 49921 (299.0 / 99.0) 30485	(5.47 , 1.00) (0.00 , N/A , 0.0)	104.7 82.4	0.6107 104.1 106.6	0.1121	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) 80570 (399.0 / 99.0) 21759	(7.12 , 1.00) (0.00 , N/A , 0.1)	91.3 167.5	0.2701 78.8 79.8	0.1033	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) 386468 (499.0 / 99.0) 80165	(8.26 , 0.99) (-0.08 , N/A , -4.7)	102.5 60.5	0.2074 95.8 90.6	0.2838	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) 74515 (427.0 / 81.0) 46841	(6.71 , 1.00) (0.00 , N/A , 0.1)	512.7 48.5	0.6286 91.0 81.3	0.4143	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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (48)
 Acquired: 2023/03/18 - 11:37

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 33920 (498.0 / 478.0) 527	(9.78, 1.00) (0.00, N/A, 0.7)	58.1 5.3	0.0155 69.9 61.4	0.0304	N/A			
NMeFOFA	(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			
NEtFOFA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (48)
 Acquired: 2023/03/18 - 11:37

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 58311	(3.57, N/A) (N/A, -0.03, N/A)	345.1	N/A	0.2722 [1.0000]	27.2% { 38.4% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 251289	(5.50, N/A) (N/A, -0.02, N/A)	2027.6	N/A	0.8001 [1.0000]	80.0% { 133.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 449829	(6.97, N/A) (N/A, 0.00, N/A)	2097.3	N/A	0.9740 [1.0000]	97.4% { 121.0% }			

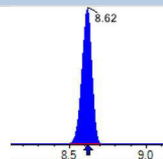
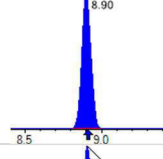
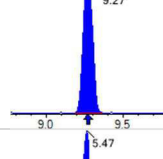
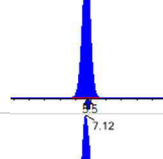
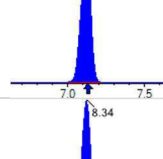
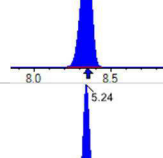
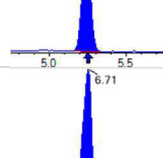
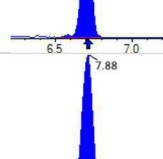
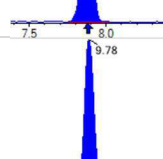
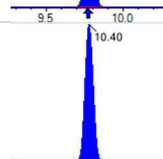
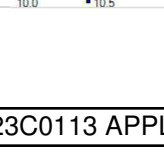


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-04
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (48)
 Acquired: 2023/03/18 - 11:37

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
13C5_PFNA_IIS	(468.0 / 423.0) 457833	(7.58, N/A) (N/A, 0.00, N/A)	3917.8	N/A	1.0971 [1.0000]	109.7% { 127.7% }			
13C2_PFDA_IIS	(515.0 / 470.1) 480350	(8.14, N/A) (N/A, 0.00, N/A)	1810.2	N/A	1.1960 [1.0000]	119.6% { 123.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 583418	(7.12, N/A) (N/A, 0.00, N/A)	1627.9	N/A	0.8593 [1.0000]	85.9% { 121.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1069780	(8.34, N/A) (N/A, 0.00, N/A)	1013.5	N/A	1.2467 [1.0000]	124.7% { 128.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 390609	(3.56, N/A) (N/A, -0.03, N/A)	4002.4	N/A	5.6288 [8.0000]	70.4% { 25.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 668029	(4.52, N/A) (N/A, -0.01, N/A)	2696.4	N/A	2.3013 [4.0000]	57.5% { 52.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 545160	(5.50, N/A) (N/A, -0.01, N/A)	3314.7	N/A	1.5565 [2.0000]	77.8% { 70.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 550728	(6.29, N/A) (N/A, 0.00, N/A)	1821.1	N/A	1.6506 [2.0000]	82.5% { 74.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 818660	(6.97, N/A) (N/A, 0.00, N/A)	3006.3	N/A	1.6752 [2.0000]	83.8% { 86.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 393338	(7.58, N/A) (N/A, 0.00, N/A)	1214.9	N/A	0.8086 [1.0000]	80.9% { 84.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 482961	(8.13, N/A) (N/A, 0.00, N/A)	2130.1	N/A	0.8354 [1.0000]	83.5% { 93.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 479998	(8.62, N/A) (N/A, 0.00, N/A)	1578.1	N/A	0.7447 [1.0000]	74.5% { 96.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 367143	(8.90, N/A) (N/A, 0.00, N/A)	1272.4	N/A	0.6516 [1.0000]	65.2% { 86.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 319551	(9.27, N/A) (N/A, 0.00, N/A)	842.9	N/A	0.5377 [1.0000]	53.8% { 79.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1379185	(5.47, N/A) (N/A, -0.01, N/A)	1430.9	N/A	1.4922 [2.0000]	74.6% { 80.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1040184	(7.12, N/A) (N/A, 0.00, N/A)	1433.0	N/A	1.7329 [2.0000]	86.6% { 90.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2414267	(8.34, N/A) (N/A, 0.00, N/A)	1514.8	N/A	1.6832 [2.0000]	84.2% { 92.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 445012	(5.24, N/A) (N/A, -0.01, N/A)	492.5	N/A	7.5904 [4.0000]	189.8% { 188.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 500884	(6.71, N/A) (N/A, 0.00, N/A)	393.1	N/A	6.5072 [4.0000]	162.7% { 166.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 722179	(7.88, N/A) (N/A, 0.00, N/A)	503.3	N/A	8.6603 [4.0000]	216.5% { 178.4% }			S2.
13C8_PFOsa_EIS	(506.0 / 78.0) 2684672	(9.78, N/A) (N/A, 0.00, N/A)	4006.5	N/A	1.0943 [2.0000]	54.7% { 76.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 427399	(10.40, N/A) (N/A, 0.01, N/A)	1676.1	N/A	0.6809 [2.0000]	34.0% { 54.3% }			

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 377966	(10.57, N/A) (N/A, 0.00, N/A)	2221.5	N/A	0.6615 [2.0000]	33.1% { 50.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 1164832	(8.25, N/A) (N/A, 0.00, N/A)	1559.1	N/A	4.7492 [4.0000]	118.7% { 126.1% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 1021190	(8.49, N/A) (N/A, 0.00, N/A)	4674.5	N/A	3.7151 [4.0000]	92.9% { 128.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1441673	(10.33, N/A) (N/A, 0.01, N/A)	1272.9	N/A	7.3808 [20.0000]	36.9% { 50.0% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2192666	(10.51, N/A) (N/A, 0.01, N/A)	1206.8	N/A	9.5109 [20.0000]	47.6% { 62.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1306973	(5.80, N/A) (N/A, -0.02, N/A)	2716.1	N/A	6.7571 [8.0000]	84.5% { 80.7% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW17S-WGN01LF-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	23C0113-04RE1	File ID:	S2023-03-17B (49)
Sampled:	03/10/23 11:10	Prepared:	03/15/23 10:17	Analyzed:	03/18/23 11:50
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	518.54 mL / 2 mL			Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082	Calibration:	2310010



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-04RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (49)
 Acquired: 2023/03/18 - 11:50

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 14498	(3.59, 1.00) (0.00, N/A, 0.0)	38.1	N/A 0.0 0.0	0.0975	N/A			
PFPeA	(263.0 / 219.0) 8590 (263.0 / 69.0) N/A	(4.52, 1.00) (-0.01, N/A, #Value!)	22.9 N/A	N/A 0.0 0.0	0.0364	N/A			
PFHxA	(313.0 / 269.0) 12166 (313.0 / 119.0) 3466	(5.50, 1.00) (0.01, N/A, -0.2)	27.6 233.1	0.2849 270.5 280.3	0.0376	N/A			IR2,
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-04RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (49)
 Acquired: 2023/03/18 - 11:50

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 7543 (299.0 / 99.0) 4283	(5.48 , 1.00) (0.00 , N/A , 0.5)	86.0 33.0	0.5678 96.8 99.1	0.0138	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

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



Chemist: HGH
Instrument: Saphira

Sample I.D.: 23C0113-04RE1@10
DF, IV: 1, 1.0µL

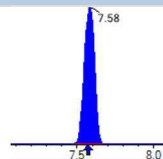
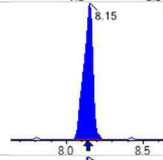
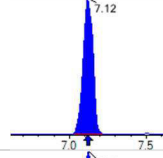
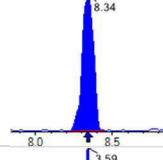
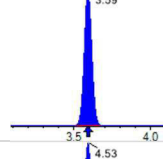
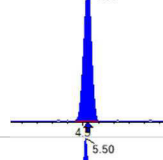
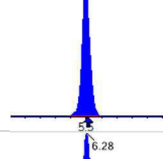
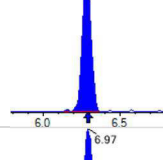
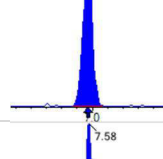
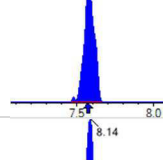
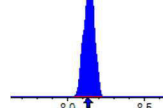
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Path: S2023-03-13B (49)

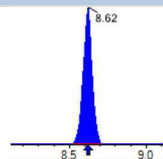
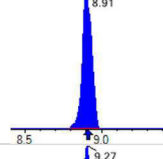
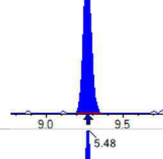
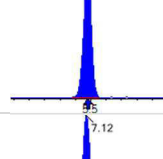
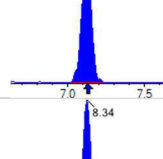
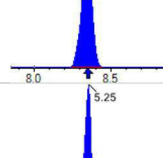
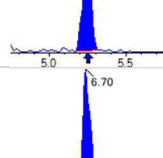
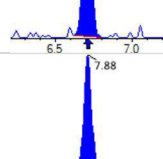
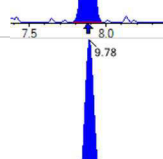
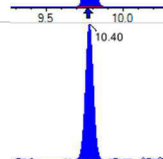
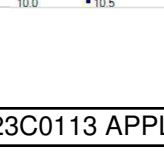
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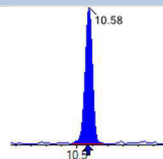
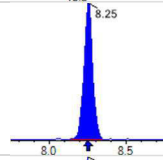
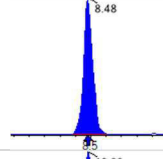
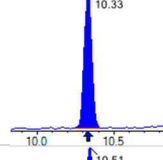
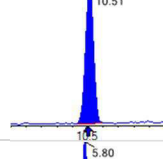
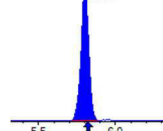
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Acquired: 2023/03/18 - 11:50

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 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) 18078	(3.59, N/A) (N/A, 0.00, N/A)	231.8	N/A	0.8440 [1.0000]	84.4% { 11.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 24603	(5.50, N/A) (N/A, -0.01, N/A)	2728.9	N/A	0.7833 [1.0000]	78.3% { 13.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 36435	(6.97, N/A) (N/A, -0.01, N/A)	2706.7	N/A	0.7890 [1.0000]	78.9% { 9.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 49827	(7.58, N/A) (N/A, 0.00, N/A)	132891.3	N/A	1.1940 [1.0000]	119.4% { 13.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 33673	(8.15, N/A) (N/A, 0.01, N/A)	2308.9	N/A	0.8384 [1.0000]	83.8% { 8.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 61264	(7.12, N/A) (N/A, 0.00, N/A)	15378.5	N/A	0.9024 [1.0000]	90.2% { 12.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 104970	(8.34, N/A) (N/A, 0.00, N/A)	347.6	N/A	1.2233 [1.0000]	122.3% { 12.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 144035	(3.59, N/A) (N/A, 0.00, N/A)	1975.6	N/A	0.6695 [0.8000]	83.7% { 9.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 107443	(4.53, N/A) (N/A, 0.00, N/A)	778.3	N/A	0.3780 [0.4000]	94.5% { 8.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 72763	(5.50, N/A) (N/A, -0.01, N/A)	26753.1	N/A	0.2122 [0.2000]	106.1% { 9.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 72655	(6.28, N/A) (N/A, -0.01, N/A)	3136.2	N/A	0.2224 [0.2000]	111.2% { 9.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 80951	(6.97, N/A) (N/A, 0.00, N/A)	658.5	N/A	0.2045 [0.2000]	102.3% { 8.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 31991	(7.58, N/A) (N/A, 0.00, N/A)	17638497.6	N/A	0.0604 [0.1000]	60.4% { 6.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 47531	(8.14, N/A) (N/A, 0.01, N/A)	1677.4	N/A	0.1173 [0.1000]	117.3% { 9.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 40555	(8.62, N/A) (N/A, 0.01, N/A)	584.6	N/A	0.0898 [0.1000]	89.8% {8.1%}			
13C2_PFDa_EIS	(615.0 / 570.0) 38313	(8.91, N/A) (N/A, 0.00, N/A)	1363.7	N/A	0.0970 [0.1000]	97.0% {9.1%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 30766	(9.27, N/A) (N/A, -0.01, N/A)	578.2	N/A	0.0739 [0.1000]	73.9% {7.7%}			
13C3_PFBs_EIS	(302.0 / 80.0) 169745	(5.48, N/A) (N/A, 0.00, N/A)	740.1	N/A	0.1749 [0.2000]	87.4% {9.9%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 102576	(7.12, N/A) (N/A, 0.00, N/A)	1143.4	N/A	0.1627 [0.2000]	81.4% {8.9%}			
13C8_PFOS_EIS	(507.0 / 80.0) 249690	(8.34, N/A) (N/A, 0.00, N/A)	525.7	N/A	0.1774 [0.2000]	88.7% {9.6%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 36478	(5.25, N/A) (N/A, 0.00, N/A)	154.7	N/A	0.5925 [0.4000]	148.1% {15.4%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 27069	(6.70, N/A) (N/A, -0.01, N/A)	81.5	N/A	0.3349 [0.4000]	83.7% {9.0%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 36111	(7.88, N/A) (N/A, 0.00, N/A)	137.0	N/A	0.4124 [0.4000]	103.1% {8.9%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 286572	(9.78, N/A) (N/A, 0.00, N/A)	1470.9	N/A	0.1190 [0.2000]	59.5% {8.1%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 48415	(10.40, N/A) (N/A, 0.01, N/A)	318.3	N/A	0.0786 [0.2000]	39.3% {6.1%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 43660	(10.58, N/A) (N/A, 0.01, N/A)	445.6	N/A	0.0779 [0.2000]	38.9% { 5.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 93887	(8.25, N/A) (N/A, 0.00, N/A)	604.0	N/A	0.3901 [0.4000]	97.5% { 10.2% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 78816	(8.48, N/A) (N/A, 0.00, N/A)	1833537.2	N/A	0.2922 [0.4000]	73.1% { 9.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 186439	(10.33, N/A) (N/A, 0.01, N/A)	283.7	N/A	0.9728 [2.0000]	48.6% { 6.5% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 227113	(10.51, N/A) (N/A, 0.01, N/A)	369.3	N/A	1.0040 [2.0000]	50.2% { 6.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 134793	(5.80, N/A) (N/A, -0.01, N/A)	1413.3	N/A	0.7118 [0.8000]	89.0% { 8.3% }			

FORM I

ANALYSIS DATA SHEET

AF-RHMW17S-WQEB01-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-05
		File ID:	S2023-03-17B (50)
Sampled:	03/10/23 14:45	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 12:02
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	558.46 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.72 U	1.4	0.72	0.19	
PFPEA	0.36 U	0.72	0.36	0.058	
PFHXA	0.18 U	0.36	0.18	0.049	
PFHPA	0.18 U	0.36	0.18	0.037	
PFOA	0.27 U	0.36	0.27	0.14	
PFNA	0.18 U	0.36	0.18	0.073	
PFDA	0.18 U	0.36	0.18	0.091	
PFUnA	0.27 U	0.36	0.27	0.14	
PFDOA	0.18 U	0.36	0.18	0.10	
PFTRDA	0.27 U	0.36	0.27	0.18	
PFTEDA	0.27 U	0.36	0.27	0.18	
PFBS	0.18 U	0.36	0.18	0.033	
PFPEs	0.18 U	0.36	0.18	0.056	
PFHXS	0.18 U	0.36	0.18	0.028	
PFHPS	0.18 U	0.36	0.18	0.046	
PFOS	0.19 J	0.36	0.18	0.057	
PFNS	0.18 U	0.36	0.18	0.11	
PFDS	0.27 U	0.36	0.27	0.14	
PFDOS	0.18 U	0.36	0.18	0.11	
4:2FTS	0.72 U	1.4	0.72	0.26	
6:2FTS	0.72 U	1.4	0.72	0.28	
8:2FTS	0.72 U	1.4	0.72	0.074	
PFOSA	0.18 U	0.36	0.18	0.093	
NMeFOSA	0.72 U	1.4	0.72	0.42	
NEtFOSA	0.72 U	1.4	0.72	0.37	
NMeFOSAA	0.18 U	0.36	0.18	0.095	
NEtFOSAA	0.18 U	0.36	0.18	0.10	
NMeFOSE	1.1 U	1.4	1.1	0.91	
NEtFOSE	1.1 U	1.4	1.1	0.94	
HFPO-DA	0.36 U	0.72	0.36	0.16	

FORM I

ANALYSIS DATA SHEET

AF-RHMW17S-WQEB01-2303W1

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0113-05
		File ID:	S2023-03-17B (50)
Sampled:	03/10/23 14:45	Prepared:	03/15/23 10:17
		Analyzed:	03/18/23 12:02
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	558.46 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0285	Sequence:	SC01082
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.36 U	0.72	0.36	0.11	
PFEESA	0.36 U	0.72	0.36	0.098	
PFMPA	0.36 U	0.72	0.36	0.048	
PFMBA	0.36 U	0.72	0.36	0.081	
NFDHA	0.36 U	0.72	0.36	0.27	
9CL-PF3ONS	0.36 U	0.72	0.36	0.19	
11CL-PF3OUDS	0.36 U	0.72	0.36	0.18	
3:3FTCA	0.72 U	1.4	0.72	0.51	
5:3FTCA	0.72 U	1.4	0.72	0.40	
7:3FTCA	0.72 U	1.4	0.72	0.50	



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (50)
 Acquired: 2023/03/18 - 12:02

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) 3011 (363.0 / 169.0) 1322	(6.31, 1.00) (0.02, N/A, 0.7)	23.7 115.9	0.4390 134.7 133.2	0.0099	N/A			
PFOA	(413.0 / 369.0) 6324 (413.0 / 169.0) 1716	(6.98, 1.00) (0.00, N/A, 0.4)	27.5 15.7	0.2713 77.8 77.3	0.0149	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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (50)
 Acquired: 2023/03/18 - 12:02

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) 82404 (499.0 / 99.0) 15337	(8.34, 1.00) (0.00, N/A, 0.4)	29.4 21.5	0.1861 86.0 81.3	0.0531	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) 9740 (427.0 / 81.0) 6906	(6.72, 1.00) (0.01, N/A, 0.1)	3123.2 154.1	0.7090 102.6 91.7	0.0520	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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (50)
 Acquired: 2023/03/18 - 12:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 17056 (498.0 / 478.0) 1356	(9.78 , 1.00) (0.00 , N/A , 0.8)	30.4 10.9	0.0795 357.7 314.3	0.0125	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

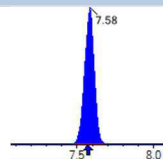
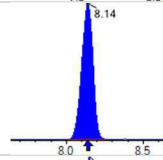
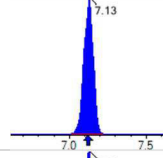
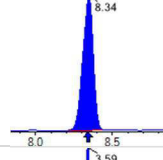
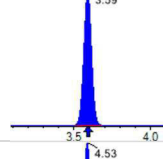
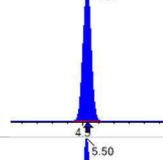
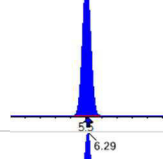
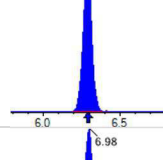
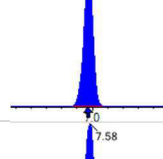
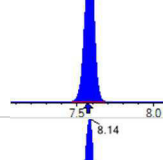
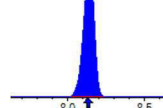


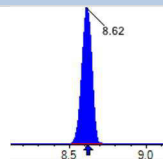
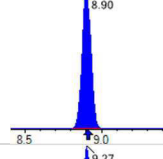
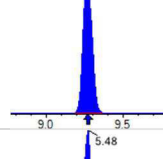
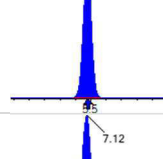
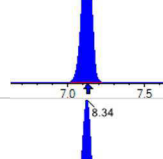
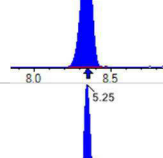
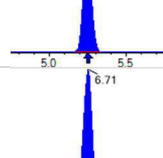
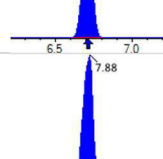
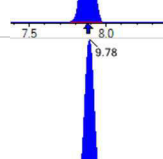
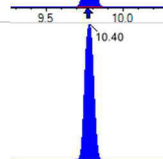
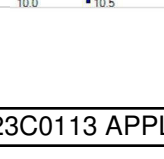
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (50)
 Acquired: 2023/03/18 - 12:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 227640	(3.59, N/A) (N/A, 0.00, N/A)	2179.2	N/A	1.0627 [1.0000]	106.3% { 149.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 286018	(5.51, N/A) (N/A, -0.01, N/A)	1946.6	N/A	0.9107 [1.0000]	91.1% { 152.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 477683	(6.97, N/A) (N/A, 0.00, N/A)	2359.6	N/A	1.0344 [1.0000]	103.4% { 128.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 470599	(7.58, N/A) (N/A, 0.00, N/A)	9563.9	N/A	1.1277 [1.0000]	112.8% { 131.2% }			
13C2_PFDA_IIS	(515.0 / 470.1) 500481	(8.14, N/A) (N/A, 0.00, N/A)	915.0	N/A	1.2462 [1.0000]	124.6% { 128.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 607067	(7.13, N/A) (N/A, 0.00, N/A)	4036.8	N/A	0.8942 [1.0000]	89.4% { 126.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1201849	(8.34, N/A) (N/A, 0.00, N/A)	669.5	N/A	1.4007 [1.0000]	140.1% { 144.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1802439	(3.59, N/A) (N/A, 0.00, N/A)	6063.9	N/A	6.6534 [8.0000]	83.2% { 115.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1208481	(4.53, N/A) (N/A, 0.00, N/A)	3955.9	N/A	3.6575 [4.0000]	91.4% { 94.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 808260	(5.50, N/A) (N/A, -0.01, N/A)	3144.8	N/A	2.0274 [2.0000]	101.4% { 104.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 717774	(6.29, N/A) (N/A, 0.00, N/A)	3230.9	N/A	1.8901 [2.0000]	94.5% { 96.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 934938	(6.98, N/A) (N/A, 0.00, N/A)	2853.4	N/A	1.8016 [2.0000]	90.1% { 98.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 464805	(7.58, N/A) (N/A, 0.00, N/A)	1740.5	N/A	0.9296 [1.0000]	93.0% { 99.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 606016	(8.14, N/A) (N/A, 0.00, N/A)	1438.0	N/A	1.0061 [1.0000]	100.6% { 117.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 544415	(8.62, N/A) (N/A, 0.00, N/A)	5369.9	N/A	0.8106 [1.0000]	81.1% { 109.0% }			
13C2_PFDa_EIS	(615.0 / 570.0) 458543	(8.90, N/A) (N/A, 0.00, N/A)	11920.0	N/A	0.7811 [1.0000]	78.1% { 108.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 411463	(9.27, N/A) (N/A, 0.00, N/A)	1663.8	N/A	0.6645 [1.0000]	66.5% { 102.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1743333	(5.48, N/A) (N/A, -0.01, N/A)	2224.2	N/A	1.8127 [2.0000]	90.6% { 101.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1137124	(7.12, N/A) (N/A, 0.00, N/A)	2417.8	N/A	1.8206 [2.0000]	91.0% { 98.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2753116	(8.34, N/A) (N/A, 0.00, N/A)	869.3	N/A	1.7085 [2.0000]	85.4% { 105.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 484214	(5.25, N/A) (N/A, 0.00, N/A)	3289.9	N/A	7.9373 [4.0000]	198.4% { 204.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 521330	(6.71, N/A) (N/A, 0.00, N/A)	1448.5	N/A	6.5089 [4.0000]	162.7% { 173.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 662700	(7.88, N/A) (N/A, 0.01, N/A)	1036.5	N/A	7.6374 [4.0000]	190.9% { 163.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3300944	(9.78, N/A) (N/A, 0.00, N/A)	3372.6	N/A	1.1976 [2.0000]	59.9% { 93.7% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 414463	(10.40, N/A) (N/A, 0.01, N/A)	1690.0	N/A	0.5877 [2.0000]	29.4% { 52.6% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 23C0113-05
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (50)
 Acquired: 2023/03/18 - 12:02

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 370798	(10.57 , N/A) (N/A , 0.00 , N/A)	2506.4	N/A	0.5777 [2.0000]	28.9% { 49.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 1238801	(8.25 , N/A) (N/A , 0.00 , N/A)	4074.4	N/A	4.4957 [4.0000]	112.4% { 134.1% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 850793	(8.49 , N/A) (N/A , 0.01 , N/A)	6390.5	N/A	2.7551 [4.0000]	68.9% { 106.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1486440	(10.33 , N/A) (N/A , 0.01 , N/A)	1283.0	N/A	6.7737 [20.0000]	33.9% { 51.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2100233	(10.51 , N/A) (N/A , 0.01 , N/A)	1413.4	N/A	8.1089 [20.0000]	40.5% { 59.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1610796	(5.80 , N/A) (N/A , -0.01 , N/A)	3424.9	N/A	7.3167 [8.0000]	91.5% { 99.5% }			

QUALITY CONTROL

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17-WGN01LF-2303W1 (23C0113-01) ng/L		Lab File ID: S2023-03-17B (42)		Analyzed: 03/18/23 10:19
13C4-PFBA	30.4	87.5	10 - 130	
13C5-PFPEA	15.2	97.4	35 - 150	
13C5-PFHXA	7.60	98.3	55 - 150	
13C4-PFHPA	7.60	114	55 - 150	
13C8-PFOA	7.60	82.1	60 - 140	
13C9-PFNA	3.80	92.3	55 - 140	
13C6-PFDA	3.80	83.9	50 - 140	
13C7-PFUnA	3.80	81.7	30 - 140	
13C2-PFDOA	3.80	71.1	10 - 150	
13C2-PFTEDA	3.80	55.4	10 - 130	
13C3-PFBS	7.60	76.1	55 - 150	
13C3-PFHXS	7.60	92.3	55 - 150	
13C8-PFOS	7.60	86.1	45 - 140	
13C2-4:2FTS	15.2	195	60 - 200	
13C2-6:2FTS	15.2	135	60 - 200	
13C2-8:2FTS	15.2	187	50 - 200	
13C8-PFOSA	7.60	55.6	30 - 130	
D3-NMEFOSA	7.60	30.1	15 - 130	
D5-NETFOSA	7.60	30.9	10 - 130	
D3-NMEFOSAA	15.2	134	45 - 200	
D5-NETFOSAA	15.2	122	10 - 200	
D7-NMEFOSE	76.0	36.3	10 - 150	
D9-NETFOSSE	76.0	46.8	10 - 150	
13C3-HFPO-DA	30.4	91.8	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17D-WGN01LF-2303W1 (23C0113-02) ng/L		Lab File ID: S2023-03-17B (44)		Analyzed: 03/18/23 10:45
13C4-PFBA	31.2	85.2	10 - 130	
13C5-PFPEA	15.6	65.2	35 - 150	
13C5-PFHXA	7.79	84.5	55 - 150	
13C4-PFHPA	7.79	86.2	55 - 150	
13C8-PFOA	7.79	86.3	60 - 140	
13C9-PFNA	3.90	83.9	55 - 140	
13C6-PFDA	3.90	90.8	50 - 140	
13C7-PFUnA	3.90	125	30 - 140	
13C2-PFDOA	3.90	115	10 - 150	
13C2-PFTEDA	3.90	98.6	10 - 130	
13C3-PFBS	7.79	88.3	55 - 150	
13C3-PFHXS	7.79	90.8	55 - 150	
13C8-PFOS	7.79	82.3	45 - 140	
13C2-4:2FTS	15.6	242	60 - 200	*
13C2-6:2FTS	15.6	210	60 - 200	*
13C2-8:2FTS	15.6	209	50 - 200	*
13C8-PFOSA	7.79	60.6	30 - 130	
D3-NMEFOSA	7.79	34.4	15 - 130	
D5-NETFOSA	7.79	32.4	10 - 130	
D3-NMEFOSAA	15.6	59.7	45 - 200	
D5-NETFOSAA	15.6	95.6	10 - 200	
D7-NMEFOSE	77.9	33.1	10 - 150	
D9-NETFOSSE	77.9	43.2	10 - 150	
13C3-HFPO-DA	31.2	89.3	25 - 160	
AF-RHMW17D-WGN01LF-2303W1 (23C0113-02RE1) ng/		Lab File ID: S2023-03-17B (45)		Analyzed: 03/18/23 10:58
13C2-4:2FTS	15.6	229	60 - 200	*
13C2-6:2FTS	15.6	105	60 - 200	
13C2-8:2FTS	15.6	194	50 - 200	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17D-WQFB01-2303W1 (23C0113-03) . ng/L		Lab File ID: S2023-03-17B (46)		Analyzed: 03/18/23 11:11
13C4-PFBA	30.1	81.3	10 - 130	
13C5-PFPEA	15.0	88.0	35 - 150	
13C5-PFHXA	7.52	88.2	55 - 150	
13C4-PFHPA	7.52	91.3	55 - 150	
13C8-PFOA	7.52	85.9	60 - 140	
13C9-PFNA	3.76	92.7	55 - 140	
13C6-PFDA	3.76	88.8	50 - 140	
13C7-PFUnA	3.76	80.6	30 - 140	
13C2-PFDOA	3.76	83.8	10 - 150	
13C2-PFTEDA	3.76	66.5	10 - 130	
13C3-PFBS	7.52	87.0	55 - 150	
13C3-PFHXS	7.52	86.9	55 - 150	
13C8-PFOS	7.52	81.9	45 - 140	
13C2-4:2FTS	15.0	176	60 - 200	
13C2-6:2FTS	15.0	104	60 - 200	
13C2-8:2FTS	15.0	98.0	50 - 200	
13C8-PFOSA	7.52	59.0	30 - 130	
D3-NMEFOSA	7.52	25.3	15 - 130	
D5-NETFOSA	7.52	26.6	10 - 130	
D3-NMEFOSAA	15.0	87.4	45 - 200	
D5-NETFOSAA	15.0	66.9	10 - 200	
D7-NMEFOSE	75.2	35.3	10 - 150	
D9-NETFOSSE	75.2	44.5	10 - 150	
13C3-HFPO-DA	30.1	88.7	25 - 160	
AF-RHMW17D-WQFB01-2303W1 (23C0113-03RE1) . ng/L		Lab File ID: S2023-03-17B (47)		Analyzed: 03/18/23 11:24
13C2-8:2FTS	15.0	114	50 - 200	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17S-WGN01LF-2303W1 (23C0113-04) ng/L		Lab File ID: S2023-03-17B (48)		Analyzed: 03/18/23 11:37
13C4-PFBA	30.9	70.4	10 - 130	
13C5-PFPEA	15.4	57.5	35 - 150	
13C5-PFHXA	7.71	77.8	55 - 150	
13C4-PFHPA	7.71	82.5	55 - 150	
13C8-PFOA	7.71	83.8	60 - 140	
13C9-PFNA	3.86	80.9	55 - 140	
13C6-PFDA	3.86	83.5	50 - 140	
13C7-PFUnA	3.86	74.5	30 - 140	
13C2-PFDOA	3.86	65.2	10 - 150	
13C2-PFTEDA	3.86	53.8	10 - 130	
13C3-PFBS	7.71	74.6	55 - 150	
13C3-PFHXS	7.71	86.6	55 - 150	
13C8-PFOS	7.71	84.2	45 - 140	
13C2-4:2FTS	15.4	190	60 - 200	
13C2-6:2FTS	15.4	163	60 - 200	
13C2-8:2FTS	15.4	217	50 - 200	*
13C8-PFOSA	7.71	54.7	30 - 130	
D3-NMEFOSA	7.71	34.0	15 - 130	
D5-NETFOSA	7.71	33.1	10 - 130	
D3-NMEFOSAA	15.4	119	45 - 200	
D5-NETFOSAA	15.4	92.9	10 - 200	
D7-NMEFOSE	77.1	36.9	10 - 150	
D9-NETFOSSE	77.1	47.6	10 - 150	
13C3-HFPO-DA	30.9	84.5	25 - 160	
AF-RHMW17S-WGN01LF-2303W1 (23C0113-04RE1) ng/l		Lab File ID: S2023-03-17B (49)		Analyzed: 03/18/23 11:50
13C2-8:2FTS	15.4	103	50 - 200	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW17S-WQEB01-2303W1 (23C0113-05) ng/L		Lab File ID: S2023-03-17B (50)		Analyzed: 03/18/23 12:02
13C4-PFBA	28.7	83.2	10 - 130	
13C5-PFPEA	14.3	91.4	35 - 150	
13C5-PFHXA	7.16	101	55 - 150	
13C4-PFHFA	7.16	94.5	55 - 150	
13C8-PFOA	7.16	90.1	60 - 140	
13C9-PFNA	3.58	93.0	55 - 140	
13C6-PFDA	3.58	101	50 - 140	
13C7-PFUnA	3.58	81.1	30 - 140	
13C2-PFDOA	3.58	78.1	10 - 150	
13C2-PFTEDA	3.58	66.5	10 - 130	
13C3-PFBS	7.16	90.6	55 - 150	
13C3-PFHXS	7.16	91.0	55 - 150	
13C8-PFOS	7.16	85.4	45 - 140	
13C2-4:2FTS	14.3	198	60 - 200	
13C2-6:2FTS	14.3	163	60 - 200	
13C2-8:2FTS	14.3	191	50 - 200	
13C8-PFOSA	7.16	59.9	30 - 130	
D3-NMEFOSA	7.16	29.4	15 - 130	
D5-NETFOSA	7.16	28.9	10 - 130	
D3-NMEFOSAA	14.3	112	45 - 200	
D5-NETFOSAA	14.3	68.9	10 - 200	
D7-NMEFOSE	71.6	33.9	10 - 150	
D9-NETFOSSE	71.6	40.5	10 - 150	
13C3-HFPO-DA	28.7	91.5	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
Blank (BCC0285-BLK1) . ng/L	Lab File ID: S2023-03-17B (7)			Analyzed: 03/18/23 02:48
13C4-PFBA	32.0	87.1	10 - 130	
13C5-PFPEA	16.0	92.3	35 - 150	
13C5-PFHXA	8.00	102	55 - 150	
13C4-PFHPA	8.00	118	55 - 150	
13C8-PFOA	8.00	91.3	60 - 140	
13C9-PFNA	4.00	89.0	55 - 140	
13C6-PFDA	4.00	87.6	50 - 140	
13C7-PFUnA	4.00	76.5	30 - 140	
13C2-PFDOA	4.00	92.8	10 - 150	
13C2-PFTEDA	4.00	76.2	10 - 130	
13C3-PFBS	8.00	83.7	55 - 150	
13C3-PFHXS	8.00	87.0	55 - 150	
13C8-PFOS	8.00	90.5	45 - 140	
13C2-4:2FTS	16.0	194	60 - 200	
13C2-6:2FTS	16.0	100	60 - 200	
13C2-8:2FTS	16.0	138	50 - 200	
13C8-PFOSA	8.00	69.7	30 - 130	
D3-NMEFOSA	8.00	30.9	15 - 130	
D5-NETFOSA	8.00	31.6	10 - 130	
D3-NMEFOSAA	16.0	96.4	45 - 200	
D5-NETFOSAA	16.0	75.5	10 - 200	
D7-NMEFOSE	80.0	41.8	10 - 150	
D9-NETFOSE	80.0	53.1	10 - 150	
13C3-HFPO-DA	32.0	94.4	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (BCC0285-BS1) . ng/L				
	Lab File ID: S2023-03-17B (8)			Analyzed: 03/18/23 03:01
13C4-PFBA	32.0	84.7	10 - 130	
13C5-PFPEA	16.0	118	35 - 150	
13C5-PFHXA	8.00	124	55 - 150	
13C4-PFHPA	8.00	136	55 - 150	
13C8-PFOA	8.00	85.4	60 - 140	
13C9-PFNA	4.00	94.0	55 - 140	
13C6-PFDA	4.00	94.3	50 - 140	
13C7-PFUnA	4.00	88.1	30 - 140	
13C2-PFDOA	4.00	92.5	10 - 150	
13C2-PFTEDA	4.00	78.2	10 - 130	
13C3-PFBS	8.00	87.1	55 - 150	
13C3-PFHXS	8.00	95.7	55 - 150	
13C8-PFOS	8.00	87.5	45 - 140	
13C2-4:2FTS	16.0	216	60 - 200	*
13C2-6:2FTS	16.0	97.9	60 - 200	
13C2-8:2FTS	16.0	121	50 - 200	
13C8-PFOSA	8.00	61.2	30 - 130	
D3-NMEFOSA	8.00	37.4	15 - 130	
D5-NETFOSA	8.00	37.6	10 - 130	
D3-NMEFOSAA	16.0	98.0	45 - 200	
D5-NETFOSAA	16.0	72.0	10 - 200	
D7-NMEFOSE	80.0	41.1	10 - 150	
D9-NETFOSSE	80.0	52.0	10 - 150	
13C3-HFPO-DA	32.0	119	25 - 160	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
MRL Check (BCC0285-MRL1) . ng/L	Lab File ID: S2023-03-17B (9)			Analyzed: 03/18/23 03:14
13C4-PFBA	32.0	86.8	10 - 130	
13C5-PFPEA	16.0	111	35 - 150	
13C5-PFHXA	8.00	120	55 - 150	
13C4-PFHFA	8.00	131	55 - 150	
13C8-PFOA	8.00	91.4	60 - 140	
13C9-PFNA	4.00	84.5	55 - 140	
13C6-PFDA	4.00	88.3	50 - 140	
13C7-PFUnA	4.00	82.0	30 - 140	
13C2-PFDOA	4.00	80.7	10 - 150	
13C2-PFTEDA	4.00	70.9	10 - 130	
13C3-PFBS	8.00	80.9	55 - 150	
13C3-PFHXS	8.00	88.7	55 - 150	
13C8-PFOS	8.00	85.7	45 - 140	
13C2-4:2FTS	16.0	206	60 - 200	*
13C2-6:2FTS	16.0	103	60 - 200	
13C2-8:2FTS	16.0	109	50 - 200	
13C8-PFOSA	8.00	60.9	30 - 130	
D3-NMEFOSA	8.00	33.4	15 - 130	
D5-NETFOSA	8.00	35.0	10 - 130	
D3-NMEFOSAA	16.0	86.4	45 - 200	
D5-NETFOSAA	16.0	63.9	10 - 200	
D7-NMEFOSE	80.0	41.2	10 - 150	
D9-NETFOSSE	80.0	52.8	10 - 150	
13C3-HFPO-DA	32.0	114	25 - 160	

METHOD BLANK SUMMARY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Blank ID:	BCC0285-BLK1	Batch:	BCC0285
		Prepared:	03/15/2023 10:17

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	BCC0285-BS1	S2023-03-17B (8)	03:01
MRL Check	BCC0285-MRL1	S2023-03-17B (9)	03:14
AF-RHMW17-WGN01LF-2303W1	23C0113-01	S2023-03-17B (42)	10:19
AF-RHMW17D-WGN01LF-2303W1	23C0113-02	S2023-03-17B (44)	10:45
DF 10	23C0113-02RE1	S2023-03-17B (45)	10:58
AF-RHMW17D-WQFB01LF-2303W1	23C0113-03	S2023-03-17B (46)	11:11
DF 10	23C0113-03RE1	S2023-03-17B (47)	11:24
AF-RHMW17S-WGN01LF-2303W1	23C0113-04	S2023-03-17B (48)	11:37
DF 10	23C0113-04RE1	S2023-03-17B (49)	11:50
AF-RHMW17S-WQEB01LF-2303W1	23C0113-05	S2023-03-17B (50)	12:02

ANALYSIS DATA SHEET

Blank

Laboratory: APPL, LLC Work Order: 23C0113
 Client: AECOM Project: Red Hill AFFF Assessment Sampling
 Matrix: Water Laboratory ID: BCC0285-BLK1 File ID: S2023-03-17B (7)
 Sampled: Prepared: 03/15/23 10:17 Analyzed: 03/18/23 02:48
 Solids: Preparation: EPA 1633 Dilution: 1
 Batch: BCC0285 Sequence: SC01082 Calibration: 2310010 Instrument: Saphira
 Column: 1

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.30 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	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0285-BLK1
Sampled:		File ID:	S2023-03-17B (7)
Solids:		Prepared:	03/15/23 10:17
Batch:	BCC0285	Analyzed:	03/18/23 02:48
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01082

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: 23C0113

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: EPA 1633

Batch: BCC0285

Laboratory ID: BCC0285-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
PFBA	16.0	17.4	109	58 - 148
PFPEA	8.00	8.77	110	54 - 152
PFHXA	4.00	4.03	101	55 - 152
PFHPA	4.00	4.12	103	54 - 154
PFOA	4.00	4.49	112	52 - 161
PFNA	4.00	3.97	99.2	59 - 149
PFDA	4.00	4.12	103	52 - 147
PFUnA	4.00	4.29	107	48 - 159
PFDOA	4.00	4.19	105	64 - 142
PFTRDA	4.00	4.32	108	49 - 148
PFTEDA	4.00	4.10	102	47 - 161
PFBS	3.54	3.91	110	62 - 144
PFPEs	3.76	4.91	131	59 - 151
PFHXS	3.66	3.52	96.1	57 - 146
PFHPS	3.82	3.13	82.1	55 - 152
PFOS	3.72	3.56	95.6	58 - 149
PFNS	3.84	3.91	102	52 - 148
PFDS	3.86	3.14	81.4	51 - 147
PFDOS	3.88	3.11	80.2	36 - 145
4:2FTS	15.0	16.1	108	67 - 146
6:2FTS	15.2	16.8	111	61 - 151
8:2FTS	15.4	16.5	108	63 - 152
PFOSA	4.00	4.60	115	61 - 148
NMeFOSA	16.0	16.6	104	63 - 145
NEtFOSA	16.0	16.3	102	65 - 139
NMeFOSAA	4.00	3.26	81.6	58 - 144
NEtFOSAA	4.00	4.43	111	59 - 146
NMeFOSE	16.0	16.5	103	71 - 136
NEtFOSE	16.0	16.0	100	69 - 137
HFPO-DA	8.00	9.17	115	63 - 144
ADONA	7.56	8.44	112	68 - 146
PFEESA	7.12	8.10	114	56 - 151
PFMPA	8.00	8.61	108	51 - 145
PFMBA	8.00	7.58	94.7	55 - 148

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0113

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: EPA 1633

Batch: BCC0285

Laboratory ID: BCC0285-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
NFDHA	8.00	7.65	95.6	48 - 161
9CL-PF3ONS	7.48	9.91	132	56 - 156
11CL-PF3OUDS	7.56	9.65	128	46 - 156
3:3FTCA	16.0	17.1	107	62 - 129
5:3FTCA	16.0	14.0	87.2	63 - 134
7:3FTCA	16.0	17.7	111	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 = 0.41290 x (std. dev. = 0.03312) (weighting: None)	%RSE=8.0
PFPeA	(263.0 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.43980 x (std. dev. = 0.03113) (weighting: None)	%RSE=7.1
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.44449 x (std. dev. = 0.04009) (weighting: None)	%RSE=9.0
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.42187 x (std. dev. = 0.02711) (weighting: None)	%RSE=6.4
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.45383 x (std. dev. = 0.03832) (weighting: None)	%RSE=8.4
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.86535 x (std. dev. = 0.07412) (weighting: None)	%RSE=8.6
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 0.94333 x (std. dev. = 0.07988) (weighting: None)	%RSE=8.5
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.79869 x (std. dev. = 0.05781) (weighting: None)	%RSE=7.2
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.84124 x (std. dev. = 0.10124) (weighting: None)	%RSE=12.0
PFTrDA	(663.0 / 619.0)	13C2_PFTDoA_EIS	1.0000	1.0000	y = 0.80675 x (std. dev. = 0.11790) (weighting: None)	%RSE=14.6
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.85378 x (std. dev. = 0.07141) (weighting: None)	%RSE=8.4
PFBS	(299.0 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.28556 x (std. dev. = 0.02284) (weighting: None)	%RSE=8.0
PFPeS	(349.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9384	y = 0.77376 x (std. dev. = 0.07201) (weighting: None)	%RSE=9.3
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.68334 x (std. dev. = 0.05740) (weighting: None)	%RSE=8.4
PFHpS	(449.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9514	y = 0.43179 x (std. dev. = 0.04361) (weighting: None)	%RSE=10.1
PFOS	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9275	y = 0.52318 x (std. dev. = 0.04717) (weighting: None)	%RSE=9.0
PFNS	(549.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9599	y = 0.51347 x (std. dev. = 0.06280) (weighting: None)	%RSE=12.2
PFDS	(599.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9631	y = 0.59519 x (std. dev. = 0.06386) (weighting: None)	%RSE=10.7
PFDoS	(699.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9696	y = 0.47895 x (std. dev. = 0.05511) (weighting: None)	%RSE=11.5
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 2.72578 x (std. dev. = 0.19026) (weighting: None)	%RSE=7.0
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.36327 x (std. dev. = 0.10794) (weighting: None)	%RSE=7.9
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.28278 x (std. dev. = 0.12090) (weighting: None)	%RSE=9.4
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.41497 x (std. dev. = 0.05066) (weighting: None)	%RSE=12.2
NMeFOSA	(512.0 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.64452 x (std. dev. = 0.23713) (weighting: None)	%RSE=14.4
NEtFOSA	(526.0 / 219.0)	D5_NEtFOSA_EIS	4.0000	1.0000	y = 1.90390 x (std. dev. = 0.15461) (weighting: None)	%RSE=8.1
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.25748 x (std. dev. = 0.01412) (weighting: None)	%RSE=5.5
NEtFOSAA	(584.0 / 419.0)	D5_EtFOSAA_EIS	1.0000	1.0000	y = 0.20946 x (std. dev. = 0.01764) (weighting: None)	%RSE=8.4
NMeFOSE	(616.0 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.19808 x (std. dev. = 0.01304) (weighting: None)	%RSE=6.6
NEtFOSE	(630.0 / 59.0)	D9_NEtFOSE_EIS	4.0000	1.0000	y = 0.19331 x (std. dev. = 0.01460) (weighting: None)	%RSE=7.6
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.19874 x (std. dev. = 0.01010) (weighting: None)	%RSE=5.1
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.73656 x (std. dev. = 0.09823) (weighting: None)	%RSE=13.3
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = 1.96553 x (std. dev. = 0.22111) (weighting: None)	%RSE=11.2
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = -0.01035 x^2 + 1.24228 x + -0.02804 (r = 0.99901) (weighting: 1 / x)	%RSE=14.5
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.02648 x (std. dev. = 0.00205) (weighting: None)	%RSE=7.7
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.30351 x (std. dev. = 0.02590) (weighting: None)	%RSE=8.5
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.50940 x (std. dev. = 0.06257) (weighting: None)	%RSE=12.3
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.98953 x (std. dev. = 0.10665) (weighting: None)	%RSE=10.8
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.11321 x (std. dev. = 0.00840) (weighting: None)	%RSE=7.4
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.36159 x (std. dev. = 0.02800) (weighting: None)	%RSE=7.7
NFDHA	(295.0 / 201.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.50402 x (std. dev. = 0.05770) (weighting: None)	%RSE=11.4
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 214202.8301 x	%RSD=16.9
13C2_PFHxA_IIS	(315.0 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 314071.0945 x	%RSD=4.3
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 461817.5022 x	%RSD=8.1
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 417317.5271 x	%RSD=6.9

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C2_PFDA_IIS	(515.0 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 401616.3949 x	%RSD=5.4
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 678923.6439 x	%RSD=8.1
13C4_PFOS_IIS	(503.0 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 858061.4123 x	%RSD=10.8
13C4_PFBA_EIS	(217.0 / 172.0)	13C3_PFBA_IIS	8.0000	1.0000	y = 9.5205 x	%RSD=6.8
13C5_PFPeA_EIS	(268.0 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 4.6208 x	%RSD=8.8
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.7877 x	%RSD=9.4
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.6555 x	%RSD=7.7
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 2.1728 x	%RSD=9.4
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 1.0625 x	%RSD=10.5
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.2035 x	%RSD=8.4
13C7_PFUxA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3419 x	%RSD=10.9
13C2_PFDxA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1730 x	%RSD=9.7
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.2371 x	%RSD=7.4
13C3_PFBS_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 3.1685 x	%RSD=13.5
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.0577 x	%RSD=8.9
13C8_PFOS_EIS	(507.0 / 80.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 2.6815 x	%RSD=8.0
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.4020 x	%RSD=7.8
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5277 x	%RSD=10.3
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5717 x	%RSD=11.5
13C8_PFOA_EIS	(506.0 / 78.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 4.5866 x	%RSD=11.2
D3_NMeFOSA_EIS	(515.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 1.1735 x	%RSD=16.0
D5_NEtFOSA_EIS	(531.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 1.0682 x	%RSD=14.3
D3_MeFOSAA_EIS	(573.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 0.9171 x	%RSD=10.1
D5_EtFOSAA_EIS	(589.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 1.0278 x	%RSD=14.4
D7_NMeFOSE_EIS	(623.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 3.6517 x	%RSD=11.2
D9_NEtFOSE_EIS	(639.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 4.3101 x	%RSD=16.2
13C3_HFPODA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 6.1578 x	%RSD=7.7

x=Concentration Analyte

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

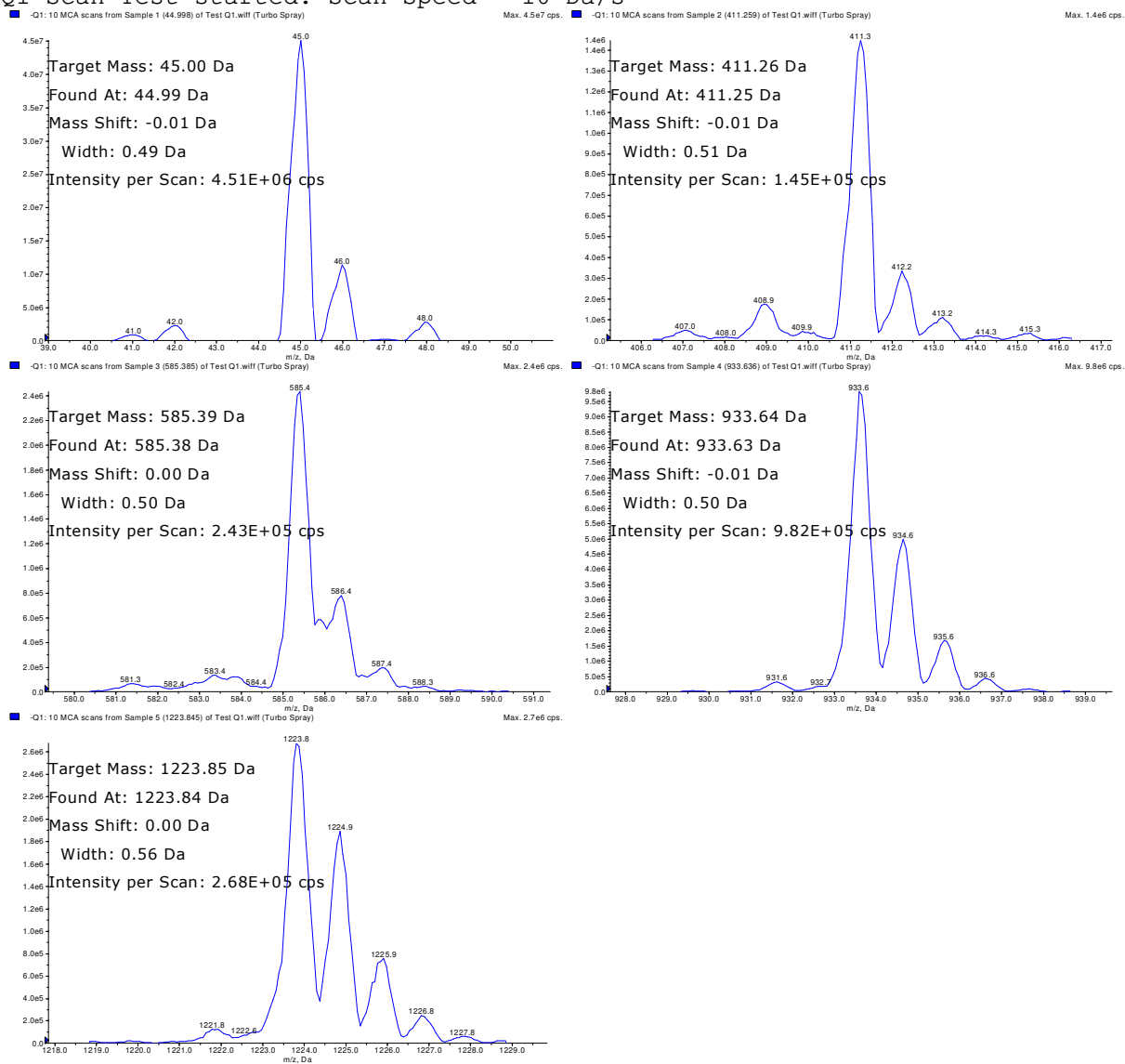
$$\text{Acid Factor} = \frac{\text{Molecular weight Acid}}{\text{Molecular weight Salt}}$$

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

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

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

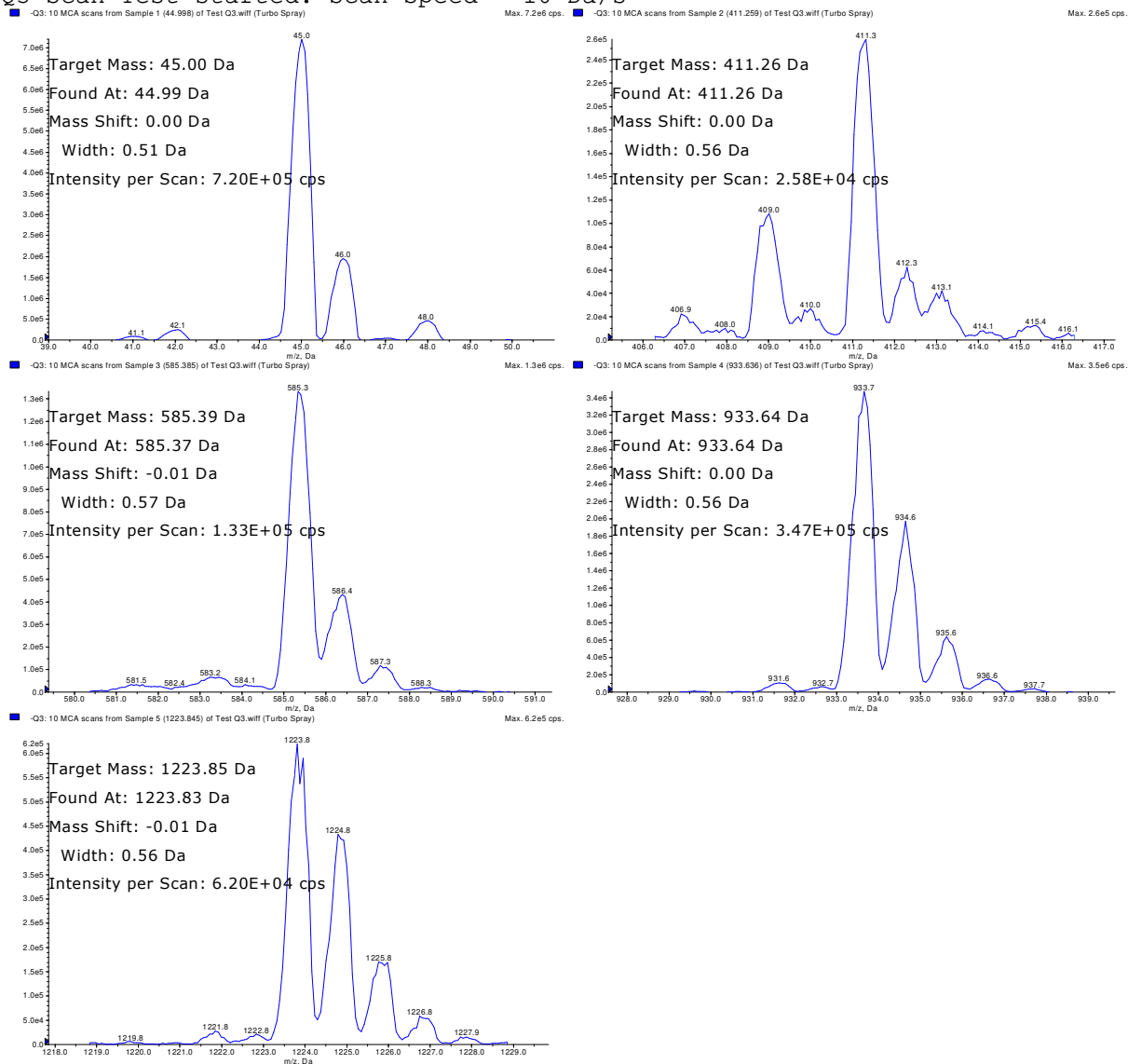
Q1 Scan Test started. Scan Speed = 10 Da/s



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

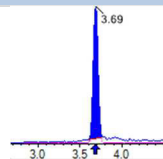
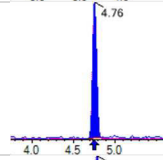
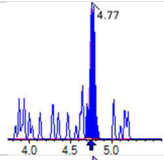
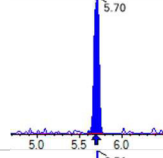
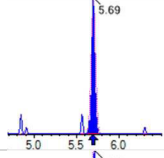
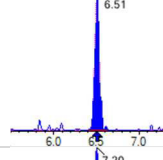
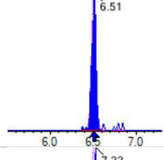
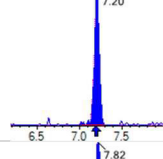
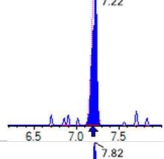
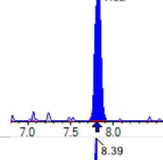
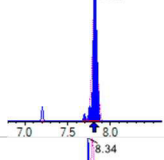
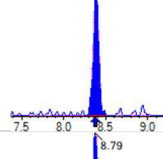
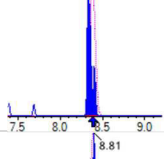
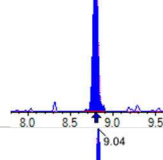
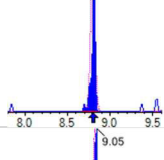
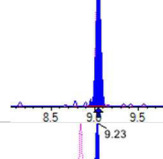
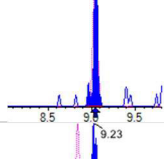
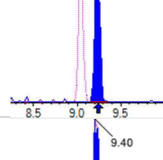
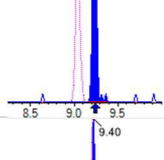
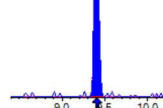
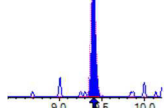
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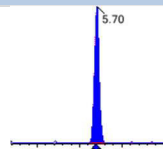
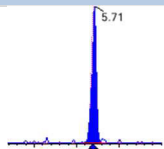
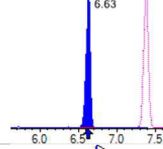
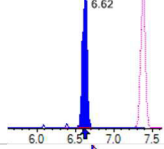
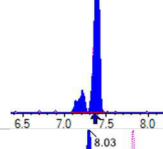
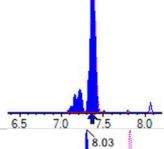
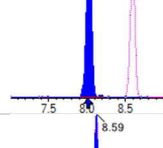
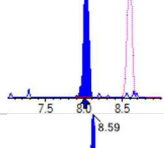
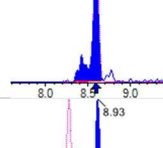
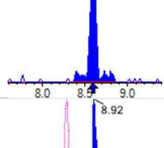
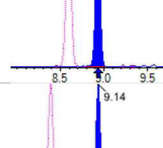
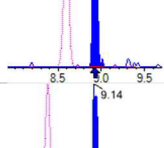
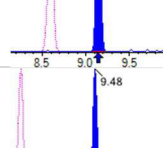
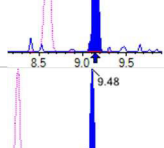
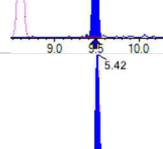
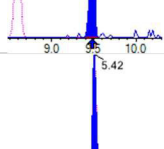
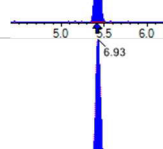
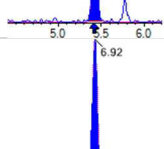
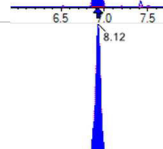
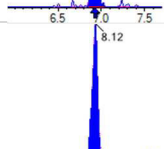
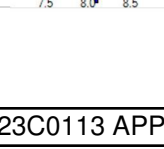
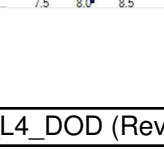


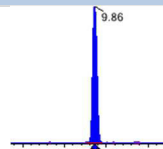
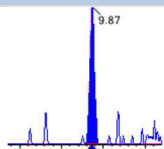
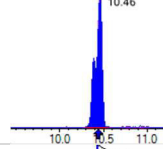
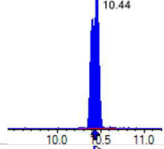
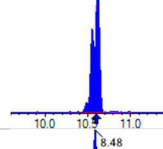
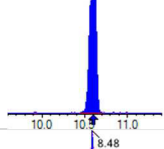
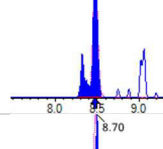
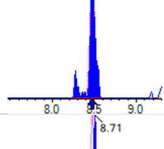
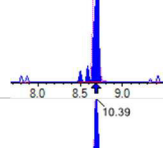
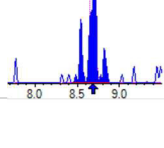
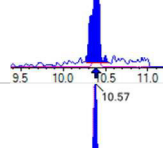
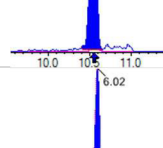
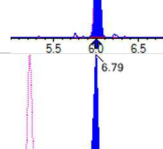
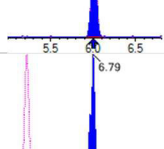
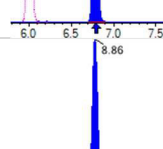
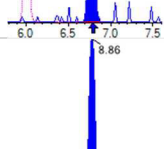
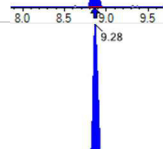
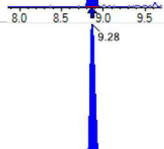
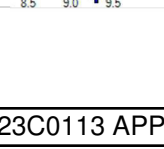
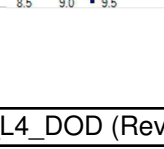
Target Mass	Found At	Delta	Width	Intensity	0.4<Width<0.6
45.00	44.99	0.00	0.51	7.20E+05	PASS
411.26	411.26	0.00	0.56	2.58E+04	PASS
585.39	585.37	-0.01	0.57	1.33E+05	PASS
933.64	933.64	0.00	0.56	3.47E+05	PASS
1223.85	1223.83	-0.01	0.56	6.20E+04	PASS

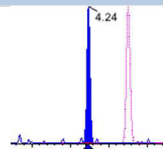
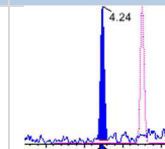
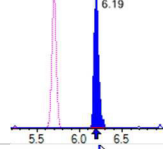
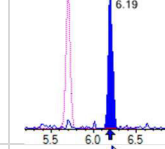
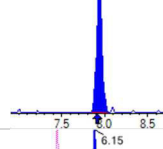
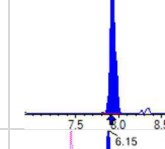
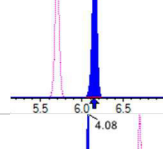
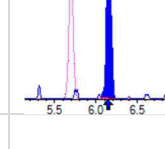
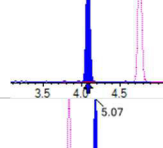
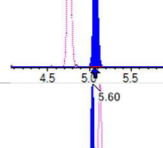
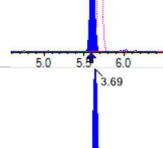
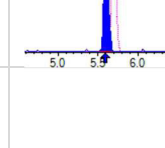
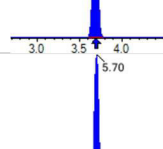
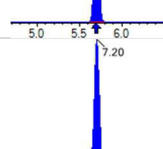
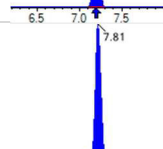

EPA 1633

Initial Calibration: SC00916

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 100623	(3.69, 1.00) (0.00, N/A, 0.0)	143.3	N/A 0.0 0.0	0.4338 [0.4000]	108.4%			
PFPeA	(263.0 / 219.0) 72126 (263.0 / 69.0) 1407	(4.76, 1.00) (0.00, N/A, -0.5)	407.2 23.0	0.0195 172.3 172.3	0.2163 [0.2000]	108.2%			
PFHxA	(313.0 / 269.0) 45876 (313.0 / 119.0) 4088	(5.70, 1.00) (0.00, N/A, 0.3)	460.5 4146.1	0.0891 84.6 84.6	0.1133 [0.1000]	113.3%			
PFHpA	(363.0 / 319.0) 37757 (363.0 / 169.0) 15046	(6.51, 1.00) (0.00, N/A, -0.3)	723.6 612.4	0.3985 122.3 122.3	0.1066 [0.1000]	106.6%			
PFOA	(413.0 / 369.0) 51733 (413.0 / 169.0) 18740	(7.20, 1.00) (0.00, N/A, -0.8)	1290.4 539.6	0.3622 103.9 103.9	0.1122 [0.1000]	112.2%			
PFNA	(463.0 / 419.0) 45098 (463.0 / 169.0) 7902	(7.82, 1.00) (0.00, N/A, 0.0)	5810.4 465.2	0.1752 74.8 74.8	0.1074 [0.1000]	107.4%			
PFDA	(513.0 / 469.0) 51659 (513.0 / 169.0) 5188	(8.39, 1.00) (0.00, N/A, 2.9)	113.3 28330.7	0.1004 94.4 94.4	0.1170 [0.1000]	117.0%			
PFUnA	(563.0 / 519.0) 49608 (563.0 / 169.0) 6200	(8.79, 1.00) (0.00, N/A, -1.1)	195.1 715.1	0.1250 104.2 104.2	0.1069 [0.1000]	106.9%			
PFDoA	(613.0 / 569.0) 48455 (613.0 / 169.0) 4914	(9.04, 1.00) (0.00, N/A, -0.4)	233.5 92.5	0.1014 62.3 62.3	0.1182 [0.1000]	118.2%			
PFTTrDA	(663.0 / 619.0) 47162 (663.0 / 169.0) 9170	(9.23, 1.02) (N/A, 0.00, -0.1)	427.7 871.5	0.1944 79.7 79.7	0.1199 [0.1000]	119.9%			
PFTeDA	(713.0 / 669.0) 47580 (713.0 / 169.0) 9130	(9.40, 1.00) (0.00, N/A, -0.2)	148.8 153.6	0.1919 100.4 100.4	0.1125 [0.1000]	112.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 66587 (299.0 / 99.0) 45749	(5.70, 1.00) (0.00, N/A, -0.4)	1202.9 307.4	0.6871 117.1 117.1	0.0961 [0.0885]	108.6%			
PFPeS	(349.0 / 80.0) 123010 (349.0 / 99.0) 48389	(6.63, 0.90) (N/A, 0.01, 0.4)	4042072.8 129363.9	0.3934 115.1 115.1	0.1053 [0.0938]	112.2%			
PFHxS	(399.0 / 80.0) 107562 (399.0 / 99.0) 37781	(7.39, 1.00) (0.01, N/A, 0.9)	771.5 33763.9	0.3512 102.5 102.5	0.1012 [0.0911]	111.1%			
PFHpS	(449.0 / 80.0) 118700 (449.0 / 99.0) 37679	(8.03, 0.93) (N/A, 0.01, -0.2)	1297.5 1296.4	0.3174 111.7 111.7	0.1100 [0.0951]	115.6%			
PFOS	(499.0 / 80.0) 145672 (499.0 / 99.0) 27572	(8.59, 1.00) (0.00, N/A, 0.0)	121.1 176.6	0.1893 87.4 87.4	0.1086 [0.0927]	117.1%			
PFNS	(549.0 / 80.0) 124807 (549.0 / 99.0) 31839	(8.93, 1.04) (N/A, 0.00, 0.4)	541.8 18340351.9	0.2551 111.3 111.3	0.0981 [0.0960]	102.2%			
PFDS	(599.0 / 80.0) 147059 (599.0 / 99.0) 32368	(9.14, 1.06) (N/A, -0.01, 0.0)	740.9 158.6	0.2201 97.2 97.2	0.1001 [0.0963]	103.9%			
PFDoS	(699.0 / 80.0) 115626 (699.0 / 99.0) 28024	(9.48, 1.10) (N/A, 0.00, -0.1)	380.4 168.0	0.2424 111.2 111.2	0.0984 [0.0970]	101.5%			
4:2FTS	(327.0 / 307.0) 79358 (327.0 / 81.0) 54222	(5.42, 1.00) (0.00, N/A, 0.0)	675.4 136.1	0.6833 110.3 110.3	0.3952 [0.3738]	105.7%			
6:2FTS	(427.0 / 407.0) 48648 (427.0 / 81.0) 39181	(6.93, 1.00) (0.00, N/A, 0.1)	11426.5 246.1	0.8054 116.6 116.6	0.3672 [0.3796]	96.7%			
8:2FTS	(527.0 / 507.0) 52744 (527.0 / 81.0) 38298	(8.12, 1.00) (0.00, N/A, 0.0)	2578.9 264.9	0.7261 107.5 107.5	0.4219 [0.3833]	110.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 186438 (498.0 / 478.0) 4400	(9.86, 1.00) (0.00, N/A, -0.4)	803.2 59.9	0.0236 106.2 106.2	0.1171 [0.1000]	117.1%			
NMeFOSA	(512.0 / 219.0) 166391 (512.0 / 169.0) 138357	(10.46, 1.00) (0.00, N/A, 1.4)	1014.7 766.3	0.8315 99.4 99.4	0.4635 [0.4000]	115.9%			
NEIFOSA	(526.0 / 219.0) 175832 (526.0 / 169.0) 226419	(10.61, 1.00) (-0.01, N/A, 0.6)	1093.2 1122.5	1.2877 100.9 100.9	0.4428 [0.4000]	110.7%			
NMeFOSAA	(570.0 / 419.0) 19700 (570.0 / 483.0) 13248	(8.48, 1.00) (0.00, N/A, -0.1)	35175.9 205.2	0.6725 143.2 143.2	0.0960 [0.1000]	96.0%			
NEIFOSAA	(584.0 / 419.0) 19298 (584.0 / 526.0) 12274	(8.70, 1.00) (0.02, N/A, -0.4)	44019.0 129.1	0.6360 99.6 99.6	0.1095 [0.1000]	109.5%			
NMeFOSE	(616.0 / 59.0) 61888	(10.39, 1.00) (0.01, N/A, 0.0)	135.0	N/A 0.0 0.0	0.4137 [0.4000]	103.4%			
NEtFOSE	(630.0 / 59.0) 64257	(10.57, 1.00) (0.01, N/A, 0.0)	193.3	N/A 0.0 0.0	0.4297 [0.4000]	107.4%			
HFPO-DA	(285.0 / 169.0) 41967 (285.0 / 185.0) 120558	(6.02, 1.00) (0.00, N/A, 0.3)	857.1 665.9	2.8727 106.7 106.7	0.2191 [0.2000]	109.6%			
ADONA	(377.0 / 85.0) 165344 (377.0 / 251.0) 14256	(6.79, 1.13) (N/A, 0.01, -0.2)	1463.0 107.6	0.0862 89.3 89.3	0.2196 [0.1885]	116.5%			
9CI-Pf3ONS	(531.0 / 351.0) 430006 (533.0 / 353.0) 127403	(8.86, 1.47) (N/A, 0.00, -0.1)	1022.9 405.0	0.2963 92.9 92.9	0.2119 [0.1867]	113.5%			
11CI-PF3OUDS	(631.0 / 451.0) 244672 (633.0 / 453.0) 79947	(9.28, 1.54) (N/A, -0.01, 0.0)	895.0 502.4	0.3268 98.1 98.1	0.2356 [0.1886]	124.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 4185 (241.0 / 117.0) 9296	(4.24, 0.89) (N/A, 0.01, 0.1)	272.8 71.8	2.2214 109.0 109.0	0.4170 [0.4000]	104.2%			
5:3FTCA	(341.0 / 236.7) 29657 (341.0 / 217.0) 47909	(6.19, 1.09) (N/A, 0.01, -0.1)	9934.4 153.8	1.6154 98.1 98.1	0.4290 [0.4000]	107.3%			
7:3FTCA	(441.0 / 317.0) 41397 (441.0 / 337.0) 48336	(7.94, 1.39) (N/A, 0.03, 0.7)	645.7 640.2	1.1676 136.3 136.3	0.3568 [0.4000]	89.2%			
PFEESA	(315.0 / 135.0) 102111 (315.0 / 83.0) 27179	(6.15, 1.08) (N/A, 0.01, 0.0)	1773.5 139.8	0.2662 102.7 102.7	0.2022 [0.1785]	113.3%			
PFMPA	(229.0 / 85.0) 18646	(4.08, 0.86) (N/A, 0.01, 0.0)	617.6	N/A 0.0 0.0	0.2173 [0.2000]	108.6%			
PFMBA	(279.0 / 85.0) 61437	(5.07, 1.07) (N/A, 0.01, 0.0)	1900.8	N/A 0.0 0.0	0.2241 [0.2000]	112.1%			
NFDHA	(295.0 / 201.0) 54791 (295.0 / 85.0) 46854	(5.60, 0.98) (N/A, 0.01, 0.0)	893.4 1184.5	0.8551 85.1 85.1	0.2386 [0.2000]	119.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 257918	(3.69, N/A) (N/A, 0.00, N/A)	2018.6	N/A	1.2041 [1.0000]	120.4% {127.4%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 323197	(5.70, N/A) (N/A, 0.01, N/A)	4417.7	N/A	1.0291 [1.0000]	102.9% {113.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 524921	(7.20, N/A) (N/A, 0.01, N/A)	39679.1	N/A	1.1366 [1.0000]	113.7% {125.2%}			
13C5_PFNA_IIS	(468.0 / 423.0) 435769	(7.81, N/A) (N/A, 0.02, N/A)	423027.3	N/A	1.0442 [1.0000]	104.4% {112.9%}			

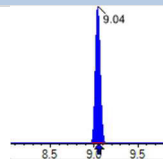
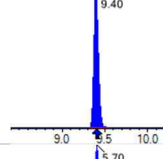
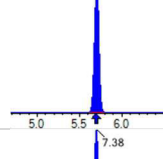
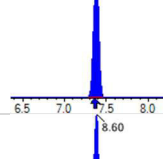
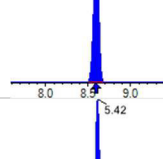
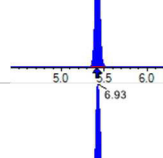
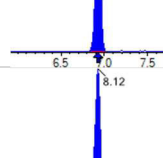
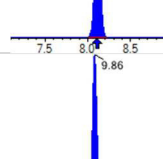
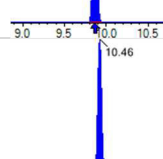
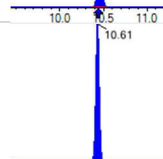
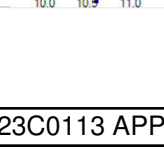


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (1)
 Acquired: 2023/03/07 - 15:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 439207	(8.39, N/A) (N/A, 0.01, N/A)	5379088.4	N/A	1.0936 [1.0000]	109.4% {114.2%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 781493	(7.38, N/A) (N/A, 0.02, N/A)	4693.2	N/A	1.1511 [1.0000]	115.1% {130.6%}			
13C4_PFOS_IIS	(503.0 / 79.9) 974029	(8.60, N/A) (N/A, 0.01, N/A)	2253.4	N/A	1.1352 [1.0000]	113.5% {117.1%}			
13C4_PFBA_EIS	(217.0 / 172.0) 2247239	(3.69, N/A) (N/A, 0.01, N/A)	6928.3	N/A	7.3214 [8.0000]	91.5% {106.2%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 1516060	(4.76, N/A) (N/A, 0.01, N/A)	4147.9	N/A	4.0606 [4.0000]	101.5% {100.6%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 911034	(5.70, N/A) (N/A, 0.01, N/A)	6134.1	N/A	2.0223 [2.0000]	101.1% {104.3%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 839521	(6.51, N/A) (N/A, 0.00, N/A)	3235.7	N/A	1.9564 [2.0000]	97.8% {99.3%}			
13C8_PFOA_EIS	(421.0 / 376.0) 1016021	(7.20, N/A) (N/A, 0.01, N/A)	2188.5	N/A	1.7816 [2.0000]	89.1% {100.5%}			
13C9_PFNA_EIS	(472.0 / 427.0) 485073	(7.81, N/A) (N/A, 0.02, N/A)	33068.8	N/A	1.0476 [1.0000]	104.8% {104.6%}			
13C6_PFDA_EIS	(519.0 / 474.0) 468071	(8.38, N/A) (N/A, 0.01, N/A)	3151.7	N/A	0.8855 [1.0000]	88.5% {93.1%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 581278	(8.80, N/A) (N/A, 0.00, N/A)	291828.8	N/A	0.9863 [1.0000]	98.6% {110.7%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-lmin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 487430	(9.04, N/A) (N/A, 0.00, N/A)	1548.9	N/A	0.9461 [1.0000]	94.6% {106.5%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 495435	(9.40, N/A) (N/A, 0.00, N/A)	2629.5	N/A	0.9118 [1.0000]	91.2% {99.4%}			
13C3_PFBs_EIS	(302.0 / 80.0) 2146215	(5.70, N/A) (N/A, 0.01, N/A)	4252.9	N/A	1.7335 [2.0000]	86.7% {94.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 1416425	(7.38, N/A) (N/A, 0.02, N/A)	2389.4	N/A	1.7616 [2.0000]	88.1% {99.8%}			
13C8_PFOS_EIS	(507.0 / 80.0) 2377734	(8.60, N/A) (N/A, 0.01, N/A)	3434.3	N/A	1.8207 [2.0000]	91.0% {101.7%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 275365	(5.42, N/A) (N/A, 0.01, N/A)	1245.3	N/A	3.5064 [4.0000]	87.7% {101.9%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 368883	(6.93, N/A) (N/A, 0.00, N/A)	1148.9	N/A	3.5776 [4.0000]	89.4% {99.8%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 373555	(8.12, N/A) (N/A, 0.02, N/A)	1527.7	N/A	3.3442 [4.0000]	83.6% {97.4%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 3837415	(9.86, N/A) (N/A, 0.00, N/A)	3337.3	N/A	1.7179 [2.0000]	85.9% {91.3%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 873116	(10.46, N/A) (N/A, 0.02, N/A)	3031.4	N/A	1.5277 [2.0000]	76.4% {80.1%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 834358	(10.61, N/A) (N/A, 0.02, N/A)	3102.4	N/A	1.6039 [2.0000]	80.2% {80.5%}			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (1)
 Acquired: 2023/03/07 - 15:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 796982	(8.48, N/A) (N/A, 0.01, N/A)	3152.7	N/A	3.5688 [4.0000]	89.2% {99.5%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 841623	(8.68, N/A) (N/A, 0.01, N/A)	9213.0	N/A	3.3628 [4.0000]	84.1% {98.1%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 3021000	(10.39, N/A) (N/A, 0.02, N/A)	1780.0	N/A	16.9868 [20.0000]	84.9% {89.6%}			
D9_NEtFOSE_EIS	(639.0 / 58.9) 3094582	(10.55, N/A) (N/A, 0.02, N/A)	1545.9	N/A	14.7426 [20.0000]	73.7% {74.5%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1927474	(6.01, N/A) (N/A, 0.01, N/A)	4848.5	N/A	7.7480 [8.0000]	96.8% {95.5%}			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (2)
 Acquired: 2023/03/07 - 15:38

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 455227	(3.69, 1.00) (0.00, N/A, 0.0)	224.7	N/A 0.0 0.0	1.7898 [2.0000]	89.5%			
PFPeA	(263.0 / 219.0) 328099 (263.0 / 69.0) 4345	(4.76, 1.00) (0.00, N/A, 0.2)	1471.1 119.8	0.0132 117.0 117.0	0.9226 [1.0000]	92.3%			
PFHxA	(313.0 / 269.0) 190755 (313.0 / 119.0) 17900	(5.71, 1.00) (0.00, N/A, 0.1)	1071.9 996930.8	0.0938 89.1 89.1	0.4379 [0.5000]	87.6%			
PFHpA	(363.0 / 319.0) 183325 (363.0 / 169.0) 54605	(6.52, 1.00) (0.00, N/A, -0.3)	6717.1 1612616.1	0.2979 91.4 91.4	0.4744 [0.5000]	94.9%			
PFOA	(413.0 / 369.0) 257420 (413.0 / 169.0) 66595	(7.21, 1.00) (0.00, N/A, 0.2)	5929.9 2988.3	0.2587 74.2 74.2	0.5237 [0.5000]	104.7%			
PFNA	(463.0 / 419.0) 193249 (463.0 / 169.0) 36131	(7.82, 1.00) (0.00, N/A, 0.2)	220427.4 65363.8	0.1870 79.9 79.9	0.4440 [0.5000]	88.8%			
PFDA	(513.0 / 469.0) 230567 (513.0 / 169.0) 28620	(8.39, 1.00) (0.00, N/A, -0.6)	513.3 1960.6	0.1241 116.7 116.7	0.4778 [0.5000]	95.6%			
PFUnA	(563.0 / 519.0) 221078 (563.0 / 169.0) 22013	(8.80, 1.00) (0.00, N/A, 0.1)	538.4 280.6	0.0996 83.0 83.0	0.4615 [0.5000]	92.3%			
PFDoA	(613.0 / 569.0) 204043 (613.0 / 169.0) 38178	(9.05, 1.00) (0.00, N/A, 0.1)	898.5 504.6	0.1871 115.0 115.0	0.4596 [0.5000]	91.9%			
PFTrDA	(663.0 / 619.0) 208748 (663.0 / 169.0) 39960	(9.24, 1.02) (N/A, 0.00, -0.4)	1078.3 449.6	0.1914 78.4 78.4	0.4903 [0.5000]	98.1%			
PFTeDA	(713.0 / 669.0) 226933 (713.0 / 169.0) 49334	(9.40, 1.00) (0.00, N/A, 0.1)	703.5 229.2	0.2174 113.7 113.7	0.5221 [0.5000]	104.4%			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (2)
 Acquired: 2023/03/07 - 15:38

