APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

908 N. Temperance Ave., Clovis, CA 93611 - Phone 559-275-2175 - www.applinc.com

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

January 04, 2023

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

RE: Red Hill AFFF Assessment Sampling
22L0160

Enclosed are the results of analyses for samples received by our laboratory on 12/22/2022. If you have any questions concerning this report, please feel free to contact me.

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

Sincerely,

Greg Salata For Gregory Salata
Project Manager

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APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Data Validatable Report

Analysis Case Narrative

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

The analyte PFBA recovered above the upper control limit in the SB03989-LCV1.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
22L0160-01	AF-RHMW12A-WGN01LF-2212W3	Water	12/21/2022 10:45	12/22/2022
22L0160-02	AF-RHMW12A-WGFD01LF-2212W3	Water	12/21/2022 10:45	12/22/2022
22L0160-03	AF-RHMW16-WGN01LF-2212W3	Water	12/21/2022 12:05	12/22/2022

APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
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Containers Received

Lab ID	Container Type	Count	Preservation Check
22L0160-01			
	500mL P	2	
22L0160-02			
	500mL P	2	
22L0160-03			
	500mL P	2	

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AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Sample Results

Sample: AF-RHMW12A-WGN01LF-2212W3
22L0160-01 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	2.7		1.5	0.76	0.20	ng/L	12/28/22	1	EPA 1633	BBL0460
PFPEA	5.0		0.76	0.38	0.062	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHXA	1.3		0.38	0.19	0.052	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHPA	0.29	J	0.38	0.19	0.039	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOA	0.19	U	0.38	0.19	0.14	ng/L	12/28/22	1	EPA 1633	BBL0460
PFNA	0.19	U	0.38	0.19	0.078	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDA	0.19	U	0.38	0.19	0.096	ng/L	12/28/22	1	EPA 1633	BBL0460
PFUnA	0.19	U	0.38	0.19	0.15	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDOA	0.19	U	0.38	0.19	0.11	ng/L	12/28/22	1	EPA 1633	BBL0460
PFTRDA	0.28	U	0.38	0.28	0.19	ng/L	12/28/22	1	EPA 1633	BBL0460
PFTEDA	0.19	U	0.38	0.19	0.19	ng/L	12/28/22	1	EPA 1633	BBL0460
PFBS	0.19	U	0.38	0.19	0.035	ng/L	12/28/22	1	EPA 1633	BBL0460
PFPES	0.19	U	0.38	0.19	0.059	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHXS	0.19	U	0.38	0.19	0.030	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHPS	0.19	U	0.38	0.19	0.049	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOS	0.065	J	0.38	0.19	0.060	ng/L	12/28/22	1	EPA 1633	BBL0460
PFNS	0.19	U	0.38	0.19	0.12	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDS	0.19	U	0.38	0.19	0.14	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDOS	0.19	U	0.38	0.19	0.12	ng/L	12/28/22	1	EPA 1633	BBL0460
4:2FTS	0.76	U	1.5	0.76	0.28	ng/L	12/28/22	1	EPA 1633	BBL0460
6:2FTS	2.3		1.5	0.76	0.30	ng/L	12/28/22	1	EPA 1633	BBL0460
8:2FTS	0.76	U	1.5	0.76	0.078	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOSA	0.19	U	0.38	0.19	0.099	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSA	0.76	U	1.5	0.76	0.45	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSA	0.76	U	1.5	0.76	0.39	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSAA	0.19	U	0.38	0.19	0.10	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSAA	0.19	U	0.38	0.19	0.11	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSE	1.1	U	1.5	1.1	0.96	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSE	1.1	U	1.5	1.1	0.99	ng/L	12/28/22	1	EPA 1633	BBL0460
HFPO-DA	0.38	U	0.76	0.38	0.17	ng/L	12/28/22	1	EPA 1633	BBL0460
ADONA	0.38	U	0.76	0.38	0.12	ng/L	12/28/22	1	EPA 1633	BBL0460
PFEESA	0.38	U	0.76	0.38	0.10	ng/L	12/28/22	1	EPA 1633	BBL0460
PFMPA	0.38	U	0.76	0.38	0.051	ng/L	12/28/22	1	EPA 1633	BBL0460
PFMBA	0.38	U	0.76	0.38	0.086	ng/L	12/28/22	1	EPA 1633	BBL0460
NFDHA	0.38	U	0.76	0.38	0.29	ng/L	12/28/22	1	EPA 1633	BBL0460
9CL-PF3ONS	0.38	U	0.76	0.38	0.20	ng/L	12/28/22	1	EPA 1633	BBL0460
11CL-PF3OUDS	0.38	U	0.76	0.38	0.20	ng/L	12/28/22	1	EPA 1633	BBL0460
3:3FTCA	0.76	U	1.5	0.76	0.55	ng/L	12/28/22	1	EPA 1633	BBL0460
5:3FTCA	0.76	U	1.5	0.76	0.42	ng/L	12/28/22	1	EPA 1633	BBL0460
7:3FTCA	0.76	U	1.5	0.76	0.52	ng/L	12/28/22	1	EPA 1633	BBL0460
Surrogate: 13C4-PFBA	*68.3%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C5-PFPEA	*67.8%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C5-PFHXA	*74.4%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C4-PFHPA	*75.2%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOA	*73.9%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*

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Sample Results
(Continued)

Sample: AF-RHMW12A-WGN01LF-2212W3 (Continued)
22L0160-01 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	*82.8%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C6-PFDA	*78.2%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C7-PFUnA	*82.2%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-PFDOA	*83.0%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-PFTEDA	*76.0%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-PFBS	*76.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-PFHXS	*76.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOS	*72.9%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-4:2FTS	*80.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-6:2FTS	*84.8%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-8:2FTS	*74.5%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOSA	*54.7%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D5-NETFOSA	*43.0%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D3-NMEFOSA	*39.9%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D3-NMEFOSAA	*78.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D5-NETFOSAA	*77.0%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D7-NMEFOSE	*59.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D9-NETFOSE	*69.9%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-HFPO-DA	*72.3%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*

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Sample Results

(Continued)

Sample: AF-RHMW12A-WGFD01LF-2212W3
22L0160-02 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	2.5		1.6	0.81	0.21	ng/L	12/28/22	1	EPA 1633	BBL0460
PFPEA	5.0		0.81	0.41	0.066	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHXA	1.4		0.41	0.20	0.056	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHPA	0.25 J		0.41	0.20	0.042	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOA	0.20 U		0.41	0.20	0.16	ng/L	12/28/22	1	EPA 1633	BBL0460
PFNA	0.20 U		0.41	0.20	0.083	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDA	0.20 U		0.41	0.20	0.10	ng/L	12/28/22	1	EPA 1633	BBL0460
PFUnA	0.20 U		0.41	0.20	0.16	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDOA	0.20 U		0.41	0.20	0.11	ng/L	12/28/22	1	EPA 1633	BBL0460
PFTRDA	0.31 U		0.41	0.31	0.21	ng/L	12/28/22	1	EPA 1633	BBL0460
PFTEDA	0.20 U	IR2,	0.41	0.20	0.20	ng/L	12/28/22	1	EPA 1633	BBL0460
PFBS	0.20 U		0.41	0.20	0.037	ng/L	12/28/22	1	EPA 1633	BBL0460
PFPES	0.20 U		0.41	0.20	0.064	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHXS	0.20 U		0.41	0.20	0.032	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHPS	0.20 U		0.41	0.20	0.052	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOS	0.089 J		0.41	0.20	0.065	ng/L	12/28/22	1	EPA 1633	BBL0460
PFNS	0.20 U		0.41	0.20	0.13	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDS	0.20 U		0.41	0.20	0.15	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDOS	0.20 U		0.41	0.20	0.13	ng/L	12/28/22	1	EPA 1633	BBL0460
4:2FTS	0.81 U		1.6	0.81	0.30	ng/L	12/28/22	1	EPA 1633	BBL0460
6:2FTS	0.51 J		1.6	0.81	0.32	ng/L	12/28/22	1	EPA 1633	BBL0460
8:2FTS	0.81 U		1.6	0.81	0.084	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOSA	0.20 U		0.41	0.20	0.11	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSA	0.81 U		1.6	0.81	0.48	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSA	0.81 U		1.6	0.81	0.42	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSAA	0.20 U		0.41	0.20	0.11	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSAA	0.20 U		0.41	0.20	0.12	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSE	1.2 U		1.6	1.2	1.0	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSE	1.2 U		1.6	1.2	1.1	ng/L	12/28/22	1	EPA 1633	BBL0460
HFPO-DA	0.41 U		0.81	0.41	0.18	ng/L	12/28/22	1	EPA 1633	BBL0460
ADONA	0.41 U		0.81	0.41	0.13	ng/L	12/28/22	1	EPA 1633	BBL0460
PFEESA	0.41 U		0.81	0.41	0.11	ng/L	12/28/22	1	EPA 1633	BBL0460
PFMPA	0.41 U		0.81	0.41	0.055	ng/L	12/28/22	1	EPA 1633	BBL0460
PFMBA	0.41 U		0.81	0.41	0.092	ng/L	12/28/22	1	EPA 1633	BBL0460
NFDHA	0.41 U		0.81	0.41	0.31	ng/L	12/28/22	1	EPA 1633	BBL0460
9CL-PF3ONS	0.41 U		0.81	0.41	0.21	ng/L	12/28/22	1	EPA 1633	BBL0460
11CL-PF3OUDS	0.41 U		0.81	0.41	0.21	ng/L	12/28/22	1	EPA 1633	BBL0460
3:3FTCA	0.81 U		1.6	0.81	0.59	ng/L	12/28/22	1	EPA 1633	BBL0460
5:3FTCA	0.81 U		1.6	0.81	0.45	ng/L	12/28/22	1	EPA 1633	BBL0460
7:3FTCA	0.81 U		1.6	0.81	0.56	ng/L	12/28/22	1	EPA 1633	BBL0460
Surrogate: 13C4-PFBA	*76.2%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C5-PFPEA	*73.0%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C5-PFHXA	*72.3%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C4-PFHPA	*74.3%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOA	*84.1%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*

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Sample Results
(Continued)

Sample: AF-RHMW12A-WGFD01LF-2212W3 (Continued)
22L0160-02 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	*76.4%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C6-PFDA	*69.3%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C7-PFUnA	*68.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-PFDOA	*60.3%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-PFTEDA	*73.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-PFBS	*73.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-PFHXS	*75.7%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOS	*81.0%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-4:2FTS	*85.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-6:2FTS	*72.2%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-8:2FTS	*75.2%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOSA	*49.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D5-NETFOSA	*35.5%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D3-NMEFOSA	*36.2%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D3-NMEFOSAA	*63.8%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D5-NETFOSAA	*68.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D7-NMEFOSE	*50.7%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D9-NETFOSE	*60.3%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-HFPO-DA	*79.1%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*

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Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Sample Results

(Continued)

Sample: AF-RHMW16-WGN01LF-2212W3
22L0160-03 (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	0.19	ng/L	12/28/22	1	EPA 1633	BBL0460
PFPEA	0.37	U	0.75	0.37	0.061	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHXA	0.19	U	0.37	0.19	0.051	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHPA	0.19	U	0.37	0.19	0.038	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOA	0.19	U	0.37	0.19	0.14	ng/L	12/28/22	1	EPA 1633	BBL0460
PFNA	0.19	U	0.37	0.19	0.077	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDA	0.19	U	0.37	0.19	0.095	ng/L	12/28/22	1	EPA 1633	BBL0460
PFUnA	0.19	U	0.37	0.19	0.15	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDOA	0.19	U	0.37	0.19	0.10	ng/L	12/28/22	1	EPA 1633	BBL0460
PFTRDA	0.28	U	0.37	0.28	0.19	ng/L	12/28/22	1	EPA 1633	BBL0460
PFTEDA	0.19	U	0.37	0.19	0.19	ng/L	12/28/22	1	EPA 1633	BBL0460
PFBS	0.19	U	0.37	0.19	0.034	ng/L	12/28/22	1	EPA 1633	BBL0460
PFPES	0.19	U	0.37	0.19	0.059	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHXS	0.19	U	0.37	0.19	0.030	ng/L	12/28/22	1	EPA 1633	BBL0460
PFHPS	0.19	U	0.37	0.19	0.048	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOS	0.19	U	0.37	0.19	0.060	ng/L	12/28/22	1	EPA 1633	BBL0460
PFNS	0.19	U	0.37	0.19	0.12	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDS	0.19	U	0.37	0.19	0.14	ng/L	12/28/22	1	EPA 1633	BBL0460
PFDOS	0.19	U	0.37	0.19	0.12	ng/L	12/28/22	1	EPA 1633	BBL0460
4:2FTS	0.75	U	1.5	0.75	0.27	ng/L	12/28/22	1	EPA 1633	BBL0460
6:2FTS	0.75	U	1.5	0.75	0.29	ng/L	12/28/22	1	EPA 1633	BBL0460
8:2FTS	0.75	U	1.5	0.75	0.077	ng/L	12/28/22	1	EPA 1633	BBL0460
PFOSA	0.19	U	0.37	0.19	0.098	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSA	0.75	U	1.5	0.75	0.44	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSA	0.75	U	1.5	0.75	0.39	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSAA	0.19	U	0.37	0.19	0.099	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSAA	0.19	U	0.37	0.19	0.11	ng/L	12/28/22	1	EPA 1633	BBL0460
NMeFOSE	1.1	U	1.5	1.1	0.95	ng/L	12/28/22	1	EPA 1633	BBL0460
NEtFOSE	1.1	U	1.5	1.1	0.98	ng/L	12/28/22	1	EPA 1633	BBL0460
HFPO-DA	0.37	U	0.75	0.37	0.16	ng/L	12/28/22	1	EPA 1633	BBL0460
ADONA	0.37	U	0.75	0.37	0.12	ng/L	12/28/22	1	EPA 1633	BBL0460
PFEESA	0.37	U	0.75	0.37	0.10	ng/L	12/28/22	1	EPA 1633	BBL0460
PFMPA	0.37	U	0.75	0.37	0.050	ng/L	12/28/22	1	EPA 1633	BBL0460
PFMBA	0.37	U	0.75	0.37	0.085	ng/L	12/28/22	1	EPA 1633	BBL0460
NFDHA	0.37	U	0.75	0.37	0.28	ng/L	12/28/22	1	EPA 1633	BBL0460
9CL-PF3ONS	0.37	U	0.75	0.37	0.20	ng/L	12/28/22	1	EPA 1633	BBL0460
11CL-PF3OUDS	0.37	U	0.75	0.37	0.19	ng/L	12/28/22	1	EPA 1633	BBL0460
3:3FTCA	0.75	U	1.5	0.75	0.54	ng/L	12/28/22	1	EPA 1633	BBL0460
5:3FTCA	0.75	U	1.5	0.75	0.42	ng/L	12/28/22	1	EPA 1633	BBL0460
7:3FTCA	0.75	U	1.5	0.75	0.52	ng/L	12/28/22	1	EPA 1633	BBL0460
Surrogate: 13C4-PFBA	*76.4%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C5-PFPEA	*78.2%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C5-PFHXA	*80.3%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C4-PFHPA	*81.2%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOA	*80.6%*		*20-150*				*12/28/22*	1	*EPA 1633*	*BBL0460*

APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Sample Results

(Continued)

Sample: AF-RHMW16-WGN01LF-2212W3 (Continued)

22L0160-03 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result	/Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	*79.4%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C6-PFDA	*83.9%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C7-PFUnA	*82.8%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-PFDOA	*83.3%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-PFTEDA	*74.0%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-PFBS	*72.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-PFHXS	*72.8%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOS	*79.9%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-4:2FTS	*73.8%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-6:2FTS	*80.5%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C2-8:2FTS	*76.7%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C8-PFOSA	*60.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D5-NETFOSA	*42.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D3-NMEFOSA	*40.2%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D3-NMEFOSAA	*73.2%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D5-NETFOSAA	*96.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D7-NMEFOSE	*58.7%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: D9-NETFOSE	*71.6%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*
Surrogate: 13C3-HFPO-DA	*77.9%*			*20-150*			*12/28/22*	1	*EPA 1633*	*BBL0460*

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AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Quality Control

Per- and Polyfluoroalkyl Substances

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0460 - 1633										
Blank (BBL0460-BLK1)										
	ng/L									
PFBA	0.80 U	1.6	0.80	0.21						
PFPEA	0.40 U	0.80	0.40	0.065						
PFHXA	0.20 U	0.40	0.20	0.055						
PFHPA	0.20 U	0.40	0.20	0.041						
PFOA	0.20 U	0.40	0.20	0.15						
PFNA	0.20 U	0.40	0.20	0.082						
PFDA	0.20 U	0.40	0.20	0.10						
PFUnA	0.20 U	0.40	0.20	0.16						
PFDOA	0.20 U	0.40	0.20	0.11						
PFTRDA	0.30 U	0.40	0.30	0.20						
PFTEDA	0.20 U	0.40	0.20	0.20						
PFBS	0.20 U	0.40	0.20	0.037						
PFPES	0.20 U	0.40	0.20	0.063						
PFHXS	0.20 U	0.40	0.20	0.032						
PFHPS	0.20 U	0.40	0.20	0.051						
PFOS	0.0845 J	0.40	0.20	0.064						
PFNS	0.20 U	0.40	0.20	0.12						
PFDS	0.20 U	0.40	0.20	0.15						
PFDOS	0.20 U	0.40	0.20	0.12						
4:2FTS	0.80 U	1.6	0.80	0.29						
6:2FTS	0.80 U	1.6	0.80	0.31						
8:2FTS	0.80 U	1.6	0.80	0.082						
PFOSA	0.20 U	0.40	0.20	0.10						
NMeFOSA	0.80 U	1.6	0.80	0.47						
NEtFOSA	0.80 U	1.6	0.80	0.41						
NMeFOSAA	0.20 U	0.40	0.20	0.11						
NEtFOSAA	0.20 U	0.40	0.20	0.11						
NMeFOSE	1.2 U	1.6	1.2	1.0						
NEtFOSE	1.2 U	1.6	1.2	1.0						
HFPO-DA	0.40 U	0.80	0.40	0.17						
ADONA	0.40 U	0.80	0.40	0.12						
PFEESA	0.40 U	0.80	0.40	0.11						
PFMPA	0.40 U	0.80	0.40	0.054						
PFMBA	0.40 U	0.80	0.40	0.091						
NFDHA	0.40 U	0.80	0.40	0.30						
9CL-PF3ONS	0.40 U	0.80	0.40	0.21						
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21						
3:3FTCA	0.80 U	1.6	0.80	0.57						
5:3FTCA	0.80 U	1.6	0.80	0.44						
7:3FTCA	0.80 U	1.6	0.80	0.55						
Surrogates										
13C4-PFBA	*25.5*				*32.0*		*79.7*	*20-150*		
13C5-PFPEA	*11.2*				*16.0*		*69.8*	*20-150*		
13C5-PFHXA	*5.69*				*8.00*		*71.2*	*20-150*		
13C4-PFHPA	*5.10*				*8.00*		*63.7*	*20-150*		
13C8-PFOA	*6.51*				*8.00*		*81.3*	*20-150*		

Prepared & Analyzed: 12/27/22 23:49

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AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0460 - 1633 (Continued)										
Blank (BBL0460-BLK1)							Prepared & Analyzed: 12/27/22 23:49			
	ng/L									
Surrogates										
13C9-PFNA	*2.82*				*4.00*		*70.6*	*20-150*		
13C6-PFDA	*2.96*				*4.00*		*73.9*	*20-150*		
13C7-PFUnA	*3.49*				*4.00*		*87.3*	*20-150*		
13C2-PFDOA	*3.22*				*4.00*		*80.4*	*20-150*		
13C2-PFTEDA	*3.60*				*4.00*		*89.9*	*20-150*		
13C3-PFBS	*5.95*				*8.00*		*74.3*	*20-150*		
13C3-PFHXS	*5.94*				*8.00*		*74.2*	*20-150*		
13C8-PFOS	*6.13*				*8.00*		*76.6*	*20-150*		
13C2-4:2FTS	*11.8*				*16.0*		*73.9*	*20-150*		
13C2-6:2FTS	*13.3*				*16.0*		*83.1*	*20-150*		
13C2-8:2FTS	*12.8*				*16.0*		*80.1*	*20-150*		
13C8-PFOSA	*4.62*				*8.00*		*57.7*	*20-150*		
D5-NETFOSA	*3.10*				*8.00*		*38.7*	*20-150*		
D3-NMEFOSA	*3.15*				*8.00*		*39.3*	*20-150*		
D3-NMEFOSAA	*11.7*				*16.0*		*73.4*	*20-150*		
D5-NETFOSAA	*13.3*				*16.0*		*83.1*	*20-150*		
D7-NMEFOSE	*47.6*				*80.0*		*59.5*	*20-150*		
D9-NETFOSE	*55.4*				*80.0*		*69.3*	*20-150*		
13C3-HFPO-DA	*23.0*				*32.0*		*72.0*	*20-150*		
LCS (BBL0460-BS1)							Prepared: 12/27/22 07:41 Analyzed: 12/28/22 00:02			
	ng/L									
PFBA	19.6				16.0		123	40-150		
PFPEA	9.23				8.00		115	40-150		
PFHXA	4.27				4.00		107	40-150		
PFHPA	4.91				4.00		123	40-150		
PFOA	5.38				4.00		134	40-150		
PFNA	5.37				4.00		134	40-150		
PFDA	4.55 IR2				4.00		114	40-150		
PFUnA	4.94				4.00		123	40-150		
PFDOA	4.41				4.00		110	40-150		
PFTRDA	4.61				4.00		115	40-150		
PFTEDA	4.62				4.00		115	40-150		
PFBS	4.03				3.54		114	40-150		
PFPES	5.15				3.76		137	40-150		
PFHXS	4.60				3.66		126	40-150		
PFHPS	4.15				3.82		109	40-150		
PFOS	3.78				3.72		102	40-150		
PFNS	4.36				3.84		113	40-150		
PFDS	4.28				3.86		111	40-150		
PFDOS	4.66				3.88		120	40-150		
4:2FTS	18.1				15.0		120	40-150		
6:2FTS	20.8				15.2		137	40-150		
8:2FTS	19.9				15.4		129	40-150		
PFOSA	4.80				4.00		120	40-150		

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AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0460 - 1633 (Continued)										
LCS (BBL0460-BS1)						Prepared: 12/27/22 07:41		Analyzed: 12/28/22 00:02		
	ng/L									
NMeFOSA	20.1				16.0		125	40-150		
NEtFOSA	19.7				16.0		123	40-150		
NMeFOSAA	4.03				4.00		101	40-150		
NEtFOSAA	4.43				4.00		111	40-150		
NMeFOSE	18.2				16.0		114	40-150		
NEtFOSE	18.5				16.0		115	40-150		
HFPO-DA	9.24				8.00		115	40-150		
ADONA	8.66				7.56		115	40-150		
PFEESA	7.31				7.12		103	40-150		
PFMPA	9.67				8.00		121	40-150		
PFMBA	9.82				8.00		123	40-150		
NFDHA	8.95				8.00		112	40-150		
9CL-PF3ONS	10.4				7.48		139	40-150		
11CL-PF3OUDS	9.69				7.56		128	40-150		
3:3FTCA	17.6				16.0		110	40-150		
5:3FTCA	16.4				16.0		102	40-150		
7:3FTCA	17.9				16.0		112	40-150		
Surrogates										
13C4-PFBA	*25.0*				*32.0*		*78.2*	*20-150*		
13C5-PFPEA	*12.4*				*16.0*		*77.3*	*20-150*		
13C5-PFHXA	*7.07*				*8.00*		*88.3*	*20-150*		
13C4-PFHPA	*6.22*				*8.00*		*77.7*	*20-150*		
13C8-PFOA	*5.77*				*8.00*		*72.2*	*20-150*		
13C9-PFNA	*3.04*				*4.00*		*75.9*	*20-150*		
13C6-PFDA	*2.71*				*4.00*		*67.8*	*20-150*		
13C7-PFUnA	*3.23*				*4.00*		*80.8*	*20-150*		
13C2-PFDOA	*3.22*				*4.00*		*80.6*	*20-150*		
13C2-PFTEDA	*3.03*				*4.00*		*75.7*	*20-150*		
13C3-PFBS	*6.53*				*8.00*		*81.6*	*20-150*		
13C3-PFHXS	*6.08*				*8.00*		*76.0*	*20-150*		
13C8-PFOS	*6.77*				*8.00*		*84.6*	*20-150*		
13C2-4:2FTS	*14.0*				*16.0*		*87.6*	*20-150*		
13C2-6:2FTS	*12.6*				*16.0*		*78.9*	*20-150*		
13C2-8:2FTS	*14.8*				*16.0*		*92.8*	*20-150*		
13C8-PFOSA	*5.17*				*8.00*		*64.7*	*20-150*		
D5-NETFOSA	*3.30*				*8.00*		*41.3*	*20-150*		
D3-NMEFOSA	*3.14*				*8.00*		*39.3*	*20-150*		
D3-NMEFOSAA	*14.2*				*16.0*		*88.6*	*20-150*		
D5-NETFOSAA	*15.0*				*16.0*		*93.4*	*20-150*		
D7-NMEFOSE	*48.1*				*80.0*		*60.2*	*20-150*		
D9-NETFOSE	*52.0*				*80.0*		*65.0*	*20-150*		
13C3-HFPO-DA	*27.3*				*32.0*		*85.3*	*20-150*		

APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0460 - 1633 (Continued)										
MRL Check (BBL0460-MRL1)						Prepared: 12/27/22 07:41 Analyzed: 12/28/22 00:15				
	ng/L									
PFBA	2.34				1.60		147	40-150		
PFPEA	0.982				0.800		123	40-150		
PFHXA	0.494				0.400		124	40-150		
PFHPA	0.571				0.400		143	40-150		
PFOA	0.548				0.400		137	40-150		
PFNA	0.413				0.400		103	40-150		
PFDA	0.569				0.400		142	40-150		
PFUnA	0.537				0.400		134	40-150		
PFDOA	0.497				0.400		124	40-150		
PFTRDA	0.460 IR2				0.400		115	40-150		
PFTEDA	0.484				0.400		121	40-150		
PFBS	0.436				0.354		123	40-150		
PFPES	0.485				0.376		129	40-150		
PFHXS	0.426				0.366		117	40-150		
PFHPS	0.412				0.382		108	40-150		
PFOS	0.470				0.372		126	40-150		
PFNS	0.433				0.384		113	40-150		
PFDS	0.409				0.386		106	40-150		
PFDOS	0.536				0.388		138	40-150		
4:2FTS	1.94				1.50		129	40-150		
6:2FTS	1.74				1.52		115	40-150		
8:2FTS	1.75				1.54		114	40-150		
PFOSA	0.466				0.400		117	40-150		
NMeFOSA	1.92				1.60		120	40-150		
NEtFOSA	1.96				1.60		123	40-150		
NMeFOSAA	0.575				0.400		144	40-150		
NEtFOSAA	0.417				0.400		104	40-150		
NMeFOSE	1.72				1.60		107	40-150		
NEtFOSE	1.87				1.60		117	40-150		
HFPO-DA	1.15				0.800		144	40-150		
ADONA	0.876				0.756		116	40-150		
PFEESA	0.766 J				0.712		108	40-150		
PFMPA	0.893				0.800		112	40-150		
PFMBA	0.939				0.800		117	40-150		
NFDHA	0.938				0.800		117	40-150		
9CL-PF3ONS	0.920				0.748		123	40-150		
11CL-PF3OUDS	0.727 J				0.756		96.1	40-150		
3:3FTCA	1.81				1.60		113	40-150		
5:3FTCA	2.10				1.60		131	40-150		
7:3FTCA	1.87				1.60		117	40-150		
Surrogates										
13C4-PFBA	*25.6*				*32.0*		*79.9*	*20-150*		
13C5-PFPEA	*12.1*				*16.0*		*75.7*	*20-150*		
13C5-PFHXA	*6.56*				*8.00*		*82.0*	*20-150*		
13C4-PFHPA	*6.54*				*8.00*		*81.8*	*20-150*		
13C8-PFOA	*6.63*				*8.00*		*82.8*	*20-150*		

APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Quality Control
(Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0460 - 1633 (Continued)										
MRL Check (BBL0460-MRL1)						Prepared: 12/27/22 07:41 Analyzed: 12/28/22 00:15				
	ng/L									
Surrogates										
13C9-PFNA	*3.39*				*4.00*		*84.7*	*20-150*		
13C6-PFDA	*3.26*				*4.00*		*81.4*	*20-150*		
13C7-PFUnA	*3.80*				*4.00*		*94.9*	*20-150*		
13C2-PFDOA	*3.62*				*4.00*		*90.5*	*20-150*		
13C2-PFTEDA	*4.20*				*4.00*		*105*	*20-150*		
13C3-PFBS	*6.38*				*8.00*		*79.7*	*20-150*		
13C3-PFHXS	*6.31*				*8.00*		*78.9*	*20-150*		
13C8-PFOS	*6.47*				*8.00*		*80.9*	*20-150*		
13C2-4:2FTS	*11.9*				*16.0*		*74.2*	*20-150*		
13C2-6:2FTS	*13.8*				*16.0*		*86.0*	*20-150*		
13C2-8:2FTS	*13.3*				*16.0*		*83.0*	*20-150*		
13C8-PFOSA	*5.09*				*8.00*		*63.7*	*20-150*		
D5-NETFOSA	*3.37*				*8.00*		*42.1*	*20-150*		
D3-NMEFOSA	*3.04*				*8.00*		*38.1*	*20-150*		
D3-NMEFOSAA	*13.3*				*16.0*		*82.9*	*20-150*		
D5-NETFOSAA	*14.7*				*16.0*		*91.7*	*20-150*		
D7-NMEFOSE	*47.3*				*80.0*		*59.1*	*20-150*		
D9-NETFOSE	*52.0*				*80.0*		*65.0*	*20-150*		
13C3-HFPO-DA	*27.1*				*32.0*		*84.7*	*20-150*		

APPL, LLC - 908 N. Temperance Ave., Clovis, CA 93611

AECOM Honolulu	Project: Red Hill AFFF Assessment Sampling	
1001 Bishop Street, Suite 1600	Project Number: Red Hill AFFF Assessment Sampling	
Honolulu, HI 96813	Project Manager: Watson Tanji	Reported: 01/04/2023 09:50

Notes and Definitions

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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

WORK ORDER

22L0160

Printed: 01/04/2023 9:50 am

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

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

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

Date Received: 12/22/2022 11:15 AM
Date Due: 01/04/2023 (5.00 day TAT)

Logged In By: Megan Salata
Received By: Lincoln Hooper

Analysis		Comments
22L0160-01 AF-RHMW12A-WGN01LF-2212W3 [Water] Sampled 12/21/2022 10:45:00AM		
1633	NONE	"Report relevant surrogates"
22L0160-02 AF-RHMW12A-WGFD01LF-2212W3 [Water] Sampled 12/21/2022 10:45:00AM		
1633	NONE	"Report relevant surrogates"
22L0160-03 AF-RHMW16-WGN01LF-2212W3 [Water] Sampled 12/21/2022 12:05:00PM		
1633	NONE	"Report relevant surrogates"

22L0160 **Sample Receipt Log**

Default Cooler

Samples Received at: **1.1°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

22L0160

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. 01-221221-23F0104-APL

Report to: PLEASE PRINT		Invoice to: PLEASE PRINT	
Company Name: AECOM	Phone: 808-954-4512 / 808-356-5311	Company Name: AECOM	Phone:
Address: 1001 Bishop St ste1600 Honolulu, HI 96813	Fax:	Address:	Fax:
Attn: Watson Tanji / Brant Landers		Attn: Sheree Smith	
Email: watson.tanji@aecom.com/brant.landers@aecom.com		Email: USAPimaging@aecom.com	

Project Name/Number	Sampler (Print)
CTO N6274223F0104 / 60697810	CHRIS WOMACK
Purchase Order Number	Sampler (Signature)

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	Analysis Requested/Method Number: PFAS EPA Draft 1633
AF-RHMW12A-WGN01LF-2212W3	RHMW12	12/21/22	1045	HST	2	✓			✓
AF-RHMW12A-WGFD01LF-2212W3	RHMW12	12/21/22	1045	HST	2	✓			✓

Date Shipped:
Carrier:
Waybill No.:
Comments:

Shuttle Temperature: IRB 4.1/1.1°C

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:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
CHRIS WOMACK	12/21/22	1340			12/21/22	1350	
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					12/22/22	1115	

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

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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. 02-221221-23F0104-APL

Report to: PLEASE PRINT

Company Name: AECOM
Phone: 808-954-4512 / 808-356-5311
Address: 1001 Bishop St ste1600
Honolulu, HI 96813
Fax:
Attn: Watson Tanji / Brant Landers
Email: watson.tanji@aecom.com/brant.landers@aecom.com

Invoice to: PLEASE PRINT

Company Name: AECOM
Phone:
Address:
Fax:
Attn: Sheree Smith
Email: USAPimaging@aecom.com

Project Name/Number	Sampler (Print)
CTO N6274223F0104 / 60697810	CHRIS WOMACK
Purchase Order Number	Sampler (Signature)

Date Shipped:
Carrier:
Waybill No.:
Comments:

Sample Identification	Location	Date Collected	Time Collected	Time Zone	No. of Containers	Matrix: Aq	Matrix: Sed.	Matrix: Soil	Analysis Requested/Method Number: PFAS EPA Draft 1633
AF-RHMW16-WGN01LF-2212W3	RHMW16	12/21/22	1205	HST	2	✓			✓

MD 12/21/22

MD 12/21/22

Shuttle Temperature:

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 sampler:	Date	Time	Received by:	Relinquished by:	Date	Time	Received by:
CHRIS WOMACK	12/21/22	1340	Mindy DeDuo	Mindy DeDuo	12/21/22	1350	
Relinquished by:	Date	Time	Received by:	Relinquished by:	Date	Time	Received at lab by:
					12/22/22	1115	Taylor Ellegan

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

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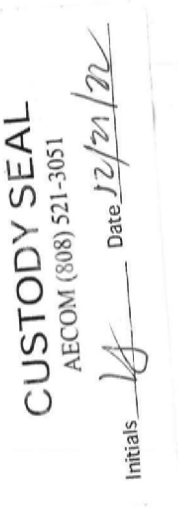

CUSTODY SEAL
AECOM (808) 521-3051
Initials
Date 12/21/22

PFAS

SAMPLE DATA

FORM I
ANALYSIS DATA SHEET

AF-RHMW12A-WGN01LF-2212W3

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0160-01	File ID:	S2022-12-27B (26)
Sampled:	12/21/22 10:45	Prepared:	12/27/22 07:41	Analyzed:	12/28/22 01:20
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	527.22 g / 2 ml			Instrument:	Saphira
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	2.7	1.5	0.76	0.20	
PFPEA	5.0	0.76	0.38	0.062	
PFHXA	1.3	0.38	0.19	0.052	
PFHPA	0.29 J	0.38	0.19	0.039	
PFOA	0.19 U	0.38	0.19	0.14	
PFNA	0.19 U	0.38	0.19	0.078	
PFDA	0.19 U	0.38	0.19	0.096	
PFUnA	0.19 U	0.38	0.19	0.15	
PFDOA	0.19 U	0.38	0.19	0.11	
PFTRDA	0.28 U	0.38	0.28	0.19	
PFTEDA	0.19 U	0.38	0.19	0.19	
PFBS	0.19 U	0.38	0.19	0.035	
PFPES	0.19 U	0.38	0.19	0.059	
PFHXS	0.19 U	0.38	0.19	0.030	
PFHPS	0.19 U	0.38	0.19	0.049	
PFOS	0.065 J	0.38	0.19	0.060	
PFNS	0.19 U	0.38	0.19	0.12	
PFDS	0.19 U	0.38	0.19	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	2.3	1.5	0.76	0.30	
8:2FTS	0.76 U	1.5	0.76	0.078	
PFOSA	0.19 U	0.38	0.19	0.099	
NMeFOSA	0.76 U	1.5	0.76	0.45	
NEtFOSA	0.76 U	1.5	0.76	0.39	
NMeFOSAA	0.19 U	0.38	0.19	0.10	
NEtFOSAA	0.19 U	0.38	0.19	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.96	
NEtFOSE	1.1 U	1.5	1.1	0.99	
HFPO-DA	0.38 U	0.76	0.38	0.17	

FORM I
ANALYSIS DATA SHEET

AF-RHMW12A-WGN01LF-2212W3

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0160-01	File ID:	S2022-12-27B (26)
Sampled:	12/21/22 10:45	Prepared:	12/27/22 07:41	Analyzed:	12/28/22 01:20
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	527.22 g / 2 ml			Instrument:	Saphira
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007

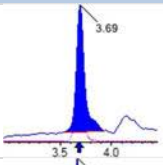
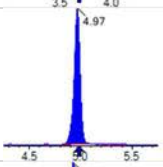
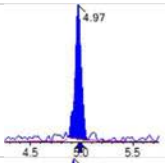
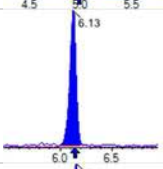
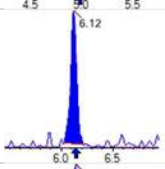
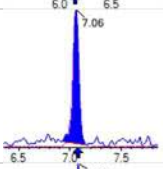
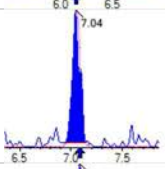
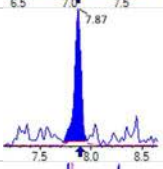
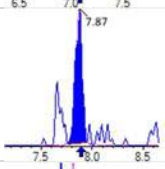
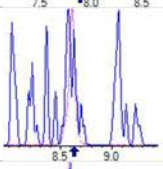
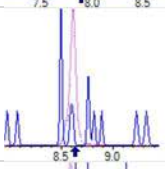
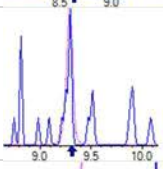
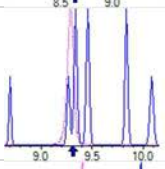
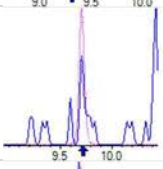
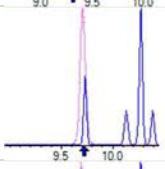
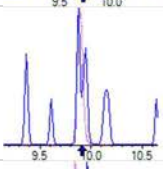
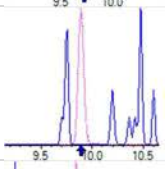
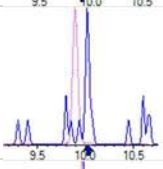
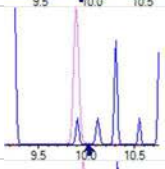
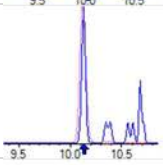
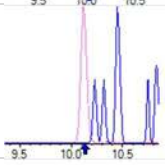
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.38 U	0.76	0.38	0.12	
PFEESA	0.38 U	0.76	0.38	0.10	
PFMPA	0.38 U	0.76	0.38	0.051	
PFMBA	0.38 U	0.76	0.38	0.086	
NFDHA	0.38 U	0.76	0.38	0.29	
9CL-PF3ONS	0.38 U	0.76	0.38	0.20	
11CL-PF3OUDS	0.38 U	0.76	0.38	0.20	
3:3FTCA	0.76 U	1.5	0.76	0.55	
5:3FTCA	0.76 U	1.5	0.76	0.42	
7:3FTCA	0.76 U	1.5	0.76	0.52	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (26)
Acquired: 2022/12/28 - 01:20