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) 316246 (299.0 / 99.0) 196788	(5.71, 1.00) (0.00, N/A, 0.0)	1678.2 776.6	0.6223 106.1 106.1	0.4087 [0.4424]	92.4%			
PFPeS	(349.0 / 80.0) 527204 (349.0 / 99.0) 189586	(6.63, 0.90) (N/A, 0.02, 0.0)	13141.5 8074.6	0.3596 105.3 105.3	0.4257 [0.4692]	90.7%			
PFHxS	(399.0 / 80.0) 465434 (399.0 / 99.0) 154312	(7.39, 1.00) (0.00, N/A, -0.2)	964.4 4798.4	0.3315 96.7 96.7	0.4132 [0.4555]	90.7%			
PFHpS	(449.0 / 80.0) 521809 (449.0 / 99.0) 143392	(8.04, 0.93) (N/A, 0.02, -0.2)	2749.5 16469.5	0.2748 96.7 96.7	0.4605 [0.4757]	96.8%			
PFOS	(499.0 / 80.0) 676229 (499.0 / 99.0) 139692	(8.60, 1.00) (0.00, N/A, 0.0)	956.0 326.0	0.2066 95.4 95.4	0.4801 [0.4637]	103.5%			
PFNS	(549.0 / 80.0) 596385 (549.0 / 99.0) 150729	(8.93, 1.04) (N/A, 0.01, 0.0)	592856.6 3474961.5	0.2527 110.2 110.2	0.4465 [0.4799]	93.0%			
PFDS	(599.0 / 80.0) 735875 (599.0 / 99.0) 156051	(9.15, 1.06) (N/A, 0.00, 0.0)	1967.8 877.2	0.2121 93.7 93.7	0.4769 [0.4816]	99.0%			
PFDoS	(699.0 / 80.0) 504938 (699.0 / 99.0) 130712	(9.48, 1.10) (N/A, 0.00, -0.2)	1018.8 724.9	0.2589 118.7 118.7	0.4094 [0.4848]	84.4%			
4:2FTS	(327.0 / 307.0) 386759 (327.0 / 81.0) 237345	(5.43, 1.00) (0.00, N/A, -0.2)	2126.8 802.1	0.6137 99.1 99.1	1.8002 [1.8691]	96.3%			
6:2FTS	(427.0 / 407.0) 257827 (427.0 / 81.0) 196330	(6.94, 1.00) (0.00, N/A, 0.1)	2075563.3 820.3	0.7615 110.2 110.2	1.9585 [1.8981]	103.2%			
8:2FTS	(527.0 / 507.0) 235758 (527.0 / 81.0) 158061	(8.12, 1.00) (0.00, N/A, 0.1)	3748859.8 423.3	0.6704 99.3 99.3	1.8998 [1.9166]	99.1%			

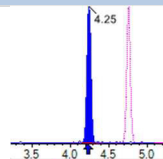
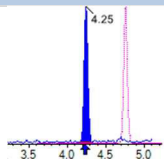
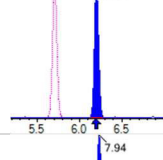
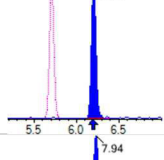
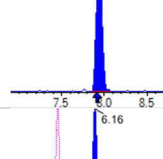
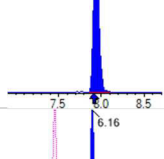
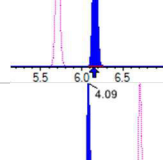
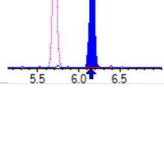
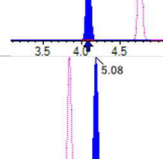
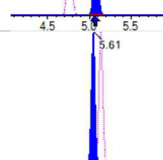
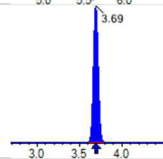

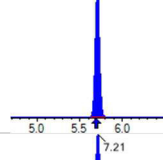
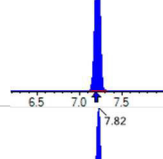
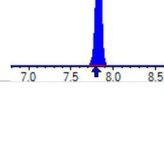
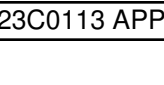


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (2)
 Acquired: 2023/03/07 - 15:38

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) 854679 (498.0 / 478.0) 18444	(9.87 , 1.00) (0.00 , N/A , -0.3)	2169.4 108.1	0.0216 97.1 97.1	0.4736 [0.5000]	94.7%			
NMeFOSA	(512.0 / 219.0) 832092 (512.0 / 169.0) 691913	(10.46 , 1.00) (0.00 , N/A , 1.1)	2834.8 2529.2	0.8315 99.4 99.4	1.9987 [2.0000]	99.9%			
NEIFOSA	(526.0 / 219.0) 890901 (526.0 / 169.0) 1086997	(10.62 , 1.00) (0.00 , N/A , 0.7)	4115.2 3001.3	1.2201 95.6 95.6	1.8946 [2.0000]	94.7%			
NMeFOSAA	(570.0 / 419.0) 98636 (570.0 / 483.0) 50529	(8.49 , 1.00) (0.00 , N/A , -0.4)	95407.0 519.8	0.5123 109.1 109.1	0.4775 [0.5000]	95.5%			
NEIFOSAA	(584.0 / 419.0) 92111 (584.0 / 526.0) 61102	(8.70 , 1.00) (0.01 , N/A , 0.0)	2470949.5 1556.1	0.6634 103.9 103.9	0.4852 [0.5000]	97.0%			
NMeFOSE	(616.0 / 59.0) 310153	(10.40 , 1.00) (0.01 , N/A , 0.0)	663.2	N/A 0.0 0.0	1.8434 [2.0000]	92.2%			
NEtFOSE	(630.0 / 59.0) 367566	(10.57 , 1.00) (0.01 , N/A , 0.0)	600.8	N/A 0.0 0.0	1.8862 [2.0000]	94.3%			
HFPO-DA	(285.0 / 169.0) 208541 (285.0 / 185.0) 532496	(6.02 , 1.00) (0.00 , N/A , 0.0)	3299.1 1641.0	2.5534 94.9 94.9	0.9922 [1.0000]	99.2%			
ADONA	(377.0 / 85.0) 795288 (377.0 / 251.0) 78107	(6.80 , 1.13) (N/A , 0.01 , 0.1)	2279.0 401.4	0.0982 101.7 101.7	0.9625 [0.9427]	102.1%			
9CI-Pr3ONS	(531.0 / 351.0) 1961185 (533.0 / 353.0) 565812	(8.87 , 1.47) (N/A , 0.01 , -0.1)	2236.9 840.7	0.2885 90.4 90.4	0.8805 [0.9333]	94.3%			
11CI-PF3OUDS	(631.0 / 451.0) 1040449 (633.0 / 453.0) 385409	(9.29 , 1.54) (N/A , 0.00 , -0.1)	1895.1 1508.9	0.3704 111.2 111.2	0.7923 [0.9432]	84.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 19845 (241.0 / 117.0) 37411	(4.25, 0.89) (N/A, 0.02, 0.0)	508.6 234.6	1.8852 92.5 92.5	1.8536 [2.0000]	92.7%			
5:3FTCA	(341.0 / 236.7) 128484 (341.0 / 217.0) 203042	(6.20, 1.09) (N/A, 0.01, -0.2)	4279.2 524.6	1.5803 95.9 95.9	1.7280 [2.0000]	86.4%			
7:3FTCA	(441.0 / 317.0) 224708 (441.0 / 337.0) 196165	(7.94, 1.39) (N/A, 0.03, 0.0)	590.1 2280.8	0.8730 101.9 101.9	1.8006 [2.0000]	90.0%			
PFEESA	(315.0 / 135.0) 443375 (315.0 / 83.0) 122369	(6.16, 1.08) (N/A, 0.02, -0.2)	2525.7 798.5	0.2760 106.5 106.5	0.8161 [0.8925]	91.4%			
PFMPA	(229.0 / 85.0) 89548	(4.09, 0.86) (N/A, 0.01, 0.0)	2484.0	N/A 0.0 0.0	0.9782 [1.0000]	97.8%			
PFMBA	(279.0 / 85.0) 277376	(5.08, 1.07) (N/A, 0.02, 0.0)	2509.0	N/A 0.0 0.0	0.9487 [1.0000]	94.9%			
NFDHA	(295.0 / 201.0) 220153 (295.0 / 85.0) 222534	(5.61, 0.98) (N/A, 0.02, 0.0)	15813.8 2532.8	1.0108 100.6 100.6	0.8915 [1.0000]	89.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 242927	(3.69, N/A) (N/A, 0.01, N/A)	1826.8	N/A	1.1341 [1.0000]	113.4% {120.0%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 329316	(5.71, N/A) (N/A, 0.02, N/A)	8544.9	N/A	1.0485 [1.0000]	104.9% {115.4%}			
13C4_PFOA_IIS	(417.0 / 372.0) 449439	(7.21, N/A) (N/A, 0.02, N/A)	2275.9	N/A	0.9732 [1.0000]	97.3% {107.2%}			
13C5_PFNA_IIS	(468.0 / 423.0) 428731	(7.82, N/A) (N/A, 0.03, N/A)	8569.8	N/A	1.0273 [1.0000]	102.7% {111.1%}			

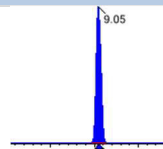
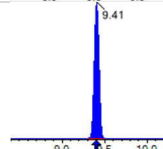
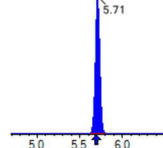
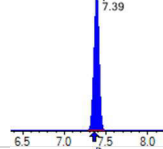
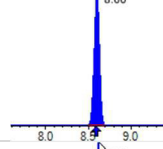
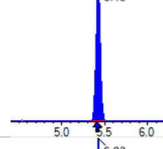
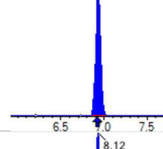
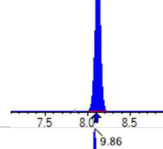
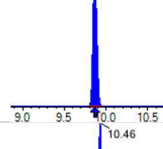
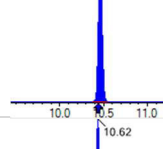
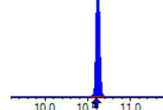


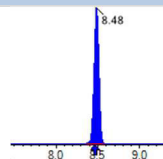




Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (2)
 Acquired: 2023/03/07 - 15:38

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 405427	(8.39, N/A) (N/A, 0.02, N/A)	5092452.6	N/A	1.0095 [1.0000]	100.9% { 105.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 697940	(7.39, N/A) (N/A, 0.03, N/A)	2770.9	N/A	1.0280 [1.0000]	102.8% { 116.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 897280	(8.60, N/A) (N/A, 0.02, N/A)	1604.6	N/A	1.0457 [1.0000]	104.6% { 107.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2463970	(3.69, N/A) (N/A, 0.01, N/A)	9039.7	N/A	8.5229 [8.0000]	106.5% { 116.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1617212	(4.76, N/A) (N/A, 0.02, N/A)	4929.1	N/A	4.2511 [4.0000]	106.3% { 107.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 979923	(5.71, N/A) (N/A, 0.02, N/A)	5857.5	N/A	2.1349 [2.0000]	106.7% { 112.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 916054	(6.52, N/A) (N/A, 0.01, N/A)	11435.7	N/A	2.0950 [2.0000]	104.8% { 108.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1083163	(7.21, N/A) (N/A, 0.02, N/A)	3719.5	N/A	2.2183 [2.0000]	110.9% { 107.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 502984	(7.82, N/A) (N/A, 0.03, N/A)	2106.0	N/A	1.1041 [1.0000]	110.4% { 108.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 511574	(8.39, N/A) (N/A, 0.02, N/A)	6049.7	N/A	1.0484 [1.0000]	104.8% { 101.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 599841	(8.80, N/A) (N/A, 0.01, N/A)	3793.6	N/A	1.1026 [1.0000]	110.3% { 114.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 527697	(9.05, N/A) (N/A, 0.00, N/A)	3454.7	N/A	1.1096 [1.0000]	111.0% { 115.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 509082	(9.41, N/A) (N/A, 0.01, N/A)	1868.5	N/A	1.0150 [1.0000]	101.5% { 102.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2397478	(5.71, N/A) (N/A, 0.02, N/A)	7429.2	N/A	2.1683 [2.0000]	108.4% { 105.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1501777	(7.39, N/A) (N/A, 0.03, N/A)	2781.4	N/A	2.0914 [2.0000]	104.6% { 105.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2496896	(8.60, N/A) (N/A, 0.01, N/A)	2408.5	N/A	2.0755 [2.0000]	103.8% { 106.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 294629	(5.43, N/A) (N/A, 0.02, N/A)	1737.0	N/A	4.2008 [4.0000]	105.0% { 109.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 366584	(6.93, N/A) (N/A, 0.01, N/A)	1231.9	N/A	3.9810 [4.0000]	99.5% { 99.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 370815	(8.12, N/A) (N/A, 0.02, N/A)	1405.7	N/A	3.7171 [4.0000]	92.9% { 96.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4348406	(9.86, N/A) (N/A, 0.01, N/A)	4293.1	N/A	2.1132 [2.0000]	105.7% { 103.5% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 1012642	(10.46, N/A) (N/A, 0.02, N/A)	2873.7	N/A	1.9234 [2.0000]	96.2% { 92.9% }			
D5_NeIFOSA_EIS	(531.0 / 169.0) 987911	(10.62, N/A) (N/A, 0.02, N/A)	4580.8	N/A	2.0615 [2.0000]	103.1% { 95.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 802280	(8.48, N/A) (N/A, 0.02, N/A)	1842.4	N/A	3.8998 [4.0000]	97.5% { 100.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 906390	(8.69, N/A) (N/A, 0.01, N/A)	11760.9	N/A	3.9314 [4.0000]	98.3% { 105.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 3397576	(10.39, N/A) (N/A, 0.02, N/A)	1623.3	N/A	20.7383 [20.0000]	103.7% { 100.8% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 4032210	(10.56, N/A) (N/A, 0.02, N/A)	1930.3	N/A	20.8526 [20.0000]	104.3% { 97.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2115142	(6.02, N/A) (N/A, 0.02, N/A)	3997.1	N/A	8.3443 [8.0000]	104.3% { 104.8% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (3)
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 899583	(3.69, 1.00) (0.00, N/A, 0.0)	233.3	N/A 0.0 0.0	3.8750 [4.0000]	96.9%			
PFPeA	(263.0 / 219.0) 675582 (263.0 / 69.0) 8867	(4.76, 1.00) (0.00, N/A, 0.1)	2191.6 300.6	0.0131 115.9 115.9	1.9529 [2.0000]	97.6%			
PFHxA	(313.0 / 269.0) 424895 (313.0 / 119.0) 37252	(5.71, 1.00) (0.00, N/A, 0.0)	2976.9 3851.0	0.0877 83.2 83.2	1.0040 [1.0000]	100.4%			
PFHpA	(363.0 / 319.0) 405820 (363.0 / 169.0) 117751	(6.52, 1.00) (0.00, N/A, -0.1)	7261.0 1907.9	0.2902 89.0 89.0	1.0637 [1.0000]	106.4%			
PFOA	(413.0 / 369.0) 440285 (413.0 / 169.0) 145747	(7.22, 1.00) (0.00, N/A, -0.1)	7768.8 2921.5	0.3310 95.0 95.0	0.9220 [1.0000]	92.2%			
PFNA	(463.0 / 419.0) 390987 (463.0 / 169.0) 87664	(7.83, 1.00) (0.00, N/A, 0.0)	72875.1 8318.5	0.2242 95.8 95.8	1.0853 [1.0000]	108.5%			
PFDA	(513.0 / 469.0) 465069 (513.0 / 169.0) 46675	(8.39, 1.00) (0.00, N/A, -0.1)	820.5 2094.2	0.1004 94.4 94.4	0.9801 [1.0000]	98.0%			
PFUnA	(563.0 / 519.0) 432933 (563.0 / 169.0) 50105	(8.81, 1.00) (0.00, N/A, 0.1)	1014.0 62932.3	0.1157 96.5 96.5	0.9185 [1.0000]	91.9%			
PFDoA	(613.0 / 569.0) 398515 (613.0 / 169.0) 50836	(9.05, 1.00) (0.00, N/A, -0.1)	1045.6 12833.9	0.1276 78.4 78.4	0.9757 [1.0000]	97.6%			
PFTrDA	(663.0 / 619.0) 418211 (663.0 / 169.0) 95943	(9.24, 1.02) (N/A, 0.00, 0.1)	1247.2 9863.0	0.2294 94.0 94.0	1.0678 [1.0000]	106.8%			
PFTeDA	(713.0 / 669.0) 458171 (713.0 / 169.0) 80613	(9.40, 1.00) (0.00, N/A, -0.2)	1401.2 1107.6	0.1759 92.1 92.1	1.0311 [1.0000]	103.1%			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (3)
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 615389 (299.0 / 99.0) 398293	(5.71, 1.00) (0.00, N/A, 0.0)	3478.3 1787.2	0.6472 110.3 110.3	0.8019 [0.8847]	90.6%			
PFPeS	(349.0 / 80.0) 1058429 (349.0 / 99.0) 345280	(6.64, 0.90) (N/A, 0.02, 0.0)	149574.9 33207.6	0.3262 95.5 95.5	0.8809 [0.9384]	93.9%			
PFHxS	(399.0 / 80.0) 1001120 (399.0 / 99.0) 324544	(7.39, 1.00) (0.00, N/A, -0.1)	958926.2 4445.9	0.3242 94.6 94.6	0.9159 [0.9110]	100.5%			
PFHpS	(449.0 / 80.0) 1006957 (449.0 / 99.0) 307697	(8.04, 0.93) (N/A, 0.03, -0.1)	1171086.0 6762.9	0.3056 107.5 107.5	0.8910 [0.9514]	93.7%			
PFOS	(499.0 / 80.0) 1192555 (499.0 / 99.0) 271910	(8.61, 1.00) (0.00, N/A, 0.3)	925.9 283.0	0.2280 105.3 105.3	0.8490 [0.9275]	91.5%			
PFNS	(549.0 / 80.0) 1227937 (549.0 / 99.0) 306323	(8.94, 1.04) (N/A, 0.01, -0.2)	7413.5 6281866.2	0.2495 108.8 108.8	0.9219 [0.9599]	96.0%			
PFDS	(599.0 / 80.0) 1438750 (599.0 / 99.0) 323735	(9.15, 1.06) (N/A, 0.01, 0.0)	2168.1 1345.4	0.2250 99.4 99.4	0.9349 [0.9631]	97.1%			
PFDoS	(699.0 / 80.0) 1135032 (699.0 / 99.0) 239155	(9.48, 1.10) (N/A, 0.01, -0.1)	2208.1 871.3	0.2107 96.6 96.6	0.9227 [0.9696]	95.2%			
4:2FTS	(327.0 / 307.0) 797684 (327.0 / 81.0) 463911	(5.43, 1.00) (0.00, N/A, -0.1)	2630.2 1010.4	0.5816 93.9 93.9	4.0135 [3.7381]	107.4%			
6:2FTS	(427.0 / 407.0) 496112 (427.0 / 81.0) 365759	(6.94, 1.00) (0.00, N/A, -0.1)	10732.5 2049.8	0.7373 106.7 106.7	3.7567 [3.7962]	99.0%			
8:2FTS	(527.0 / 507.0) 506485 (527.0 / 81.0) 360588	(8.12, 1.00) (0.01, N/A, 0.2)	2971154.2 1405.3	0.7119 105.4 105.4	4.0025 [3.8332]	104.4%			

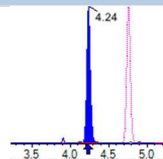
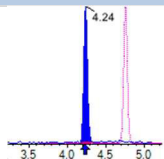
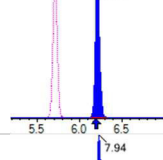
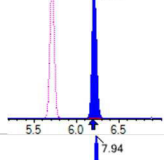
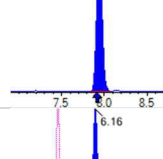
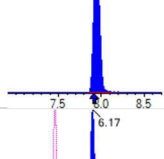
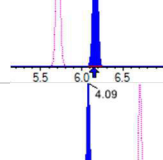
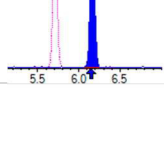
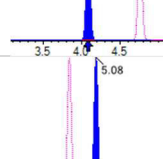
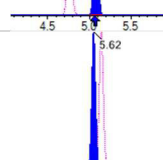
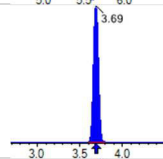

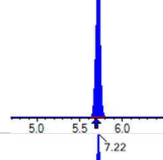
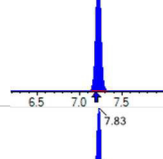
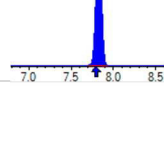
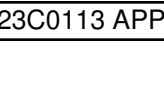


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (3)
 Acquired: 2023/03/07 - 15:51

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) 1733815 (498.0 / 478.0) 41303	(9.87, 1.00) (0.00, N/A, -0.1)	3820.9 317.0	0.0238 107.2 107.2	0.9965 [1.0000]	99.7%			
NMeFOFA	(512.0 / 219.0) 1804160 (512.0 / 169.0) 1466966	(10.47, 1.00) (0.00, N/A, 1.0)	5320.7 3512.8	0.8131 97.2 97.2	4.2050 [4.0000]	105.1%			
NEIFOSA	(526.0 / 219.0) 1924663 (526.0 / 169.0) 2364022	(10.62, 1.00) (0.00, N/A, 0.9)	5871.8 5658.9	1.2283 96.2 96.2	3.9752 [4.0000]	99.4%			
NMeFOSAA	(570.0 / 419.0) 209471 (570.0 / 483.0) 97761	(8.49, 1.00) (0.00, N/A, 0.1)	5055.4 1376.0	0.4667 99.4 99.4	0.9998 [1.0000]	100.0%			
NEIFOSAA	(584.0 / 419.0) 182265 (584.0 / 526.0) 95982	(8.69, 1.00) (0.00, N/A, -0.3)	190588.3 992.3	0.5266 82.5 82.5	0.9131 [1.0000]	91.3%			
NMeFOSE	(616.0 / 59.0) 641996	(10.41, 1.00) (0.01, N/A, 0.0)	912.7	N/A 0.0 0.0	3.9310 [4.0000]	98.3%			
NEtFOSE	(630.0 / 59.0) 785939	(10.57, 1.00) (0.01, N/A, 0.0)	979.4	N/A 0.0 0.0	3.8482 [4.0000]	96.2%			
HFPO-DA	(285.0 / 169.0) 379118 (285.0 / 185.0) 1021866	(6.03, 1.00) (0.00, N/A, -0.1)	1971.1 3001.7	2.6954 100.1 100.1	2.0057 [2.0000]	100.3%			
ADONA	(377.0 / 85.0) 1508398 (377.0 / 251.0) 178454	(6.81, 1.13) (N/A, 0.02, -0.1)	3205.3 782.7	0.1183 122.5 122.5	2.0299 [1.8854]	107.7%			
9CI-Pf3ONS	(531.0 / 351.0) 4092531 (533.0 / 353.0) 1268614	(8.87, 1.47) (N/A, 0.01, 0.1)	3430.5 1626.8	0.3100 97.2 97.2	2.0432 [1.8665]	109.5%			
11CI-PF3OUDS	(631.0 / 451.0) 2243763 (633.0 / 453.0) 757471	(9.29, 1.54) (N/A, 0.00, 0.0)	4136.5 11423.2	0.3376 101.4 101.4	1.8489 [1.8864]	98.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 39190 (241.0 / 117.0) 69278	(4.24, 0.89) (N/A, 0.01, 0.0)	853.0 384.6	1.7678 86.7 86.7	3.7631 [4.0000]	94.1%			
5:3FTCA	(341.0 / 236.7) 282646 (341.0 / 217.0) 452482	(6.21, 1.09) (N/A, 0.03, 0.1)	1702.4 1217.0	1.6009 97.2 97.2	3.9123 [4.0000]	97.8%			
7:3FTCA	(441.0 / 317.0) 421980 (441.0 / 337.0) 371193	(7.94, 1.39) (N/A, 0.03, -0.3)	1090.9 1049.1	0.8796 102.7 102.7	3.4801 [4.0000]	87.0%			
PFEESA	(315.0 / 135.0) 892808 (315.0 / 83.0) 256798	(6.16, 1.08) (N/A, 0.02, -0.1)	3617.4 756.5	0.2876 111.0 111.0	1.6914 [1.7849]	94.8%			
PFMPA	(229.0 / 85.0) 166754	(4.09, 0.86) (N/A, 0.01, 0.0)	4633.2	N/A 0.0 0.0	1.8726 [2.0000]	93.6%			
PFMBA	(279.0 / 85.0) 556248	(5.08, 1.07) (N/A, 0.02, 0.0)	3540.3	N/A 0.0 0.0	1.9558 [2.0000]	97.8%			
NFDHA	(295.0 / 201.0) 441885 (295.0 / 85.0) 434993	(5.62, 0.98) (N/A, 0.02, -0.1)	2916.2 2312.3	0.9844 98.0 98.0	1.8416 [2.0000]	92.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 229958	(3.69, N/A) (N/A, 0.01, N/A)	2206.8	N/A	1.0736 [1.0000]	107.4% {113.6%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 323301	(5.72, N/A) (N/A, 0.03, N/A)	2814.3	N/A	1.0294 [1.0000]	102.9% {113.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 473706	(7.22, N/A) (N/A, 0.03, N/A)	353.5	N/A	1.0257 [1.0000]	102.6% {113.0%}			
13C5_PFNA_IIS	(468.0 / 423.0) 415237	(7.83, N/A) (N/A, 0.03, N/A)	7018.9	N/A	0.9950 [1.0000]	99.5% {107.6%}			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (3)
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 373543	(8.40, N/A) (N/A, 0.02, N/A)	297.7	N/A	0.9301 [1.0000]	93.0% { 97.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 670924	(7.39, N/A) (N/A, 0.04, N/A)	3693.4	N/A	0.9882 [1.0000]	98.8% { 112.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 872005	(8.61, N/A) (N/A, 0.02, N/A)	1193.8	N/A	1.0162 [1.0000]	101.6% { 104.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2248973	(3.69, N/A) (N/A, 0.01, N/A)	6273.9	N/A	8.2180 [8.0000]	102.7% { 106.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1573121	(4.76, N/A) (N/A, 0.02, N/A)	4085.3	N/A	4.2121 [4.0000]	105.3% { 104.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 952129	(5.71, N/A) (N/A, 0.02, N/A)	2897.9	N/A	2.1129 [2.0000]	105.6% { 109.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 904375	(6.52, N/A) (N/A, 0.02, N/A)	3801.6	N/A	2.1068 [2.0000]	105.3% { 107.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1052237	(7.22, N/A) (N/A, 0.03, N/A)	8472.9	N/A	2.0446 [2.0000]	102.2% { 104.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 416332	(7.83, N/A) (N/A, 0.04, N/A)	50832.2	N/A	0.9436 [1.0000]	94.4% { 89.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 503009	(8.39, N/A) (N/A, 0.02, N/A)	6142.5	N/A	1.1189 [1.0000]	111.9% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 590145	(8.81, N/A) (N/A, 0.01, N/A)	9698.8	N/A	1.1774 [1.0000]	117.7% { 112.3% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (3)
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 485494	(9.05, N/A) (N/A, 0.01, N/A)	50290.7	N/A	1.1080 [1.0000]	110.8% { 106.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 520469	(9.41, N/A) (N/A, 0.01, N/A)	2897.3	N/A	1.1263 [1.0000]	112.6% { 104.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2377635	(5.71, N/A) (N/A, 0.03, N/A)	4276.3	N/A	2.2369 [2.0000]	111.8% { 104.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1457103	(7.39, N/A) (N/A, 0.03, N/A)	1949.9	N/A	2.1109 [2.0000]	105.5% { 102.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2490101	(8.61, N/A) (N/A, 0.02, N/A)	2350.5	N/A	2.1299 [2.0000]	106.5% { 106.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 272564	(5.43, N/A) (N/A, 0.02, N/A)	1232.8	N/A	4.0427 [4.0000]	101.1% { 100.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 367740	(6.94, N/A) (N/A, 0.02, N/A)	1880.2	N/A	4.1543 [4.0000]	103.9% { 99.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 378126	(8.12, N/A) (N/A, 0.02, N/A)	1848.9	N/A	3.9430 [4.0000]	98.6% { 98.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4192639	(9.87, N/A) (N/A, 0.01, N/A)	3885.8	N/A	2.0965 [2.0000]	104.8% { 99.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1043595	(10.47, N/A) (N/A, 0.03, N/A)	2728.0	N/A	2.0397 [2.0000]	102.0% { 95.7% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 1017207	(10.62, N/A) (N/A, 0.03, N/A)	4606.7	N/A	2.1842 [2.0000]	109.2% { 98.2% }			

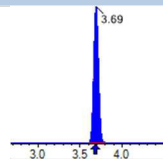
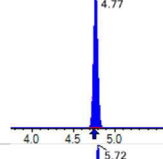
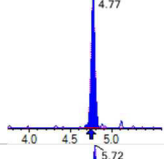
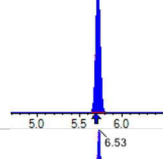
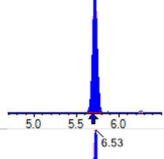
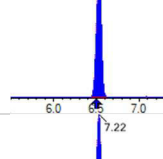
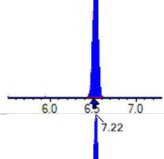
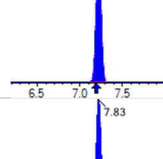
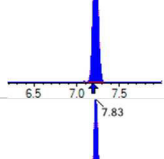
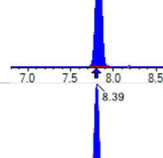
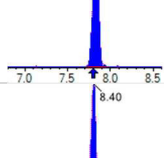
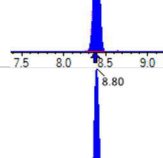
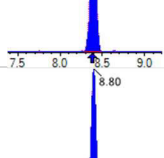
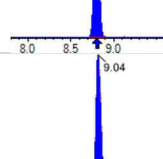
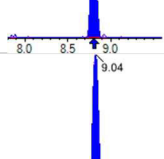
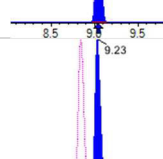
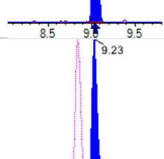
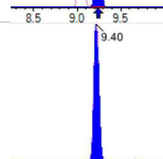
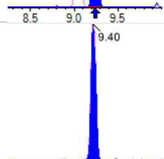
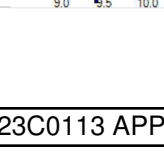
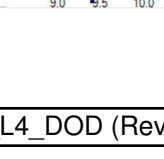


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (3)
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 813696	(8.49 , N/A) (N/A , 0.02 , N/A)	4157.5	N/A	4.0700 [4.0000]	101.7% { 101.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 952968	(8.69 , N/A) (N/A , 0.02 , N/A)	694005.0	N/A	4.2532 [4.0000]	106.3% { 111.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 3298043	(10.40 , N/A) (N/A , 0.03 , N/A)	1524.5	N/A	20.7142 [20.0000]	103.6% { 97.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 4225952	(10.56 , N/A) (N/A , 0.03 , N/A)	1928.0	N/A	22.4880 [20.0000]	112.4% { 101.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1902126	(6.02 , N/A) (N/A , 0.02 , N/A)	3072.4	N/A	7.6436 [8.0000]	95.5% { 94.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1849907	(3.69, 1.00) (0.00, N/A, 0.0)	323.3	N/A 0.0 0.0	8.1022 [8.0000]	101.3%			
PFPeA	(263.0 / 219.0) 1294642 (263.0 / 69.0) 15077	(4.77, 1.00) (0.00, N/A, 0.0)	3404.4 299.0	0.0116 102.8 102.8	4.0826 [4.0000]	102.1%			
PFHxA	(313.0 / 269.0) 820543 (313.0 / 119.0) 85586	(5.72, 1.00) (0.00, N/A, 0.0)	7201.6 17397.8	0.1043 99.0 99.0	1.9672 [2.0000]	98.4%			
PFHpA	(363.0 / 319.0) 663043 (363.0 / 169.0) 199777	(6.53, 1.00) (0.00, N/A, 0.0)	144596.8 9449.4	0.3013 92.4 92.4	1.8653 [2.0000]	93.3%			
PFOA	(413.0 / 369.0) 908175 (413.0 / 169.0) 302595	(7.22, 1.00) (0.00, N/A, 0.0)	26262.5 7678.6	0.3332 95.6 95.6	1.9752 [2.0000]	98.8%			
PFNA	(463.0 / 419.0) 751547 (463.0 / 169.0) 160378	(7.83, 1.00) (0.00, N/A, -0.2)	14925.3 6102.5	0.2134 91.2 91.2	1.9216 [2.0000]	96.1%			
PFDA	(513.0 / 469.0) 893653 (513.0 / 169.0) 111167	(8.39, 1.00) (0.00, N/A, -0.2)	1373.3 25309.0	0.1244 116.9 116.9	1.9297 [2.0000]	96.5%			
PFUnA	(563.0 / 519.0) 888048 (563.0 / 169.0) 105722	(8.80, 1.00) (0.00, N/A, -0.1)	2145.5 992.5	0.1191 99.3 99.3	1.9211 [2.0000]	96.1%			
PFDoA	(613.0 / 569.0) 822634 (613.0 / 169.0) 118861	(9.04, 1.00) (0.00, N/A, -0.2)	1854.1 961.5	0.1445 88.8 88.8	1.9432 [2.0000]	97.2%			
PFTTrDA	(663.0 / 619.0) 773173 (663.0 / 169.0) 182237	(9.23, 1.02) (N/A, 0.00, 0.1)	1462.0 1650.8	0.2357 96.6 96.6	1.9044 [2.0000]	95.2%			
PFTeDA	(713.0 / 669.0) 833839 (713.0 / 169.0) 181859	(9.40, 1.00) (0.00, N/A, -0.1)	2446.2 974.2	0.2181 114.1 114.1	2.0479 [2.0000]	102.4%			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (4)
 Acquired: 2023/03/07 - 16:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 1329915 (299.0 / 99.0) 818514	(5.72, 1.00) (0.00, N/A, 0.0)	2864.0 2405.9	0.6155 104.9 104.9	1.7696 [1.7695]	100.0%			
PFPeS	(349.0 / 80.0) 2279446 (349.0 / 99.0) 813391	(6.64, 0.90) (N/A, 0.03, 0.1)	5177.9 2382.8	0.3568 104.4 104.4	1.9167 [1.8768]	102.1%			
PFHxS	(399.0 / 80.0) 1895693 (399.0 / 99.0) 645001	(7.40, 1.00) (0.00, N/A, 0.2)	1134585.9 1960.8	0.3402 99.3 99.3	1.7523 [1.8220]	96.2%			
PFHpS	(449.0 / 80.0) 2026857 (449.0 / 99.0) 590814	(8.04, 0.93) (N/A, 0.03, -0.2)	1595077.5 3310.8	0.2915 102.6 102.6	1.8706 [1.9028]	98.3%			
PFOS	(499.0 / 80.0) 2470448 (499.0 / 99.0) 550553	(8.60, 1.00) (0.00, N/A, -0.1)	1721.0 821.1	0.2229 103.0 103.0	1.8345 [1.8550]	98.9%			
PFNS	(549.0 / 80.0) 2609531 (549.0 / 99.0) 645319	(8.93, 1.04) (N/A, 0.00, -0.1)	1186513.1 16939.5	0.2473 107.8 107.8	2.0433 [1.9198]	106.4%			
PFDS	(599.0 / 80.0) 2700710 (599.0 / 99.0) 603288	(9.15, 1.06) (N/A, 0.00, -0.1)	3278.4 1934.6	0.2234 98.7 98.7	1.8305 [1.9262]	95.0%			
PFDoS	(699.0 / 80.0) 2384829 (699.0 / 99.0) 542518	(9.48, 1.10) (N/A, 0.00, 0.0)	2589.2 920.5	0.2275 104.3 104.3	2.0222 [1.9391]	104.3%			
4:2FTS	(327.0 / 307.0) 1477302 (327.0 / 81.0) 951283	(5.44, 1.00) (0.00, N/A, 0.0)	4573.2 2203.8	0.6439 104.0 104.0	7.6654 [7.4762]	102.5%			
6:2FTS	(427.0 / 407.0) 982816 (427.0 / 81.0) 708608	(6.95, 1.00) (0.00, N/A, 0.0)	2028.0 1710.9	0.7210 104.4 104.4	8.2282 [7.5923]	108.4%			
8:2FTS	(527.0 / 507.0) 1014731 (527.0 / 81.0) 673071	(8.12, 1.00) (0.00, N/A, 0.1)	2795.6 1482.0	0.6633 98.2 98.2	8.1499 [7.6663]	106.3%			

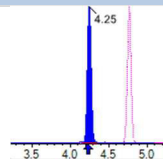
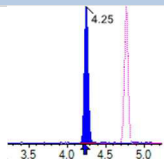
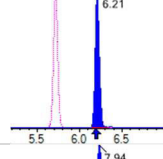
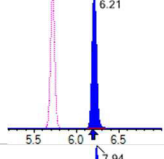
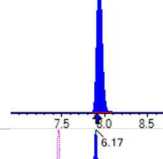
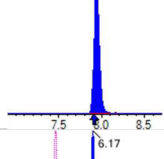
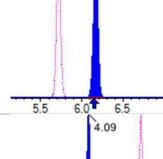
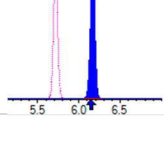
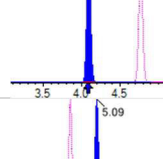
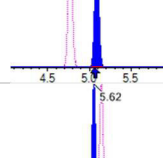
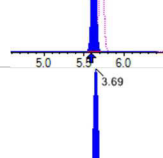
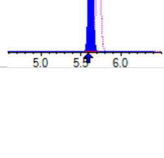
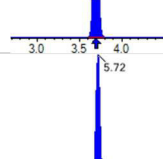
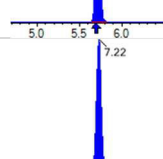
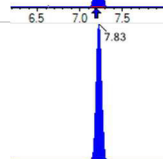
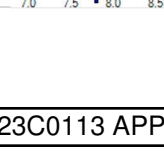


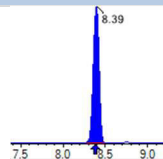
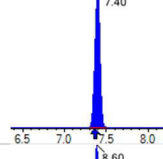
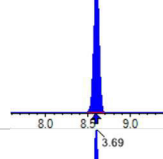
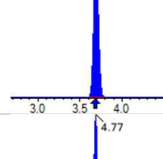
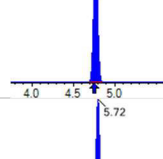
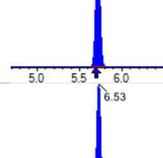
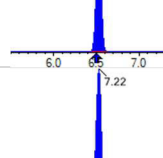
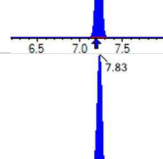
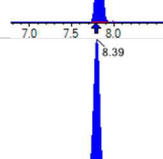
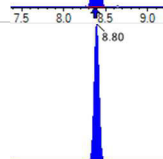

Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

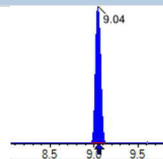
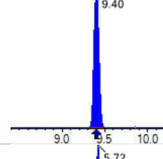
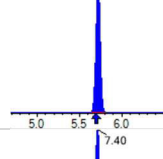
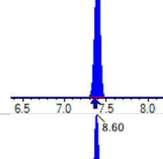
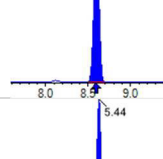
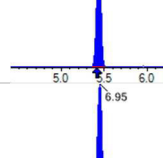
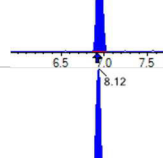
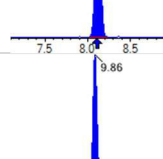
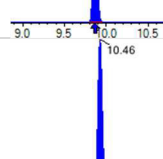
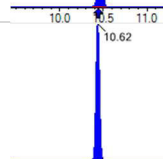
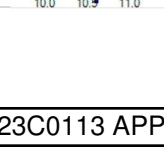
Sample I.D.: SC00916-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (4)
 Acquired: 2023/03/07 - 16:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 3574964 (498.0 / 478.0) 72595	(9.86, 1.00) (0.00, N/A, -0.1)	3964.0 400.7	0.0203 91.4 91.4	2.0098 [2.0000]	100.5%			
NMeFOSA	(512.0 / 219.0) 3568843 (512.0 / 169.0) 2972036	(10.46, 1.00) (0.00, N/A, 1.1)	5747.5 5583.2	0.8328 99.6 99.6	8.7504 [8.0000]	109.4%			
NEIFOSA	(526.0 / 219.0) 3758190 (526.0 / 169.0) 4606849	(10.62, 1.00) (0.00, N/A, 1.0)	7512.8 9488.3	1.2258 96.0 96.0	8.2450 [8.0000]	103.1%			
NMeFOSAA	(570.0 / 419.0) 428380 (570.0 / 483.0) 207064	(8.48, 1.00) (0.00, N/A, -0.3)	135213.9 629.3	0.4834 102.9 102.9	2.1091 [2.0000]	105.5%			
NEIFOSAA	(584.0 / 419.0) 384457 (584.0 / 526.0) 191644	(8.69, 1.00) (0.00, N/A, -0.1)	9554.8 793.5	0.4985 78.1 78.1	1.9895 [2.0000]	99.5%			
NMeFOSE	(616.0 / 59.0) 1320905	(10.40, 1.00) (0.01, N/A, 0.0)	1699.7	N/A 0.0 0.0	7.9859 [8.0000]	99.8%			
NEIFOSE	(630.0 / 59.0) 1562452	(10.57, 1.00) (0.01, N/A, 0.0)	1827.5	N/A 0.0 0.0	7.8671 [8.0000]	98.3%			
HFPO-DA	(285.0 / 169.0) 771348 (285.0 / 185.0) 2190901	(6.03, 1.00) (0.00, N/A, -0.1)	2300.3 2990.1	2.8404 105.5 105.5	3.8303 [4.0000]	95.8%			
ADONA	(377.0 / 85.0) 2940301 (377.0 / 251.0) 309332	(6.81, 1.13) (N/A, 0.02, -0.2)	3936.8 1080.2	0.1052 108.9 108.9	3.7139 [3.7708]	98.5%			
9CI-Pf3ONS	(531.0 / 351.0) 8449291 (533.0 / 353.0) 2630210	(8.87, 1.47) (N/A, 0.01, 0.1)	3811.2 2678.5	0.3113 97.6 97.6	3.9592 [3.7330]	106.1%			
11CI-PF3OUDS	(631.0 / 451.0) 4441626 (633.0 / 453.0) 1563440	(9.29, 1.54) (N/A, 0.00, 0.0)	4320.3 2560.0	0.3520 105.7 105.7	3.4225 [3.7728]	90.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 75885 (241.0 / 117.0) 153703	(4.25, 0.89) (N/A, 0.02, 0.0)	1274.3 776.6	2.0255 99.4 99.4	7.9490 [8.0000]	99.4%			
5:3FTCA	(341.0 / 236.7) 536060 (341.0 / 217.0) 812702	(6.21, 1.09) (N/A, 0.02, -0.1)	1781.7 1510.3	1.5161 92.0 92.0	7.5284 [8.0000]	94.1%			
7:3FTCA	(441.0 / 317.0) 933185 (441.0 / 337.0) 730861	(7.94, 1.39) (N/A, 0.03, -0.2)	1190.1 1352.0	0.7832 91.4 91.4	7.8087 [8.0000]	97.6%			
PFEESA	(315.0 / 135.0) 1789549 (315.0 / 83.0) 503296	(6.17, 1.08) (N/A, 0.03, 0.1)	4493.1 2090.7	0.2812 108.5 108.5	3.4399 [3.5698]	96.4%			
PFMPA	(229.0 / 85.0) 357853	(4.09, 0.86) (N/A, 0.02, 0.0)	3097.0	N/A 0.0 0.0	4.3839 [4.0000]	109.6%			
PFMBA	(279.0 / 85.0) 1086933	(5.09, 1.07) (N/A, 0.03, 0.0)	4311.6	N/A 0.0 0.0	4.1690 [4.0000]	104.2%			
NFDHA	(295.0 / 201.0) 891682 (295.0 / 85.0) 925802	(5.62, 0.98) (N/A, 0.03, 0.0)	3535.6 3290.3	1.0383 103.4 103.4	3.7705 [4.0000]	94.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 247750	(3.69, N/A) (N/A, 0.01, N/A)	2370.3	N/A	1.1566 [1.0000]	115.7% { 122.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 310993	(5.72, N/A) (N/A, 0.03, N/A)	3117.6	N/A	0.9902 [1.0000]	99.0% { 109.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 506851	(7.22, N/A) (N/A, 0.03, N/A)	3984.4	N/A	1.0975 [1.0000]	109.8% { 120.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 464822	(7.83, N/A) (N/A, 0.03, N/A)	2448.2	N/A	1.1138 [1.0000]	111.4% { 120.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 421840	(8.39, N/A) (N/A, 0.02, N/A)	3055.2	N/A	1.0504 [1.0000]	105.0% { 109.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 709350	(7.40, N/A) (N/A, 0.04, N/A)	2597.5	N/A	1.0448 [1.0000]	104.5% { 118.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 964234	(8.60, N/A) (N/A, 0.01, N/A)	1382.7	N/A	1.1237 [1.0000]	112.4% { 115.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2211871	(3.69, N/A) (N/A, 0.01, N/A)	5892.5	N/A	7.5019 [8.0000]	93.8% { 104.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1442056	(4.77, N/A) (N/A, 0.03, N/A)	4413.1	N/A	4.0140 [4.0000]	100.3% { 95.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 938406	(5.72, N/A) (N/A, 0.03, N/A)	2648.8	N/A	2.1649 [2.0000]	108.2% { 107.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 842582	(6.53, N/A) (N/A, 0.02, N/A)	3209.3	N/A	2.0405 [2.0000]	102.0% { 99.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1013121	(7.22, N/A) (N/A, 0.03, N/A)	726435.9	N/A	1.8399 [2.0000]	92.0% { 100.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 451962	(7.83, N/A) (N/A, 0.04, N/A)	3637.9	N/A	0.9151 [1.0000]	91.5% { 97.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 490912	(8.39, N/A) (N/A, 0.02, N/A)	2368.7	N/A	0.9669 [1.0000]	96.7% { 97.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 578778	(8.80, N/A) (N/A, 0.01, N/A)	2409.2	N/A	1.0225 [1.0000]	102.2% { 110.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 503234	(9.04, N/A) (N/A, 0.00, N/A)	2868.6	N/A	1.0170 [1.0000]	101.7% { 109.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 476906	(9.40, N/A) (N/A, 0.00, N/A)	1606.4	N/A	0.9138 [1.0000]	91.4% { 95.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2328464	(5.72, N/A) (N/A, 0.03, N/A)	4566.4	N/A	2.0720 [2.0000]	103.6% { 102.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1442268	(7.40, N/A) (N/A, 0.04, N/A)	2492.3	N/A	1.9762 [2.0000]	98.8% { 101.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2387405	(8.60, N/A) (N/A, 0.01, N/A)	2982.9	N/A	1.8467 [2.0000]	92.3% { 102.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 264301	(5.44, N/A) (N/A, 0.03, N/A)	1554.1	N/A	3.7077 [4.0000]	92.7% { 97.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 332609	(6.95, N/A) (N/A, 0.02, N/A)	1586.3	N/A	3.5539 [4.0000]	88.8% { 90.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 372054	(8.12, N/A) (N/A, 0.03, N/A)	1357.8	N/A	3.6695 [4.0000]	91.7% { 97.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4286473	(9.86, N/A) (N/A, 0.01, N/A)	3982.4	N/A	1.9384 [2.0000]	96.9% { 102.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 992019	(10.46, N/A) (N/A, 0.02, N/A)	3169.9	N/A	1.7534 [2.0000]	87.7% { 91.0% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 957642	(10.62, N/A) (N/A, 0.02, N/A)	3344.9	N/A	1.8596 [2.0000]	93.0% { 92.4% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (4)
 Acquired: 2023/03/07 - 16:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 788848	(8.48 , N/A) (N/A , 0.02 , N/A)	1642.6	N/A	3.5683 [4.0000]	89.2% { 98.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 922571	(8.69 , N/A) (N/A , 0.01 , N/A)	74159.3	N/A	3.7237 [4.0000]	93.1% { 107.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 3340167	(10.39 , N/A) (N/A , 0.02 , N/A)	1498.5	N/A	18.9722 [20.0000]	94.9% { 99.1% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 4109527	(10.56 , N/A) (N/A , 0.02 , N/A)	2343.5	N/A	19.7767 [20.0000]	98.9% { 98.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2026565	(6.03 , N/A) (N/A , 0.03 , N/A)	5527.8	N/A	8.4660 [8.0000]	105.8% { 100.4% }			

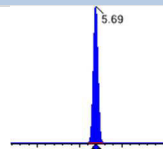
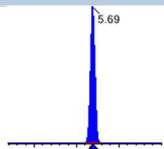
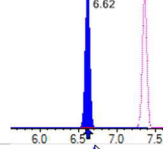
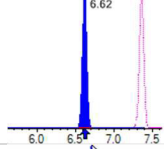
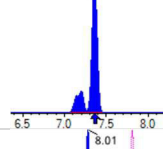
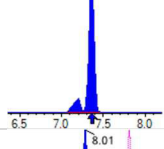
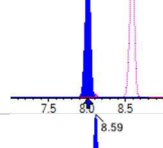
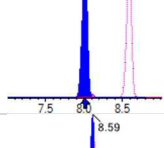
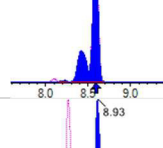
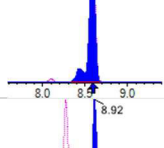
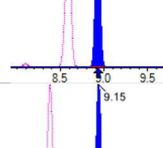
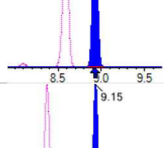
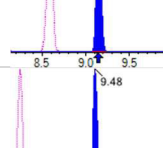
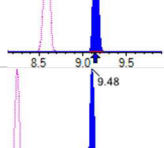
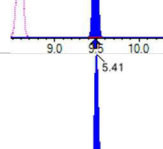
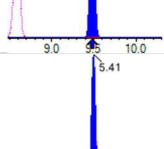
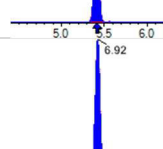
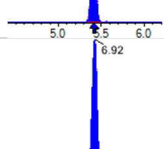
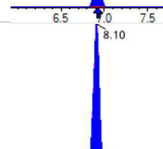
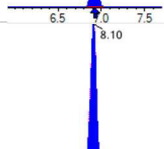
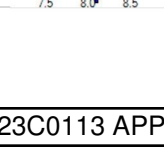
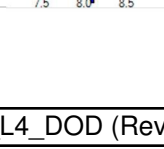


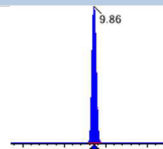
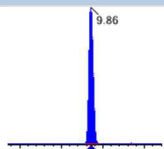
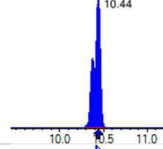
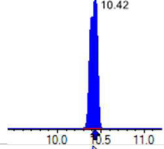
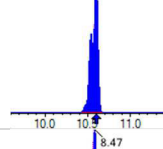
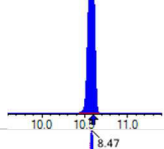
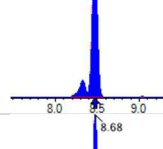
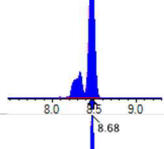
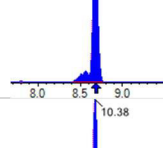
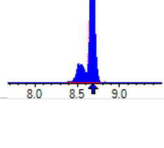
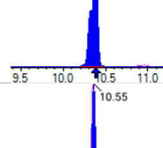
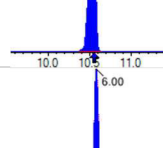
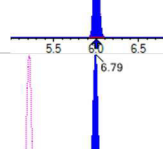
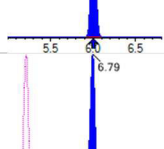
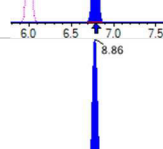
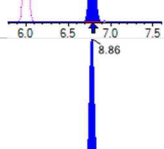
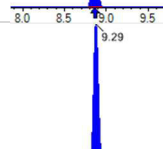
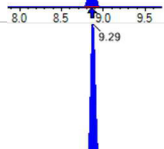
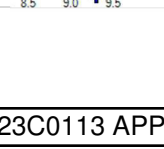
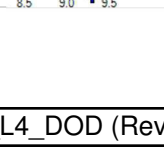
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

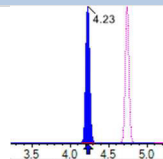
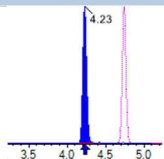
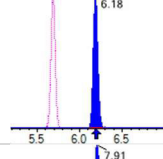
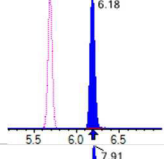
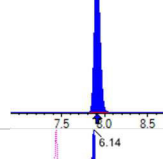
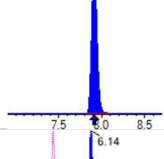
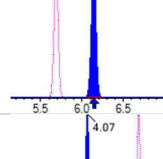
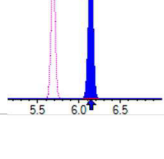
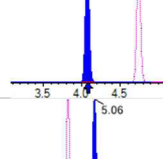
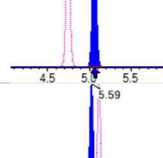
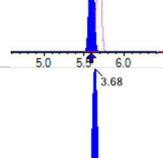
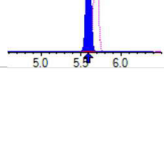
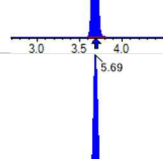
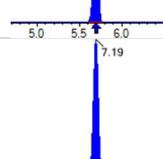
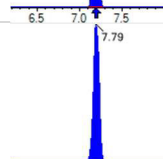
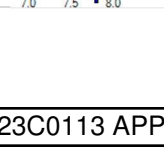
Sample I.D.: SC00916-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

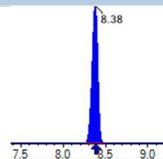
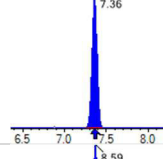
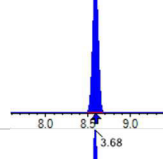
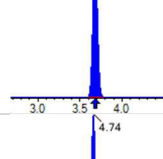
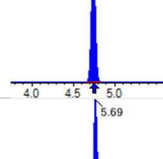
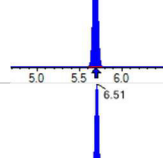
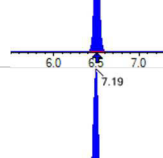
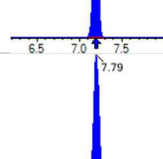
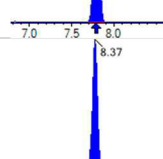
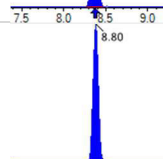
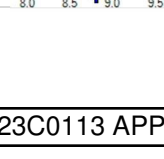
Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (5)
 Acquired: 2023/03/07 - 16:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 4314770	(3.68, 1.00) (0.00, N/A, 0.0)	303.4	N/A 0.0 0.0	19.7494 [20.0000]	98.7%			
PFPeA	(263.0 / 219.0) 3292599 (263.0 / 69.0) 37284	(4.74, 1.00) (0.00, N/A, 0.1)	5807.1 752.6	0.0113 100.0 100.0	9.9316 [10.0000]	99.3%			
PFHxA	(313.0 / 269.0) 1819361 (313.0 / 119.0) 191644	(5.69, 1.00) (0.00, N/A, 0.0)	7617.2 10259.4	0.1053 100.0 100.0	4.6839 [5.0000]	93.7%			
PFHpA	(363.0 / 319.0) 1631903 (363.0 / 169.0) 531953	(6.51, 1.00) (0.00, N/A, 0.0)	7658.1 16704.3	0.3260 100.0 100.0	4.5759 [5.0000]	91.5%			
PFOA	(413.0 / 369.0) 2141962 (413.0 / 169.0) 746553	(7.19, 1.00) (0.00, N/A, 0.0)	6728.6 16398481.8	0.3485 100.0 100.0	4.6678 [5.0000]	93.4%			
PFNA	(463.0 / 419.0) 1841847 (463.0 / 169.0) 431173	(7.80, 1.00) (0.01, N/A, -0.1)	10486.5 1047.6	0.2341 100.0 100.0	4.5888 [5.0000]	91.8%			
PFDA	(513.0 / 469.0) 2188019 (513.0 / 169.0) 232738	(8.37, 1.00) (0.00, N/A, 0.0)	2376.8 4348.3	0.1064 100.0 100.0	4.6111 [5.0000]	92.2%			
PFUnA	(563.0 / 519.0) 2071082 (563.0 / 169.0) 248377	(8.79, 1.00) (0.00, N/A, 0.0)	2261.0 1032.9	0.1199 100.0 100.0	4.9366 [5.0000]	98.7%			
PFDoA	(613.0 / 569.0) 1910401 (613.0 / 169.0) 310938	(9.04, 1.00) (0.00, N/A, 0.2)	2426.1 19684.3	0.1628 100.0 100.0	4.9616 [5.0000]	99.2%			
PFTrDA	(663.0 / 619.0) 1773794 (663.0 / 169.0) 432832	(9.24, 1.02) (N/A, 0.00, -0.1)	2432.2 1362.9	0.2440 100.0 100.0	4.8038 [5.0000]	96.1%			
PFTeDA	(713.0 / 669.0) 2119862 (713.0 / 169.0) 405166	(9.40, 1.00) (0.00, N/A, 0.2)	3506.1 2650.0	0.1911 100.0 100.0	4.9835 [5.0000]	99.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 3184247 (299.0 / 99.0) 1868082	(5.69, 1.00) (0.00, N/A, 0.0)	3732.0 2826.3	0.5867 100.0 100.0	4.3464 [4.4237]	98.3%			
PFPeS	(349.0 / 80.0) 5511119 (349.0 / 99.0) 1882930	(6.62, 0.90) (N/A, 0.00, 0.0)	14463.2 10577.6	0.3417 100.0 100.0	4.7071 [4.6919]	100.3%			
PFHxS	(399.0 / 80.0) 4400564 (399.0 / 99.0) 1508515	(7.36, 1.00) (0.00, N/A, 0.0)	37748.7 2987.5	0.3428 100.0 100.0	4.1317 [4.5549]	90.7%			
PFHpS	(449.0 / 80.0) 4723479 (449.0 / 99.0) 1342163	(8.01, 0.93) (N/A, 0.00, -0.1)	237984.5 13682802.3	0.2841 100.0 100.0	4.4509 [4.7570]	93.6%			
PFOS	(499.0 / 80.0) 5818311 (499.0 / 99.0) 1259333	(8.59, 1.00) (0.00, N/A, 0.1)	2453.4 1137.4	0.2164 100.0 100.0	4.4111 [4.6375]	95.1%			
PFNS	(549.0 / 80.0) 6021740 (549.0 / 99.0) 1380746	(8.93, 1.04) (N/A, 0.00, 0.1)	14814.0 4250.0	0.2293 100.0 100.0	4.8142 [4.7994]	100.3%			
PFDS	(599.0 / 80.0) 7029909 (599.0 / 99.0) 1591235	(9.15, 1.06) (N/A, 0.00, 0.0)	5650.2 4928.8	0.2264 100.0 100.0	4.8648 [4.8155]	101.0%			
PFDoS	(699.0 / 80.0) 5889342 (699.0 / 99.0) 1284050	(9.48, 1.10) (N/A, 0.00, 0.0)	3296.4 3117.0	0.2180 100.0 100.0	5.0985 [4.8478]	105.2%			
4:2FTS	(327.0 / 307.0) 3660829 (327.0 / 81.0) 2266912	(5.41, 1.00) (0.00, N/A, 0.0)	6003.4 3400.5	0.6192 100.0 100.0	18.5752 [18.6906]	99.4%			
6:2FTS	(427.0 / 407.0) 2380284 (427.0 / 81.0) 1644539	(6.92, 1.00) (0.00, N/A, 0.0)	2766.3 4141.8	0.6909 100.0 100.0	17.9343 [18.9808]	94.5%			
8:2FTS	(527.0 / 507.0) 2381201 (527.0 / 81.0) 1608176	(8.10, 1.00) (0.00, N/A, 0.0)	2282.2 2104.3	0.6754 100.0 100.0	18.5604 [19.1658]	96.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 8764904 (498.0 / 478.0) 194763	(9.86, 1.00) (0.00, N/A, 0.1)	3924.6 1446.7	0.0222 100.0 100.0	5.0267 [5.0000]	100.5%			
NMeFOSA	(512.0 / 219.0) 8429901 (512.0 / 169.0) 7048831	(10.44, 1.00) (0.00, N/A, 1.2)	6121.6 6632.6	0.8362 100.0 100.0	18.8117 [20.0000]	94.1%			
NEIFOSA	(526.0 / 219.0) 9106900 (526.0 / 169.0) 11624129	(10.59, 1.00) (0.00, N/A, 0.9)	10421.3 10232.9	1.2764 100.0 100.0	18.4676 [20.0000]	92.3%			
NMeFOSAA	(570.0 / 419.0) 967880 (570.0 / 483.0) 454645	(8.47, 1.00) (0.00, N/A, 0.0)	2406.0 497.0	0.4697 100.0 100.0	4.6931 [5.0000]	93.9%			
NEIFOSAA	(584.0 / 419.0) 827259 (584.0 / 526.0) 528100	(8.68, 1.00) (0.00, N/A, 0.0)	2557.1 1843.5	0.6384 100.0 100.0	4.6023 [5.0000]	92.0%			
NMeFOSE	(616.0 / 59.0) 3065855	(10.38, 1.00) (0.01, N/A, 0.0)	2493.0	N/A 0.0 0.0	18.3688 [20.0000]	91.8%			
NEIFOSE	(630.0 / 59.0) 3713982	(10.55, 1.00) (0.01, N/A, 0.0)	1743.1	N/A 0.0 0.0	18.4930 [20.0000]	92.5%			
HFPO-DA	(285.0 / 169.0) 1950795 (285.0 / 185.0) 5250896	(6.00, 1.00) (0.00, N/A, -0.1)	6057.9 4047.8	2.6917 100.0 100.0	9.7242 [10.0000]	97.2%			
ADONA	(377.0 / 85.0) 7516722 (377.0 / 251.0) 726011	(6.79, 1.13) (N/A, 0.00, -0.1)	4655.2 1887.4	0.0966 100.0 100.0	9.5307 [9.4270]	101.1%			
9CI-Pf3ONS	(531.0 / 351.0) 18998957 (533.0 / 353.0) 6061965	(8.86, 1.48) (N/A, 0.00, 0.0)	4237.4 3111.4	0.3191 100.0 100.0	8.9368 [9.3325]	95.8%			
11CI-PF3OUDS	(631.0 / 451.0) 11517834 (633.0 / 453.0) 3835435	(9.29, 1.55) (N/A, 0.00, 0.0)	5594.5 3741.0	0.3330 100.0 100.0	9.0695 [9.4321]	96.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 177222 (241.0 / 117.0) 361209	(4.23, 0.89) (N/A, 0.00, 0.0)	2445.5 1356.9	2.0382 100.0 100.0	17.7566 [20.0000]	88.8%			
5:3FTCA	(341.0 / 236.7) 1237103 (341.0 / 217.0) 2037578	(6.18, 1.09) (N/A, 0.00, 0.0)	3647.4 2401.9	1.6471 100.0 100.0	18.6569 [20.0000]	93.3%			
7:3FTCA	(441.0 / 317.0) 2102004 (441.0 / 337.0) 1801002	(7.91, 1.39) (N/A, 0.00, -0.1)	1816.4 1778.4	0.8568 100.0 100.0	18.8880 [20.0000]	94.4%			
PFEESA	(315.0 / 135.0) 4461630 (315.0 / 83.0) 1156024	(6.14, 1.08) (N/A, 0.00, -0.1)	3865.9 2283.8	0.2591 100.0 100.0	9.2094 [8.9246]	103.2%			
PFMPA	(229.0 / 85.0) 812908	(4.07, 0.86) (N/A, 0.00, 0.0)	4981.9	N/A 0.0 0.0	9.5254 [10.0000]	95.3%			
PFMBA	(279.0 / 85.0) 2687457	(5.06, 1.07) (N/A, 0.00, 0.0)	6165.9	N/A 0.0 0.0	9.8597 [10.0000]	98.6%			
NFDHA	(295.0 / 201.0) 2076210 (295.0 / 85.0) 2085359	(5.59, 0.98) (N/A, 0.00, 0.1)	4862.4 4695.6	1.0044 100.0 100.0	9.4277 [10.0000]	94.3%			
13C3_PFBa_IIS	(216.0 / 172.0) 202451	(3.68, N/A) (N/A, 0.00, N/A)	1732.9	N/A	0.9451 [1.0000]	94.5% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 285310	(5.69, N/A) (N/A, 0.00, N/A)	423221.1	N/A	0.9084 [1.0000]	90.8% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 419320	(7.19, N/A) (N/A, 0.00, N/A)	567286.9	N/A	0.9080 [1.0000]	90.8% { 100.0% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 385992	(7.79, N/A) (N/A, 0.00, N/A)	5201.5	N/A	0.9249 [1.0000]	92.5% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 384541	(8.38, N/A) (N/A, 0.00, N/A)	4558685.7	N/A	0.9575 [1.0000]	95.7% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 598431	(7.36, N/A) (N/A, 0.00, N/A)	4079.2	N/A	0.8814 [1.0000]	88.1% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 831690	(8.59, N/A) (N/A, 0.00, N/A)	1562.3	N/A	0.9693 [1.0000]	96.9% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2116502	(3.68, N/A) (N/A, 0.00, N/A)	5745.2	N/A	8.7847 [8.0000]	109.8% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1507625	(4.74, N/A) (N/A, 0.00, N/A)	3806.4	N/A	4.5742 [4.0000]	114.4% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 873873	(5.69, N/A) (N/A, 0.00, N/A)	4000.5	N/A	2.1975 [2.0000]	109.9% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 845360	(6.51, N/A) (N/A, 0.00, N/A)	2681.8	N/A	2.2316 [2.0000]	111.6% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1011129	(7.19, N/A) (N/A, 0.00, N/A)	3836.8	N/A	2.2196 [2.0000]	111.0% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 463835	(7.79, N/A) (N/A, 0.00, N/A)	468207.4	N/A	1.1309 [1.0000]	113.1% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 503015	(8.37, N/A) (N/A, 0.00, N/A)	333.3	N/A	1.0869 [1.0000]	108.7% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 525279	(8.80, N/A) (N/A, 0.00, N/A)	1875.5	N/A	1.0180 [1.0000]	101.8% { 100.0% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (5)
 Acquired: 2023/03/07 - 16:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 457695	(9.04, N/A) (N/A, 0.00, N/A)	2608.7	N/A	1.0147 [1.0000]	101.5% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 498225	(9.40, N/A) (N/A, 0.00, N/A)	6470.5	N/A	1.0473 [1.0000]	104.7% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2269851	(5.69, N/A) (N/A, 0.00, N/A)	3665.4	N/A	2.3942 [2.0000]	119.7% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1419902	(7.36, N/A) (N/A, 0.00, N/A)	3443.3	N/A	2.3062 [2.0000]	115.3% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2338329	(8.59, N/A) (N/A, 0.00, N/A)	1608.7	N/A	2.0970 [2.0000]	104.8% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 270276	(5.41, N/A) (N/A, 0.00, N/A)	1239.4	N/A	4.4943 [4.0000]	112.4% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 369581	(6.92, N/A) (N/A, 0.00, N/A)	1785.9	N/A	4.6809 [4.0000]	117.0% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 383366	(8.10, N/A) (N/A, 0.00, N/A)	1245.4	N/A	4.4819 [4.0000]	112.0% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4201922	(9.86, N/A) (N/A, 0.00, N/A)	4072.4	N/A	2.2030 [2.0000]	110.2% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 1089973	(10.44, N/A) (N/A, 0.00, N/A)	2751.6	N/A	2.2336 [2.0000]	111.7% { 100.0% }			
D5_NeIFOSA_EIS	(531.0 / 169.0) 1036040	(10.60, N/A) (N/A, 0.00, N/A)	4635.3	N/A	2.3324 [2.0000]	116.6% { 100.0% }			

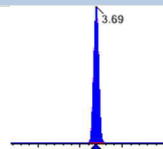
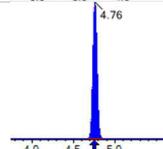
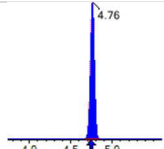
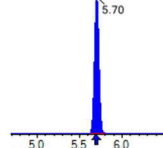
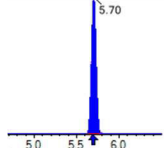
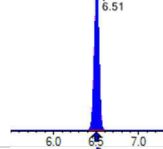
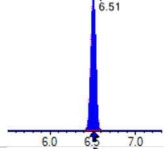
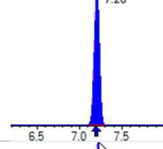
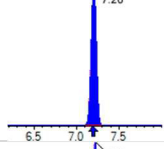
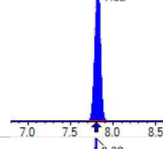
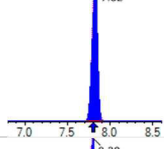
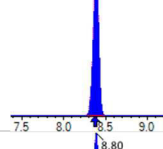
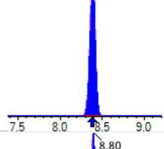
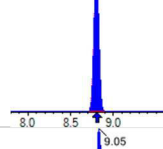
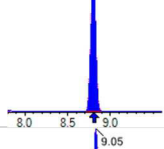
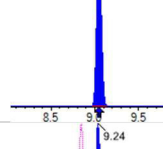
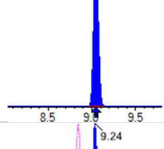
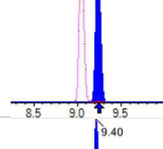
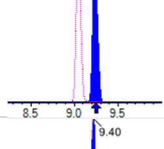
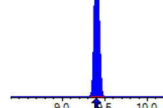
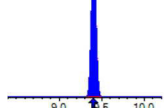


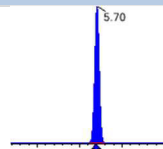
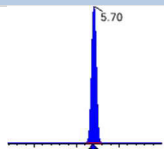
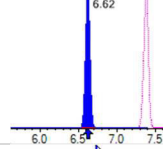
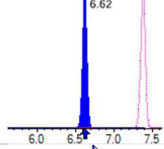
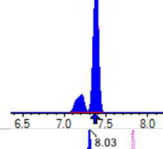
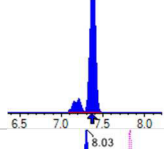
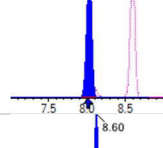
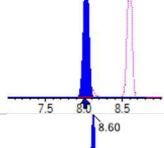
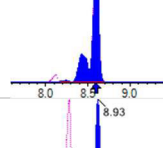
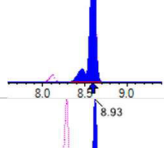
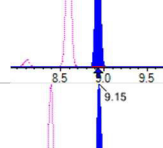
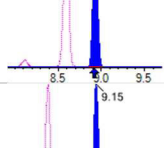
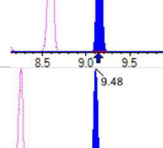
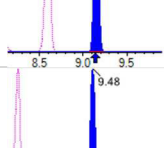
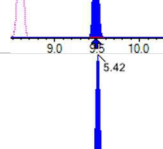
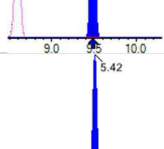
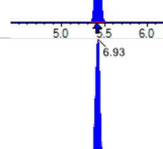
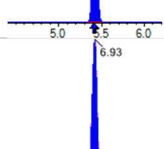
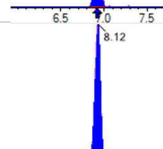
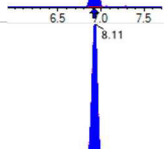
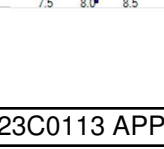
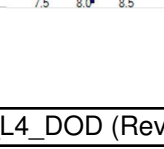
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (5)
 Acquired: 2023/03/07 - 16:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 800976	(8.47, N/A) (N/A, 0.00, N/A)	1718.7	N/A	4.2006 [4.0000]	105.0% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 858151	(8.67, N/A) (N/A, 0.00, N/A)	18086.3	N/A	4.0157 [4.0000]	100.4% { 100.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 3370502	(10.37, N/A) (N/A, 0.00, N/A)	1674.2	N/A	22.1955 [20.0000]	111.0% { 100.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 4155590	(10.54, N/A) (N/A, 0.00, N/A)	1840.0	N/A	23.1855 [20.0000]	115.9% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2018818	(6.00, N/A) (N/A, 0.00, N/A)	3856.1	N/A	9.1927 [8.0000]	114.9% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 7996170	(3.69, 1.00) (0.00, N/A, 0.0)	332.4	N/A 0.0 0.0	45.4712 [40.0000]	113.7%			
PFPeA	(263.0 / 219.0) 6303654 (263.0 / 69.0) 68860	(4.76, 1.00) (0.00, N/A, -0.1)	11103.8 1621.0	0.0109 96.5 96.5	22.2289 [20.0000]	111.1%			
PFHxA	(313.0 / 269.0) 3695051 (313.0 / 119.0) 381396	(5.70, 1.00) (0.00, N/A, 0.0)	10462.7 7988.4	0.1032 98.0 98.0	11.2694 [10.0000]	112.7%			
PFHpA	(363.0 / 319.0) 3306989 (363.0 / 169.0) 1033501	(6.51, 1.00) (0.00, N/A, -0.1)	12732.1 13003.2	0.3125 95.9 95.9	10.7066 [10.0000]	107.1%			
PFOA	(413.0 / 369.0) 4269177 (413.0 / 169.0) 1448972	(7.20, 1.00) (0.00, N/A, 0.1)	6779.1 130886.0	0.3394 97.4 97.4	11.1591 [10.0000]	111.6%			
PFNA	(463.0 / 419.0) 3593727 (463.0 / 169.0) 785371	(7.82, 1.00) (0.00, N/A, -0.1)	34423.4 52396.6	0.2185 93.4 93.4	11.2601 [10.0000]	112.6%			
PFDA	(513.0 / 469.0) 4357130 (513.0 / 169.0) 455442	(8.39, 1.00) (0.00, N/A, 0.0)	3068.9 2516.3	0.1045 98.3 98.3	10.9022 [10.0000]	109.0%			
PFUnA	(563.0 / 519.0) 4076367 (563.0 / 169.0) 505324	(8.80, 1.00) (0.00, N/A, 0.0)	4201.4 2351.0	0.1240 103.4 103.4	11.3163 [10.0000]	113.2%			
PFDoA	(613.0 / 569.0) 3675190 (613.0 / 169.0) 575616	(9.05, 1.00) (0.00, N/A, 0.0)	3706.7 2084.2	0.1566 96.2 96.2	11.8616 [10.0000]	118.6%			
PFTrDA	(663.0 / 619.0) 3510237 (663.0 / 169.0) 804980	(9.24, 1.02) (N/A, 0.00, 0.0)	3627.1 11540.5	0.2293 94.0 94.0	11.8136 [10.0000]	118.1%			
PFTeDA	(713.0 / 669.0) 3960952 (713.0 / 169.0) 717233	(9.40, 1.00) (0.00, N/A, -0.1)	3406.2 1843.9	0.1811 94.7 94.7	10.1833 [10.0000]	101.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 6193634 (299.0 / 99.0) 3827218	(5.70, 1.00) (0.00, N/A, 0.0)	5759.3 4313.6	0.6179 105.3 105.3	10.1048 [8.8473]	114.2%			
PFPeS	(349.0 / 80.0) 10805698 (349.0 / 99.0) 3726447	(6.62, 0.90) (N/A, 0.00, 0.0)	439832.7 6763.0	0.3449 100.9 100.9	10.6880 [9.3838]	113.9%			
PFHxS	(399.0 / 80.0) 9481485 (399.0 / 99.0) 3197112	(7.38, 1.00) (0.00, N/A, 0.1)	53584.8 1424234.9	0.3372 98.4 98.4	10.3091 [9.1098]	113.2%			
PFHpS	(449.0 / 80.0) 9776182 (449.0 / 99.0) 2703954	(8.03, 0.93) (N/A, 0.02, 0.1)	48634.1 7160.6	0.2766 97.3 97.3	10.6328 [9.5141]	111.8%			
PFOS	(499.0 / 80.0) 11331591 (499.0 / 99.0) 2492053	(8.60, 1.00) (0.00, N/A, 0.1)	3266.5 1560.0	0.2199 101.6 101.6	9.9160 [9.2749]	106.9%			
PFNS	(549.0 / 80.0) 12109353 (549.0 / 99.0) 3052635	(8.93, 1.04) (N/A, 0.01, 0.1)	24466.1 2253637.3	0.2521 109.9 109.9	11.1740 [9.5989]	116.4%			
PFDS	(599.0 / 80.0) 14052434 (599.0 / 99.0) 3241900	(9.15, 1.06) (N/A, 0.00, 0.0)	6376.4 5185.8	0.2307 101.9 101.9	11.2242 [9.6311]	116.5%			
PFDoS	(699.0 / 80.0) 11082155 (699.0 / 99.0) 2497400	(9.48, 1.10) (N/A, 0.00, 0.0)	4512.1 3952.2	0.2254 103.4 103.4	11.0737 [9.6956]	114.2%			
4:2FTS	(327.0 / 307.0) 7213879 (327.0 / 81.0) 4343526	(5.42, 1.00) (0.00, N/A, 0.0)	6294.0 4390.6	0.6021 97.2 97.2	40.0055 [37.3811]	107.0%			
6:2FTS	(427.0 / 407.0) 4591018 (427.0 / 81.0) 3367582	(6.93, 1.00) (0.00, N/A, 0.1)	3835.9 3204.5	0.7335 106.2 106.2	42.7228 [37.9617]	112.5%			
8:2FTS	(527.0 / 507.0) 4747971 (527.0 / 81.0) 3315402	(8.12, 1.00) (0.00, N/A, 0.1)	3148.0 3653.6	0.6983 103.4 103.4	41.4503 [38.3315]	108.1%			

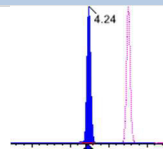
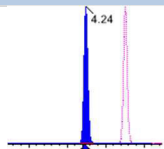
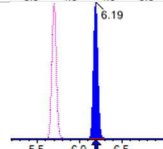
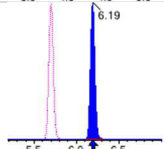
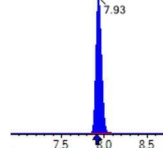
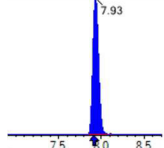
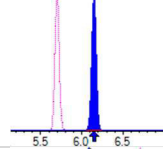
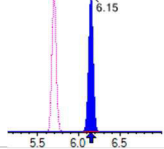
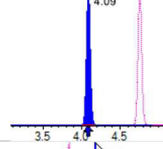
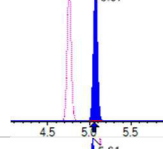
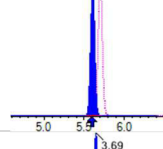
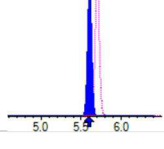
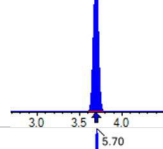
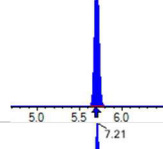
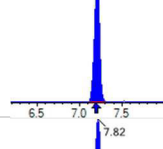
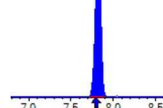


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (6)
 Acquired: 2023/03/07 - 16:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 16373502 (498.0 / 478.0) 378339	(9.87, 1.00) (0.00, N/A, 0.1)	4763.2 1885.7	0.0231 104.0 104.0	11.4882 [10.0000]	114.9%			
NMeFOSA	(512.0 / 219.0) 16497720 (512.0 / 169.0) 13927760	(10.46, 1.00) (0.00, N/A, 1.0)	5949.0 8503.3	0.8442 101.0 101.0	45.1248 [40.0000]	112.8%			
NEIFOSA	(526.0 / 219.0) 17698464 (526.0 / 169.0) 21879187	(10.62, 1.00) (0.00, N/A, 0.8)	14299.6 17950.9	1.2362 96.9 96.9	44.9492 [40.0000]	112.4%			
NMeFOSAA	(570.0 / 419.0) 1941686 (570.0 / 483.0) 959131	(8.48, 1.00) (0.00, N/A, 0.0)	2780.8 713.7	0.4940 105.2 105.2	10.6067 [10.0000]	106.1%			
NEIFOSAA	(584.0 / 419.0) 1760073 (584.0 / 526.0) 983886	(8.69, 1.00) (0.01, N/A, 0.1)	2822.6 54782.8	0.5590 87.6 87.6	11.5613 [10.0000]	115.6%			
NMeFOSE	(616.0 / 59.0) 6190679	(10.40, 1.00) (0.01, N/A, 0.0)	3385.0	N/A 0.0 0.0	44.9694 [40.0000]	112.4%			
NEtFOSE	(630.0 / 59.0) 7180038	(10.57, 1.00) (0.01, N/A, 0.0)	1630.5	N/A 0.0 0.0	46.0220 [40.0000]	115.1%			
HFPO-DA	(285.0 / 169.0) 3666413 (285.0 / 185.0) 10607744	(6.01, 1.00) (0.00, N/A, 0.0)	4490.0 6113.0	2.8932 107.5 107.5	21.0240 [20.0000]	105.1%			
ADONA	(377.0 / 85.0) 14256379 (377.0 / 251.0) 1456394	(6.79, 1.13) (N/A, 0.00, -0.2)	4595.9 2831.4	0.1022 105.8 105.8	20.7941 [18.8540]	110.3%			
9CI-Pf3ONS	(531.0 / 351.0) 34792374 (533.0 / 353.0) 11380772	(8.87, 1.48) (N/A, 0.00, 0.1)	4232.4 3709.9	0.3271 102.5 102.5	18.8266 [18.6651]	100.9%			
11CI-PF3OUDS	(631.0 / 451.0) 21366234 (633.0 / 453.0) 7518134	(9.29, 1.55) (N/A, 0.00, 0.0)	5480.3 5588.8	0.3519 105.7 105.7	20.3622 [18.8642]	107.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 356777 (241.0 / 117.0) 714316	(4.24, 0.89) (N/A, 0.01, 0.0)	2050.1 1801.3	2.0021 98.2 98.2	41.7912 [40.0000]	104.5%			
5:3FTCA	(341.0 / 236.7) 2509841 (341.0 / 217.0) 4213578	(6.19, 1.09) (N/A, 0.01, 0.0)	2909.5 3237.4	1.6788 101.9 101.9	44.8405 [40.0000]	112.1%			
7:3FTCA	(441.0 / 317.0) 4486774 (441.0 / 337.0) 3739024	(7.93, 1.39) (N/A, 0.02, 0.0)	2178.6 2236.3	0.8333 97.3 97.3	47.7614 [40.0000]	119.4%			
PFEEA	(315.0 / 135.0) 8587443 (315.0 / 83.0) 2334196	(6.15, 1.08) (N/A, 0.01, 0.0)	3933.6 4882.5	0.2718 104.9 104.9	20.9988 [17.8492]	117.6%			
PFMPA	(229.0 / 85.0) 1557216	(4.09, 0.86) (N/A, 0.01, 0.0)	5840.2	N/A 0.0 0.0	21.3323 [20.0000]	106.7%			
PFMBA	(279.0 / 85.0) 5022999	(5.07, 1.07) (N/A, 0.02, 0.0)	4873.8	N/A 0.0 0.0	21.5442 [20.0000]	107.7%			
NFDHA	(295.0 / 201.0) 4323240 (295.0 / 85.0) 4324686	(5.61, 0.98) (N/A, 0.01, 0.1)	6065.2 4345.5	1.0003 99.6 99.6	23.2560 [20.0000]	116.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 193545	(3.69, N/A) (N/A, 0.01, N/A)	1721.4	N/A	0.9036 [1.0000]	90.4% { 95.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 308295	(5.70, N/A) (N/A, 0.01, N/A)	1400.5	N/A	0.9816 [1.0000]	98.2% { 108.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 445034	(7.21, N/A) (N/A, 0.01, N/A)	1881.8	N/A	0.9637 [1.0000]	96.4% { 106.1% }			
13C5_PFNxA_IIS	(468.0 / 423.0) 405209	(7.82, N/A) (N/A, 0.02, N/A)	2019243.5	N/A	0.9710 [1.0000]	97.1% { 105.0% }			