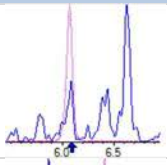
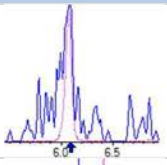
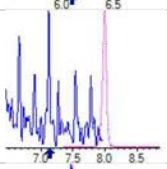
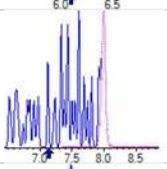
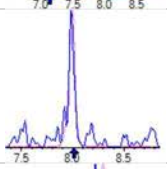
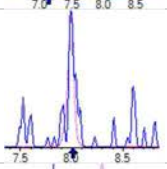
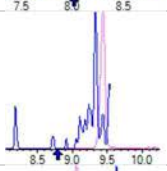
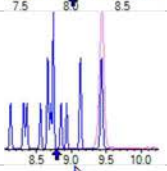
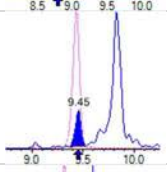
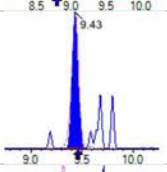
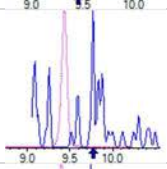
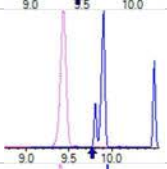
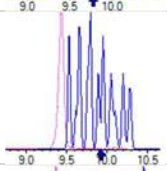
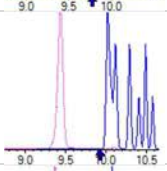
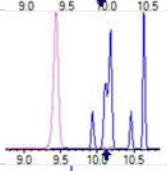
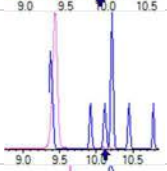
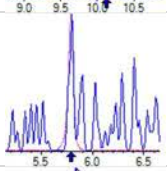
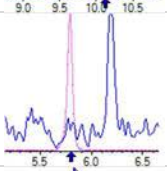
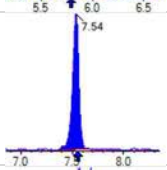
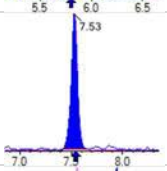
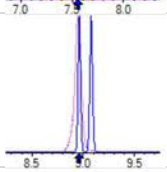
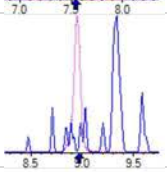
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 127864	(3.69 , 1.00) (0.00 , N/A , 0.0)	136.0	N/A 0.0 0.0	0.7152	N/A			
PFPeA	(263.0 / 219.0) 336160 (263.0 / 69.0) 3723	(4.97 , 1.00) (0.00 , N/A , 0.1)	476.0 76.6	0.0111 102.6 104.3	1.3253	N/A			
PFHxA	(313.0 / 269.0) 122426 (313.0 / 119.0) 9358	(6.13 , 1.00) (0.00 , N/A , 0.3)	195.9 55.7	0.0764 84.9 88.5	0.3391	N/A			
PFHpA	(363.0 / 319.0) 25775 (363.0 / 169.0) 8408	(7.06 , 1.00) (0.00 , N/A , 0.8)	64.5 47.8	0.3262 107.2 109.7	0.0752	N/A			
PFOA	(413.0 / 369.0) 10531 (413.0 / 169.0) 2928	(7.87 , 1.00) (0.00 , N/A , 0.2)	39.6 29.8	0.2781 82.8 88.8	0.0315	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (26)
Acquired: 2022/12/28 - 01:20

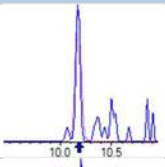
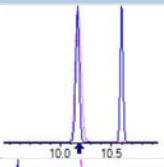
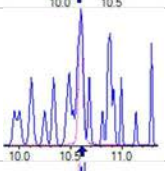
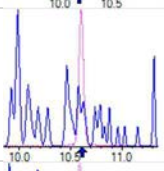
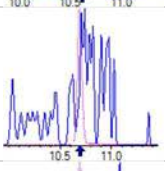
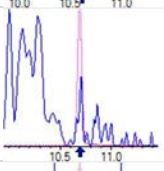
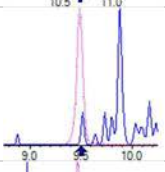
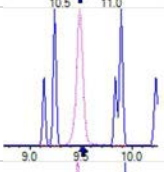
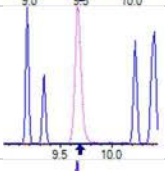
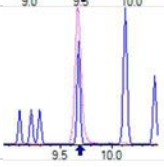
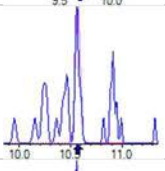
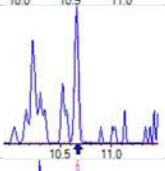
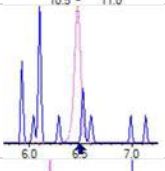
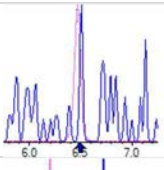
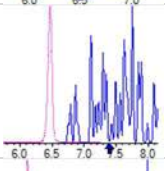
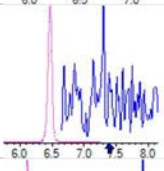
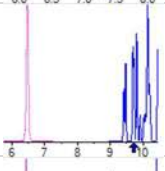
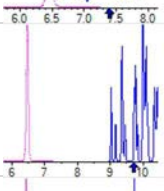
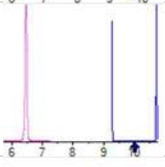
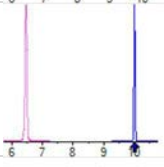
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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) 14687 (499.0 / 99.0) 3888	(9.45 , 1.00) (0.02 , N/A , 1.5)	29.0 1269.9	0.2647 115.9 117.6	0.0170	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) 126192 (427.0 / 81.0) 92424	(7.54 , 1.00) (0.00 , N/A , 0.4)	274.2 168.4	0.7324 103.6 106.8	0.6096	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (26)
Acquired: 2022/12/28 - 01:20

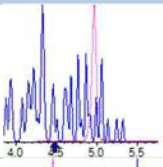
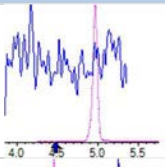
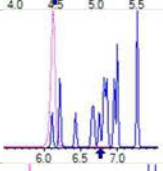
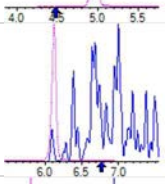
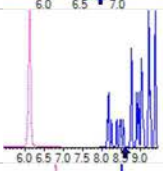
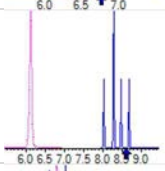
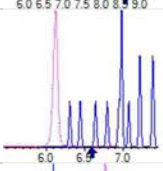
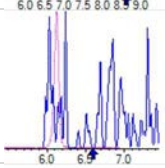
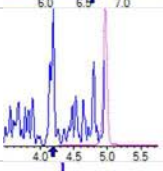
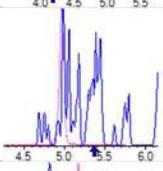
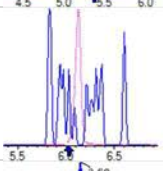
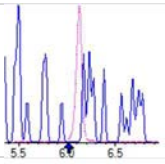
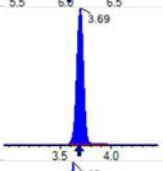
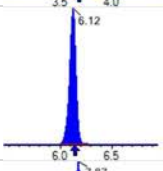
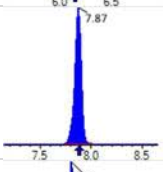
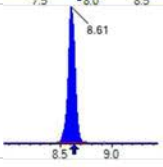
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (26)
Acquired: 2022/12/28 - 01:20

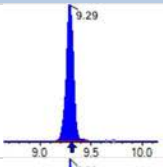
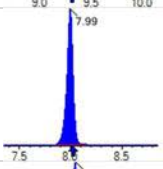
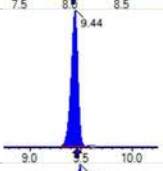
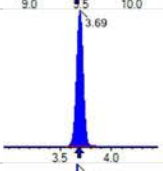
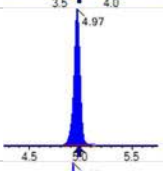
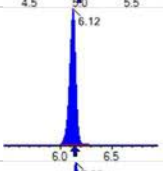
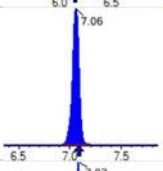
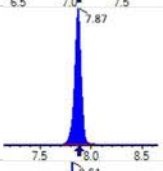
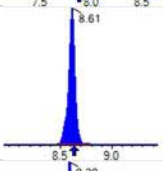
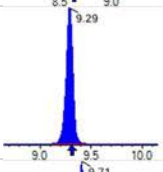
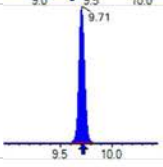
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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) 290617	(3.69 , N/A) (N/A , 0.01 , N/A)	581.0	N/A	1.0751 [1.0000]	107.5% { 101.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 478964	(6.12 , N/A) (N/A , -0.01 , N/A)	566.6	N/A	1.2061 [1.0000]	120.6% { 116.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 445067	(7.87 , N/A) (N/A , -0.02 , N/A)	585.1	N/A	1.1141 [1.0000]	111.4% { 113.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 348607	(8.61 , N/A) (N/A , -0.02 , N/A)	455.1	N/A	1.0546 [1.0000]	105.5% { 101.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (26)
Acquired: 2022/12/28 - 01:20

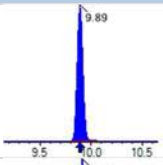
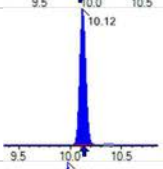
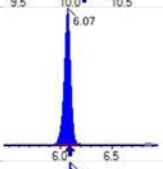
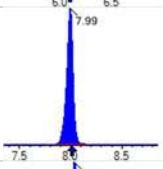
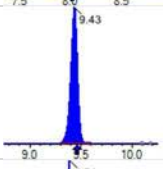
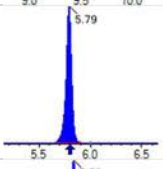
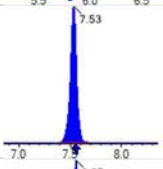
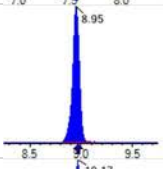
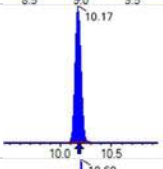
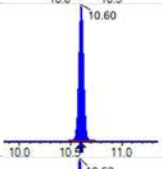
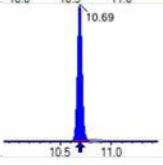
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 405309	(9.29 , N/A) (N/A , -0.02 , N/A)	252.1	N/A	1.1351 [1.0000]	113.5% { 111.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 724019	(7.99 , N/A) (N/A , -0.02 , N/A)	616.5	N/A	1.0381 [1.0000]	103.8% { 110.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 788030	(9.44 , N/A) (N/A , -0.02 , N/A)	486.0	N/A	1.1428 [1.0000]	114.3% { 116.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1705499	(3.69 , N/A) (N/A , 0.01 , N/A)	752.1	N/A	5.4611 [8.0000]	68.3% { 72.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1187442	(4.97 , N/A) (N/A , -0.01 , N/A)	603.8	N/A	2.7129 [4.0000]	67.8% { 83.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 792626	(6.12 , N/A) (N/A , -0.01 , N/A)	534.8	N/A	1.4878 [2.0000]	74.4% { 83.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 715503	(7.06 , N/A) (N/A , -0.02 , N/A)	548.0	N/A	1.5031 [2.0000]	75.2% { 89.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 720627	(7.87 , N/A) (N/A , -0.02 , N/A)	470.2	N/A	1.4776 [2.0000]	73.9% { 88.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 317887	(8.61 , N/A) (N/A , -0.02 , N/A)	540.7	N/A	0.8284 [1.0000]	82.8% { 84.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 414776	(9.29 , N/A) (N/A , -0.02 , N/A)	415.6	N/A	0.7823 [1.0000]	78.2% { 98.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 527859	(9.71 , N/A) (N/A , -0.01 , N/A)	544.6	N/A	0.8215 [1.0000]	82.2% { 82.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (26)
Acquired: 2022/12/28 - 01:20

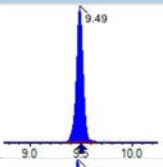
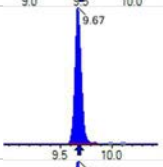
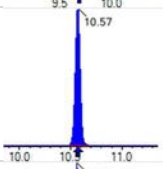
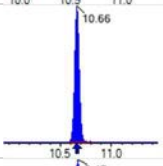
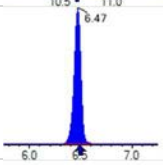
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 586938	(9.89 , N/A) (N/A , -0.01 , N/A)	579.4	N/A	0.8299 [1.0000]	83.0% { 93.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 354734	(10.12 , N/A) (N/A , -0.01 , N/A)	1465.5	N/A	0.7599 [1.0000]	76.0% { 80.2% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1854475	(6.07 , N/A) (N/A , -0.02 , N/A)	449.9	N/A	1.5211 [2.0000]	76.1% { 86.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 985315	(7.99 , N/A) (N/A , -0.02 , N/A)	725.5	N/A	1.5225 [2.0000]	76.1% { 87.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1488015	(9.43 , N/A) (N/A , -0.02 , N/A)	515.9	N/A	1.4580 [2.0000]	72.9% { 80.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 459983	(5.79 , N/A) (N/A , -0.01 , N/A)	711.1	N/A	3.2037 [4.0000]	80.1% { 86.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 605006	(7.53 , N/A) (N/A , -0.01 , N/A)	842.8	N/A	3.3908 [4.0000]	84.8% { 89.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 524341	(8.95 , N/A) (N/A , -0.02 , N/A)	494.3	N/A	2.9808 [4.0000]	74.5% { 72.4% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1483354	(10.17 , N/A) (N/A , -0.01 , N/A)	694.2	N/A	1.0932 [2.0000]	54.7% { 59.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 210136	(10.60 , N/A) (N/A , 0.00 , N/A)	586.0	N/A	0.7986 [2.0000]	39.9% { 45.6% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 201415	(10.69 , N/A) (N/A , 0.00 , N/A)	553.7	N/A	0.8590 [2.0000]	43.0% { 40.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-01
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (26)
Acquired: 2022/12/28 - 01:20

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) 871793	(9.49 , N/A) (N/A , -0.02 , N/A)	482.5	N/A	3.1226 [4.0000]	78.1% { 87.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 736314	(9.67 , N/A) (N/A , -0.01 , N/A)	300.8	N/A	3.0791 [4.0000]	77.0% { 101.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 497921	(10.57 , N/A) (N/A , 0.00 , N/A)	921.8	N/A	11.8104 [20.0000]	59.1% { 51.8% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 238350	(10.66 , N/A) (N/A , 0.00 , N/A)	907.5	N/A	13.9799 [20.0000]	69.9% { 56.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1711377	(6.47 , N/A) (N/A , -0.01 , N/A)	668.0	N/A	5.7849 [8.0000]	72.3% { 82.6% }			

FORM I
ANALYSIS DATA SHEET

AF-RHMW12A-WGFD01LF-2212W3

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0160-02	File ID:	S2022-12-27B (28)
Sampled:	12/21/22 10:45	Prepared:	12/27/22 07:41	Analyzed:	12/28/22 01:45
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	491.26 g / 2 ml			Instrument:	Saphira
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	2.5	1.6	0.81	0.21	
PFPEA	5.0	0.81	0.41	0.066	
PFHXA	1.4	0.41	0.20	0.056	
PFHPA	0.25 J	0.41	0.20	0.042	
PFOA	0.20 U	0.41	0.20	0.16	
PFNA	0.20 U	0.41	0.20	0.083	
PFDA	0.20 U	0.41	0.20	0.10	
PFUnA	0.20 U	0.41	0.20	0.16	
PFDOA	0.20 U	0.41	0.20	0.11	
PFTRDA	0.31 U	0.41	0.31	0.21	
PFTEDA	0.20 U	0.41	0.20	0.20	IR2,
PFBS	0.20 U	0.41	0.20	0.037	
PFPES	0.20 U	0.41	0.20	0.064	
PFHXS	0.20 U	0.41	0.20	0.032	
PFHPS	0.20 U	0.41	0.20	0.052	
PFOS	0.089 J	0.41	0.20	0.065	
PFNS	0.20 U	0.41	0.20	0.13	
PFDS	0.20 U	0.41	0.20	0.15	
PFDOS	0.20 U	0.41	0.20	0.13	
4:2FTS	0.81 U	1.6	0.81	0.30	
6:2FTS	0.51 J	1.6	0.81	0.32	
8:2FTS	0.81 U	1.6	0.81	0.084	
PFOSA	0.20 U	0.41	0.20	0.11	
NMeFOSA	0.81 U	1.6	0.81	0.48	
NEtFOSA	0.81 U	1.6	0.81	0.42	
NMeFOSAA	0.20 U	0.41	0.20	0.11	
NEtFOSAA	0.20 U	0.41	0.20	0.12	
NMeFOSE	1.2 U	1.6	1.2	1.0	
NEtFOSE	1.2 U	1.6	1.2	1.1	
HFPO-DA	0.41 U	0.81	0.41	0.18	

FORM I
ANALYSIS DATA SHEET

AF-RHMW12A-WGFD01LF-2212W3

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0160-02	File ID:	S2022-12-27B (28)
Sampled:	12/21/22 10:45	Prepared:	12/27/22 07:41	Analyzed:	12/28/22 01:45
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	491.26 g / 2 ml			Instrument:	Saphira
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007

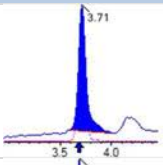
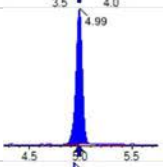
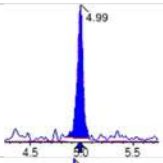
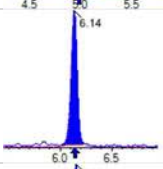
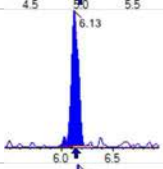
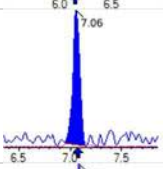
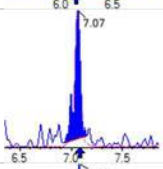
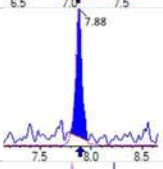
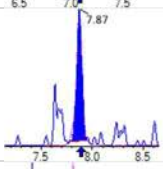
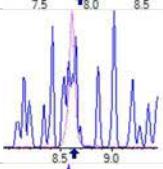
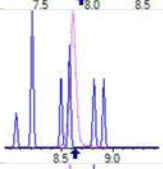
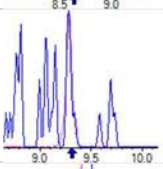
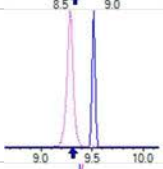
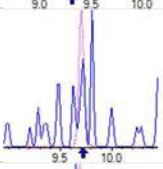
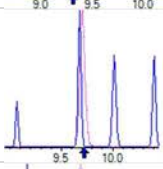
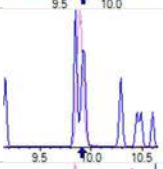
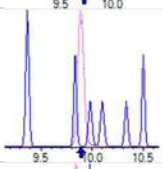
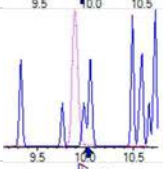
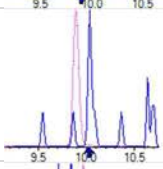
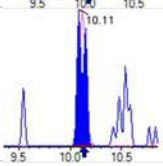
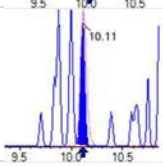
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.41 U	0.81	0.41	0.13	
PFEESA	0.41 U	0.81	0.41	0.11	
PFMPA	0.41 U	0.81	0.41	0.055	
PFMBA	0.41 U	0.81	0.41	0.092	
NFDHA	0.41 U	0.81	0.41	0.31	
9CL-PF3ONS	0.41 U	0.81	0.41	0.21	
11CL-PF3OUDS	0.41 U	0.81	0.41	0.21	
3:3FTCA	0.81 U	1.6	0.81	0.59	
5:3FTCA	0.81 U	1.6	0.81	0.45	
7:3FTCA	0.81 U	1.6	0.81	0.56	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (28)
Acquired: 2022/12/28 - 01:45

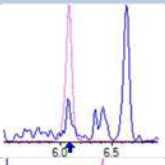
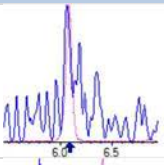
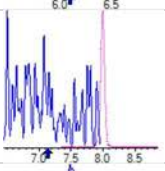
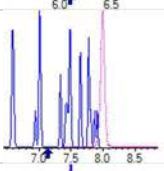
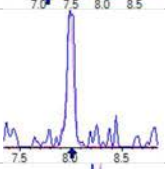
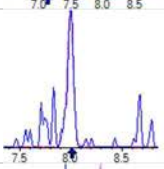
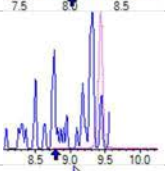
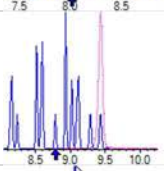
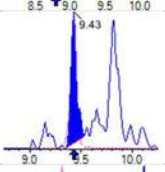
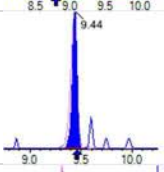
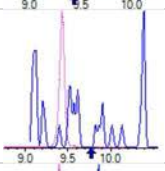
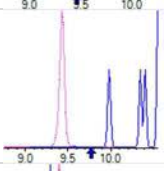
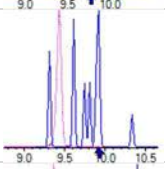
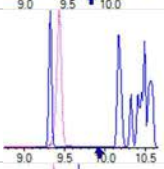
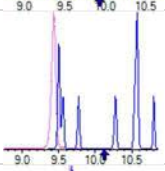
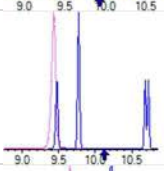
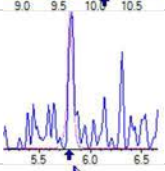
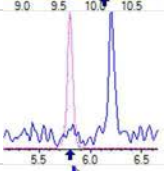
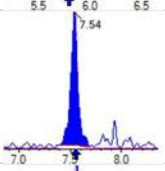
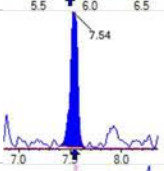
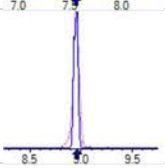
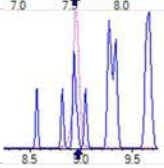
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 122492	(3.71 , 1.00) (0.00 , N/A , 0.0)	148.0	N/A 0.0 0.0	0.6081	N/A			
PFPeA	(263.0 / 219.0) 318217 (263.0 / 69.0) 3379	(4.99 , 1.00) (0.00 , N/A , -0.1)	494.2 69.1	0.0106 98.4 100.0	1.2305	N/A			
PFHxA	(313.0 / 269.0) 110900 (313.0 / 119.0) 12292	(6.14 , 1.00) (0.00 , N/A , 0.2)	182.8 79.5	0.1108 123.1 128.3	0.3338	N/A			
PFHpA	(363.0 / 319.0) 20060 (363.0 / 169.0) 5156	(7.06 , 1.00) (0.00 , N/A , -0.3)	44.3 30.6	0.2570 84.4 86.5	0.0626	N/A			
PFOA	(413.0 / 369.0) 10124 (413.0 / 169.0) 3058	(7.88 , 1.00) (0.01 , N/A , 0.5)	44.2 29.6	0.3020 89.9 96.4	0.0295	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) 4661 (713.0 / 169.0) 1309	(10.11 , 1.00) (-0.01 , N/A , -0.2)	20.0 9.0	0.2807 134.4 152.4	0.0137	N/A			IR2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (28)
Acquired: 2022/12/28 - 01:45

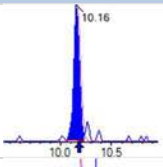
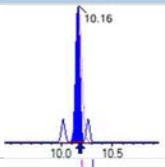
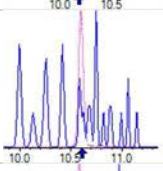
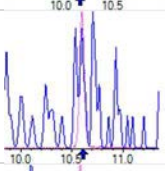
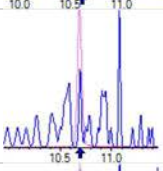
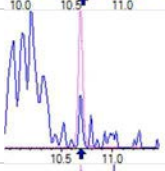
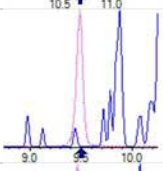
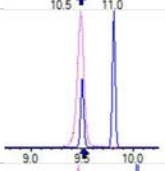
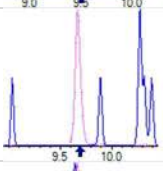
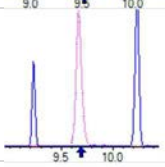
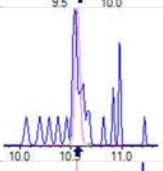
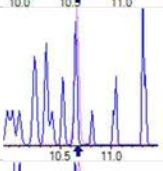
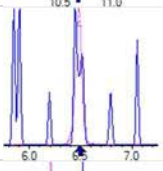
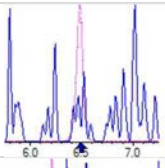
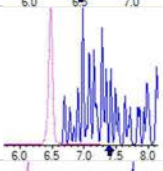
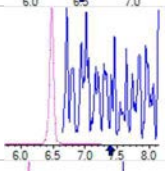
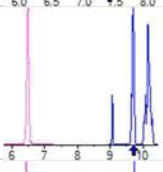
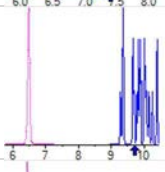
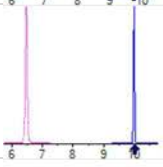
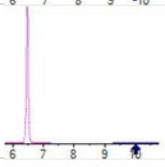
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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) 22811 (499.0 / 99.0) 5706	(9.43 , 1.00) (-0.01 , N/A , -0.8)	28.2 2225.5	0.2502 109.5 111.1	0.0218	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) 23424 (427.0 / 81.0) 19755	(7.54 , 1.00) (0.00 , N/A , -0.1)	56.2 42.9	0.8433 119.3 123.0	0.1262	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (28)
Acquired: 2022/12/28 - 01:45

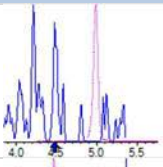
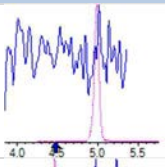
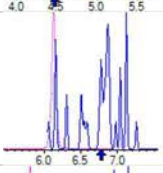
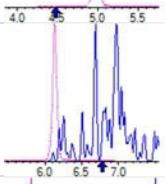
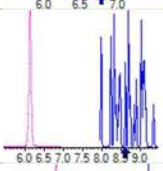
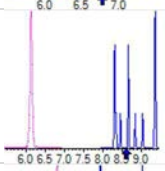
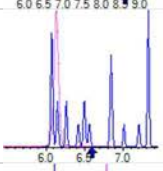
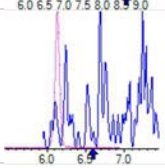
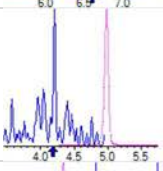
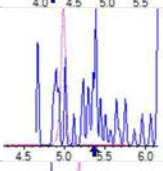
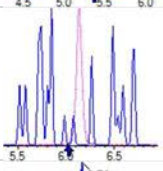
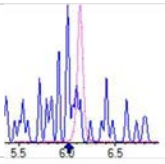
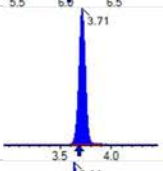
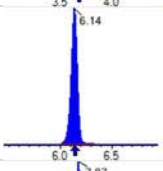
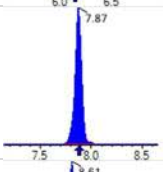
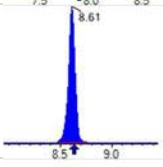
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 10621 (498.0 / 478.0) 1927	(10.16 , 1.00) (-0.01 , N/A , -0.1)	79.7 970.0	0.1815 1138.5 722.7	0.0150	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (28)
Acquired: 2022/12/28 - 01:45

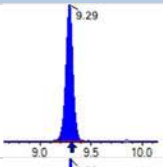
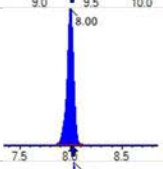
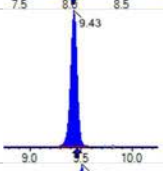
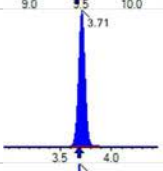
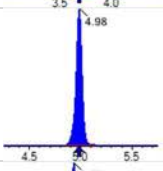
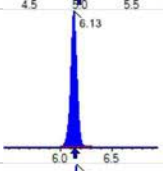
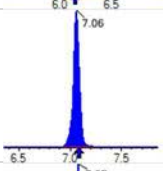
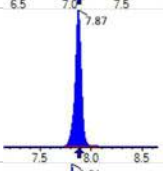
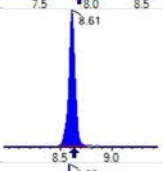
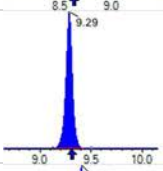
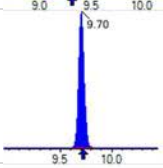
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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) 293221	(3.71 , N/A) (N/A , 0.03 , N/A)	599.7	N/A	1.0847 [1.0000]	108.5% { 102.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 453487	(6.14 , N/A) (N/A , 0.00 , N/A)	579.2	N/A	1.1419 [1.0000]	114.2% { 110.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 401400	(7.87 , N/A) (N/A , -0.02 , N/A)	653.4	N/A	1.0048 [1.0000]	100.5% { 102.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 373094	(8.61 , N/A) (N/A , -0.02 , N/A)	410.4	N/A	1.1287 [1.0000]	112.9% { 108.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (28)
Acquired: 2022/12/28 - 01:45

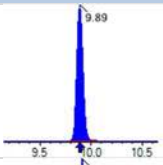
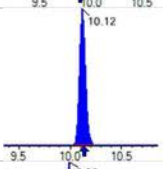
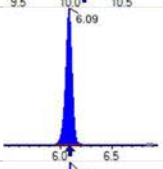
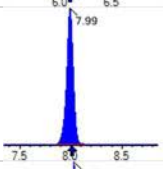
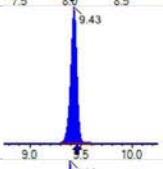
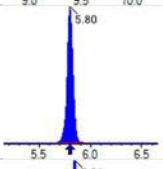
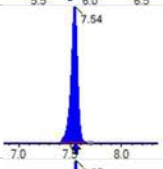
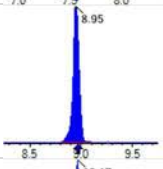
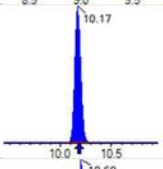
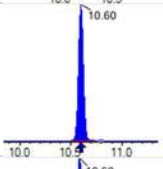
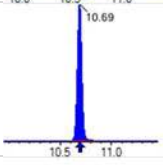
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 445384	(9.29 , N/A) (N/A , -0.02 , N/A)	367.3	N/A	1.2473 [1.0000]	124.7% { 122.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 762501	(8.00 , N/A) (N/A , -0.01 , N/A)	815.5	N/A	1.0933 [1.0000]	109.3% { 116.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 860405	(9.43 , N/A) (N/A , -0.02 , N/A)	444.0	N/A	1.2478 [1.0000]	124.8% { 127.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1921615	(3.71 , N/A) (N/A , 0.03 , N/A)	751.4	N/A	6.0984 [8.0000]	76.2% { 81.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1210680	(4.98 , N/A) (N/A , 0.01 , N/A)	628.6	N/A	2.9213 [4.0000]	73.0% { 85.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 729372	(6.13 , N/A) (N/A , 0.00 , N/A)	522.4	N/A	1.4460 [2.0000]	72.3% { 77.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 669679	(7.06 , N/A) (N/A , -0.01 , N/A)	576.7	N/A	1.4859 [2.0000]	74.3% { 83.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 740086	(7.87 , N/A) (N/A , -0.02 , N/A)	590.5	N/A	1.6826 [2.0000]	84.1% { 90.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 313886	(8.61 , N/A) (N/A , -0.02 , N/A)	533.9	N/A	0.7643 [1.0000]	76.4% { 83.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 403808	(9.29 , N/A) (N/A , -0.02 , N/A)	366.3	N/A	0.6931 [1.0000]	69.3% { 95.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 484612	(9.70 , N/A) (N/A , -0.02 , N/A)	775.1	N/A	0.6863 [1.0000]	68.6% { 75.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (28)
Acquired: 2022/12/28 - 01:45

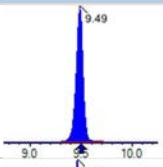
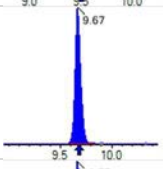
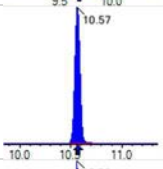
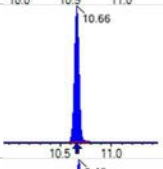
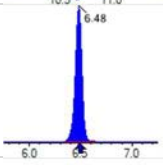
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 468625	(9.89 , N/A) (N/A , -0.01 , N/A)	340.7	N/A	0.6030 [1.0000]	60.3% { 74.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 374752	(10.12 , N/A) (N/A , -0.01 , N/A)	2705.7	N/A	0.7306 [1.0000]	73.1% { 84.7% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1876362	(6.09 , N/A) (N/A , 0.00 , N/A)	403.7	N/A	1.4614 [2.0000]	73.1% { 87.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1031655	(7.99 , N/A) (N/A , -0.02 , N/A)	665.8	N/A	1.5137 [2.0000]	75.7% { 91.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1804723	(9.43 , N/A) (N/A , -0.02 , N/A)	617.8	N/A	1.6196 [2.0000]	81.0% { 97.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 517856	(5.80 , N/A) (N/A , 0.00 , N/A)	796.3	N/A	3.4248 [4.0000]	85.6% { 96.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 542400	(7.54 , N/A) (N/A , -0.01 , N/A)	574.5	N/A	2.8865 [4.0000]	72.2% { 79.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 556897	(8.95 , N/A) (N/A , -0.02 , N/A)	428.9	N/A	3.0061 [4.0000]	75.2% { 76.9% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1470987	(10.17 , N/A) (N/A , -0.01 , N/A)	827.2	N/A	0.9929 [2.0000]	49.6% { 58.5% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 207927	(10.60 , N/A) (N/A , 0.00 , N/A)	792.6	N/A	0.7237 [2.0000]	36.2% { 45.1% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 181918	(10.69 , N/A) (N/A , 0.00 , N/A)	735.7	N/A	0.7106 [2.0000]	35.5% { 37.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-02
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (28)
Acquired: 2022/12/28 - 01:45

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) 777386	(9.49 , N/A) (N/A , -0.02 , N/A)	291.2	N/A	2.5502 [4.0000]	63.8% { 77.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 711216	(9.67 , N/A) (N/A , -0.01 , N/A)	288.0	N/A	2.7240 [4.0000]	68.1% { 98.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 466317	(10.57 , N/A) (N/A , 0.00 , N/A)	1096.9	N/A	10.1304 [20.0000]	50.7% { 48.5% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 224442	(10.66 , N/A) (N/A , 0.00 , N/A)	1498.2	N/A	12.0568 [20.0000]	60.3% { 53.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1771963	(6.48 , N/A) (N/A , 0.00 , N/A)	684.4	N/A	6.3262 [8.0000]	79.1% { 85.5% }			

FORM I
ANALYSIS DATA SHEET

AF-RHMW16-WGN01LF-2212W3

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0160-03	File ID:	S2022-12-27B (30)
Sampled:	12/21/22 12:05	Prepared:	12/27/22 07:41	Analyzed:	12/28/22 02:11
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	533.9 g / 2 ml			Instrument:	Saphira
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.75 U	1.5	0.75	0.19	
PFPEA	0.37 U	0.75	0.37	0.061	
PFHXA	0.19 U	0.37	0.19	0.051	
PFHPA	0.19 U	0.37	0.19	0.038	
PFOA	0.19 U	0.37	0.19	0.14	
PFNA	0.19 U	0.37	0.19	0.077	
PFDA	0.19 U	0.37	0.19	0.095	
PFUnA	0.19 U	0.37	0.19	0.15	
PFDOA	0.19 U	0.37	0.19	0.10	
PFTRDA	0.28 U	0.37	0.28	0.19	
PFTEDA	0.19 U	0.37	0.19	0.19	
PFBS	0.19 U	0.37	0.19	0.034	
PFPES	0.19 U	0.37	0.19	0.059	
PFHXS	0.19 U	0.37	0.19	0.030	
PFHPS	0.19 U	0.37	0.19	0.048	
PFOS	0.19 U	0.37	0.19	0.060	
PFNS	0.19 U	0.37	0.19	0.12	
PFDS	0.19 U	0.37	0.19	0.14	
PFDOS	0.19 U	0.37	0.19	0.12	
4:2FTS	0.75 U	1.5	0.75	0.27	
6:2FTS	0.75 U	1.5	0.75	0.29	
8:2FTS	0.75 U	1.5	0.75	0.077	
PFOSA	0.19 U	0.37	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	0.37	0.19	0.099	
NEtFOSAA	0.19 U	0.37	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	0.37 U	0.75	0.37	0.16	

FORM I
ANALYSIS DATA SHEET

AF-RHMW16-WGN01LF-2212W3

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0160-03	File ID:	S2022-12-27B (30)
Sampled:	12/21/22 12:05	Prepared:	12/27/22 07:41	Analyzed:	12/28/22 02:11
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	533.9 g / 2 ml			Instrument:	Saphira
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007

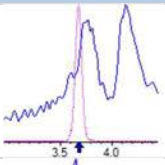
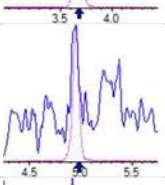
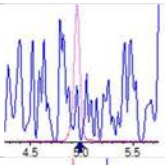
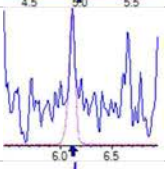
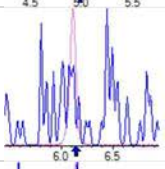
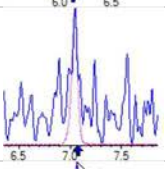
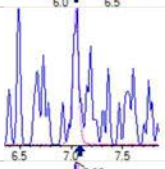
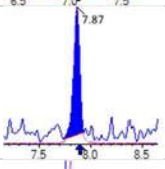
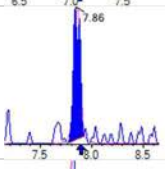
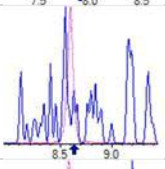
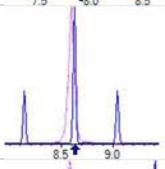
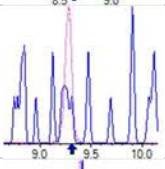
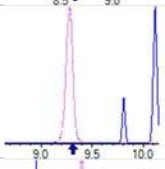
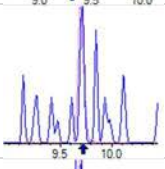
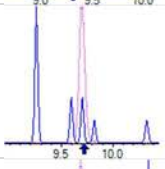
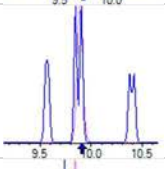
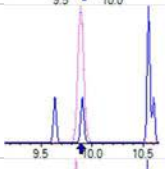
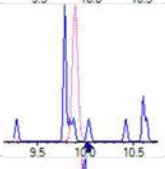
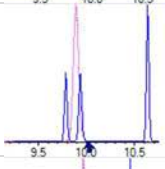
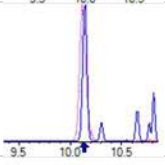
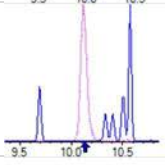
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.37 U	0.75	0.37	0.12	
PFEESA	0.37 U	0.75	0.37	0.10	
PFMPA	0.37 U	0.75	0.37	0.050	
PFMBA	0.37 U	0.75	0.37	0.085	
NFDHA	0.37 U	0.75	0.37	0.28	
9CL-PF3ONS	0.37 U	0.75	0.37	0.20	
11CL-PF3OUDS	0.37 U	0.75	0.37	0.19	
3:3FTCA	0.75 U	1.5	0.75	0.54	
5:3FTCA	0.75 U	1.5	0.75	0.42	
7:3FTCA	0.75 U	1.5	0.75	0.52	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (30)
Acquired: 2022/12/28 - 02:11