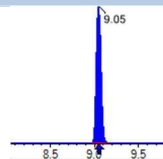
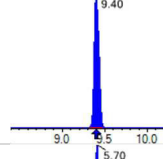
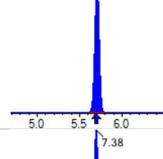
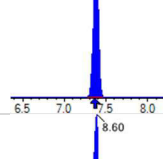
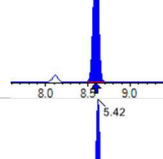
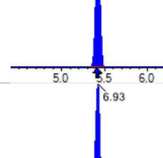
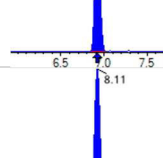
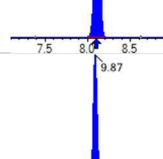
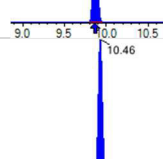
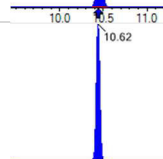
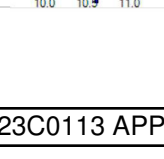


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (6)
 Acquired: 2023/03/07 - 16:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 385118	(8.38, N/A) (N/A, 0.01, N/A)	36473.8	N/A	0.9589 [1.0000]	95.9% { 100.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 635241	(7.38, N/A) (N/A, 0.02, N/A)	2302.3	N/A	0.9357 [1.0000]	93.6% { 106.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 852701	(8.60, N/A) (N/A, 0.01, N/A)	2500.5	N/A	0.9938 [1.0000]	99.4% { 102.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1703574	(3.69, N/A) (N/A, 0.01, N/A)	5949.8	N/A	7.3962 [8.0000]	92.5% { 80.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1289578	(4.76, N/A) (N/A, 0.02, N/A)	4159.4	N/A	3.6210 [4.0000]	90.5% { 85.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 737662	(5.70, N/A) (N/A, 0.01, N/A)	2296.6	N/A	1.7166 [2.0000]	85.8% { 84.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 732149	(6.51, N/A) (N/A, 0.00, N/A)	2603.5	N/A	1.7886 [2.0000]	89.4% { 86.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 842985	(7.20, N/A) (N/A, 0.01, N/A)	1725.2	N/A	1.7435 [2.0000]	87.2% { 83.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 368815	(7.82, N/A) (N/A, 0.03, N/A)	32715.7	N/A	0.8566 [1.0000]	85.7% { 79.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 423663	(8.38, N/A) (N/A, 0.01, N/A)	5125.2	N/A	0.9140 [1.0000]	91.4% { 84.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 451010	(8.80, N/A) (N/A, 0.00, N/A)	2135.9	N/A	0.8727 [1.0000]	87.3% { 85.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 368310	(9.05, N/A) (N/A, 0.00, N/A)	342.7	N/A	0.8153 [1.0000]	81.5% { 80.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 455581	(9.40, N/A) (N/A, 0.00, N/A)	1670.7	N/A	0.9562 [1.0000]	95.6% { 91.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1899060	(5.70, N/A) (N/A, 0.01, N/A)	3735.7	N/A	1.8870 [2.0000]	94.4% { 83.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1226116	(7.38, N/A) (N/A, 0.02, N/A)	1320.0	N/A	1.8760 [2.0000]	93.8% { 86.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2025888	(8.60, N/A) (N/A, 0.01, N/A)	1845.0	N/A	1.7720 [2.0000]	88.6% { 86.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 247292	(5.42, N/A) (N/A, 0.01, N/A)	2016.4	N/A	3.8739 [4.0000]	96.8% { 91.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 299237	(6.93, N/A) (N/A, 0.00, N/A)	2193.5	N/A	3.5703 [4.0000]	89.3% { 81.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 342283	(8.11, N/A) (N/A, 0.02, N/A)	1736.1	N/A	3.7697 [4.0000]	94.2% { 89.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3434548	(9.87, N/A) (N/A, 0.01, N/A)	3577.1	N/A	1.7563 [2.0000]	87.8% { 81.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 889264	(10.46, N/A) (N/A, 0.03, N/A)	2690.9	N/A	1.7774 [2.0000]	88.9% { 81.6% }			
D5_NeIFOSA_EIS	(531.0 / 169.0) 827237	(10.62, N/A) (N/A, 0.03, N/A)	3918.5	N/A	1.8165 [2.0000]	90.8% { 79.8% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL6
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (6)
 Acquired: 2023/03/07 - 16:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 710980	(8.48 , N/A) (N/A , 0.01 , N/A)	2012.3	N/A	3.6367 [4.0000]	90.9% { 88.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 726802	(8.68 , N/A) (N/A , 0.01 , N/A)	65178.8	N/A	3.3172 [4.0000]	82.9% { 84.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2779993	(10.39 , N/A) (N/A , 0.02 , N/A)	1471.2	N/A	17.8558 [20.0000]	89.3% { 82.5% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 3228200	(10.56 , N/A) (N/A , 0.03 , N/A)	1895.0	N/A	17.5674 [20.0000]	87.8% { 77.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1754943	(6.01 , N/A) (N/A , 0.01 , N/A)	4435.4	N/A	7.3954 [8.0000]	92.4% { 86.9% }			



Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL7
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
Path: S2023-03-07A (7)
Acquired: 2023/03/07 - 16:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 14758618	(3.69 , 1.00) (0.00 , N/A , 0.0)	269.9	N/A 0.0 0.0	79.8137 [80.0000]	99.8%			
PFPeA	(263.0 / 219.0) 11859000 (263.0 / 69.0) 137423	(4.77 , 1.00) (0.00 , N/A , 0.0)	8846.2 1726.8	0.0116 102.3 102.3	39.5115 [40.0000]	98.8%			
PFHxA	(313.0 / 269.0) 7395509 (313.0 / 119.0) 726599	(5.72 , 1.00) (0.00 , N/A , 0.1)	8825.8 1371221.3	0.0982 93.3 93.3	19.9785 [20.0000]	99.9%			
PFHpA	(363.0 / 319.0) 6905536 (363.0 / 169.0) 2076469	(6.53 , 1.00) (0.00 , N/A , 0.1)	14057.8 35487569.2	0.3007 92.2 92.2	19.5568 [20.0000]	97.8%			
PFOA	(413.0 / 369.0) 8724085 (413.0 / 169.0) 2898336	(7.23 , 1.00) (0.00 , N/A , 0.0)	16706.9 25376.3	0.3322 95.3 95.3	19.0288 [20.0000]	95.1%			
PFNA	(463.0 / 419.0) 7415635 (463.0 / 169.0) 1716442	(7.84 , 1.00) (0.00 , N/A , -0.1)	10760.6 29340937.6	0.2315 98.9 98.9	19.7834 [20.0000]	98.9%			
PFDA	(513.0 / 469.0) 8867829 (513.0 / 169.0) 981533	(8.41 , 1.00) (0.00 , N/A , 0.1)	4066.1 2058.0	0.1107 104.1 104.1	19.0507 [20.0000]	95.3%			
PFUnA	(563.0 / 519.0) 8406788 (563.0 / 169.0) 939605	(8.81 , 1.00) (0.00 , N/A , 0.1)	4798.2 1717.0	0.1118 93.2 93.2	20.3492 [20.0000]	101.7%			
PFDoA	(613.0 / 569.0) 7250729 (613.0 / 169.0) 1128288	(9.05 , 1.00) (0.00 , N/A , 0.0)	4120.5 2607.5	0.1556 95.6 95.6	17.7930 [20.0000]	89.0%			
PFTrDA	(663.0 / 619.0) 7019990 (663.0 / 169.0) 1586633	(9.24 , 1.02) (N/A , 0.00 , 0.0)	3582.1 2201.2	0.2260 92.6 92.6	17.9633 [20.0000]	89.8%			
PFTeDA	(713.0 / 669.0) 7917785 (713.0 / 169.0) 1646513	(9.40 , 1.00) (0.00 , N/A , 0.0)	4257.9 1930.0	0.2080 108.8 108.8	18.0439 [20.0000]	90.2%			

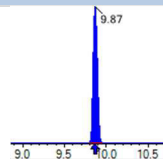
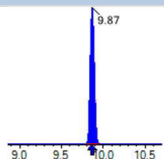
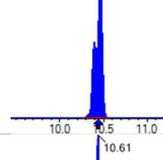
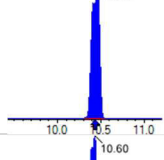
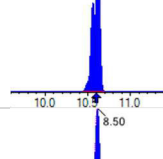
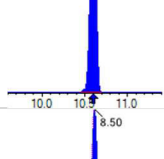
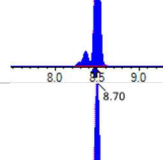
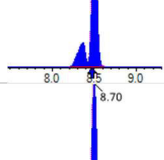
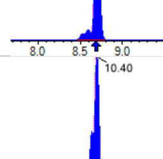
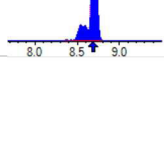
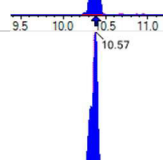
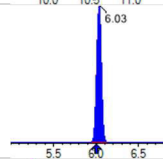
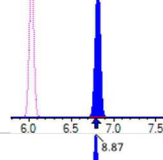
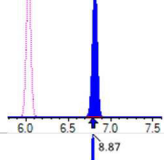
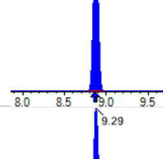
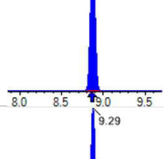
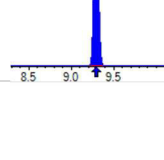
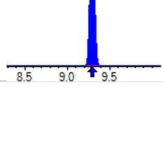
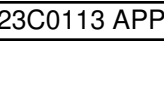
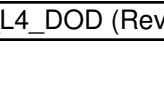


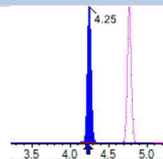
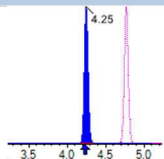
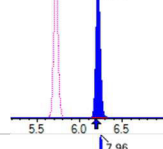
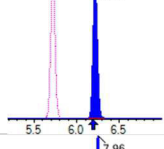
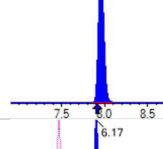
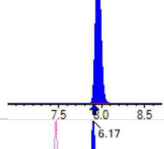
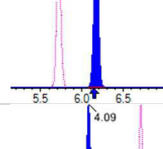
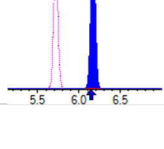
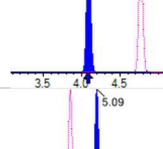
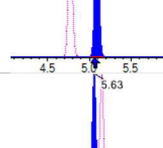
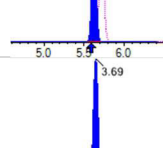
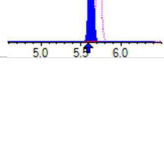
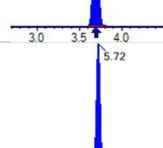
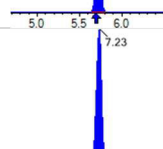
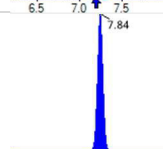
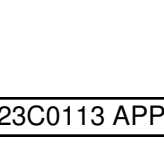
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Instrument: Saphira
Type: Sciex Q3 5500

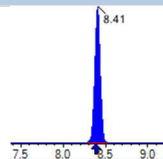
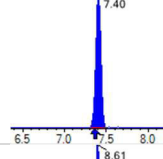
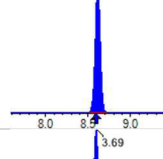
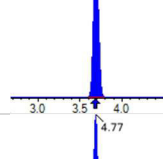
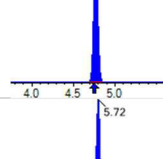
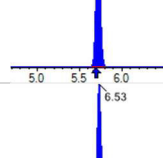
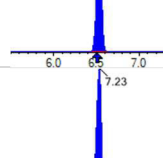
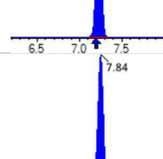
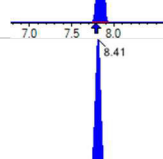
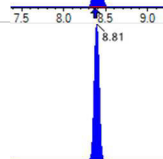
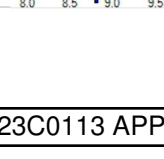
Sample I.D.: SC00916-CAL7
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
Path: S2023-03-07A (7)
Acquired: 2023/03/07 - 16:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 11425757 (299.0 / 99.0) 7157682	(5.72, 1.00) (0.00, N/A, 0.0)	6254.2 4750.7	0.6265 106.8 106.8	17.7933 [17.6947]	100.6%			
PFPeS	(349.0 / 80.0) 20940326 (349.0 / 99.0) 7731304	(6.65, 0.90) (N/A, 0.03, 0.0)	51117.4 2660771.5	0.3692 108.1 108.1	18.4501 [18.7676]	98.3%			
PFHxS	(399.0 / 80.0) 18911315 (399.0 / 99.0) 6485696	(7.40, 1.00) (0.00, N/A, 0.1)	9273.8 3233.4	0.3430 100.0 100.0	18.3163 [18.2197]	100.5%			
PFHpS	(449.0 / 80.0) 18481655 (449.0 / 99.0) 5072871	(8.06, 0.94) (N/A, 0.04, 0.1)	29383.8 5479.5	0.2745 96.6 96.6	19.9604 [19.0281]	104.9%			
PFOS	(499.0 / 80.0) 20827778 (499.0 / 99.0) 4670568	(8.61, 1.00) (-0.01, N/A, 0.0)	3252.1 1953.7	0.2242 103.6 103.6	18.0982 [18.5499]	97.6%			
PFNS	(549.0 / 80.0) 22952215 (549.0 / 99.0) 5879673	(8.94, 1.04) (N/A, 0.01, 0.0)	17464.8 407375.5	0.2562 111.7 111.7	21.0311 [19.1977]	109.5%			
PFDS	(599.0 / 80.0) 26197395 (599.0 / 99.0) 6343599	(9.15, 1.06) (N/A, 0.00, 0.1)	6182.2 4791.7	0.2421 107.0 107.0	20.7783 [19.2621]	107.9%			
PFDoS	(699.0 / 80.0) 21838547 (699.0 / 99.0) 4941206	(9.48, 1.10) (N/A, 0.00, 0.0)	4648.6 2864.0	0.2263 103.8 103.8	21.6690 [19.3913]	111.7%			
4:2FTS	(327.0 / 307.0) 14072671 (327.0 / 81.0) 9123622	(5.44, 1.00) (0.00, N/A, 0.0)	6082.6 4925.0	0.6483 104.7 104.7	70.0195 [74.7622]	93.7%			
6:2FTS	(427.0 / 407.0) 9472165 (427.0 / 81.0) 6767863	(6.95, 1.00) (0.00, N/A, 0.0)	5556.8 6546.5	0.7145 103.4 103.4	74.5613 [75.9234]	98.2%			
8:2FTS	(527.0 / 507.0) 10263203 (527.0 / 81.0) 6971663	(8.14, 1.00) (0.00, N/A, 0.1)	2647.5 3186.9	0.6793 100.6 100.6	71.7898 [76.6631]	93.6%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 29182008 (498.0 / 478.0) 724687	(9.87, 1.00) (0.00, N/A, 0.0)	5672.2 1896.0	0.0248 111.8 111.8	18.8584 [20.0000]	94.3%			
NMeFOSEA	(512.0 / 219.0) 30792142 (512.0 / 169.0) 26188878	(10.46, 1.00) (0.00, N/A, 1.0)	5977.1 6789.0	0.8505 101.7 101.7	73.0814 [80.0000]	91.4%			
NEIFOSA	(526.0 / 219.0) 32684026 (526.0 / 169.0) 39009290	(10.61, 1.00) (-0.01, N/A, 0.5)	16641.2 20983.2	1.1935 93.5 93.5	77.4369 [80.0000]	96.8%			
NMeFOSAA	(570.0 / 419.0) 4089582 (570.0 / 483.0) 1843106	(8.50, 1.00) (0.00, N/A, -0.1)	3763.2 874.0	0.4507 95.9 95.9	21.4540 [20.0000]	107.3%			
NEIFOSAA	(584.0 / 419.0) 3775897 (584.0 / 526.0) 2100626	(8.70, 1.00) (0.01, N/A, -0.1)	3451.8 3551.9	0.5563 87.1 87.1	19.7456 [20.0000]	98.7%			
NMeFOSE	(616.0 / 59.0) 12166463	(10.40, 1.00) (0.01, N/A, 0.0)	4159.8	N/A 0.0 0.0	81.9788 [80.0000]	102.5%			
NEIFOSE	(630.0 / 59.0) 13842886	(10.57, 1.00) (0.01, N/A, 0.0)	1836.9	N/A 0.0 0.0	79.6583 [80.0000]	99.6%			
HFPO-DA	(285.0 / 169.0) 7416448 (285.0 / 185.0) 19914498	(6.03, 1.00) (0.00, N/A, 0.0)	5298.9 5719.4	2.6852 99.8 99.8	39.5174 [40.0000]	98.8%			
ADONA	(377.0 / 85.0) 25207854 (377.0 / 251.0) 2886224	(6.82, 1.13) (N/A, 0.03, 0.0)	5928.2 3518.3	0.1145 118.5 118.5	34.1652 [37.7080]	90.6%			
9CI-Pf3ONS	(531.0 / 351.0) 59394827 (533.0 / 353.0) 22046370	(8.87, 1.47) (N/A, 0.01, 0.0)	3116.1 4443.8	0.3712 116.3 116.3	29.8644 [37.3302]	80.0%			
11CI-PF3OUDS	(631.0 / 451.0) 38576641 (633.0 / 453.0) 14298622	(9.29, 1.54) (N/A, 0.00, 0.0)	5660.6 5576.8	0.3707 111.3 111.3	37.1607 [37.7283]	98.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 753219 (241.0 / 117.0) 1448014	(4.25, 0.89) (N/A, 0.02, 0.0)	2440.6 2188.1	1.9224 94.3 94.3	83.3602 [80.0000]	104.2%			
5:3FTCA	(341.0 / 236.7) 5286037 (341.0 / 217.0) 8346667	(6.21, 1.09) (N/A, 0.03, -0.1)	2762.8 2692.3	1.5790 95.9 95.9	83.6502 [80.0000]	104.6%			
7:3FTCA	(441.0 / 317.0) 9247687 (441.0 / 337.0) 7377021	(7.96, 1.39) (N/A, 0.05, -0.1)	2121.2 2126.7	0.7977 93.1 93.1	87.1944 [80.0000]	109.0%			
PFEESA	(315.0 / 135.0) 16030825 (315.0 / 83.0) 4525293	(6.17, 1.08) (N/A, 0.03, 0.0)	3574.1 4784.3	0.2823 108.9 108.9	34.7215 [35.6984]	97.3%			
PFMPA	(229.0 / 85.0) 3047447	(4.09, 0.86) (N/A, 0.02, 0.0)	5845.2	N/A 0.0 0.0	39.4434 [40.0000]	98.6%			
PFMBA	(279.0 / 85.0) 9593910	(5.09, 1.07) (N/A, 0.03, 0.0)	5244.2	N/A 0.0 0.0	38.8788 [40.0000]	97.2%			
NFDHA	(295.0 / 201.0) 8424025 (295.0 / 85.0) 8362443	(5.63, 0.98) (N/A, 0.03, 0.0)	5626.3 5548.2	0.9927 98.8 98.8	40.1382 [40.0000]	100.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 184738	(3.69, N/A) (N/A, 0.01, N/A)	1844.2	N/A	0.8624 [1.0000]	86.2% { 91.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 316203	(5.72, N/A) (N/A, 0.03, N/A)	8998.6	N/A	1.0068 [1.0000]	100.7% { 110.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 446896	(7.23, N/A) (N/A, 0.04, N/A)	4311.5	N/A	0.9677 [1.0000]	96.8% { 106.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 374008	(7.84, N/A) (N/A, 0.05, N/A)	2760.9	N/A	0.8962 [1.0000]	89.6% { 96.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 396586	(8.41, N/A) (N/A, 0.03, N/A)	8541.1	N/A	0.9875 [1.0000]	98.7% { 103.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 651163	(7.40, N/A) (N/A, 0.05, N/A)	1191.6	N/A	0.9591 [1.0000]	95.9% { 108.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 694779	(8.61, N/A) (N/A, 0.03, N/A)	1603.0	N/A	0.8097 [1.0000]	81.0% { 83.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1791364	(3.69, N/A) (N/A, 0.01, N/A)	6420.6	N/A	8.1481 [8.0000]	101.9% { 84.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1364891	(4.77, N/A) (N/A, 0.03, N/A)	3948.7	N/A	3.7366 [4.0000]	93.4% { 90.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 832809	(5.72, N/A) (N/A, 0.03, N/A)	4092.1	N/A	1.8896 [2.0000]	94.5% { 95.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 836990	(6.53, N/A) (N/A, 0.03, N/A)	3788.5	N/A	1.9936 [2.0000]	99.7% { 99.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1010212	(7.23, N/A) (N/A, 0.04, N/A)	2678.7	N/A	2.0807 [2.0000]	104.0% { 99.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 433166	(7.84, N/A) (N/A, 0.05, N/A)	12692.7	N/A	1.0900 [1.0000]	109.0% { 93.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 493448	(8.41, N/A) (N/A, 0.04, N/A)	129642.2	N/A	1.0338 [1.0000]	103.4% { 98.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 517252	(8.81, N/A) (N/A, 0.01, N/A)	2396.6	N/A	0.9720 [1.0000]	97.2% { 98.5% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL7
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (7)
 Acquired: 2023/03/07 - 16:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 484406	(9.05, N/A) (N/A, 0.00, N/A)	7173.2	N/A	1.0413 [1.0000]	104.1% { 105.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 513958	(9.40, N/A) (N/A, 0.01, N/A)	1662.0	N/A	1.0475 [1.0000]	104.8% { 103.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1989521	(5.72, N/A) (N/A, 0.04, N/A)	3980.5	N/A	1.9286 [2.0000]	96.4% { 87.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1376442	(7.40, N/A) (N/A, 0.04, N/A)	2202.1	N/A	2.0545 [2.0000]	102.7% { 96.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2040176	(8.61, N/A) (N/A, 0.03, N/A)	1272.6	N/A	2.1902 [2.0000]	109.5% { 87.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 275625	(5.44, N/A) (N/A, 0.03, N/A)	1410.7	N/A	4.2121 [4.0000]	105.3% { 102.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 353754	(6.95, N/A) (N/A, 0.03, N/A)	3351.4	N/A	4.1176 [4.0000]	102.9% { 95.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 427194	(8.14, N/A) (N/A, 0.04, N/A)	1428.8	N/A	4.5899 [4.0000]	114.7% { 111.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3728987	(9.87, N/A) (N/A, 0.01, N/A)	4888.7	N/A	2.3403 [2.0000]	117.0% { 88.7% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1024838	(10.46, N/A) (N/A, 0.02, N/A)	2513.1	N/A	2.5140 [2.0000]	125.7% { 94.0% }			
D5_NeIFOSa_EIS	(531.0 / 169.0) 886755	(10.62, N/A) (N/A, 0.02, N/A)	3320.9	N/A	2.3897 [2.0000]	119.5% { 85.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 740338	(8.50 , N/A) (N/A , 0.03 , N/A)	1875.0	N/A	4.6476 [4.0000]	116.2% { 92.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 912943	(8.70 , N/A) (N/A , 0.02 , N/A)	10881.8	N/A	5.1139 [4.0000]	127.8% { 106.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2996992	(10.39 , N/A) (N/A , 0.02 , N/A)	1441.4	N/A	23.6249 [20.0000]	118.1% { 88.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 3595791	(10.56 , N/A) (N/A , 0.02 , N/A)	2390.0	N/A	24.0156 [20.0000]	120.1% { 86.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1888623	(6.03 , N/A) (N/A , 0.03 , N/A)	4552.3	N/A	7.7597 [8.0000]	97.0% { 93.6% }			

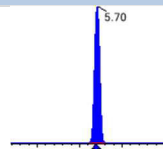
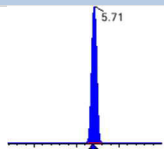
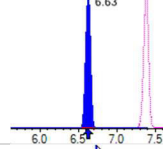
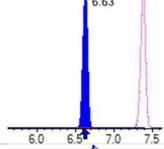
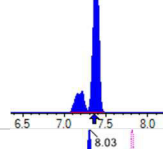
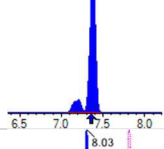
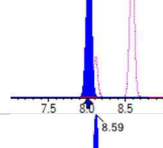
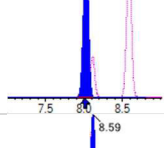
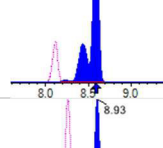
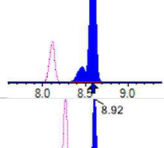
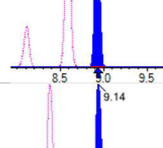
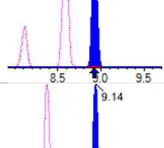
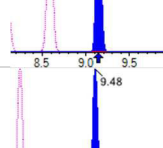
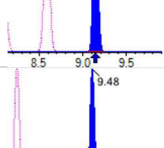
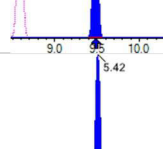
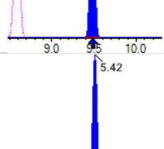
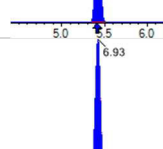
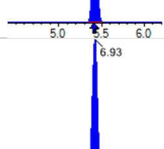
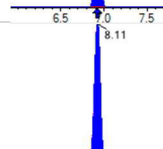
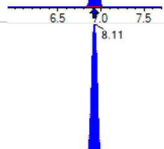
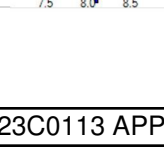
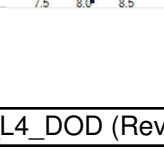


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (8)
 Acquired: 2023/03/07 - 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
PFBA	(213.0 / 169.0) 28194490	(3.69, 1.00) (0.00, N/A, 0.0)	250.1	N/A 0.0 0.0	183.4399 [200.0000]	91.7%			
PFPeA	(263.0 / 219.0) 25676526 (263.0 / 69.0) 291878	(4.76, 1.00) (0.00, N/A, 0.0)	11443.3 2310.2	0.0114 100.4 100.4	90.6150 [100.0000]	90.6%			
PFHxA	(313.0 / 269.0) 16221489 (313.0 / 119.0) 1576991	(5.70, 1.00) (0.00, N/A, 0.0)	11462.1 3750.2	0.0972 92.3 92.3	47.0488 [50.0000]	94.1%			
PFHpA	(363.0 / 319.0) 16215410 (363.0 / 169.0) 4848365	(6.51, 1.00) (0.00, N/A, 0.1)	15117.9 41760.7	0.2990 91.7 91.7	51.2597 [50.0000]	102.5%			
PFOA	(413.0 / 369.0) 20134628 (413.0 / 169.0) 7289396	(7.21, 1.00) (0.00, N/A, 0.1)	11959.3 10322.6	0.3620 103.9 103.9	46.0130 [50.0000]	92.0%			
PFNA	(463.0 / 419.0) 17233945 (463.0 / 169.0) 3729063	(7.82, 1.00) (0.00, N/A, -0.1)	11806.7 4982.3	0.2164 92.4 92.4	47.9335 [50.0000]	95.9%			
PFDA	(513.0 / 469.0) 21055778 (513.0 / 169.0) 2238507	(8.38, 1.00) (0.00, N/A, 0.0)	4807.1 2700.7	0.1063 99.9 99.9	48.2261 [50.0000]	96.5%			
PFUnA	(563.0 / 519.0) 18365759 (563.0 / 169.0) 2027450	(8.79, 1.00) (0.00, N/A, 0.0)	5230.4 2274.0	0.1104 92.1 92.1	49.6556 [50.0000]	99.3%			
PFDoA	(613.0 / 569.0) 16804583 (613.0 / 169.0) 2614963	(9.04, 1.00) (0.00, N/A, 0.0)	3357.7 3831.5	0.1556 95.6 95.6	44.1770 [50.0000]	88.4%			
PFTTrDA	(663.0 / 619.0) 13857572 (663.0 / 169.0) 3472823	(9.23, 1.02) (N/A, -0.01, -0.1)	4565.7 3337.5	0.2506 102.7 102.7	37.9871 [50.0000]	76.0%			
PFTeDA	(713.0 / 669.0) 18112204 (713.0 / 169.0) 3591344	(9.40, 1.00) (0.00, N/A, 0.0)	5041.8 2497.4	0.1983 103.7 103.7	42.9339 [50.0000]	85.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 23387642 (299.0 / 99.0) 15231547	(5.70, 1.00) (0.00, N/A, 0.0)	6420.4 6444.8	0.6513 111.0 111.0	42.1567 [44.2367]	95.3%			
PFPeS	(349.0 / 80.0) 44103650 (349.0 / 99.0) 17745420	(6.63, 0.90) (N/A, 0.01, -0.1)	31328.5 41014.8	0.4024 117.8 117.8	41.5157 [46.9191]	88.5%			
PFHxS	(399.0 / 80.0) 42716749 (399.0 / 99.0) 15139756	(7.38, 1.00) (0.00, N/A, 0.2)	6466.4 51901071.1	0.3544 103.4 103.4	44.2014 [45.5491]	97.0%			
PFHpS	(449.0 / 80.0) 39760233 (449.0 / 99.0) 12016684	(8.03, 0.93) (N/A, 0.01, 0.0)	26714.4 3322.7	0.3022 106.4 106.4	40.6245 [47.5703]	85.4%			
PFOS	(499.0 / 80.0) 50397653 (499.0 / 99.0) 11762234	(8.59, 1.00) (0.00, N/A, 0.0)	4099.4 1821.0	0.2334 107.8 107.8	41.4299 [46.3746]	89.3%			
PFNS	(549.0 / 80.0) 42077398 (549.0 / 99.0) 11628110	(8.93, 1.04) (N/A, 0.00, 0.0)	13372.1 6635.2	0.2764 120.5 120.5	36.4752 [47.9943]	76.0%			
PFDS	(599.0 / 80.0) 51027281 (599.0 / 99.0) 13711608	(9.14, 1.06) (N/A, 0.00, 0.0)	7426.9 5335.7	0.2687 118.7 118.7	38.2883 [48.1553]	79.5%			
PFDoS	(699.0 / 80.0) 43091708 (699.0 / 99.0) 11427848	(9.48, 1.10) (N/A, 0.00, -0.1)	4849.8 3795.4	0.2652 121.6 121.6	40.4503 [48.4781]	83.4%			
4:2FTS	(327.0 / 307.0) 32797846 (327.0 / 81.0) 21614814	(5.42, 1.00) (0.00, N/A, 0.0)	5700.3 6179.7	0.6590 106.4 106.4	164.4716 [186.9055]	88.0%			
6:2FTS	(427.0 / 407.0) 23591728 (427.0 / 81.0) 17476058	(6.93, 1.00) (0.00, N/A, 0.0)	6446.5 6466.3	0.7408 107.2 107.2	166.1053 [189.8085]	87.5%			
8:2FTS	(527.0 / 507.0) 23002314 (527.0 / 81.0) 16933256	(8.11, 1.00) (0.00, N/A, 0.0)	4448.6 4618.3	0.7362 109.0 109.0	156.1208 [191.6577]	81.5%			

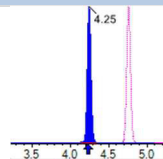
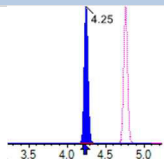
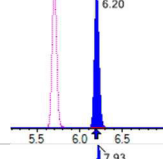
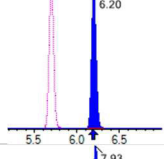
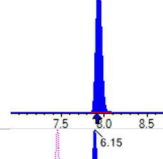
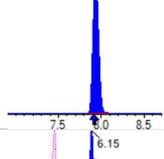
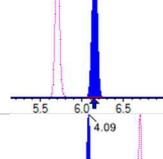
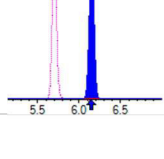
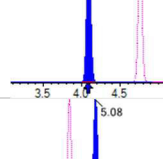
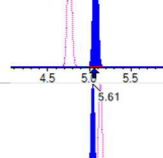
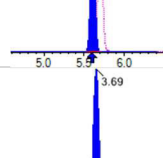
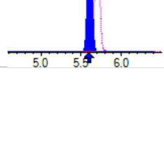
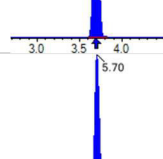
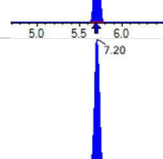
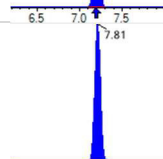
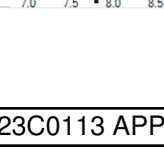


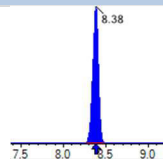
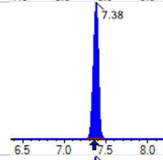
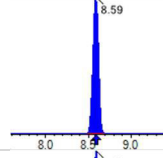
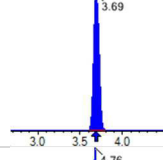
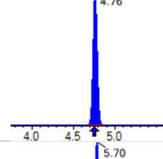
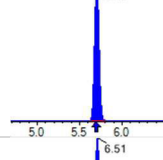
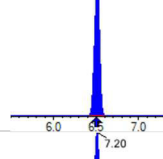
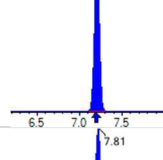
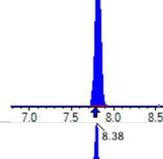
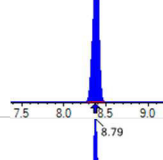
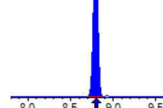
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (8)
 Acquired: 2023/03/07 - 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) 53177131 (498.0 / 478.0) 1564730	(9.86 , 1.00) (0.00 , N/A , 0.0)	4192.4 3640.3	0.0294 132.4 132.4	39.1700 [50.0000]	78.3%			
NMeFOSA	(512.0 / 219.0) 59814565 (512.0 / 169.0) 50589226	(10.45 , 1.00) (-0.01 , N/A , 0.9)	4910.1 5159.0	0.8458 101.1 101.1	142.9144 [200.0000]	71.5%			
NEIFOSA	(526.0 / 219.0) 62794272 (526.0 / 169.0) 72096668	(10.61 , 1.00) (-0.01 , N/A , 0.5)	19321.9 21939.1	1.1481 90.0 90.0	181.2571 [200.0000]	90.6%			
NMeFOSAA	(570.0 / 419.0) 9701053 (570.0 / 483.0) 4502968	(8.48 , 1.00) (0.01 , N/A , 0.1)	4095.9 1037.7	0.4642 98.8 98.8	47.9316 [50.0000]	95.9%			
NEIFOSAA	(584.0 / 419.0) 8633231 (584.0 / 526.0) 5053479	(8.68 , 1.00) (0.00 , N/A , -0.1)	3826.8 3618.5	0.5854 91.7 91.7	48.1637 [50.0000]	96.3%			
NMeFOSE	(616.0 / 59.0) 26483793	(10.40 , 1.00) (0.01 , N/A , 0.0)	4892.2	N/A 0.0 0.0	199.1291 [200.0000]	99.6%			
NEtFOSE	(630.0 / 59.0) 27197180	(10.57 , 1.00) (0.01 , N/A , 0.0)	1589.6	N/A 0.0 0.0	193.2760 [200.0000]	96.6%			
HFPO-DA	(285.0 / 169.0) 16930429 (285.0 / 185.0) 39516373	(6.01 , 1.00) (0.00 , N/A , 0.1)	3883.9 6307.4	2.3340 86.7 86.7	94.0318 [100.0000]	94.0%			
ADONA	(377.0 / 85.0) 48907797 (377.0 / 251.0) 6546772	(6.79 , 1.13) (N/A , 0.01 , 0.0)	3820.3 3392.7	0.1339 138.6 138.6	69.0941 [94.2700]	73.3%			
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 [93.3254]	N/A%			QC,
11CI-PF3OUDS	(631.0 / 451.0) 65536324 (633.0 / 453.0) 28646753	(9.29 , 1.54) (N/A , 0.00 , -0.1)	5290.2 2765.0	0.4371 131.3 131.3	94.0420 [94.3208]	99.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 1913847	(4.25, 0.89)	3445.5	1.9226 94.3	224.3539	112.2%			
	(241.0 / 117.0) 3679641	(N/A, 0.02, 0.0)	3988.0	94.3	[200.0000]				
5:3FTCA	(341.0 / 236.7) 12299269	(6.20, 1.09)	3168.7	1.6626 100.9	208.9678	104.5%			
	(341.0 / 217.0) 20448567	(N/A, 0.01, -0.1)	4271.5	100.9	[200.0000]				
7:3FTCA	(441.0 / 317.0) 22387428	(7.93, 1.39)	2694.4	0.8469 98.8	226.6329	113.3%			
	(441.0 / 337.0) 18959161	(N/A, 0.02, 0.0)	2952.5	98.8	[200.0000]				
PFEEA	(315.0 / 135.0) 33028805	(6.15, 1.08)	3355.2	0.3072 118.6	76.8066	86.1%			
	(315.0 / 83.0) 10147116	(N/A, 0.01, 0.1)	5125.6	118.6	[89.2459]				
PFMPA	(229.0 / 85.0) 6549586	(4.09, 0.86) (N/A, 0.02, 0.0)	5355.4	N/A 0.0 0.0	89.7925 [100.0000]	89.8%			
PFMBA	(279.0 / 85.0) 20391299	(5.08, 1.07) (N/A, 0.02, 0.0)	6325.0	N/A 0.0 0.0	87.5287 [100.0000]	87.5%			
NFDHA	(295.0 / 201.0) 18429626	(5.61, 0.98) (N/A, 0.01, 0.0)	5692.8	0.9683 96.4	94.2797 [100.0000]	94.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 154336	(3.69, N/A) (N/A, 0.01, N/A)	1373.1	N/A	0.7205 [1.0000]	72.1% {76.2%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 315954	(5.70, N/A) (N/A, 0.01, N/A)	10169.6	N/A	1.0060 [1.0000]	100.6% {110.7%}			
13C4_PFOA_IIS	(417.0 / 372.0) 428374	(7.20, N/A) (N/A, 0.01, N/A)	6967.6	N/A	0.9276 [1.0000]	92.8% {102.2%}			
13C5_PFNxA_IIS	(468.0 / 423.0) 428772	(7.81, N/A) (N/A, 0.02, N/A)	31194.2	N/A	1.0274 [1.0000]	102.7% {111.1%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 406670	(8.38, N/A) (N/A, 0.01, N/A)	2681.1	N/A	1.0126 [1.0000]	101.3% { 105.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 686847	(7.38, N/A) (N/A, 0.02, N/A)	2000.7	N/A	1.0117 [1.0000]	101.2% { 114.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 777774	(8.59, N/A) (N/A, 0.00, N/A)	1430.8	N/A	0.9064 [1.0000]	90.6% { 93.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1488969	(3.69, N/A) (N/A, 0.01, N/A)	6419.8	N/A	8.1068 [8.0000]	101.3% { 70.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1288575	(4.76, N/A) (N/A, 0.02, N/A)	3874.2	N/A	3.5304 [4.0000]	88.3% { 85.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 775679	(5.70, N/A) (N/A, 0.01, N/A)	3089.9	N/A	1.7614 [2.0000]	88.1% { 88.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 749845	(6.51, N/A) (N/A, 0.01, N/A)	2507.0	N/A	1.7874 [2.0000]	89.4% { 88.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 964198	(7.20, N/A) (N/A, 0.01, N/A)	3804.1	N/A	2.0718 [2.0000]	103.6% { 95.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 415482	(7.81, N/A) (N/A, 0.02, N/A)	1566.8	N/A	0.9120 [1.0000]	91.2% { 89.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 462834	(8.38, N/A) (N/A, 0.01, N/A)	3370.2	N/A	0.9456 [1.0000]	94.6% { 92.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 463084	(8.79, N/A) (N/A, 0.00, N/A)	2050.3	N/A	0.8486 [1.0000]	84.9% { 88.2% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (8)
 Acquired: 2023/03/07 - 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
13C2_PFDa_EIS	(615.0 / 570.0) 452178	(9.04, N/A) (N/A, 0.00, N/A)	2858.6	N/A	0.9479 [1.0000]	94.8% { 98.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 494112	(9.40, N/A) (N/A, 0.00, N/A)	1888.3	N/A	0.9821 [1.0000]	98.2% { 99.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1718852	(5.70, N/A) (N/A, 0.02, N/A)	1764.4	N/A	1.5796 [2.0000]	79.0% { 75.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1288358	(7.38, N/A) (N/A, 0.02, N/A)	1981.3	N/A	1.8232 [2.0000]	91.2% { 90.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2156531	(8.59, N/A) (N/A, 0.00, N/A)	679.7	N/A	2.0680 [2.0000]	103.4% { 92.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 273474	(5.42, N/A) (N/A, 0.01, N/A)	1752.2	N/A	3.9621 [4.0000]	99.1% { 101.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 395495	(6.93, N/A) (N/A, 0.01, N/A)	2315.2	N/A	4.3643 [4.0000]	109.1% { 107.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 440267	(8.11, N/A) (N/A, 0.01, N/A)	1808.5	N/A	4.4846 [4.0000]	112.1% { 114.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3271539	(9.87, N/A) (N/A, 0.01, N/A)	4019.0	N/A	1.8342 [2.0000]	91.7% { 77.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1018012	(10.46, N/A) (N/A, 0.02, N/A)	2604.2	N/A	2.2307 [2.0000]	111.5% { 93.4% }			
D5_NeIFOSA_EIS	(531.0 / 169.0) 727849	(10.62, N/A) (N/A, 0.02, N/A)	3207.3	N/A	1.7522 [2.0000]	87.6% { 70.3% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (8)
 Acquired: 2023/03/07 - 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
D3_MeFOSAA_EIS	(573.0 / 419.0) 786063	(8.47, N/A) (N/A, 0.00, N/A)	1968.0	N/A	4.4081 [4.0000]	110.2% { 98.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 855751	(8.68, N/A) (N/A, 0.00, N/A)	5504.8	N/A	4.2820 [4.0000]	107.1% { 99.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2685767	(10.39, N/A) (N/A, 0.02, N/A)	997.3	N/A	18.9124 [20.0000]	94.6% { 79.7% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 2911689	(10.56, N/A) (N/A, 0.02, N/A)	1911.4	N/A	17.3715 [20.0000]	86.9% { 70.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1811885	(6.01, N/A) (N/A, 0.01, N/A)	3209.1	N/A	7.4503 [8.0000]	93.1% { 89.7% }			

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC00916-SCV1**Sequence:** SC00916**Standard ID:** 23B0089

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	7.66	-4.3	30.00
PFPEA	4.00	3.70	-7.5	30.00
PFHXA	2.00	1.90	-4.8	30.00
PFHPA	2.00	1.77	-11.7	30.00
PFOA	2.00	1.86	-7.0	30.00
PFNA	2.00	1.80	-10.0	30.00
PFDA	2.00	1.73	-13.4	30.00
PFUnA	2.00	1.99	-0.7	30.00
PFDOA	2.00	2.16	8.0	30.00
PFTRDA	2.00	2.28	14.1	30.00
PFTEDA	2.00	1.94	-3.2	30.00
PFBS	1.77	1.59	-10.0	30.00
PFPEs	1.88	1.96	4.4	30.00
PFHXS	1.83	1.69	-7.5	30.00
PFHPS	1.91	1.71	-10.6	30.00
PFOS	1.86	1.58	-14.9	30.00
PFNS	1.92	1.90	-1.0	30.00
PFDS	1.93	1.84	-4.7	30.00
PFDOS	1.94	1.85	-4.5	30.00
4:2FTS	7.50	7.07	-5.7	30.00
6:2FTS	7.60	7.46	-1.8	30.00
8:2FTS	7.68	7.26	-5.4	30.00
PFOSA	2.00	1.98	-1.1	30.00
NMeFOSA	8.00	7.71	-3.6	30.00
NEtFOSA	8.00	7.09	-11.4	30.00
NMeFOSAA	2.00	1.83	-8.3	30.00
NEtFOSAA	2.00	1.87	-6.7	30.00

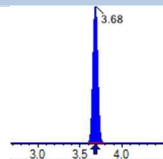
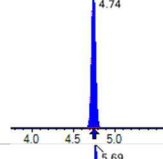
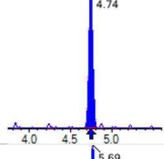
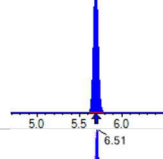
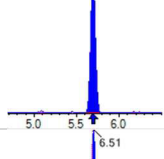
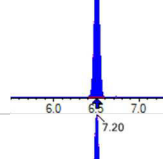
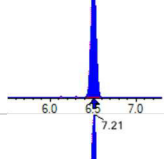
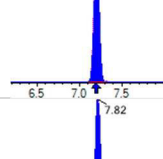
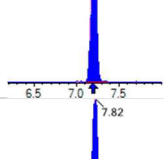
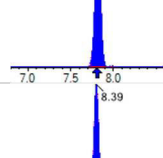
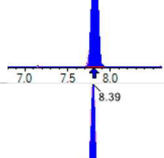
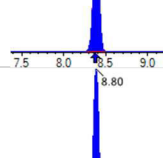
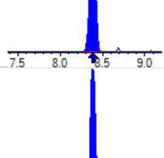
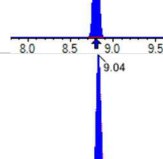
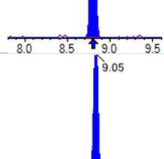
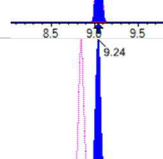
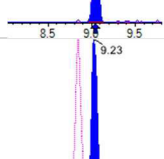
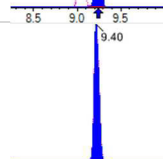
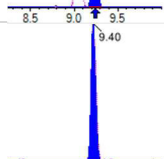
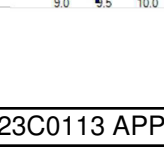
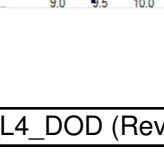
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC00916-SCV1**Sequence:** SC00916**Standard ID:** 23B0089

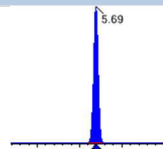
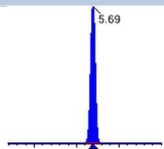
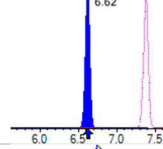
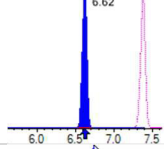
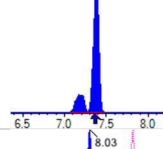
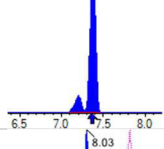
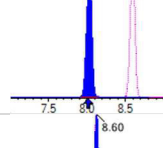
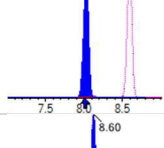
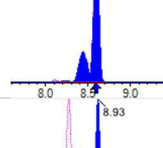
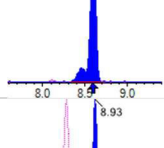
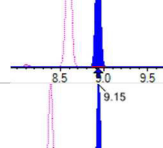
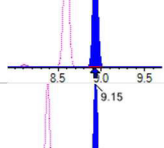
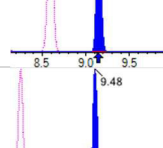
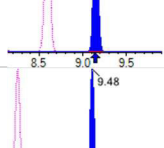
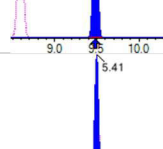
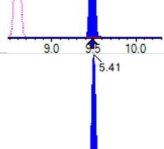
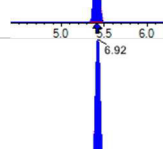
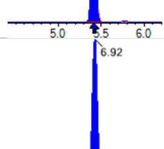
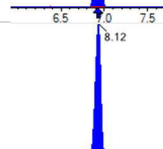
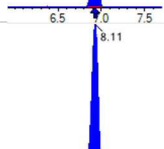
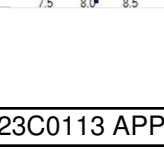
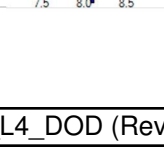
NMeFOSE	8.00	8.30	3.8	30.00
NEtFOSE	8.00	8.15	1.9	30.00
HFPO-DA	4.00	3.66	-8.4	30.00
ADONA	3.78	3.81	0.9	30.00
PFEESA	3.56	3.45	-3.1	30.00
PFMPA	4.00	3.45	-13.7	30.00
PFMBA	4.00	3.71	-7.3	30.00
NFDHA	4.00	3.73	-6.7	30.00
9CL-PF3ONS	3.74	3.86	3.2	30.00
11CL-PF3OUDS	3.78	3.75	-0.9	30.00
3:3FTCA	8.00	7.32	-8.5	30.00
5:3FTCA	8.00	6.97	-12.8	30.00
7:3FTCA	8.00	7.25	-9.3	30.00
13C4-PFBA	8.00	8.23	2.8	30.00
13C5-PFPEA	4.00	4.38	9.6	30.00
13C5-PFHXA	2.00	2.10	4.9	30.00
13C4-PFHPA	2.00	2.10	5.0	30.00
13C8-PFOA	2.00	2.27	13.5	30.00
13C9-PFNA	1.00	1.11	11.1	30.00
13C6-PFDA	1.00	1.11	11.1	30.00
13C7-PFUnA	1.00	1.07	7.3	30.00
13C2-PFDOA	1.00	0.970	-3.0	30.00
13C2-PFTEDA	1.00	1.11	10.8	30.00
13C3-PFBS	2.00	2.27	13.7	30.00
13C3-PFHXS	2.00	2.01	0.7	30.00
13C8-PFOS	2.00	2.03	1.6	30.00
13C2-4:2FTS	4.00	4.03	0.8	30.00
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13C2-8:2FTS	4.00	4.25	6.3	30.00

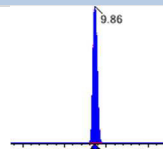
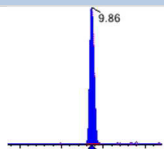
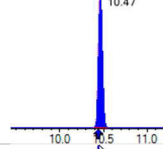
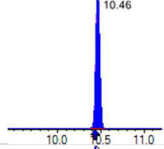
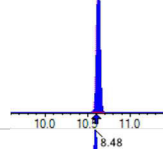
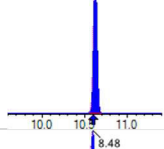
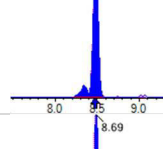
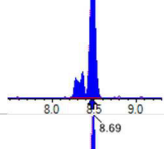
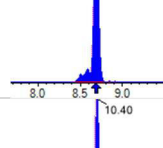
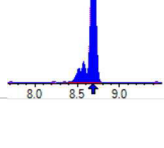
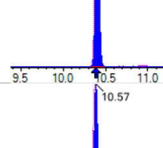
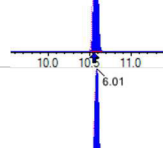
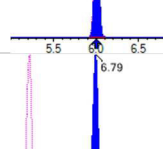
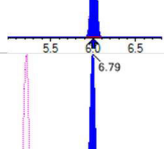
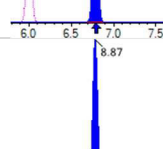
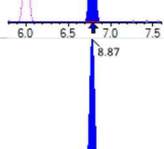
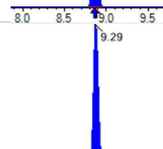
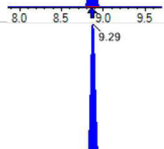
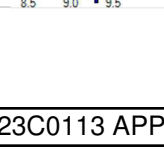
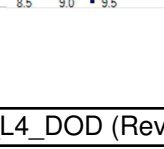
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC00916-SCV1**Sequence:** SC00916**Standard ID:** 23B0089

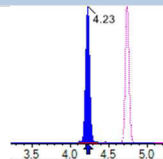
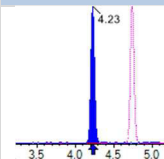
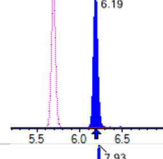
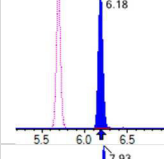
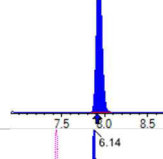
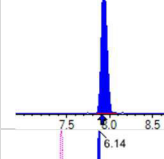
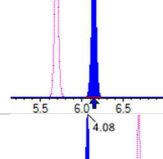
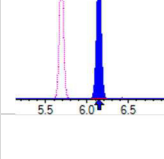
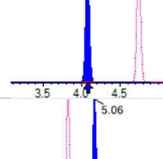
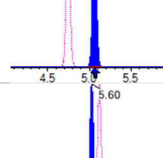
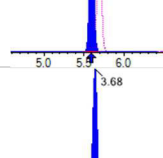
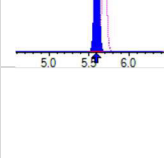
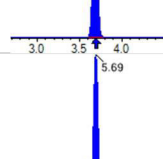
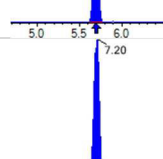
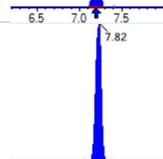
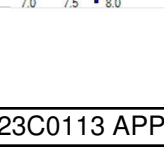
13C8-PFOSA	2.00	1.99	-0.5	30.00
D3-NMEFOSA	2.00	1.95	-2.6	30.00
D5-NETFOSA	2.00	2.06	3.0	30.00
D3-NMEFOSAA	4.00	3.84	-4.0	30.00
D5-NETFOSAA	4.00	4.02	0.6	30.00
D7-NMEFOSE	20.0	21.2	5.9	30.00
D9-NETFOSAE	20.0	20.5	2.5	30.00
13C3-HFPO-DA	8.00	8.42	5.3	30.00

* Values outside of QC limits

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1664096	(3.68, 1.00) (0.00, N/A, 0.0)	261.1	N/A 0.0 0.0	7.6595 [8.0000]	95.7%			
PFPeA	(263.0 / 219.0) 1253382 (263.0 / 69.0) 14187	(4.74, 1.00) (0.00, N/A, 0.1)	4512.2 398.1	0.0113 100.0 100.0	3.6984 [4.0000]	92.5%			
PFHxA	(313.0 / 269.0) 753563 (313.0 / 119.0) 73223	(5.69, 1.00) (0.00, N/A, -0.1)	6278.8 2909.9	0.0972 92.2 92.2	1.9044 [2.0000]	95.2%			
PFHpA	(363.0 / 319.0) 632362 (363.0 / 169.0) 192370	(6.51, 1.00) (0.00, N/A, -0.1)	136798.3 5722.1	0.3042 93.3 93.3	1.7663 [2.0000]	88.3%			
PFOA	(413.0 / 369.0) 885681 (413.0 / 169.0) 300853	(7.20, 1.00) (0.00, N/A, -0.3)	7469.5 2755.3	0.3397 97.5 97.5	1.8607 [2.0000]	93.0%			
PFNA	(463.0 / 419.0) 708343 (463.0 / 169.0) 166595	(7.82, 1.00) (0.00, N/A, -0.1)	119549.5 3758163.8	0.2352 100.5 100.5	1.7998 [2.0000]	90.0%			
PFDA	(513.0 / 469.0) 825199 (513.0 / 169.0) 81929	(8.39, 1.00) (0.00, N/A, 0.0)	1384.8 49713.2	0.0993 93.3 93.3	1.7328 [2.0000]	86.6%			
PFUnA	(563.0 / 519.0) 862355 (563.0 / 169.0) 91390	(8.80, 1.00) (0.00, N/A, 0.2)	1646.5 456.3	0.1060 88.4 88.4	1.9857 [2.0000]	99.3%			
PFDoA	(613.0 / 569.0) 780919 (613.0 / 169.0) 120958	(9.04, 1.00) (0.00, N/A, -0.3)	1791.5 437.1	0.1549 95.2 95.2	2.1609 [2.0000]	108.0%			
PFTTrDA	(663.0 / 619.0) 790884 (663.0 / 169.0) 173759	(9.24, 1.02) (N/A, 0.00, 0.5)	1998.3 4252.9	0.2197 90.0 90.0	2.2820 [2.0000]	114.1%			
PFTeDA	(713.0 / 669.0) 855431 (713.0 / 169.0) 159035	(9.40, 1.00) (0.00, N/A, 0.1)	2082.1 853.3	0.1859 97.3 97.3	1.9357 [2.0000]	96.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 1201687 (299.0 / 99.0) 760731	(5.69, 1.00) (0.00, N/A, 0.0)	4106.3 2562.1	0.6331 107.9 107.9	1.5922 [1.7695]	90.0%			
PFPeS	(349.0 / 80.0) 2175309 (349.0 / 99.0) 746031	(6.62, 0.90) (N/A, 0.00, -0.1)	6815.0 76954.6	0.3430 100.4 100.4	1.9623 [1.8768]	104.6%			
PFHxS	(399.0 / 80.0) 1706170 (399.0 / 99.0) 562130	(7.38, 1.00) (0.00, N/A, 0.3)	995439.9 2626.3	0.3295 96.1 96.1	1.6919 [1.8220]	92.9%			
PFHpS	(449.0 / 80.0) 1946441 (449.0 / 99.0) 535417	(8.03, 0.93) (N/A, 0.02, 0.1)	5262.9 5928897.4	0.2751 96.8 96.8	1.7083 [1.9028]	89.8%			
PFOS	(499.0 / 80.0) 2242196 (499.0 / 99.0) 487501	(8.60, 1.00) (0.00, N/A, 0.0)	1456.7 704.5	0.2174 100.5 100.5	1.5833 [1.8550]	85.4%			
PFNS	(549.0 / 80.0) 2551843 (549.0 / 99.0) 610737	(8.93, 1.04) (N/A, 0.00, 0.1)	110468.2 3581.4	0.2393 104.4 104.4	1.9001 [1.9198]	99.0%			
PFDS	(599.0 / 80.0) 2853931 (599.0 / 99.0) 637835	(9.15, 1.06) (N/A, 0.00, 0.0)	3357.2 2297.6	0.2235 98.7 98.7	1.8394 [1.9262]	95.5%			
PFDoS	(699.0 / 80.0) 2298831 (699.0 / 99.0) 518668	(9.48, 1.10) (N/A, 0.00, 0.0)	2567.9 1806.3	0.2256 103.5 103.5	1.8536 [1.9391]	95.6%			
4:2FTS	(327.0 / 307.0) 1355571 (327.0 / 81.0) 852910	(5.41, 1.00) (0.00, N/A, -0.1)	5701.3 1849.5	0.6292 101.6 101.6	7.0750 [7.4762]	94.6%			
6:2FTS	(427.0 / 407.0) 936616 (427.0 / 81.0) 688032	(6.92, 1.00) (0.00, N/A, 0.0)	2053.3 2319.9	0.7346 106.3 106.3	7.4645 [7.5923]	98.3%			
8:2FTS	(527.0 / 507.0) 958389 (527.0 / 81.0) 717713	(8.12, 1.00) (0.00, N/A, 0.1)	2404.4 1881.0	0.7489 110.9 110.9	7.2638 [7.6663]	94.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 3453097 (498.0 / 478.0) 75202	(9.86, 1.00) (0.00, N/A, 0.2)	3766.9 612.7	0.0218 98.0 98.0	1.9775 [2.0000]	98.9%			
NMeFOSA	(512.0 / 219.0) 3343169 (512.0 / 169.0) 2422949	(10.47, 1.00) (0.00, N/A, 0.0)	6906.2 5715.6	0.7247 86.7 86.7	7.7143 [8.0000]	96.4%			
NEIFOSA	(526.0 / 219.0) 3421761 (526.0 / 169.0) 3644672	(10.63, 1.00) (0.01, N/A, 0.0)	9783.9 7812.9	1.0651 83.4 83.4	7.0871 [8.0000]	88.6%			
NMeFOSAA	(570.0 / 419.0) 383277 (570.0 / 483.0) 191900	(8.48, 1.00) (0.00, N/A, -0.1)	9579.1 355.1	0.5007 106.6 106.6	1.8341 [2.0000]	91.7%			
NEIFOSAA	(584.0 / 419.0) 372479 (584.0 / 526.0) 211704	(8.69, 1.00) (0.01, N/A, -0.1)	33267.6 1287.8	0.5684 89.0 89.0	1.8665 [2.0000]	93.3%			
NMeFOSE	(616.0 / 59.0) 1465026	(10.40, 1.00) (0.01, N/A, 0.0)	2848.7	N/A 0.0 0.0	8.3016 [8.0000]	103.8%			
NEtFOSE	(630.0 / 59.0) 1604413	(10.57, 1.00) (0.01, N/A, 0.0)	2356.0	N/A 0.0 0.0	8.1507 [8.0000]	101.9%			
HFPO-DA	(285.0 / 169.0) 718380 (285.0 / 185.0) 1875342	(6.01, 1.00) (0.00, N/A, -0.2)	2183.9 3637.3	2.6105 97.0 97.0	3.6635 [4.0000]	91.6%			
ADONA	(377.0 / 85.0) 2940313 (377.0 / 251.0) 294319	(6.79, 1.13) (N/A, 0.00, 0.0)	3346.7 1190.2	0.1001 103.6 103.6	3.8141 [3.7708]	101.1%			
9CI-Pf3ONS	(531.0 / 351.0) 8022611 (533.0 / 353.0) 2455718	(8.87, 1.48) (N/A, 0.00, 0.0)	3379.1 2482.3	0.3061 95.9 95.9	3.8608 [3.7330]	103.4%			
11CI-PF3OUDS	(631.0 / 451.0) 4731455 (633.0 / 453.0) 1609022	(9.29, 1.55) (N/A, 0.00, 0.0)	4301.4 3379.7	0.3401 102.1 102.1	3.7456 [3.7728]	99.3%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 74724 (241.0 / 117.0) 133140	(4.23, 0.89) (N/A, 0.00, 0.0)	1129.3 569.6	1.7818 87.4 87.4	7.3240 [8.0000]	91.5%			
5:3FTCA	(341.0 / 236.7) 471044 (341.0 / 217.0) 778565	(6.19, 1.09) (N/A, 0.00, 0.0)	1725.4 1518.7	1.6529 100.4 100.4	6.9733 [8.0000]	87.2%			
7:3FTCA	(441.0 / 317.0) 822193 (441.0 / 337.0) 732974	(7.93, 1.39) (N/A, 0.02, 0.1)	1657.6 1426.6	0.8915 104.0 104.0	7.2522 [8.0000]	90.7%			
PFEESA	(315.0 / 135.0) 1702147 (315.0 / 83.0) 462589	(6.14, 1.08) (N/A, 0.00, 0.0)	16538.4 1911.8	0.2718 104.9 104.9	3.4489 [3.5698]	96.6%			
PFMPA	(229.0 / 85.0) 301046	(4.08, 0.86) (N/A, 0.00, 0.0)	3905.7	N/A 0.0 0.0	3.4508 [4.0000]	86.3%			
PFMBA	(279.0 / 85.0) 1033208	(5.06, 1.07) (N/A, 0.00, 0.0)	5108.7	N/A 0.0 0.0	3.7081 [4.0000]	92.7%			
NFDHA	(295.0 / 201.0) 837378 (295.0 / 85.0) 874846	(5.60, 0.98) (N/A, 0.00, 0.0)	2532.7 3328.2	1.0447 104.0 104.0	3.7325 [4.0000]	93.3%			
13C3_PFBa_IIS	(216.0 / 172.0) 214976	(3.68, N/A) (N/A, 0.00, N/A)	1796.6	N/A	1.0036 [1.0000]	100.4% { 106.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 304439	(5.69, N/A) (N/A, 0.00, N/A)	13439.9	N/A	0.9693 [1.0000]	96.9% { 106.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 425465	(7.20, N/A) (N/A, 0.01, N/A)	3979.7	N/A	0.9213 [1.0000]	92.1% { 101.5% }			
13C5_PFNxA_IIS	(468.0 / 423.0) 385110	(7.82, N/A) (N/A, 0.03, N/A)	1641.2	N/A	0.9228 [1.0000]	92.3% { 99.8% }			

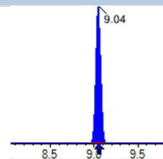
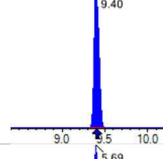
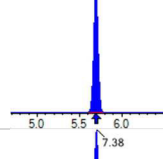
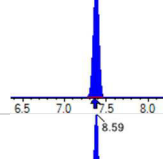
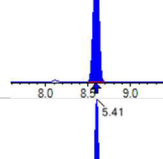
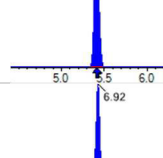
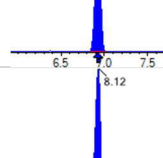
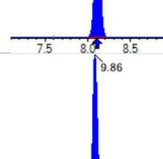
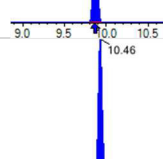
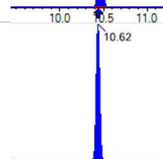
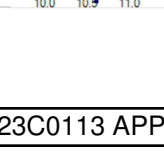


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (10)
 Acquired: 2023/03/07 - 17:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 377711	(8.39, N/A) (N/A, 0.01, N/A)	8059.1	N/A	0.9405 [1.0000]	94.0% { 98.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 648804	(7.38, N/A) (N/A, 0.02, N/A)	2264.7	N/A	0.9556 [1.0000]	95.6% { 108.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 921781	(8.59, N/A) (N/A, 0.01, N/A)	1328.6	N/A	1.0743 [1.0000]	107.4% { 110.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2104725	(3.68, N/A) (N/A, 0.00, N/A)	5991.5	N/A	8.2269 [8.0000]	102.8% { 99.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1541161	(4.74, N/A) (N/A, 0.00, N/A)	4238.0	N/A	4.3822 [4.0000]	109.6% { 102.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 890239	(5.69, N/A) (N/A, 0.00, N/A)	3757.2	N/A	2.0979 [2.0000]	104.9% { 101.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 848645	(6.50, N/A) (N/A, 0.00, N/A)	1489.8	N/A	2.0995 [2.0000]	105.0% { 100.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1048839	(7.20, N/A) (N/A, 0.01, N/A)	1580.9	N/A	2.2691 [2.0000]	113.5% { 103.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 454804	(7.82, N/A) (N/A, 0.03, N/A)	8063.0	N/A	1.1115 [1.0000]	111.1% { 98.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 504834	(8.39, N/A) (N/A, 0.02, N/A)	8986.1	N/A	1.1105 [1.0000]	111.1% { 100.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 543728	(8.80, N/A) (N/A, 0.00, N/A)	15878.5	N/A	1.0728 [1.0000]	107.3% { 103.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 429592	(9.04, N/A) (N/A, 0.00, N/A)	2775.3	N/A	0.9696 [1.0000]	97.0% { 93.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 517617	(9.40, N/A) (N/A, 0.00, N/A)	9065.6	N/A	1.1077 [1.0000]	110.8% { 103.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2338331	(5.69, N/A) (N/A, 0.00, N/A)	5427.1	N/A	2.2749 [2.0000]	113.7% { 103.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1344378	(7.38, N/A) (N/A, 0.02, N/A)	3272.3	N/A	2.0140 [2.0000]	100.7% { 94.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2510585	(8.59, N/A) (N/A, 0.01, N/A)	1778.2	N/A	2.0314 [2.0000]	101.6% { 107.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 262760	(5.41, N/A) (N/A, 0.00, N/A)	1789.8	N/A	4.0301 [4.0000]	100.8% { 97.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 349402	(6.92, N/A) (N/A, 0.00, N/A)	1824.0	N/A	4.0817 [4.0000]	102.0% { 94.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 394261	(8.12, N/A) (N/A, 0.02, N/A)	1449.2	N/A	4.2514 [4.0000]	106.3% { 102.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4207938	(9.86, N/A) (N/A, 0.01, N/A)	3731.9	N/A	1.9906 [2.0000]	99.5% { 100.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1054109	(10.46, N/A) (N/A, 0.02, N/A)	3195.9	N/A	1.9490 [2.0000]	97.4% { 96.7% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 1014374	(10.62, N/A) (N/A, 0.02, N/A)	3874.7	N/A	2.0605 [2.0000]	103.0% { 97.9% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (10)
 Acquired: 2023/03/07 - 17:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 811596	(8.48, N/A) (N/A, 0.01, N/A)	1969.1	N/A	3.8403 [4.0000]	96.0% { 101.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 952742	(8.68, N/A) (N/A, 0.01, N/A)	109957.8	N/A	4.0226 [4.0000]	100.6% { 111.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 3563722	(10.39, N/A) (N/A, 0.02, N/A)	1337.9	N/A	21.1742 [20.0000]	105.9% { 105.7% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 4073064	(10.56, N/A) (N/A, 0.02, N/A)	1946.3	N/A	20.5040 [20.0000]	102.5% { 98.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1973305	(6.00, N/A) (N/A, 0.00, N/A)	3904.3	N/A	8.4209 [8.0000]	105.3% { 97.7% }			

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC

SDG:

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Calibration: 2310010

Laboratory ID: SC01082-LCV1

Sequence: SC01082

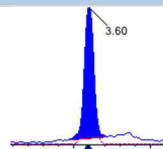
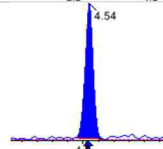
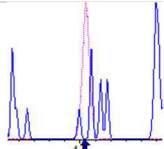
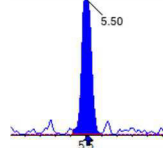
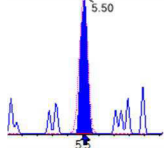
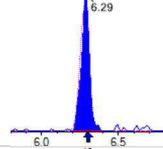
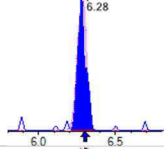
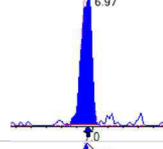
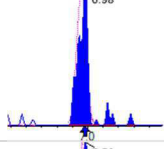
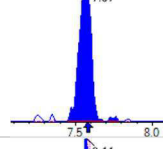
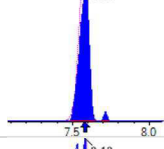
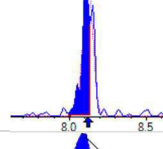
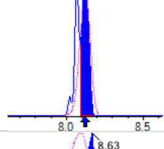
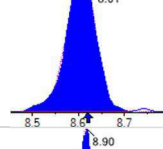
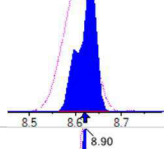
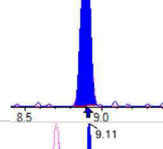
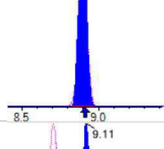
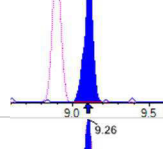
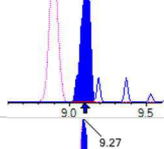
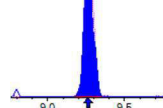
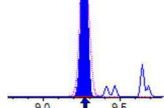
Standard ID: 23C0282

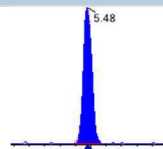
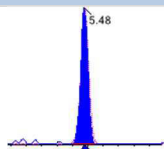
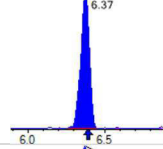
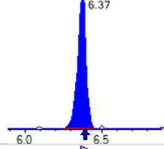
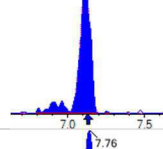
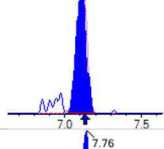
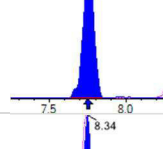
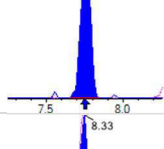
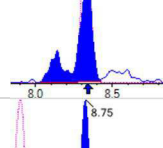
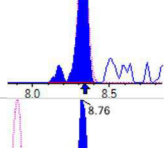
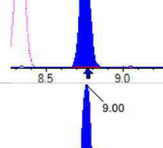
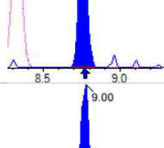
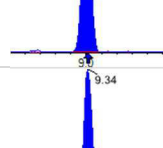
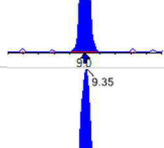
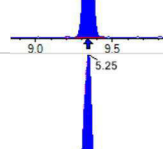
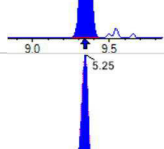
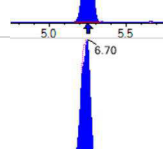
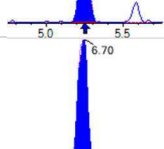
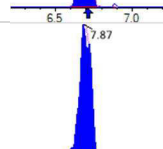
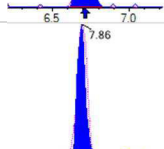
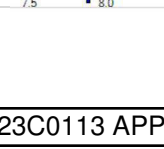
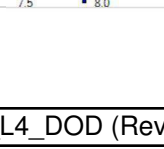
ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.435	8.8	30.00
PFPEA	0.200	0.208	3.8	30.00
PFHXA	0.100	0.157	57.2 *	30.00
PFHPA	0.100	0.0984	-1.6	30.00
PFOA	0.100	0.108	8.4	30.00
PFNA	0.100	0.120	19.7	30.00
PFDA	0.100	0.0761	-23.9	30.00
PFUnA	0.100	0.125	25.5	30.00
PFDOA	0.100	0.136	36.3 *	30.00
PFTRDA	0.100	0.0971	-2.9	30.00
PFTEDA	0.100	0.127	26.9	30.00
PFBS	0.0885	0.0808	-8.7	30.00
PFPEs	0.0940	0.113	20.6	30.00
PFHXS	0.0915	0.0935	2.2	30.00
PFHPS	0.0955	0.0875	-8.4	30.00
PFOS	0.0930	0.104	12.2	30.00
PFNS	0.0960	0.0987	2.9	30.00
PFDS	0.0965	0.0897	-7.0	30.00
PFDOS	0.0970	0.0820	-15.5	30.00
4:2FTS	0.375	0.445	18.6	30.00
6:2FTS	0.380	0.410	8.0	30.00
8:2FTS	0.384	0.409	6.6	30.00
PFOSA	0.100	0.104	3.5	30.00
NMeFOSA	0.400	0.435	8.7	30.00
NEtFOSA	0.400	0.419	4.7	30.00
NMeFOSAA	0.100	0.0742	-25.8	30.00
NEtFOSAA	0.100	0.0833	-16.7	30.00
NMeFOSE	0.400	0.392	-1.9	30.00

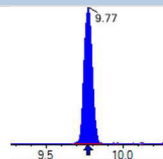
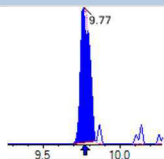
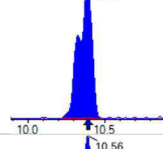
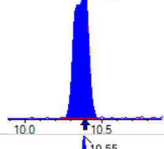
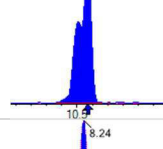
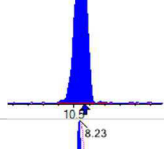
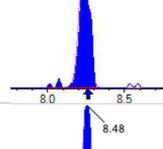
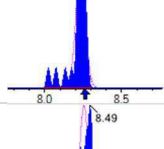
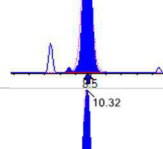
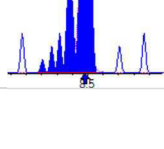
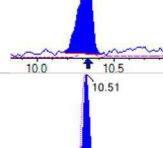
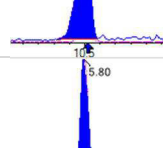
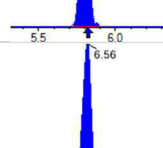
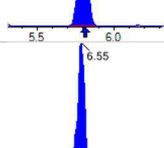
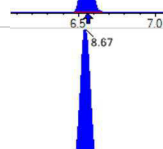
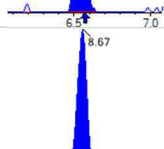
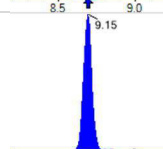
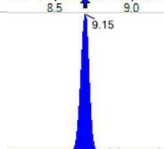
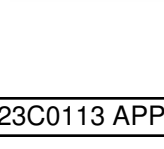
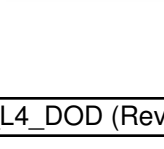
LOW-CONCENTRATION CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC01082-LCV1**Sequence:** SC01082**Standard ID:** 23C0282

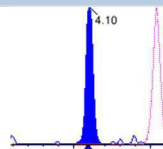
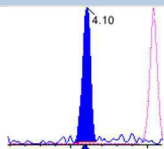
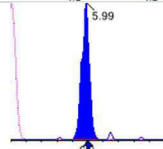
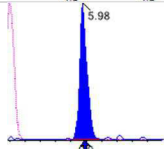
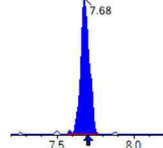
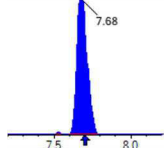
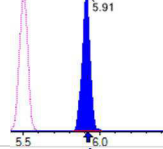
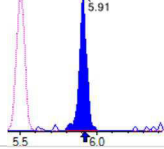
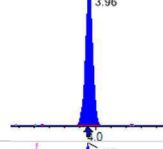
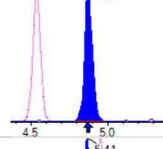
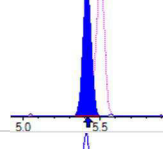
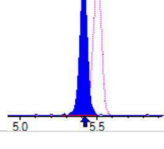
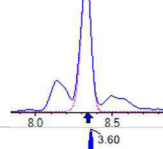
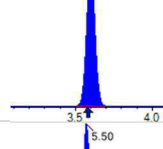
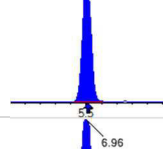
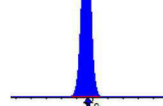
NEtFOSE	0.400	0.414	3.6	30.00
HFPO-DA	0.200	0.225	12.3	30.00
ADONA	0.189	0.225	19.2	30.00
PFEESA	0.178	0.244	36.8 *	30.00
PFMPA	0.200	0.177	-11.5	30.00
PFMBA	0.200	0.181	-9.6	30.00
NFDHA	0.200	0.243	21.6	30.00
9CL-PF3ONS	0.187	0.215	14.9	30.00
11CL-PF3OUDS	0.189	0.243	28.4	30.00
3:3FTCA	0.400	0.467	16.7	30.00
5:3FTCA	0.400	0.395	-1.3	30.00
7:3FTCA	0.400	0.439	9.7	30.00