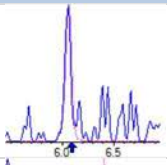
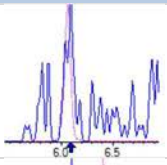
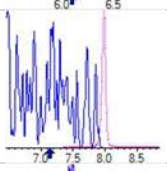
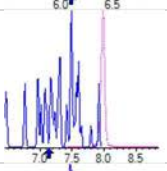
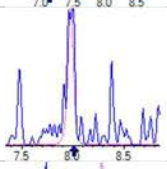
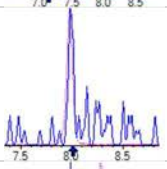
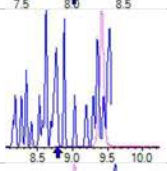
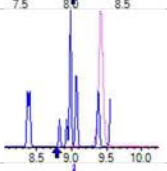
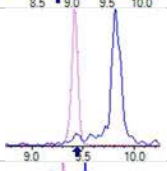
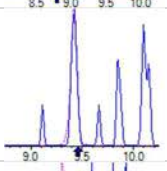
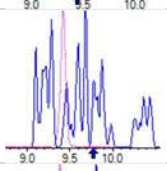
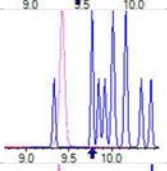
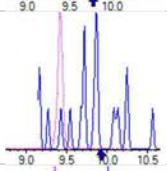
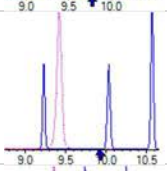
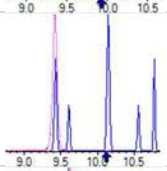
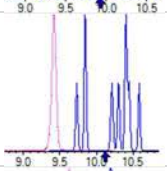
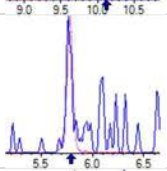
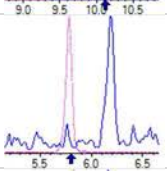
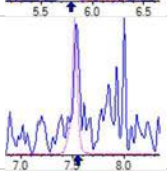
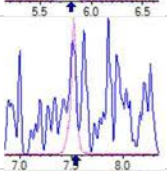
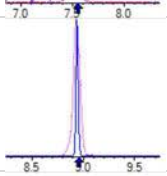
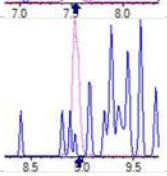
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	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) 8587 (413.0 / 169.0) 3366	(7.87 , 1.00) (0.00 , N/A , 0.7)	34.8 29.1	0.3920 116.7 125.1	0.0223	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (30)
Acquired: 2022/12/28 - 02:11

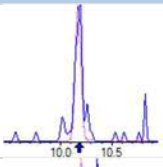
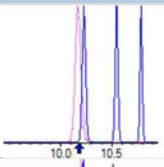
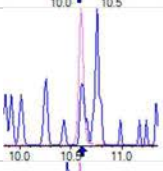
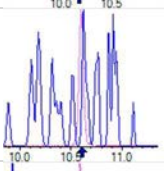
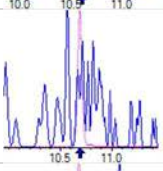
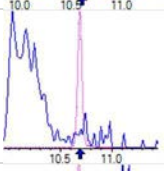
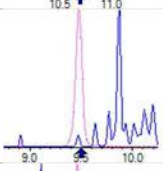
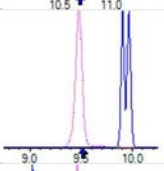
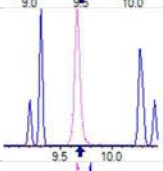
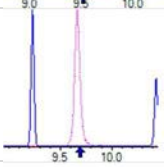
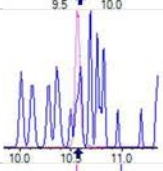
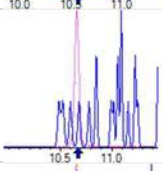
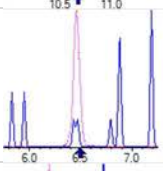
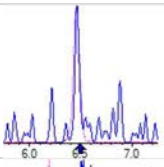
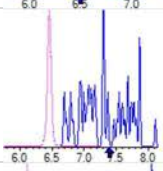
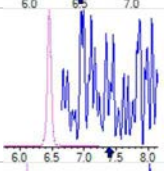
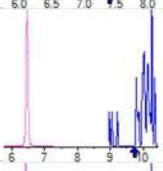
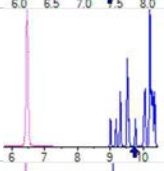
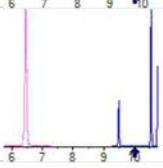
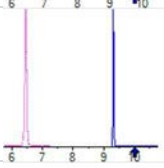
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (30)
Acquired: 2022/12/28 - 02:11

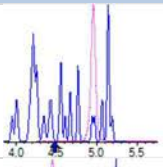
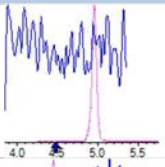
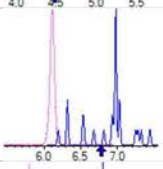
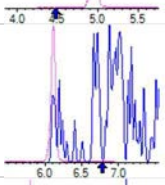
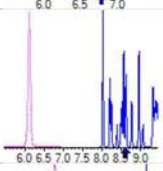
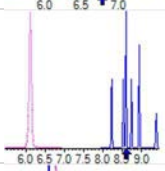
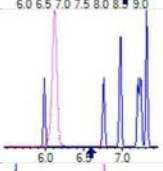
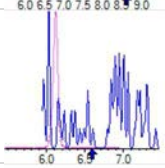
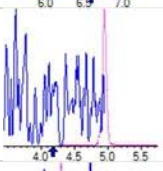
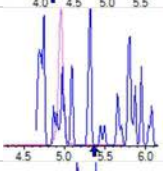
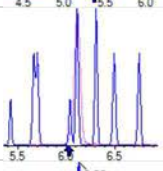
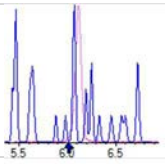
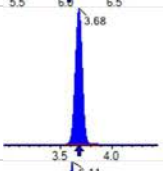
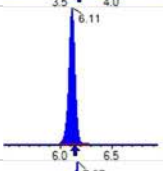
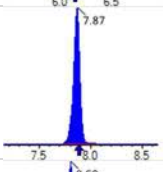
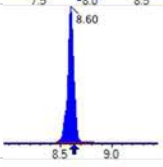
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (30)
Acquired: 2022/12/28 - 02:11

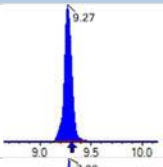
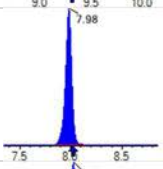
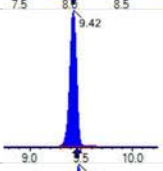
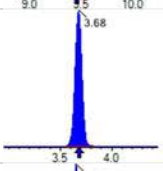
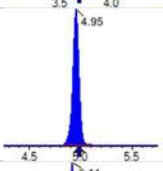
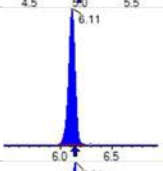
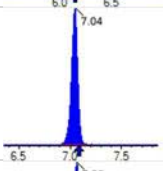
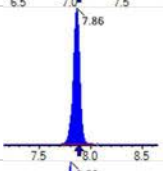
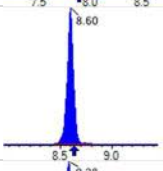
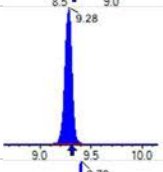
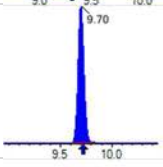
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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			
13C3_PFBA_IIS	(216.0 / 172.0) 307201	(3.68 , N/A) (N/A , 0.00 , N/A)	688.9	N/A	1.1364 [1.0000]	113.6% { 106.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 467729	(6.11 , N/A) (N/A , -0.02 , N/A)	534.7	N/A	1.1778 [1.0000]	117.8% { 114.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 468615	(7.87 , N/A) (N/A , -0.02 , N/A)	421.7	N/A	1.1730 [1.0000]	117.3% { 119.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 387901	(8.60 , N/A) (N/A , -0.03 , N/A)	529.6	N/A	1.1735 [1.0000]	117.3% { 113.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (30)
Acquired: 2022/12/28 - 02:11

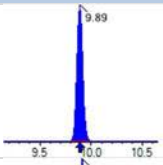
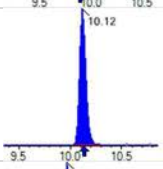
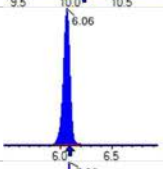
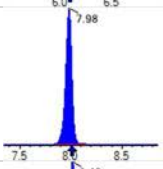
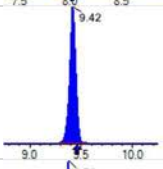
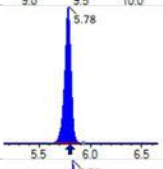
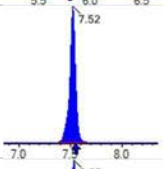
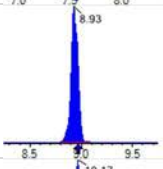
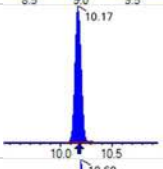
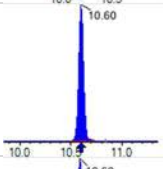
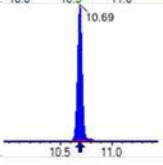
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 375315	(9.27 , N/A) (N/A , -0.04 , N/A)	368.4	N/A	1.0511 [1.0000]	105.1% { 103.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 812983	(7.98 , N/A) (N/A , -0.03 , N/A)	703.0	N/A	1.1656 [1.0000]	116.6% { 123.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 813696	(9.42 , N/A) (N/A , -0.03 , N/A)	435.8	N/A	1.1800 [1.0000]	118.0% { 120.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2016974	(3.68 , N/A) (N/A , 0.00 , N/A)	790.5	N/A	6.1098 [8.0000]	76.4% { 85.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1337687	(4.95 , N/A) (N/A , -0.02 , N/A)	605.3	N/A	3.1295 [4.0000]	78.2% { 94.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 835962	(6.11 , N/A) (N/A , -0.02 , N/A)	607.3	N/A	1.6069 [2.0000]	80.3% { 88.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 754739	(7.04 , N/A) (N/A , -0.03 , N/A)	653.3	N/A	1.6237 [2.0000]	81.2% { 94.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 827940	(7.86 , N/A) (N/A , -0.03 , N/A)	526.2	N/A	1.6123 [2.0000]	80.6% { 101.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 339042	(8.60 , N/A) (N/A , -0.04 , N/A)	432.4	N/A	0.7940 [1.0000]	79.4% { 90.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 411909	(9.28 , N/A) (N/A , -0.03 , N/A)	495.1	N/A	0.8390 [1.0000]	83.9% { 97.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 492948	(9.70 , N/A) (N/A , -0.02 , N/A)	585.9	N/A	0.8285 [1.0000]	82.8% { 76.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (30)
Acquired: 2022/12/28 - 02:11

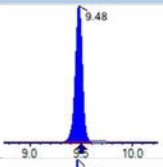
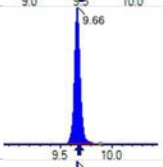
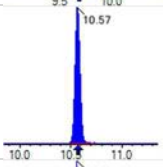
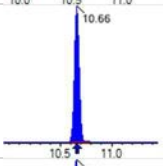
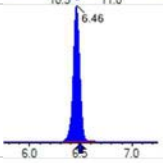
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 545264	(9.89 , N/A) (N/A , -0.01 , N/A)	518.1	N/A	0.8326 [1.0000]	83.3% { 86.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 319984	(10.12 , N/A) (N/A , -0.01 , N/A)	642.3	N/A	0.7403 [1.0000]	74.0% { 72.3% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1987942	(6.06 , N/A) (N/A , -0.03 , N/A)	701.6	N/A	1.4521 [2.0000]	72.6% { 92.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1057848	(7.98 , N/A) (N/A , -0.03 , N/A)	715.7	N/A	1.4558 [2.0000]	72.8% { 93.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1684893	(9.42 , N/A) (N/A , -0.04 , N/A)	509.6	N/A	1.5989 [2.0000]	79.9% { 91.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 476213	(5.78 , N/A) (N/A , -0.02 , N/A)	573.9	N/A	2.9538 [4.0000]	73.8% { 89.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 644887	(7.52 , N/A) (N/A , -0.02 , N/A)	694.6	N/A	3.2188 [4.0000]	80.5% { 94.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 606266	(8.93 , N/A) (N/A , -0.04 , N/A)	499.7	N/A	3.0694 [4.0000]	76.7% { 83.8% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1699021	(10.17 , N/A) (N/A , -0.01 , N/A)	929.6	N/A	1.2126 [2.0000]	60.6% { 67.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 218251	(10.60 , N/A) (N/A , 0.00 , N/A)	793.4	N/A	0.8032 [2.0000]	40.2% { 47.3% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 206500	(10.69 , N/A) (N/A , 0.00 , N/A)	791.5	N/A	0.8529 [2.0000]	42.6% { 42.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0160-03
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (30)
Acquired: 2022/12/28 - 02:11

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 843812	(9.48 , N/A) (N/A , -0.03 , N/A)	445.9	N/A	2.9270 [4.0000]	73.2% { 84.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 954334	(9.66 , N/A) (N/A , -0.02 , N/A)	399.6	N/A	3.8650 [4.0000]	96.6% { 132.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 511110	(10.57 , N/A) (N/A , -0.01 , N/A)	1111.9	N/A	11.7409 [20.0000]	58.7% { 53.2% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 251988	(10.66 , N/A) (N/A , 0.00 , N/A)	1278.3	N/A	14.3136 [20.0000]	71.6% { 60.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1801088	(6.46 , N/A) (N/A , -0.03 , N/A)	666.2	N/A	6.2344 [8.0000]	77.9% { 86.9% }			

QUALITY CONTROL

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0160
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW12A-WGN01LF-2212W3 (22L0160-01) ng/L	Lab File ID: S2022-12-27B (26)			Analyzed: 12/28/22 01:20
13C4-PFBA	30.3	68.3	20 - 150	
13C5-PFPEA	15.2	67.8	20 - 150	
13C5-PFHXA	7.59	74.4	20 - 150	
13C4-PFHPA	7.59	75.2	20 - 150	
13C8-PFOA	7.59	73.9	20 - 150	
13C9-PFNA	3.79	82.8	20 - 150	
13C6-PFDA	3.79	78.2	20 - 150	
13C7-PFUnA	3.79	82.2	20 - 150	
13C2-PFDOA	3.79	83.0	20 - 150	
13C2-PFTEDA	3.79	76.0	20 - 150	
13C3-PFBS	7.59	76.1	20 - 150	
13C3-PFHXS	7.59	76.1	20 - 150	
13C8-PFOS	7.59	72.9	20 - 150	
13C2-4:2FTS	15.2	80.1	20 - 150	
13C2-6:2FTS	15.2	84.8	20 - 150	
13C2-8:2FTS	15.2	74.5	20 - 150	
13C8-PFOSA	7.59	54.7	20 - 150	
D5-NETFOSA	7.59	43.0	20 - 150	
D3-NMEFOSA	7.59	39.9	20 - 150	
D3-NMEFOSAA	15.2	78.1	20 - 150	
D5-NETFOSAA	15.2	77.0	20 - 150	
D7-NMEFOSE	75.9	59.1	20 - 150	
D9-NETFOSE	75.9	69.9	20 - 150	
13C3-HFPO-DA	30.3	72.3	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0160
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW12A-WGFD01LF-2212W3 (22L0160-02) ng/L	Lab File ID: S2022-12-27B (28)			Analyzed: 12/28/22 01:45
13C4-PFBA	32.6	76.2	20 - 150	
13C5-PFPEA	16.3	73.0	20 - 150	
13C5-PFHXA	8.14	72.3	20 - 150	
13C4-PFHPA	8.14	74.3	20 - 150	
13C8-PFOA	8.14	84.1	20 - 150	
13C9-PFNA	4.07	76.4	20 - 150	
13C6-PFDA	4.07	69.3	20 - 150	
13C7-PFUnA	4.07	68.6	20 - 150	
13C2-PFDOA	4.07	60.3	20 - 150	
13C2-PFTEDA	4.07	73.1	20 - 150	
13C3-PFBS	8.14	73.1	20 - 150	
13C3-PFHXS	8.14	75.7	20 - 150	
13C8-PFOS	8.14	81.0	20 - 150	
13C2-4:2FTS	16.3	85.6	20 - 150	
13C2-6:2FTS	16.3	72.2	20 - 150	
13C2-8:2FTS	16.3	75.2	20 - 150	
13C8-PFOSA	8.14	49.6	20 - 150	
D5-NETFOSA	8.14	35.5	20 - 150	
D3-NMEFOSA	8.14	36.2	20 - 150	
D3-NMEFOSAA	16.3	63.8	20 - 150	
D5-NETFOSAA	16.3	68.1	20 - 150	
D7-NMEFOSE	81.4	50.7	20 - 150	
D9-NETFOSE	81.4	60.3	20 - 150	
13C3-HFPO-DA	32.6	79.1	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0160
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW16-WGN01LF-2212W3 (22L0160-03) ng/L	Lab File ID: S2022-12-27B (30)			Analyzed: 12/28/22 02:11
13C4-PFBA	30.0	76.4	20 - 150	
13C5-PFPEA	15.0	78.2	20 - 150	
13C5-PFHXA	7.49	80.3	20 - 150	
13C4-PFHPA	7.49	81.2	20 - 150	
13C8-PFOA	7.49	80.6	20 - 150	
13C9-PFNA	3.75	79.4	20 - 150	
13C6-PFDA	3.75	83.9	20 - 150	
13C7-PFUnA	3.75	82.8	20 - 150	
13C2-PFDOA	3.75	83.3	20 - 150	
13C2-PFTEDA	3.75	74.0	20 - 150	
13C3-PFBS	7.49	72.6	20 - 150	
13C3-PFHXS	7.49	72.8	20 - 150	
13C8-PFOS	7.49	79.9	20 - 150	
13C2-4:2FTS	15.0	73.8	20 - 150	
13C2-6:2FTS	15.0	80.5	20 - 150	
13C2-8:2FTS	15.0	76.7	20 - 150	
13C8-PFOSA	7.49	60.6	20 - 150	
D5-NETFOSA	7.49	42.6	20 - 150	
D3-NMEFOSA	7.49	40.2	20 - 150	
D3-NMEFOSAA	15.0	73.2	20 - 150	
D5-NETFOSAA	15.0	96.6	20 - 150	
D7-NMEFOSE	74.9	58.7	20 - 150	
D9-NETFOSE	74.9	71.6	20 - 150	
13C3-HFPO-DA	30.0	77.9	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0160
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
Blank (BBL0460-BLK1) ng/L	Lab File ID: S2022-12-27B (19)			Analyzed: 12/27/22 23:49
13C4-PFBA	32.0	79.7	20 - 150	
13C5-PFPEA	16.0	69.8	20 - 150	
13C5-PFHXA	8.00	71.2	20 - 150	
13C4-PFHPA	8.00	63.7	20 - 150	
13C8-PFOA	8.00	81.3	20 - 150	
13C9-PFNA	4.00	70.6	20 - 150	
13C6-PFDA	4.00	73.9	20 - 150	
13C7-PFUnA	4.00	87.3	20 - 150	
13C2-PFDOA	4.00	80.4	20 - 150	
13C2-PFTEDA	4.00	89.9	20 - 150	
13C3-PFBS	8.00	74.3	20 - 150	
13C3-PFHXS	8.00	74.2	20 - 150	
13C8-PFOS	8.00	76.6	20 - 150	
13C2-4:2FTS	16.0	73.9	20 - 150	
13C2-6:2FTS	16.0	83.1	20 - 150	
13C2-8:2FTS	16.0	80.1	20 - 150	
13C8-PFOSA	8.00	57.7	20 - 150	
D5-NETFOSA	8.00	38.7	20 - 150	
D3-NMEFOSA	8.00	39.3	20 - 150	
D3-NMEFOSAA	16.0	73.4	20 - 150	
D5-NETFOSAA	16.0	83.1	20 - 150	
D7-NMEFOSE	80.0	59.5	20 - 150	
D9-NETFOSE	80.0	69.3	20 - 150	
13C3-HFPO-DA	32.0	72.0	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0160
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (BBL0460-BS1) ng/L	Lab File ID: S2022-12-27B (20)			Analyzed: 12/28/22 00:02
13C4-PFBA	32.0	78.2	20 - 150	
13C5-PFPEA	16.0	77.3	20 - 150	
13C5-PFHXA	8.00	88.3	20 - 150	
13C4-PFHPA	8.00	77.7	20 - 150	
13C8-PFOA	8.00	72.2	20 - 150	
13C9-PFNA	4.00	75.9	20 - 150	
13C6-PFDA	4.00	67.8	20 - 150	
13C7-PFUnA	4.00	80.8	20 - 150	
13C2-PFDOA	4.00	80.6	20 - 150	
13C2-PFTEDA	4.00	75.7	20 - 150	
13C3-PFBS	8.00	81.6	20 - 150	
13C3-PFHXS	8.00	76.0	20 - 150	
13C8-PFOS	8.00	84.6	20 - 150	
13C2-4:2FTS	16.0	87.6	20 - 150	
13C2-6:2FTS	16.0	78.9	20 - 150	
13C2-8:2FTS	16.0	92.8	20 - 150	
13C8-PFOSA	8.00	64.7	20 - 150	
D5-NETFOSA	8.00	41.3	20 - 150	
D3-NMEFOSA	8.00	39.3	20 - 150	
D3-NMEFOSAA	16.0	88.6	20 - 150	
D5-NETFOSAA	16.0	93.4	20 - 150	
D7-NMEFOSE	80.0	60.2	20 - 150	
D9-NETFOSE	80.0	65.0	20 - 150	
13C3-HFPO-DA	32.0	85.3	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
Work Order: 22L0160
Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
MRL Check (BBL0460-MRL1) ng/L	Lab File ID: S2022-12-27B (21)			Analyzed: 12/28/22 00:15
13C4-PFBA	32.0	79.9	20 - 150	
13C5-PFPEA	16.0	75.7	20 - 150	
13C5-PFHXA	8.00	82.0	20 - 150	
13C4-PFHPA	8.00	81.8	20 - 150	
13C8-PFOA	8.00	82.8	20 - 150	
13C9-PFNA	4.00	84.7	20 - 150	
13C6-PFDA	4.00	81.4	20 - 150	
13C7-PFUnA	4.00	94.9	20 - 150	
13C2-PFDOA	4.00	90.5	20 - 150	
13C2-PFTEDA	4.00	105	20 - 150	
13C3-PFBS	8.00	79.7	20 - 150	
13C3-PFHXS	8.00	78.9	20 - 150	
13C8-PFOS	8.00	80.9	20 - 150	
13C2-4:2FTS	16.0	74.2	20 - 150	
13C2-6:2FTS	16.0	86.0	20 - 150	
13C2-8:2FTS	16.0	83.0	20 - 150	
13C8-PFOSA	8.00	63.7	20 - 150	
D5-NETFOSA	8.00	42.1	20 - 150	
D3-NMEFOSA	8.00	38.1	20 - 150	
D3-NMEFOSAA	16.0	82.9	20 - 150	
D5-NETFOSAA	16.0	91.7	20 - 150	
D7-NMEFOSE	80.0	59.1	20 - 150	
D9-NETFOSE	80.0	65.0	20 - 150	
13C3-HFPO-DA	32.0	84.7	20 - 150	

METHOD BLANK SUMMARY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Blank ID:	BBL0460-BLK1	Batch:	BBL0460
Prepared:	12/27/2022 07:41		

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	BBL0460-BS1	S2022-12-27B (20)	00:02
MRL Check	BBL0460-MRL1	S2022-12-27B (21)	00:15
AF-RHMW12A-WGN01LF-2212W3	22L0160-01	S2022-12-27B (26)	01:20
AF-RHMW12A-WGFD01LF-2212W3	22L0160-02	S2022-12-27B (28)	01:45
AF-RHMW16-WGN01LF-2212W3	22L0160-03	S2022-12-27B (30)	02:11

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-BLK1	File ID:	S2022-12-27B (19)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/27/22 23:49
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Column:	1			Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.20 U	0.40	0.20	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.20 U	0.40	0.20	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.20 U	0.40	0.20	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPES	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.0845 J	0.40	0.20	0.064	J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.20 U	0.40	0.20	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U				

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-BLK1	File ID:	S2022-12-27B (19)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/27/22 23:49
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Instrument:	Saphira				
Column:	1				

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

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Preparation:	1633
Batch:	BBL0460	Laboratory ID:	BBL0460-BS1
Column:			

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
PFBA	16.0	19.6	123	40 - 150
PFPEA	8.00	9.23	115	40 - 150
PFHXA	4.00	4.27	107	40 - 150
PFHPA	4.00	4.91	123	40 - 150
PFOA	4.00	5.38	134	40 - 150
PFNA	4.00	5.37	134	40 - 150
PFDA	4.00	4.55	114	40 - 150
PFUnA	4.00	4.94	123	40 - 150
PFDOA	4.00	4.41	110	40 - 150
PFTRDA	4.00	4.61	115	40 - 150
PFTEDA	4.00	4.62	115	40 - 150
PFBS	3.54	4.03	114	40 - 150
PFPES	3.76	5.15	137	40 - 150
PFHXS	3.66	4.60	126	40 - 150
PFHPS	3.82	4.15	109	40 - 150
PFOS	3.72	3.78	102	40 - 150
PFNS	3.84	4.36	113	40 - 150
PFDS	3.86	4.28	111	40 - 150
PFDOS	3.88	4.66	120	40 - 150
4:2FTS	15.0	18.1	120	40 - 150
6:2FTS	15.2	20.8	137	40 - 150
8:2FTS	15.4	19.9	129	40 - 150
PFOSA	4.00	4.80	120	40 - 150
NMeFOSA	16.0	20.1	125	40 - 150
NEtFOSA	16.0	19.7	123	40 - 150
NMeFOSAA	4.00	4.03	101	40 - 150
NEtFOSAA	4.00	4.43	111	40 - 150
NMeFOSE	16.0	18.2	114	40 - 150
NEtFOSE	16.0	18.5	115	40 - 150
HFPO-DA	8.00	9.24	115	40 - 150
ADONA	7.56	8.66	115	40 - 150
PFEESA	7.12	7.31	103	40 - 150
PFMPA	8.00	9.67	121	40 - 150
PFMBA	8.00	9.82	123	40 - 150

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Preparation:	1633
Batch:	BBL0460	Laboratory ID:	BBL0460-BS1
Column:			

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
NFDHA	8.00	8.95	112	40 - 150
9CL-PF3ONS	7.48	10.4	139	40 - 150
11CL-PF3OUDS	7.56	9.69	128	40 - 150
3:3FTCA	16.0	17.6	110	40 - 150
5:3FTCA	16.0	16.4	102	40 - 150
7:3FTCA	16.0	17.9	112	40 - 150

CALIBRATION SUMMARY

Chemist:DAG
Instrument:Saphira
Type:Sciex Q5500

Quant Method:163

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(213.0 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.41929 x (std. dev. = 0.02329) (weighting: None)	%RSE=5.6
PFPeA	(263.0 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.42720 x (std. dev. = 0.02079) (weighting: None)	%RSE=4.9
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.45552 x (std. dev. = 0.02835) (weighting: None)	%RSE=6.2
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.47886 x (std. dev. = 0.05269) (weighting: None)	%RSE=11.0
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.46448 x (std. dev. = 0.02628) (weighting: None)	%RSE=5.7
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.90558 x (std. dev. = 0.04258) (weighting: None)	%RSE=4.7
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 0.89061 x (std. dev. = 0.09718) (weighting: None)	%RSE=10.9
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.79188 x (std. dev. = 0.04851) (weighting: None)	%RSE=6.1
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.85703 x (std. dev. = 0.09108) (weighting: None)	%RSE=10.6
PFTrDA	(663.0 / 619.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.72441 x (std. dev. = 0.05281) (weighting: None)	%RSE=7.3
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.90826 x (std. dev. = 0.10286) (weighting: None)	%RSE=11.3
PFBS	(299.0 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.24675 x (std. dev. = 0.01896) (weighting: None)	%RSE=7.7
PFPeS	(349.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9384	y = 0.78804 x (std. dev. = 0.06145) (weighting: None)	%RSE=7.8
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.70012 x (std. dev. = 0.04475) (weighting: None)	%RSE=6.4
PFHpS	(449.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9514	y = 0.45254 x (std. dev. = 0.03021) (weighting: None)	%RSE=6.7
PFOS	(499.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9275	y = 0.53808 x (std. dev. = 0.03923) (weighting: None)	%RSE=7.3
PFNS	(549.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9599	y = 0.55489 x (std. dev. = 0.06523) (weighting: None)	%RSE=11.8
PFDS	(599.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9631	y = 0.68078 x (std. dev. = 0.08302) (weighting: None)	%RSE=12.2
PFDoS	(699.0 / 80.0)	13C8_PFOS_EIS	1.0000	0.9696	y = 0.27376 x (std. dev. = 0.01722) (weighting: None)	%RSE=6.3
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 2.66614 x (std. dev. = 0.21073) (weighting: None)	%RSE=7.9
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.29894 x (std. dev. = 0.12486) (weighting: None)	%RSE=9.6
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.29107 x (std. dev. = 0.18142) (weighting: None)	%RSE=14.1
PFOSA	(498.0 / 78.0)	13C8_PFOSA_EIS	1.0000	1.0000	y = 0.47988 x (std. dev. = 0.04428) (weighting: None)	%RSE=9.2
NMeFOSA	(512.0 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.73979 x (std. dev. = 0.23696) (weighting: None)	%RSE=13.6
NEtFOSA	(526.0 / 219.0)	D5_NEtFOSA_EIS	4.0000	1.0000	y = 1.83827 x (std. dev. = 0.15160) (weighting: None)	%RSE=8.2
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.20760 x (std. dev. = 0.02006) (weighting: None)	%RSE=9.7
NEtFOSAA	(584.0 / 419.0)	D5_EtFOSAA_EIS	1.0000	1.0000	y = 0.21680 x (std. dev. = 0.02253) (weighting: None)	%RSE=10.4
NMeFOSE	(616.0 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.22581 x (std. dev. = 0.01671) (weighting: None)	%RSE=7.4
NEtFOSE	(630.0 / 59.0)	D9_NEtFOSE_EIS	4.0000	1.0000	y = 0.07584 x (std. dev. = 0.00744) (weighting: None)	%RSE=9.8
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.15345 x (std. dev. = 0.00632) (weighting: None)	%RSE=4.1
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.61946 x (std. dev. = 0.04933) (weighting: None)	%RSE=8.0
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = 1.60954 x (std. dev. = 0.15254) (weighting: None)	%RSE=9.5
11Cl-PF3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 0.85035 x (std. dev. = 0.09071) (weighting: None)	%RSE=10.7
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.02990 x (std. dev. = 0.00358) (weighting: None)	%RSE=12.0
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.27947 x (std. dev. = 0.02031) (weighting: None)	%RSE=7.3
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.34429 x (std. dev. = 0.03222) (weighting: None)	%RSE=9.4
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.80979 x (std. dev. = 0.04055) (weighting: None)	%RSE=5.0
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.12964 x (std. dev. = 0.00775) (weighting: None)	%RSE=6.0
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.33939 x (std. dev. = 0.01964) (weighting: None)	%RSE=5.8
NFDHA	(295.0 / 201.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.43560 x (std. dev. = 0.01759) (weighting: None)	%RSE=4.0
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 270317.4835 x	%RSD=9.5
13C2_PFHxA_IIS	(315.0 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 397129.3476 x	%RSD=7.0
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 399486.5252 x	%RSD=4.8
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 330557.8979 x	%RSD=8.7
13C2_PFDA_IIS	(515.0 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 357076.3967 x	%RSD=9.2
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 697456.7746 x	%RSD=5.3
13C4_PFOS_IIS	(503.0 / 79.9)	13C4_PFOS_IIS	1.0000	1.0000	y = 689562.2282 x	%RSD=9.5

Chemist:DAG
Instrument:Saphira
Type:Sciex Q5500

Quant Method:163

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFBA_EIS	(217.0 / 172.0)	13C3_PFBA_IIS	8.0000	1.0000	y = 8.5969 x	%RSD=3.8
13C5_PFPeA_EIS	(268.0 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 3.6555 x	%RSD=9.1
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.2245 x	%RSD=9.4
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 1.9876 x	%RSD=7.8
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 2.1916 x	%RSD=6.2
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 1.1008 x	%RSD=4.2
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3082 x	%RSD=9.6
13C7_PFUnA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.5853 x	%RSD=11.6
13C2_PFDoA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.7449 x	%RSD=15.1
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1517 x	%RSD=20.6
13C3_PFBS_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 3.3678 x	%RSD=7.4
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.7877 x	%RSD=6.8
13C8_PFOS_EIS	(507.0 / 80.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 2.5902 x	%RSD=8.8
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.7932 x	%RSD=12.7
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.9858 x	%RSD=13.3
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.9718 x	%RSD=8.0
13C8_PFOSA_EIS	(506.0 / 78.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 3.4438 x	%RSD=13.0
D3_NMeFOSA_EIS	(515.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.6679 x	%RSD=10.7
D5_NEtFOSA_EIS	(531.0 / 169.0)	13C4_PFOS_IIS	2.0000	1.0000	y = 0.5951 x	%RSD=8.0
D3_MeFOSAA_EIS	(573.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 1.4172 x	%RSD=10.5
D5_EtFOSAA_EIS	(589.0 / 419.0)	13C4_PFOS_IIS	4.0000	1.0000	y = 1.2138 x	%RSD=15.3
D7_NMeFOSE_EIS	(623.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 1.0700 x	%RSD=7.0
D9_NEtFOSE_EIS	(639.0 / 58.9)	13C4_PFOS_IIS	20.0000	1.0000	y = 0.4327 x	%RSD=11.3
13C3_HFPODA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 4.9413 x	%RSD=8.5

$$x = \text{Concentration Analyte}$$

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

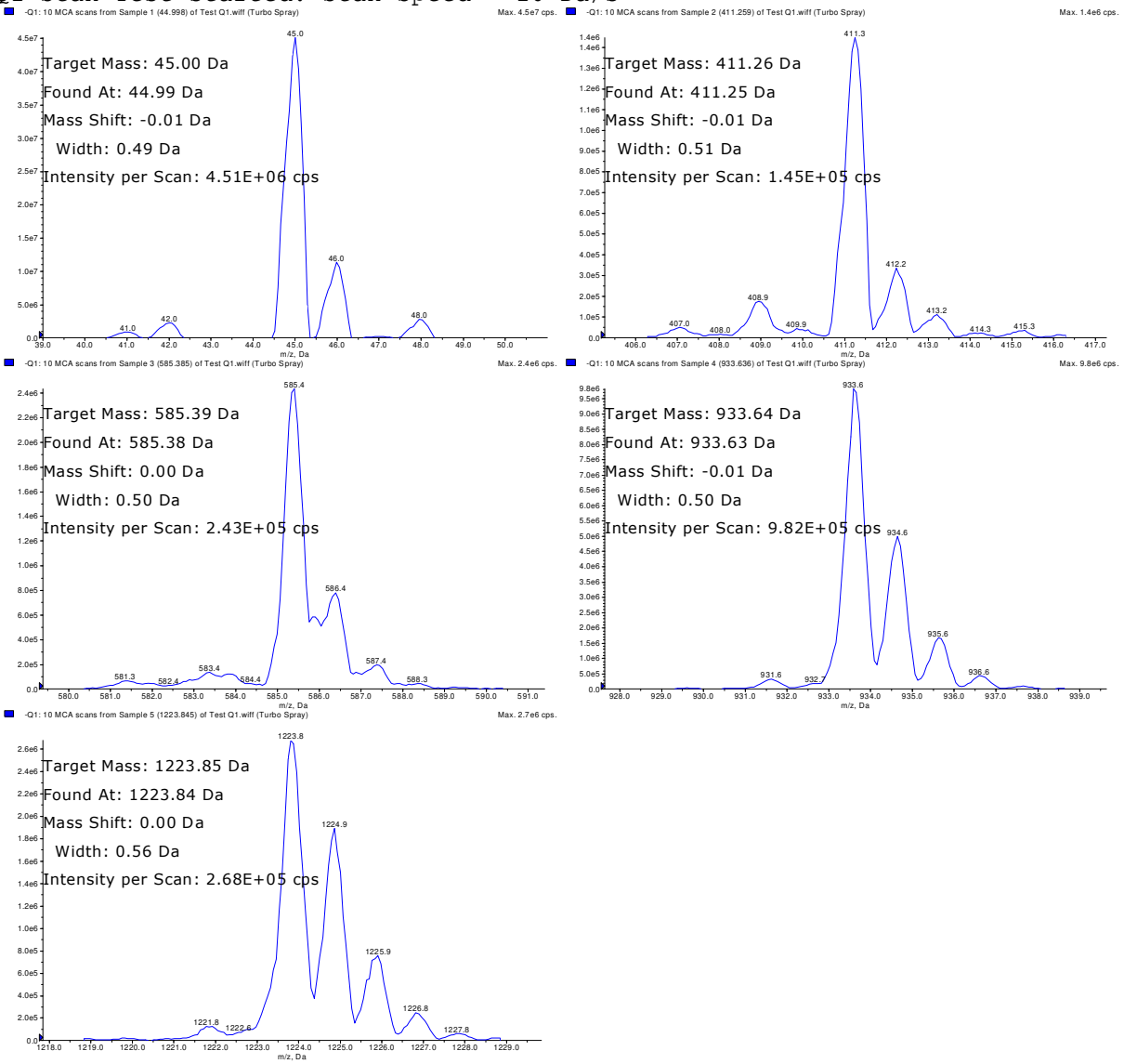
$$\text{Acid Factor} = \frac{\text{Moleculat weight Acid}}{\text{Molecular weight Salt}}$$

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

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

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

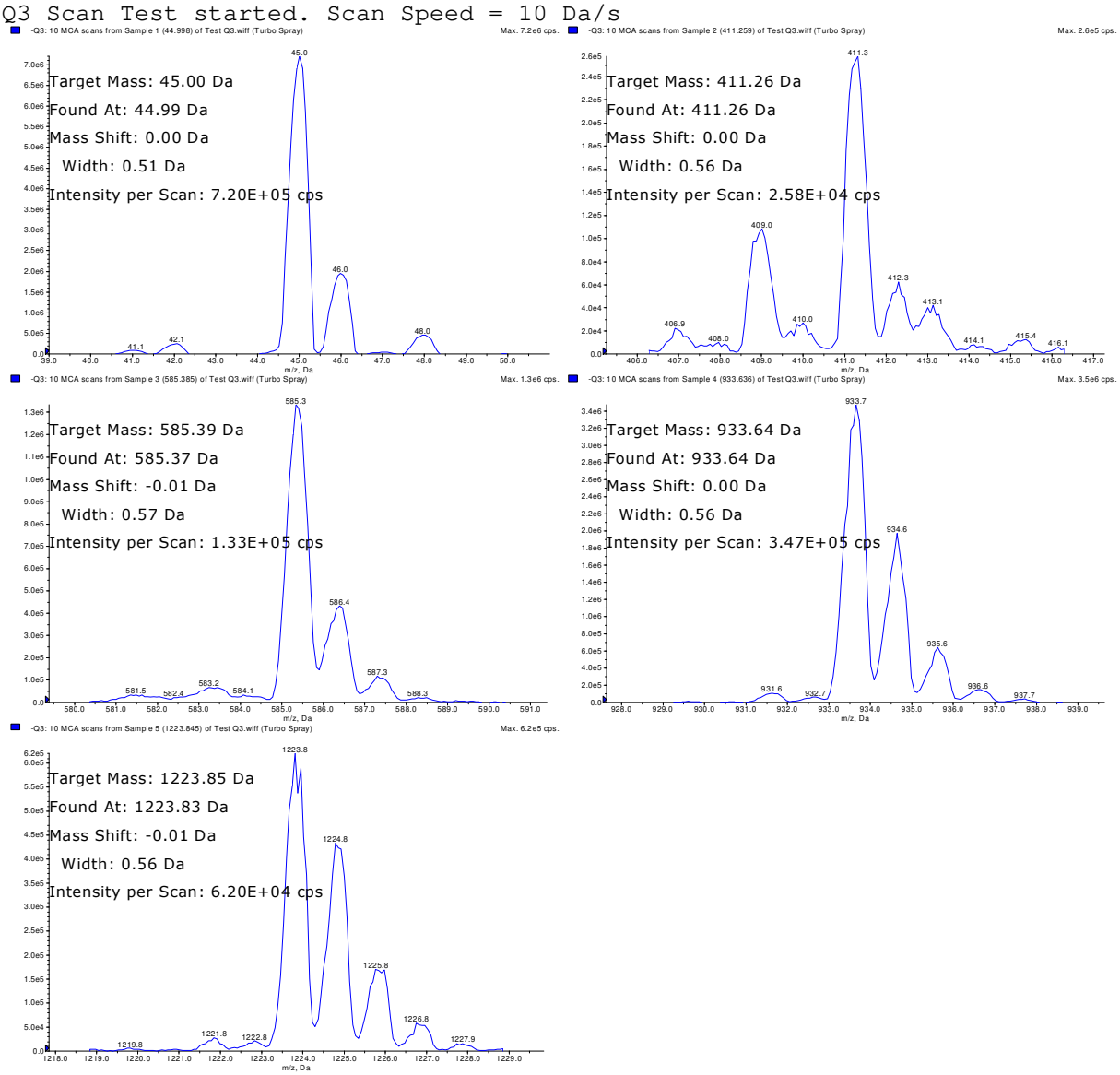
Q1 Scan Test started. Scan Speed = 10 Da/s