* Values outside of QC limits

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 70014	(3.60, 1.00) (0.00, N/A, 0.0)	109.1	N/A 0.0 0.0	0.4353 [0.4000]	108.8%			
PFPeA	(263.0 / 219.0) 54407 (263.0 / 69.0) N/A	(4.54, 1.00) (0.00, N/A, #Value!)	245.5 N/A	N/A 0.0 0.0	0.2077 [0.2000]	103.8%			
PFHxA	(313.0 / 269.0) 48784 (313.0 / 119.0) 2901	(5.50, 1.00) (0.00, N/A, -0.2)	120.7 256.4	0.0595 56.5 58.5	0.1572 [0.1000]	157.2%			CV2,
PFHpA	(363.0 / 319.0) 32349 (363.0 / 169.0) 12545	(6.29, 1.00) (0.00, N/A, 0.6)	348.3 650.1	0.3878 119.0 117.6	0.0984 [0.1000]	98.4%			
PFOA	(413.0 / 369.0) 44228 (413.0 / 169.0) 14479	(6.97, 1.00) (0.01, N/A, -0.6)	181.1 626863.1	0.3274 93.9 93.3	0.1084 [0.1000]	108.4%			
PFNA	(463.0 / 419.0) 42040 (463.0 / 169.0) 8394	(7.57, 1.00) (0.00, N/A, -0.9)	943.5 34706.8	0.1997 85.3 100.4	0.1197 [0.1000]	119.7%			
PFDA	(513.0 / 469.0) 31843 (513.0 / 169.0) 2825	(8.11, 1.00) (-0.01, N/A, -0.7)	102.4 1717.8	0.0887 83.4 83.5	0.0761 [0.1000]	76.1%			
PFUnA	(563.0 / 519.0) 47748 (563.0 / 169.0) 3188	(8.61, 1.00) (0.00, N/A, -1.6)	191.2 121985.9	0.0668 55.7 57.9	0.1255 [0.1000]	125.5%			
PFDoA	(613.0 / 569.0) 42979 (613.0 / 169.0) 5820	(8.90, 1.00) (0.00, N/A, -0.1)	167.3 35758.4	0.1354 83.2 76.6	0.1363 [0.1000]	136.3%			CV2,
PFTrDA	(663.0 / 619.0) 29370 (663.0 / 169.0) 8680	(9.11, 1.02) (N/A, 0.01, 0.0)	285.1 173.0	0.2956 121.1 122.0	0.0971 [0.1000]	97.1%			
PFTeDA	(713.0 / 669.0) 39413 (713.0 / 169.0) 5303	(9.26, 1.00) (0.00, N/A, -0.3)	309.1 93.7	0.1345 70.4 69.9	0.1269 [0.1000]	126.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 48039 (299.0 / 99.0) 41078	(5.48, 1.00) (0.00, N/A, 0.0)	19758.0 1538.1	0.8551 145.8 149.2	0.0808 [0.0885]	91.3%			
PFPeS	(349.0 / 80.0) 108220 (349.0 / 99.0) 37215	(6.37, 0.90) (N/A, -0.01, 0.1)	4684198.6 682.1	0.3439 100.6 111.6	0.1133 [0.0938]	120.8%			
PFHxS	(399.0 / 80.0) 81254 (399.0 / 99.0) 24374	(7.12, 1.00) (0.00, N/A, 0.6)	53345.2 1195.2	0.3000 87.5 88.6	0.0935 [0.0911]	102.7%			
PFHpS	(449.0 / 80.0) 96185 (449.0 / 99.0) 26284	(7.76, 0.93) (N/A, -0.01, 0.0)	32220075.0 8919.6	0.2733 96.2 96.9	0.0875 [0.0951]	91.9%			
PFOS	(499.0 / 80.0) 142634 (499.0 / 99.0) 28213	(8.34, 1.00) (0.01, N/A, 0.3)	212.4 50.8	0.1978 91.4 86.4	0.1043 [0.0927]	112.5%			
PFNS	(549.0 / 80.0) 128003 (549.0 / 99.0) 28305	(8.75, 1.05) (N/A, -0.01, -0.3)	297185.2 902.4	0.2211 96.4 88.1	0.0987 [0.0960]	102.9%			
PFDS	(599.0 / 80.0) 134380 (599.0 / 99.0) 38557	(9.00, 1.08) (N/A, -0.01, 0.0)	27158.7 1863.5	0.2869 126.8 132.7	0.0897 [0.0963]	93.2%			
PFDoS	(699.0 / 80.0) 98145 (699.0 / 99.0) 20506	(9.34, 1.12) (N/A, 0.00, -0.2)	409.1 164.0	0.2089 95.8 88.5	0.0820 [0.0970]	84.6%			
4:2FTS	(327.0 / 307.0) 75371 (327.0 / 81.0) 42895	(5.25, 1.00) (0.00, N/A, 0.0)	896.7 308.8	0.5691 91.9 84.4	0.4449 [0.3738]	119.0%			
6:2FTS	(427.0 / 407.0) 47334 (427.0 / 81.0) 31200	(6.70, 1.00) (0.00, N/A, 0.0)	1318.5 285.8	0.6591 95.4 85.3	0.4105 [0.3796]	108.1%			
8:2FTS	(527.0 / 507.0) 48515 (527.0 / 81.0) 33127	(7.87, 1.00) (0.00, N/A, 0.7)	9782.3 289.3	0.6828 101.1 86.8	0.4094 [0.3833]	106.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 156566 (498.0 / 478.0) 3897	(9.77, 1.00) (0.00, N/A, 0.1)	864.6 62.6	0.0249 112.0 98.4	0.1035 [0.1000]	103.5%			
NMeFOSA	(512.0 / 219.0) 113388 (512.0 / 169.0) 95021	(10.38, 1.00) (-0.01, N/A, 0.7)	640.9 706.8	0.8380 100.2 99.6	0.4349 [0.4000]	108.7%			
NEFOSA	(526.0 / 219.0) 124948 (526.0 / 169.0) 159989	(10.56, 1.00) (-0.01, N/A, 0.7)	1340.6 801.1	1.2804 100.3 100.0	0.4189 [0.4000]	104.7%			
NMeFOSAA	(570.0 / 419.0) 17603 (570.0 / 483.0) 7883	(8.24, 1.00) (0.00, N/A, 0.2)	5379.1 365.1	0.4478 95.3 94.4	0.0742 [0.1000]	74.2%			
NEIFOSAA	(584.0 / 419.0) 13069 (584.0 / 526.0) 9942	(8.48, 1.00) (0.00, N/A, -0.6)	4946.5 11175.1	0.7607 119.2 143.2	0.0833 [0.1000]	83.3%			
NMeFOSE	(616.0 / 59.0) 48776	(10.32, 1.00) (0.00, N/A, 0.0)	140.8	N/A 0.0 0.0	0.3924 [0.4000]	98.1%			
NEtFOSE	(630.0 / 59.0) 62158	(10.51, 1.00) (0.01, N/A, 0.0)	185.5	N/A 0.0 0.0	0.4142 [0.4000]	103.6%			
HFPO-DA	(285.0 / 169.0) 38350 (285.0 / 185.0) 104776	(5.80, 1.00) (0.00, N/A, -0.2)	185376.9 1017.2	2.7321 101.5 102.7	0.2247 [0.2000]	112.3%			
ADONA	(377.0 / 85.0) 151237 (377.0 / 251.0) 15151	(6.56, 1.13) (N/A, -0.01, 0.4)	7378.0 169.3	0.1002 103.7 106.9	0.2254 [0.1885]	119.5%			
9CI-Pf3ONS	(531.0 / 351.0) 388616 (533.0 / 353.0) 125748	(8.67, 1.50) (N/A, -0.01, 0.0)	858.5 245.4	0.3236 101.4 101.4	0.2148 [0.1867]	115.1%			
11CI-PF3OUDS	(631.0 / 451.0) 226096 (633.0 / 453.0) 93741	(9.15, 1.58) (N/A, 0.00, -0.1)	971.0 917.6	0.4146 124.5 111.7	0.2427 [0.1886]	128.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 3683 (241.0 / 117.0) 5774	(4.10, 0.90) (N/A, 0.01, -0.1)	137.2 60.0	1.5679 76.9 103.3	0.4670 [0.4000]	116.7%			
5:3FTCA	(341.0 / 236.7) 20921 (341.0 / 217.0) 34034	(5.99, 1.09) (N/A, -0.01, 0.5)	1016.2 228.9	1.6268 98.8 94.4	0.3949 [0.4000]	98.7%			
7:3FTCA	(441.0 / 317.0) 39014 (441.0 / 337.0) 33886	(7.68, 1.40) (N/A, -0.02, 0.1)	678.1 56799.0	0.8686 101.4 102.6	0.4387 [0.4000]	109.7%			
PFEESA	(315.0 / 135.0) 94296 (315.0 / 83.0) 24727	(5.91, 1.07) (N/A, -0.01, 0.1)	426.3 162.0	0.2622 101.2 118.5	0.2436 [0.1785]	136.5%			CV2,
PFMPA	(229.0 / 85.0) 11939	(3.96, 0.87) (N/A, 0.01, 0.0)	738.7	N/A 0.0 0.0	0.1771 [0.2000]	88.5%			
PFMBA	(279.0 / 85.0) 38928	(4.87, 1.07) (N/A, 0.00, 0.0)	542.9	N/A 0.0 0.0	0.1808 [0.2000]	90.4%			
NFDHA	(295.0 / 201.0) 42799 (295.0 / 85.0) 41372	(5.41, 0.98) (N/A, 0.00, 0.1)	922.3 494.1	0.9666 96.2 104.1	0.2432 [0.2000]	121.6%			
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) 174715	(3.60, N/A) (N/A, 0.01, N/A)	2582.0	N/A	0.8157 [1.0000]	81.6% { 115.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 203519	(5.50, N/A) (N/A, -0.01, N/A)	2436083.1	N/A	0.6480 [1.0000]	64.8% { 108.2% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 395964	(6.96, N/A) (N/A, -0.01, N/A)	3093.7	N/A	0.8574 [1.0000]	85.7% { 106.5% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-LCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (2)
 Acquired: 2023/03/18 - 01:44

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 412987	(7.57, N/A) (N/A, -0.01, N/A)	1457.4	N/A	0.9896 [1.0000]	99.0% { 115.2% }			
13C2_PFDA_IIS	(515.0 / 470.1) 357273	(8.12, N/A) (N/A, -0.02, N/A)	2526.3	N/A	0.8896 [1.0000]	89.0% { 91.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 601147	(7.11, N/A) (N/A, -0.01, N/A)	3891.4	N/A	0.8854 [1.0000]	88.5% { 125.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 964873	(8.33, N/A) (N/A, -0.01, N/A)	1480.5	N/A	1.1245 [1.0000]	112.4% { 116.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1558044	(3.60, N/A) (N/A, 0.01, N/A)	6471.9	N/A	7.4934 [8.0000]	93.7% { 99.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1191231	(4.54, N/A) (N/A, 0.01, N/A)	4005.2	N/A	5.0668 [4.0000]	126.7% { 93.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 698285	(5.50, N/A) (N/A, -0.01, N/A)	2836.9	N/A	2.4616 [2.0000]	123.1% { 90.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 779126	(6.28, N/A) (N/A, -0.01, N/A)	2061.3	N/A	2.8833 [2.0000]	144.2% { 104.7% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 898939	(6.96, N/A) (N/A, -0.01, N/A)	1905.3	N/A	2.0897 [2.0000]	104.5% { 95.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 405874	(7.57, N/A) (N/A, -0.01, N/A)	1501.8	N/A	0.9249 [1.0000]	92.5% { 87.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 443793	(8.12, N/A) (N/A, -0.01, N/A)	2785.0	N/A	1.0321 [1.0000]	103.2% { 85.8% }			

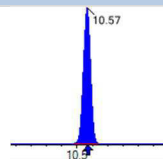
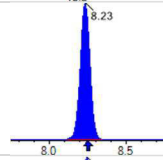
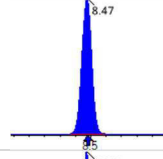
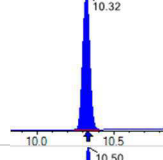
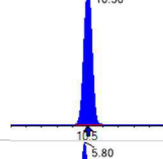
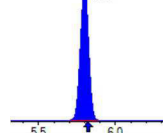


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-LCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (2)
 Acquired: 2023/03/18 - 01:44

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 476534	(8.61, N/A) (N/A, -0.01, N/A)	7864.0	N/A	0.9940 [1.0000]	99.4% { 95.4% }			
13C2_PFDa_EIS	(615.0 / 570.0) 374920	(8.90, N/A) (N/A, -0.01, N/A)	2525.4	N/A	0.8946 [1.0000]	89.5% { 88.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 363715	(9.27, N/A) (N/A, -0.01, N/A)	921.9	N/A	0.8229 [1.0000]	82.3% { 90.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1841815	(5.48, N/A) (N/A, 0.00, N/A)	5375.3	N/A	1.9339 [2.0000]	96.7% { 107.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1157951	(7.11, N/A) (N/A, -0.01, N/A)	1760.8	N/A	1.8722 [2.0000]	93.6% { 100.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2423412	(8.33, N/A) (N/A, -0.01, N/A)	2229.5	N/A	1.8733 [2.0000]	93.7% { 93.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 232321	(5.25, N/A) (N/A, 0.00, N/A)	1561.3	N/A	3.8457 [4.0000]	96.1% { 98.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 321113	(6.70, N/A) (N/A, -0.01, N/A)	5867.2	N/A	4.0486 [4.0000]	101.2% { 106.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 354105	(7.86, N/A) (N/A, -0.01, N/A)	3377.5	N/A	4.1211 [4.0000]	103.0% { 87.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3645232	(9.77, N/A) (N/A, 0.00, N/A)	5815.8	N/A	1.6474 [2.0000]	82.4% { 103.4% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 634147	(10.39, N/A) (N/A, 0.00, N/A)	1872.5	N/A	1.1201 [2.0000]	56.0% { 80.5% }			S1,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 626679	(10.57, N/A) (N/A, 0.00, N/A)	2458.9	N/A	1.2161 [2.0000]	60.8% { 84.3% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 921812	(8.23, N/A) (N/A, -0.02, N/A)	2006.6	N/A	4.1670 [4.0000]	104.2% { 99.8% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 749437	(8.47, N/A) (N/A, -0.01, N/A)	537860.6	N/A	3.0229 [4.0000]	75.6% { 94.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2510035	(10.32, N/A) (N/A, 0.00, N/A)	809.5	N/A	14.2476 [20.0000]	71.2% { 87.1% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3105064	(10.50, N/A) (N/A, 0.00, N/A)	1671.7	N/A	14.9329 [20.0000]	74.7% { 88.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1717779	(5.80, N/A) (N/A, -0.01, N/A)	5189.5	N/A	10.9655 [8.0000]	137.1% { 106.1% }			S2,

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 23B0084

Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2310010
 Sequence: SC01082

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01082-CCV1	PFBA	20.0	19.7	98.3	ng/mL	+/- 30.00%
	PFPEA	10.0	9.20	92.0	ng/mL	+/- 30.00%
	PFHXA	5.00	4.44	88.8	ng/mL	+/- 30.00%
	PFHPA	5.00	4.57	91.4	ng/mL	+/- 30.00%
	PFOA	5.00	4.22	84.4	ng/mL	+/- 30.00%
	PFNA	5.00	4.63	92.5	ng/mL	+/- 30.00%
	PFDA	5.00	4.60	92.1	ng/mL	+/- 30.00%
	PFUnA	5.00	4.86	97.3	ng/mL	+/- 30.00%
	PFDOA	5.00	4.79	95.9	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.58	91.7	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.85	97.0	ng/mL	+/- 30.00%
	PFBS	4.42	4.51	102	ng/mL	+/- 30.00%
	PFPEs	4.70	5.91	126	ng/mL	+/- 30.00%
	PFHXS	4.58	4.46	97.5	ng/mL	+/- 30.00%
	PFHPS	4.78	3.95	82.6	ng/mL	+/- 30.00%
	PFOS	4.65	3.98	85.6	ng/mL	+/- 30.00%
	PFNS	4.80	4.49	93.6	ng/mL	+/- 30.00%
	PFDS	4.82	4.56	94.6	ng/mL	+/- 30.00%
	PFDOS	4.85	3.60	74.2	ng/mL	+/- 30.00%
	4:2FTS	18.8	17.0	90.7	ng/mL	+/- 30.00%
	6:2FTS	19.0	20.3	107	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.0	93.8	ng/mL	+/- 30.00%
	PFOSA	5.00	5.00	100	ng/mL	+/- 30.00%
	NMeFOSA	20.0	18.5	92.6	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.0	89.9	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	3.87	77.3	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.03	101	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.4	92.0	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.2	90.9	ng/mL	+/- 30.00%
	HFPO-DA	10.0	11.0	110	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2310010
Standard ID:	23B0084	Sequence:	SC01082

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01082-CCV1	ADONA	9.45	9.19	97.2	ng/mL	+/- 30.00%
	PFEESA	8.90	9.26	104	ng/mL	+/- 30.00%
	PFMPA	10.0	8.14	81.4	ng/mL	+/- 30.00%
	PFMBA	10.0	8.56	85.6	ng/mL	+/- 30.00%
	NFDHA	10.0	9.13	91.3	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	11.8	126	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	12.0	127	ng/mL	+/- 30.00%
	3:3FTCA	20.0	19.0	94.9	ng/mL	+/- 30.00%
	5:3FTCA	20.0	16.8	83.8	ng/mL	+/- 30.00%
	7:3FTCA	20.0	18.9	94.6	ng/mL	+/- 30.00%



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (3)
 Acquired: 2023/03/18 - 01:57

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) 3172774	(3.59, 1.00) (0.00, N/A, 0.0)	283.3	N/A 0.0 0.0	19.6528 [20.0000]	98.3%			
PFPeA	(263.0 / 219.0) 2590016 (263.0 / 69.0) 31090	(4.53, 1.00) (0.00, N/A, 0.3)	4547.9 532.8	0.0120 106.0 100.0	9.1976 [10.0000]	92.0%			
PFHxA	(313.0 / 269.0) 1529228 (313.0 / 119.0) 155403	(5.51, 1.00) (0.00, N/A, 0.1)	3209.2 38820.3	0.1016 96.5 100.0	4.4395 [5.0000]	88.8%			
PFHpA	(363.0 / 319.0) 1435544 (363.0 / 169.0) 473239	(6.29, 1.00) (0.00, N/A, 0.0)	4805.5 13668240.2	0.3297 101.1 100.0	4.5723 [5.0000]	91.4%			
PFOA	(413.0 / 369.0) 1811350 (413.0 / 169.0) 635625	(6.97, 1.00) (0.00, N/A, 0.0)	3189.0 30876.7	0.3509 100.7 100.0	4.2196 [5.0000]	84.4%			
PFNA	(463.0 / 419.0) 1863141 (463.0 / 169.0) 370640	(7.58, 1.00) (0.00, N/A, 0.1)	9403.7 3545412.2	0.1989 85.0 100.0	4.6267 [5.0000]	92.5%			
PFDA	(513.0 / 469.0) 2247103 (513.0 / 169.0) 238683	(8.14, 1.00) (0.00, N/A, 0.1)	2083.8 3526.1	0.1062 99.9 100.0	4.6046 [5.0000]	92.1%			
PFUnA	(563.0 / 519.0) 1939677 (563.0 / 169.0) 223833	(8.62, 1.00) (0.00, N/A, 0.0)	2479.9 1774.2	0.1154 96.2 100.0	4.8637 [5.0000]	97.3%			
PFDoA	(613.0 / 569.0) 1707237 (613.0 / 169.0) 301671	(8.90, 1.00) (0.00, N/A, -0.1)	2463.3 1614.2	0.1767 108.6 100.0	4.7940 [5.0000]	95.9%			
PFTrDA	(663.0 / 619.0) 1565797 (663.0 / 169.0) 379347	(9.10, 1.02) (N/A, 0.00, 0.1)	2924.4 1792.4	0.2423 99.3 100.0	4.5848 [5.0000]	91.7%			
PFTeDA	(713.0 / 669.0) 1661036 (713.0 / 169.0) 319778	(9.27, 1.00) (0.00, N/A, 0.1)	2718.1 1024.4	0.1925 100.7 100.0	4.8523 [5.0000]	97.0%			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (3)
 Acquired: 2023/03/18 - 01:57

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2494871 (299.0 / 99.0) 1429467	(5.48, 1.00) (0.00, N/A, -0.1)	26719.7 12829.6	0.5730 97.7 100.0	4.5114 [4.4237]	102.0%			
PFPeS	(349.0 / 80.0) 5626205 (349.0 / 99.0) 1734256	(6.38, 0.90) (N/A, 0.00, 0.1)	6635.5 30083.3	0.3082 90.2 100.0	5.9128 [4.6919]	126.0%			
PFHxS	(399.0 / 80.0) 3863638 (399.0 / 99.0) 1307413	(7.12, 1.00) (0.00, N/A, 0.2)	34657.6 3073.7	0.3384 98.7 100.0	4.4635 [4.5549]	98.0%			
PFHpS	(449.0 / 80.0) 4673108 (449.0 / 99.0) 1317340	(7.77, 0.93) (N/A, 0.00, 0.0)	3351.4 23537862.4	0.2819 99.2 100.0	3.9498 [4.7570]	83.0%			
PFOS	(499.0 / 80.0) 5850029 (499.0 / 99.0) 1339267	(8.34, 1.00) (0.00, N/A, 0.0)	1908.3 1097.2	0.2289 105.8 100.0	3.9782 [4.6375]	85.8%			
PFNS	(549.0 / 80.0) 6267984 (549.0 / 99.0) 1573645	(8.76, 1.05) (N/A, 0.00, -0.1)	9134.7 135303.3	0.2511 109.5 100.0	4.4947 [4.7994]	93.7%			
PFDS	(599.0 / 80.0) 7349048 (599.0 / 99.0) 1588452	(9.01, 1.08) (N/A, 0.00, 0.1)	8746.6 4187.8	0.2161 95.5 100.0	4.5616 [4.8155]	94.7%			
PFDoS	(699.0 / 80.0) 4636328 (699.0 / 99.0) 1095024	(9.34, 1.12) (N/A, 0.00, 0.2)	4006.3 2713.9	0.2362 108.3 100.0	3.6002 [4.8478]	74.3%			
4:2FTS	(327.0 / 307.0) 2938961 (327.0 / 81.0) 1981252	(5.25, 1.00) (0.00, N/A, 0.1)	5545.0 3264.6	0.6741 108.9 100.0	17.0460 [18.6906]	91.2%			
6:2FTS	(427.0 / 407.0) 2194419 (427.0 / 81.0) 1695924	(6.71, 1.00) (0.00, N/A, 0.0)	2644.5 3084.9	0.7728 111.9 100.0	20.2955 [18.9808]	106.9%			
8:2FTS	(527.0 / 507.0) 2439496 (527.0 / 81.0) 1919343	(7.88, 1.00) (0.00, N/A, 0.0)	2883.9 2811.9	0.7868 116.5 100.0	18.0093 [19.1658]	94.0%			

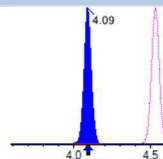
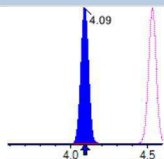
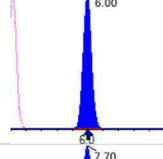
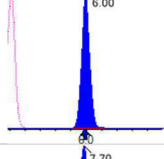
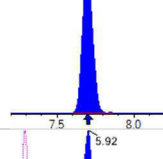
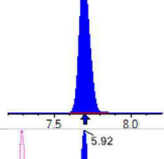
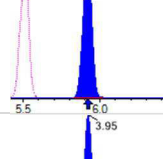
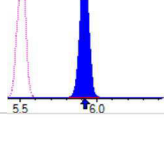
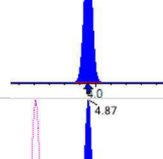
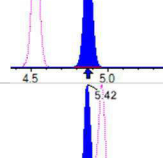
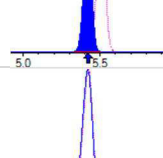
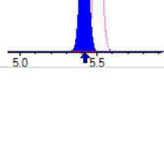
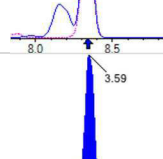
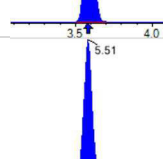
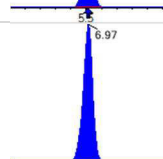
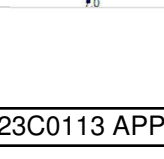


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (3)
 Acquired: 2023/03/18 - 01:57

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7315277 (498.0 / 478.0) 185018	(9.77, 1.00) (0.00, N/A, -0.1)	5312.4 1208.8	0.0253 113.8 100.0	5.0014 [5.0000]	100.0%			
NMeFOSA	(512.0 / 219.0) 5996069 (512.0 / 169.0) 5045429	(10.39, 1.00) (-0.01, N/A, 1.0)	5370.3 5265.3	0.8415 100.6 100.0	18.5245 [20.0000]	92.6%			
NEIFOSA	(526.0 / 219.0) 6361291 (526.0 / 169.0) 8147315	(10.56, 1.00) (-0.01, N/A, 0.8)	9891.2 8563.8	1.2808 100.3 100.0	17.9870 [20.0000]	89.9%			
NMeFOSAA	(570.0 / 419.0) 919508 (570.0 / 483.0) 436212	(8.25, 1.00) (0.00, N/A, -0.1)	5385.5 757.6	0.4744 101.0 100.0	3.8659 [5.0000]	77.3%			
NEIFOSAA	(584.0 / 419.0) 839909 (584.0 / 526.0) 446139	(8.49, 1.00) (0.01, N/A, 0.1)	4963.8 4906.2	0.5312 83.2 100.0	5.0284 [5.0000]	100.6%			
NMeFOSE	(616.0 / 59.0) 2625061	(10.33, 1.00) (0.01, N/A, 0.0)	2332.2	N/A 0.0 0.0	18.3905 [20.0000]	92.0%			
NEtFOSE	(630.0 / 59.0) 3089951	(10.52, 1.00) (0.01, N/A, 0.0)	1289.1	N/A 0.0 0.0	18.1704 [20.0000]	90.9%			
HFPO-DA	(285.0 / 169.0) 1768955 (285.0 / 185.0) 4705682	(5.81, 1.00) (0.00, N/A, 0.2)	3567.6 4060.8	2.6601 98.8 100.0	10.9966 [10.0000]	110.0%			
ADONA	(377.0 / 85.0) 5811034 (377.0 / 251.0) 544569	(6.57, 1.13) (N/A, 0.00, -0.2)	5554.1 1501.9	0.0937 97.0 100.0	9.1887 [9.4270]	97.5%			
9CI-Pf3ONS	(531.0 / 351.0) 20082823 (533.0 / 353.0) 6407606	(8.68, 1.49) (N/A, 0.00, 0.0)	5548.0 2890.0	0.3191 100.0 100.0	11.7809 [9.3325]	126.2%			
11CI-PF3OUDS	(631.0 / 451.0) 12109242 (633.0 / 453.0) 4495130	(9.15, 1.57) (N/A, 0.00, 0.1)	5382.3 3643.2	0.3712 111.5 100.0	12.0423 [9.4321]	127.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 160980 (241.0 / 117.0) 244249	(4.09, 0.90) (N/A, 0.00, 0.0)	1941.2 1631.6	1.5173 74.4 100.0	18.9892 [20.0000]	94.9%			
5:3FTCA	(341.0 / 236.7) 985958 (341.0 / 217.0) 1698649	(6.00, 1.09) (N/A, 0.00, 0.1)	1687.4 2584.2	1.7228 104.6 100.0	16.7672 [20.0000]	83.8%			
7:3FTCA	(441.0 / 317.0) 1867528 (441.0 / 337.0) 1581332	(7.70, 1.40) (N/A, 0.00, 0.1)	1800.0 2115.0	0.8468 98.8 100.0	18.9229 [20.0000]	94.6%			
PFEESA	(315.0 / 135.0) 3979731 (315.0 / 83.0) 881013	(5.92, 1.07) (N/A, 0.00, 0.1)	5932.1 2155.4	0.2214 85.4 100.0	9.2632 [8.9246]	103.8%			
PFMPA	(229.0 / 85.0) 589804	(3.95, 0.87) (N/A, 0.00, 0.0)	5917.3	N/A 0.0 0.0	8.1366 [10.0000]	81.4%			
PFMBA	(279.0 / 85.0) 1982937	(4.87, 1.08) (N/A, 0.00, 0.0)	3944.2	N/A 0.0 0.0	8.5649 [10.0000]	85.6%			
NFDHA	(295.0 / 201.0) 1782197 (295.0 / 85.0) 1654510	(5.42, 0.98) (N/A, 0.00, 0.0)	4625.6 3656.9	0.9284 92.4 100.0	9.1255 [10.0000]	91.3%			
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) 151977	(3.59, N/A) (N/A, 0.00, N/A)	2178.8	N/A	0.7095 [1.0000]	70.9% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 188038	(5.51, N/A) (N/A, 0.00, N/A)	15479.6	N/A	0.5987 [1.0000]	59.9% { 100.0% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 371762	(6.97, N/A) (N/A, 0.00, N/A)	4684.6	N/A	0.8050 [1.0000]	80.5% { 100.0% }			

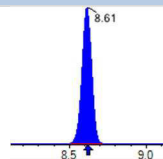
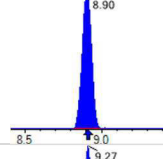
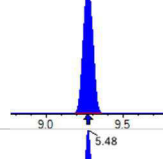
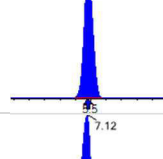
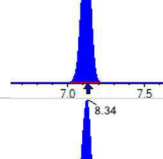
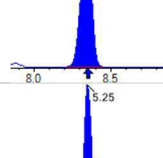
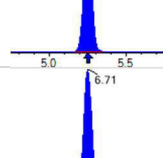
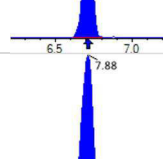
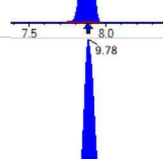
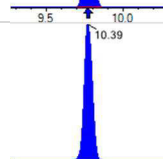
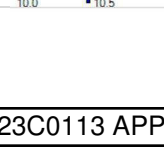


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (3)
 Acquired: 2023/03/18 - 01:57

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
13C5_PFNA_IIS	(468.0 / 423.0) 358649	(7.58, N/A) (N/A, 0.00, N/A)	5687.2	N/A	0.8594 [1.0000]	85.9% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 389798	(8.14, N/A) (N/A, 0.00, N/A)	7238.9	N/A	0.9706 [1.0000]	97.1% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 478937	(7.12, N/A) (N/A, 0.00, N/A)	1812.1	N/A	0.7054 [1.0000]	70.5% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 831360	(8.34, N/A) (N/A, 0.00, N/A)	935.1	N/A	0.9689 [1.0000]	96.9% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1563978	(3.59, N/A) (N/A, 0.00, N/A)	7845.6	N/A	8.6473 [8.0000]	108.1% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1280561	(4.53, N/A) (N/A, 0.00, N/A)	5046.0	N/A	5.8952 [4.0000]	147.4% { 100.0% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 774963	(5.51, N/A) (N/A, 0.00, N/A)	3256.3	N/A	2.9568 [2.0000]	147.8% { 100.0% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 744214	(6.29, N/A) (N/A, 0.00, N/A)	14129.1	N/A	2.9808 [2.0000]	149.0% { 100.0% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 945883	(6.97, N/A) (N/A, 0.00, N/A)	1547.6	N/A	2.3419 [2.0000]	117.1% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 465352	(7.58, N/A) (N/A, 0.00, N/A)	3937.8	N/A	1.2211 [1.0000]	122.1% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 517329	(8.13, N/A) (N/A, 0.00, N/A)	1641.1	N/A	1.1027 [1.0000]	110.3% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUaA_EIS	(570.0 / 525.0) 499321	(8.61, N/A) (N/A, 0.00, N/A)	3899.9	N/A	0.9546 [1.0000]	95.5% { 100.0% }			
13C2_PFDaA_EIS	(615.0 / 570.0) 423324	(8.90, N/A) (N/A, 0.00, N/A)	8424.9	N/A	0.9258 [1.0000]	92.6% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 400947	(9.27, N/A) (N/A, 0.00, N/A)	3745.1	N/A	0.8314 [1.0000]	83.1% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1713394	(5.48, N/A) (N/A, 0.00, N/A)	3423.8	N/A	2.2582 [2.0000]	112.9% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1153966	(7.12, N/A) (N/A, 0.00, N/A)	2449.6	N/A	2.3419 [2.0000]	117.1% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2606935	(8.34, N/A) (N/A, 0.00, N/A)	1365.7	N/A	2.3388 [2.0000]	116.9% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 236447	(5.25, N/A) (N/A, 0.00, N/A)	1702.3	N/A	4.9128 [4.0000]	122.8% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 301081	(6.71, N/A) (N/A, 0.00, N/A)	1356.1	N/A	4.7647 [4.0000]	119.1% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 404770	(7.88, N/A) (N/A, 0.00, N/A)	3344.0	N/A	5.9128 [4.0000]	147.8% { 100.0% }			S2.
13C8_PFOsa_EIS	(506.0 / 78.0) 3524667	(9.78, N/A) (N/A, 0.00, N/A)	4354.6	N/A	1.8487 [2.0000]	92.4% { 100.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 787302	(10.39, N/A) (N/A, 0.00, N/A)	2380.9	N/A	1.6140 [2.0000]	80.7% { 100.0% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (3)
 Acquired: 2023/03/18 - 01:57

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 743026	(10.57, N/A) (N/A, 0.00, N/A)	2912.1	N/A	1.6734 [2.0000]	83.7% { 100.0% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 923772	(8.25, N/A) (N/A, 0.00, N/A)	2880.2	N/A	4.8465 [4.0000]	121.2% { 100.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 797435	(8.48, N/A) (N/A, 0.00, N/A)	4624.0	N/A	3.7330 [4.0000]	93.3% { 100.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2882493	(10.32, N/A) (N/A, 0.00, N/A)	1475.5	N/A	18.9894 [20.0000]	94.9% { 100.0% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3518741	(10.50, N/A) (N/A, 0.00, N/A)	2271.5	N/A	19.6401 [20.0000]	98.2% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1618807	(5.81, N/A) (N/A, 0.00, N/A)	3537.5	N/A	11.1845 [8.0000]	139.8% { 100.0% }			S2,

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 23B0084

Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2310010
 Sequence: SC01082

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01082-CCV2	PFBA	20.0	19.3	96.4	ng/mL	+/- 30.00%
	PFPEA	10.0	9.71	97.1	ng/mL	+/- 30.00%
	PFHXA	5.00	4.88	97.6	ng/mL	+/- 30.00%
	PFHPA	5.00	4.79	95.8	ng/mL	+/- 30.00%
	PFOA	5.00	4.94	98.9	ng/mL	+/- 30.00%
	PFNA	5.00	5.05	101	ng/mL	+/- 30.00%
	PFDA	5.00	4.53	90.7	ng/mL	+/- 30.00%
	PFUnA	5.00	4.83	96.6	ng/mL	+/- 30.00%
	PFDOA	5.00	4.82	96.4	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.29	85.8	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.78	95.6	ng/mL	+/- 30.00%
	PFBS	4.42	4.25	96.1	ng/mL	+/- 30.00%
	PFPEs	4.70	5.25	112	ng/mL	+/- 30.00%
	PFHXS	4.58	4.32	94.3	ng/mL	+/- 30.00%
	PFHPS	4.78	3.73	78.1	ng/mL	+/- 30.00%
	PFOS	4.65	4.10	88.1	ng/mL	+/- 30.00%
	PFNS	4.80	4.58	95.4	ng/mL	+/- 30.00%
	PFDS	4.82	4.38	90.9	ng/mL	+/- 30.00%
	PFDOS	4.85	3.46	71.4	ng/mL	+/- 30.00%
	4:2FTS	18.8	20.7	110	ng/mL	+/- 30.00%
	6:2FTS	19.0	20.1	106	ng/mL	+/- 30.00%
	8:2FTS	19.2	17.9	93.4	ng/mL	+/- 30.00%
	PFOSA	5.00	5.00	100	ng/mL	+/- 30.00%
	NMeFOSA	20.0	18.4	91.8	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.2	91.0	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	3.88	77.6	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.87	97.3	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.1	90.6	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.2	91.2	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.4	104	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2310010
Standard ID:	23B0084	Sequence:	SC01082

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01082-CCV2	ADONA	9.45	9.73	103	ng/mL	+/- 30.00%
	PFEESA	8.90	8.50	95.5	ng/mL	+/- 30.00%
	PFMPA	10.0	8.86	88.6	ng/mL	+/- 30.00%
	PFMBA	10.0	9.25	92.5	ng/mL	+/- 30.00%
	NFDHA	10.0	9.06	90.6	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	12.8	137	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	13.2	140	ng/mL	+/- 30.00%
	3:3FTCA	20.0	20.9	104	ng/mL	+/- 30.00%
	5:3FTCA	20.0	14.0	70.0	ng/mL	+/- 30.00%
	7:3FTCA	20.0	21.8	109	ng/mL	+/- 30.00%

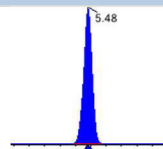
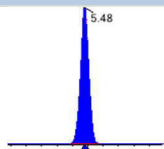
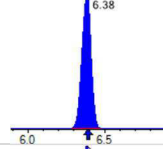
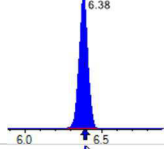
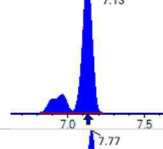
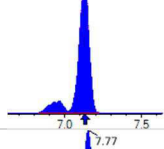
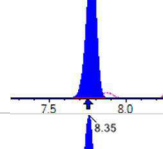
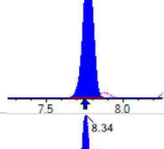
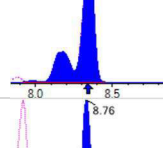
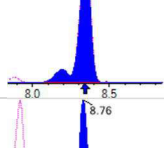
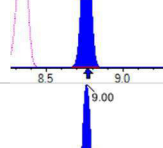
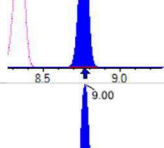
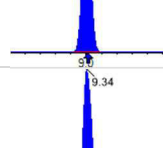
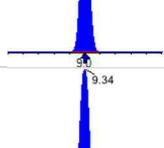
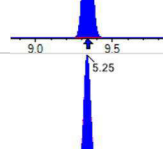
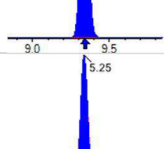
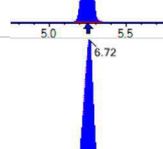
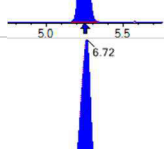
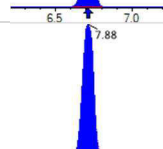
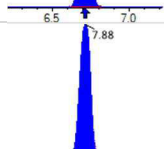
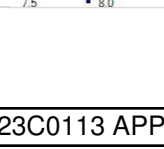
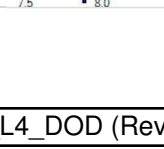


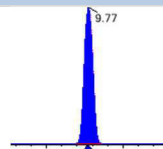
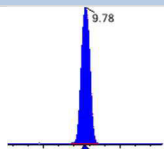
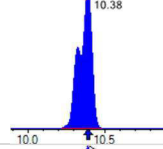
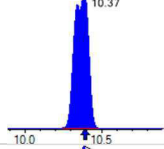
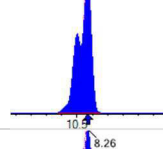
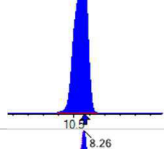
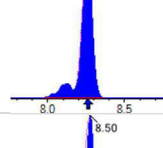
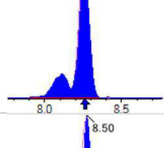
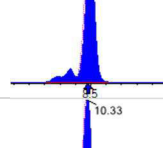
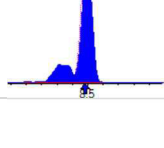
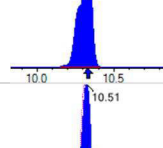
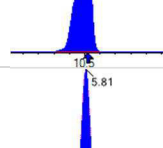
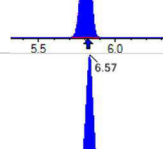
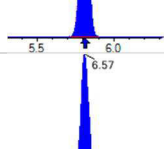
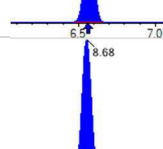
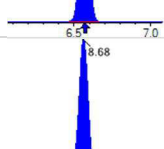
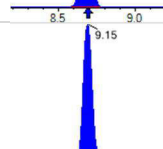
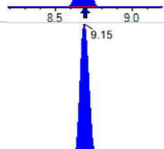
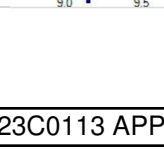
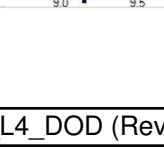
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

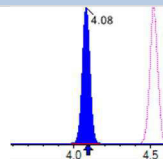
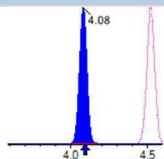
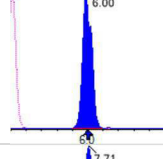
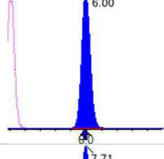
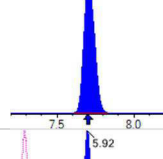
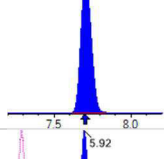
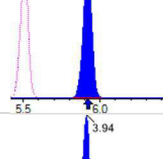
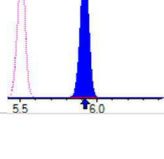
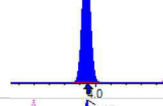
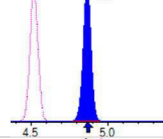
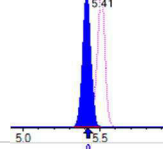
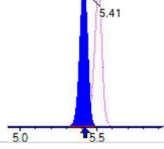
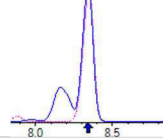
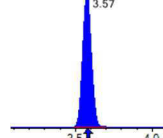
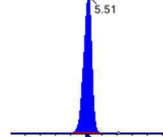
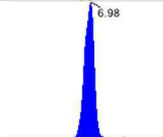
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 Acquisition Method: 1633 2023-03-07.dam

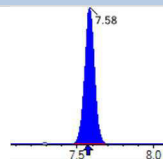
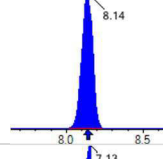
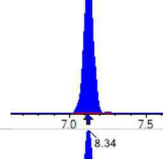
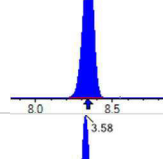
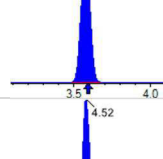
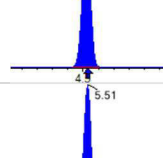
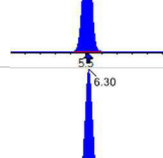
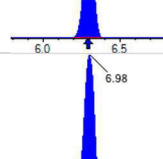
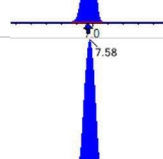
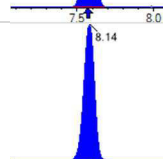
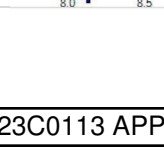
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 Path: S2023-03-13B (32)
 Acquired: 2023/03/18 - 08:10

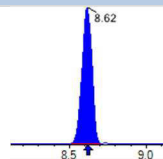
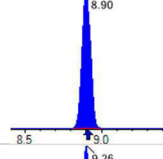
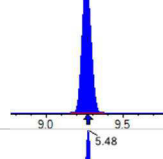
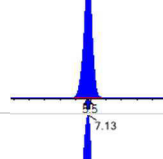
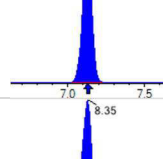
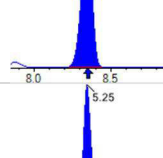
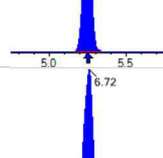
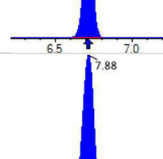
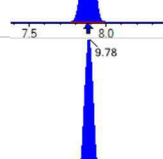
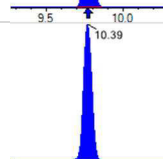
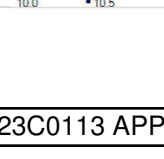
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2924894	(3.58, 1.00) (0.00, N/A, 0.0)	219.7	N/A 0.0 0.0	19.2801 [20.0000]	96.4%			
PFPeA	(263.0 / 219.0) 2364948 (263.0 / 69.0) 28543	(4.52, 1.00) (0.00, N/A, -0.1)	3519.7 456.1	0.0121 106.6 100.5	9.7115 [10.0000]	97.1%			
PFHxA	(313.0 / 269.0) 1516106 (313.0 / 119.0) 140324	(5.51, 1.00) (0.00, N/A, 0.0)	2973.4 39822.8	0.0926 87.9 91.1	4.8776 [5.0000]	97.6%			
PFHpA	(363.0 / 319.0) 1443070 (363.0 / 169.0) 408714	(6.30, 1.00) (0.00, N/A, -0.1)	4107.3 2620.0	0.2832 86.9 85.9	4.7894 [5.0000]	95.8%			
PFOA	(413.0 / 369.0) 1917114 (413.0 / 169.0) 550051	(6.98, 1.00) (0.00, N/A, 0.0)	2478.6 9534.6	0.2869 82.3 81.8	4.9445 [5.0000]	98.9%			
PFNA	(463.0 / 419.0) 1811901 (463.0 / 169.0) 372954	(7.59, 1.00) (0.00, N/A, -0.1)	33364.6 7692.6	0.2058 87.9 103.5	5.0483 [5.0000]	101.0%			
PFDA	(513.0 / 469.0) 2198730 (513.0 / 169.0) 231507	(8.14, 1.00) (0.00, N/A, -0.1)	1881.2 1071.6	0.1053 99.0 99.1	4.5346 [5.0000]	90.7%			
PFUnA	(563.0 / 519.0) 2058613 (563.0 / 169.0) 230582	(8.62, 1.00) (0.00, N/A, 0.1)	3119.2 2870.8	0.1120 93.4 97.1	4.8281 [5.0000]	96.6%			
PFDoA	(613.0 / 569.0) 1957409 (613.0 / 169.0) 316964	(8.90, 1.00) (0.00, N/A, 0.0)	3344.7 2195.4	0.1619 99.5 91.6	4.8200 [5.0000]	96.4%			
PFTrDA	(663.0 / 619.0) 1670568 (663.0 / 169.0) 410826	(9.10, 1.02) (N/A, 0.00, -0.1)	3195.0 1093.4	0.2459 100.8 101.5	4.2895 [5.0000]	85.8%			
PFTeDA	(713.0 / 669.0) 1511091 (713.0 / 169.0) 285475	(9.26, 1.00) (0.00, N/A, -0.1)	2176.9 1224.0	0.1889 98.8 98.1	4.7818 [5.0000]	95.6%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2089140 (299.0 / 99.0) 1406524	(5.48, 1.00) (0.00, N/A, 0.2)	17636.4 11392.5	0.6733 114.8 117.5	4.2458 [4.4237]	96.0%			
PFPeS	(349.0 / 80.0) 4875456 (349.0 / 99.0) 1694922	(6.38, 0.90) (N/A, 0.00, 0.0)	1638464.8 8573.6	0.3476 101.8 112.8	5.2492 [4.6919]	111.9%			
PFHxS	(399.0 / 80.0) 3651025 (399.0 / 99.0) 1206753	(7.13, 1.00) (0.00, N/A, 0.0)	11731.0 969110.3	0.3305 96.4 97.7	4.3211 [4.5549]	94.9%			
PFHpS	(449.0 / 80.0) 4500182 (449.0 / 99.0) 1289075	(7.77, 0.93) (N/A, 0.00, 0.1)	153156.2 5168.9	0.2864 100.8 101.6	3.7347 [4.7570]	78.5%			
PFOS	(499.0 / 80.0) 6137830 (499.0 / 99.0) 1398252	(8.35, 1.00) (0.00, N/A, 0.1)	1616.9 1106.3	0.2278 105.3 99.5	4.0983 [4.6375]	88.4%			
PFNS	(549.0 / 80.0) 6502219 (549.0 / 99.0) 1516981	(8.76, 1.05) (N/A, 0.00, 0.0)	12956.4 5670.3	0.2333 101.7 92.9	4.5783 [4.7994]	95.4%			
PFDS	(599.0 / 80.0) 7189352 (599.0 / 99.0) 1641464	(9.00, 1.08) (N/A, 0.00, 0.1)	9128.3 9725.6	0.2283 100.9 105.6	4.3817 [4.8155]	91.0%			
PFDoS	(699.0 / 80.0) 4540382 (699.0 / 99.0) 1063129	(9.34, 1.12) (N/A, -0.01, -0.1)	3955.0 2881.4	0.2341 107.4 99.1	3.4619 [4.8478]	71.4%			
4:2FTS	(327.0 / 307.0) 3314470 (327.0 / 81.0) 1882093	(5.25, 1.00) (0.00, N/A, 0.0)	5811.5 3814.2	0.5678 91.7 84.2	20.6502 [18.6906]	110.5%			
6:2FTS	(427.0 / 407.0) 2312527 (427.0 / 81.0) 1730641	(6.72, 1.00) (0.00, N/A, -0.1)	4697.2 2191.9	0.7484 108.3 96.8	20.0769 [18.9808]	105.8%			
8:2FTS	(527.0 / 507.0) 2778842 (527.0 / 81.0) 2220702	(7.88, 1.00) (0.00, N/A, 0.0)	3746.7 1912.2	0.7991 118.3 101.6	17.9333 [19.1658]	93.6%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7088342 (498.0 / 478.0) 186102	(9.77, 1.00) (0.00, N/A, -0.1)	5376.9 1780.5	0.0263 118.2 103.8	5.0010 [5.0000]	100.0%			
NMeFOSA	(512.0 / 219.0) 5762274 (512.0 / 169.0) 4771444	(10.38, 1.00) (-0.01, N/A, 0.9)	6649.0 6107.5	0.8280 99.0 98.4	18.3522 [20.0000]	91.8%			
NEFOSA	(526.0 / 219.0) 6080166 (526.0 / 169.0) 7605078	(10.56, 1.00) (0.00, N/A, 0.8)	9292.8 7843.8	1.2508 98.0 97.7	18.1997 [20.0000]	91.0%			
NMeFOSAA	(570.0 / 419.0) 1119545 (570.0 / 483.0) 506998	(8.26, 1.00) (0.01, N/A, 0.1)	3277.5 443.8	0.4529 96.4 95.5	3.8819 [5.0000]	77.6%			
NEFOSAA	(584.0 / 419.0) 976568 (584.0 / 526.0) 571654	(8.50, 1.00) (0.01, N/A, 0.1)	2534.5 2536.3	0.5854 91.7 110.2	4.8650 [5.0000]	97.3%			
NMeFOSE	(616.0 / 59.0) 2507584	(10.33, 1.00) (0.01, N/A, 0.0)	2397.7	N/A 0.0 0.0	18.1240 [20.0000]	90.6%			
NEtFOSE	(630.0 / 59.0) 2896218	(10.51, 1.00) (0.01, N/A, 0.0)	1412.5	N/A 0.0 0.0	18.2326 [20.0000]	91.2%			
HFPO-DA	(285.0 / 169.0) 1533456 (285.0 / 185.0) 4286492	(5.81, 1.00) (0.00, N/A, -0.2)	3270.7 4465.1	2.7953 103.9 105.1	10.4453 [10.0000]	104.5%			
ADONA	(377.0 / 85.0) 5616872 (377.0 / 251.0) 602376	(6.57, 1.13) (N/A, 0.01, 0.1)	4807.9 1776.7	0.1072 111.0 114.4	9.7319 [9.4270]	103.2%			
9Cl-Pf3ONS	(531.0 / 351.0) 19915509 (533.0 / 353.0) 6320532	(8.68, 1.49) (N/A, 0.00, 0.0)	4216.8 2420.7	0.3174 99.5 99.5	12.8013 [9.3325]	137.2%			CV2,
11Cl-PF3OUDS	(631.0 / 451.0) 12050191 (633.0 / 453.0) 4285080	(9.15, 1.58) (N/A, -0.01, 0.1)	4941.4 3539.1	0.3556 106.8 95.8	13.1980 [9.4321]	139.9%			CV2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 153081 (241.0 / 117.0) 228763	(4.08, 0.90) (N/A, -0.01, 0.0)	1986.5 1615.4	1.4944 73.3 98.5	20.8808 [20.0000]	104.4%			
5:3FTCA	(341.0 / 236.7) 742483 (341.0 / 217.0) 1512929	(6.00, 1.09) (N/A, 0.00, -0.1)	1637.8 1922.8	2.0377 123.7 118.3	13.9928 [20.0000]	70.0%			CV1,
7:3FTCA	(441.0 / 317.0) 1944486 (441.0 / 337.0) 1711078	(7.71, 1.40) (N/A, 0.01, 0.1)	1501.4 2199.9	0.8800 102.7 103.9	21.8344 [20.0000]	109.2%			
PFEESA	(315.0 / 135.0) 3295259 (315.0 / 83.0) 850630	(5.92, 1.07) (N/A, 0.00, 0.0)	3826.8 2043.1	0.2581 99.6 116.6	8.4999 [8.9246]	95.2%			
PFMPA	(229.0 / 85.0) 555698	(3.94, 0.87) (N/A, -0.01, 0.0)	4810.2	N/A 0.0 0.0	8.8647 [10.0000]	88.6%			
PFMBA	(279.0 / 85.0) 1852193	(4.87, 1.08) (N/A, -0.01, 0.0)	4409.0	N/A 0.0 0.0	9.2510 [10.0000]	92.5%			
NFDHA	(295.0 / 201.0) 1596011 (295.0 / 85.0) 1469287	(5.41, 0.98) (N/A, 0.00, -0.1)	3756.3 3880.7	0.9206 91.7 99.2	9.0564 [10.0000]	90.6%			
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) 147528	(3.57, N/A) (N/A, -0.02, N/A)	2159.7	N/A	0.6887 [1.0000]	68.9% { 97.1% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 169098	(5.51, N/A) (N/A, 0.00, N/A)	2639.4	N/A	0.5384 [1.0000]	53.8% { 89.9% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 353425	(6.98, N/A) (N/A, 0.01, N/A)	35208.0	N/A	0.7653 [1.0000]	76.5% { 95.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 369178	(7.58, N/A) (N/A, 0.00, N/A)	1554.3	N/A	0.8846 [1.0000]	88.5% { 102.9% }			
13C2_PFDA_IIS	(515.0 / 470.1) 352797	(8.14, N/A) (N/A, 0.00, N/A)	56557.1	N/A	0.8784 [1.0000]	87.8% { 90.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 468870	(7.13, N/A) (N/A, 0.00, N/A)	2262.0	N/A	0.6906 [1.0000]	69.1% { 97.9% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 939083	(8.34, N/A) (N/A, 0.00, N/A)	1366.1	N/A	1.0944 [1.0000]	109.4% { 113.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1469657	(3.58, N/A) (N/A, -0.01, N/A)	7605.0	N/A	8.3709 [8.0000]	104.6% { 94.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1107416	(4.52, N/A) (N/A, -0.01, N/A)	4078.3	N/A	5.6691 [4.0000]	141.7% { 86.5% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 699300	(5.51, N/A) (N/A, 0.00, N/A)	3057.8	N/A	2.9670 [2.0000]	148.3% { 90.2% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 714216	(6.30, N/A) (N/A, 0.01, N/A)	1980.4	N/A	3.1811 [2.0000]	159.1% { 96.0% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 854339	(6.98, N/A) (N/A, 0.01, N/A)	6840.0	N/A	2.2250 [2.0000]	111.3% { 90.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 414762	(7.58, N/A) (N/A, 0.00, N/A)	3432.7	N/A	1.0573 [1.0000]	105.7% { 89.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 514006	(8.14, N/A) (N/A, 0.01, N/A)	2340797.3	N/A	1.2105 [1.0000]	121.1% { 99.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 533849	(8.62, N/A) (N/A, 0.00, N/A)	2367.1	N/A	1.1277 [1.0000]	112.8% { 106.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 482738	(8.90, N/A) (N/A, 0.00, N/A)	1872.1	N/A	1.1665 [1.0000]	116.7% { 114.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 370128	(9.26, N/A) (N/A, -0.01, N/A)	1132.5	N/A	0.8480 [1.0000]	84.8% { 92.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1524513	(5.48, N/A) (N/A, 0.00, N/A)	3969.4	N/A	2.0524 [2.0000]	102.6% { 89.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1126417	(7.13, N/A) (N/A, 0.01, N/A)	2103.9	N/A	2.3350 [2.0000]	116.8% { 97.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2655006	(8.35, N/A) (N/A, 0.00, N/A)	1310.9	N/A	2.1087 [2.0000]	105.4% { 101.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 220116	(5.25, N/A) (N/A, 0.00, N/A)	1744.0	N/A	4.6717 [4.0000]	116.8% { 93.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 320742	(6.72, N/A) (N/A, 0.01, N/A)	2034.8	N/A	5.1849 [4.0000]	129.6% { 106.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 463030	(7.88, N/A) (N/A, 0.01, N/A)	6853.1	N/A	6.9091 [4.0000]	172.7% { 114.4% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3415630	(9.78, N/A) (N/A, 0.00, N/A)	4238.1	N/A	1.5860 [2.0000]	79.3% { 96.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 763709	(10.39, N/A) (N/A, 0.00, N/A)	2552.1	N/A	1.3860 [2.0000]	69.3% { 97.0% }			S1,

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 701887	(10.57, N/A) (N/A, 0.00, N/A)	3302.8	N/A	1.3995 [2.0000]	70.0% { 94.5% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 1120112	(8.25, N/A) (N/A, 0.00, N/A)	2051.4	N/A	5.2024 [4.0000]	130.1% { 121.3% }			S2,
D5_EiFOSAA_EIS	(589.0 / 419.0) 958318	(8.49, N/A) (N/A, 0.00, N/A)	4355.0	N/A	3.9716 [4.0000]	99.3% { 120.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2793981	(10.32, N/A) (N/A, 0.00, N/A)	2583.1	N/A	16.2949 [20.0000]	81.5% { 96.9% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3286867	(10.50, N/A) (N/A, 0.00, N/A)	1451.6	N/A	16.2414 [20.0000]	81.2% { 93.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1477369	(5.81, N/A) (N/A, 0.00, N/A)	2856.7	N/A	11.3505 [8.0000]	141.9% { 91.3% }			S2,

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 23B0084

Work Order: 23C0113
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2310010
 Sequence: SC01082

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01082-CCV3	PFBA	20.0	18.7	93.5	ng/mL	+/- 30.00%
	PFPEA	10.0	9.28	92.8	ng/mL	+/- 30.00%
	PFHXA	5.00	5.04	101	ng/mL	+/- 30.00%
	PFHPA	5.00	4.79	95.9	ng/mL	+/- 30.00%
	PFOA	5.00	4.74	94.8	ng/mL	+/- 30.00%
	PFNA	5.00	4.10	82.0	ng/mL	+/- 30.00%
	PFDA	5.00	4.29	85.7	ng/mL	+/- 30.00%
	PFUnA	5.00	4.98	99.6	ng/mL	+/- 30.00%
	PFDOA	5.00	4.84	96.8	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.75	95.0	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.88	97.5	ng/mL	+/- 30.00%
	PFBS	4.42	4.36	98.5	ng/mL	+/- 30.00%
	PFPEs	4.70	5.44	116	ng/mL	+/- 30.00%
	PFHXS	4.58	4.49	98.0	ng/mL	+/- 30.00%
	PFHPS	4.78	3.99	83.5	ng/mL	+/- 30.00%
	PFOS	4.65	4.10	88.1	ng/mL	+/- 30.00%
	PFNS	4.80	4.52	94.1	ng/mL	+/- 30.00%
	PFDS	4.82	4.49	93.1	ng/mL	+/- 30.00%
	PFDOS	4.85	3.60	74.2	ng/mL	+/- 30.00%
	4:2FTS	18.8	19.4	103	ng/mL	+/- 30.00%
	6:2FTS	19.0	19.5	102	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.0	93.5	ng/mL	+/- 30.00%
	PFOSA	5.00	4.98	99.7	ng/mL	+/- 30.00%
	NMeFOSA	20.0	18.7	93.6	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.3	91.3	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	3.64	72.9	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.20	104	ng/mL	+/- 30.00%
	NMeFOSE	20.0	17.8	89.1	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.8	93.8	ng/mL	+/- 30.00%
	HFPO-DA	10.0	11.1	111	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2310010
Standard ID:	23B0084	Sequence:	SC01082

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01082-CCV3	ADONA	9.45	10.0	106	ng/mL	+/- 30.00%
	PFEESA	8.90	9.52	107	ng/mL	+/- 30.00%
	PFMPA	10.0	9.04	90.4	ng/mL	+/- 30.00%
	PFMBA	10.0	7.90	79.0	ng/mL	+/- 30.00%
	NFDHA	10.0	9.61	96.1	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	11.7	126	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	12.5	132	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.8	94.0	ng/mL	+/- 30.00%
	5:3FTCA	20.0	16.6	83.1	ng/mL	+/- 30.00%
	7:3FTCA	20.0	22.1	110	ng/mL	+/- 30.00%



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (52)
 Acquired: 2023/03/18 - 12:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 3288042	(3.58, 1.00) (0.00, N/A, 0.0)	193.4	N/A 0.0 0.0	18.7035 [20.0000]	93.5%			
PFPeA	(263.0 / 219.0) 2646610 (263.0 / 69.0) 31780	(4.52, 1.00) (0.00, N/A, -0.1)	3335.3 344.5	0.0120 106.0 100.0	9.2764 [10.0000]	92.8%			
PFHxA	(313.0 / 269.0) 1628780 (313.0 / 119.0) 146390	(5.50, 1.00) (0.00, N/A, -0.2)	1876.3 1591.6	0.0899 85.3 88.4	5.0412 [5.0000]	100.8%			
PFHpA	(363.0 / 319.0) 1560395 (363.0 / 169.0) 416528	(6.29, 1.00) (0.00, N/A, 0.0)	4530.0 11252.3	0.2669 81.9 81.0	4.7926 [5.0000]	95.9%			
PFOA	(413.0 / 369.0) 2054736 (413.0 / 169.0) 685276	(6.97, 1.00) (0.00, N/A, -0.1)	2723.4 3816.0	0.3335 95.7 95.0	4.7414 [5.0000]	94.8%			
PFNA	(463.0 / 419.0) 1710364 (463.0 / 169.0) 383182	(7.58, 1.00) (0.01, N/A, 0.0)	10807.9 806.2	0.2240 95.7 112.6	4.0977 [5.0000]	82.0%			
PFDA	(513.0 / 469.0) 2106750 (513.0 / 169.0) 231755	(8.14, 1.00) (0.00, N/A, -0.1)	2693.2 988.7	0.1100 103.4 103.6	4.2857 [5.0000]	85.7%			
PFUnA	(563.0 / 519.0) 1908504 (563.0 / 169.0) 209836	(8.62, 1.00) (0.00, N/A, -0.1)	2392.1 1226.0	0.1099 91.7 95.3	4.9785 [5.0000]	99.6%			
PFDoA	(613.0 / 569.0) 1810349 (613.0 / 169.0) 284292	(8.91, 1.00) (0.00, N/A, -0.2)	2800.4 1278.6	0.1570 96.5 88.9	4.8394 [5.0000]	96.8%			
PFTrDA	(663.0 / 619.0) 1704854 (663.0 / 169.0) 414212	(9.10, 1.02) (N/A, 0.00, 0.0)	2504.8 1817.9	0.2430 99.6 100.3	4.7523 [5.0000]	95.0%			
PFTeDA	(713.0 / 669.0) 1673712 (713.0 / 169.0) 295426	(9.27, 1.00) (0.00, N/A, 0.0)	2026.4 951.9	0.1765 92.4 91.7	4.8757 [5.0000]	97.5%			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (52)
 Acquired: 2023/03/18 - 12:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2373300 (299.0 / 99.0) 1506376	(5.47, 1.00) (0.00, N/A, -0.1)	8150.4 7164.1	0.6347 108.2 110.8	4.3557 [4.4237]	98.5%			
PFPeS	(349.0 / 80.0) 5295777 (349.0 / 99.0) 1883432	(6.37, 0.89) (N/A, -0.01, -0.1)	64142.6 6944.9	0.3556 104.1 115.4	5.4411 [4.6919]	116.0%			
PFHxS	(399.0 / 80.0) 3973851 (399.0 / 99.0) 1369363	(7.12, 1.00) (0.00, N/A, 0.2)	13449.2 3056.6	0.3446 100.5 101.8	4.4881 [4.5549]	98.5%			
PFHpS	(449.0 / 80.0) 4716713 (449.0 / 99.0) 1311042	(7.77, 0.93) (N/A, 0.00, 0.0)	1341752.6 3187.0	0.2780 97.8 98.6	3.9927 [4.7570]	83.9%			
PFOS	(499.0 / 80.0) 6015144 (499.0 / 99.0) 1363610	(8.35, 1.00) (0.00, N/A, 0.1)	1614.7 847.6	0.2267 104.7 99.0	4.0967 [4.6375]	88.3%			
PFNS	(549.0 / 80.0) 6288752 (549.0 / 99.0) 1609756	(8.77, 1.05) (N/A, 0.00, -0.1)	8840.0 28618.2	0.2560 111.6 102.0	4.5165 [4.7994]	94.1%			
PFDS	(599.0 / 80.0) 7220153 (599.0 / 99.0) 1677413	(9.01, 1.08) (N/A, 0.00, 0.0)	11463.1 5481.8	0.2323 102.6 107.5	4.4884 [4.8155]	93.2%			
PFDoS	(699.0 / 80.0) 4626913 (699.0 / 99.0) 1055251	(9.35, 1.12) (N/A, 0.01, 0.0)	3955.0 2432.9	0.2281 104.6 96.6	3.5983 [4.8478]	74.2%			
4:2FTS	(327.0 / 307.0) 3184901 (327.0 / 81.0) 2000611	(5.24, 1.00) (0.00, N/A, -0.1)	5148.1 4160.9	0.6282 101.4 93.2	19.4054 [18.6906]	103.8%			
6:2FTS	(427.0 / 407.0) 2218062 (427.0 / 81.0) 1658149	(6.71, 1.00) (0.00, N/A, 0.0)	4321.3 3952.0	0.7476 108.2 96.7	19.4575 [18.9808]	102.5%			
8:2FTS	(527.0 / 507.0) 2423555 (527.0 / 81.0) 1817111	(7.88, 1.00) (0.00, N/A, 0.0)	4739.3 2966.0	0.7498 111.0 95.3	17.9543 [19.1658]	93.7%			

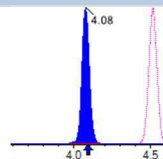
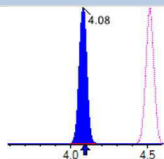
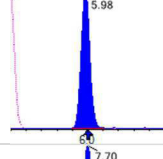
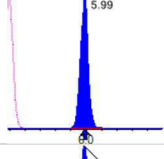
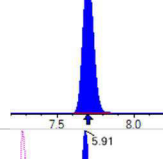
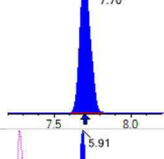
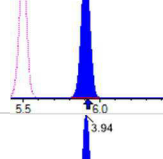
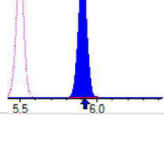
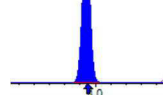
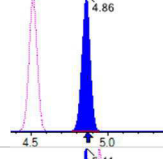
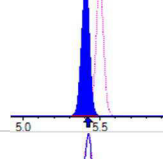
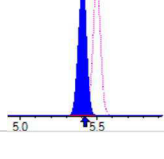
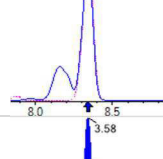
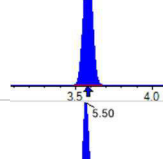
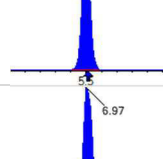
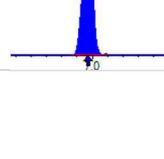


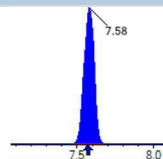
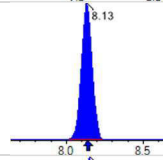
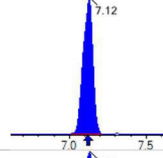
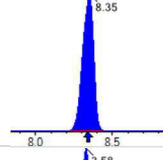
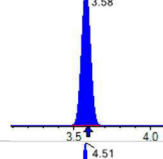
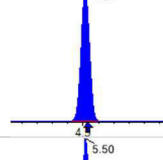
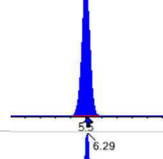
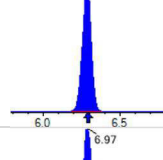
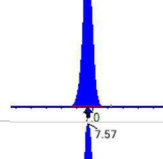
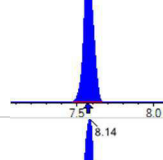
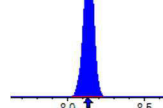
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

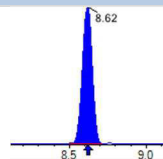
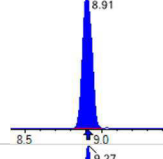
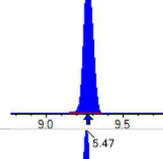
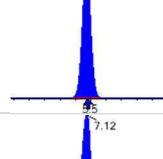
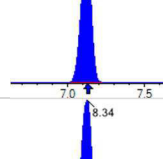
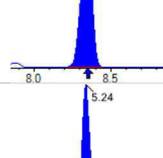
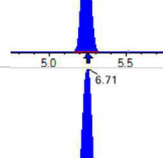
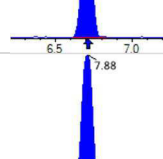
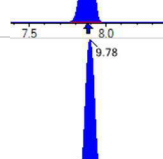
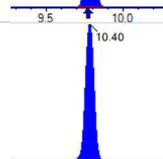
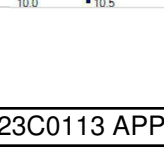
Sample I.D.: SC01082-CCV3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

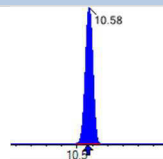
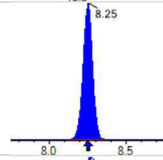
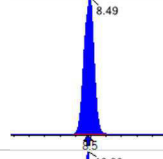
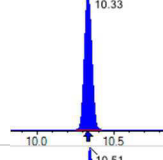
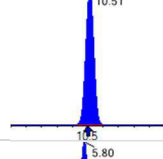
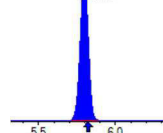
Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (52)
 Acquired: 2023/03/18 - 12:28

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7498840 (498.0 / 478.0) 182618	(9.78, 1.00) (0.00, N/A, 0.1)	4274.0 1034.7	0.0244 109.6 96.3	4.9833 [5.0000]	99.7%			
NMeFOSA	(512.0 / 219.0) 5830435 (512.0 / 169.0) 4952986	(10.40, 1.00) (-0.01, N/A, 1.1)	6624.9 6688.3	0.8495 101.6 101.0	18.7218 [20.0000]	93.6%			
NEIFOSA	(526.0 / 219.0) 6263326 (526.0 / 169.0) 7671195	(10.58, 1.00) (0.00, N/A, 0.9)	9463.2 9137.9	1.2248 96.0 95.6	18.2676 [20.0000]	91.3%			
NMeFOSAA	(570.0 / 419.0) 883539 (570.0 / 483.0) 430141	(8.25, 1.00) (0.00, N/A, 0.0)	4343.7 528.3	0.4868 103.6 102.6	3.6434 [5.0000]	72.9%			
NEIFOSAA	(584.0 / 419.0) 796977 (584.0 / 526.0) 458542	(8.50, 1.00) (0.01, N/A, 0.1)	2050.2 62100.6	0.5754 90.1 108.3	5.1969 [5.0000]	103.9%			
NMeFOSE	(616.0 / 59.0) 2472237	(10.34, 1.00) (0.01, N/A, 0.0)	2274.6	N/A 0.0 0.0	17.8155 [20.0000]	89.1%			
NEtFOSE	(630.0 / 59.0) 2950836	(10.52, 1.00) (0.01, N/A, 0.0)	1024.1	N/A 0.0 0.0	18.7577 [20.0000]	93.8%			
HFPO-DA	(285.0 / 169.0) 1786404 (285.0 / 185.0) 4617826	(5.80, 1.00) (0.00, N/A, -0.1)	2554.5 3208.5	2.5850 96.0 97.2	11.0623 [10.0000]	110.6%			
ADONA	(377.0 / 85.0) 6362933 (377.0 / 251.0) 629903	(6.56, 1.13) (N/A, 0.00, 0.0)	4850.8 1877.8	0.0990 102.5 105.6	10.0226 [9.4270]	106.3%			
9CI-Pf3ONS	(531.0 / 351.0) 20088160 (533.0 / 353.0) 6396254	(8.69, 1.50) (N/A, 0.00, 0.0)	4436.4 3183.7	0.3184 99.8 99.8	11.7387 [9.3325]	125.8%			
11CI-PF3OUDS	(631.0 / 451.0) 12551852 (633.0 / 453.0) 4616836	(9.16, 1.58) (N/A, 0.00, 0.0)	6227.3 4592.9	0.3678 110.5 99.1	12.4570 [9.4321]	132.1%			CV2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 161490 (241.0 / 117.0) 249863	(4.08, 0.90) (N/A, -0.01, -0.2)	2332.7 1778.7	1.5472 75.9 102.0	18.8017 [20.0000]	94.0%			
5:3FTCA	(341.0 / 236.7) 916327 (341.0 / 217.0) 1714058	(5.98, 1.09) (N/A, -0.01, -0.2)	1923.7 2360.6	1.8706 113.6 108.6	16.6136 [20.0000]	83.1%			
7:3FTCA	(441.0 / 317.0) 2042796 (441.0 / 337.0) 1674055	(7.70, 1.40) (N/A, 0.00, 0.1)	1946.7 1800.8	0.8195 95.6 96.8	22.0677 [20.0000]	110.3%			
PFEESA	(315.0 / 135.0) 3836104 (315.0 / 83.0) 998508	(5.91, 1.07) (N/A, -0.01, 0.0)	3769.3 2544.4	0.2603 100.5 117.6	9.5194 [8.9246]	106.7%			
PFMPA	(229.0 / 85.0) 663784	(3.94, 0.87) (N/A, -0.01, 0.0)	5463.2	N/A 0.0 0.0	9.0381 [10.0000]	90.4%			
PFMBA	(279.0 / 85.0) 1854057	(4.86, 1.08) (N/A, -0.01, 0.0)	4539.3	N/A 0.0 0.0	7.9041 [10.0000]	79.0%			
NFDHA	(295.0 / 201.0) 1760478 (295.0 / 85.0) 1634172	(5.41, 0.98) (N/A, -0.01, 0.0)	3106.8 4861.3	0.9283 92.4 100.0	9.6105 [10.0000]	96.1%			
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 [5.0000]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 165877	(3.58, N/A) (N/A, -0.01, N/A)	1809.2	N/A	0.7744 [1.0000]	77.4% { 109.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 206465	(5.50, N/A) (N/A, -0.01, N/A)	10011.3	N/A	0.6574 [1.0000]	65.7% { 109.8% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 405057	(6.97, N/A) (N/A, 0.00, N/A)	8212.5	N/A	0.8771 [1.0000]	87.7% { 109.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 397325	(7.58, N/A) (N/A, 0.00, N/A)	389.4	N/A	0.9521 [1.0000]	95.2% { 110.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 355896	(8.13, N/A) (N/A, -0.01, N/A)	29072.2	N/A	0.8862 [1.0000]	88.6% { 91.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 488360	(7.12, N/A) (N/A, 0.00, N/A)	3430.8	N/A	0.7193 [1.0000]	71.9% { 102.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 907230	(8.35, N/A) (N/A, 0.01, N/A)	1445.3	N/A	1.0573 [1.0000]	105.7% { 109.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1703057	(3.58, N/A) (N/A, -0.01, N/A)	5791.1	N/A	8.6272 [8.0000]	107.8% { 108.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1297434	(4.51, N/A) (N/A, -0.02, N/A)	4089.0	N/A	5.4398 [4.0000]	136.0% { 101.3% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 726890	(5.50, N/A) (N/A, -0.01, N/A)	3044.1	N/A	2.5259 [2.0000]	126.3% { 93.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 771764	(6.29, N/A) (N/A, 0.00, N/A)	2927.4	N/A	2.8153 [2.0000]	140.8% { 103.7% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 954893	(6.97, N/A) (N/A, 0.00, N/A)	2941.5	N/A	2.1699 [2.0000]	108.5% { 101.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 482348	(7.57, N/A) (N/A, 0.00, N/A)	10873.2	N/A	1.1425 [1.0000]	114.3% { 103.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 521103	(8.14, N/A) (N/A, 0.00, N/A)	222717.8	N/A	1.2166 [1.0000]	121.7% { 100.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 479973	(8.62, N/A) (N/A, 0.00, N/A)	1100.3	N/A	1.0050 [1.0000]	100.5% { 96.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 444679	(8.91, N/A) (N/A, 0.00, N/A)	7145.9	N/A	1.0652 [1.0000]	106.5% { 105.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 402067	(9.27, N/A) (N/A, 0.00, N/A)	1498.3	N/A	0.9132 [1.0000]	91.3% { 100.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1688170	(5.47, N/A) (N/A, -0.01, N/A)	2839.0	N/A	2.1820 [2.0000]	109.1% { 98.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1180378	(7.12, N/A) (N/A, 0.00, N/A)	2090.8	N/A	2.3492 [2.0000]	117.5% { 102.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2602986	(8.34, N/A) (N/A, 0.00, N/A)	1374.6	N/A	2.1400 [2.0000]	107.0% { 99.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 225079	(5.24, N/A) (N/A, -0.01, N/A)	2282.7	N/A	4.5863 [4.0000]	114.7% { 95.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 317433	(6.71, N/A) (N/A, 0.00, N/A)	1374.0	N/A	4.9266 [4.0000]	123.2% { 105.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 403358	(7.88, N/A) (N/A, 0.00, N/A)	11447.1	N/A	5.7785 [4.0000]	144.5% { 99.7% }			S2.
13C8_PFOsa_EIS	(506.0 / 78.0) 3626264	(9.78, N/A) (N/A, 0.01, N/A)	4104.2	N/A	1.7429 [2.0000]	87.1% { 102.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 757487	(10.40, N/A) (N/A, 0.01, N/A)	2692.2	N/A	1.4230 [2.0000]	71.2% { 96.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	(531.0 / 169.0) 720346	(10.58, N/A) (N/A, 0.01, N/A)	3093.5	N/A	1.4867 [2.0000]	74.3% { 96.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 941857	(8.25, N/A) (N/A, 0.00, N/A)	2867.7	N/A	4.5281 [4.0000]	113.2% { 102.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 732146	(8.49, N/A) (N/A, 0.00, N/A)	5154.2	N/A	3.1408 [4.0000]	78.5% { 91.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2802296	(10.33, N/A) (N/A, 0.01, N/A)	1524.0	N/A	16.9172 [20.0000]	84.6% { 97.2% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3255110	(10.51, N/A) (N/A, 0.01, N/A)	2216.9	N/A	16.6492 [20.0000]	83.2% { 92.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1625071	(5.80, N/A) (N/A, -0.01, N/A)	3240.9	N/A	10.2256 [8.0000]	127.8% { 100.4% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00916
 Calibration: 2310010

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

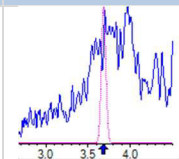
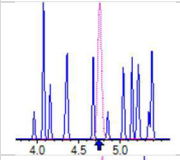
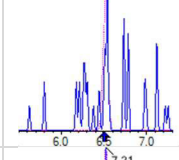
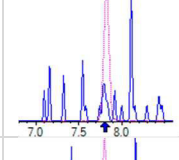
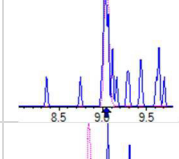
Lab Sample ID	Analyte	Found	Units	RL	C
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	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.0136	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.0203	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	0.0168	ng/mL	0.10	U
	NEtFOSAA	0.0225	ng/mL	0.10	U
	NMeFOSE	0.0804	ng/mL	0.40	U
	NEtFOSE	0.0948	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

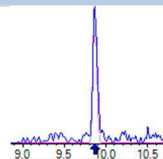
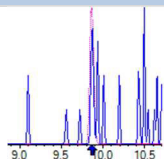
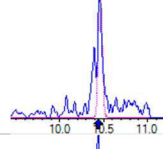
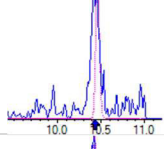
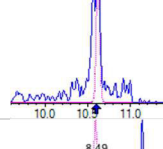
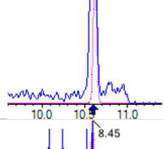
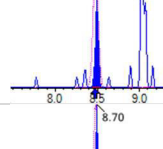
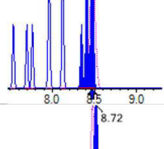
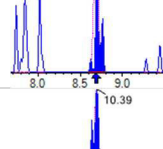
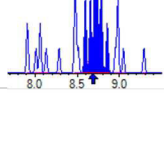
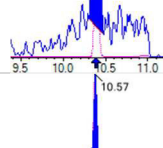
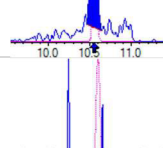
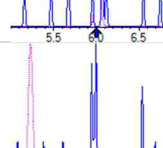
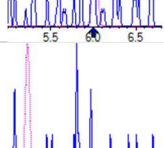
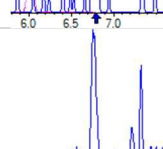
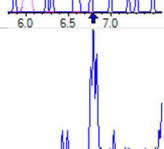
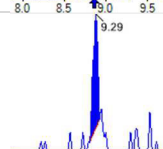
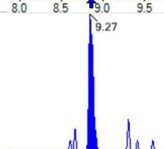
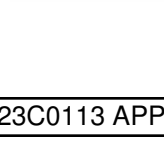
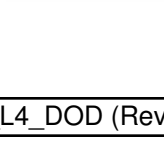
Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00916
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC00916-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	0.0478	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	7.20	ng/mL		
	13C5-PFPEA	3.76	ng/mL		
	13C5-PFHXA	1.79	ng/mL		
	13C4-PFHPA	1.69	ng/mL		
	13C8-PFOA	1.76	ng/mL		
	13C9-PFNA	0.736	ng/mL		
	13C6-PFDA	0.824	ng/mL		
	13C7-PFUnA	0.889	ng/mL		
	13C2-PFDOA	1.02	ng/mL		
	13C2-PFTEDA	0.868	ng/mL		
	13C3-PFBS	1.99	ng/mL		
	13C3-PFHXS	1.80	ng/mL		
	13C8-PFOS	1.75	ng/mL		
	13C2-4:2FTS	3.79	ng/mL		
	13C2-6:2FTS	3.39	ng/mL		
	13C2-8:2FTS	3.41	ng/mL		
	13C8-PFOSA	1.85	ng/mL		
	D3-NMEFOSA	1.75	ng/mL		
	D5-NETFOSA	1.94	ng/mL		
	D3-NMEFOSAA	3.13	ng/mL		
	D5-NETFOSAA	3.41	ng/mL		
	D7-NMEFOSE	18.5	ng/mL		
	D9-NETFOSE	19.4	ng/mL		
	13C3-HFPO-DA	7.53	ng/mL		

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 5598 (413.0 / 169.0) 1649	(7.21, 1.00) (0.00, N/A, 1.3)	1765.2 714.9	0.2945 84.5 84.5	0.0136	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) 7244 (713.0 / 169.0) 2099	(9.40, 1.00) (0.00, N/A, -1.1)	31.4 178.5	0.2897 151.6 151.6	0.0203	N/A			IR2,

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEIFOSA	(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) 2697 (570.0 / 483.0) 1245	(8.49, 1.00) (0.02, N/A, 2.5)	1510.5 446.0	0.4614 98.2 98.2	0.0168	N/A			
NEIFOSAA	(584.0 / 419.0) 3590 (584.0 / 526.0) 4622	(8.70, 1.00) (0.01, N/A, -1.5)	1564.3 146.5	1.2877 201.7 201.7	0.0225	N/A			IR2,
NMeFOSE	(616.0 / 59.0) 11691	(10.39, 1.00) (0.00, N/A, 0.0)	22.1	N/A 0.0 0.0	0.0804	N/A			
NEIFOSE	(630.0 / 59.0) 16668	(10.57, 1.00) (0.01, N/A, 0.0)	20.8	N/A 0.0 0.0	0.0948	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 6356 (633.0 / 453.0) 5900	(9.29, 1.54) (N/A, 0.00, 1.2)	9.7 245.8	0.9282 278.7 278.7	0.0478	N/A			IR2,