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

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

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



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

EPA 1633

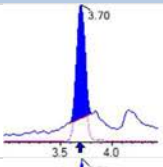
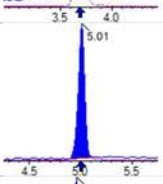
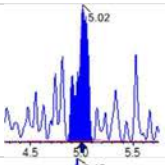
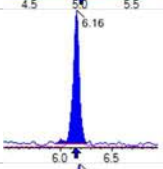
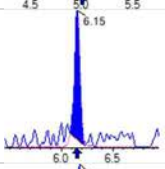
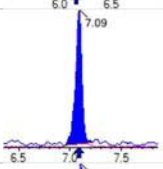
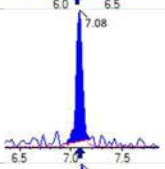
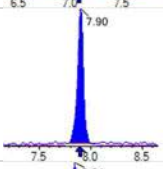
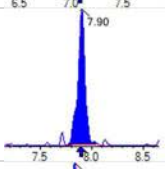
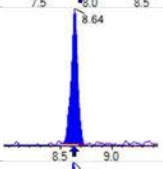
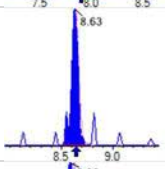
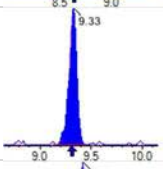
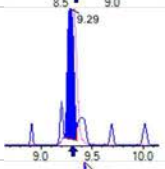
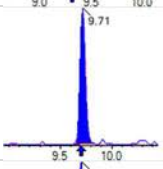
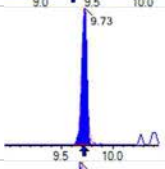
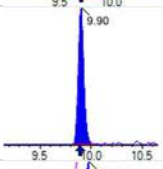
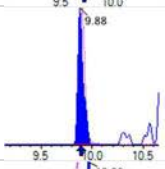
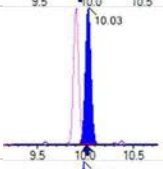
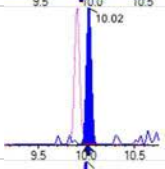
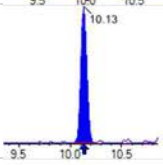
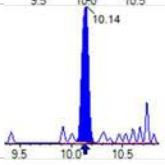
Initial Calibration: SB03988

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (1)
Acquired: 2022/12/27 - 17:10

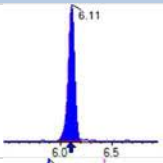
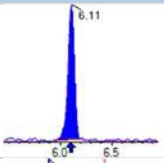
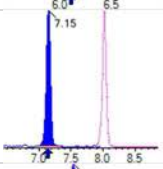
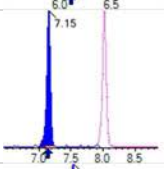
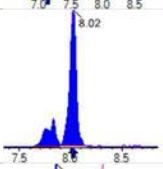
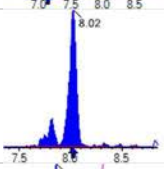
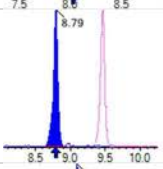
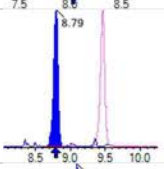
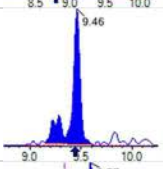
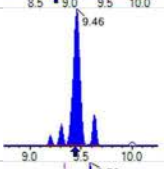
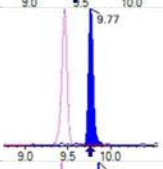
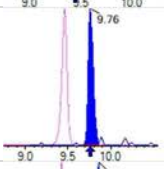
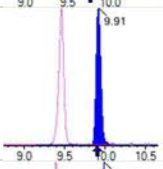
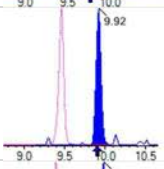
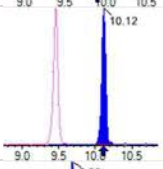
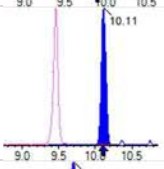
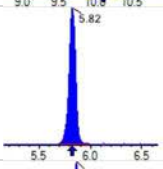
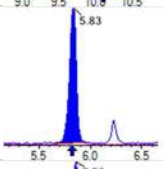
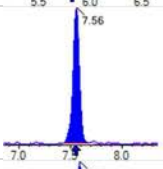
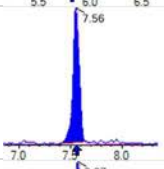
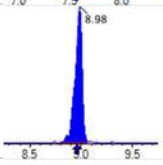
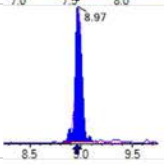
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 96482	(3.70 , 1.00) (0.00 , N/A , 0.0)	87.7	N/A 0.0 0.0	0.3532 [0.4000]	88.3%			
PFPeA	(263.0 / 219.0) 70122 (263.0 / 69.0) 1164	(5.01 , 1.00) (0.00 , N/A , -0.9)	218.3 18.0	0.0166 153.9 153.9	0.2183 [0.2000]	109.2%			
PFHxA	(313.0 / 269.0) 47485 (313.0 / 119.0) 3407	(6.16 , 1.00) (0.00 , N/A , 0.2)	119.7 27.9	0.0717 79.7 79.7	0.1109 [0.1000]	110.9%			
PFHpA	(363.0 / 319.0) 47869 (363.0 / 169.0) 12253	(7.09 , 1.00) (0.00 , N/A , 0.5)	116.7 49.4	0.2560 84.1 84.1	0.1243 [0.1000]	124.3%			
PFOA	(413.0 / 369.0) 49111 (413.0 / 169.0) 13991	(7.90 , 1.00) (0.00 , N/A , 0.0)	167.7 121.3	0.2849 84.8 84.8	0.1090 [0.1000]	109.0%			
PFNA	(463.0 / 419.0) 36748 (463.0 / 169.0) 5202	(8.64 , 1.00) (0.00 , N/A , 0.4)	131.8 51.9	0.1416 67.7 67.7	0.1022 [0.1000]	102.2%			
PFDA	(513.0 / 469.0) 51300 (513.0 / 169.0) 3417	(9.33 , 1.00) (0.01 , N/A , 2.3)	139.7 40.6	0.0666 74.7 74.7	0.1168 [0.1000]	116.8%			
PFUnA	(563.0 / 519.0) 42174 (563.0 / 169.0) 5888	(9.71 , 1.00) (-0.01 , N/A , -0.6)	130.0 118.3	0.1396 132.5 132.5	0.0962 [0.1000]	96.2%			
PFDoA	(613.0 / 569.0) 73172 (613.0 / 169.0) 6980	(9.90 , 1.00) (0.00 , N/A , 1.1)	144.6 43.3	0.0954 74.3 74.3	0.1199 [0.1000]	119.9%			
PFTrDA	(663.0 / 619.0) 56473 (663.0 / 169.0) 15707	(10.03 , 1.01) (N/A , 0.01 , 0.2)	223.6 52.6	0.2781 121.9 121.9	0.1095 [0.1000]	109.5%			
PFTeDA	(713.0 / 669.0) 45824 (713.0 / 169.0) 14793	(10.13 , 1.00) (0.00 , N/A , -0.4)	167.6 32.8	0.3228 154.6 154.6	0.0992 [0.1000]	99.2%			IR2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (1)
Acquired: 2022/12/27 - 17:10

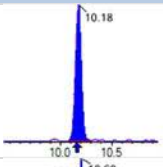
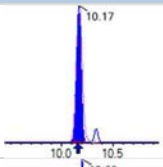
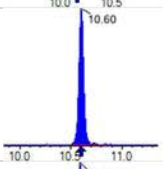
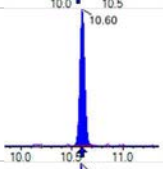
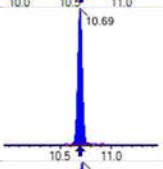
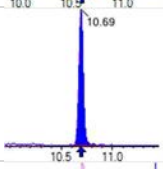
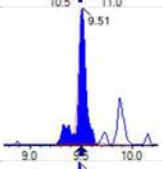
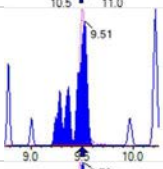
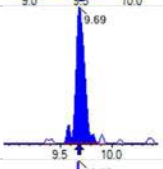
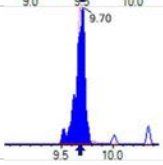
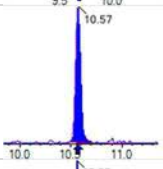
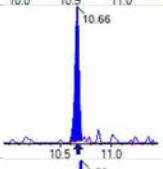
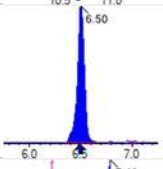
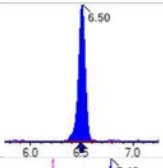
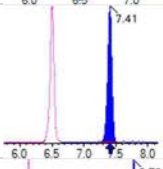
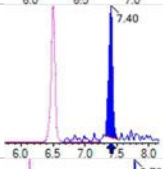
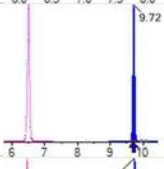
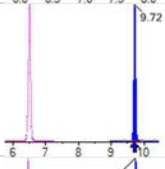
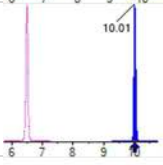
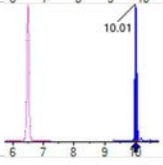
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 66699 (299.0 / 99.0) 40194	(6.11 , 1.00) (0.01 , N/A , 0.2)	326.7 157.8	0.6026 90.4 90.4	0.0987 [0.0885]	111.5%			
PFPeS	(349.0 / 80.0) 106821 (349.0 / 99.0) 37213	(7.15 , 0.89) (N/A , 0.01 , -0.2)	247.4 242.2	0.3484 94.6 94.6	0.0933 [0.0938]	99.4%			
PFHxS	(399.0 / 80.0) 95291 (399.0 / 99.0) 31242	(8.02 , 1.00) (0.00 , N/A , 0.0)	316.5 8179.6	0.3279 102.5 102.5	0.0910 [0.0911]	99.8%			
PFHpS	(449.0 / 80.0) 87975 (449.0 / 99.0) 27138	(8.79 , 0.93) (N/A , 0.01 , -0.1)	232.3 133.2	0.3085 116.0 116.0	0.0914 [0.0951]	96.1%			
PFOS	(499.0 / 80.0) 117548 (499.0 / 99.0) 28867	(9.46 , 1.00) (0.00 , N/A , 0.2)	89.2 1676.6	0.2456 107.5 107.5	0.1002 [0.0927]	108.0%			
PFNS	(549.0 / 80.0) 106989 (549.0 / 99.0) 27706	(9.77 , 1.03) (N/A , 0.01 , 0.1)	219.7 109.1	0.2590 110.2 110.2	0.0915 [0.0960]	95.3%			
PFDS	(599.0 / 80.0) 124766 (599.0 / 99.0) 30760	(9.91 , 1.05) (N/A , 0.01 , -0.2)	310.8 120.0	0.2465 110.0 110.0	0.0873 [0.0963]	90.6%			
PFDoS	(699.0 / 80.0) 51061 (699.0 / 99.0) 17349	(10.12 , 1.07) (N/A , 0.01 , 0.2)	611.4 106.2	0.3398 166.0 166.0	0.0894 [0.0970]	92.2%			IR2,
4:2FTS	(327.0 / 307.0) 171176 (327.0 / 81.0) 98575	(5.82 , 1.00) (0.00 , N/A , -0.4)	484.1 142.8	0.5759 89.3 89.3	0.3842 [0.3738]	102.8%			
6:2FTS	(427.0 / 407.0) 95412 (427.0 / 81.0) 71318	(7.56 , 1.00) (0.00 , N/A , 0.1)	241.4 180.0	0.7475 105.7 105.7	0.3539 [0.3796]	93.2%			
8:2FTS	(527.0 / 507.0) 114696 (527.0 / 81.0) 64756	(8.98 , 1.00) (0.00 , N/A , 0.6)	309.1 173.9	0.5646 80.4 80.4	0.4801 [0.3833]	125.2%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (1)
Acquired: 2022/12/27 - 17:10

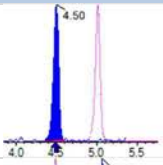
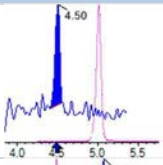
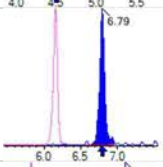
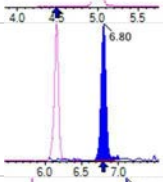
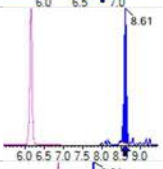
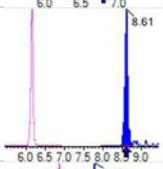
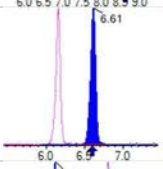
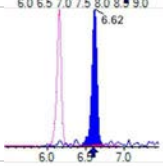
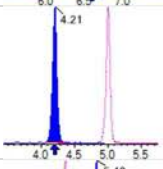
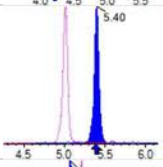
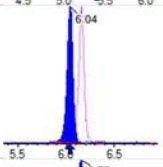
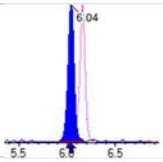
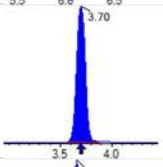
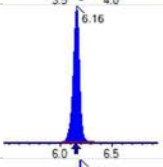
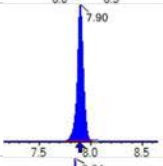
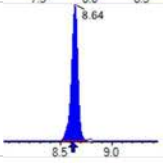
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 121033 (498.0 / 478.0) 5721	(10.18 , 1.00) (0.00 , N/A , 0.4)	257.4 21519.3	0.0473 296.6 296.6	0.0985 [0.1000]	98.5%			
NMeFOSA	(512.0 / 219.0) 79936 (512.0 / 169.0) 60706	(10.60 , 1.00) (0.00 , N/A , 0.0)	378.0 366.0	0.7594 111.6 111.6	0.4093 [0.4000]	102.3%			
NEtFOSA	(526.0 / 219.0) 81986 (526.0 / 169.0) 85130	(10.69 , 1.00) (0.00 , N/A , -0.1)	584.0 435.6	1.0383 103.4 103.4	0.4060 [0.4000]	101.5%			
NMeFOSAA	(570.0 / 419.0) 26827 (570.0 / 483.0) 4808	(9.51 , 1.00) (0.01 , N/A , -0.1)	83.5 34.8	0.1792 35.9 35.9	0.1188 [0.1000]	118.8%			IR1,
NEtFOSAA	(584.0 / 419.0) 24255 (584.0 / 526.0) 11817	(9.69 , 1.00) (0.00 , N/A , -0.2)	206.8 2643.1	0.4872 81.1 81.1	0.1117 [0.1000]	111.7%			
NMeFOSE	(616.0 / 59.0) 19486	(10.57 , 1.00) (0.01 , N/A , 0.0)	175.1	N/A 0.0 0.0	0.4474 [0.4000]	111.8%			
NEtFOSE	(630.0 / 59.0) 2906	(10.66 , 1.00) (0.00 , N/A , 0.0)	74.1	N/A 0.0 0.0	0.4257 [0.4000]	106.4%			
HFPO-DA	(285.0 / 169.0) 33903 (285.0 / 185.0) 82984	(6.50 , 1.00) (0.00 , N/A , 0.1)	204.2 389.0	2.4477 88.9 88.9	0.2113 [0.2000]	105.6%			
ADONA	(377.0 / 85.0) 135299 (377.0 / 251.0) 16867	(7.41 , 1.14) (N/A , 0.01 , 0.1)	411.1 72.3	0.1247 108.4 108.4	0.1969 [0.1885]	104.4%			
9Cl-Pf3ONS	(531.0 / 351.0) 326066 (533.0 / 353.0) 109270	(9.72 , 1.49) (N/A , 0.01 , 0.0)	486.9 319.4	0.3351 104.7 104.7	0.1808 [0.1867]	96.9%			
11Cl-PF3OUDS	(631.0 / 451.0) 191612 (633.0 / 453.0) 50415	(10.01 , 1.54) (N/A , 0.01 , 0.0)	543.2 379.6	0.2631 89.9 89.9	0.2032 [0.1886]	107.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (1)
Acquired: 2022/12/27 - 17:10

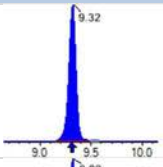
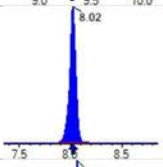
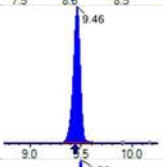
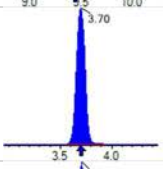
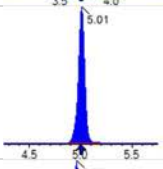
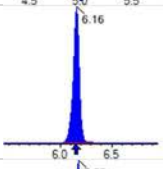
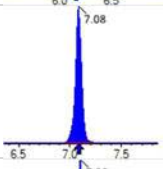
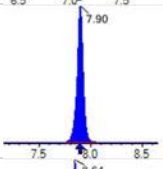
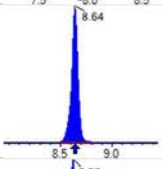
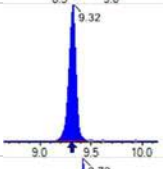
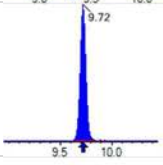
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 5576 (241.0 / 117.0) 5792	(4.50 , 0.90) (N/A , 0.01 , -0.1)	192.3 27.4	1.0387 76.1 76.1	0.4960 [0.4000]	124.0%			
5:3FTCA	(341.0 / 236.7) 26198 (341.0 / 217.0) 39448	(6.79 , 1.10) (N/A , 0.00 , -0.3)	129.8 142.2	1.5058 90.6 90.6	0.3989 [0.4000]	99.7%			
7:3FTCA	(441.0 / 317.0) 27767 (441.0 / 337.0) 28665	(8.61 , 1.40) (N/A , 0.01 , -0.1)	99.7 95.8	1.0323 123.5 123.5	0.3432 [0.4000]	85.8%			
PFEESA	(315.0 / 135.0) 82797 (315.0 / 83.0) 25229	(6.61 , 1.07) (N/A , 0.01 , -0.2)	389.8 103.8	0.3047 98.9 98.9	0.1942 [0.1785]	108.8%			
PFMPA	(229.0 / 85.0) 21451	(4.21 , 0.84) (N/A , 0.01 , 0.0)	375.2	N/A 0.0 0.0	0.2201 [0.2000]	110.0%			
PFMBA	(279.0 / 85.0) 51455	(5.40 , 1.08) (N/A , 0.01 , 0.0)	421.8	N/A 0.0 0.0	0.2016 [0.2000]	100.8%			
NFDHA	(295.0 / 201.0) 41254 (295.0 / 85.0) 33866	(6.04 , 0.98) (N/A , 0.01 , 0.0)	344.0 183.0	0.8209 94.5 94.5	0.2015 [0.2000]	100.8%			
13C3_PFBA_IIS	(216.0 / 172.0) 293759	(3.70 , N/A) (N/A , 0.00 , N/A)	523.8	N/A	1.0867 [1.0000]	108.7% { 100.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 426693	(6.16 , N/A) (N/A , 0.01 , N/A)	501.6	N/A	1.0744 [1.0000]	107.4% { 106.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 417656	(7.90 , N/A) (N/A , 0.01 , N/A)	506.2	N/A	1.0455 [1.0000]	104.5% { 105.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 344151	(8.64 , N/A) (N/A , 0.02 , N/A)	392.3	N/A	1.0411 [1.0000]	104.1% { 94.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (1)
Acquired: 2022/12/27 - 17:10