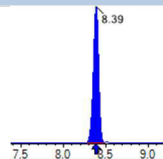
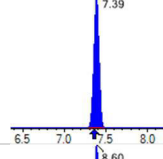
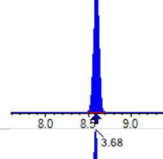
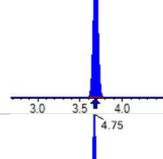
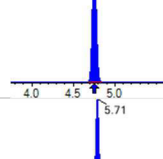
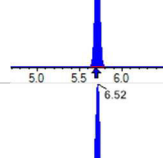
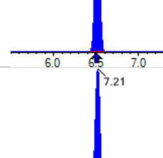
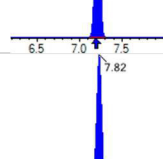
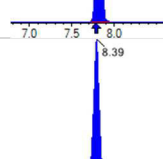
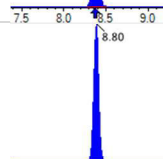
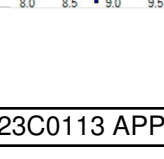


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (9)
 Acquired: 2023/03/07 - 17:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 232842	(3.69, N/A) (N/A, 0.00, N/A)	2043.3	N/A	1.0870 [1.0000]	108.7% { 115.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 319636	(5.71, N/A) (N/A, 0.02, N/A)	3374.6	N/A	1.0177 [1.0000]	101.8% { 112.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 474636	(7.21, N/A) (N/A, 0.02, N/A)	3052.6	N/A	1.0278 [1.0000]	102.8% { 113.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 445306	(7.82, N/A) (N/A, 0.03, N/A)	364.9	N/A	1.0671 [1.0000]	106.7% { 115.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 388299	(8.39, N/A) (N/A, 0.01, N/A)	210.7	N/A	0.9668 [1.0000]	96.7% { 101.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 647647	(7.39, N/A) (N/A, 0.03, N/A)	4282.3	N/A	0.9539 [1.0000]	95.4% { 108.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 868682	(8.60, N/A) (N/A, 0.01, N/A)	2002.7	N/A	1.0124 [1.0000]	101.2% { 104.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1994127	(3.68, N/A) (N/A, 0.00, N/A)	7087.2	N/A	7.1965 [8.0000]	90.0% { 94.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1387209	(4.75, N/A) (N/A, 0.01, N/A)	5017.5	N/A	3.7569 [4.0000]	93.9% { 92.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 797367	(5.71, N/A) (N/A, 0.02, N/A)	4316.1	N/A	1.7897 [2.0000]	89.5% { 91.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 716060	(6.52, N/A) (N/A, 0.01, N/A)	2684.9	N/A	1.6872 [2.0000]	84.4% { 84.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 908919	(7.21, N/A) (N/A, 0.02, N/A)	2391.1	N/A	1.7627 [2.0000]	88.1% { 89.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 348058	(7.82, N/A) (N/A, 0.03, N/A)	4426058.7	N/A	0.7356 [1.0000]	73.6% { 75.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 385290	(8.39, N/A) (N/A, 0.01, N/A)	6025.3	N/A	0.8244 [1.0000]	82.4% { 76.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 463187	(8.80, N/A) (N/A, 0.01, N/A)	965.7	N/A	0.8890 [1.0000]	88.9% { 88.2% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (9)
 Acquired: 2023/03/07 - 17:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 465466	(9.04, N/A) (N/A, 0.00, N/A)	8419.9	N/A	1.0219 [1.0000]	102.2% { 101.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 417100	(9.40, N/A) (N/A, 0.00, N/A)	1612.0	N/A	0.8683 [1.0000]	86.8% { 83.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2045070	(5.71, N/A) (N/A, 0.02, N/A)	4131.7	N/A	1.9932 [2.0000]	99.7% { 90.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1201286	(7.39, N/A) (N/A, 0.03, N/A)	3380.1	N/A	1.8028 [2.0000]	90.1% { 84.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2036595	(8.60, N/A) (N/A, 0.01, N/A)	1860.5	N/A	1.7486 [2.0000]	87.4% { 87.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 246626	(5.43, N/A) (N/A, 0.02, N/A)	1749.7	N/A	3.7894 [4.0000]	94.7% { 91.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 289642	(6.94, N/A) (N/A, 0.02, N/A)	2307.3	N/A	3.3897 [4.0000]	84.7% { 78.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 315826	(8.12, N/A) (N/A, 0.02, N/A)	1116.3	N/A	3.4117 [4.0000]	85.3% { 82.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3692427	(9.86, N/A) (N/A, 0.01, N/A)	4298.6	N/A	1.8535 [2.0000]	92.7% { 87.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 892287	(10.46, N/A) (N/A, 0.02, N/A)	2397.8	N/A	1.7506 [2.0000]	87.5% { 81.9% }			
D5_NeIFOSA_EIS	(531.0 / 169.0) 898022	(10.62, N/A) (N/A, 0.02, N/A)	4467.0	N/A	1.9356 [2.0000]	96.8% { 86.7% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC00916-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A
 Path: S2023-03-07A (9)
 Acquired: 2023/03/07 - 17:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 623733	(8.48 , N/A) (N/A , 0.01 , N/A)	2634.9	N/A	3.1317 [4.0000]	78.3% { 77.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 761280	(8.68 , N/A) (N/A , 0.01 , N/A)	10745755.0	N/A	3.4107 [4.0000]	85.3% { 88.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2935780	(10.39 , N/A) (N/A , 0.02 , N/A)	1583.5	N/A	18.5095 [20.0000]	92.5% { 87.1% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 3638490	(10.56 , N/A) (N/A , 0.02 , N/A)	1855.7	N/A	19.4359 [20.0000]	97.2% { 87.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1851667	(6.02 , N/A) (N/A , 0.02 , N/A)	3811.1	N/A	7.5261 [8.0000]	94.1% { 91.7% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01082
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-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: SC01082
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-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	7.46	ng/mL		
	13C5-PFPEA	4.72	ng/mL		
	13C5-PFHXA	2.58	ng/mL		
	13C4-PFHPA	2.71	ng/mL		
	13C8-PFOA	1.91	ng/mL		
	13C9-PFNA	0.930	ng/mL		
	13C6-PFDA	0.978	ng/mL		
	13C7-PFUnA	1.01	ng/mL		
	13C2-PFDOA	0.911	ng/mL		
	13C2-PFTEDA	0.848	ng/mL		
	13C3-PFBS	1.81	ng/mL		
	13C3-PFHXS	1.78	ng/mL		
	13C8-PFOS	1.81	ng/mL		
	13C2-4:2FTS	4.03	ng/mL		
	13C2-6:2FTS	3.75	ng/mL		
	13C2-8:2FTS	4.04	ng/mL		
	13C8-PFOSA	1.66	ng/mL		
	D3-NMEFOSA	1.22	ng/mL		
	D5-NETFOSA	1.27	ng/mL		
	D3-NMEFOSAA	3.73	ng/mL		
	D5-NETFOSAA	3.44	ng/mL		
	D7-NMEFOSE	14.4	ng/mL		
	D9-NETFOSE	15.5	ng/mL		
	13C3-HFPO-DA	9.52	ng/mL		

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 ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (1)
 Acquired: 2023/03/18 - 01:31

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 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			

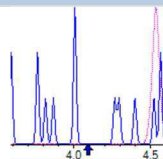
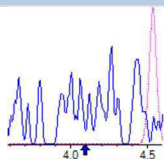
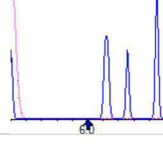
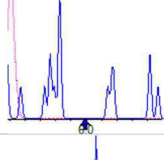
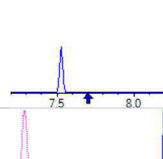
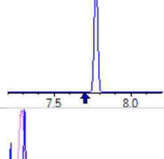
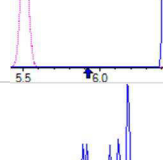
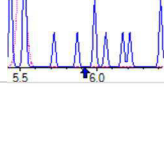
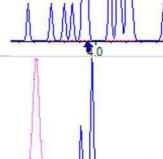
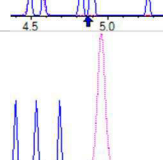
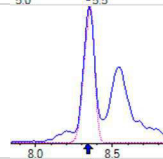
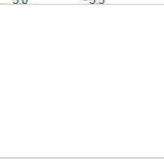
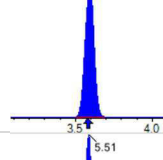
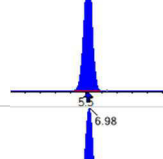
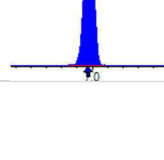
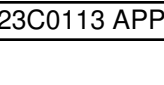


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (1)
 Acquired: 2023/03/18 - 01:31

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 ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 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) 166166	(3.59, N/A) (N/A, 0.00, N/A)	1863.3	N/A	0.7757 [1.0000]	77.6% { 109.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 193891	(5.51, N/A) (N/A, 0.00, N/A)	6580.6	N/A	0.6173 [1.0000]	61.7% { 103.1% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 348631	(6.98, N/A) (N/A, 0.01, N/A)	1361.6	N/A	0.7549 [1.0000]	75.5% { 93.8% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (1)
 Acquired: 2023/03/18 - 01:31

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 ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 377117	(7.59, N/A) (N/A, 0.01, N/A)	5128.8	N/A	0.9037 [1.0000]	90.4% {105.1%}			
13C2_PFDA_IIS	(515.0 / 470.1) 336949	(8.14, N/A) (N/A, 0.00, N/A)	201368.1	N/A	0.8390 [1.0000]	83.9% {86.4%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 511977	(7.13, N/A) (N/A, 0.01, N/A)	6116.3	N/A	0.7541 [1.0000]	75.4% {106.9%}			
13C4_PFOS_IIS	(503.0 / 79.9) 912330	(8.35, N/A) (N/A, 0.01, N/A)	2278.2	N/A	1.0632 [1.0000]	106.3% {109.7%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1474252	(3.59, N/A) (N/A, 0.00, N/A)	7925.9	N/A	7.4552 [8.0000]	93.2% {94.3%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 1056314	(4.53, N/A) (N/A, 0.00, N/A)	4312.3	N/A	4.7160 [4.0000]	117.9% {82.5%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 698266	(5.51, N/A) (N/A, 0.00, N/A)	3714.4	N/A	2.5838 [2.0000]	129.2% {90.1%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 697691	(6.29, N/A) (N/A, 0.00, N/A)	2382.6	N/A	2.7101 [2.0000]	135.5% {93.7%}			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 724769	(6.98, N/A) (N/A, 0.01, N/A)	1849.3	N/A	1.9135 [2.0000]	95.7% {76.6%}			
13C9_PFNA_EIS	(472.0 / 427.0) 372565	(7.58, N/A) (N/A, 0.00, N/A)	3319.9	N/A	0.9298 [1.0000]	93.0% {80.1%}			
13C6_PFDA_EIS	(519.0 / 474.0) 396447	(8.15, N/A) (N/A, 0.01, N/A)	4304306.5	N/A	0.9776 [1.0000]	97.8% {76.6%}			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (1)
 Acquired: 2023/03/18 - 01:31

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 ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 458269	(8.62, N/A) (N/A, 0.01, N/A)	2636.4	N/A	1.0135 [1.0000]	101.4% {91.8%}			
13C2_PFDa_EIS	(615.0 / 570.0) 359984	(8.91, N/A) (N/A, 0.01, N/A)	1538.6	N/A	0.9108 [1.0000]	91.1% {85.0%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 353430	(9.28, N/A) (N/A, 0.01, N/A)	1763.5	N/A	0.8479 [1.0000]	84.8% {88.1%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1472091	(5.49, N/A) (N/A, 0.00, N/A)	3410.5	N/A	1.8149 [2.0000]	90.7% {85.9%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 937914	(7.13, N/A) (N/A, 0.01, N/A)	1996.4	N/A	1.7806 [2.0000]	89.0% {81.3%}			
13C8_PFOS_EIS	(507.0 / 80.0) 2212827	(8.35, N/A) (N/A, 0.01, N/A)	2114.7	N/A	1.8090 [2.0000]	90.5% {84.9%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 207207	(5.25, N/A) (N/A, 0.00, N/A)	1068.8	N/A	4.0274 [4.0000]	100.7% {87.6%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 252981	(6.72, N/A) (N/A, 0.01, N/A)	1376.8	N/A	3.7452 [4.0000]	93.6% {84.0%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 295572	(7.89, N/A) (N/A, 0.01, N/A)	2467.8	N/A	4.0390 [4.0000]	101.0% {73.0%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 3480798	(9.79, N/A) (N/A, 0.01, N/A)	3644.0	N/A	1.6637 [2.0000]	83.2% {98.8%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 651612	(10.41, N/A) (N/A, 0.02, N/A)	2589.3	N/A	1.2173 [2.0000]	60.9% {82.8%}			S1,



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (1)
 Acquired: 2023/03/18 - 01:31

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 ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 620812	(10.59, N/A) (N/A, 0.02, N/A)	3112.5	N/A	1.2741 [2.0000]	63.7% {83.6%}			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 780133	(8.26, N/A) (N/A, 0.01, N/A)	1343.0	N/A	3.7296 [4.0000]	93.2% {84.5%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 806004	(8.49, N/A) (N/A, 0.01, N/A)	17986.5	N/A	3.4383 [4.0000]	86.0% {101.1%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2390768	(10.34, N/A) (N/A, 0.02, N/A)	1290.0	N/A	14.3521 [20.0000]	71.8% {82.9%}			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3049441	(10.52, N/A) (N/A, 0.02, N/A)	1976.5	N/A	15.5101 [20.0000]	77.6% {86.7%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1420163	(5.81, N/A) (N/A, -0.01, N/A)	3682.3	N/A	9.5158 [8.0000]	118.9% {87.7%}			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01082
 Calibration: 2310010

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

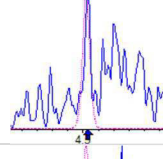
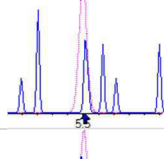
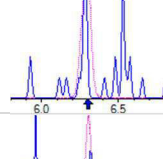
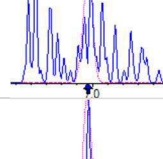
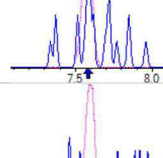
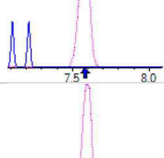
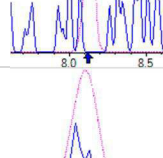
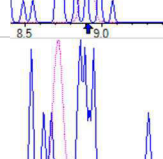
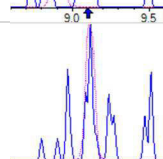
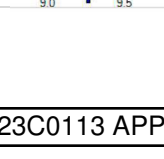
Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-CCB2	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	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: SC01082
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-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	7.03	ng/mL		
	13C5-PFPEA	5.97	ng/mL		
	13C5-PFHXA	2.62	ng/mL		
	13C4-PFHPA	2.83	ng/mL		
	13C8-PFOA	1.86	ng/mL		
	13C9-PFNA	0.938	ng/mL		
	13C6-PFDA	0.951	ng/mL		
	13C7-PFUnA	0.936	ng/mL		
	13C2-PFDOA	0.867	ng/mL		
	13C2-PFTEDA	0.804	ng/mL		
	13C3-PFBS	1.96	ng/mL		
	13C3-PFHXS	2.00	ng/mL		
	13C8-PFOS	1.90	ng/mL		
	13C2-4:2FTS	4.35	ng/mL		
	13C2-6:2FTS	4.05	ng/mL		
	13C2-8:2FTS	4.58	ng/mL		
	13C8-PFOSA	1.59	ng/mL		
	D3-NMEFOSA	1.21	ng/mL		
	D5-NETFOSA	1.24	ng/mL		
	D3-NMEFOSAA	3.44	ng/mL		
	D5-NETFOSAA	2.97	ng/mL		
	D7-NMEFOSE	14.1	ng/mL		
	D9-NETFOSE	15.2	ng/mL		
	13C3-HFPO-DA	10.5	ng/mL		

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



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (6)
 Acquired: 2023/03/18 - 02:35

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

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

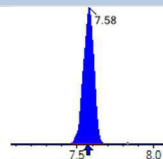
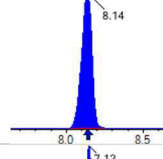
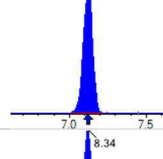
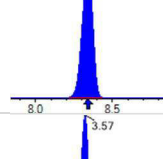
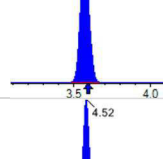
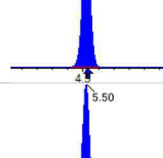
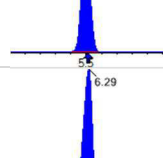
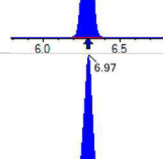
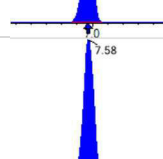
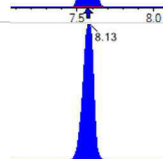
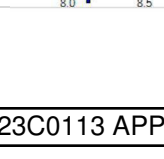


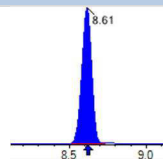
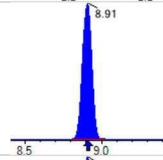
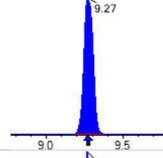
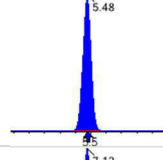
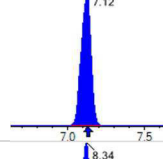
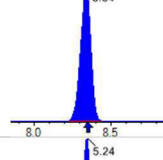
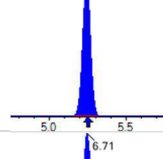
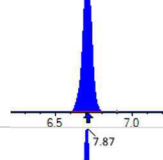
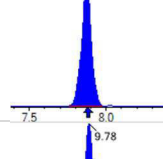
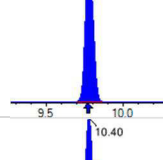
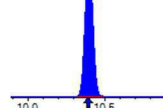
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (6)
 Acquired: 2023/03/18 - 02:35

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 172825	(3.57, N/A) (N/A, -0.02, N/A)	2391.2	N/A	0.8068 [1.0000]	80.7% { 113.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 152784	(5.50, N/A) (N/A, -0.01, N/A)	2685.8	N/A	0.4865 [1.0000]	48.6% { 81.3% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 364674	(6.97, N/A) (N/A, 0.00, N/A)	1511.2	N/A	0.7897 [1.0000]	79.0% { 98.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 364392	(7.58, N/A) (N/A, 0.00, N/A)	338101.0	N/A	0.8732 [1.0000]	87.3% { 101.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 336248	(8.14, N/A) (N/A, 0.00, N/A)	308047.1	N/A	0.8372 [1.0000]	83.7% { 86.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 463884	(7.12, N/A) (N/A, 0.00, N/A)	1309.4	N/A	0.6833 [1.0000]	68.3% { 96.9% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 912887	(8.34, N/A) (N/A, 0.00, N/A)	2007.9	N/A	1.0639 [1.0000]	106.4% { 109.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1445063	(3.57, N/A) (N/A, -0.02, N/A)	6691.0	N/A	7.0260 [8.0000]	87.8% { 92.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1053032	(4.52, N/A) (N/A, -0.01, N/A)	4400.2	N/A	5.9663 [4.0000]	149.2% { 82.2% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 558011	(5.50, N/A) (N/A, -0.01, N/A)	3110.3	N/A	2.6203 [2.0000]	131.0% { 72.0% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 574274	(6.29, N/A) (N/A, 0.00, N/A)	2217.8	N/A	2.8309 [2.0000]	141.5% { 77.2% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 735273	(6.97, N/A) (N/A, 0.00, N/A)	3146.7	N/A	1.8559 [2.0000]	92.8% { 77.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 363115	(7.58, N/A) (N/A, 0.00, N/A)	7392.5	N/A	0.9378 [1.0000]	93.8% { 78.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 384715	(8.13, N/A) (N/A, 0.00, N/A)	5062.5	N/A	0.9506 [1.0000]	95.1% { 74.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 422450	(8.61, N/A) (N/A, 0.00, N/A)	1959.6	N/A	0.9363 [1.0000]	93.6% { 84.6% }			
13C2_PFDa_EIS	(615.0 / 570.0) 341974	(8.91, N/A) (N/A, 0.00, N/A)	43182.8	N/A	0.8670 [1.0000]	86.7% { 80.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 334266	(9.27, N/A) (N/A, 0.00, N/A)	1808.4	N/A	0.8036 [1.0000]	80.4% { 83.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1443841	(5.48, N/A) (N/A, -0.01, N/A)	3232.4	N/A	1.9646 [2.0000]	98.2% { 84.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 953644	(7.12, N/A) (N/A, 0.00, N/A)	2248.1	N/A	1.9981 [2.0000]	99.9% { 82.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2328671	(8.34, N/A) (N/A, 0.00, N/A)	4100.5	N/A	1.9026 [2.0000]	95.1% { 89.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 202562	(5.24, N/A) (N/A, -0.01, N/A)	1774.9	N/A	4.3453 [4.0000]	108.6% { 85.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 247595	(6.71, N/A) (N/A, 0.00, N/A)	42310980.8	N/A	4.0454 [4.0000]	101.1% { 82.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 303767	(7.87, N/A) (N/A, 0.00, N/A)	1994.1	N/A	4.5814 [4.0000]	114.5% { 75.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3331967	(9.78, N/A) (N/A, 0.00, N/A)	3764.6	N/A	1.5916 [2.0000]	79.6% { 94.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 649282	(10.40, N/A) (N/A, 0.01, N/A)	2279.3	N/A	1.2122 [2.0000]	60.6% { 82.5% }			S1,

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 603630	(10.57, N/A) (N/A, 0.00, N/A)	2526.2	N/A	1.2381 [2.0000]	61.9% { 81.2% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 719087	(8.24, N/A) (N/A, -0.01, N/A)	1746.3	N/A	3.4357 [4.0000]	85.9% { 77.8% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 696288	(8.48, N/A) (N/A, 0.00, N/A)	607031.5	N/A	2.9684 [4.0000]	74.2% { 87.3% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2358420	(10.33, N/A) (N/A, 0.00, N/A)	1218.9	N/A	14.1493 [20.0000]	70.7% { 81.8% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2988379	(10.51, N/A) (N/A, 0.00, N/A)	1806.7	N/A	15.1902 [20.0000]	76.0% { 84.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1235738	(5.80, N/A) (N/A, -0.01, N/A)	3098.9	N/A	10.5079 [8.0000]	131.3% { 76.3% }			S2,

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01082
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-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: SC01082
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-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	7.07	ng/mL		
	13C5-PFPEA	5.08	ng/mL		
	13C5-PFHXA	2.61	ng/mL		
	13C4-PFHPA	2.69	ng/mL		
	13C8-PFOA	1.92	ng/mL		
	13C9-PFNA	0.939	ng/mL		
	13C6-PFDA	0.919	ng/mL		
	13C7-PFUnA	0.824	ng/mL		
	13C2-PFDOA	0.850	ng/mL		
	13C2-PFTEDA	0.747	ng/mL		
	13C3-PFBS	1.82	ng/mL		
	13C3-PFHXS	2.08	ng/mL		
	13C8-PFOS	1.84	ng/mL		
	13C2-4:2FTS	4.40	ng/mL		
	13C2-6:2FTS	4.68	ng/mL		
	13C2-8:2FTS	4.84	ng/mL		
	13C8-PFOSA	1.59	ng/mL		
	D3-NMEFOSA	1.20	ng/mL		
	D5-NETFOSA	1.17	ng/mL		
	D3-NMEFOSAA	4.13	ng/mL		
	D5-NETFOSAA	2.98	ng/mL		
	D7-NMEFOSE	14.0	ng/mL		
	D9-NETFOSSE	15.0	ng/mL		
	13C3-HFPO-DA	9.64	ng/mL		



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (33)
 Acquired: 2023/03/18 - 08:23

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

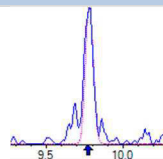
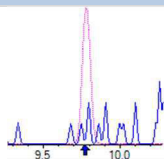
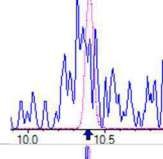
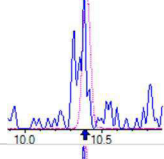
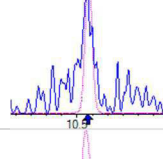
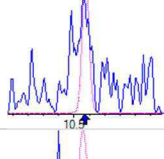
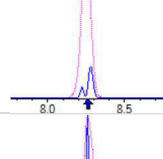
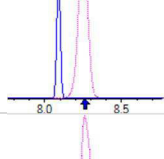
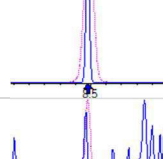
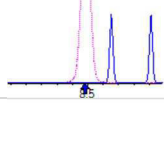
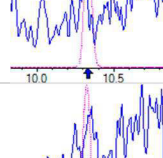
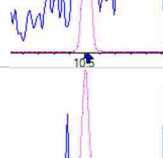
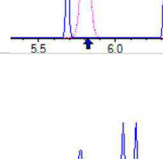
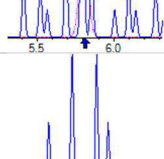
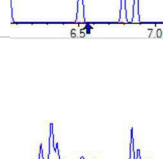
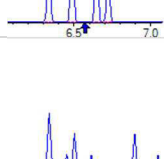
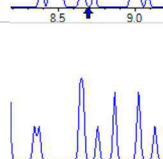
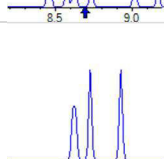
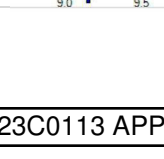
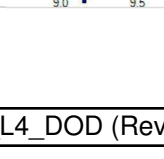


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

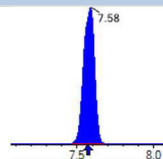
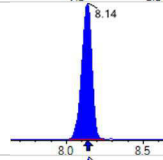
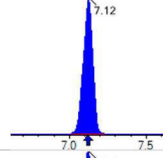
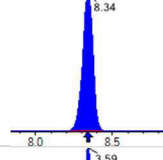
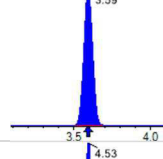
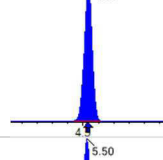
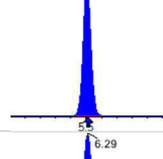
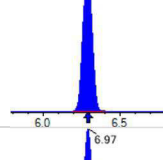
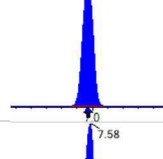
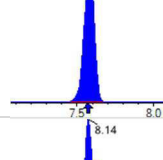
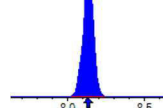
Sample I.D.: SC01082-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

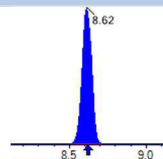
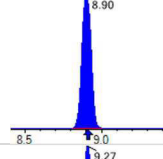
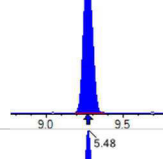
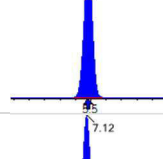
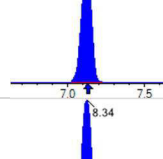
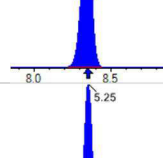
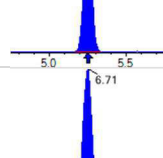
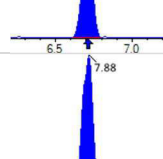
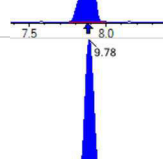
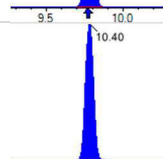
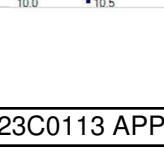
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 Path: S2023-03-13B (33)
 Acquired: 2023/03/18 - 08:23

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			

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 172544	(3.59, N/A) (N/A, 0.00, N/A)	2044.0	N/A	0.8055 [1.0000]	80.6% { 113.5% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 169805	(5.51, N/A) (N/A, 0.00, N/A)	6143.9	N/A	0.5407 [1.0000]	54.1% { 90.3% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 353929	(6.97, N/A) (N/A, 0.00, N/A)	27251.2	N/A	0.7664 [1.0000]	76.6% { 95.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 360766	(7.58, N/A) (N/A, 0.00, N/A)	2864733.4	N/A	0.8645 [1.0000]	86.4% { 100.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 382855	(8.14, N/A) (N/A, 0.00, N/A)	1810.1	N/A	0.9533 [1.0000]	95.3% { 98.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 452218	(7.12, N/A) (N/A, 0.00, N/A)	5737.5	N/A	0.6661 [1.0000]	66.6% { 94.4% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 904446	(8.34, N/A) (N/A, 0.00, N/A)	1616.4	N/A	1.0541 [1.0000]	105.4% { 108.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1452496	(3.59, N/A) (N/A, 0.00, N/A)	6701.9	N/A	7.0737 [8.0000]	88.4% { 92.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 996350	(4.53, N/A) (N/A, 0.00, N/A)	3260.3	N/A	5.0793 [4.0000]	127.0% { 77.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 617622	(5.50, N/A) (N/A, -0.01, N/A)	3358.1	N/A	2.6095 [2.0000]	130.5% { 79.7% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 606330	(6.29, N/A) (N/A, 0.00, N/A)	6494.4	N/A	2.6893 [2.0000]	134.5% { 81.5% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 736546	(6.97, N/A) (N/A, 0.00, N/A)	73217.8	N/A	1.9155 [2.0000]	95.8% { 77.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 359790	(7.58, N/A) (N/A, 0.00, N/A)	1407.4	N/A	0.9386 [1.0000]	93.9% { 77.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 423564	(8.14, N/A) (N/A, 0.00, N/A)	230837.7	N/A	0.9192 [1.0000]	91.9% { 81.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUaA_EIS	(570.0 / 525.0) 423505	(8.62, N/A) (N/A, 0.00, N/A)	1283.3	N/A	0.8244 [1.0000]	82.4% { 84.8% }			
13C2_PFDaA_EIS	(615.0 / 570.0) 381643	(8.90, N/A) (N/A, 0.00, N/A)	8707.7	N/A	0.8498 [1.0000]	85.0% { 90.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 353984	(9.27, N/A) (N/A, 0.00, N/A)	1792.4	N/A	0.7474 [1.0000]	74.7% { 88.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1301666	(5.48, N/A) (N/A, 0.00, N/A)	4795.0	N/A	1.8169 [2.0000]	90.8% { 76.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 969270	(7.12, N/A) (N/A, 0.00, N/A)	1976.4	N/A	2.0833 [2.0000]	104.2% { 84.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2237281	(8.34, N/A) (N/A, 0.00, N/A)	2917.6	N/A	1.8450 [2.0000]	92.2% { 85.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 200164	(5.25, N/A) (N/A, 0.00, N/A)	1354.7	N/A	4.4046 [4.0000]	110.1% { 84.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 279149	(6.71, N/A) (N/A, 0.00, N/A)	5031.0	N/A	4.6787 [4.0000]	117.0% { 92.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 312685	(7.88, N/A) (N/A, 0.00, N/A)	2445.1	N/A	4.8375 [4.0000]	120.9% { 77.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3291781	(9.78, N/A) (N/A, 0.00, N/A)	3571.4	N/A	1.5870 [2.0000]	79.4% { 93.4% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 637311	(10.40, N/A) (N/A, 0.01, N/A)	2221.7	N/A	1.2009 [2.0000]	60.0% { 80.9% }			S1,



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (33)
 Acquired: 2023/03/18 - 08:23

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 566784	(10.58 , N/A) (N/A , 0.01 , N/A)	2702.9	N/A	1.1734 [2.0000]	58.7% { 76.3% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 855450	(8.25 , N/A) (N/A , 0.00 , N/A)	1795.4	N/A	4.1254 [4.0000]	103.1% { 92.6% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 692446	(8.49 , N/A) (N/A , 0.00 , N/A)	10207.2	N/A	2.9796 [4.0000]	74.5% { 86.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2307456	(10.33 , N/A) (N/A , 0.01 , N/A)	1963.6	N/A	13.9728 [20.0000]	69.9% { 80.1% }			S1,
D9_NEiFOSE_EIS	(639.0 / 58.9) 2914311	(10.51 , N/A) (N/A , 0.01 , N/A)	1410.7	N/A	14.9520 [20.0000]	74.8% { 82.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1259710	(5.80 , N/A) (N/A , -0.01 , N/A)	3221.2	N/A	9.6380 [8.0000]	120.5% { 77.8% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01082
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-CCB4	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01082
 Calibration: 2310010

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

Lab Sample ID	Analyte	Found	Units	RL	C
SC01082-CCB4	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.33	ng/mL		
	13C5-PFPEA	5.03	ng/mL		
	13C5-PFHXA	2.43	ng/mL		
	13C4-PFHPA	2.64	ng/mL		
	13C8-PFOA	1.90	ng/mL		
	13C9-PFNA	1.00	ng/mL		
	13C6-PFDA	0.976	ng/mL		
	13C7-PFUnA	0.935	ng/mL		
	13C2-PFDOA	0.864	ng/mL		
	13C2-PFTEDA	0.720	ng/mL		
	13C3-PFBS	1.89	ng/mL		
	13C3-PFHXS	1.94	ng/mL		
	13C8-PFOS	1.84	ng/mL		
	13C2-4:2FTS	4.27	ng/mL		
	13C2-6:2FTS	4.16	ng/mL		
	13C2-8:2FTS	4.60	ng/mL		
	13C8-PFOSA	1.43	ng/mL		
	D3-NMEFOSA	1.13	ng/mL		
	D5-NETFOSA	1.20	ng/mL		
	D3-NMEFOSAA	4.06	ng/mL		
	D5-NETFOSAA	2.95	ng/mL		
	D7-NMEFOSE	12.6	ng/mL		
	D9-NETFOSSE	14.3	ng/mL		
	13C3-HFPO-DA	8.89	ng/mL		



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (53)
 Acquired: 2023/03/18 - 12:41

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



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (53)
 Acquired: 2023/03/18 - 12:41

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			

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



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (53)
 Acquired: 2023/03/18 - 12:41

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
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) 175646	(3.56, N/A) (N/A, -0.03, N/A)	2209.3	N/A	0.8200 [1.0000]	82.0% { 115.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 203036	(5.50, N/A) (N/A, -0.01, N/A)	34895.4	N/A	0.6465 [1.0000]	64.6% { 108.0% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 364709	(6.97, N/A) (N/A, 0.00, N/A)	1307.7	N/A	0.7897 [1.0000]	79.0% { 98.1% }			

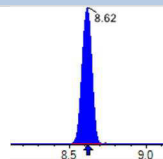
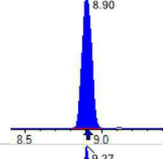
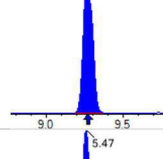
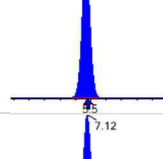
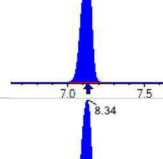
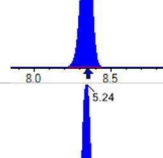
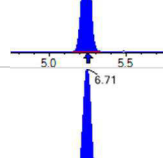
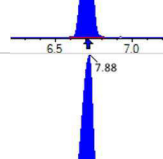
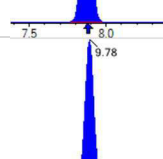
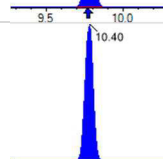
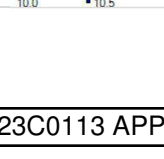


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (53)
 Acquired: 2023/03/18 - 12:41

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
13C5_PFNA_IIS	(468.0 / 423.0) 363719	(7.58, N/A) (N/A, 0.00, N/A)	5271.9	N/A	0.8716 [1.0000]	87.2% { 101.4% }			
13C2_PFDA_IIS	(515.0 / 470.1) 345512	(8.14, N/A) (N/A, 0.00, N/A)	318.0	N/A	0.8603 [1.0000]	86.0% { 88.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 488244	(7.12, N/A) (N/A, 0.00, N/A)	1950.5	N/A	0.7191 [1.0000]	71.9% { 101.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 891304	(8.34, N/A) (N/A, 0.00, N/A)	1853.3	N/A	1.0387 [1.0000]	103.9% { 107.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1531964	(3.56, N/A) (N/A, -0.03, N/A)	6789.8	N/A	7.3289 [8.0000]	91.6% { 98.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1178898	(4.51, N/A) (N/A, -0.02, N/A)	4035.6	N/A	5.0263 [4.0000]	125.7% { 92.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 687145	(5.49, N/A) (N/A, -0.02, N/A)	4092.0	N/A	2.4281 [2.0000]	121.4% { 88.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 710517	(6.29, N/A) (N/A, 0.00, N/A)	4787.5	N/A	2.6356 [2.0000]	131.8% { 95.5% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 751030	(6.97, N/A) (N/A, 0.00, N/A)	1917.0	N/A	1.8955 [2.0000]	94.8% { 79.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 386955	(7.58, N/A) (N/A, 0.00, N/A)	5522.3	N/A	1.0013 [1.0000]	100.1% { 83.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 406066	(8.14, N/A) (N/A, 0.00, N/A)	9840.6	N/A	0.9765 [1.0000]	97.6% { 78.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 433335	(8.62, N/A) (N/A, 0.00, N/A)	2748.5	N/A	0.9347 [1.0000]	93.5% { 86.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 350268	(8.90, N/A) (N/A, 0.00, N/A)	1103.1	N/A	0.8643 [1.0000]	86.4% { 82.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 307858	(9.27, N/A) (N/A, 0.00, N/A)	1222.2	N/A	0.7202 [1.0000]	72.0% { 76.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1463945	(5.47, N/A) (N/A, -0.02, N/A)	3350.2	N/A	1.8926 [2.0000]	94.6% { 85.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 972769	(7.12, N/A) (N/A, 0.00, N/A)	2821.3	N/A	1.9365 [2.0000]	96.8% { 84.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2195306	(8.34, N/A) (N/A, 0.00, N/A)	3185.8	N/A	1.8371 [2.0000]	91.9% { 84.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 209679	(5.24, N/A) (N/A, -0.01, N/A)	1738.5	N/A	4.2736 [4.0000]	106.8% { 88.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 268205	(6.71, N/A) (N/A, 0.00, N/A)	1944.0	N/A	4.1635 [4.0000]	104.1% { 89.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 320842	(7.88, N/A) (N/A, 0.00, N/A)	2261.1	N/A	4.5975 [4.0000]	114.9% { 79.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2932401	(9.78, N/A) (N/A, 0.00, N/A)	3522.9	N/A	1.4346 [2.0000]	71.7% { 83.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 591601	(10.40, N/A) (N/A, 0.01, N/A)	3380.6	N/A	1.1312 [2.0000]	56.6% { 75.1% }			S1,



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (53)
 Acquired: 2023/03/18 - 12:41

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 570226	(10.57 , N/A) (N/A , 0.00 , N/A)	2728.6	N/A	1.1979 [2.0000]	59.9% { 76.7% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 829217	(8.25 , N/A) (N/A , 0.00 , N/A)	2713.4	N/A	4.0578 [4.0000]	101.4% { 89.8% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 675773	(8.49 , N/A) (N/A , 0.00 , N/A)	4612.9	N/A	2.9507 [4.0000]	73.8% { 84.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2057801	(10.32 , N/A) (N/A , 0.00 , N/A)	709.2	N/A	12.6447 [20.0000]	63.2% { 71.4% }			S1,
D9_NEiFOSE_EIS	(639.0 / 58.9) 2748662	(10.51 , N/A) (N/A , 0.00 , N/A)	1295.3	N/A	14.3100 [20.0000]	71.6% { 78.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1389769	(5.80 , N/A) (N/A , -0.02 , N/A)	3567.4	N/A	8.8927 [8.0000]	111.2% { 85.9% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (4)
 Acquired: 2023/03/18 - 02:10

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] 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) 12880 (313.0 / 119.0) N/A	(5.50, 1.00) (0.00, N/A, #Value!)	31.8 N/A	N/A 0.0 0.0	0.0391	N/A			IR1,
PFHpA	(363.0 / 319.0) 25257 (363.0 / 169.0) 9578	(6.28, 1.00) (0.00, N/A, -0.6)	311.6 1898.5	0.3792 116.3 115.0	0.0806	N/A			
PFOA	(413.0 / 369.0) 4087953 (413.0 / 169.0) 1435359	(6.96, 1.00) (0.00, N/A, 0.0)	2815.1 2533.7	0.3511 100.7 100.1	10.1850	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) 217 (513.0 / 169.0) 205	(8.17, 1.00) (0.04, N/A, 10.3)	2.3 2769.6	0.9447 888.1 889.4	0.0005	N/A			IR2,
PFUnA	(563.0 / 519.0) 1111 (563.0 / 169.0) 207	(8.63, 1.00) (0.02, N/A, 9.6)	7.9 13.1	0.1863 155.3 161.4	0.0026	N/A			IR2,
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: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (4)
 Acquired: 2023/03/18 - 02:10

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 697 (299.0 / 99.0) 539	(5.50, 1.00) (0.03, N/A, 19.9)	171.9 866.1	0.7731 131.8 134.9	0.0013	N/A			
PFPeS	(349.0 / 80.0) 508 (349.0 / 99.0) 513	(6.03, 0.85) (N/A, -0.35, -1.4)	3757.9 569.0	1.0095 295.5 327.5	0.0005	N/A			IR2,
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) 1535 (449.0 / 99.0) N/A	(7.77, 0.93) (N/A, 0.01, #Value!)	665.1 N/A	N/A 0.0 0.0	0.0012	N/A			IR1,
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			

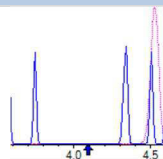
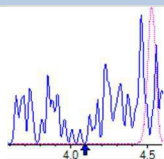
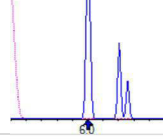
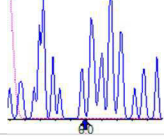
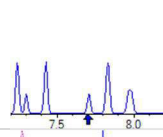
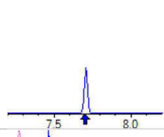
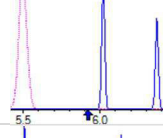
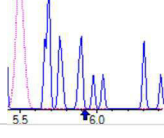
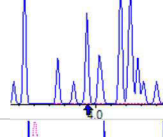
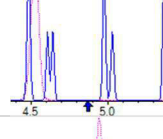
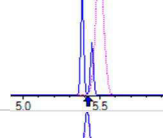
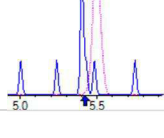
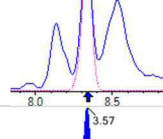
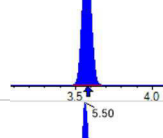
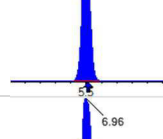
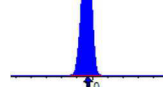


Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (4)
 Acquired: 2023/03/18 - 02:10

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 18992637 (498.0 / 478.0) 467517	(9.77 , 1.00) (0.00 , N/A , 0.0)	4461.4 1439.4	0.0246 110.8 97.3	11.6477	N/A			
NMeFOSA	(512.0 / 219.0) 3110013 (512.0 / 169.0) 2620109	(10.38 , 1.00) (-0.01 , N/A , 0.8)	4935.6 3697.5	0.8425 100.8 100.1	11.0110	N/A			
NEtFOSA	(526.0 / 219.0) 3442490 (526.0 / 169.0) 4302789	(10.56 , 1.00) (0.00 , N/A , 0.8)	5893.3 6293.5	1.2499 97.9 97.6	10.2935	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) 1637386	(10.33 , 1.00) (0.01 , N/A , 0.0)	2236.9	N/A 0.0 0.0	11.6912	N/A			
NEtFOSE	(630.0 / 59.0) 1858435	(10.52 , 1.00) (0.01 , N/A , 0.0)	1070.1	N/A 0.0 0.0	11.1313	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 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) 206915	(3.57, N/A) (N/A, -0.02, N/A)	2330.2	N/A	0.9660 [1.0000]	96.6% { 136.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 236175	(5.50, N/A) (N/A, -0.02, N/A)	2858.0	N/A	0.7520 [1.0000]	75.2% { 125.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 488313	(6.96, N/A) (N/A, -0.01, N/A)	2619.1	N/A	1.0574 [1.0000]	105.7% { 131.4% }			

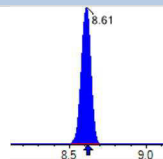
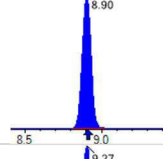
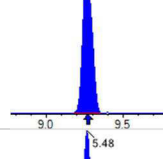
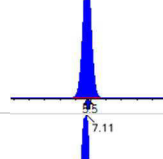
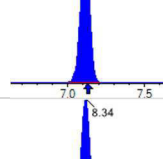
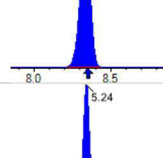
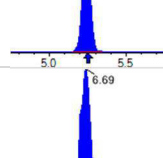
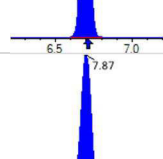
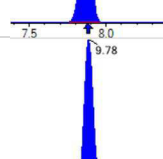
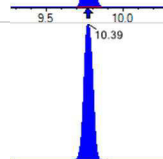
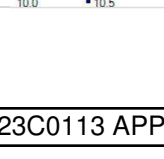


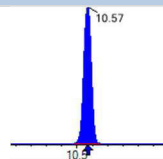
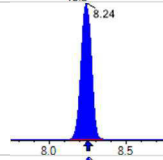
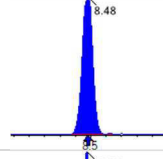
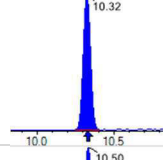
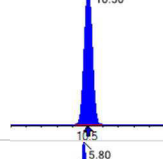
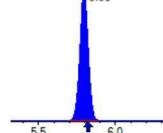
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SC01082-PEM1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (4)
 Acquired: 2023/03/18 - 02:10

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] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 454496	(7.58, N/A) (N/A, 0.00, N/A)	1955.0	N/A	1.0891 [1.0000]	108.9% { 126.7% }			
13C2_PFDA_IIS	(515.0 / 470.1) 498579	(8.13, N/A) (N/A, -0.01, N/A)	1854.7	N/A	1.2414 [1.0000]	124.1% { 127.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 584241	(7.11, N/A) (N/A, -0.01, N/A)	1906.4	N/A	0.8605 [1.0000]	86.1% { 122.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1176775	(8.34, N/A) (N/A, 0.00, N/A)	1743.2	N/A	1.3714 [1.0000]	137.1% { 141.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1660889	(3.57, N/A) (N/A, -0.02, N/A)	7854.2	N/A	6.7449 [8.0000]	84.3% { 106.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1236445	(4.53, N/A) (N/A, 0.00, N/A)	3948.0	N/A	4.5319 [4.0000]	113.3% { 96.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 740283	(5.50, N/A) (N/A, -0.01, N/A)	4445.1	N/A	2.2488 [2.0000]	112.4% { 95.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 742720	(6.29, N/A) (N/A, 0.00, N/A)	2586.1	N/A	2.3685 [2.0000]	118.4% { 99.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 884402	(6.96, N/A) (N/A, -0.01, N/A)	15079.3	N/A	1.6671 [2.0000]	83.4% { 93.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 472652	(7.58, N/A) (N/A, 0.00, N/A)	4410.6	N/A	0.9787 [1.0000]	97.9% { 101.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 503185	(8.13, N/A) (N/A, -0.01, N/A)	34775.1	N/A	0.8386 [1.0000]	83.9% { 97.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 533684	(8.61, N/A) (N/A, 0.00, N/A)	3734.7	N/A	0.7977 [1.0000]	79.8% { 106.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 446797	(8.90, N/A) (N/A, 0.00, N/A)	1978.5	N/A	0.7640 [1.0000]	76.4% { 105.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 381317	(9.27, N/A) (N/A, 0.00, N/A)	1635.8	N/A	0.6182 [1.0000]	61.8% { 95.1% }			S1,
13C3_PFBs_EIS	(302.0 / 80.0) 1676479	(5.48, N/A) (N/A, -0.01, N/A)	4264.9	N/A	1.8113 [2.0000]	90.6% { 97.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1160053	(7.11, N/A) (N/A, -0.01, N/A)	1612.2	N/A	1.9299 [2.0000]	96.5% { 100.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2712796	(8.34, N/A) (N/A, -0.01, N/A)	1882.2	N/A	1.7194 [2.0000]	86.0% { 104.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 233794	(5.24, N/A) (N/A, -0.01, N/A)	1719.3	N/A	3.9821 [4.0000]	99.6% { 98.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 335864	(6.69, N/A) (N/A, -0.02, N/A)	1525.1	N/A	4.3572 [4.0000]	108.9% { 111.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 380205	(7.87, N/A) (N/A, -0.01, N/A)	1102.7	N/A	4.5529 [4.0000]	113.8% { 93.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3929394	(9.78, N/A) (N/A, 0.00, N/A)	4247.0	N/A	1.4560 [2.0000]	72.8% { 111.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 687003	(10.39, N/A) (N/A, 0.00, N/A)	2270.2	N/A	0.9950 [2.0000]	49.7% { 87.3% }			S1,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 702630	(10.57, N/A) (N/A, 0.00, N/A)	2533.9	N/A	1.1180 [2.0000]	55.9% { 94.6% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 1016548	(8.24, N/A) (N/A, -0.01, N/A)	2005.6	N/A	3.7678 [4.0000]	94.2% { 110.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 836511	(8.48, N/A) (N/A, -0.01, N/A)	79405.7	N/A	2.7665 [4.0000]	69.2% { 104.9% }			S1,
D7_NMeFOSE_EIS	(623.0 / 58.9) 2828222	(10.32, N/A) (N/A, 0.00, N/A)	1329.8	N/A	13.1629 [20.0000]	65.8% { 98.1% }			S1,
D9_NEiFOSE_EIS	(639.0 / 58.9) 3454630	(10.50, N/A) (N/A, 0.00, N/A)	1809.5	N/A	13.6224 [20.0000]	68.1% { 98.2% }			S1,
13C3_HFPODA_EIS	(287.0 / 169.0) 1642345	(5.80, N/A) (N/A, -0.02, N/A)	4997.8	N/A	9.0343 [8.0000]	112.9% { 101.5% }			

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) 54295 (499.0 / 99.0) 3255154	(7.96 , 0.96) (-0.37 , N/A , -22.3)	10.8	59.9533 27699.4 26188.1	0.0323	N/A			
TDCA	(499.0 / 80.0) 7519912	(6.55 , 0.79) (N/A , #Value! , 0.0)	16031.7	N/A 0.0 0.0	4.8288	N/A			

R.T.PFOS – R.T.TDCA > 1 minute

7.96 - 6.55 = 1.41 Pass

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QUALITY CONTROL RAW DATA

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0285-BLK1
Sampled:		Prepared:	03/15/23 10:17
Solids:		Preparation:	EPA 1633
Batch:	BCC0285	Sequence:	SC01082
Column:	1	Calibration:	2310010
		Instrument:	Saphira
		File ID:	S2023-03-17B (7)
		Analyzed:	03/18/23 02:48
		Dilution:	1

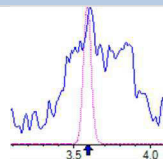
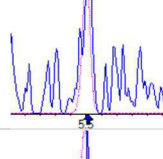
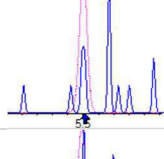
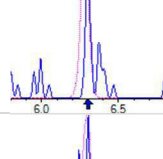
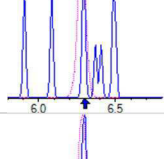
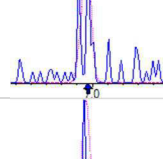
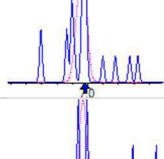
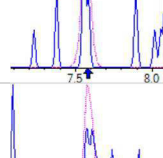
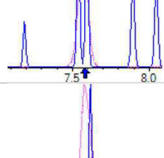
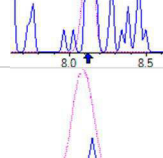
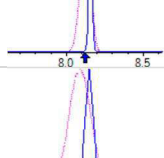
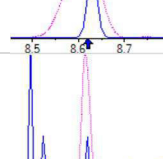
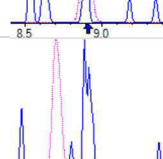
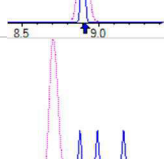
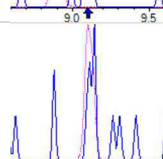
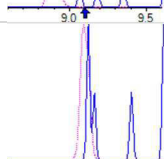
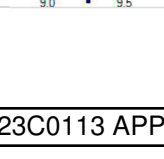
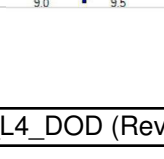
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.30 U	0.40	0.30	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.30 U	0.40	0.30	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	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	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0285-BLK1
Sampled:		File ID:	S2023-03-17B (7)
Solids:		Prepared:	03/15/23 10:17
Batch:	BCC0285	Analyzed:	03/18/23 02:48
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01082

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

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



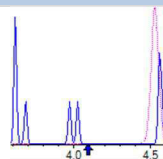
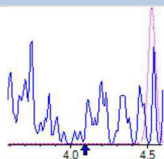
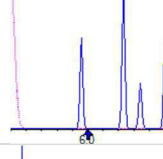
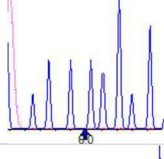
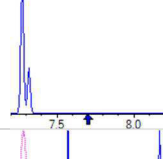
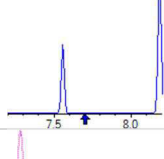
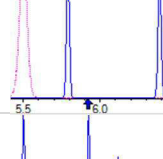
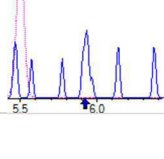
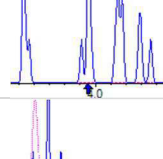
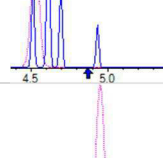
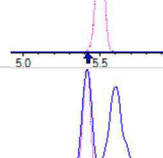
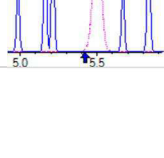
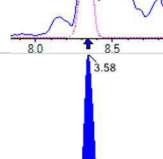
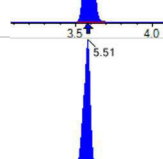
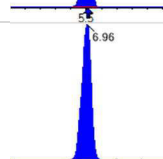
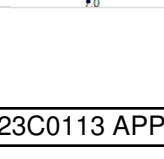
Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

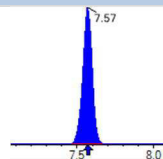
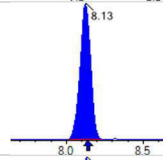
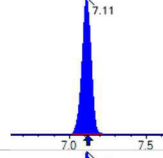
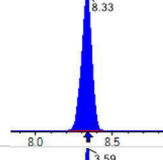
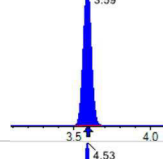
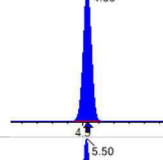
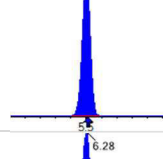
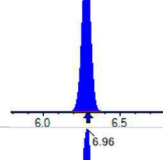
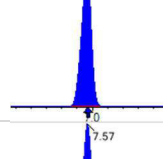
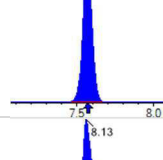
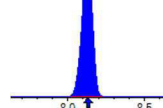
Sample I.D.: BCC0285-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

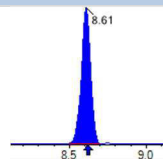
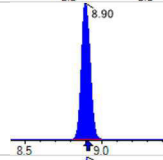
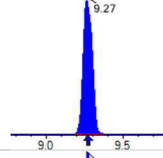
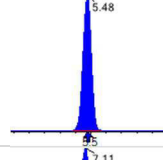
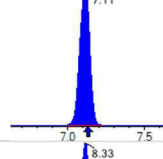
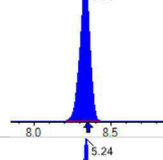
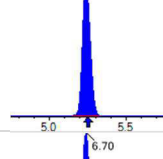
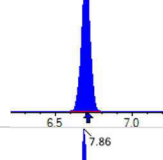
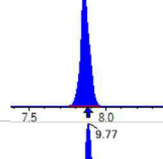
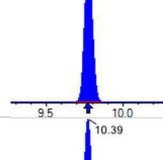
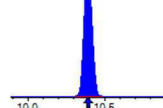
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 Path: S2023-03-13B (7)
 Acquired: 2023/03/18 - 02:48

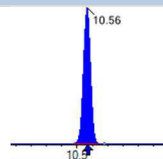
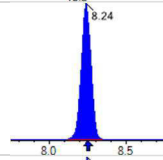
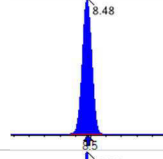
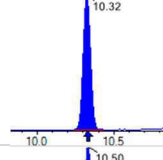
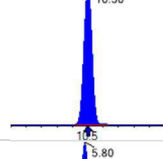
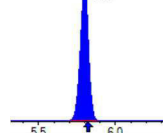
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A 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			

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

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 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) 183957	(3.58, N/A) (N/A, -0.01, N/A)	2373.1	N/A	0.8588 [1.0000]	85.9% { 121.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 237411	(5.51, N/A) (N/A, 0.00, N/A)	52705.3	N/A	0.7559 [1.0000]	75.6% { 126.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 389402	(6.96, N/A) (N/A, -0.01, N/A)	5414.2	N/A	0.8432 [1.0000]	84.3% { 104.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 387862	(7.57, N/A) (N/A, -0.01, N/A)	5432.7	N/A	0.9294 [1.0000]	92.9% { 108.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 417346	(8.13, N/A) (N/A, -0.01, N/A)	1608.4	N/A	1.0392 [1.0000]	103.9% { 107.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 575146	(7.11, N/A) (N/A, -0.01, N/A)	1862.3	N/A	0.8471 [1.0000]	84.7% { 120.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1044820	(8.33, N/A) (N/A, -0.01, N/A)	1640.6	N/A	1.2177 [1.0000]	121.8% { 125.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1525979	(3.59, N/A) (N/A, 0.00, N/A)	6428.9	N/A	6.9704 [8.0000]	87.1% { 97.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1012224	(4.53, N/A) (N/A, 0.00, N/A)	3698.6	N/A	3.6908 [4.0000]	92.3% { 79.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 677468	(5.50, N/A) (N/A, -0.01, N/A)	4423.9	N/A	2.0473 [2.0000]	102.4% { 87.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 742289	(6.28, N/A) (N/A, -0.01, N/A)	4521.2	N/A	2.3548 [2.0000]	117.7% { 99.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 772902	(6.96, N/A) (N/A, -0.01, N/A)	11799.6	N/A	1.8270 [2.0000]	91.3% { 81.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 366931	(7.57, N/A) (N/A, -0.01, N/A)	4411079.6	N/A	0.8903 [1.0000]	89.0% { 78.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 440017	(8.13, N/A) (N/A, -0.01, N/A)	280160.3	N/A	0.8760 [1.0000]	87.6% { 85.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 428521	(8.61, N/A) (N/A, 0.00, N/A)	1151.8	N/A	0.7652 [1.0000]	76.5% { 85.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 454208	(8.90, N/A) (N/A, -0.01, N/A)	3338.7	N/A	0.9278 [1.0000]	92.8% { 107.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 393569	(9.27, N/A) (N/A, 0.00, N/A)	1269.1	N/A	0.7623 [1.0000]	76.2% { 98.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1525512	(5.48, N/A) (N/A, -0.01, N/A)	4448.3	N/A	1.6742 [2.0000]	83.7% { 89.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1029988	(7.11, N/A) (N/A, -0.01, N/A)	2349.3	N/A	1.7406 [2.0000]	87.0% { 89.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2535389	(8.33, N/A) (N/A, -0.01, N/A)	2080.5	N/A	1.8099 [2.0000]	90.5% { 97.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 448843	(5.24, N/A) (N/A, -0.01, N/A)	3279.6	N/A	7.7658 [4.0000]	194.1% { 189.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 303792	(6.70, N/A) (N/A, -0.01, N/A)	1904.9	N/A	4.0034 [4.0000]	100.1% { 100.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 455143	(7.86, N/A) (N/A, -0.02, N/A)	2765.3	N/A	5.5365 [4.0000]	138.4% { 112.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3339632	(9.77, N/A) (N/A, 0.00, N/A)	4067.6	N/A	1.3938 [2.0000]	69.7% { 94.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 379332	(10.39, N/A) (N/A, 0.00, N/A)	1709.2	N/A	0.6188 [2.0000]	30.9% { 48.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 353067	(10.56 , N/A) (N/A , -0.01 , N/A)	2253.4	N/A	0.6327 [2.0000]	31.6% { 47.5% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 923717	(8.24 , N/A) (N/A , -0.01 , N/A)	2585.2	N/A	3.8561 [4.0000]	96.4% { 100.0% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 810301	(8.48 , N/A) (N/A , -0.01 , N/A)	5105.1	N/A	3.0183 [4.0000]	75.5% { 101.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1595274	(10.32 , N/A) (N/A , 0.00 , N/A)	958.6	N/A	8.3623 [20.0000]	41.8% { 55.3% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2393355	(10.50 , N/A) (N/A , 0.00 , N/A)	1372.8	N/A	10.6294 [20.0000]	53.1% { 68.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1380154	(5.80 , N/A) (N/A , -0.01 , N/A)	3244.5	N/A	7.5525 [8.0000]	94.4% { 85.3% }			

ANALYSIS DATA SHEET**LCS**

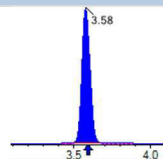
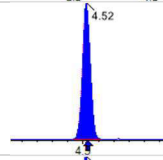
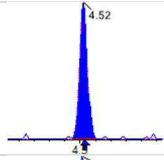
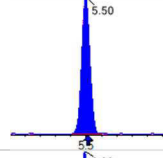
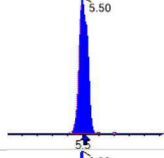
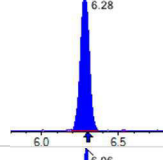
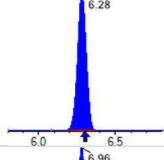
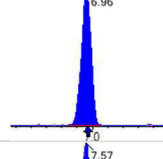
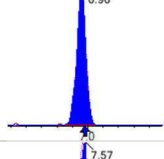
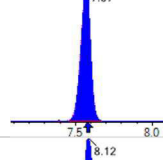
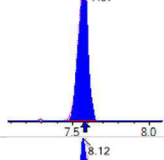
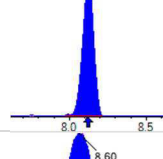
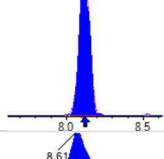
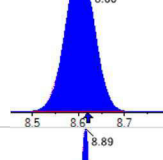
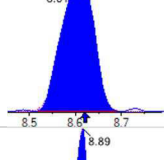
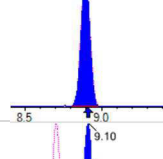
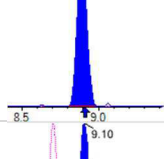
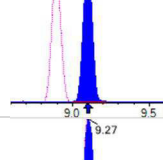
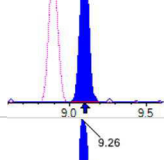
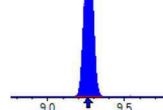
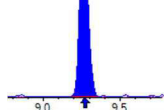
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Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0285-BS1
Sampled:		File ID:	S2023-03-17B (8)
Solids:		Prepared:	03/15/23 10:17
Batch:	BCC0285	Analyzed:	03/18/23 03:01
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		Calibration:	2310010
		Instrument:	Saphira
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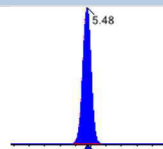
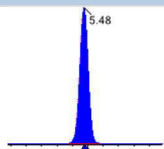
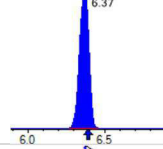
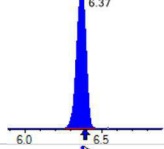
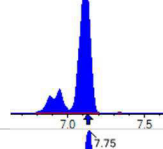
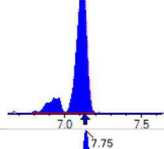
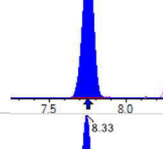
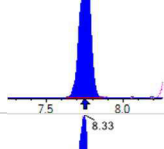
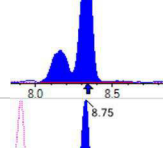
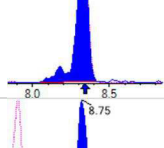
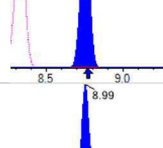
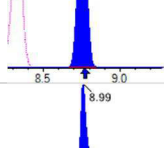
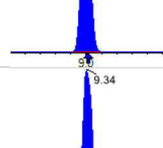
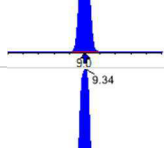
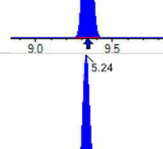
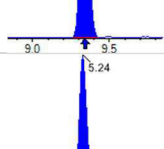
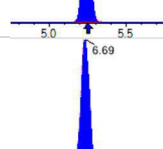
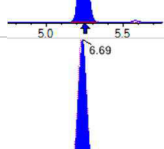
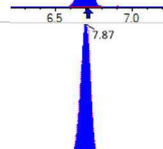
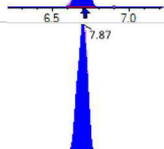
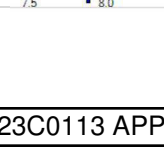
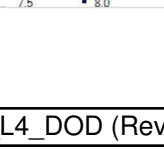
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	17.4	1.6	0.21	
PFPEA	8.77	0.80	0.065	
PFHXA	4.03	0.40	0.055	
PFHPA	4.12	0.40	0.041	
PFOA	4.49	0.40	0.15	
PFNA	3.97	0.40	0.082	
PFDA	4.12	0.40	0.10	
PFUnA	4.29	0.40	0.16	
PFDOA	4.19	0.40	0.11	
PFTRDA	4.32	0.40	0.20	
PFTEDA	4.10	0.40	0.20	
PFBS	3.91	0.40	0.037	
PFPEs	4.91	0.40	0.063	
PFHXS	3.52	0.40	0.032	
PFHPS	3.13	0.40	0.051	
PFOS	3.56	0.40	0.064	
PFNS	3.91	0.40	0.12	
PFDS	3.14	0.40	0.15	
PFDOS	3.11	0.40	0.12	
4:2FTS	16.1	1.6	0.29	
6:2FTS	16.8	1.6	0.31	
8:2FTS	16.5	1.6	0.082	
PFOSA	4.60	0.40	0.10	
NMeFOSA	16.6	1.6	0.47	
NEtFOSA	16.3	1.6	0.41	
NMeFOSAA	3.26	0.40	0.11	
NEtFOSAA	4.43	0.40	0.11	
NMeFOSE	16.5	1.6	1.0	
NEtFOSE	16.0	1.6	1.0	
HFPO-DA	9.17	0.80	0.17	

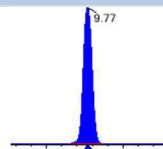
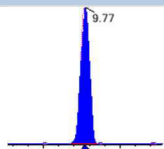
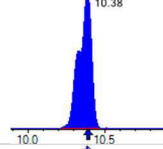
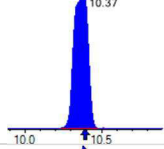
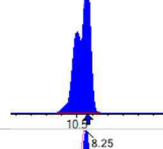
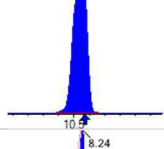
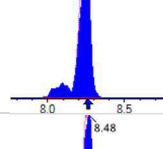
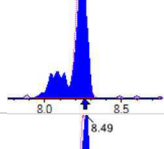
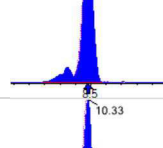
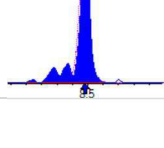
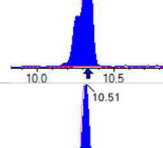
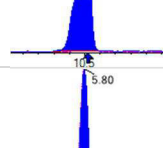
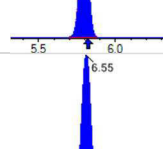
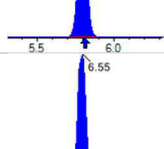
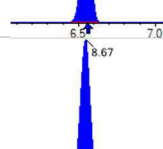
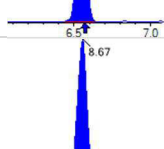
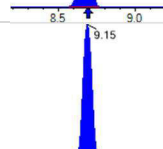
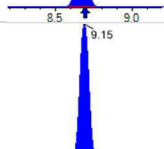
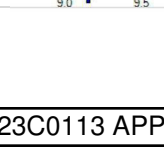
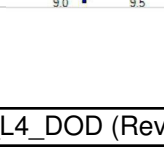
ANALYSIS DATA SHEET**LCS**

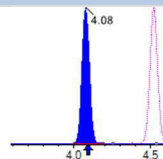
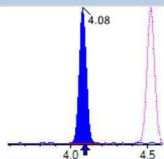
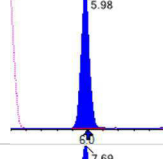
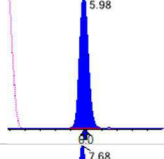
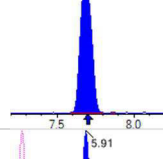
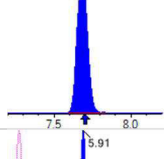
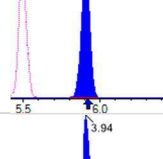
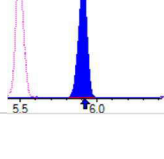
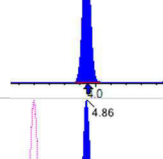
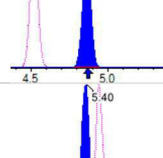
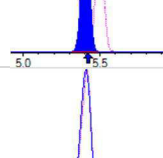
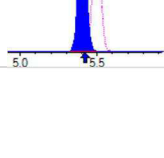
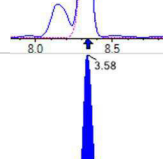
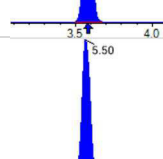
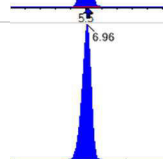
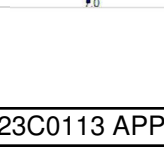
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Solids:		Prepared:	03/15/23 10:17
Batch:	BCC0285	Analyzed:	03/18/23 03:01
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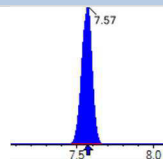
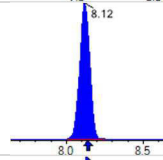
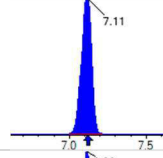
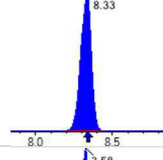
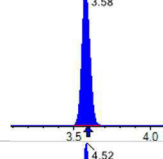
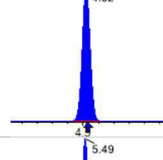
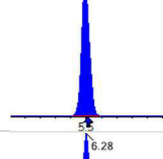
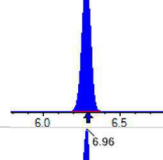
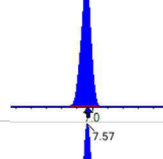
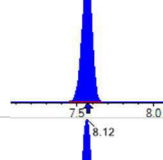
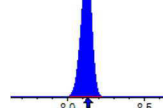
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	8.44	0.80	0.12	
PFEESA	8.10	0.80	0.11	
PFMPA	8.61	0.80	0.054	
PFMBA	7.58	0.80	0.091	
NFDHA	7.65	0.80	0.30	
9CL-PF3ONS	9.91	0.80	0.21	
11CL-PF3OUDS	9.65	0.80	0.21	
3:3FTCA	17.1	1.6	0.57	
5:3FTCA	14.0	1.6	0.44	
7:3FTCA	17.7	1.6	0.55	

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 695917	(3.58, 1.00) (0.00, N/A, 0.0)	261.7	N/A 0.0 0.0	4.3498 [4.0000]	108.7%			
PFPeA	(263.0 / 219.0) 565764 (263.0 / 69.0) 6217	(4.52, 1.00) (0.00, N/A, 0.0)	1879.9 159.4	0.0110 97.0 91.5	2.1924 [2.0000]	109.6%			
PFHxA	(313.0 / 269.0) 332761 (313.0 / 119.0) 37131	(5.50, 1.00) (0.00, N/A, -0.4)	899.9 2565.8	0.1116 105.9 109.8	1.0085 [1.0000]	100.8%			
PFHpA	(363.0 / 319.0) 337166 (363.0 / 169.0) 102742	(6.28, 1.00) (0.00, N/A, 0.0)	9208.6 3067.1	0.3047 93.5 92.4	1.0307 [1.0000]	103.1%			
PFOA	(413.0 / 369.0) 414121 (413.0 / 169.0) 146557	(6.96, 1.00) (0.00, N/A, 0.2)	1159.4 35479.8	0.3539 101.5 100.9	1.1217 [1.0000]	112.2%			
PFNA	(463.0 / 419.0) 389862 (463.0 / 169.0) 81758	(7.57, 1.00) (0.00, N/A, -0.2)	61829.4 25064192.1	0.2097 89.6 105.4	0.9923 [1.0000]	99.2%			
PFDA	(513.0 / 469.0) 459234 (513.0 / 169.0) 55721	(8.12, 1.00) (0.00, N/A, 0.4)	969.9 120506.2	0.1213 114.1 114.2	1.0295 [1.0000]	102.9%			
PFUnA	(563.0 / 519.0) 421678 (563.0 / 169.0) 54552	(8.60, 1.00) (0.00, N/A, -0.2)	1650.0 858.7	0.1294 107.9 112.1	1.0719 [1.0000]	107.2%			
PFDoA	(613.0 / 569.0) 398012 (613.0 / 169.0) 61457	(8.89, 1.00) (0.00, N/A, 0.2)	1290.2 2310.1	0.1544 94.9 87.4	1.0464 [1.0000]	104.6%			
PFTrDA	(663.0 / 619.0) 394104 (663.0 / 169.0) 87685	(9.10, 1.02) (N/A, 0.00, 0.1)	1518.7 571.1	0.2225 91.2 91.8	1.0804 [1.0000]	108.0%			
PFTeDA	(713.0 / 669.0) 352466 (713.0 / 169.0) 79727	(9.27, 1.00) (0.00, N/A, 0.2)	1618.3 370.7	0.2262 118.3 117.5	1.0238 [1.0000]	102.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 510559 (299.0 / 99.0) 318961	(5.48, 1.00) (0.00, N/A, -0.1)	16282.0 11324.1	0.6247 106.5 109.0	0.9777 [0.8847]	110.5%			
PFPeS	(349.0 / 80.0) 1170029 (349.0 / 99.0) 385080	(6.37, 0.90) (N/A, -0.01, 0.0)	176206.5 11923.7	0.3291 96.3 106.8	1.2287 [0.9384]	130.9%			
PFHxS	(399.0 / 80.0) 761968 (399.0 / 99.0) 270918	(7.11, 1.00) (0.00, N/A, 0.0)	10327.4 1030.6	0.3556 103.7 105.1	0.8796 [0.9110]	96.6%			
PFHpS	(449.0 / 80.0) 938198 (449.0 / 99.0) 288249	(7.75, 0.93) (N/A, -0.02, -0.1)	19767.9 254593.3	0.3072 108.1 109.0	0.7837 [0.9514]	82.4%			
PFOS	(499.0 / 80.0) 1322786 (499.0 / 99.0) 294682	(8.33, 1.00) (0.00, N/A, 0.1)	630.1 317.3	0.2228 102.9 97.3	0.8891 [0.9275]	95.9%			
PFNS	(549.0 / 80.0) 1378464 (549.0 / 99.0) 339998	(8.75, 1.05) (N/A, -0.01, 0.1)	26221.7 60515.6	0.2467 107.6 98.2	0.9770 [0.9599]	101.8%			
PFDS	(599.0 / 80.0) 1280759 (599.0 / 99.0) 309036	(8.99, 1.08) (N/A, -0.01, 0.1)	3552.2 47237.4	0.2413 106.6 111.6	0.7857 [0.9631]	81.6%			
PFDoS	(699.0 / 80.0) 1013578 (699.0 / 99.0) 243884	(9.34, 1.12) (N/A, -0.01, -0.2)	1909.6 974.0	0.2406 110.4 101.9	0.7779 [0.9696]	80.2%			
4:2FTS	(327.0 / 307.0) 1497770 (327.0 / 81.0) 881962	(5.24, 1.00) (0.00, N/A, 0.1)	5507.0 2329.0	0.5889 95.1 87.3	4.0334 [3.7381]	107.9%			
6:2FTS	(427.0 / 407.0) 457760 (427.0 / 81.0) 370054	(6.69, 1.00) (0.00, N/A, -0.1)	13044.2 1174.7	0.8084 117.0 104.6	4.2051 [3.7962]	110.8%			
8:2FTS	(527.0 / 507.0) 559907 (527.0 / 81.0) 429539	(7.87, 1.00) (0.00, N/A, 0.1)	3942.0 1818.1	0.7672 113.6 97.5	4.1349 [3.8332]	107.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1508311 (498.0 / 478.0) 39921	(9.77, 1.00) (0.00, N/A, -0.3)	2536.5 484.5	0.0265 119.1 104.6	1.1505 [1.0000]	115.1%			
NMeFOSA	(512.0 / 219.0) 842653 (512.0 / 169.0) 700470	(10.38, 1.00) (0.00, N/A, 0.9)	3332.5 2670.9	0.8313 99.4 98.8	4.1476 [4.0000]	103.7%			
NEFOSA	(526.0 / 219.0) 875208 (526.0 / 169.0) 1117424	(10.56, 1.00) (-0.01, N/A, 0.8)	3746.4 3566.7	1.2768 100.0 99.7	4.0683 [4.0000]	101.7%			
NMeFOSAA	(570.0 / 419.0) 212255 (570.0 / 483.0) 102314	(8.25, 1.00) (0.01, N/A, 0.1)	6538.8 229.3	0.4820 102.6 101.6	0.8159 [1.0000]	81.6%			
NEIFOSAA	(584.0 / 419.0) 193189 (584.0 / 526.0) 106819	(8.48, 1.00) (0.01, N/A, -0.2)	3192300.8 3196.3	0.5529 86.6 104.1	1.1078 [1.0000]	110.8%			
NMeFOSE	(616.0 / 59.0) 344137	(10.33, 1.00) (0.01, N/A, 0.0)	632.7	N/A 0.0 0.0	4.1127 [4.0000]	102.8%			
NEtFOSE	(630.0 / 59.0) 488012	(10.51, 1.00) (0.01, N/A, 0.0)	673.2	N/A 0.0 0.0	4.0038 [4.0000]	100.1%			
HFPO-DA	(285.0 / 169.0) 360315 (285.0 / 185.0) 941366	(5.80, 1.00) (0.00, N/A, 0.0)	2228.3 3408.5	2.6126 97.1 98.2	2.2934 [2.0000]	114.7%			
ADONA	(377.0 / 85.0) 1302776 (377.0 / 251.0) 138465	(6.55, 1.13) (N/A, -0.02, 0.0)	4563.0 565.5	0.1063 110.0 113.4	2.1093 [1.8854]	111.9%			
9CI-Pf3ONS	(531.0 / 351.0) 4124632 (533.0 / 353.0) 1295134	(8.67, 1.50) (N/A, -0.01, 0.0)	2894.3 1457.6	0.3140 98.4 98.4	2.4774 [1.8665]	132.7%			
11CI-PF3OUDS	(631.0 / 451.0) 2441302 (633.0 / 453.0) 945230	(9.15, 1.58) (N/A, -0.01, 0.0)	2692.4 2445.4	0.3872 116.3 104.3	2.4131 [1.8864]	127.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 33248 (241.0 / 117.0) 54840	(4.08, 0.90) (N/A, -0.01, 0.0)	880.5 526.7	1.6495 80.9 108.7	4.2797 [4.0000]	107.0%			
5:3FTCA	(341.0 / 236.7) 196492 (341.0 / 217.0) 335082	(5.98, 1.09) (N/A, -0.01, 0.0)	983.9 885.3	1.7053 103.5 99.0	3.4884 [4.0000]	87.2%			
7:3FTCA	(441.0 / 317.0) 418396 (441.0 / 337.0) 329855	(7.69, 1.40) (N/A, -0.01, 0.2)	813.5 1053.2	0.7884 92.0 93.1	4.4258 [4.0000]	110.6%			
PFEESA	(315.0 / 135.0) 832921 (315.0 / 83.0) 211916	(5.91, 1.08) (N/A, -0.01, -0.1)	2230.3 986.1	0.2544 98.2 114.9	2.0239 [1.7849]	113.4%			
PFMPA	(229.0 / 85.0) 142973	(3.94, 0.87) (N/A, -0.01, 0.0)	3845.7	N/A 0.0 0.0	2.1523 [2.0000]	107.6%			
PFMBA	(279.0 / 85.0) 402013	(4.86, 1.08) (N/A, -0.01, 0.0)	2812.9	N/A 0.0 0.0	1.8948 [2.0000]	94.7%			
NFDHA	(295.0 / 201.0) 357848 (295.0 / 85.0) 350890	(5.40, 0.98) (N/A, -0.01, 0.1)	2839.5 4090.3	0.9806 97.6 105.6	1.9129 [2.0000]	95.6%			
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) 192281	(3.58, N/A) (N/A, -0.01, N/A)	2332.6	N/A	0.8977 [1.0000]	89.8% {126.5%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 215134	(5.50, N/A) (N/A, -0.01, N/A)	3543.6	N/A	0.6850 [1.0000]	68.5% {114.4%}			
13C4_PFOA_IIS	(417.0 / 372.0) 438310	(6.96, N/A) (N/A, -0.01, N/A)	4985.1	N/A	0.9491 [1.0000]	94.9% {117.9%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 454621	(7.57, N/A) (N/A, -0.01, N/A)	10488.2	N/A	1.0894 [1.0000]	108.9% { 126.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 416638	(8.12, N/A) (N/A, -0.02, N/A)	3836.7	N/A	1.0374 [1.0000]	103.7% { 106.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 586510	(7.11, N/A) (N/A, -0.01, N/A)	14143.4	N/A	0.8639 [1.0000]	86.4% { 122.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1124755	(8.33, N/A) (N/A, -0.01, N/A)	1614.5	N/A	1.3108 [1.0000]	131.1% { 135.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1549914	(3.58, N/A) (N/A, -0.01, N/A)	7543.8	N/A	6.7733 [8.0000]	84.7% { 99.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1173495	(4.52, N/A) (N/A, -0.01, N/A)	3913.9	N/A	4.7219 [4.0000]	118.0% { 91.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 742330	(5.49, N/A) (N/A, -0.02, N/A)	3564.6	N/A	2.4756 [2.0000]	123.8% { 95.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 775400	(6.28, N/A) (N/A, -0.01, N/A)	2713.8	N/A	2.7146 [2.0000]	135.7% { 104.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 813528	(6.96, N/A) (N/A, -0.01, N/A)	4216.0	N/A	1.7084 [2.0000]	85.4% { 86.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 454042	(7.57, N/A) (N/A, -0.01, N/A)	3152.9	N/A	0.9399 [1.0000]	94.0% { 97.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 472886	(8.12, N/A) (N/A, -0.01, N/A)	432808.2	N/A	0.9430 [1.0000]	94.3% { 91.4% }			



Chemist: HGH
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BCC0285-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A
 Path: S2023-03-13B (8)
 Acquired: 2023/03/18 - 03:01

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
13C7_PFUa_EIS	(570.0 / 525.0) 492525	(8.61, N/A) (N/A, -0.01, N/A)	2557.5	N/A	0.8810 [1.0000]	88.1% { 98.6% }			
13C2_PFDa_EIS	(615.0 / 570.0) 452164	(8.89, N/A) (N/A, -0.01, N/A)	3339.0	N/A	0.9252 [1.0000]	92.5% { 106.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 403244	(9.26, N/A) (N/A, -0.01, N/A)	1065.6	N/A	0.7823 [1.0000]	78.2% { 100.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1617859	(5.47, N/A) (N/A, -0.01, N/A)	4100.6	N/A	1.7412 [2.0000]	87.1% { 94.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1154833	(7.11, N/A) (N/A, -0.01, N/A)	2677.9	N/A	1.9138 [2.0000]	95.7% { 100.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2637663	(8.33, N/A) (N/A, -0.01, N/A)	1629.3	N/A	1.7491 [2.0000]	87.5% { 101.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 509261	(5.24, N/A) (N/A, -0.01, N/A)	4099.8	N/A	8.6405 [4.0000]	216.0% { 215.4% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 303126	(6.69, N/A) (N/A, -0.02, N/A)	1610.4	N/A	3.9172 [4.0000]	97.9% { 100.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 404625	(7.87, N/A) (N/A, -0.01, N/A)	1790.6	N/A	4.8266 [4.0000]	120.7% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3159179	(9.77, N/A) (N/A, -0.01, N/A)	3788.7	N/A	1.2248 [2.0000]	61.2% { 89.6% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 494168	(10.39, N/A) (N/A, -0.01, N/A)	1896.3	N/A	0.7488 [2.0000]	37.4% { 62.8% }			

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
D5_NEiFOSA_EIS	(531.0 / 169.0) 451973	(10.56 , N/A) (N/A , -0.01 , N/A)	2183.0	N/A	0.7524 [2.0000]	37.6% { 60.8% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 1010366	(8.24 , N/A) (N/A , -0.01 , N/A)	3025.5	N/A	3.9181 [4.0000]	98.0% { 109.4% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 832586	(8.47 , N/A) (N/A , -0.01 , N/A)	15267.2	N/A	2.8809 [4.0000]	72.0% { 104.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1689756	(10.32 , N/A) (N/A , 0.00 , N/A)	1404.1	N/A	8.2281 [20.0000]	41.1% { 58.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2522067	(10.50 , N/A) (N/A , -0.01 , N/A)	1810.7	N/A	10.4050 [20.0000]	52.0% { 71.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1581006	(5.79 , N/A) (N/A , -0.02 , N/A)	3399.3	N/A	9.5475 [8.0000]	119.3% { 97.7% }			

ANALYSIS DATA SHEET

MRL Check

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0285-MRL1
Sampled:		File ID:	S2023-03-17B (9)
Solids:		Prepared:	03/15/23 10:17
Batch:	BCC0285	Analyzed:	03/18/23 03:14
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01082

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	1.69	1.6	0.21	
PFPEA	0.866	0.80	0.065	
PFHXA	0.522	0.40	0.055	
PFHPA	0.444	0.40	0.041	
PFOA	0.598	0.40	0.15	
PFNA	0.419	0.40	0.082	
PFDA	0.392	0.40	0.10	IR2, J
PFUnA	0.363	0.40	0.16	J
PFDOA	0.352	0.40	0.11	J
PFTRDA	0.425	0.40	0.20	
PFTEDA	0.441	0.40	0.20	
PFBS	0.428	0.40	0.037	
PFPEs	0.562	0.40	0.063	BS2
PFHXS	0.991	0.40	0.032	BS2
PFHPS	0.338	0.40	0.051	J
PFOS	1.16	0.40	0.064	BS2
PFNS	0.364	0.40	0.12	J
PFDS	0.329	0.40	0.15	J
PFDOS	0.257	0.40	0.12	J
4:2FTS	1.53	1.6	0.29	J
6:2FTS	1.50	1.6	0.31	J
8:2FTS	1.56	1.6	0.082	J
PFOSA	0.464	0.40	0.10	
NMeFOSA	1.49	1.6	0.47	J
NEtFOSA	1.33	1.6	0.41	J
NMeFOSAA	0.336	0.40	0.11	J
NEtFOSAA	0.333	0.40	0.11	J
NMeFOSE	1.65	1.6	1.0	
NEtFOSE	1.59	1.6	1.0	J
HFPO-DA	0.808	0.80	0.17	

ANALYSIS DATA SHEET**MRL Check**

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0285-MRL1
Sampled:		File ID:	S2023-03-17B (9)
Solids:		Prepared:	03/15/23 10:17
Batch:	BCC0285	Analyzed:	03/18/23 03:14
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01082

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	0.783	0.80	0.12	J
PFEESA	0.708	0.80	0.11	J
PFMPA	0.800	0.80	0.054	
PFMBA	0.796	0.80	0.091	J
NFDHA	0.925	0.80	0.30	
9CL-PF3ONS	0.944	0.80	0.21	
11CL-PF3OUDS	1.09	0.80	0.21	
3:3FTCA	1.57	1.6	0.57	J
5:3FTCA	1.36	1.6	0.44	J
7:3FTCA	1.73	1.6	0.55	

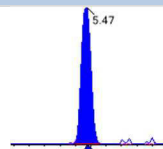
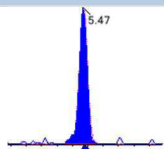
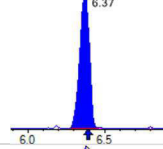
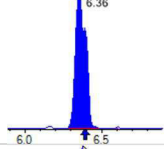
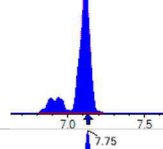
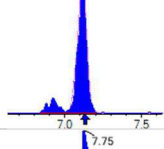
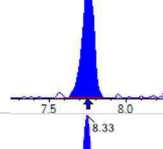
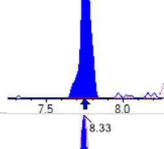
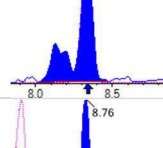
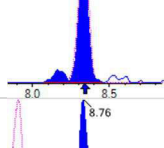
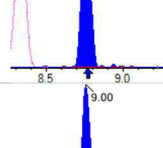
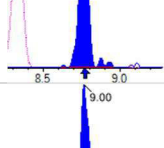
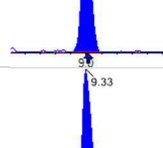
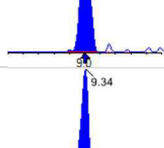
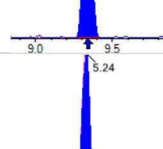
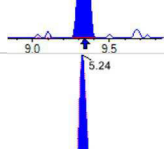
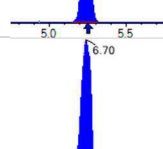
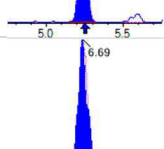
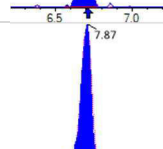
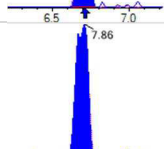
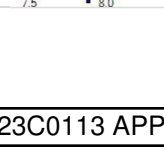
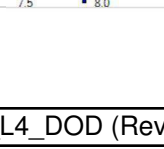


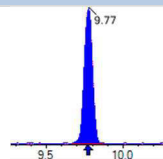
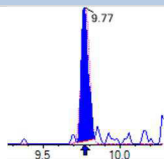
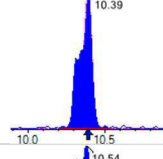
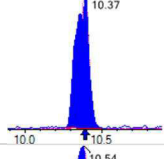
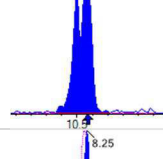
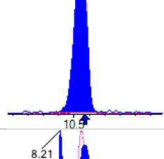
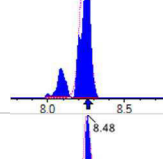
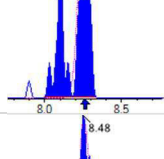
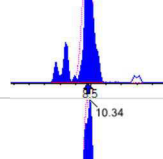
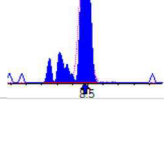
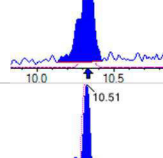
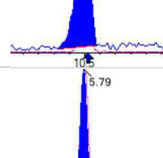
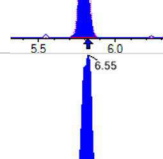
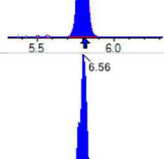
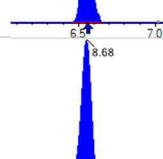
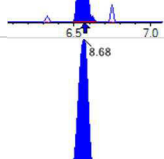
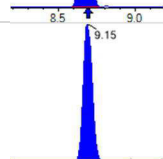
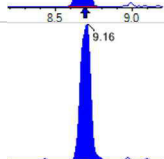
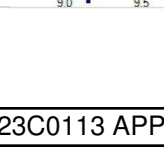
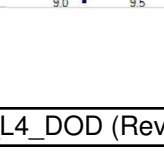
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 Instrument: Saphira
 Type: Sciex Q3 5500

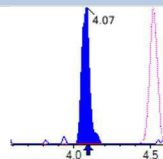
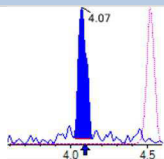
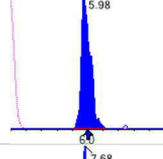
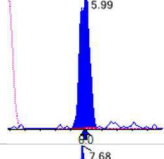
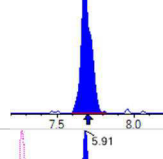
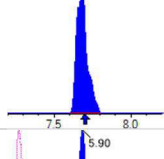
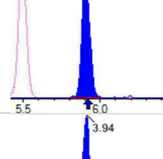
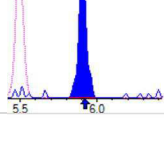
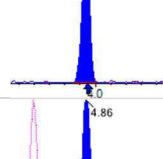
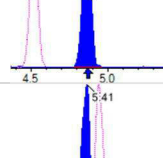
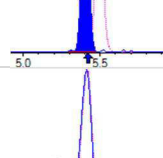
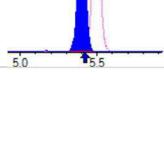
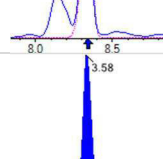
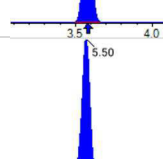
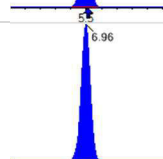
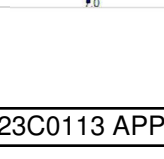
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 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2023-03-07.dam

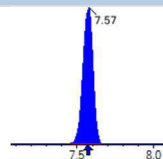
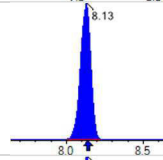
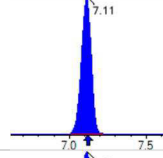
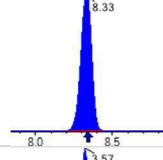
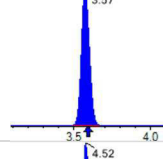
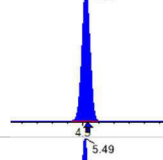
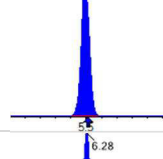
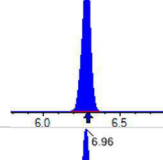
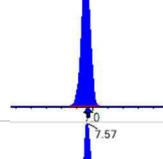
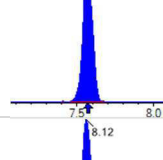
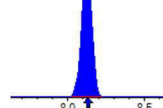
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 Path: S2023-03-13B (9)
 Acquired: 2023/03/18 - 03:14

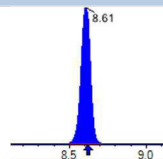
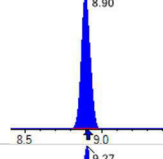
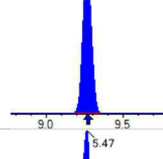
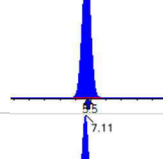
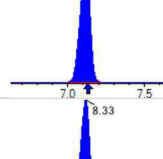
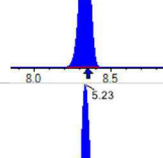
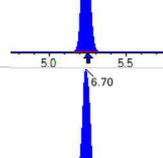
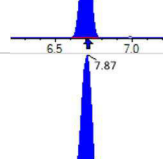
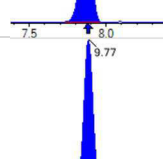
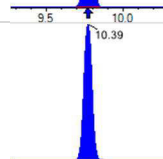
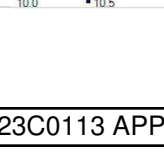
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 67369	(3.58, 1.00) (0.00, N/A, 0.0)	124.3	N/A 0.0 0.0	0.4224 [0.4000]	105.6%			
PFPeA	(263.0 / 219.0) 47341 (263.0 / 69.0) 1078	(4.52, 1.00) (0.00, N/A, 0.2)	226.7 58.7	0.0228 201.1 189.7	0.2164 [0.2000]	108.2%			
PFHxA	(313.0 / 269.0) 37787 (313.0 / 119.0) 5224	(5.49, 1.00) (-0.01, N/A, 0.0)	103.8 2600.3	0.1382 131.2 136.0	0.1306 [0.1000]	130.6%			
PFHpA	(363.0 / 319.0) 31577 (363.0 / 169.0) 5800	(6.28, 1.00) (0.00, N/A, 0.6)	490.4 571262.8	0.1837 56.3 55.7	0.1110 [0.1000]	111.0%			
PFOA	(413.0 / 369.0) 55142 (413.0 / 169.0) 24843	(6.96, 1.00) (0.00, N/A, -0.1)	234.0 27140.5	0.4505 129.3 128.4	0.1495 [0.1000]	149.5%			
PFNA	(463.0 / 419.0) 35651 (463.0 / 169.0) 6719	(7.56, 1.00) (-0.01, N/A, -0.2)	1716.1 157.9	0.1885 80.5 94.7	0.1046 [0.1000]	104.6%			
PFDA	(513.0 / 469.0) 43152 (513.0 / 169.0) 8156	(8.13, 1.00) (0.01, N/A, 0.0)	124.7 726.2	0.1890 177.7 177.9	0.0979 [0.1000]	97.9%			IR2,
PFUnA	(563.0 / 519.0) 35122 (563.0 / 169.0) 6006	(8.61, 1.00) (0.00, N/A, -0.4)	200.7 183.3	0.1710 142.6 148.2	0.0908 [0.1000]	90.8%			
PFDoA	(613.0 / 569.0) 30765 (613.0 / 169.0) 5806	(8.90, 1.00) (0.01, N/A, 0.5)	148.7 132.5	0.1887 116.0 106.8	0.0879 [0.1000]	87.9%			
PFTrDA	(663.0 / 619.0) 35695 (663.0 / 169.0) 9262	(9.10, 1.02) (N/A, 0.00, 0.7)	190.7 452.9	0.2595 106.3 107.1	0.1063 [0.1000]	106.3%			
PFTeDA	(713.0 / 669.0) 36339 (713.0 / 169.0) 4660	(9.27, 1.00) (0.00, N/A, 0.3)	219.5 81.1	0.1283 67.1 66.6	0.1103 [0.1000]	110.3%			

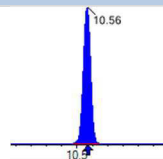
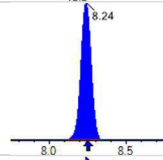
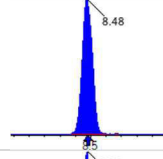
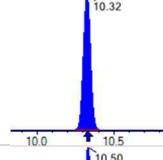
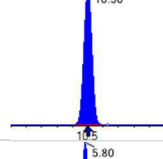
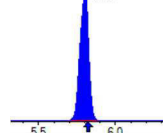
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 49551 (299.0 / 99.0) 28982	(5.47, 1.00) (0.00, N/A, -0.1)	120485.3 333.1	0.5849 99.7 102.1	0.1070 [0.0885]	121.0%			
PFPeS	(349.0 / 80.0) 118413 (349.0 / 99.0) 44369	(6.37, 0.90) (N/A, -0.01, 0.5)	261746.5 14800.9	0.3747 109.7 121.6	0.1405 [0.0938]	149.8%			BS2,
PFHxS	(399.0 / 80.0) 189948 (399.0 / 99.0) 74071	(7.12, 1.00) (0.00, N/A, 0.0)	5941948.7 196.5	0.3900 113.8 115.2	0.2478 [0.0911]	272.0%			BS2,
PFHpS	(449.0 / 80.0) 93912 (449.0 / 99.0) 31654	(7.75, 0.93) (N/A, -0.02, 0.0)	87379.3 1436.9	0.3371 118.6 119.6	0.0845 [0.0951]	88.8%			
PFOS	(499.0 / 80.0) 400167 (499.0 / 99.0) 78520	(8.33, 1.00) (0.00, N/A, 0.1)	230.7 178.4	0.1962 90.7 85.7	0.2895 [0.0927]	312.2%			BS2,
PFNS	(549.0 / 80.0) 119241 (549.0 / 99.0) 35249	(8.76, 1.05) (N/A, -0.01, -0.3)	17211.8 834.6	0.2956 128.9 117.7	0.0910 [0.0960]	94.8%			
PFDS	(599.0 / 80.0) 124353 (599.0 / 99.0) 31565	(9.00, 1.08) (N/A, -0.01, 0.0)	917.5 1073.5	0.2538 112.1 117.4	0.0821 [0.0963]	85.3%			
PFDoS	(699.0 / 80.0) 77621 (699.0 / 99.0) 20738	(9.33, 1.12) (N/A, -0.01, -0.5)	280.1 121.7	0.2672 122.5 113.1	0.0641 [0.0970]	66.1%			
4:2FTS	(327.0 / 307.0) 128973 (327.0 / 81.0) 78392	(5.24, 1.00) (0.00, N/A, 0.1)	1690.6 491.8	0.6078 98.2 90.2	0.3814 [0.3738]	102.0%			
6:2FTS	(427.0 / 407.0) 40777 (427.0 / 81.0) 29077	(6.70, 1.00) (0.00, N/A, 0.5)	1268.5 478.5	0.7131 103.2 92.3	0.3749 [0.3796]	98.8%			
8:2FTS	(527.0 / 507.0) 45557 (527.0 / 81.0) 27188	(7.87, 1.00) (0.00, N/A, 0.5)	13159.9 196.0	0.5968 88.4 75.9	0.3912 [0.3833]	102.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 143375 (498.0 / 478.0) 5213	(9.77, 1.00) (0.00, N/A, 0.4)	570.5 51.1	0.0364 163.6 143.7	0.1159 [0.1000]	115.9%			
NMeFOSA	(512.0 / 219.0) 63881 (512.0 / 169.0) 57546	(10.39, 1.00) (0.00, N/A, 0.9)	457.4 370.0	0.9008 107.7 107.1	0.3720 [0.4000]	93.0%			
NEFOSA	(526.0 / 219.0) 63181 (526.0 / 169.0) 76911	(10.54, 1.00) (-0.02, N/A, 0.0)	342.4 447.1	1.2173 95.4 95.0	0.3326 [0.4000]	83.2%			
NMeFOSAA	(570.0 / 419.0) 18267 (570.0 / 483.0) 8202	(8.25, 1.00) (0.01, N/A, 2.4)	97.8 81.7	0.4490 95.6 94.6	0.0840 [0.1000]	84.0%			
NEIFOSAA	(584.0 / 419.0) 12221 (584.0 / 526.0) 9731	(8.48, 1.00) (0.01, N/A, 0.2)	138.0 522610.3	0.7962 124.7 149.9	0.0833 [0.1000]	83.3%			
NMeFOSE	(616.0 / 59.0) 32722	(10.34, 1.00) (0.01, N/A, 0.0)	80.6	N/A 0.0 0.0	0.4116 [0.4000]	102.9%			
NEtFOSE	(630.0 / 59.0) 46516	(10.51, 1.00) (0.01, N/A, 0.0)	120.9	N/A 0.0 0.0	0.3969 [0.4000]	99.2%			
HFPO-DA	(285.0 / 169.0) 27420 (285.0 / 185.0) 79747	(5.79, 1.00) (-0.01, N/A, -0.2)	12774.4 401.9	2.9084 108.1 109.3	0.2021 [0.2000]	101.0%			
ADONA	(377.0 / 85.0) 104462 (377.0 / 251.0) 9975	(6.55, 1.13) (N/A, -0.01, -0.6)	3068.6 228.4	0.0955 98.9 101.9	0.1958 [0.1885]	103.9%			
9CI-Pf3ONS	(531.0 / 351.0) 339445 (533.0 / 353.0) 108509	(8.68, 1.50) (N/A, 0.00, 0.0)	509.6 271.5	0.3197 100.2 100.2	0.2361 [0.1867]	126.5%			
11CI-PF3OUDS	(631.0 / 451.0) 205704 (633.0 / 453.0) 76191	(9.15, 1.58) (N/A, 0.00, -0.4)	1236.0 325.3	0.3704 111.2 99.8	0.2717 [0.1886]	144.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 2580 (241.0 / 117.0) 4565	(4.07, 0.90) (N/A, -0.01, 0.1)	165.8 43.1	1.7696 86.8 116.6	0.3918 [0.4000]	97.9%			
5:3FTCA	(341.0 / 236.7) 16798 (341.0 / 217.0) 31465	(5.98, 1.09) (N/A, -0.02, -0.4)	37820.3 177.6	1.8732 113.7 108.7	0.3400 [0.4000]	85.0%			
7:3FTCA	(441.0 / 317.0) 35855 (441.0 / 337.0) 27465	(7.68, 1.40) (N/A, -0.01, 0.5)	371.3 224.4	0.7660 89.4 90.5	0.4324 [0.4000]	108.1%			
PFEESA	(315.0 / 135.0) 63875 (315.0 / 83.0) 13756	(5.91, 1.07) (N/A, -0.01, 0.0)	721.6 80.4	0.2154 83.1 97.3	0.1770 [0.1785]	99.1%			
PFMPA	(229.0 / 85.0) 11258	(3.94, 0.87) (N/A, -0.01, 0.0)	401.9	N/A 0.0 0.0	0.2000 [0.2000]	100.0%			
PFMBA	(279.0 / 85.0) 35775	(4.86, 1.08) (N/A, -0.01, 0.0)	1047.4	N/A 0.0 0.0	0.1989 [0.2000]	99.5%			
NFDHA	(295.0 / 201.0) 37957 (295.0 / 85.0) 32239	(5.41, 0.98) (N/A, -0.01, 0.3)	2112.0 989.8	0.8494 84.6 91.5	0.2313 [0.2000]	115.7%			
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 [0.1000]	N/A%			BS2,
13C3_PFBA_IIS	(216.0 / 172.0) 187033	(3.58, N/A) (N/A, -0.02, N/A)	2523.4	N/A	0.8732 [1.0000]	87.3% { 123.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 194141	(5.50, N/A) (N/A, -0.01, N/A)	406.9	N/A	0.6181 [1.0000]	61.8% { 103.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 409373	(6.96, N/A) (N/A, -0.02, N/A)	26449.4	N/A	0.8864 [1.0000]	88.6% { 110.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 438559	(7.57, N/A) (N/A, -0.01, N/A)	338244.5	N/A	1.0509 [1.0000]	105.1% { 122.3% }			
13C2_PFDA_IIS	(515.0 / 470.1) 439801	(8.13, N/A) (N/A, -0.01, N/A)	6372.0	N/A	1.0951 [1.0000]	109.5% { 112.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 559887	(7.11, N/A) (N/A, -0.01, N/A)	3225.7	N/A	0.8247 [1.0000]	82.5% { 116.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1066073	(8.33, N/A) (N/A, -0.01, N/A)	1532.2	N/A	1.2424 [1.0000]	124.2% { 128.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1545251	(3.57, N/A) (N/A, -0.02, N/A)	7022.1	N/A	6.9424 [8.0000]	86.8% { 98.8% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 994630	(4.52, N/A) (N/A, -0.01, N/A)	4696.8	N/A	4.4349 [4.0000]	110.9% { 77.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 651057	(5.49, N/A) (N/A, -0.02, N/A)	3122.2	N/A	2.4060 [2.0000]	120.3% { 84.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 674506	(6.28, N/A) (N/A, -0.01, N/A)	11397.2	N/A	2.6167 [2.0000]	130.8% { 90.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 812670	(6.96, N/A) (N/A, -0.02, N/A)	2900.0	N/A	1.8273 [2.0000]	91.4% { 85.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 393745	(7.57, N/A) (N/A, -0.01, N/A)	2049.9	N/A	0.8450 [1.0000]	84.5% { 84.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 467319	(8.12, N/A) (N/A, -0.01, N/A)	5839.4	N/A	0.8829 [1.0000]	88.3% { 90.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 484032	(8.61, N/A) (N/A, -0.01, N/A)	1463.3	N/A	0.8202 [1.0000]	82.0% { 96.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 416098	(8.90, N/A) (N/A, -0.01, N/A)	8826.5	N/A	0.8066 [1.0000]	80.7% { 98.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 385917	(9.27, N/A) (N/A, -0.01, N/A)	1747.1	N/A	0.7093 [1.0000]	70.9% { 96.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1434491	(5.47, N/A) (N/A, -0.01, N/A)	2833.4	N/A	1.6172 [2.0000]	80.9% { 83.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1021771	(7.11, N/A) (N/A, -0.01, N/A)	2939.8	N/A	1.7738 [2.0000]	88.7% { 88.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2450127	(8.33, N/A) (N/A, -0.01, N/A)	2270.4	N/A	1.7142 [2.0000]	85.7% { 94.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 463722	(5.23, N/A) (N/A, -0.02, N/A)	3223.7	N/A	8.2419 [4.0000]	206.0% { 196.1% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 302878	(6.70, N/A) (N/A, -0.01, N/A)	2023.2	N/A	4.1002 [4.0000]	102.5% { 100.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 348023	(7.87, N/A) (N/A, -0.01, N/A)	1112.4	N/A	4.3488 [4.0000]	108.7% { 86.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2980119	(9.77, N/A) (N/A, 0.00, N/A)	3900.0	N/A	1.2189 [2.0000]	60.9% { 84.6% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 417659	(10.39, N/A) (N/A, 0.00, N/A)	1651.7	N/A	0.6677 [2.0000]	33.4% { 53.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 399086	(10.56 , N/A) (N/A , -0.01 , N/A)	2209.8	N/A	0.7009 [2.0000]	35.0% { 53.7% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 844456	(8.24 , N/A) (N/A , -0.01 , N/A)	2058.4	N/A	3.4549 [4.0000]	86.4% { 91.4% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 700371	(8.48 , N/A) (N/A , -0.01 , N/A)	3711.5	N/A	2.5568 [4.0000]	63.9% { 87.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1605538	(10.32 , N/A) (N/A , 0.00 , N/A)	1394.6	N/A	8.2483 [20.0000]	41.2% { 55.7% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2424850	(10.50 , N/A) (N/A , 0.00 , N/A)	1470.4	N/A	10.5546 [20.0000]	52.8% { 68.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1365412	(5.80 , N/A) (N/A , -0.01 , N/A)	3909.5	N/A	9.1372 [8.0000]	114.2% { 84.3% }			

PREPARATION BATCH SUMMARY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0113
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Batch:	BCC0285	Batch Matrix:	Water
		Preparation:	EPA 1633

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT mL	FINAL VOL. mL
AF-RHMW17-WGN01LF-2303W1	23C0113-01	03/15/23 10:17	526.66	2.00
AF-RHMW17D-WGN01LF-2303W1	23C0113-02	03/15/23 10:17	513.30	2.00
AF-RHMW17D-WGN01LF-2303W1	23C0113-02RE1	03/15/23 10:17	513.30	2.00
AF-RHMW17D-WQFB01-2303W1	23C0113-03	03/15/23 10:17	531.91	2.00
AF-RHMW17D-WQFB01-2303W1	23C0113-03RE1	03/15/23 10:17	531.91	2.00
AF-RHMW17S-WGN01LF-2303W1	23C0113-04	03/15/23 10:17	518.54	2.00
AF-RHMW17S-WGN01LF-2303W1	23C0113-04RE1	03/15/23 10:17	518.54	2.00
AF-RHMW17S-WQEB01-2303W1	23C0113-05	03/15/23 10:17	558.46	2.00
Blank	BCC0285-BLK1	03/15/23 10:17	500.00	2.00
LCS	BCC0285-BS1	03/15/23 10:17	500.00	2.00
MRL Check	BCC0285-MRL1	03/15/23 10:17	500.00	2.00

PREPARATION BENCH SHEET

Organics

BCC0285

Print Date/Time: 03/21/2023 3:23 pm

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses 1633	Spiking Solution(s) PFAS - MIX 1633 10ng/mL	Surrogate Solution(s) MPFAC-HIF-ES 20.0ng/mL	
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Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
23C0011-01	23C0150-01	03/15/2023	03/29/2023	3/15/2023 10:17:00AM	605.99	2		200	
23C0011-01RE1	23C0150-01	03/15/2023	03/29/2023	3/15/2023 10:17:00AM	605.99	2		200	Added 3/17/2023 by DAG
23C0018-01	LF001P-LF01-MW21S-01	03/21/2023	03/30/2023	3/15/2023 10:17:00AM	552.98	2		200	
23C0018-01RE1	LF001P-LF01-MW21S-01	03/21/2023	03/30/2023	3/15/2023 10:17:00AM	552.98	2		200	Added 3/17/2023 by DAG
23C0018-02	LF001P-LF01-MW21D-01	03/21/2023	03/30/2023	3/15/2023 10:17:00AM	563.41	2		200	
23C0018-02RE1	LF001P-LF01-MW21D-01	03/21/2023	03/30/2023	3/15/2023 10:17:00AM	563.41	2		200	Added 3/17/2023 by DAG
23C0050-01	LF001P-LF01-MW39S-01	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	514.12	2		200	
23C0050-01RE1	LF001P-LF01-MW39S-01	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	514.12	2		200	Added 3/17/2023 by DAG
23C0050-02	LF001P-EB-H20-02	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	533.2	2		200	
23C0050-02RE1	LF001P-EB-H20-02	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	533.2	2		200	Added 3/17/2023 by DAG
23C0050-03	LF001P-LF01-MW11-01	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	516	2		200	
23C0050-03RE1	LF001P-LF01-MW11-01	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	516	2		200	Added 3/17/2023 by DAG
23C0050-04	LF001P-LF01-MW511-01	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	507.06	2		200	
23C0050-04RE1	LF001P-LF01-MW511-01	03/22/2023	04/04/2023	3/15/2023 10:17:00AM	507.06	2		200	Added 3/17/2023 by DAG
23C0068-01	RS001P-EB-H20-01	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	566.67	2		200	
23C0068-01RE1	RS001P-EB-H20-01	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	566.67	2		200	Added 3/17/2023 by DAG
23C0068-02	RS001P-EB-H20-02	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	550.63	2		200	
23C0068-02RE1	RS001P-EB-H20-02	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	550.63	2		200	Added 3/17/2023 by DAG
23C0068-03	RS001P-SCOTT01-MW001-01	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	499.46	2		200	
23C0068-03RE1	RS001P-SCOTT01-MW001-01	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	499.46	2		200	Added 3/17/2023 by DAG
23C0068-03RE2	RS001P-SCOTT01-MW001-01	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	499.46	2		20000	Added 3/21/2023 by HGH
23C0068-04	RS001P-FRB-H20-01	03/23/2023	04/05/2023	3/15/2023 10:17:00AM	555.33	2		200	

Spiking Witnessed By _____ Date _____ Preparation Reviewed By _____ Date _____ Extracts Received By _____ Date _____

PREPARATION BENCH SHEET

Organics

BCC0285

(Continued)

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses		Spiking Solution(s)				Surrogate Solution(s)		
1633	PFAS - MIX 1633 10ng/mL	23B0578	04/05/2023	3/15/2023 10:17:00AM	2	23C0199	MPFAC-HIF-ES 20.0ng/mL	200
23C0068-04RE1	RS001P-FRB-H20-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2	Added 3/17/2023 by DAG	200
23C0068-05	RS001P-SCOTT01-MW003-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2		200
23C0068-05RE1	RS001P-SCOTT01-MW003-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2	Added 3/17/2023 by DAG	200
23C0068-05RE2	RS001P-SCOTT01-MW003-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2	Added 3/21/2023 by HGH	20000
23C0068-06	RS001P-SCOTT01-MW002-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2		200
23C0068-06RE1	RS001P-SCOTT01-MW002-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2	Added 3/17/2023 by DAG	200
23C0068-06RE2	RS001P-SCOTT01-MW002-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2	Added 3/21/2023 by HGH	20000
23C0068-07	RS001P-SCOTT01-MW502-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2		200
23C0068-07RE1	RS001P-SCOTT01-MW502-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2	Added 3/17/2023 by DAG	200
23C0068-07RE2	RS001P-SCOTT01-MW502-01		03/23/2023	04/05/2023	3/15/2023 10:17:00AM	2	Added 3/21/2023 by HGH	20000
23C0113-01	AF-RHMW17-WGN01LF-2303W1		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-01RE1	AF-RHMW17-WGN01LF-2303W1		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-02	AF-RHMW17D-WGN01LF-2303W		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-02RE1	AF-RHMW17D-WGN01LF-2303W		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-03	AF-RHMW17D-WQFB01LF-2303W1		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-03RE1	AF-RHMW17D-WQFB01LF-2303W1		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-04	AF-RHMW17S-WGN01LF-2303W1		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-04RE1	AF-RHMW17S-WGN01LF-2303W1		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-05	AF-RHMW17S-WQEB01LF-2303W		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
23C0113-05RE1	AF-RHMW17S-WQEB01LF-2303W		03/21/2023	04/07/2023	3/15/2023 10:17:00AM	2	"Report relevant surrogates"	200
BCC0285-BLK1	Blank			3/15/2023 10:17:00AM	2	0		200

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date

PREPARATION BENCH SHEET

Organics

Print Date/Time: 03/21/2023 3:23 pm

BCC0285

(Continued)

Matrix: Water

Prepared using: PFAS - EPA 1633

Analyses	Spiking Solution(s)		Surrogate Solution(s)	
1633	23B0578	PFAS - MIX 1633 10ng/mL	23C0199	MPFAC-HIF-ES 20.0ng/mL
BCC0285-BS1	LCS	3/15/2023 10:17:00AM	200	200
BCC0285-MRL1	MRL Check	3/15/2023 10:17:00AM	20	200
BCC0285-MS1	Matrix Spike [23C0068-05]	3/15/2023 10:17:00AM	200	200
BCC0285-MSD1	Matrix Spike Dup [23C0068-05]	3/15/2023 10:17:00AM	200	200

Reagents	Standard	Description	LotNum

Start Date/Time _____
 StopDate/Time _____

Batch Comments:
 Spiked by: DAG 3/15/23 12:48
 Witness: PAF
 Balance #: WB-2
 Cartridge: Oasis
 Concentration: 3/17/23 11:40-12:42

Spiking Witnessed By _____ Date _____
 Preparation Reviewed By _____ Date _____
 Extracts Received By _____ Date _____

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC00916
 Calibration: 2310010

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

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SC00916-CAL1	S2023-03-07A (1)	03/07/23 15:26
Cal Standard	SC00916-CAL2	S2023-03-07A (2)	03/07/23 15:38
Cal Standard	SC00916-CAL3	S2023-03-07A (3)	03/07/23 15:51
Cal Standard	SC00916-CAL4	S2023-03-07A (4)	03/07/23 16:04
Cal Standard	SC00916-CAL5	S2023-03-07A (5)	03/07/23 16:17
Cal Standard	SC00916-CAL6	S2023-03-07A (6)	03/07/23 16:30
Cal Standard	SC00916-CAL7	S2023-03-07A (7)	03/07/23 16:43
Cal Standard	SC00916-CAL8	S2023-03-07A (8)	03/07/23 16:56
Initial Cal Blank	SC00916-ICB1	S2023-03-07A (9)	03/07/23 17:09
Secondary Cal Check	SC00916-SCV1	S2023-03-07A (10)	03/07/23 17:22

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SC01082
 Calibration: 2310010

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

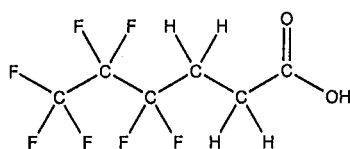
Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SC01082-CCB1	S2023-03-17B (1)	03/18/23 01:31
Low Cal Check	SC01082-LCV1	S2023-03-17B (2)	03/18/23 01:44
Calibration Check	SC01082-CCV1	S2023-03-17B (3)	03/18/23 01:57
Performance Mix	SC01082-PEM1	S2023-03-17B (4)	03/18/23 02:10
Performance Mix	SC01082-PEM2	S2023-03-17B (5)	03/18/23 02:22
Calibration Blank	SC01082-CCB2	S2023-03-17B (6)	03/18/23 02:35
Blank	BCC0285-BLK1	S2023-03-17B (7)	03/18/23 02:48
LCS	BCC0285-BS1	S2023-03-17B (8)	03/18/23 03:01
MRL Check	BCC0285-MRL1	S2023-03-17B (9)	03/18/23 03:14
Calibration Check	SC01082-CCV2	S2023-03-17B (32)	03/18/23 08:10
Calibration Blank	SC01082-CCB3	S2023-03-17B (33)	03/18/23 08:23
AF-RHMW17-WGN01LF-2303W1	23C0113-01	S2023-03-17B (42)	03/18/23 10:19
AF-RHMW17D-WGN01LF-2303W1	23C0113-02	S2023-03-17B (44)	03/18/23 10:45
AF-RHMW17D-WGN01LF-2303W1	23C0113-02RE1	S2023-03-17B (45)	03/18/23 10:58
AF-RHMW17D-WQFB01-2303W1	23C0113-03	S2023-03-17B (46)	03/18/23 11:11
AF-RHMW17D-WQFB01-2303W1	23C0113-03RE1	S2023-03-17B (47)	03/18/23 11:24
AF-RHMW17S-WGN01LF-2303W1	23C0113-04	S2023-03-17B (48)	03/18/23 11:37
AF-RHMW17S-WGN01LF-2303W1	23C0113-04RE1	S2023-03-17B (49)	03/18/23 11:50
AF-RHMW17S-WQEB01-2303W1	23C0113-05	S2023-03-17B (50)	03/18/23 12:02
Calibration Check	SC01082-CCV3	S2023-03-17B (52)	03/18/23 12:28
Calibration Blank	SC01082-CCB4	S2023-03-17B (53)	03/18/23 12:41



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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



MOLECULAR FORMULA: $C_8H_5F_7O_2$ **MOLECULAR WEIGHT:** 242.09
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/12/2020
EXPIRY DATE: (mm/dd/yyyy) 11/12/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_8H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

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:

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HOMOGENEITY:

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

UNCERTAINTY:

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x_1, x_2, \dots, x_n on which it depends is:

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

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

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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:

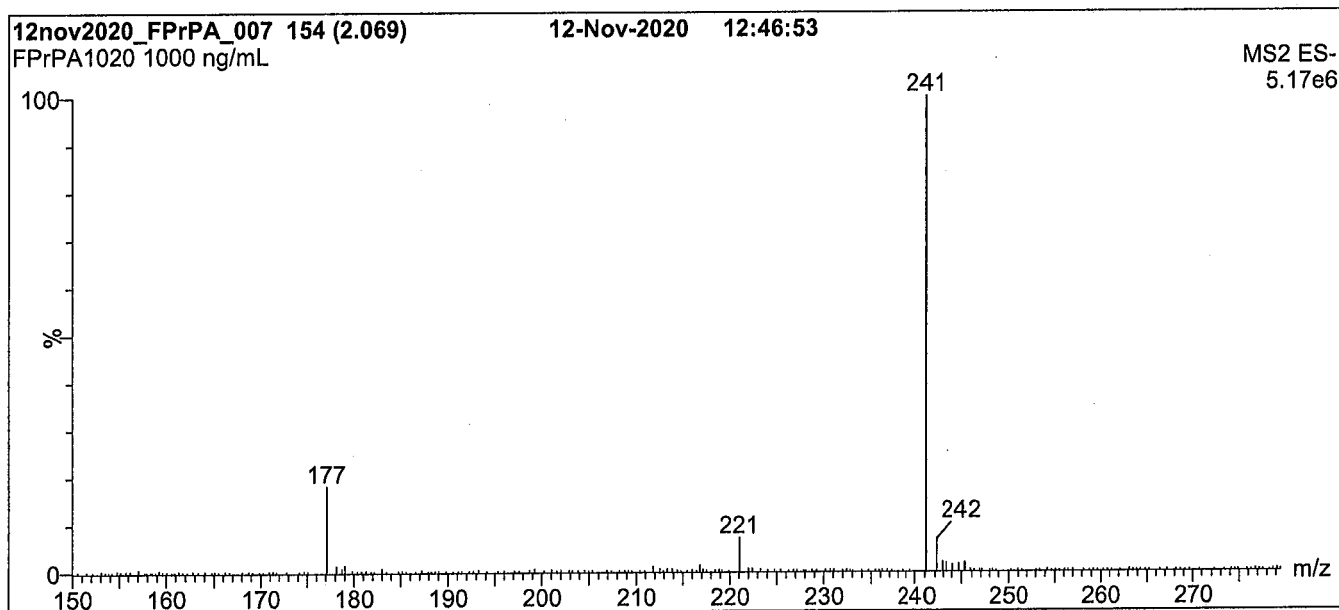
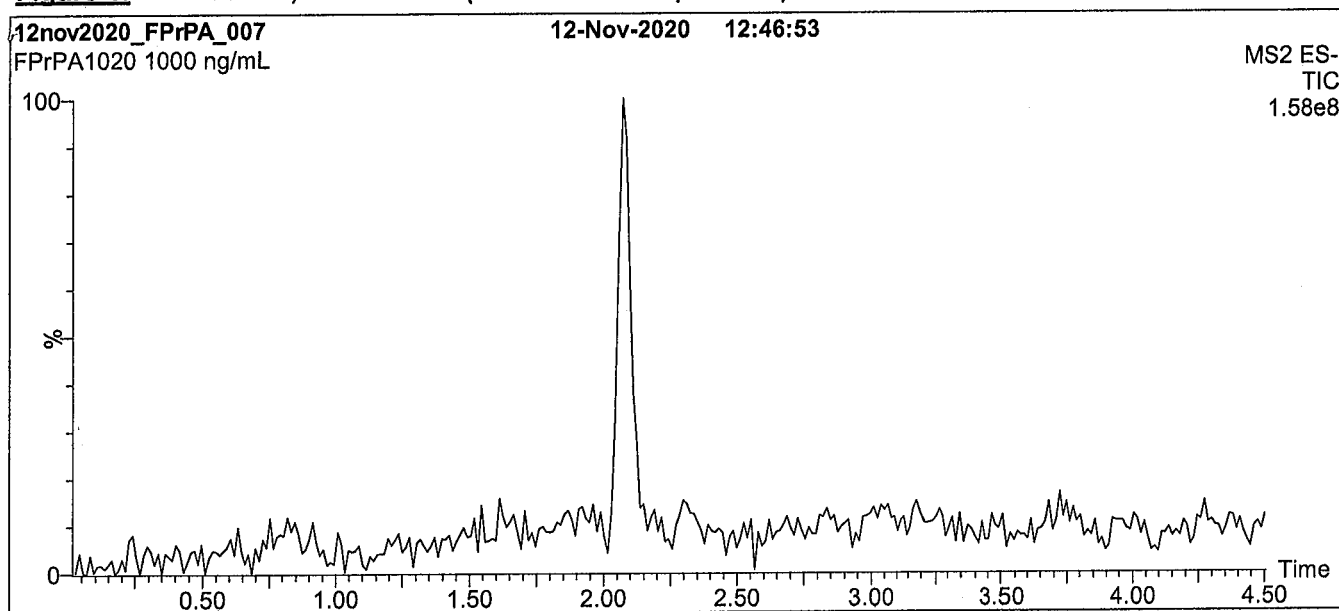
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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 or contact us directly at info@well-labs.com

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

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

Chromatographic Conditions:

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

Mobile phase: Gradient

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

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

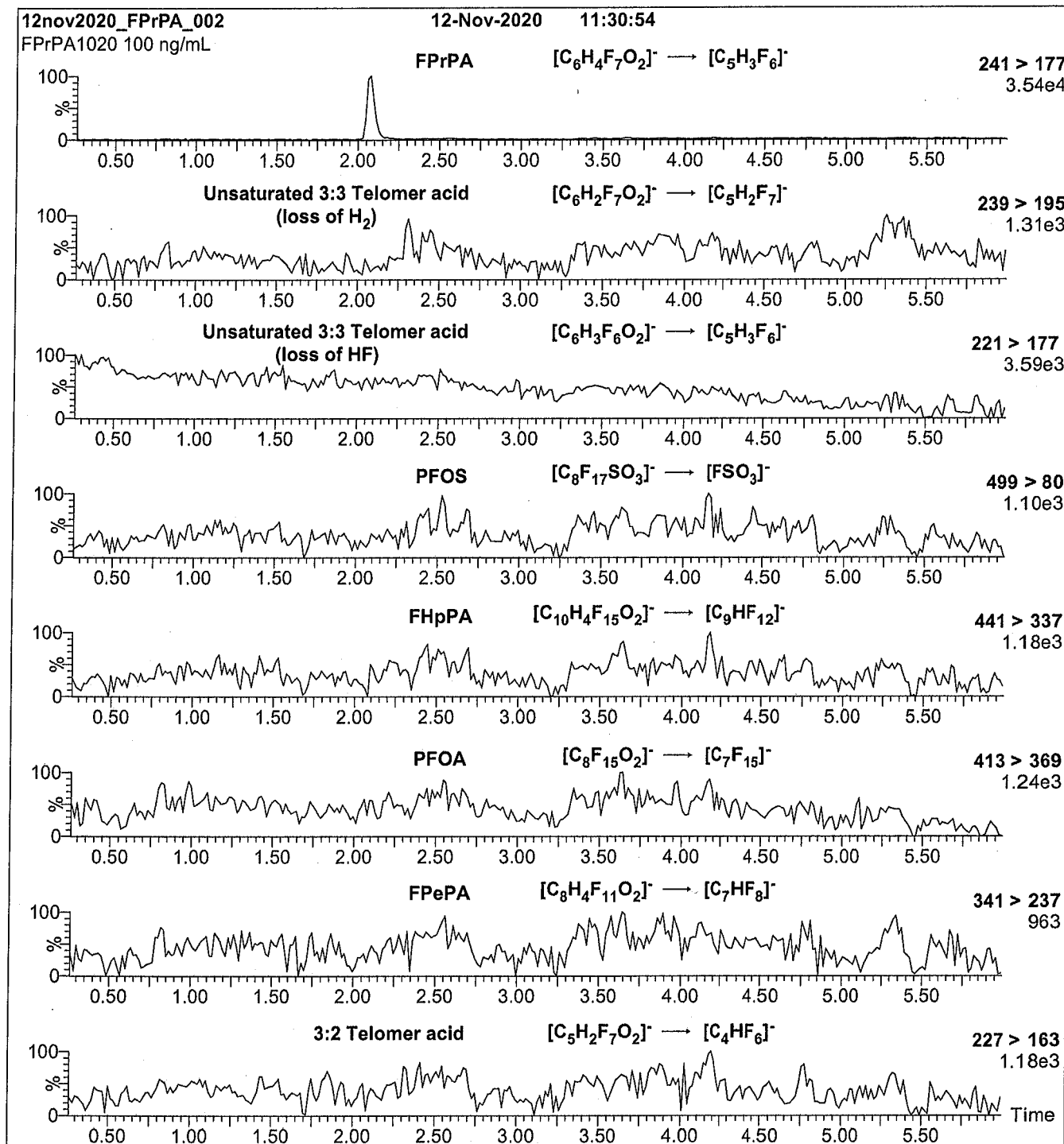
Source: Electrospray (negative)

Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 18.50

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

Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.49e-3

Collision Energy (eV) = 10

Analytical Standard Record

21L0004

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

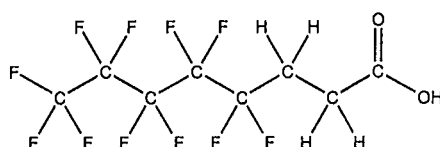
Analyte	Parent	CAS Number	Concentration	Units
3:3 FTA		113507-82-7	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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



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


DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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

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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:

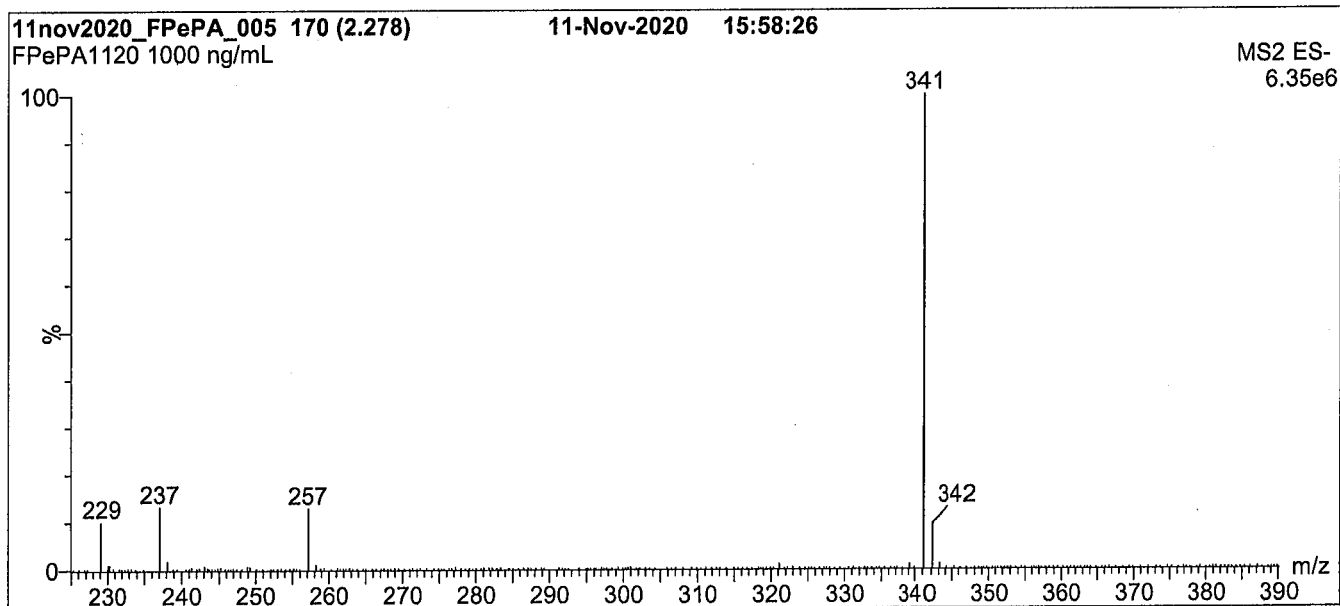
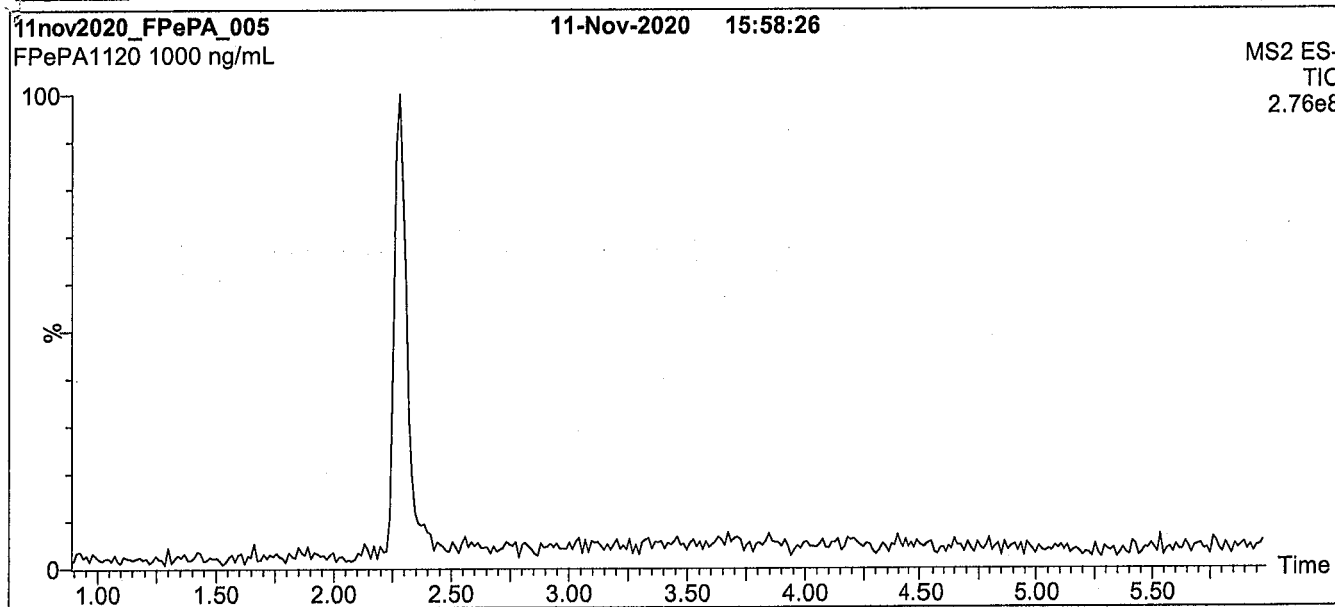
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Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

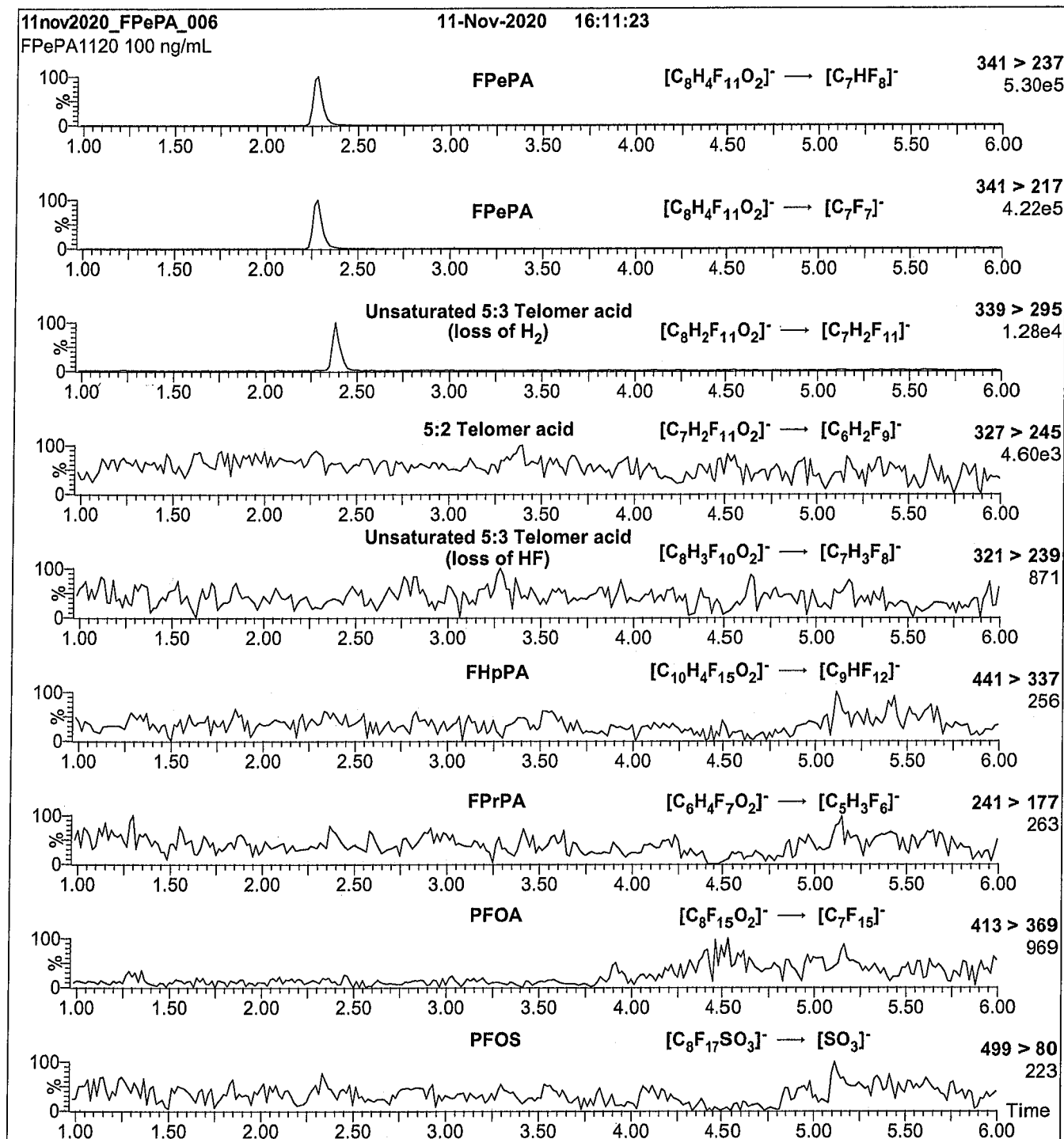
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 10

Analytical Standard Record

21L0005

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

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

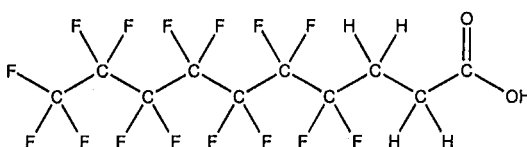


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 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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LIMITED WARRANTY:

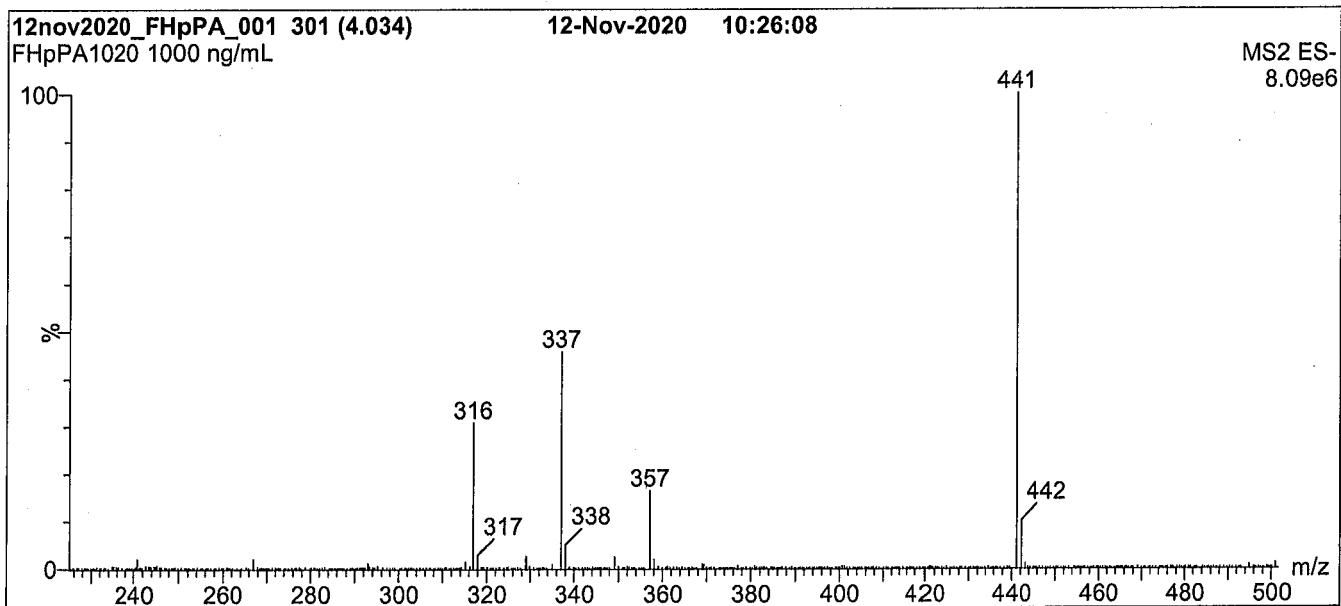
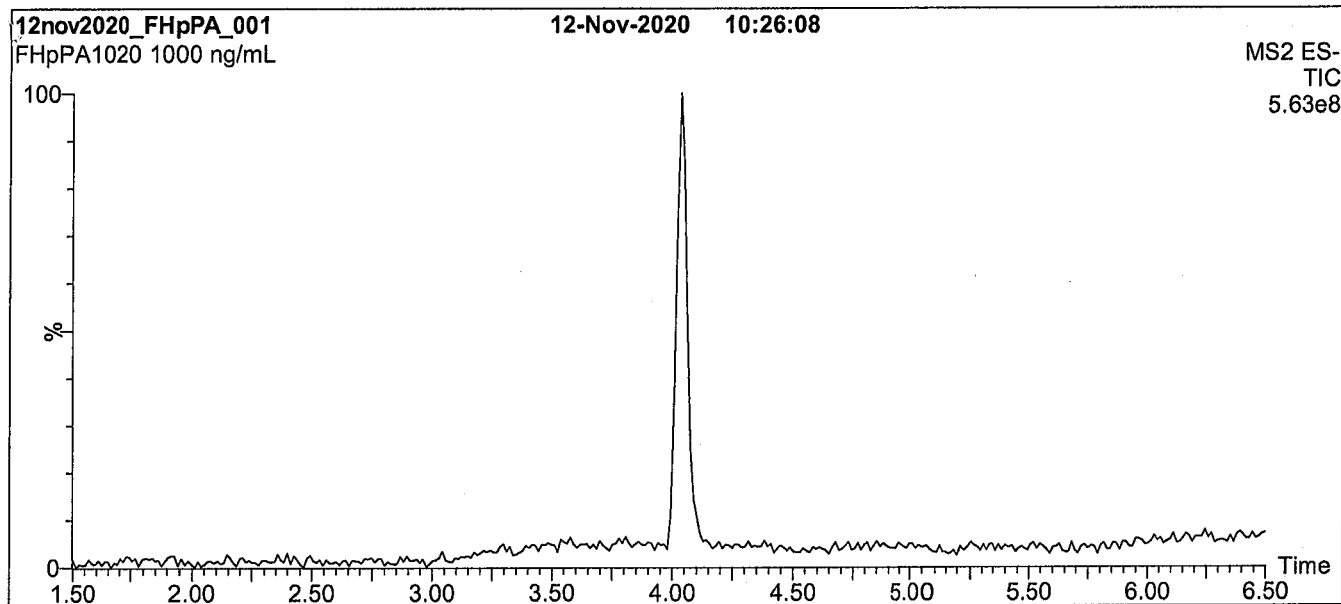
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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

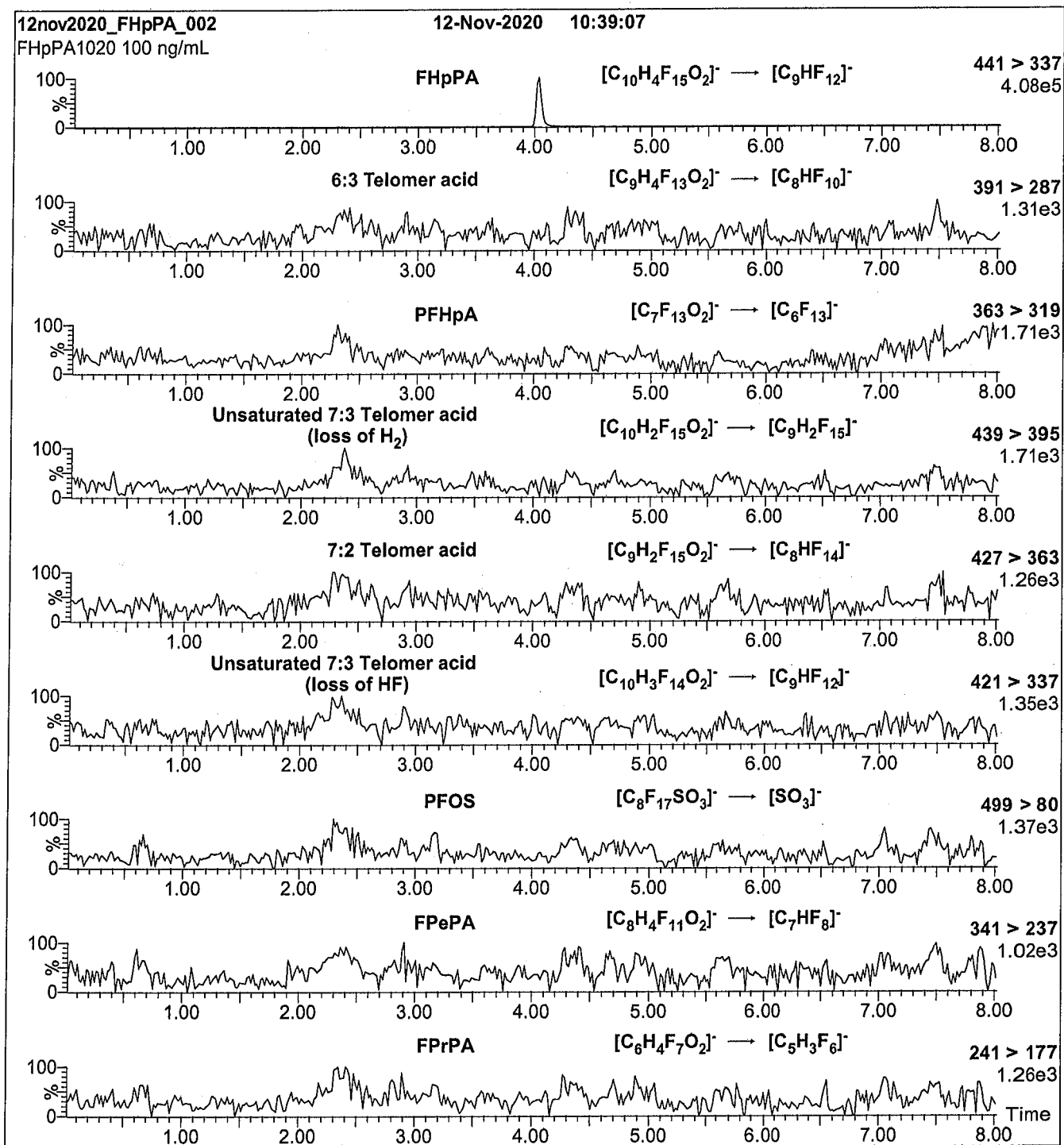
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 8

Analytical Standard Record

21L0007

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

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

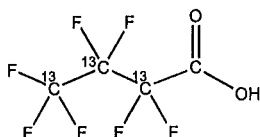


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²CHF₇O₂ **MOLECULAR WEIGHT:** 217.02
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (2,3,4-¹³C₃)
LAST TESTED: (mm/dd/yyyy) 08/19/2021
EXPIRY DATE: (mm/dd/yyyy) 08/19/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~0.2% of perfluoro-n-(¹³C₃)propanoic acid and also contains ~1.0% of perfluoro-n-(1,2,3,4-¹³C₄)butanoic acid due to the naturally occurring isotopic abundance of ¹³C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

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

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

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HOMOGENEITY:

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

UNCERTAINTY:

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

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

x_1, x_2, \dots, x_n on which it depends is:

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

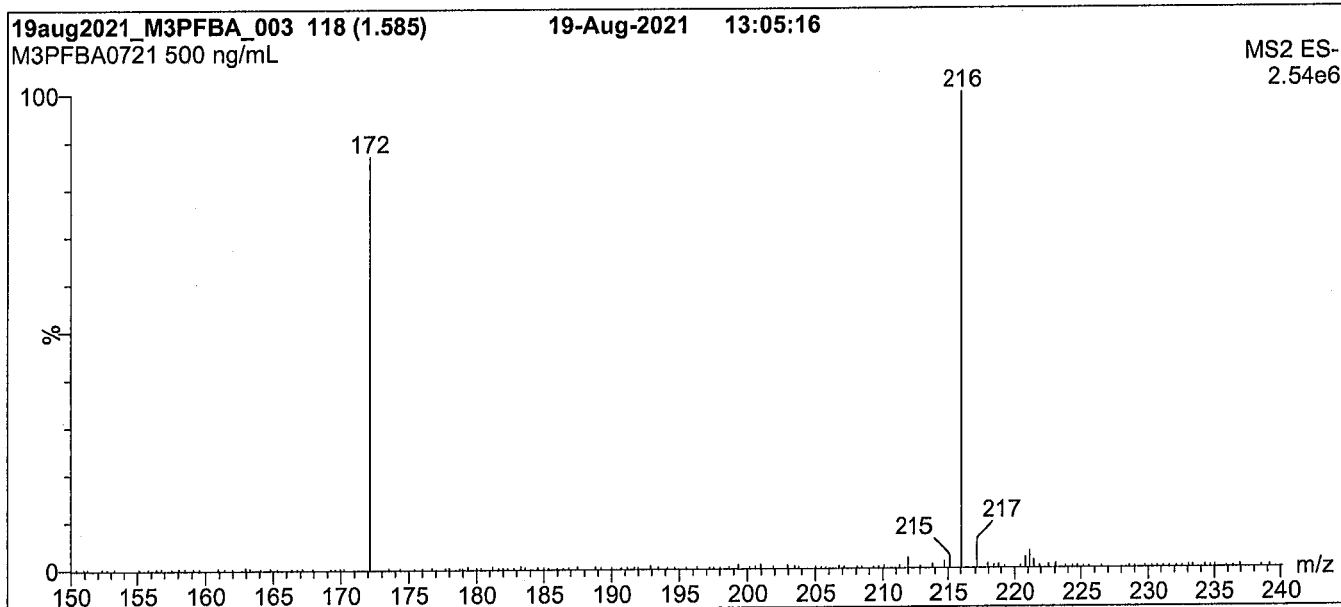
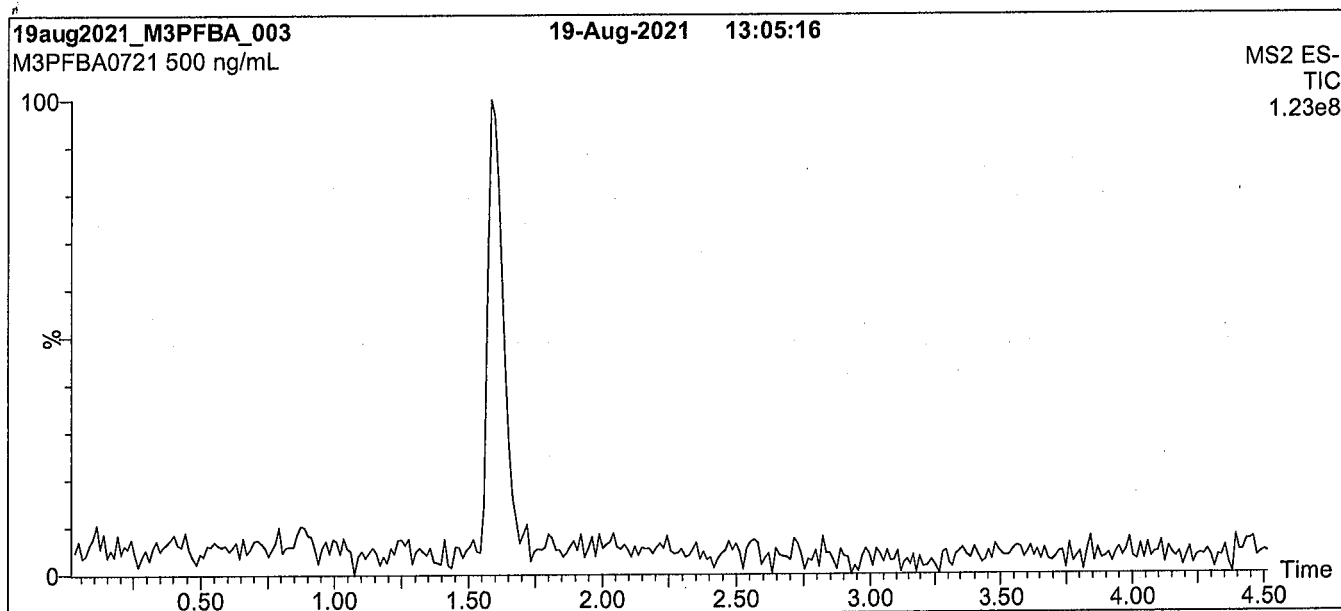
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QUALITY MANAGEMENT:

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

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

Chromatographic Conditions:

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

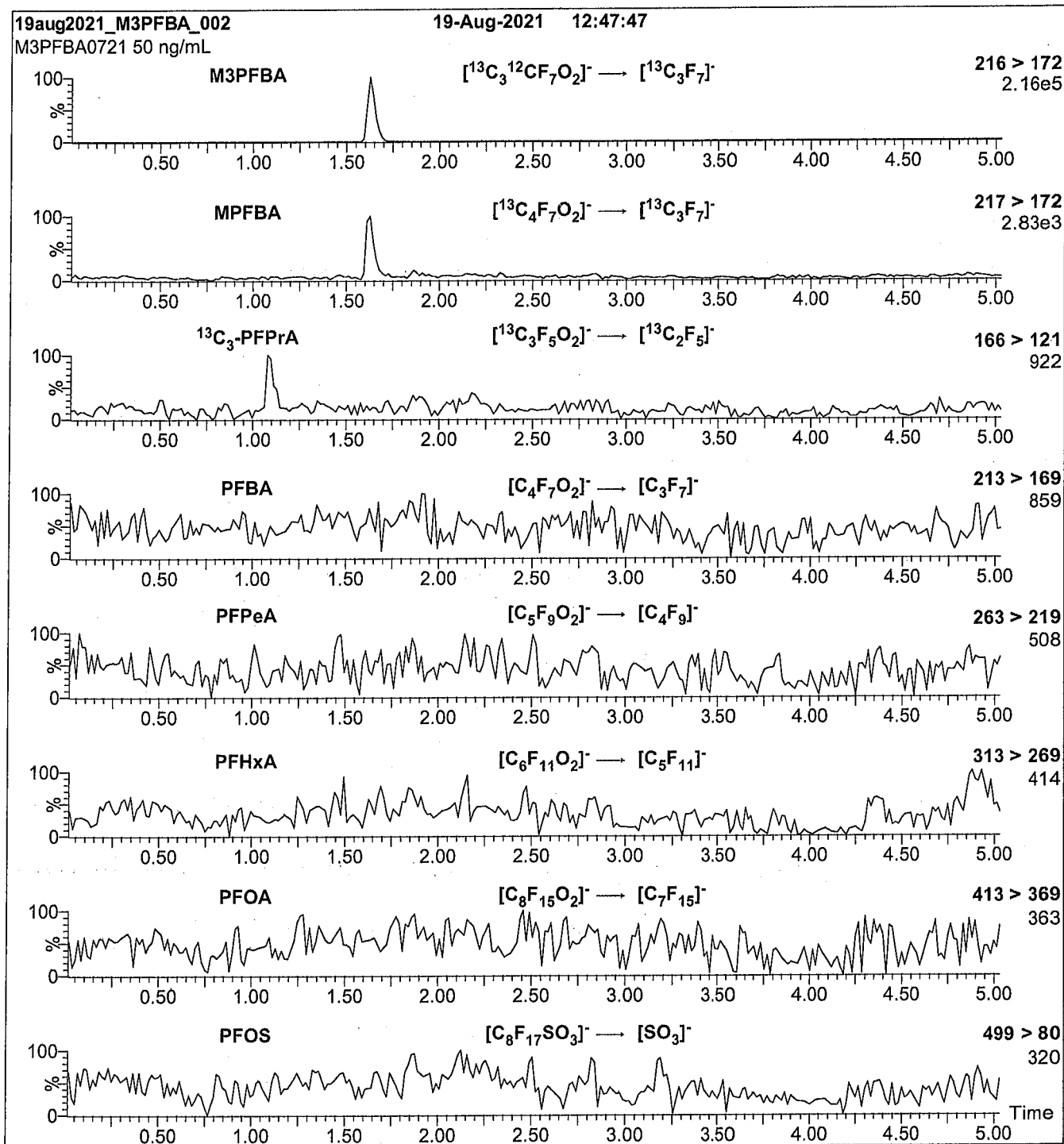
Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

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

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

Injection: On-column (M3PFBA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.45e-3

Collision Energy (eV) = 8

Analytical Standard Record

22A0116

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

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

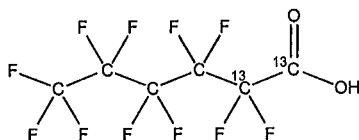


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA **LOT NUMBER:** MPFHxA0921
COMPOUND: Perfluoro-n-(1,2-¹³C₂)hexanoic acid

STRUCTURE: **CAS #:** 960315-47-3



MOLECULAR FORMULA: ¹³C₂¹²C₄HF₁₁O₂ **MOLECULAR WEIGHT:** 316.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 10/04/2021
EXPIRY DATE: (mm/dd/yyyy) 10/04/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 10/22/2021
 (mm/dd/yyyy)

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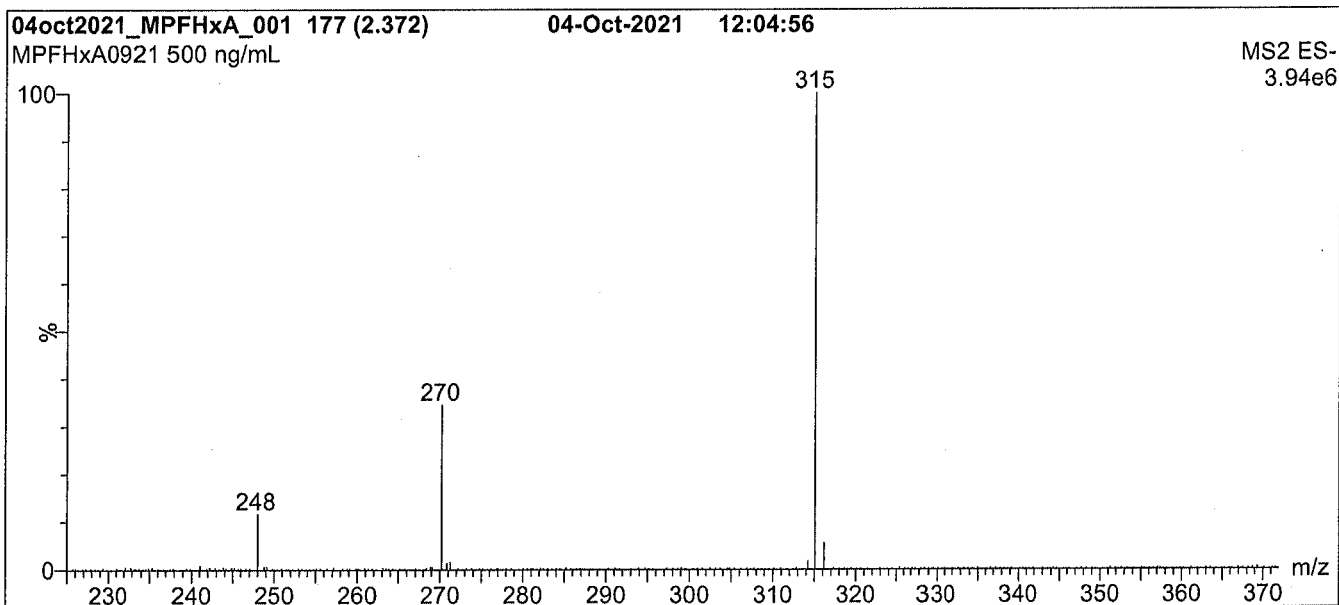
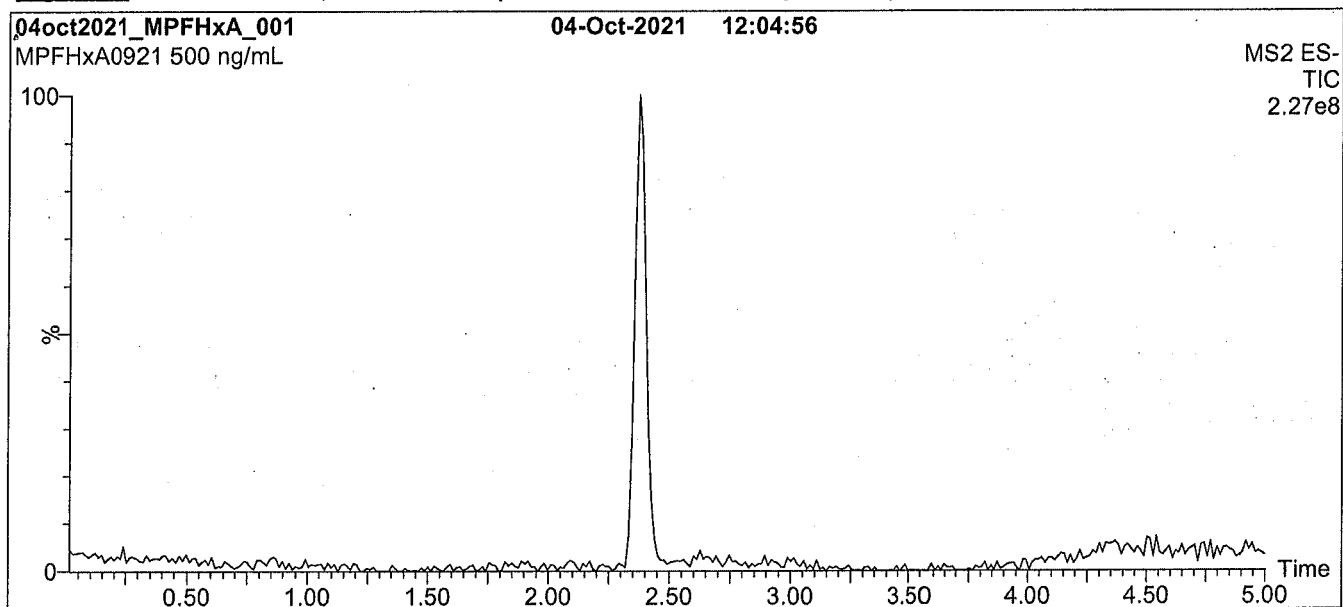
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Figure 1: MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

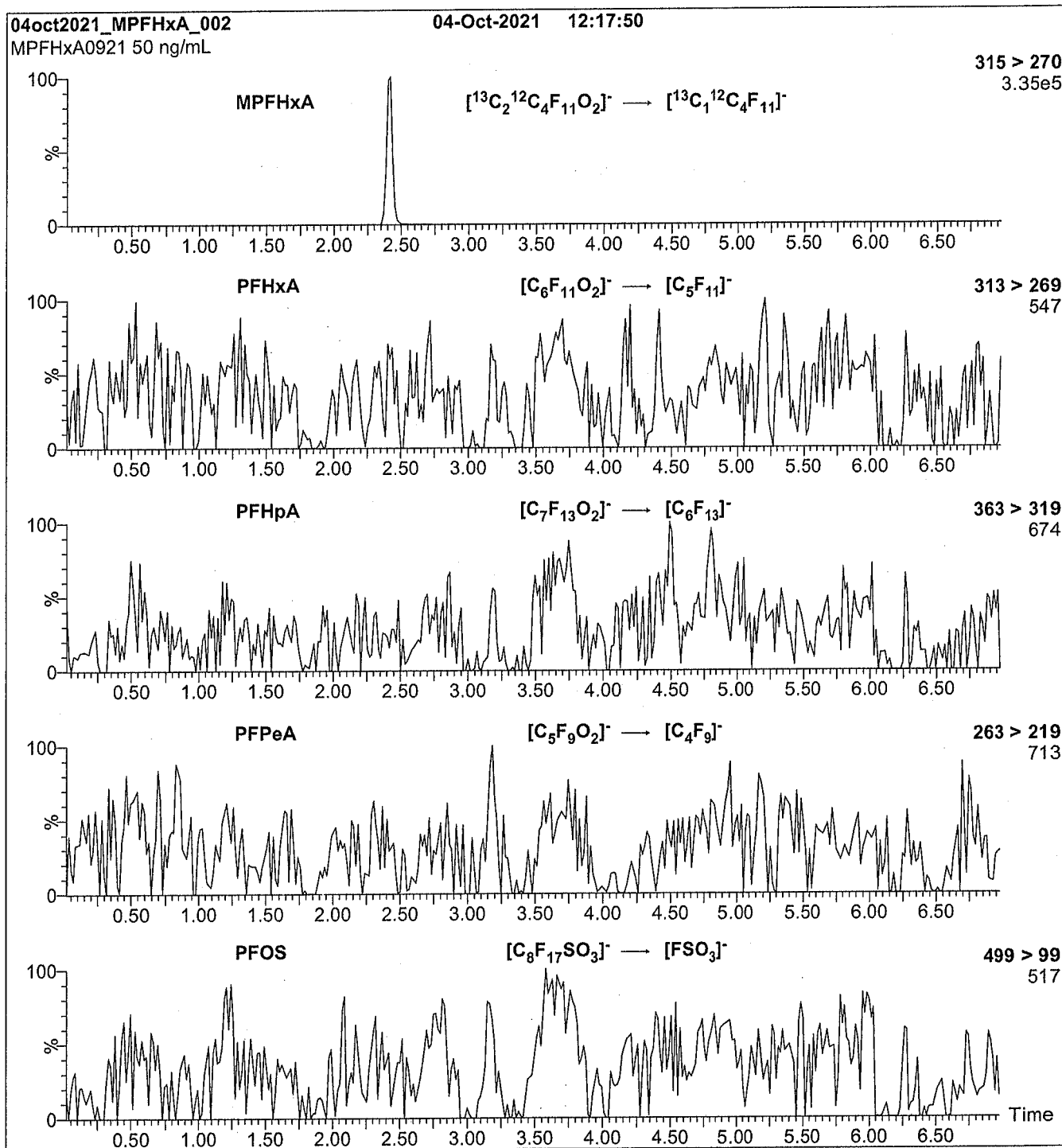
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°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
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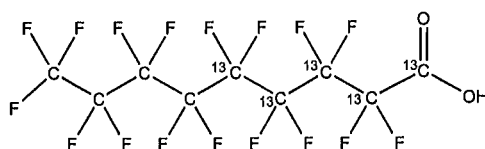
Analyte	Parent	CAS Number	Concentration	Units
13C2-PFHxA		13C2-PFHxA	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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



MOLECULAR FORMULA: $^{13}\text{C}_5^{12}\text{C}_4\text{HF}_{17}\text{O}_2$ **MOLECULAR WEIGHT:** 469.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4,5-¹³C₅)
LAST TESTED: (mm/dd/yyyy) 10/29/2021
EXPIRY DATE: (mm/dd/yyyy) 10/29/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:


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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 11/01/2021
 (mm/dd/yyyy)

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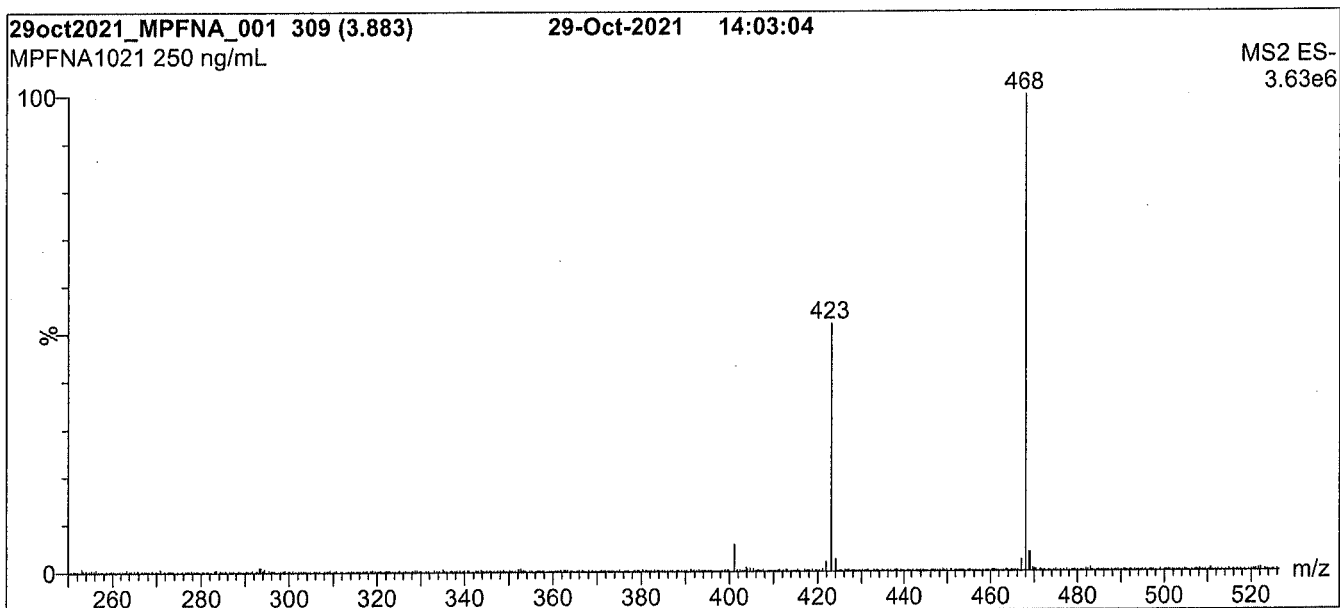
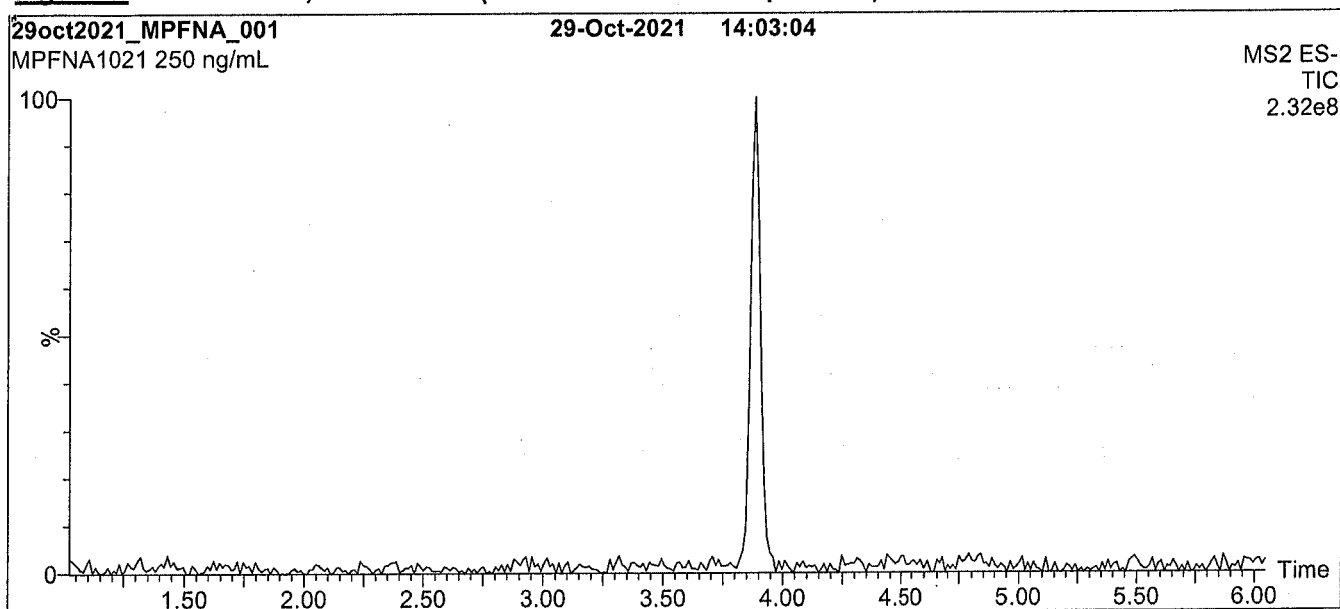
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Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

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

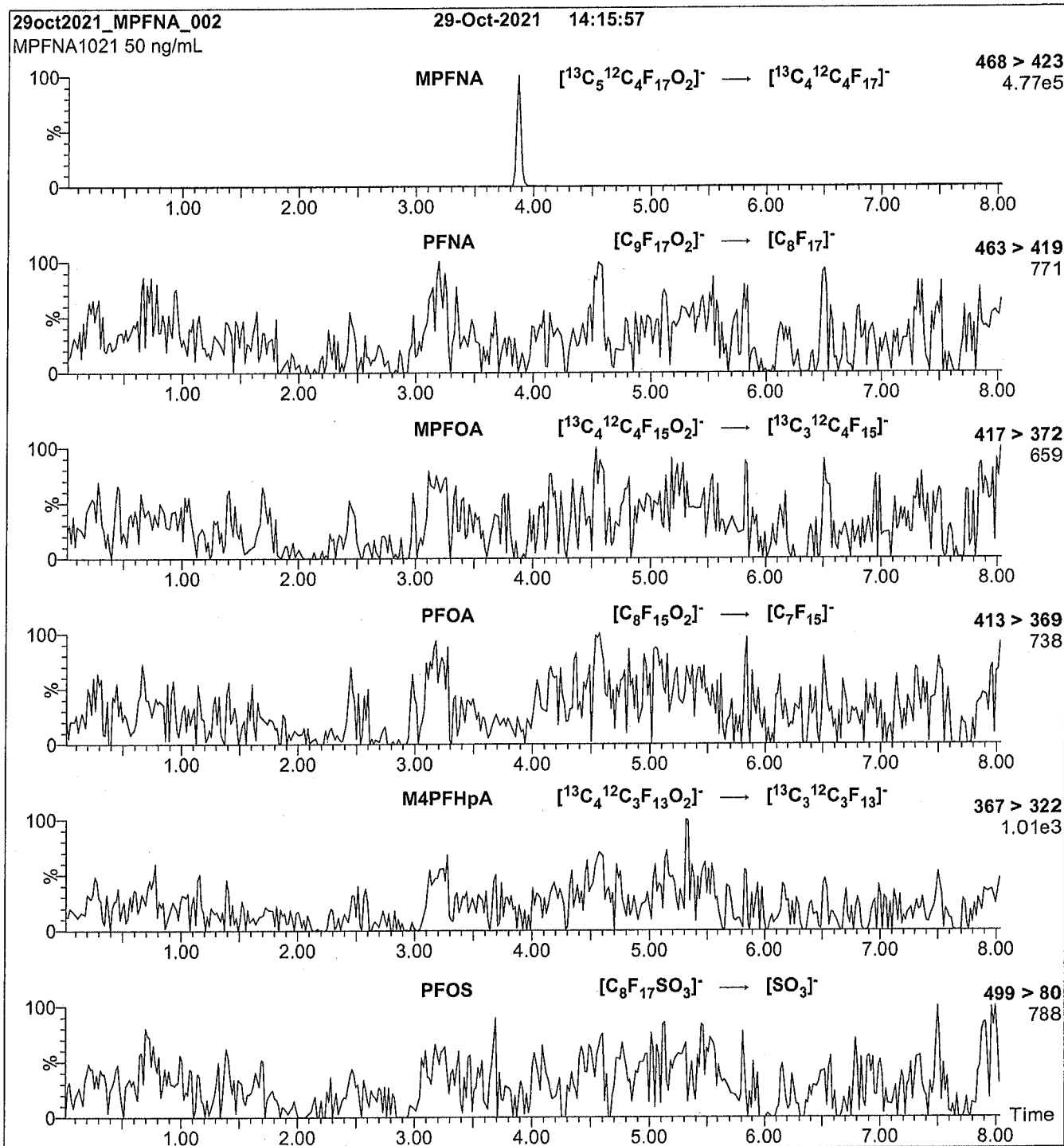
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 10

Analytical Standard Record

22A0118

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

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

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22A0118

Description:	PFAS - IIS MPFNA 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
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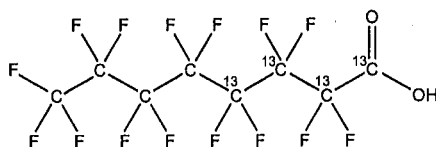
Analyte	Parent	CAS Number	Concentration	Units
13C5-PFNA		13C5-PFNA	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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



MOLECULAR FORMULA: ¹³C₄¹²C₄HF₁₅O₂ **MOLECULAR WEIGHT:** 418.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4-¹³C₄)
LAST TESTED: (mm/dd/yyyy) 12/07/2021
EXPIRY DATE: (mm/dd/yyyy) 12/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

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

LIMITED WARRANTY:

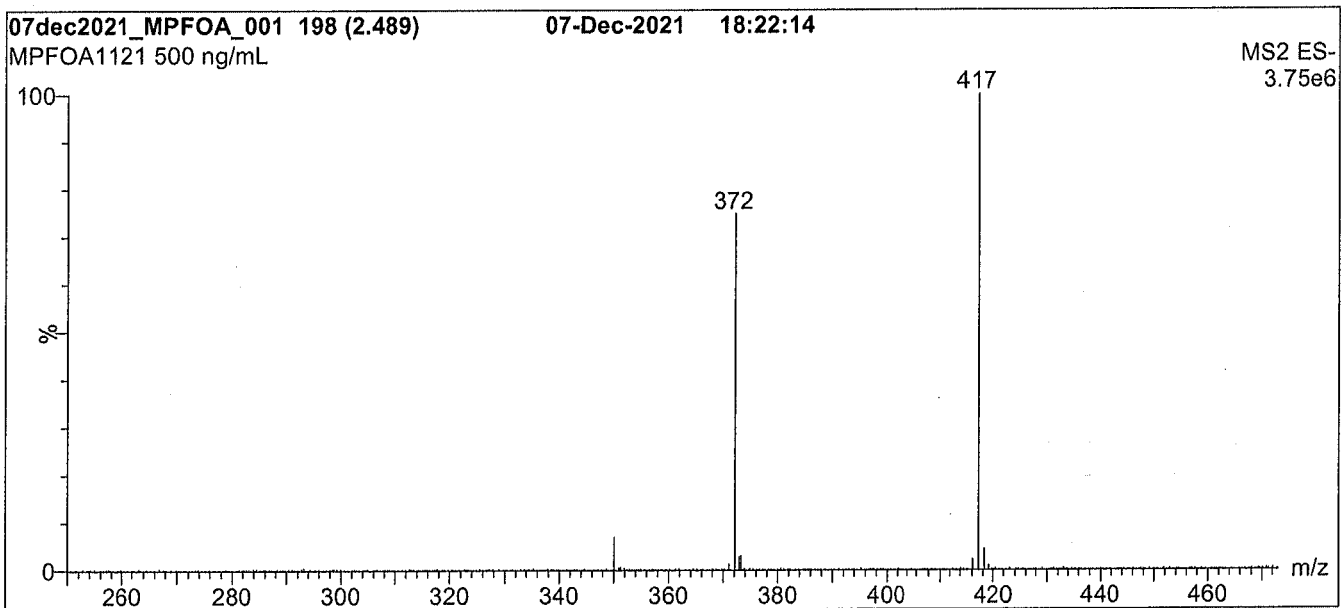
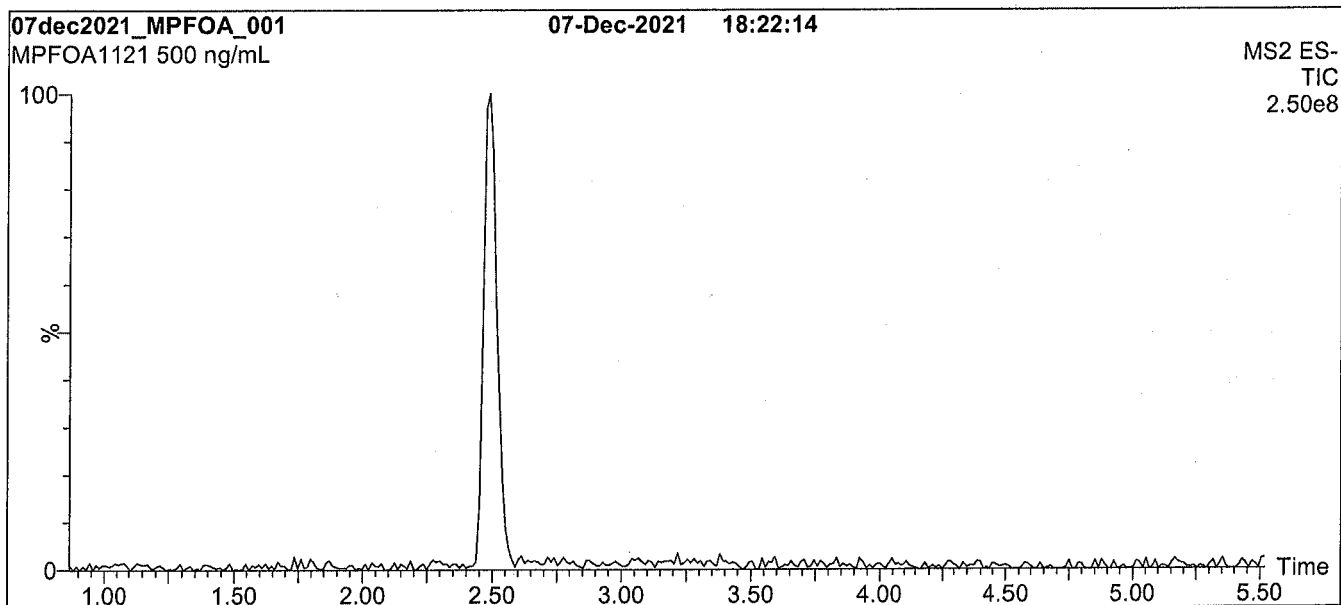
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

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

Chromatographic Conditions:

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

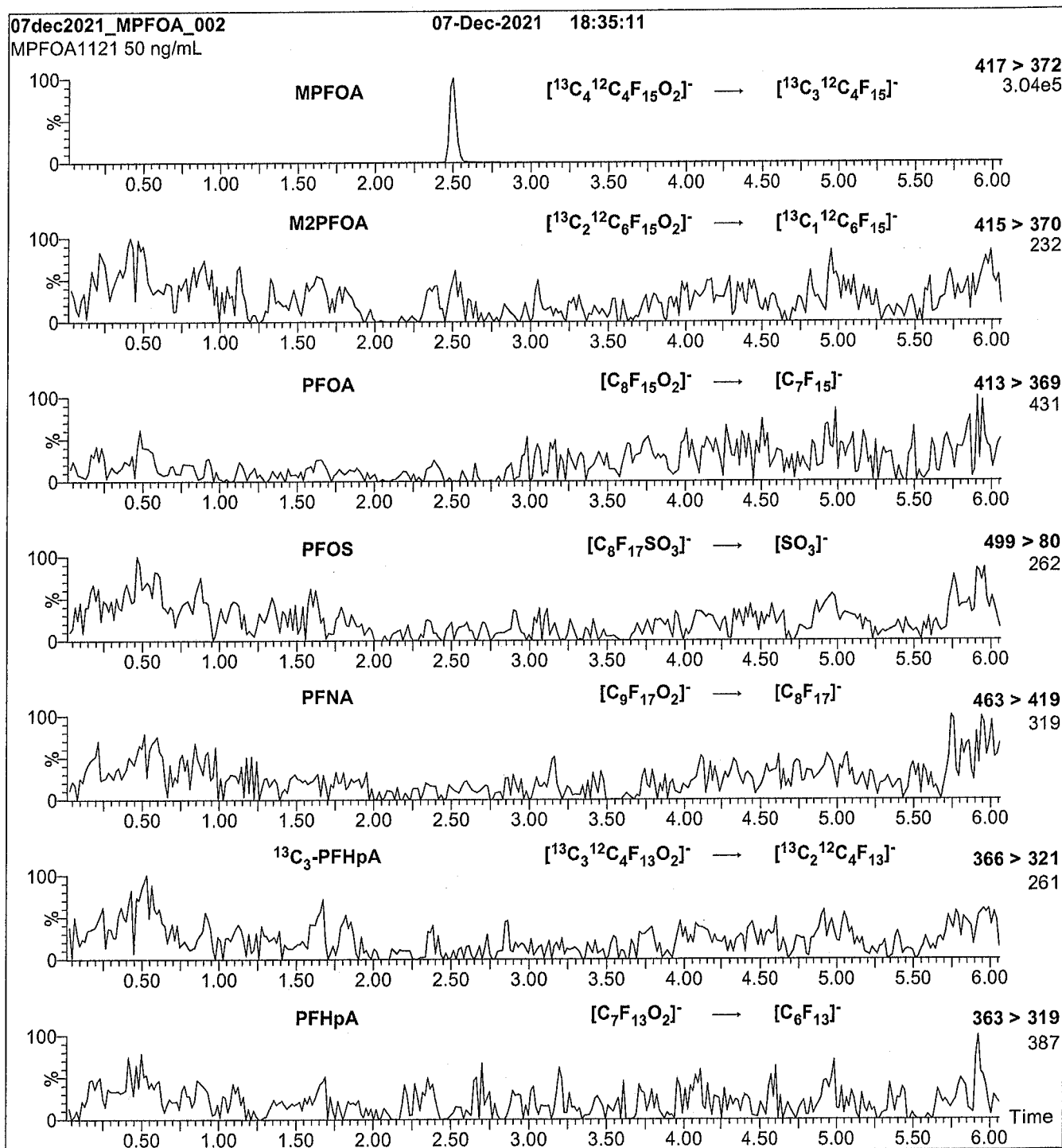
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

Injection: On-column (MPFOA)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 8

Analytical Standard Record

22A0119

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

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

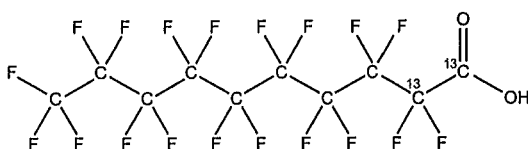


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

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



MOLECULAR FORMULA: ¹³C₂¹²C₈HF₁₉O₂ **MOLECULAR WEIGHT:** 516.07
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 12/08/2021
EXPIRY DATE: (mm/dd/yyyy) 12/08/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 12/13/2021
 (mm/dd/yyyy)

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

INTENDED USE:

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:

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LIMITED WARRANTY:

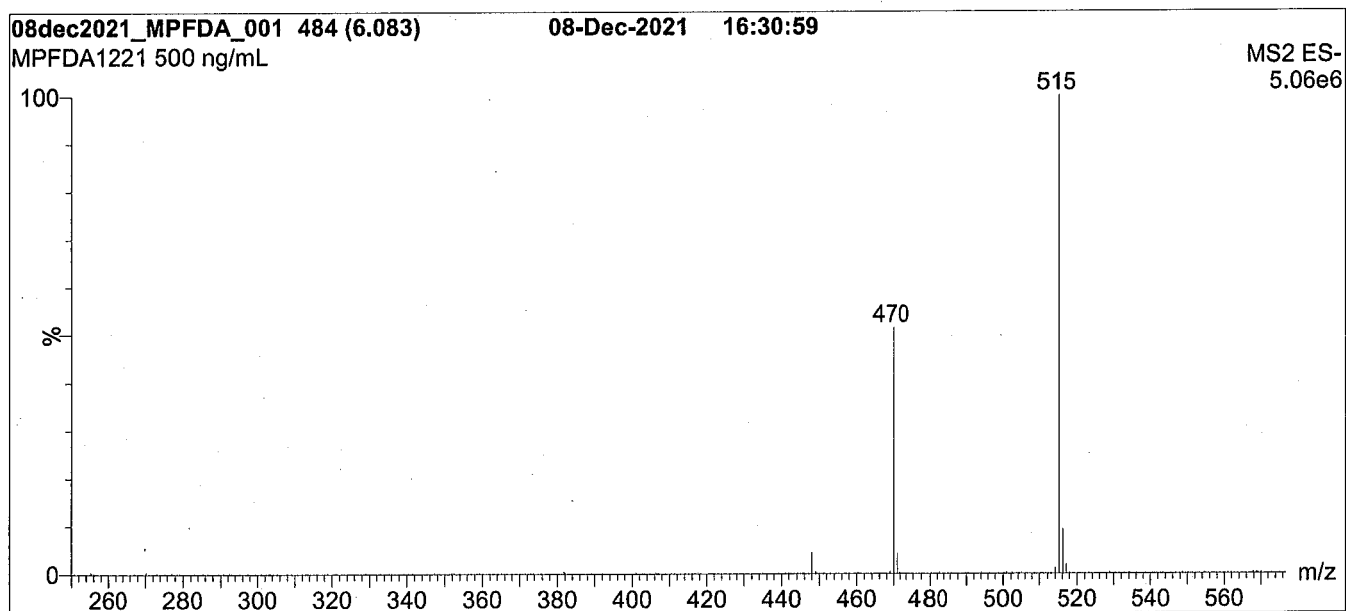
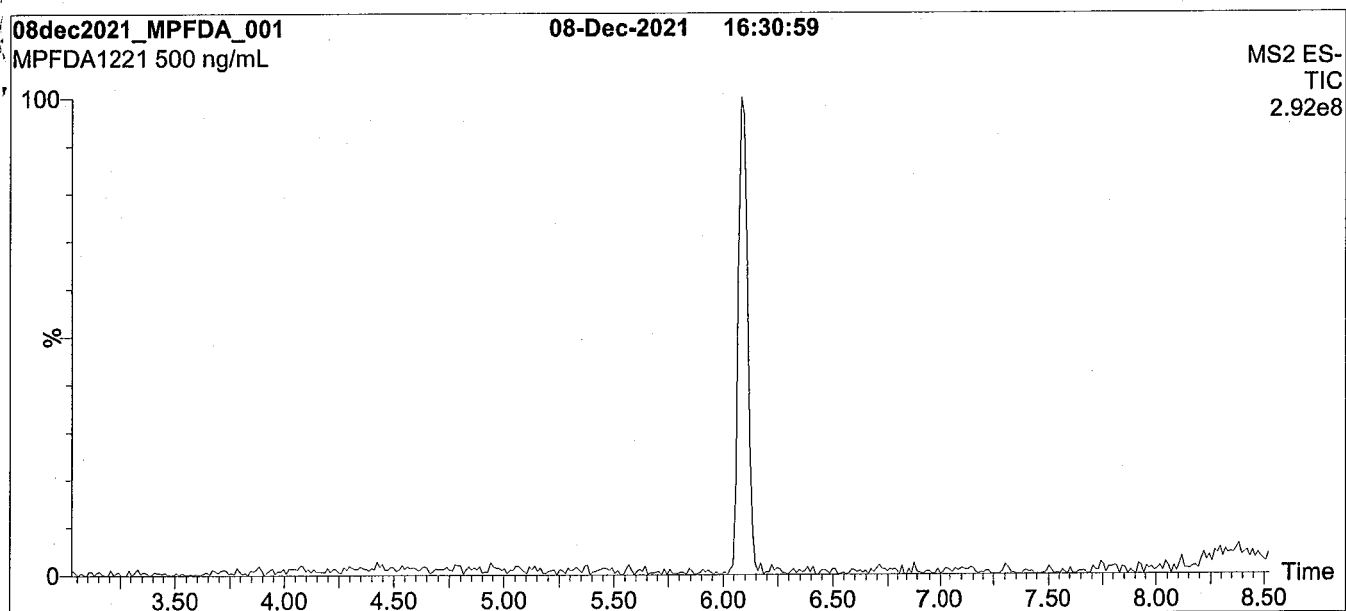
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

Chromatographic Conditions:

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

Mobile phase: Gradient

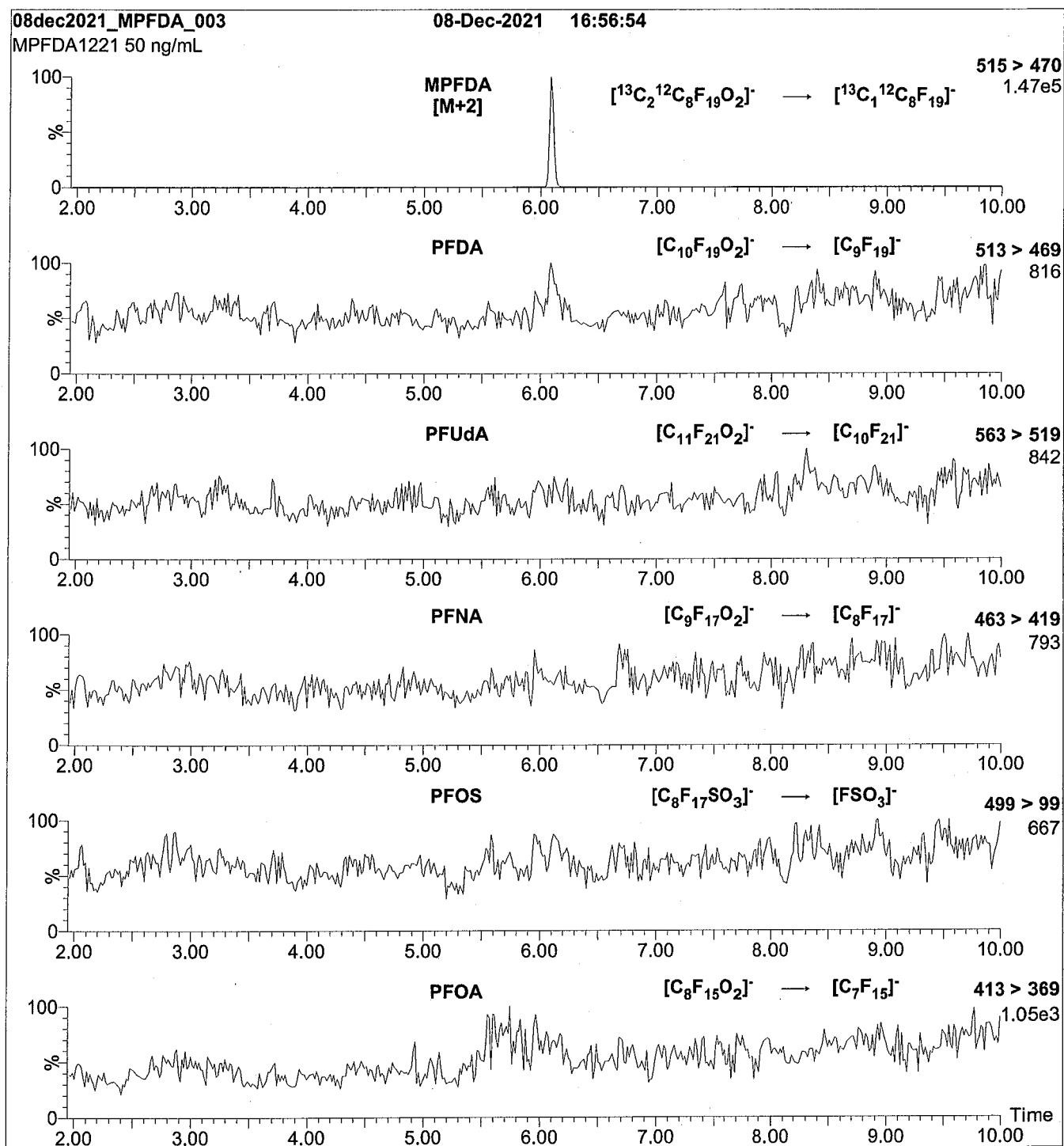
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300 μ 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

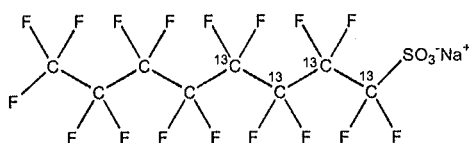


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

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



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

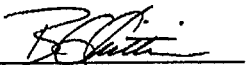
DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.4% sodium perfluoro-1-(¹³C₃)heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

INTENDED USE:

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HOMOGENEITY:

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

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LIMITED WARRANTY:

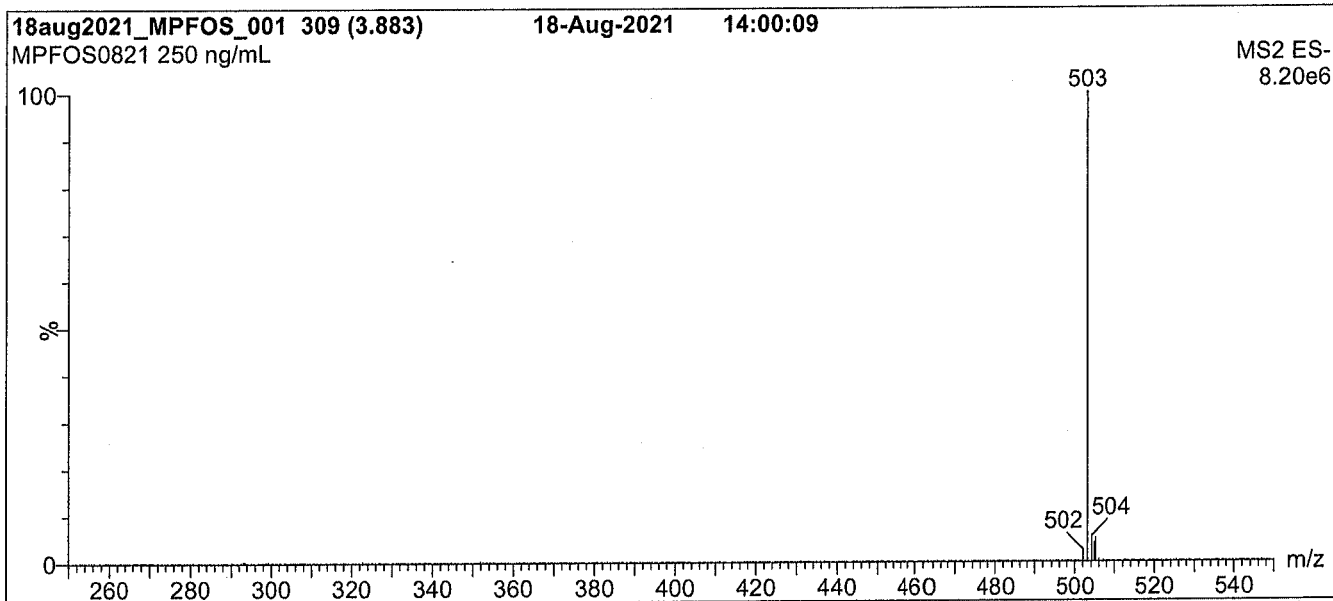
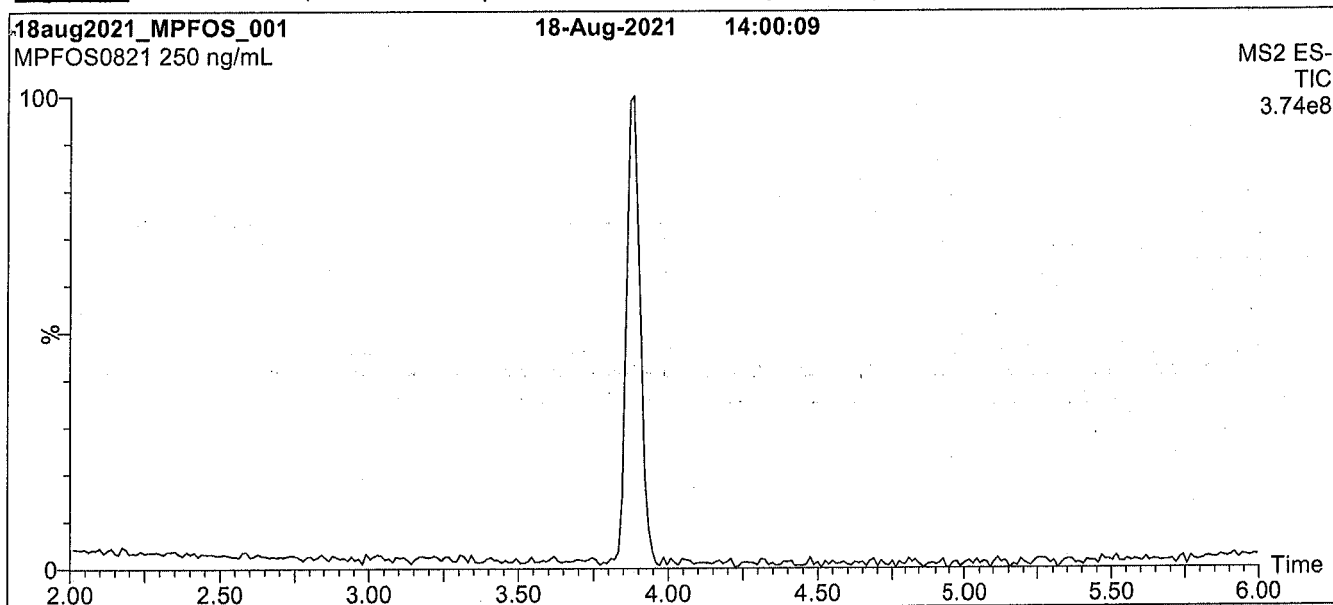
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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

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

Chromatographic Conditions:

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

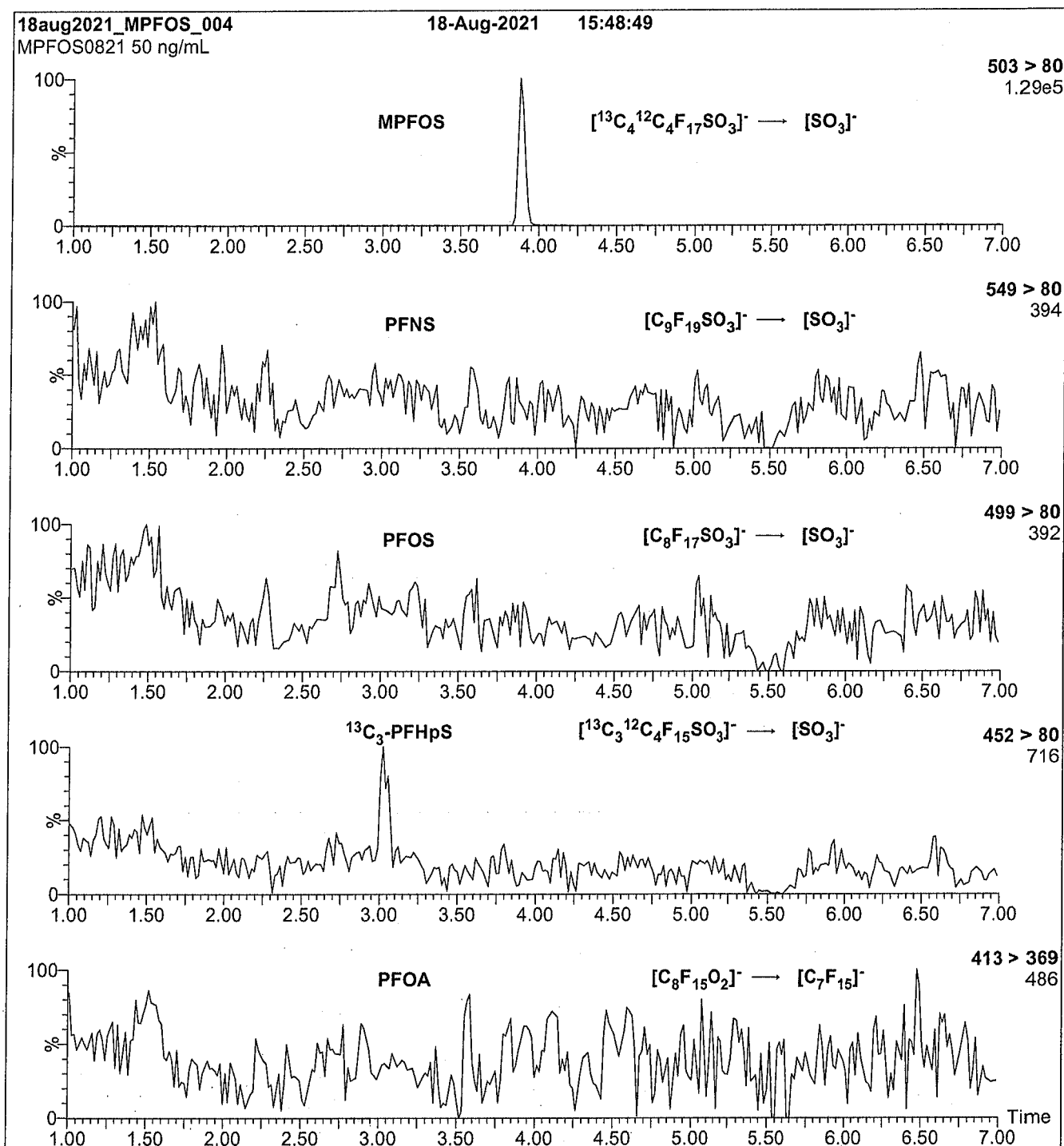
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

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

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 42

Analytical Standard Record

22A0121

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

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

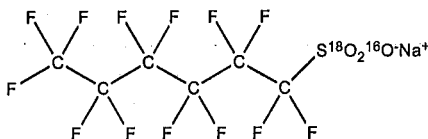


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

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

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



MOLECULAR FORMULA: C₆F₁₃S¹⁸O₂¹⁶ONa **MOLECULAR WEIGHT:** 426.10
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 47.4 ± 2.4 µg/mL (MPFHxS acid)
 47.3 ± 2.4 µg/mL (MPFHxS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** >94% (¹⁸O₂)
LAST TESTED: (mm/dd/yyyy) 10/29/2021
EXPIRY DATE: (mm/dd/yyyy) 10/29/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:


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

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS (C₆F₁₃S¹⁸O₂¹⁶O) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁸O₃) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane(¹⁸O₂)sulfonate (¹⁸O₂-PFOS) and ~0.3% of sodium perfluoro-1-heptane(¹⁸O₂)sulfonate (¹⁸O₂-PFHpS).
- Due to the isotopic purity of the starting material (¹⁸O₂ >94%), MPFHxS contains ~0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

INTENDED USE:

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

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LIMITED WARRANTY:

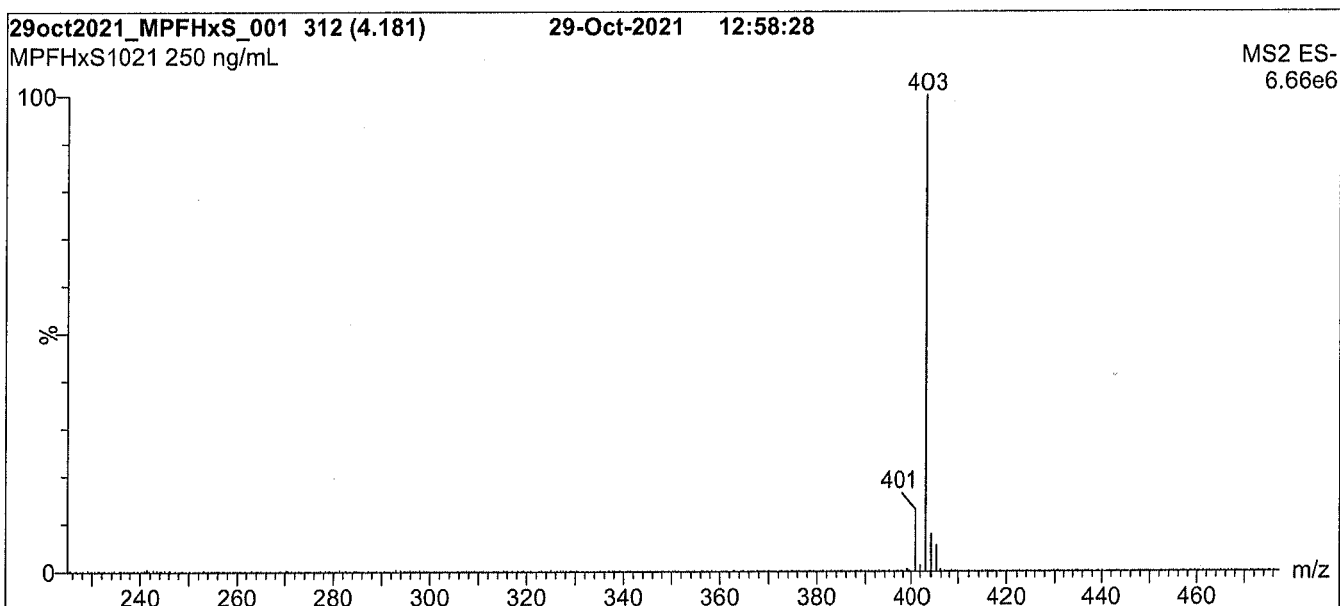
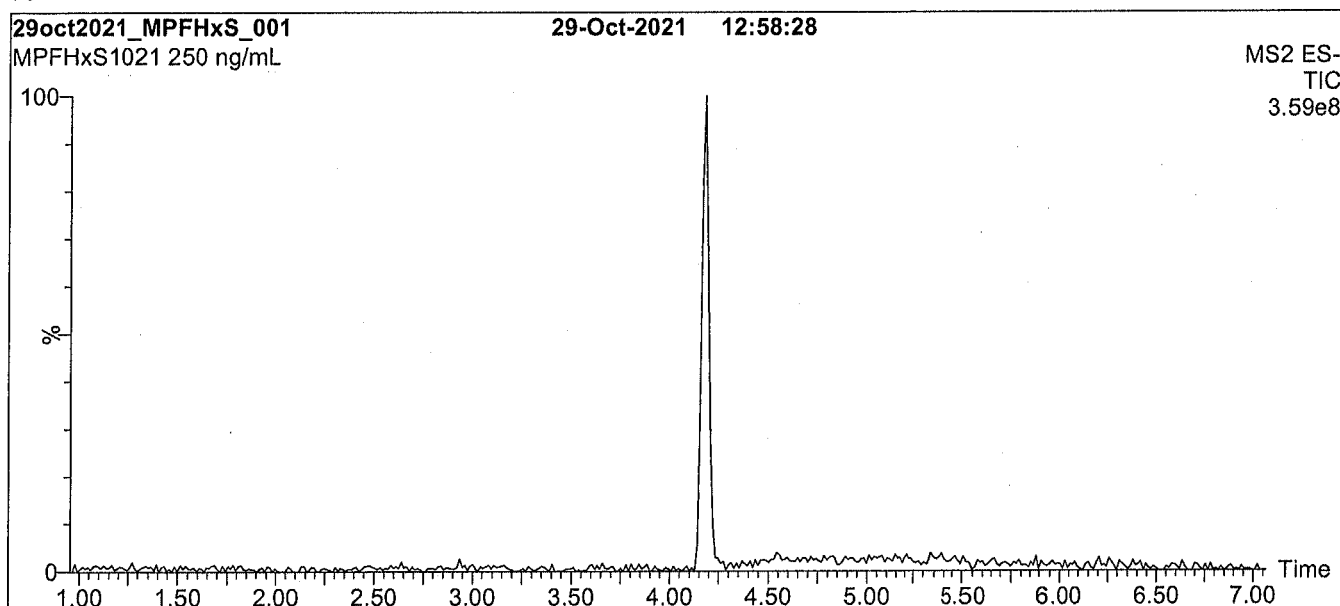
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Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

Mobile phase: Gradient

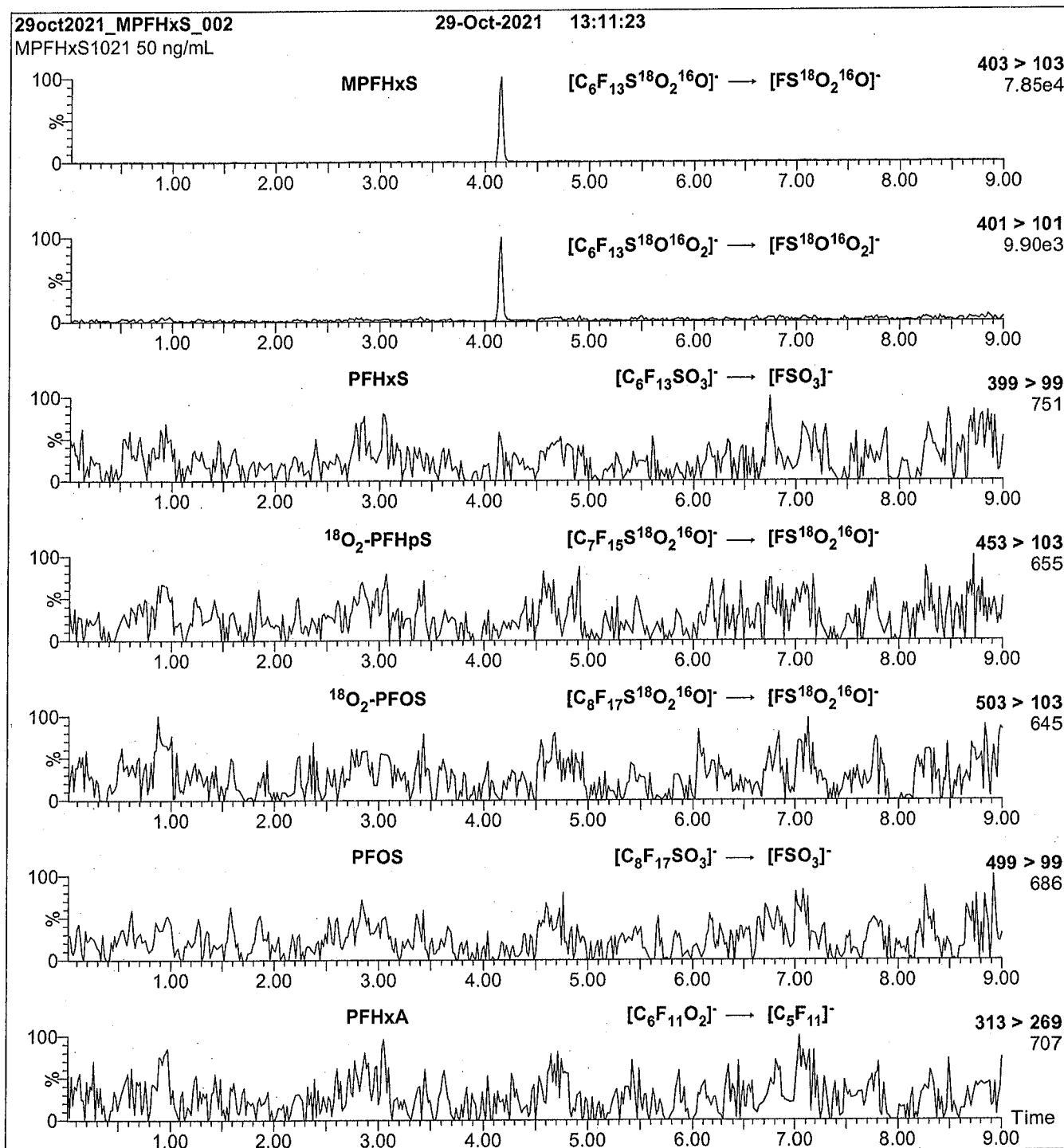
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 32

Analytical Standard Record

22A0122

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

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

Analytical Standard Record

22A0122

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

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

Calbiochem®



Certificate of Analysis

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

Batch Number: 3761825
Material Number: 580221-5GM
Molecular Formula: C₂₆H₄₄NO₆S · 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
Solubility:		H ₂ O (100 mg/ml)
Chloride:		<0.01%
Loss on drying:	≤5.0 %	0.1%
Color:		White
Form:		Powder
TLC:	≥95.0 %	≥95.00%
IR:		Conforms to reference
Optical rotation:	35.0 ° - 39.0 °	+36.38°
Water by Karl Fischer:	≤5.0 %	2.86%
Carbon:	≥0.00 %	57.78%
Hydrogen:	≥0.00 %	8.32 %
Nitrogen:	≥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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EMD Millipore Corporation | 28820 Single Oak Dr., Temecula, CA 92590

Technical Support NA +1-800-221-1975 | email: www.millipore.com/techservices | www.calbiochem.com

Technical Support All Other Countries - Contact Your Local Office

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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

Analyte	Parent	CAS Number	Concentration	Units
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

Analyte	Parent	CAS Number	Concentration	Units
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

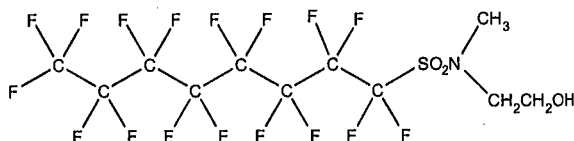


WELLINGTON LABORATORIES

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: C₁₁H₈F₁₇NO₃S **MOLECULAR WEIGHT:** 557.22
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/22/2021 (HRGC/LRMS)
 09/23/2021 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 09/23/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 09/28/2021
 (mm/dd/yyyy)

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

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SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

x_1, x_2, \dots, x_n on which it depends is:

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

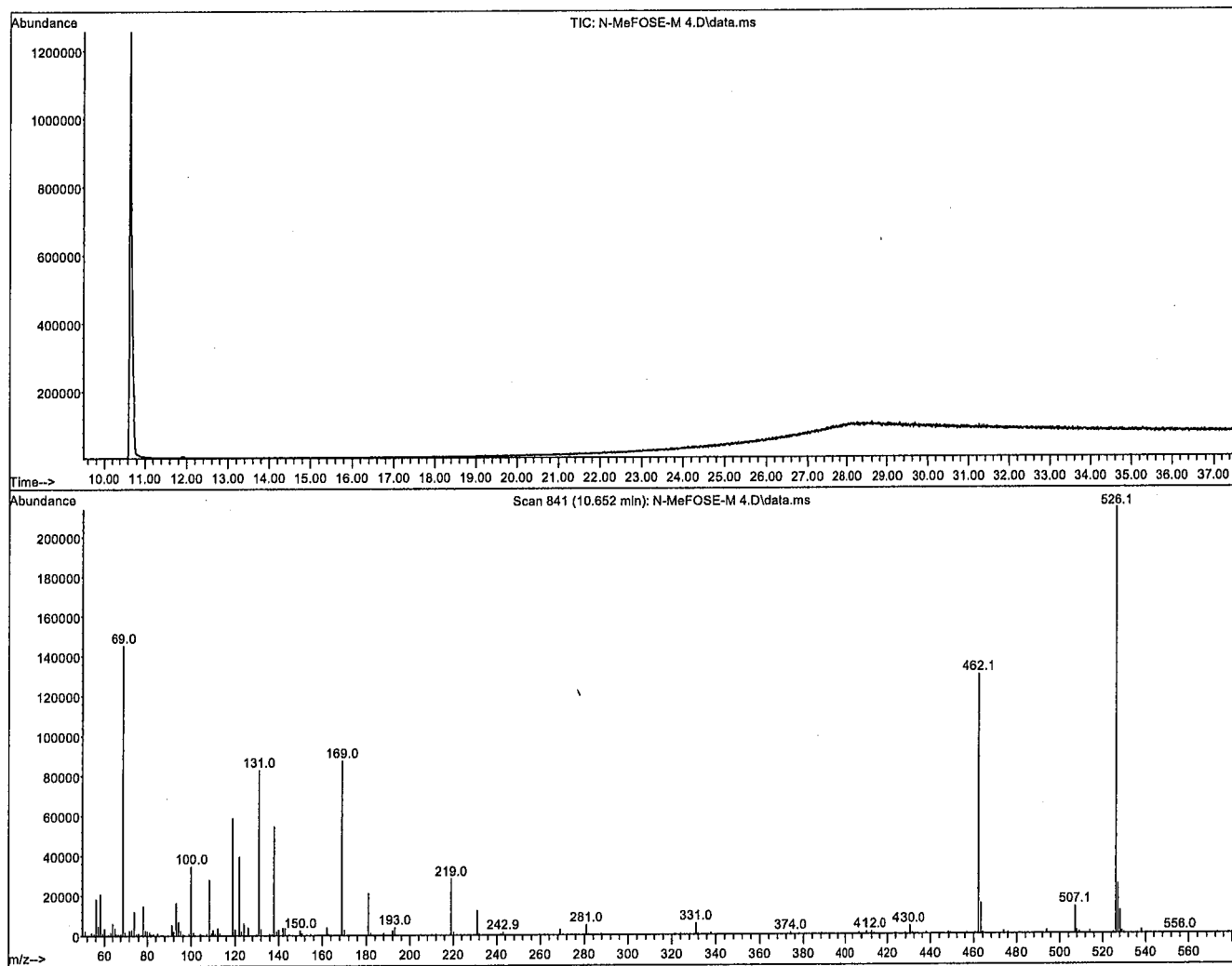
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

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

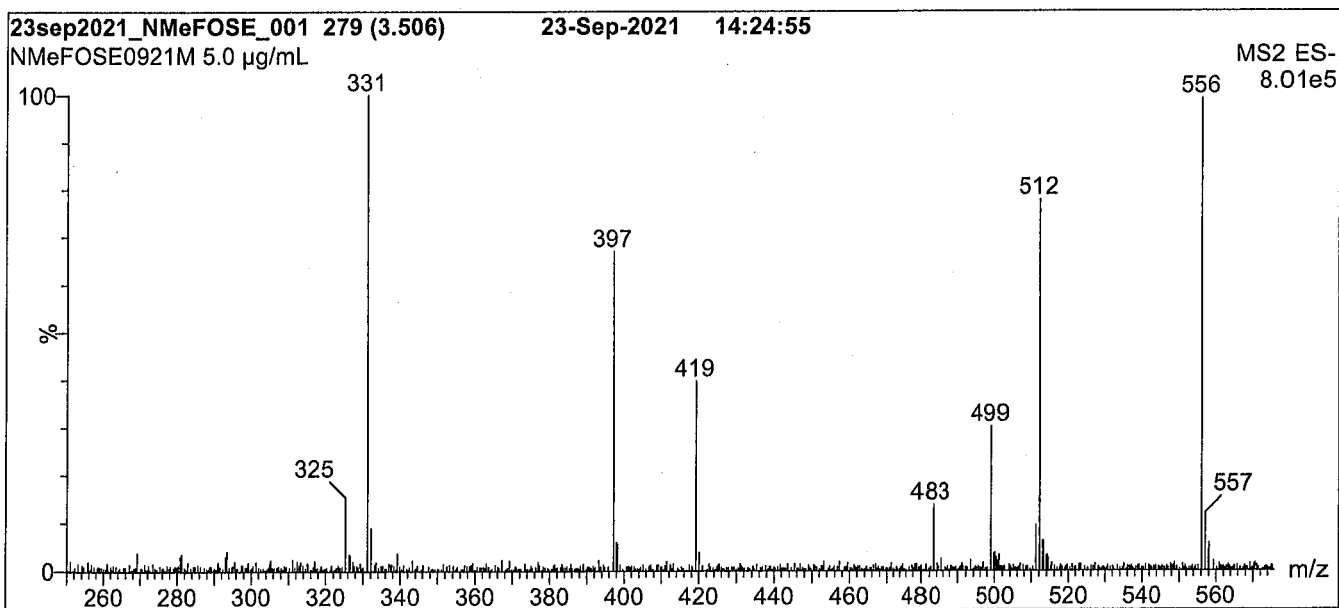
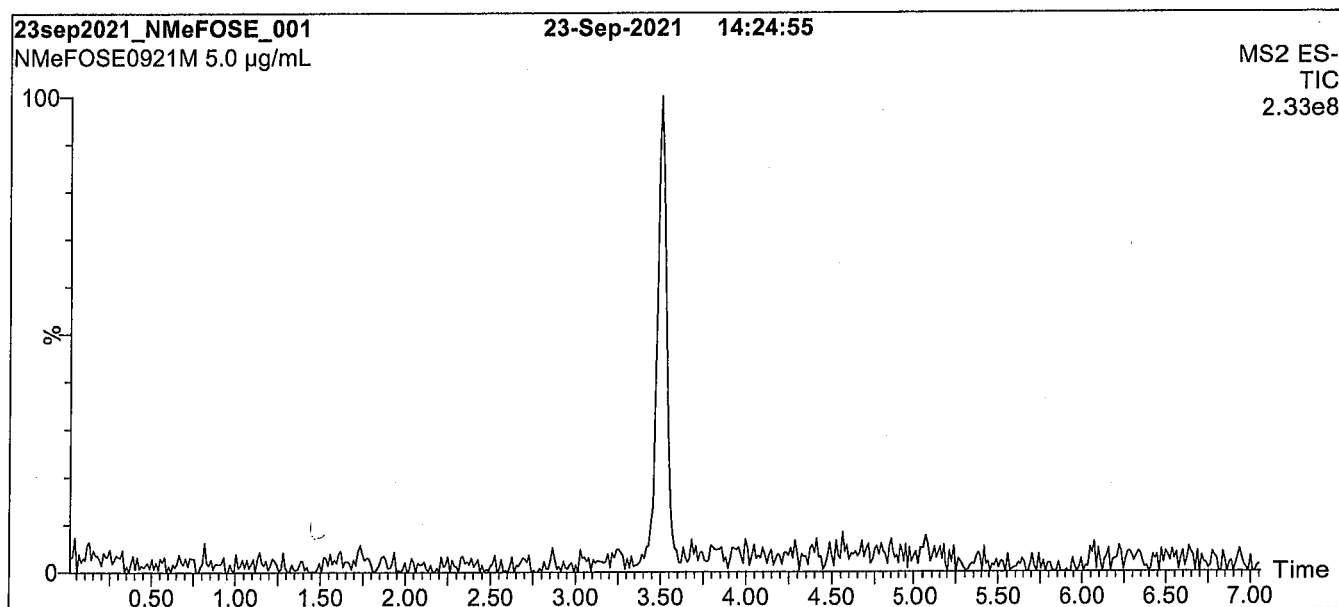
Flow: Constant at 1 mL/min

Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)
 10°C/min to 310°C
 310°C (10 min)

Ionization: EI+

Detector: 230°C
 Full Scan (50-1000 amu)

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

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

Chromatographic Conditions:

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

Mobile phase: Gradient

Start: 30% H₂O / 70% MeOH

Ramp to 90% organic over 8 min and hold for

1.5 min before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

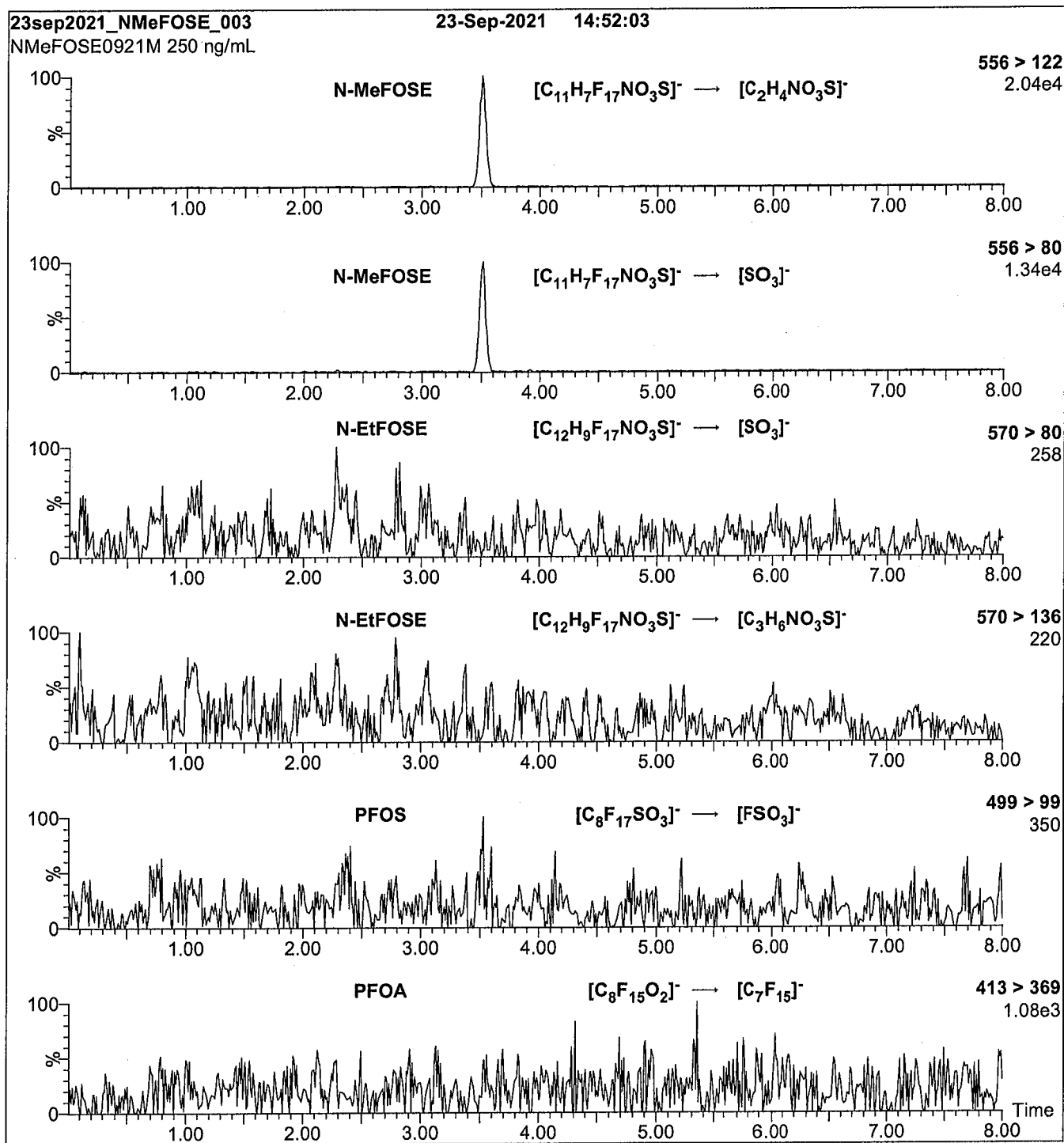
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 65.00

Desolvation Temperature (°C) = 450

Desolvation Gas Flow (L/hr) = 1000

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

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

Mobile phase: Same as Figure 2

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 36

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Analytical Standard Record

22C0307

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NMeFOSE0921M)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

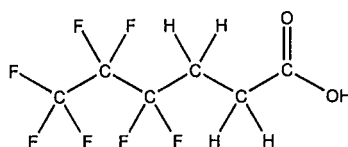
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE		24448-09-7	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA **LOT NUMBER:** FPrPA0122
COMPOUND: 3-Perfluoropropyl propanoic acid **22C0308**
STRUCTURE: **CAS #:** 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂ **MOLECULAR WEIGHT:** 242.09
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
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 <1% of the unsaturated 3:3 telomer acid (C₆H₃F₇O₂) as an impurity determined by ¹⁹F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 02/04/2022
 (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:

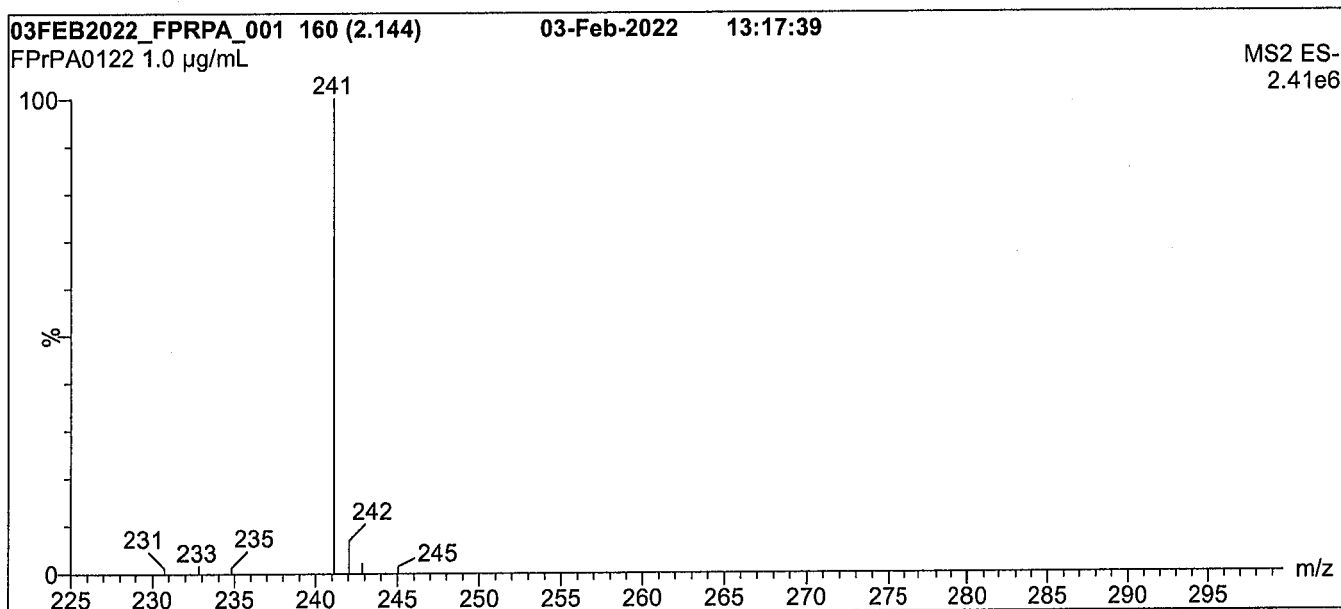
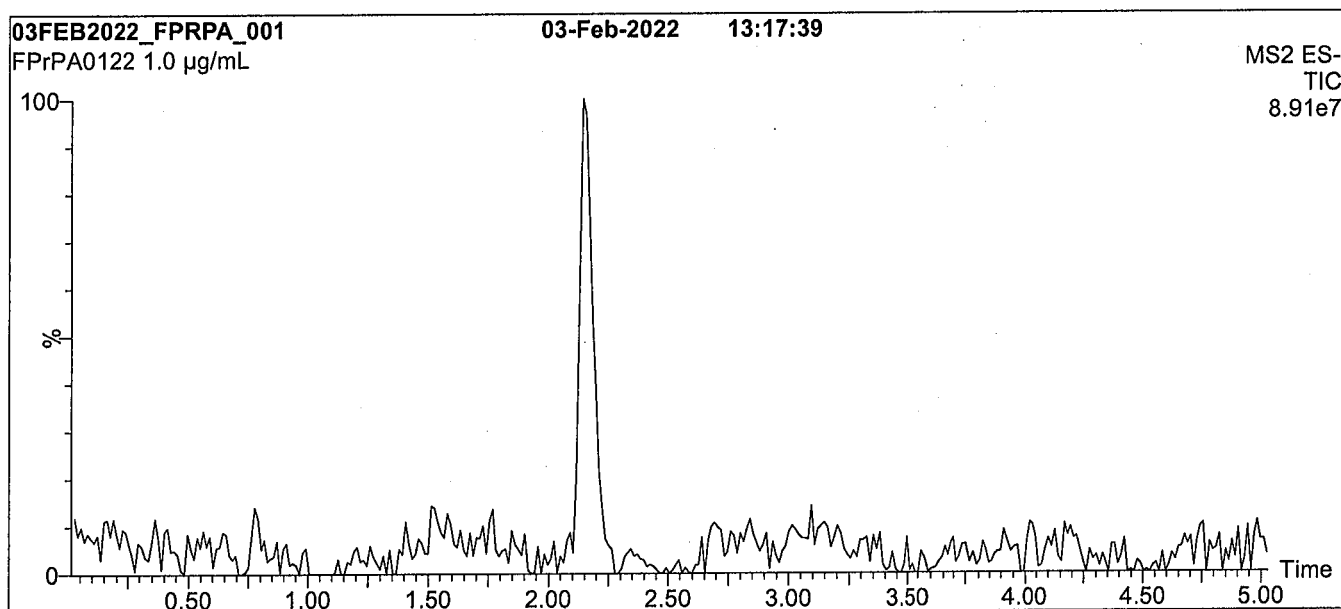
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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 or contact us directly at 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 RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

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

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

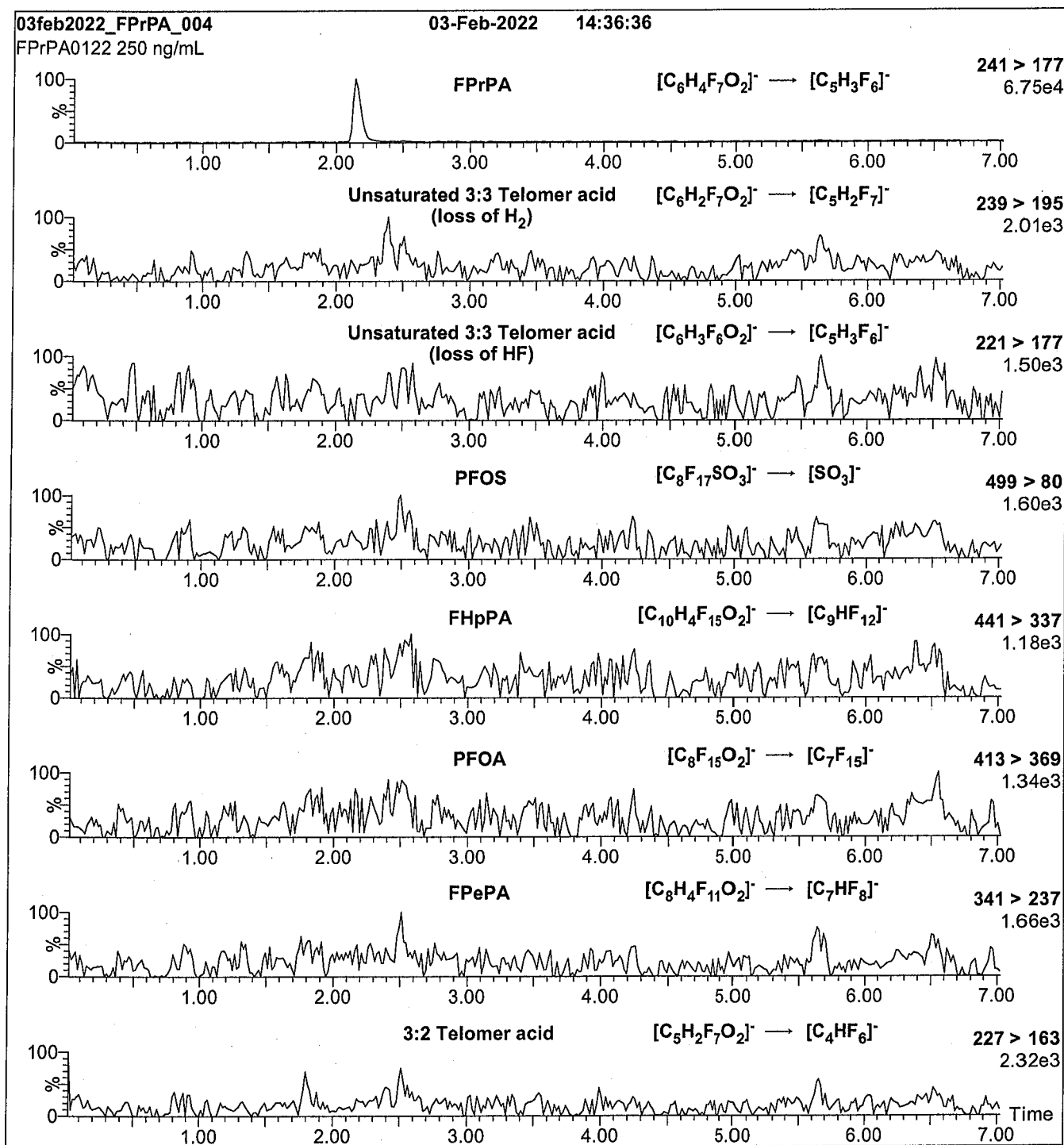
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 10

Analytical Standard Record

22C0308

Description:	PFAS - SAS FPrPA 50ug/mL	Expires:	02/03/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FPrPA0122)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

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

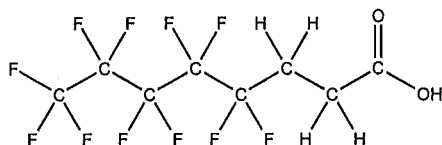


WELLINGTON LABORATORIES

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

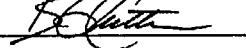
DOCUMENTATION/ DATA ATTACHED:

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 ^1H 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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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

UNCERTAINTY:

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

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

x_1, x_2, \dots, x_n on which it depends is:

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

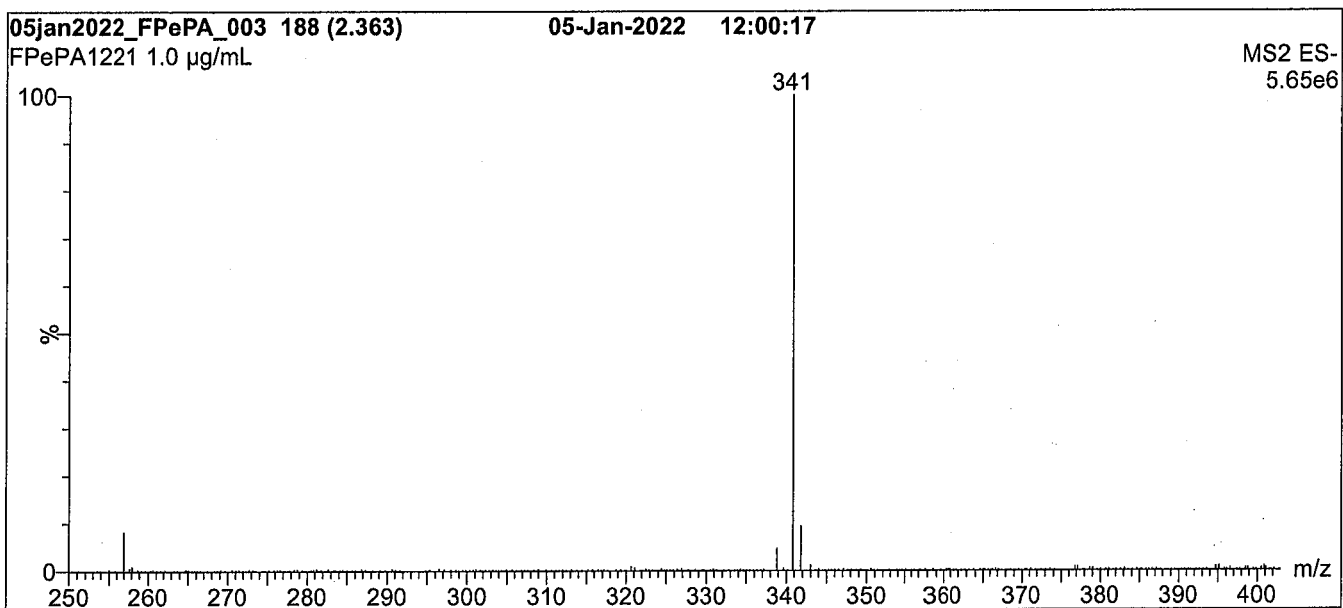
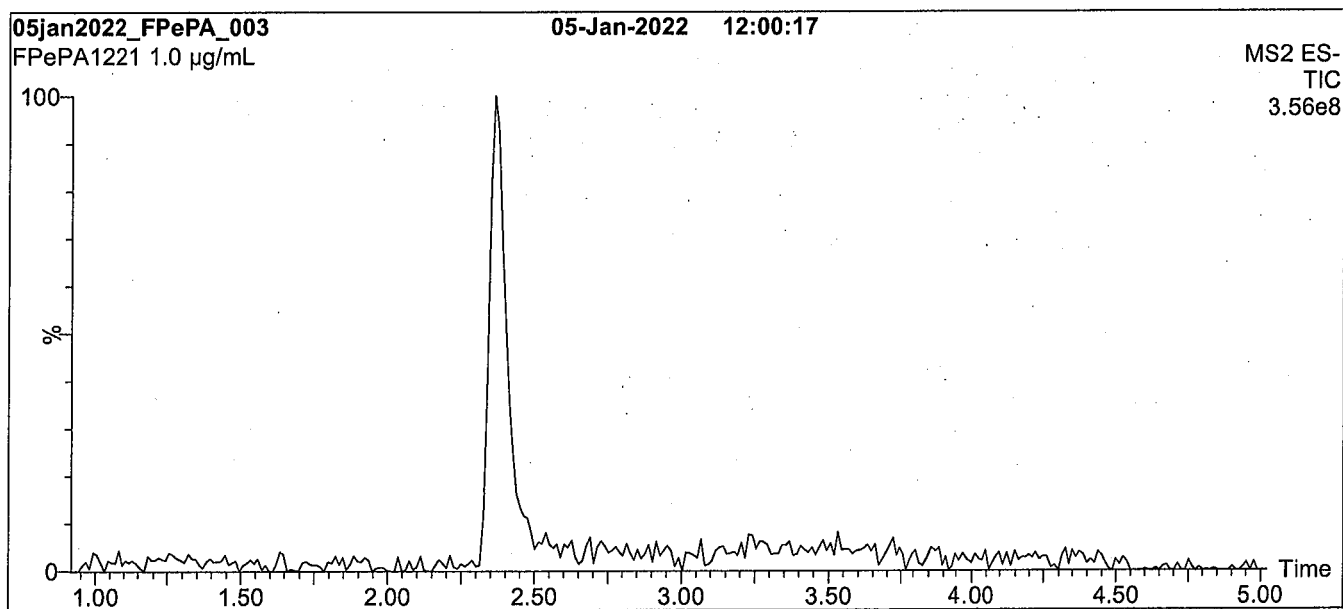
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

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

Chromatographic Conditions:

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

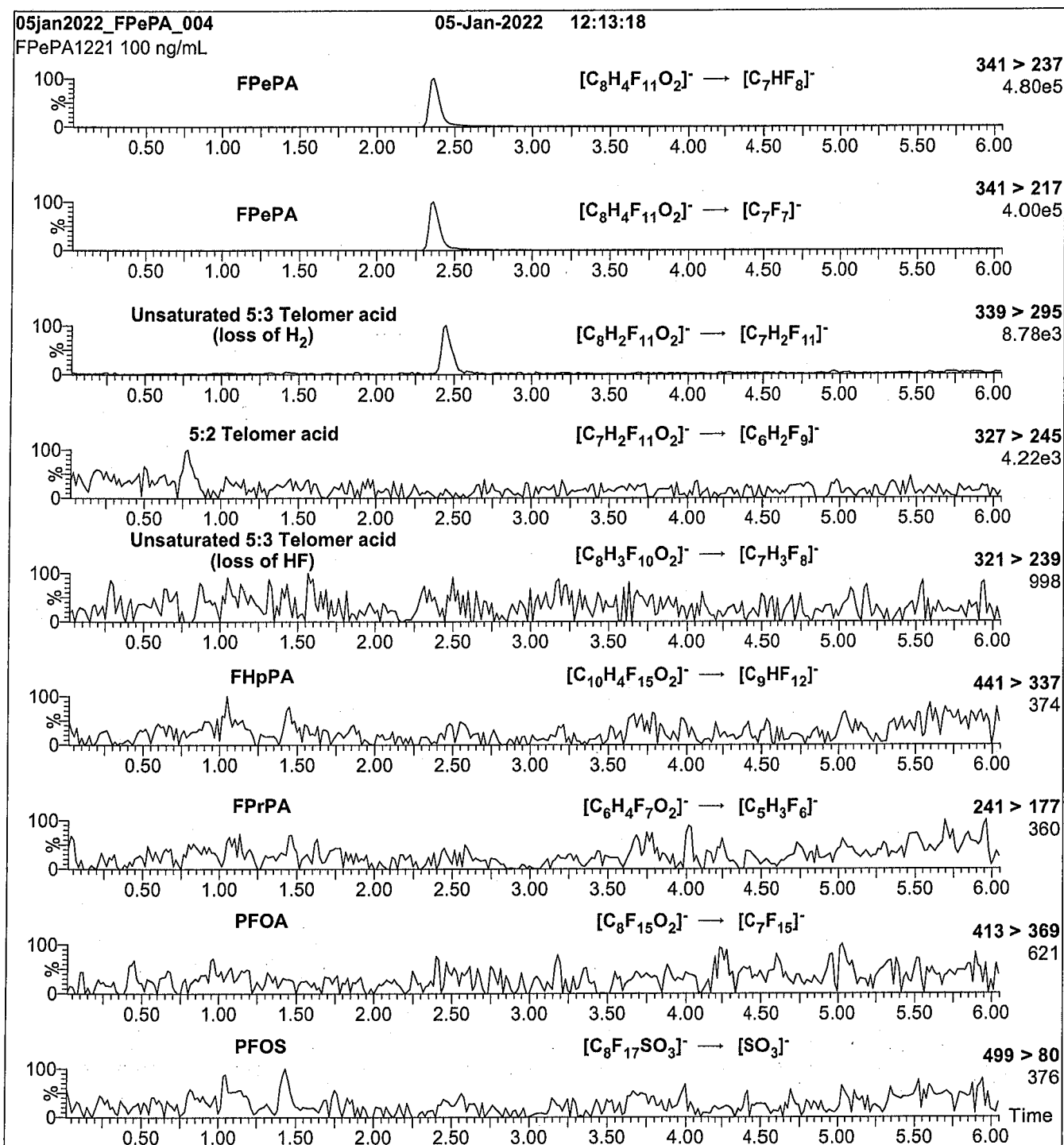
Mobile phase: Gradient
 Start: 45% H₂O / 55% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 3 min before returning to initial conditions in 0.75 min.
 Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

Injection: On-column (FPePA)
 Mobile phase: Same as Figure 1
 Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.09e-3
 Collision Energy (eV) = 10

Analytical Standard Record

22C0309

Description:	PFAS - SAS FPePA 50ug/mL	Expires:	01/05/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS1221)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

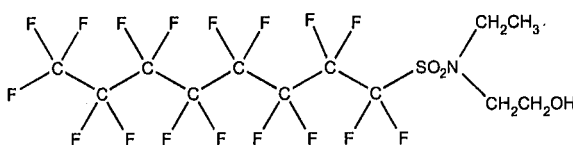
Analyte	Parent	CAS Number	Concentration	Units
5:3FTCA		914637-49-3	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol **22C0310**
STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA: C₁₂H₁₀F₁₇NO₃S **MOLECULAR WEIGHT:** 571.25
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/22/2021 (HRGC/LRMS)
 09/23/2021 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 09/23/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 10/20/2021
 (mm/dd/yyyy)

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

INTENDED USE:

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

HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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.

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

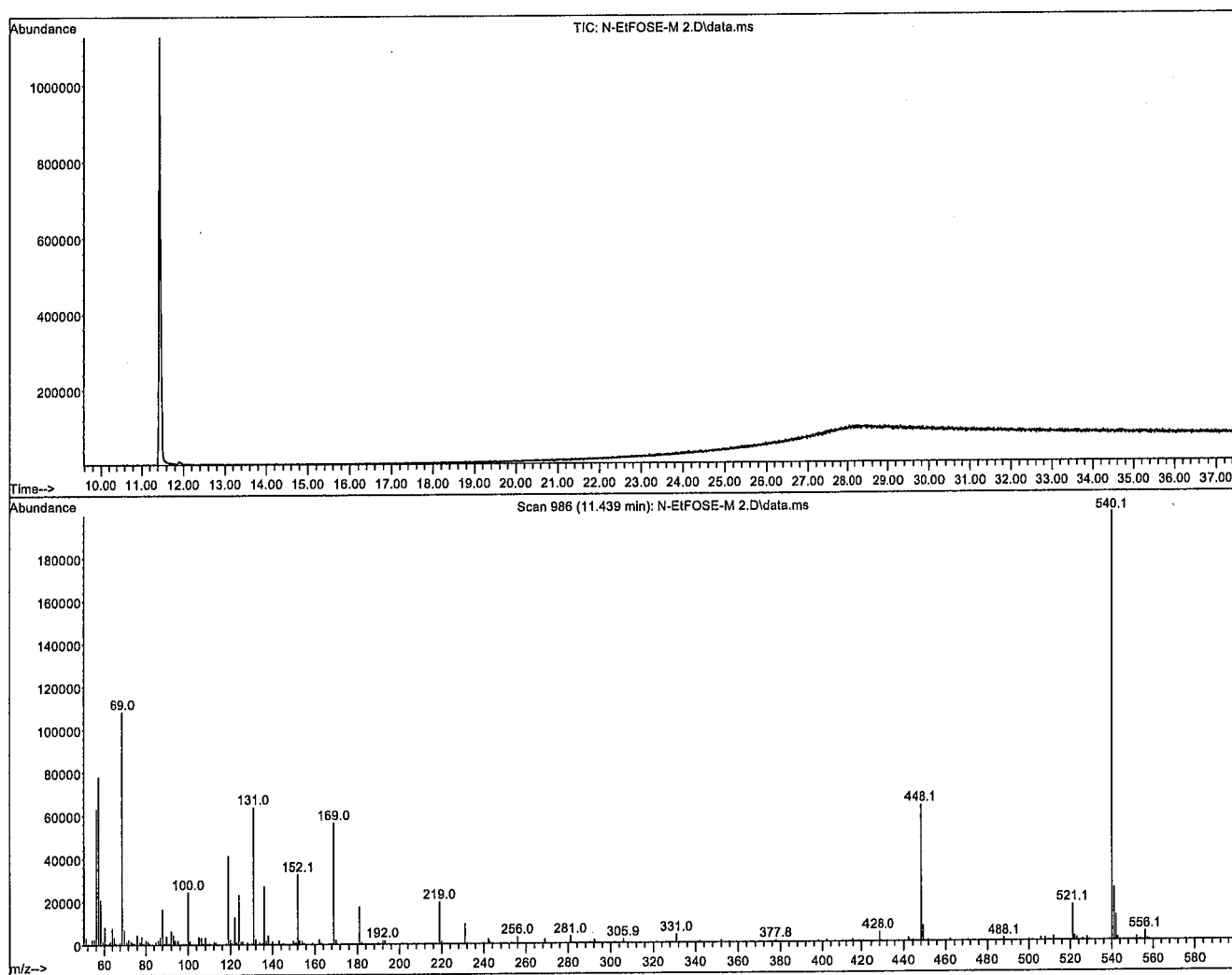
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



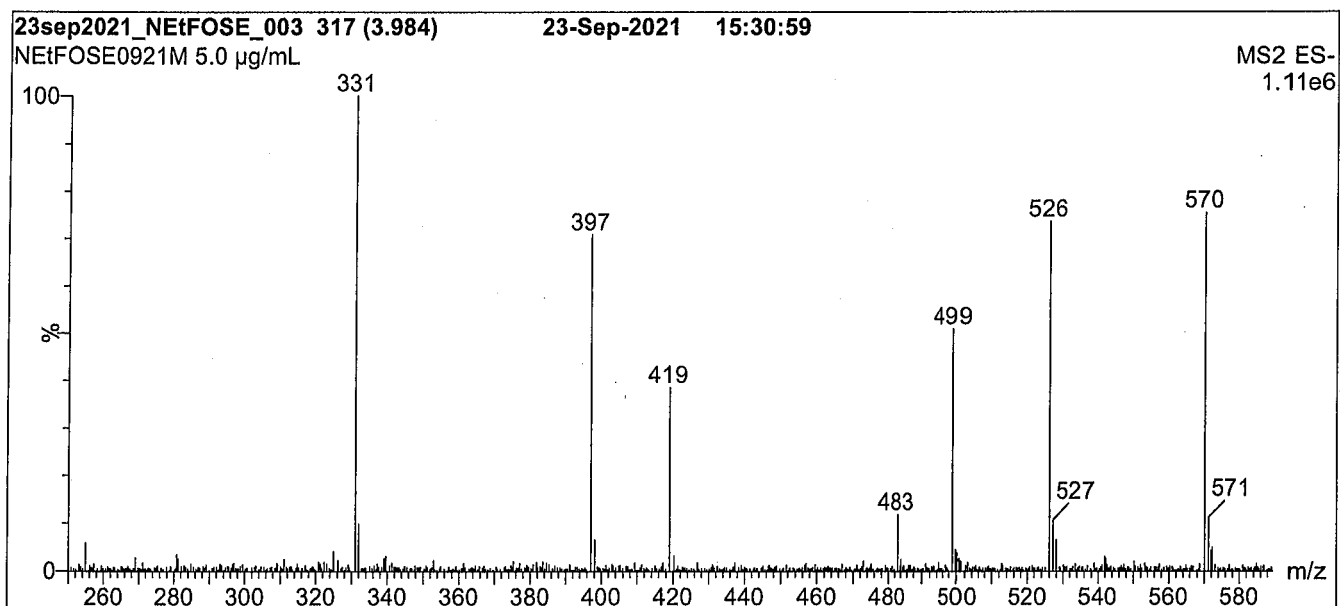
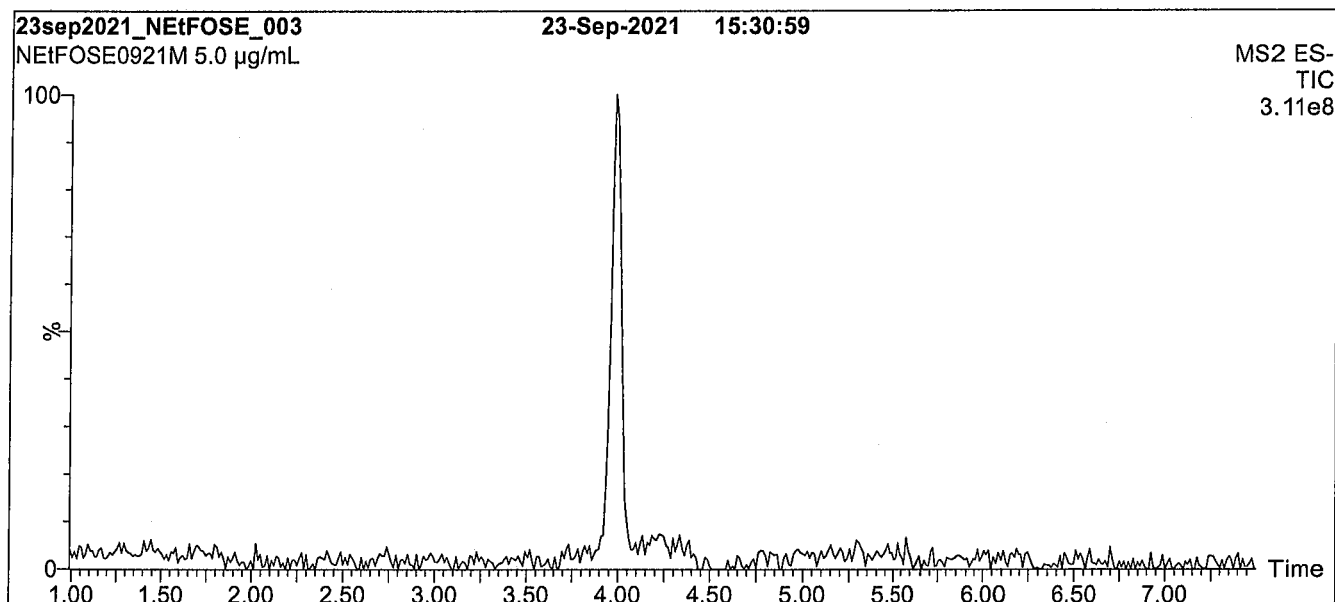
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W
 Flow: Constant at 1 mL/min
 Injector: 250°C (Splitless Injection)
 Oven: 100°C (5 min)
 10°C/min to 325°C
 325°C (10 min)
 Ionization: EI+
 Detector: 230°C
 Full Scan (50-1000 amu)

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

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

Chromatographic Conditions:

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

Mobile phase: Gradient

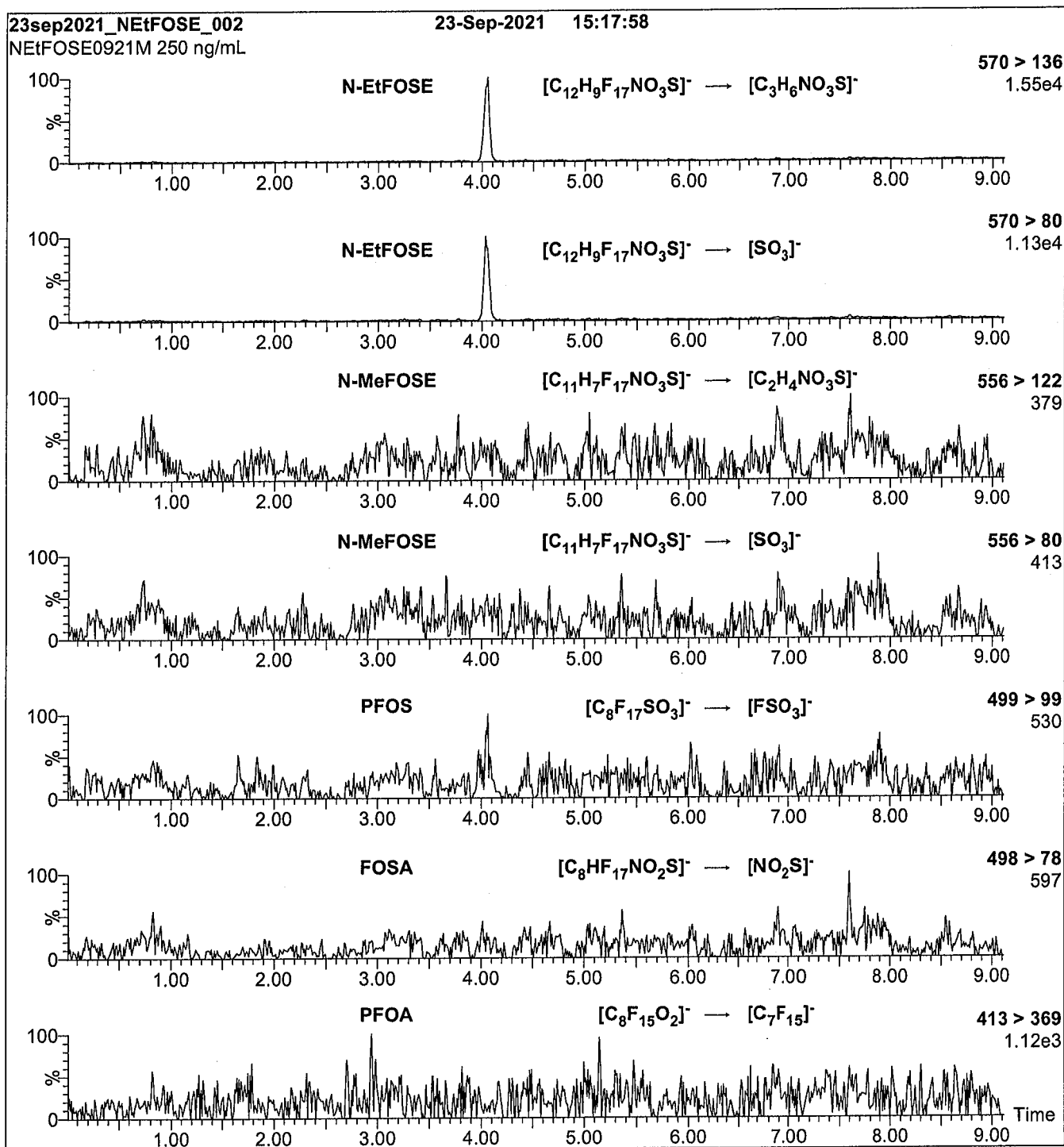
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

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

Mobile phase: Same as Figure 2

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 32

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#:
Final Volume (mls):	1	Department:	NETFOSE0921M)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

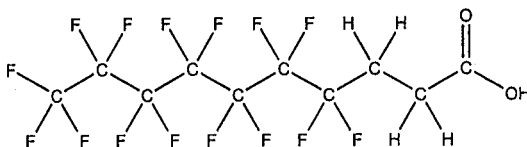
Analyte	Parent	CAS Number	Concentration	Units
NETFOSE		1691-99-2	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHpPA **LOT NUMBER:** FHpPA1020
COMPOUND: 3-Perfluoroheptyl propanoic acid **22C0311**
STRUCTURE: **CAS #:** 812-70-4



MOLECULAR FORMULA: $C_{10}H_6F_{16}O_2$ **MOLECULAR WEIGHT:** 442.12
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/12/2020
EXPIRY DATE: (mm/dd/yyyy) 11/12/2025
RECOMMENDED STORAGE: Refrigerate ampoule


DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 11/27/2020
 B.G. Chittim, General Manager (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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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

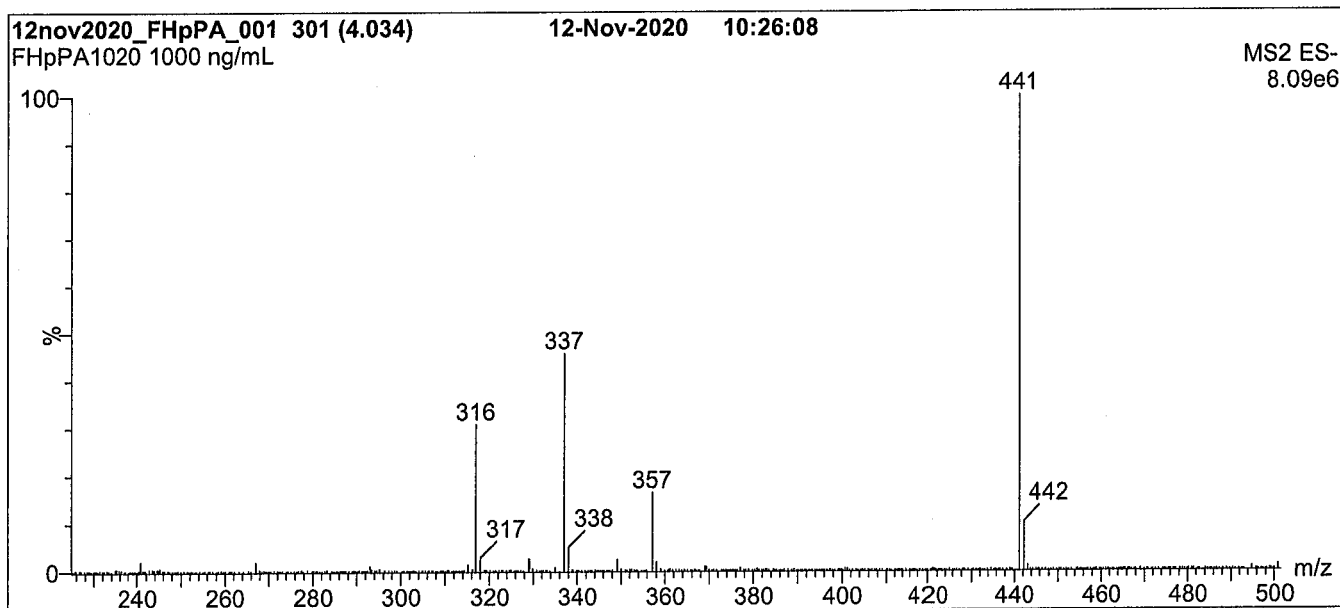
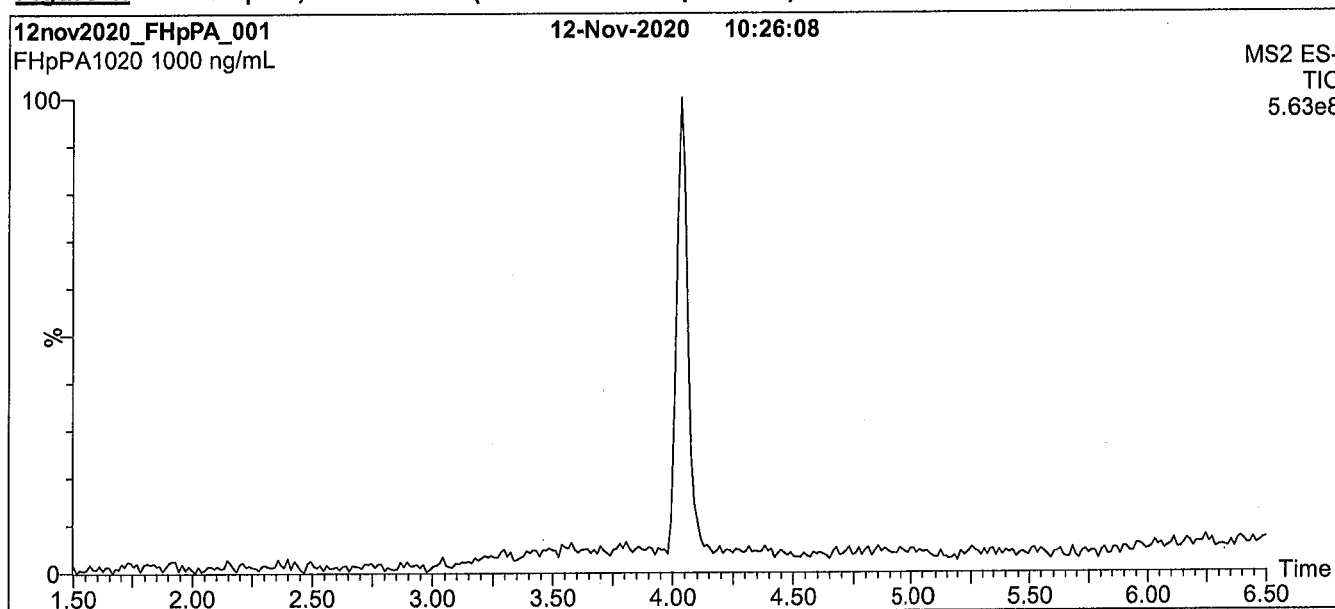
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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

Mobile phase: Gradient

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

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

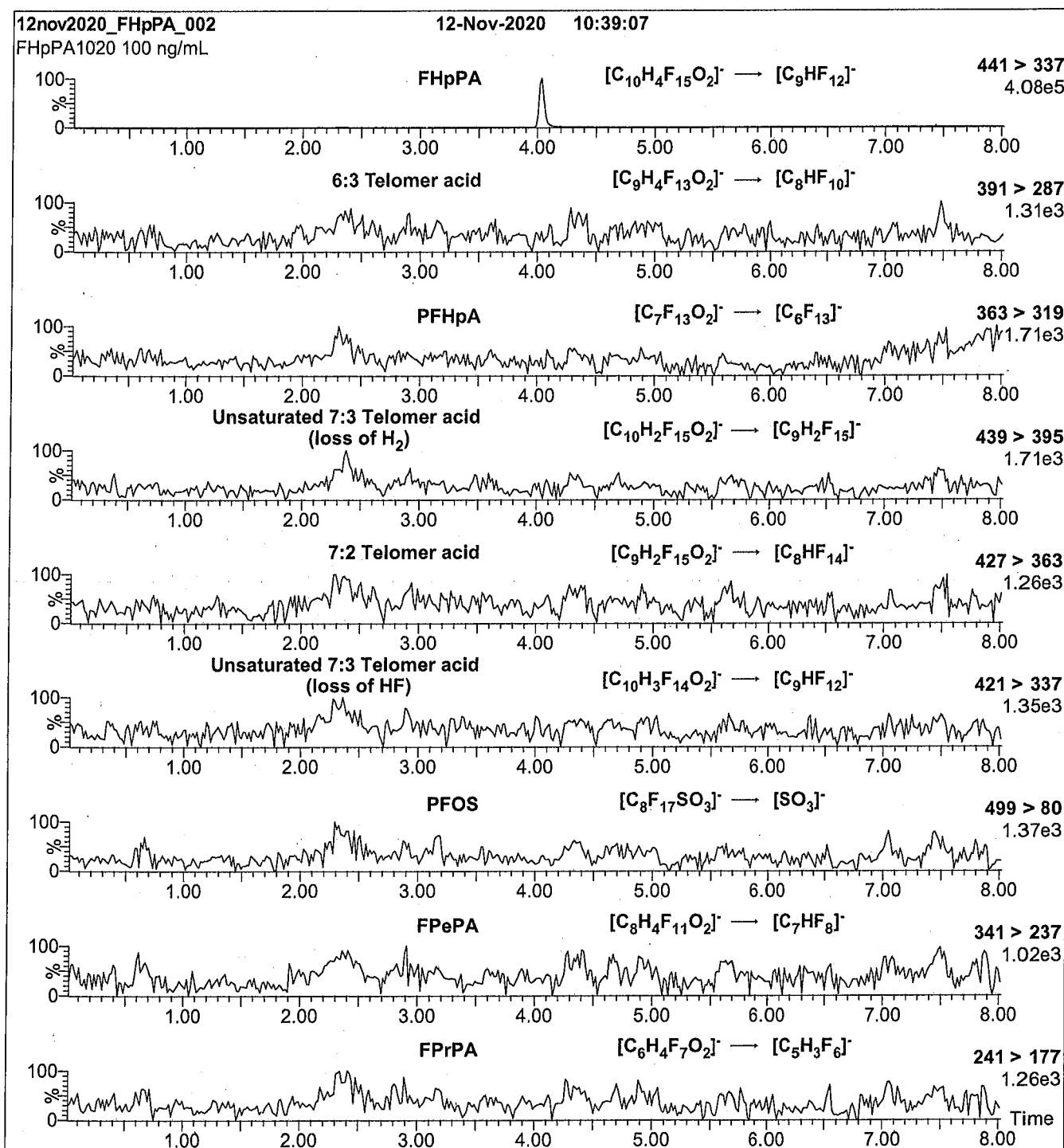
Source: Electrospray (negative)

Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 28.50

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

Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 8

Analytical Standard Record

22C0311

Description:	PFAS - SAS FHpPA 50ug/mL	Expires:	11/12/2025
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: HFA1020)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

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

Analytical Standard Record

22C0311

Description:	PFAS - SAS FHpPA 50ug/mL	Expires:	11/12/2025
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FHpPA1020)
Final Volume (mls):	1	Department:	FHpPA
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

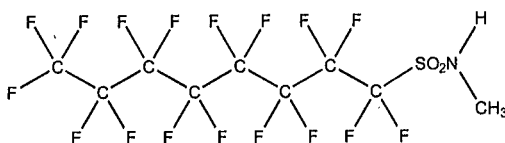
Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL



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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

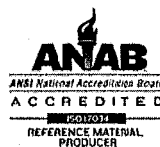
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

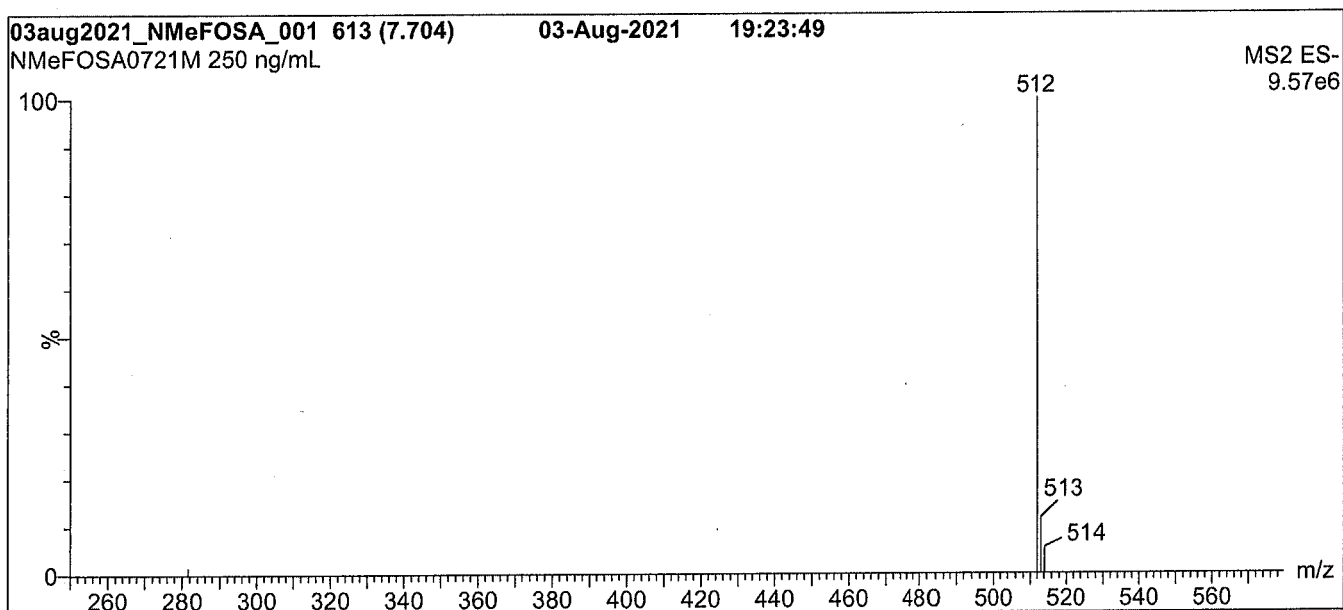
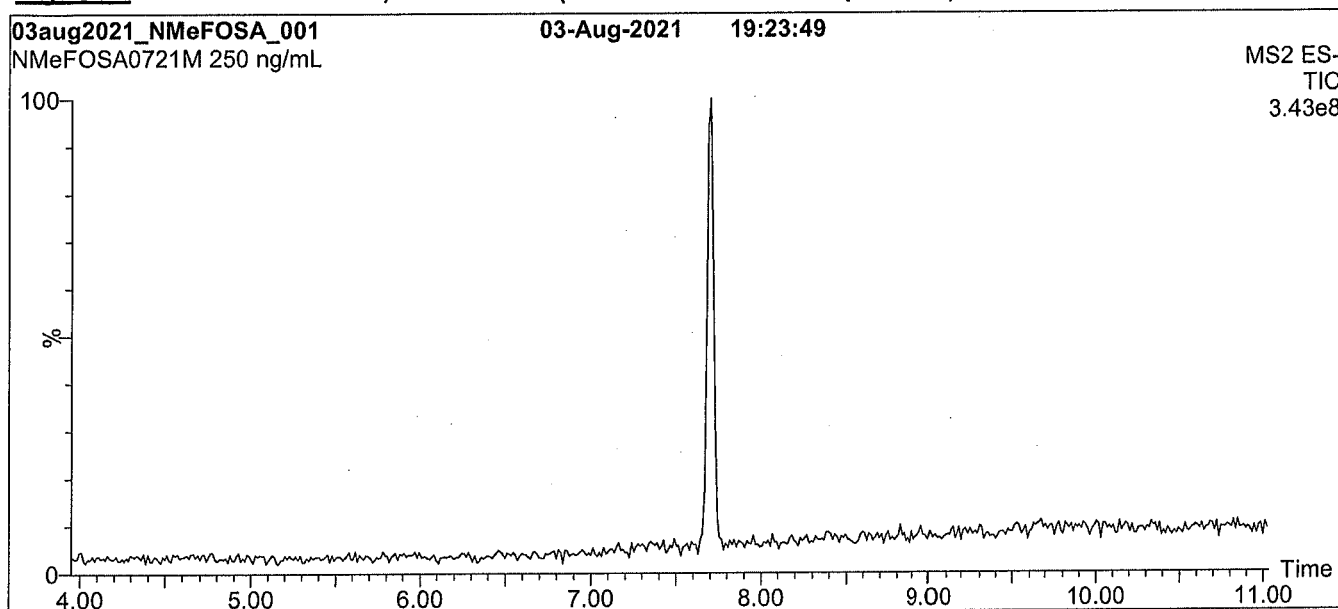
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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



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

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

Chromatographic Conditions:

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

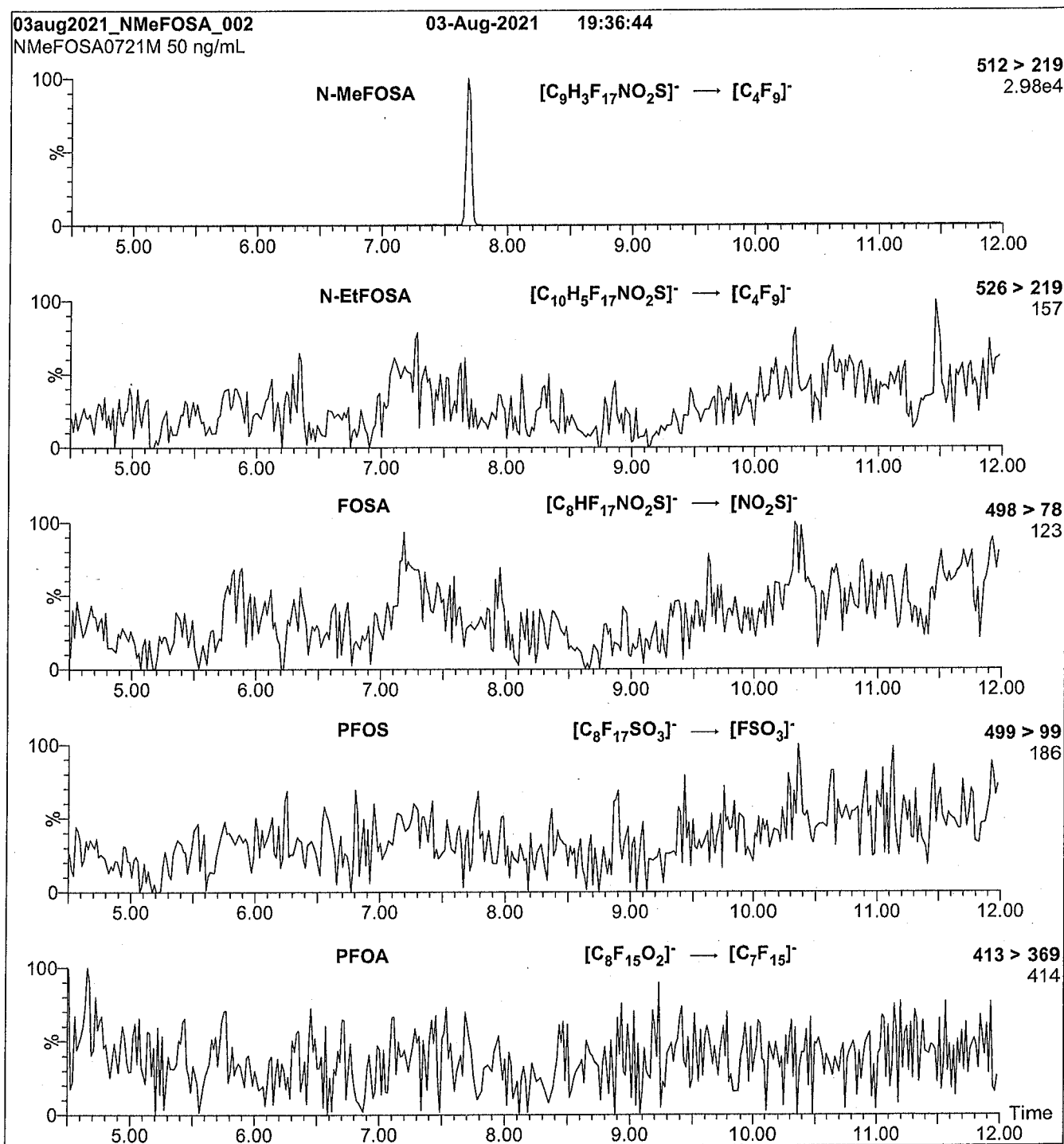
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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

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

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 24

Analytical Standard Record

22C0312

Description:	PFAS - SAS NMeFOSA 50ug/mL	Expires:	08/03/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

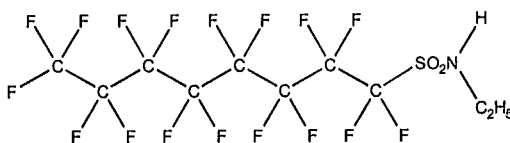
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M **LOT NUMBER:** NEtFOSA0821M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide **22C0313**
STRUCTURE: **CAS #:** 4151-50-2



MOLECULAR FORMULA: C₁₀H₆F₁₇NO₂S **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.

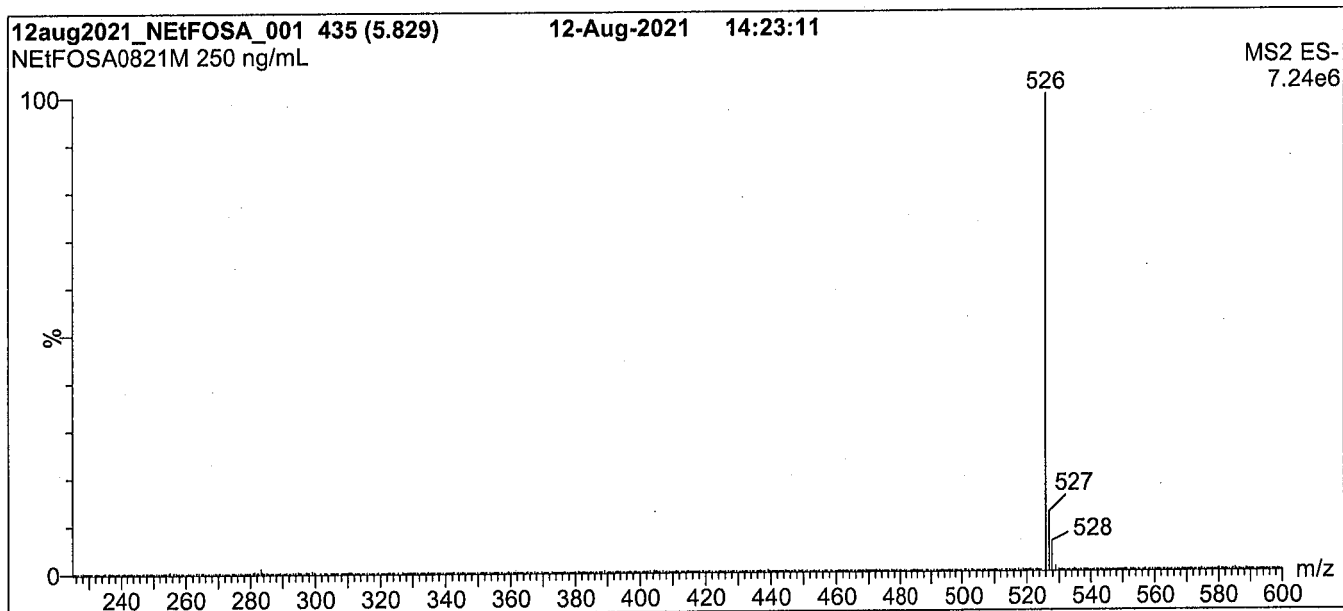
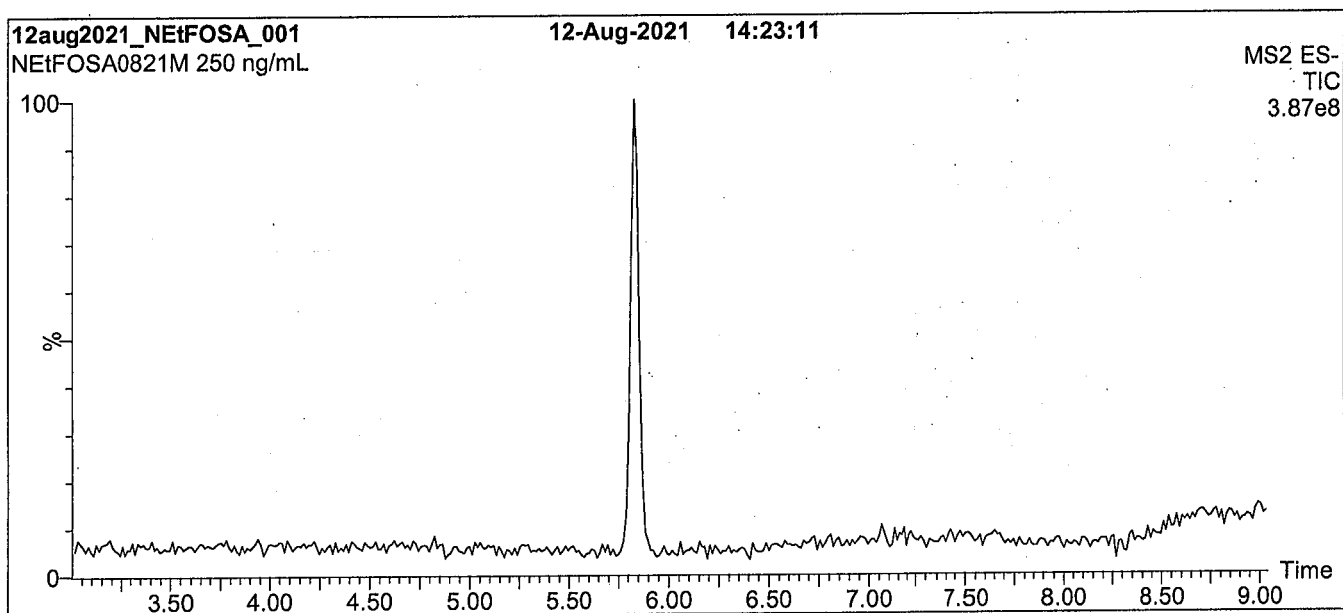
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

Chromatographic Conditions:

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

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

Analytical Standard Record

22C0313

Description:	PFAS - SAS NETFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Other	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NETFOSA0821M)
Final Volume (mls):	1	Department:	NETFOSA
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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 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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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:

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QUALITY MANAGEMENT:

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

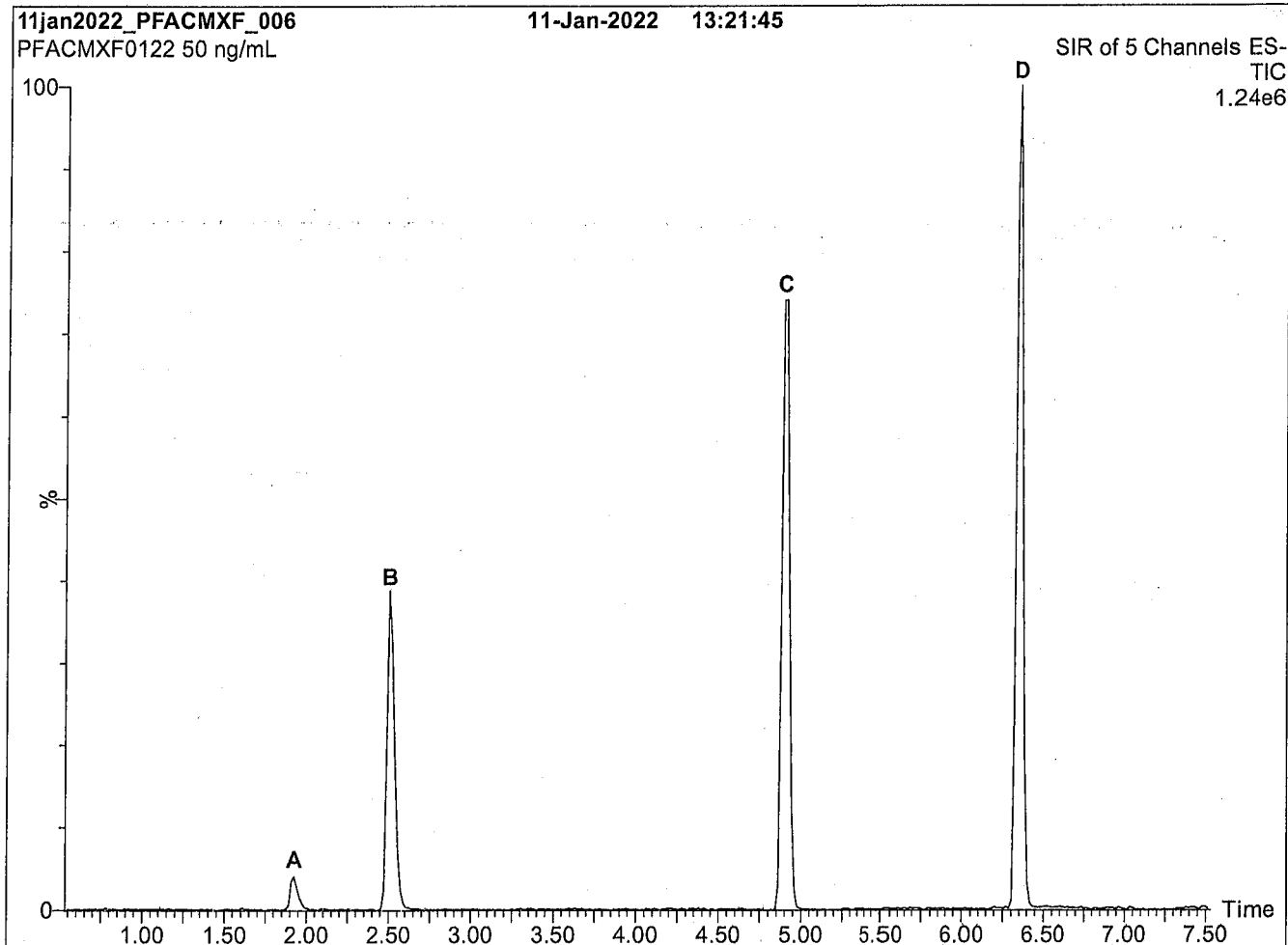
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxananoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	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)

Figure 1: PFAC-MXF; LC/MS Data (SIR)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

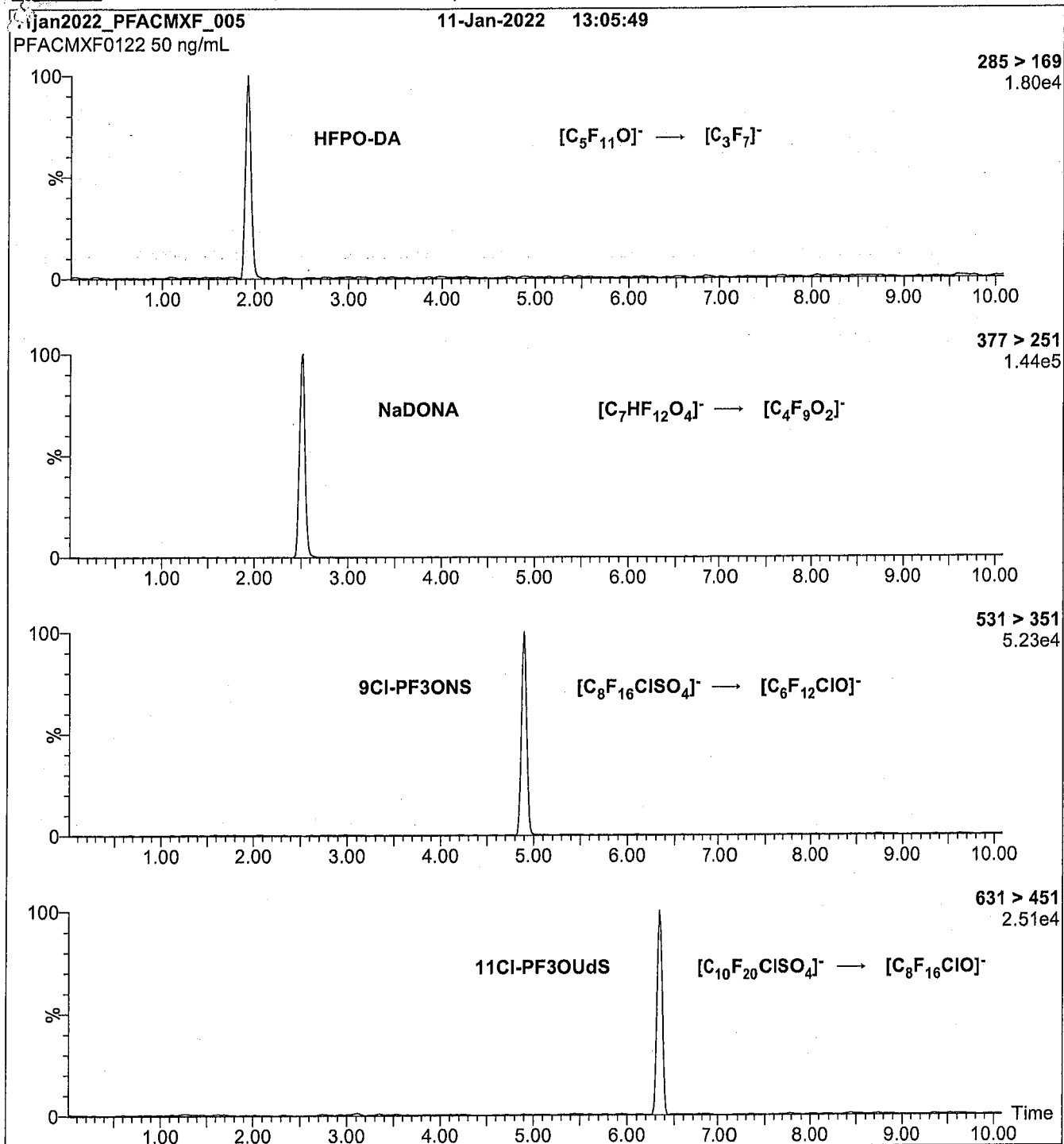
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (15-74)
Desolvation Temperature ($^{\circ}$ C) = 325
Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (PFAC-MXF)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.43e-3

Collision Energy (eV) = 6-60 (variable)

Analytical Standard Record

22F0058

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:32 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH 22F0059

**Native Per- and Poly-fluoroalkyl Substance
Solution/Mixture**

PRODUCT CODE: PFAC-MXH
LOT NUMBER: PFACMXH0921
SOLVENT(S): Methanol / Isopropanol (2%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 09/09/2021
LAST TESTED: (mm/dd/yyyy) 09/14/2021
EXPIRY DATE: (mm/dd/yyyy) 09/14/2026
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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

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Table A: PFAC-MXH; Components and Concentrations
($\mu\text{g/mL}$, $\pm 5\%$ in methanol / isopropanol (2%) / water (<1%))

Compound	Acronym	Concentration* ($\mu\text{g/mL}$)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4.00		1
Perfluoro-n-pentanoic acid	PFPeA	2.00		2
Perfluoro-n-hexanoic acid	PFHxA	1.00		5
Perfluoro-n-heptanoic acid	PFHpA	1.00		7
Perfluoro-n-octanoic acid	PFOA	1.00		11
Perfluoro-n-nonanoic acid	PFNA	1.00		14
Perfluoro-n-decanoic acid	PFDA	1.00		18
Perfluoro-n-undecanoic acid	PFUdA	1.00		23
Perfluoro-n-dodecanoic acid	PFDoA	1.00		26
Perfluoro-n-tridecanoic acid	PFTrDA	1.00		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00		29
Perfluoro-1-octanesulfonamide	FOSA	1.00		25
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: Σ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: Σ branched isomers	0.225		21
Compound	Acronym	Concentration* ($\mu\text{g/mL}$)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexanesulfonate ^c	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: Σ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanesulfonate ^d	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: Σ 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

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

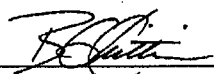
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____


B.G. Chittim, General Manager

Date: 09/23/2021

(mm/dd/yyyy)

Table B: br-NMeFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad $ $\quad \quad \quad \text{CH}_3$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\quad \quad \quad $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	0.2	
7	Other Unidentified Isomers		1.1	

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Table C: br-NEtFOSAA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad $ $\quad \quad \quad \text{C}_2\text{H}_5$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CFCF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CFCF}_2\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad \quad \quad \quad $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
9	Other Unidentified Isomers		1.3	

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

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

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{SO}_3^-\text{K}^+) \\ \\ \text{CF}_3 \end{array}$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$\begin{array}{c} \text{CF}_3 \\ \\ \text{CF}_3\text{C}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\ \\ \text{CF}_3 \end{array}$	0.2	
7	Other Unidentified Isomers		0.5	

* Percent of total perfluorohexanesulfonate isomers only.

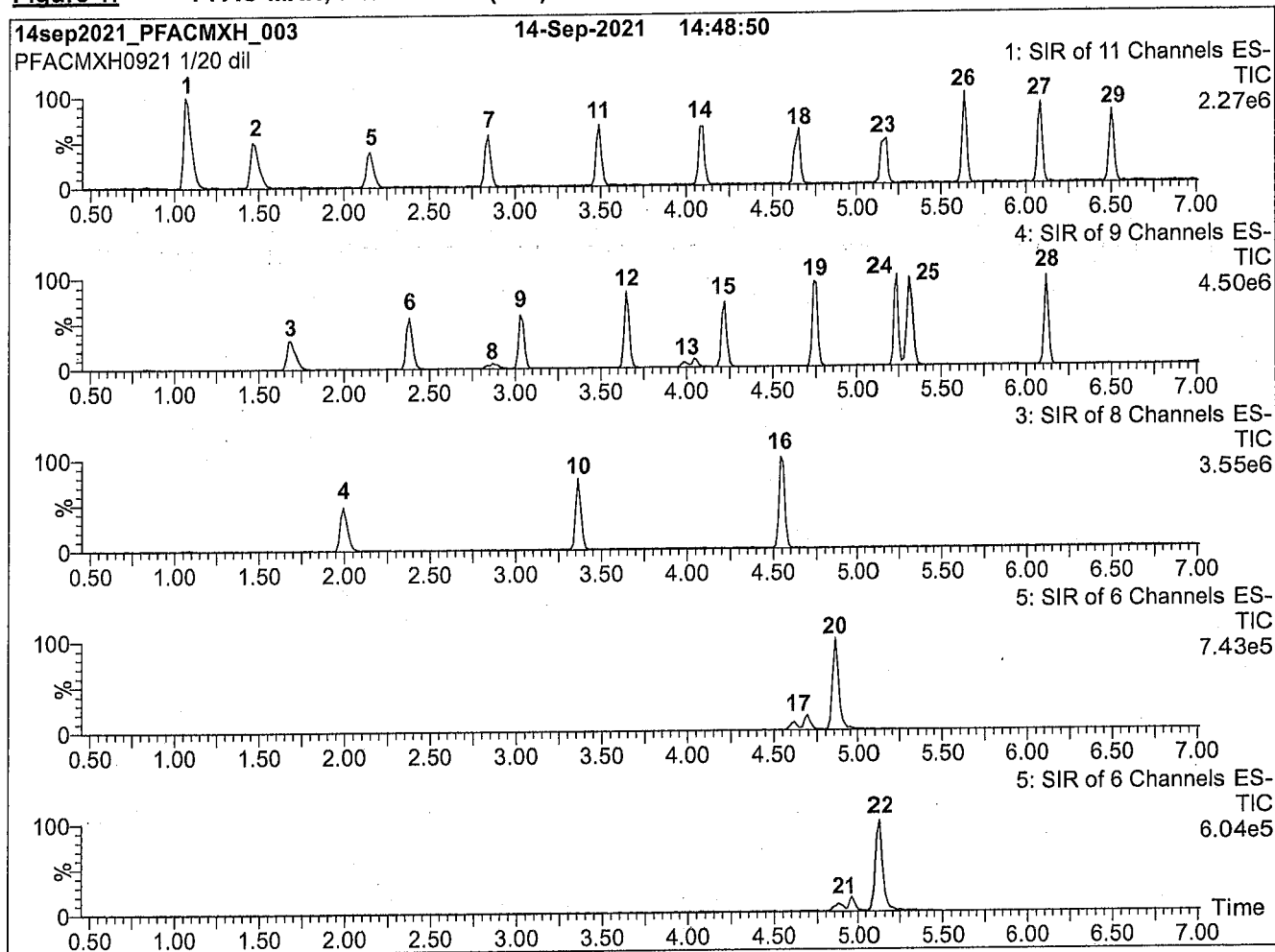
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

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

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF(SO ₃ ⁻)K ⁺ CF ₃	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF(CF ₃)SO ₃ ⁻ K ⁺ CF ₃	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF(CF ₃)CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CCF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF ₂ CCF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.07	

* Percent of total perfluorooctanesulfonate isomers only.

** Systematic Name: Potassium perfluorooctane-2-sulfonate.

Figure 1: PFAC-MXH; LC/MS Data (SIR)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = variable (2-74)
Desolvation Temperature ($^{\circ}$ C) = 350
Desolvation Gas Flow (L/hr) = 1000

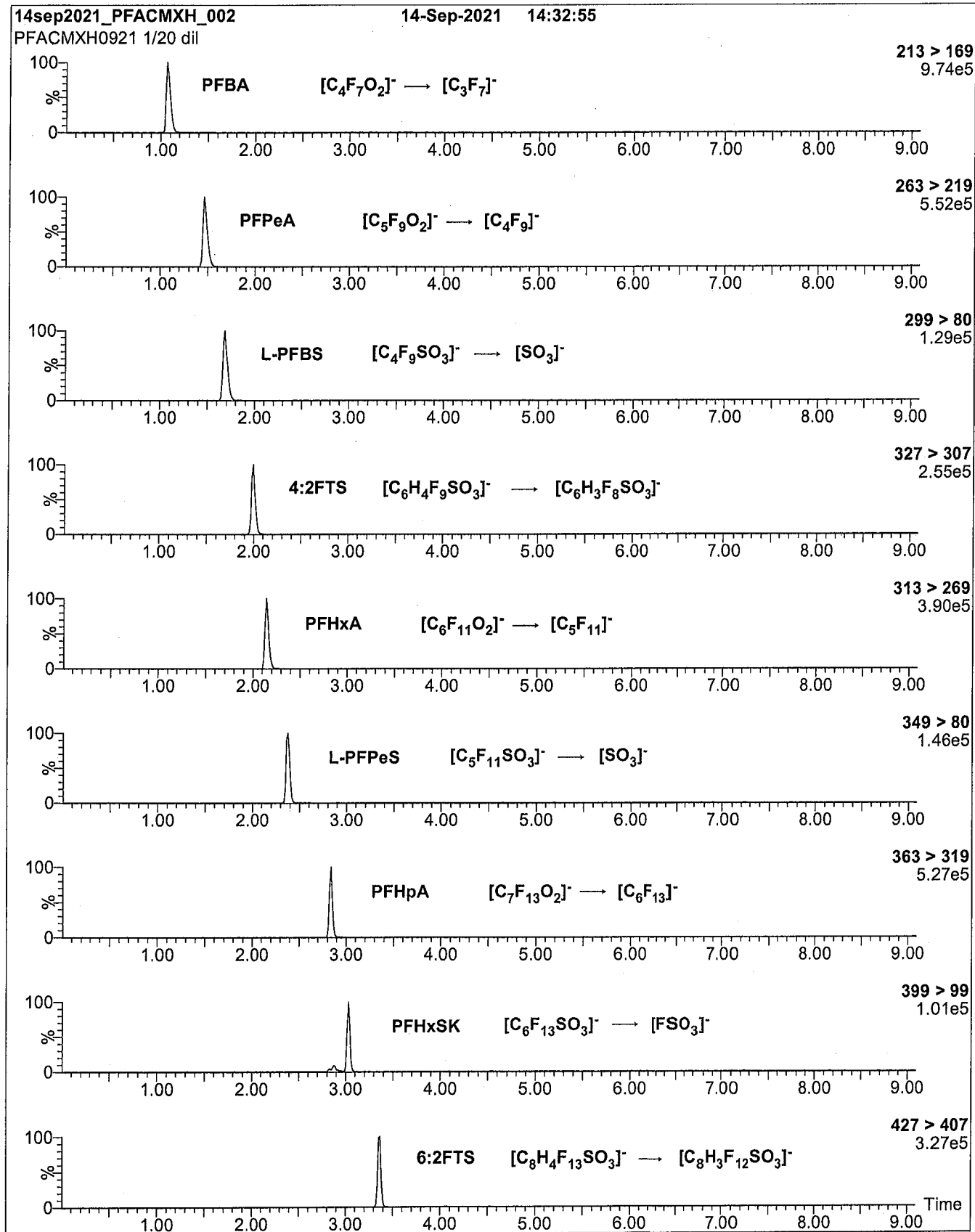
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

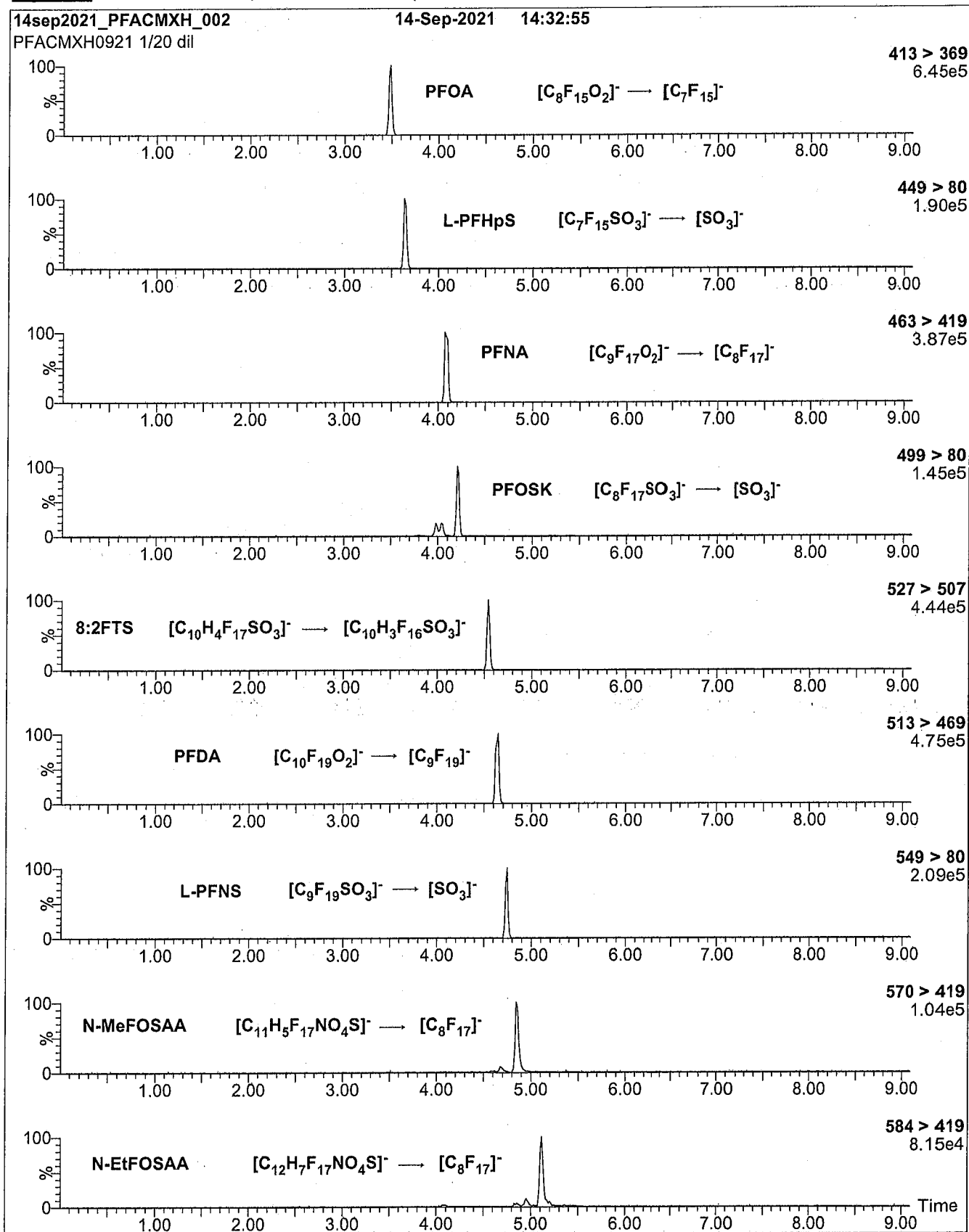
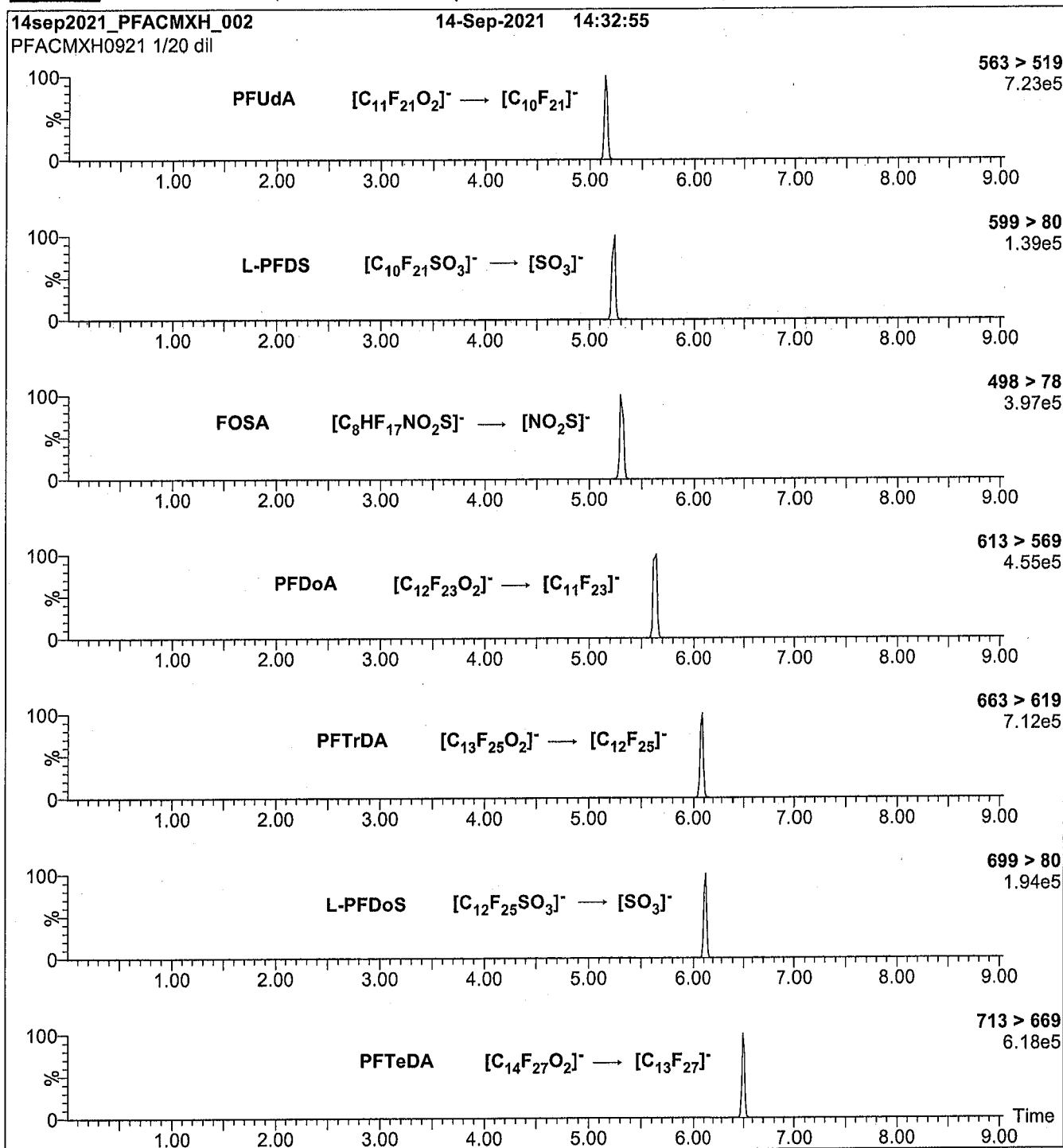
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

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

Injection: On-column (PFAC-MXH)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 6-60 (variable)

Analytical Standard Record

22F0059

Description:	PFAS - MIX MXH 2ug/mL	Expires:	09/14/2026
Standard Type:	Other	Prepared:	09/09/2021
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:33 by DAG

Analyte	Parent	CAS Number	Concentration	Units
4:2FTS		757124-72-4	3.75	ug/mL
6:2FTS		27619-97-2	3.8	ug/mL
8:2FTS		39108-34-4	3.84	ug/mL
NETFOSAA		2991-50-6	1	ug/mL
NMeFOSAA		2355-31-9	1	ug/mL
PFBA		375-22-4	4	ug/mL
PFBS		375-73-5	0.887	ug/mL
PFDA		335-76-2	1	ug/mL
PFDOA		307-55-1	1	ug/mL
PFDOS		79780-39-5	0.97	ug/mL
PFDS		335-77-3	0.965	ug/mL
PFHPA		375-85-9	1	ug/mL
PFHPS		375-92-8	0.953	ug/mL
PFHXA		307-24-4	1	ug/mL
PFHXS		355-46-4	0.914	ug/mL
PFNA		375-95-1	1	ug/mL
PFNS		68259-12-1	0.962	ug/mL
PFOA		335-67-1	1	ug/mL
PFOS		1763-23-1	0.928	ug/mL
PFOSA		754-91-6	1	ug/mL
PFPEA		2706-90-3	2	ug/mL
PFPEs		630402-22-1	0.941	ug/mL
PFTEDA		376-06-7	1	ug/mL
PFTRDA		72629-94-8	1	ug/mL
PFUnA		2058-94-8	1	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG 22F0061

**Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture**

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG0222
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	02/07/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	02/22/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	02/22/2027
<u>RECOMMENDED STORAGE:</u>	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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



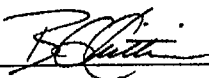
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: PFAC-MXG; Components and Concentrations (ng/mL; \pm 5% in methanol/water (<1%))

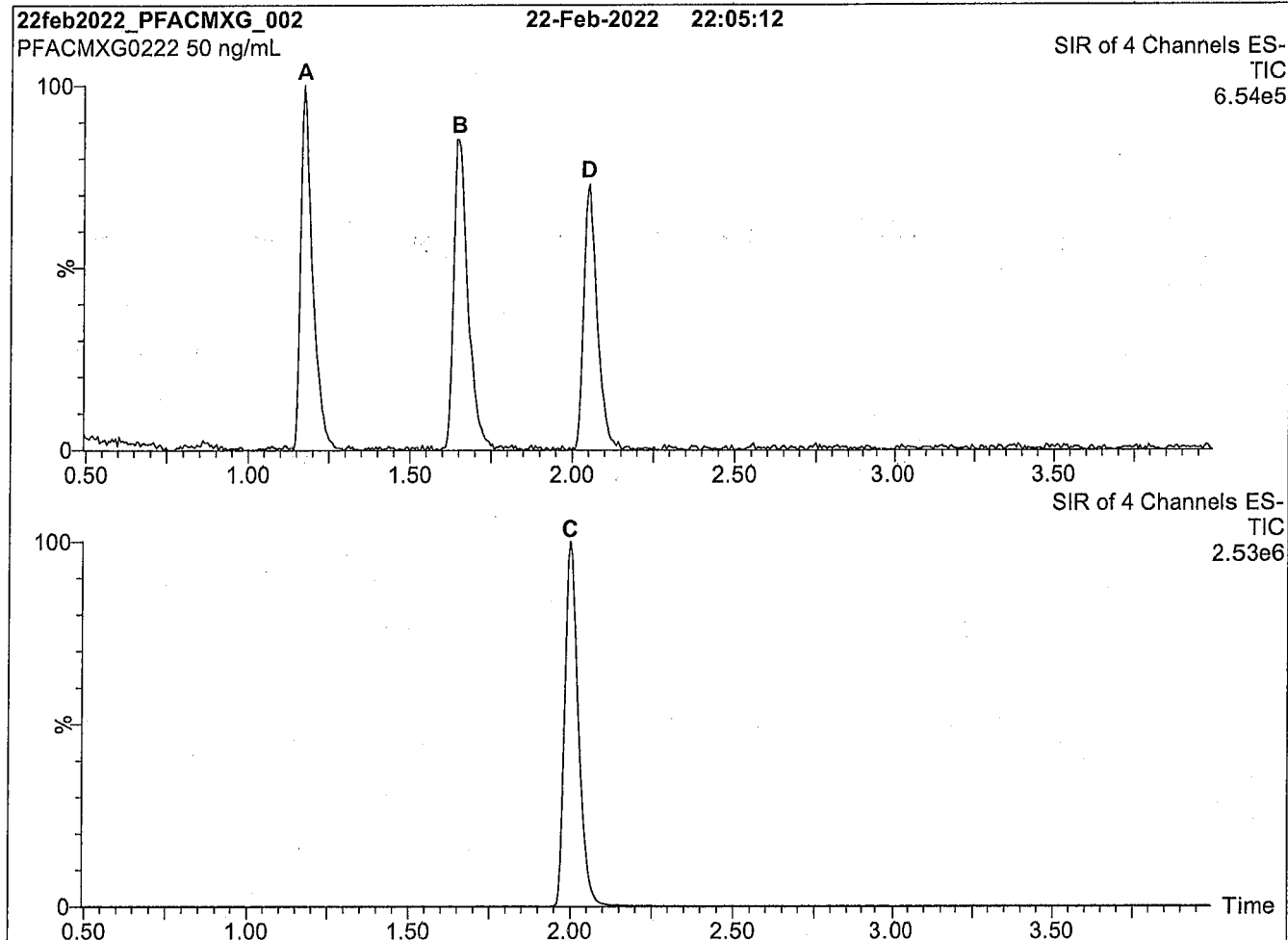
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____


B.G. Chittim, General Manager

Date: 03/03/2022
(mm/dd/yyyy)

Figure 1: PFAC-MXG; LC/MS Data (SIR)**Conditions for Figure 1:**

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

Chromatographic Conditions:

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

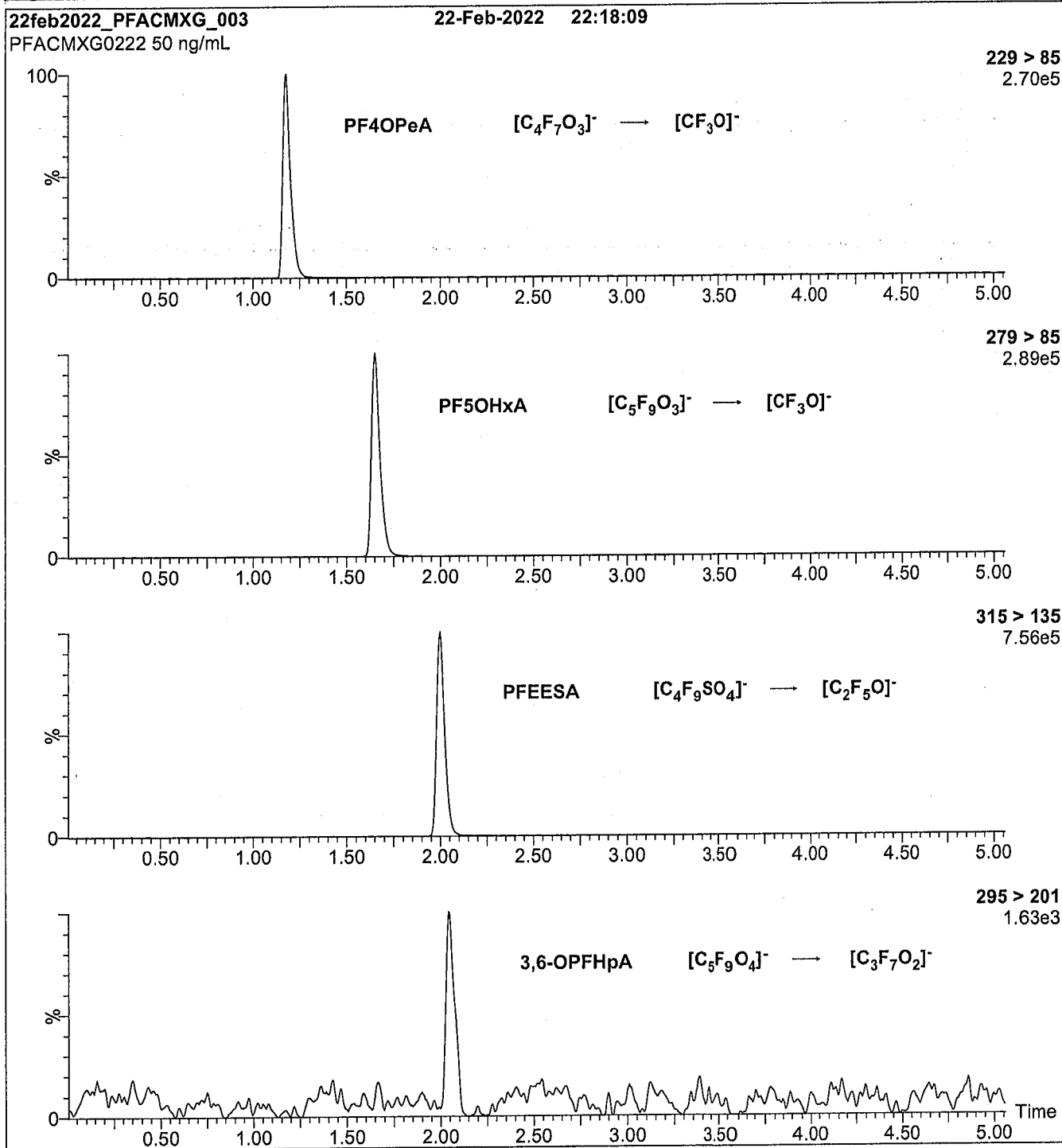
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = variable (15-35)
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

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

Injection: On-column (PFAC-MXG)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 8-48 (variable)

Analytical Standard Record

22F0061

Description:	PFAS - MIX MXG 2ug/mL	Expires:	02/22/2027
Standard Type:	Other	Prepared:	02/07/2022
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG
Comments:	contains NFDHA PFMBA PFMPA PFEESA @ 2ug/mL		

Analyte	Parent	CAS Number	Concentration	Units
NFDHA		151772-58-6	2	ug/mL
PFEESA		113507-82-7	1.78	ug/mL
PFMBA		863090-89-5	2	ug/mL
PFMPA		377-73-1	2	ug/mL

Analytical Standard Record

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

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	FHpPA1020	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



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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 ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	Ammonium perfluoro-n-octanoate		79
2	Ammonium 6-trifluoromethylperfluoroheptanoate		9.0
3	Ammonium 5-trifluoromethylperfluoroheptanoate		4.5
4	Ammonium 4-trifluoromethylperfluoroheptanoate		4.0
5	Ammonium 3-trifluoromethylperfluoroheptanoate		3.0
6	Ammonium 2-trifluoromethylperfluoroheptanoate		
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 ¹⁹F-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



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CERTIFICATE OF ANALYSIS DOCUMENTATION

br-FOSA

Perfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-FOSA
<u>LOT NUMBER:</u>	brFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Isopropanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/14/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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 ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR
1	Perfluoro-1-octanesulfonamide	CF ₃ (CF ₂) ₇ SO ₂ NH ₂	66.6
2	Perfluoro-1-methyl-1-heptanesulfonamide**	CF ₃ (CF ₂) ₅ CF(SO ₂ NH ₂) CF ₃	0.8
3	Perfluoro-2-methyl-1-heptanesulfonamide	CF ₃ (CF ₂) ₄ CF(CF ₃)SO ₂ NH ₂ CF ₃	0.3
4	Perfluoro-3-methyl-1-heptanesulfonamide	CF ₃ (CF ₂) ₃ CF(CF ₃) ₂ SO ₂ NH ₂ CF ₃	4.2
5	Perfluoro-4-methyl-1-heptanesulfonamide	CF ₃ (CF ₂) ₂ CF(CF ₃) ₂ SO ₂ NH ₂ CF ₃	3.5
6	Perfluoro-5-methyl-1-heptanesulfonamide	CF ₃ CF ₂ CF(CF ₃) ₄ SO ₂ NH ₂ CF ₃	7.8
7	Perfluoro-6-methyl-1-heptanesulfonamide	CF ₃ CF(CF ₃) ₅ SO ₂ NH ₂ CF ₃	16.8
8	Perfluoro-5,5-dimethyl-1-hexanesulfonamide	CF ₃ CF ₃ C(CF ₃) ₄ SO ₂ NH ₂ CF ₃	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



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br-NMeFOSA

N-Methylperfluorooctanesulfonamide Isomeric Mix

<u>PRODUCT CODE:</u>	br-NMeFOSA
<u>LOT NUMBER:</u>	brNMeFOSA0822
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/18/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/23/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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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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

Analytical Standard Record

22J0302

Description:	br-NETFOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NETFOSA0922)
Final Volume (mls):	1	Department:	PPAS
Vials:	1	Last Edit:	10/18/2022 13:38 by HGH

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



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DOCUMENTATION

br-NEtFOSA

**N-Ethylperfluorooctanesulfonamide
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NEtFOSA
<u>LOT NUMBER:</u>	brNEtFOSA0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/23/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	10/07/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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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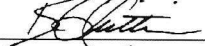
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Table A: br-NEtFOSA; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ 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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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSE

**2-(N-Methylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

<u>PRODUCT CODE:</u>	br-NMeFOSE
<u>LOT NUMBER:</u>	brNMeFOSE0922
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/02/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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 ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ 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	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:	NETFOSE
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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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSE

2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix

<u>PRODUCT CODE:</u>	br-NEtFOSE
<u>LOT NUMBER:</u>	brNEtFOSE1022
<u>CONCENTRATION:</u>	50.0 ± 2.5 µg/mL
<u>SOLVENT(S):</u>	Methanol
<u>DATE PREPARED:</u> (mm/dd/yyyy)	09/12/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	10/07/2027
<u>RECOMMENDED STORAGE:</u>	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 ¹⁹F-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 ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ 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	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:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22I0153	PFAS - MIX 1633 200ng/mL	09/13/2022	In house	x	01/11/2025	09/15/2022 09:34 by DAG	1

Analytical Standard Record

22K0180

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:	PFAS ^{MXF0122})
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:	PFAS MXG0222)
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		

Analyte	Parent	CAS Number	Concentration	Units
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

23A0371

Description: PFAS - MIX 1633 200ng/mL
 Standard Type: Analyte Spike
 Solvent: MeOH 62244
 Final Volume (mL): 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-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

<u>PRODUCT CODE:</u>	MPFAC-HIF-ES
<u>LOT NUMBER:</u>	MPFACHIFES1022
<u>SOLVENT(S):</u>	Methanol/Isopropanol (1%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	10/28/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	11/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	11/23/2025
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 - C_{12} , C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₄)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

Analytical Standard Record

23B0169

Description:	MPFAC-HIF-ES-EIS	Expires:	08/06/2023
Standard Type:	Other	Prepared:	02/07/2023
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	02/07/2023 16:12 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

<u>PRODUCT CODE:</u>	MPFAC-HIF-ES
<u>LOT NUMBER:</u>	MPFACHIFES1022
<u>SOLVENT(S):</u>	Methanol/Isopropanol (1%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	10/28/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	11/23/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	11/23/2025
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 - C_{12} , C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -labelled components all have chemical purities >98% and isotopic purities of $\geq 98\%$.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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: MPFAC-HIF-ES; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₄)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		17
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
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2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
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2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
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B.G. Chittim, General Manager

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