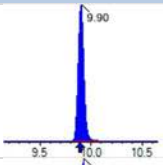
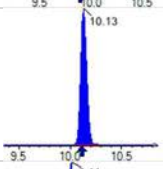
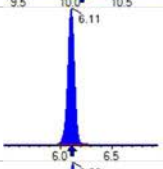
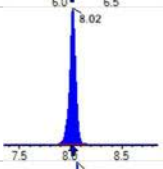
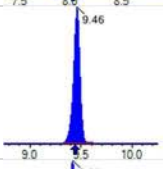
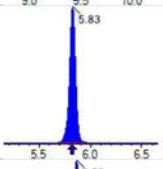
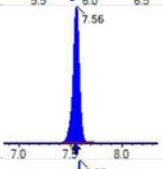
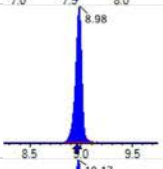
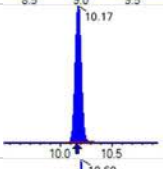
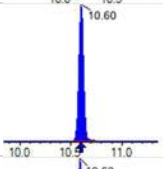
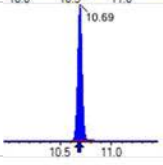
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 319411	(9.32 , N/A) (N/A , 0.01 , N/A)	333.6	N/A	0.8945 [1.0000]	89.5% { 96.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 720909	(8.02 , N/A) (N/A , 0.01 , N/A)	607.1	N/A	1.0336 [1.0000]	103.4% { 96.9% }			
13C4_PFOS_IIS	(503.0 / 79.9) 693012	(9.46 , N/A) (N/A , 0.02 , N/A)	356.9	N/A	1.0050 [1.0000]	100.5% { 105.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2606071	(3.70 , N/A) (N/A , 0.00 , N/A)	758.1	N/A	8.2555 [8.0000]	103.2% { 108.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1503812	(5.01 , N/A) (N/A , 0.01 , N/A)	561.1	N/A	3.8565 [4.0000]	96.4% { 99.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 939907	(6.16 , N/A) (N/A , 0.01 , N/A)	479.4	N/A	1.9804 [2.0000]	99.0% { 108.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 804502	(7.08 , N/A) (N/A , 0.00 , N/A)	673.6	N/A	1.8972 [2.0000]	94.9% { 96.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 970319	(7.90 , N/A) (N/A , 0.01 , N/A)	576.0	N/A	2.1201 [2.0000]	106.0% { 119.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 397208	(8.64 , N/A) (N/A , 0.01 , N/A)	428.8	N/A	1.0485 [1.0000]	104.8% { 103.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 493303	(9.32 , N/A) (N/A , 0.02 , N/A)	433.4	N/A	1.1806 [1.0000]	118.1% { 110.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 553780	(9.72 , N/A) (N/A , 0.01 , N/A)	627.7	N/A	1.0936 [1.0000]	109.4% { 91.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (1)
Acquired: 2022/12/27 - 17:10

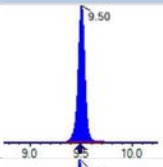
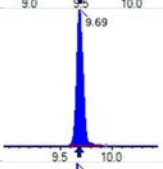
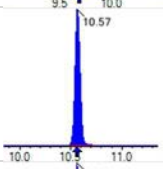
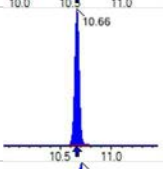
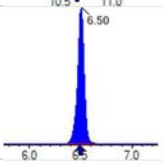
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 711923	(9.90 , N/A) (N/A , 0.01 , N/A)	511.5	N/A	1.2774 [1.0000]	127.7% { 104.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 508564	(10.13 , N/A) (N/A , 0.01 , N/A)	4581.3	N/A	1.3825 [1.0000]	138.2% { 115.5% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2423623	(6.11 , N/A) (N/A , 0.01 , N/A)	480.0	N/A	1.9965 [2.0000]	99.8% { 96.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1363135	(8.02 , N/A) (N/A , 0.01 , N/A)	727.3	N/A	2.1155 [2.0000]	105.8% { 107.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2022649	(9.46 , N/A) (N/A , 0.01 , N/A)	486.5	N/A	2.2536 [2.0000]	112.7% { 123.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 624626	(5.83 , N/A) (N/A , 0.01 , N/A)	677.5	N/A	4.3692 [4.0000]	109.2% { 121.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 787997	(7.56 , N/A) (N/A , 0.01 , N/A)	556.2	N/A	4.4354 [4.0000]	110.9% { 131.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 709354	(8.98 , N/A) (N/A , 0.02 , N/A)	544.7	N/A	4.0500 [4.0000]	101.3% { 116.1% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2561171	(10.17 , N/A) (N/A , 0.01 , N/A)	614.6	N/A	2.1463 [2.0000]	107.3% { 107.5% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 448995	(10.60 , N/A) (N/A , 0.01 , N/A)	889.3	N/A	1.9402 [2.0000]	97.0% { 98.6% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 439418	(10.69 , N/A) (N/A , 0.01 , N/A)	1298.8	N/A	2.1311 [2.0000]	106.6% { 107.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (1)
Acquired: 2022/12/27 - 17:10

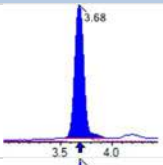
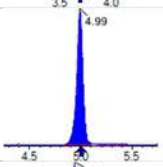
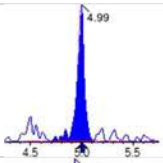
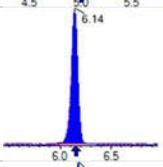
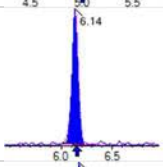
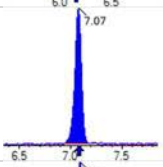
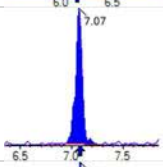
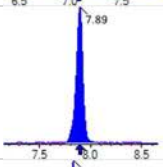
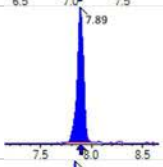
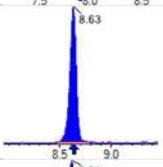
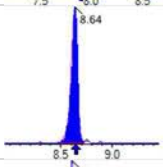
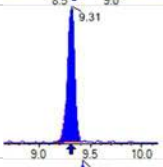
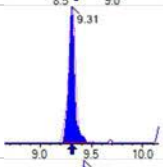
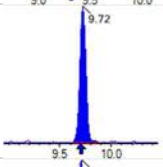
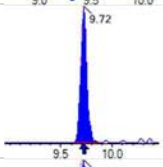
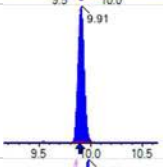
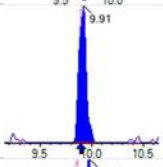
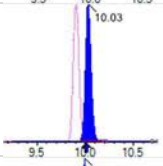
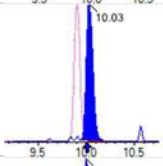
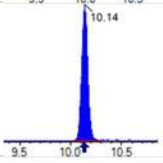
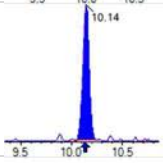
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1088026	(9.50 , N/A) (N/A , 0.01 , N/A)	390.2	N/A	4.4314 [4.0000]	110.8% { 103.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 1001401	(9.69 , N/A) (N/A , 0.02 , N/A)	366.4	N/A	4.7619 [4.0000]	119.0% { 109.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 771530	(10.57 , N/A) (N/A , 0.01 , N/A)	1010.0	N/A	20.8094 [20.0000]	104.0% { 104.8% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 360122	(10.66 , N/A) (N/A , 0.01 , N/A)	985.4	N/A	24.0182 [20.0000]	120.1% { 119.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2091567	(6.50 , N/A) (N/A , 0.01 , N/A)	629.0	N/A	7.9361 [8.0000]	99.2% { 106.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (2)
Acquired: 2022/12/27 - 17:23

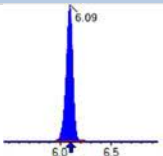
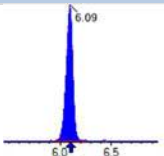
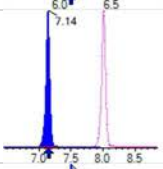
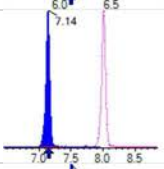
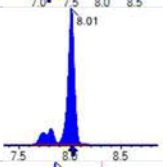
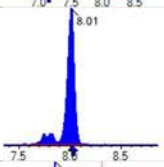
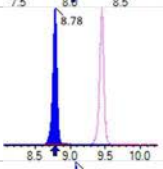
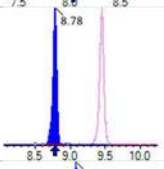
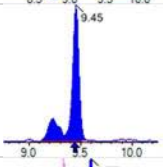
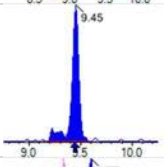
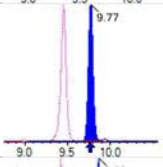
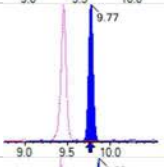
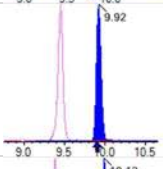
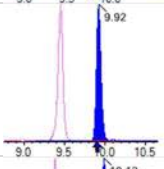
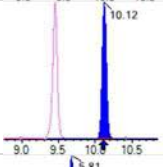
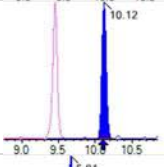
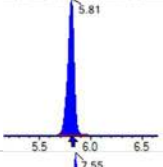
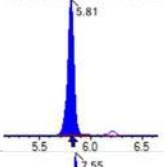
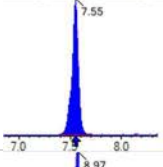
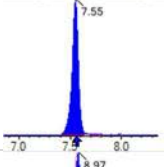
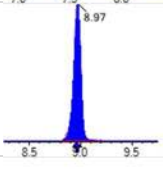
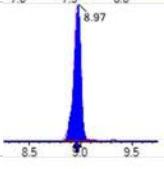
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 521167	(3.68 , 1.00) (0.00 , N/A , 0.0)	265.0	N/A 0.0 0.0	2.0353 [2.0000]	101.8%			
PFPeA	(263.0 / 219.0) 320854 (263.0 / 69.0) 4152	(4.99 , 1.00) (0.00 , N/A , -0.2)	457.5 157.4	0.0129 119.9 119.9	0.9712 [1.0000]	97.1%			
PFHxA	(313.0 / 269.0) 194977 (313.0 / 119.0) 20293	(6.14 , 1.00) (0.00 , N/A , 0.4)	328.1 141.9	0.1041 115.6 115.6	0.4541 [0.5000]	90.8%			
PFHpA	(363.0 / 319.0) 190217 (363.0 / 169.0) 50369	(7.07 , 1.00) (0.00 , N/A , 0.1)	273.0 150.1	0.2648 87.0 87.0	0.4985 [0.5000]	99.7%			
PFOA	(413.0 / 369.0) 205001 (413.0 / 169.0) 59201	(7.89 , 1.00) (0.00 , N/A , 0.1)	423.1 260.1	0.2888 86.0 86.0	0.4670 [0.5000]	93.4%			
PFNA	(463.0 / 419.0) 161557 (463.0 / 169.0) 32887	(8.63 , 1.00) (0.00 , N/A , -0.4)	265.7 218.9	0.2036 97.3 97.3	0.4620 [0.5000]	92.4%			
PFDA	(513.0 / 469.0) 205700 (513.0 / 169.0) 21909	(9.31 , 1.00) (0.00 , N/A , 0.4)	215.0 307.9	0.1065 119.5 119.5	0.4713 [0.5000]	94.3%			
PFUnA	(563.0 / 519.0) 221267 (563.0 / 169.0) 30791	(9.72 , 1.00) (0.00 , N/A , 0.0)	254.7 121.3	0.1392 132.1 132.1	0.4540 [0.5000]	90.8%			
PFDoA	(613.0 / 569.0) 250949 (613.0 / 169.0) 28444	(9.91 , 1.00) (0.00 , N/A , -0.4)	465.4 101.4	0.1133 88.3 88.3	0.5127 [0.5000]	102.5%			
PFTrDA	(663.0 / 619.0) 206069 (663.0 / 169.0) 37764	(10.03 , 1.01) (N/A , 0.01 , -0.1)	412.2 125.9	0.1833 80.3 80.3	0.4981 [0.5000]	99.6%			
PFTeDA	(713.0 / 669.0) 169706 (713.0 / 169.0) 41380	(10.14 , 1.00) (0.00 , N/A , -0.3)	395.6 135.4	0.2438 116.7 116.7	0.4278 [0.5000]	85.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (2)
Acquired: 2022/12/27 - 17:23

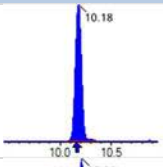
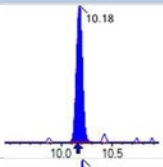
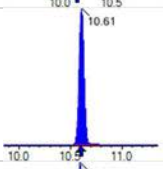
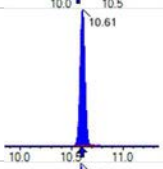
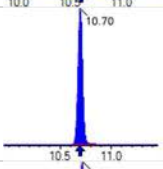
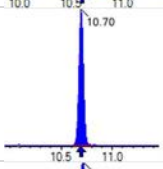
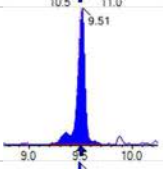
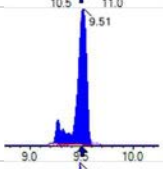
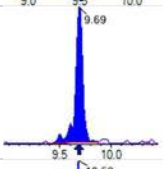
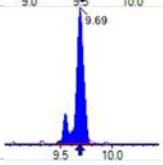
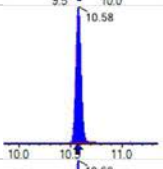
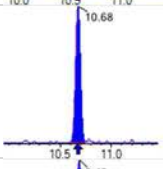
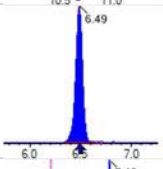
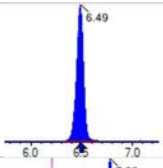
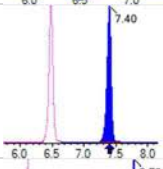
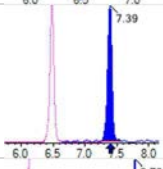
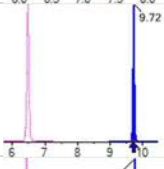
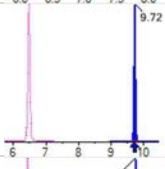
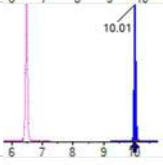
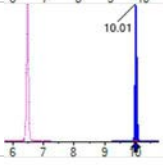
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 278472 (299.0 / 99.0) 190563	(6.09 , 1.00) (0.00 , N/A , 0.0)	455.0 417.5	0.6843 102.7 102.7	0.4079 [0.4424]	92.2%			
PFPeS	(349.0 / 80.0) 523335 (349.0 / 99.0) 186304	(7.14 , 0.89) (N/A , 0.00 , 0.0)	554.9 474.9	0.3560 96.7 96.7	0.4969 [0.4692]	105.9%			
PFHxS	(399.0 / 80.0) 465773 (399.0 / 99.0) 150912	(8.01 , 1.00) (0.00 , N/A , 0.2)	794.7 522.5	0.3240 101.3 101.3	0.4832 [0.4555]	106.1%			
PFHpS	(449.0 / 80.0) 408354 (449.0 / 99.0) 110034	(8.78 , 0.93) (N/A , 0.00 , 0.0)	480.9 438.4	0.2695 101.3 101.3	0.4292 [0.4757]	90.2%			
PFOS	(499.0 / 80.0) 488845 (499.0 / 99.0) 96676	(9.45 , 1.00) (0.00 , N/A , 0.1)	236.3 303.4	0.1978 86.6 86.6	0.4212 [0.4637]	90.8%			
PFNS	(549.0 / 80.0) 514423 (549.0 / 99.0) 141771	(9.77 , 1.03) (N/A , 0.01 , -0.1)	722.4 379.6	0.2756 117.3 117.3	0.4449 [0.4799]	92.7%			
PFDS	(599.0 / 80.0) 628037 (599.0 / 99.0) 156320	(9.92 , 1.05) (N/A , 0.01 , 0.0)	478.0 438.4	0.2489 111.1 111.1	0.4442 [0.4816]	92.2%			
PFDoS	(699.0 / 80.0) 247263 (699.0 / 99.0) 56750	(10.12 , 1.07) (N/A , 0.01 , 0.2)	588.5 283.7	0.2295 112.1 112.1	0.4378 [0.4848]	90.3%			
4:2FTS	(327.0 / 307.0) 774496 (327.0 / 81.0) 456872	(5.81 , 1.00) (0.00 , N/A , 0.2)	585.5 249.3	0.5899 91.4 91.4	1.8072 [1.8691]	96.7%			
6:2FTS	(427.0 / 407.0) 433351 (427.0 / 81.0) 346345	(7.55 , 1.00) (0.00 , N/A , 0.0)	483.0 450.9	0.7992 113.0 113.0	1.7070 [1.8981]	89.9%			
8:2FTS	(527.0 / 507.0) 432267 (527.0 / 81.0) 343587	(8.97 , 1.00) (0.00 , N/A , -0.2)	361.9 450.1	0.7948 113.2 113.2	1.8830 [1.9166]	98.2%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (2)
Acquired: 2022/12/27 - 17:23

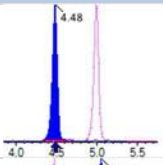
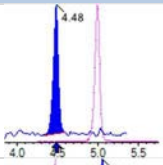
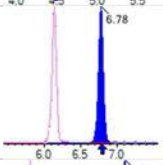
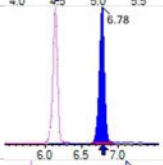
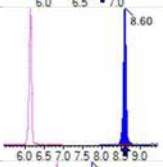
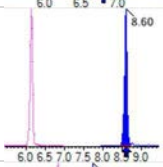
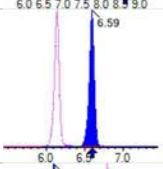
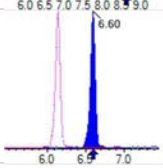
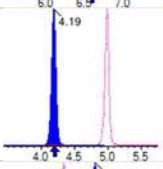
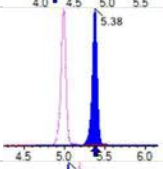
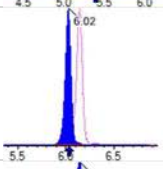
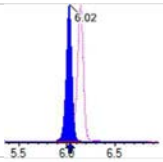
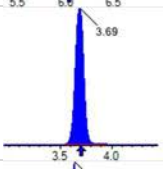
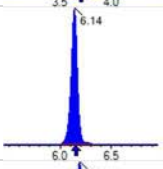
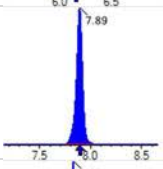
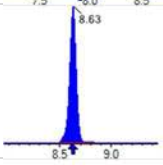
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 648957 (498.0 / 478.0) 14502	(10.18 , 1.00) (0.00 , N/A , 0.0)	502.8 172.7	0.0223 140.2 140.2	0.4811 [0.5000]	96.2%			
NMeFOSA	(512.0 / 219.0) 410464 (512.0 / 169.0) 269004	(10.61 , 1.00) (0.00 , N/A , 0.1)	743.1 757.2	0.6554 96.3 96.3	2.0942 [2.0000]	104.7%			
NEtFOSA	(526.0 / 219.0) 374167 (526.0 / 169.0) 408553	(10.70 , 1.00) (0.00 , N/A , 0.0)	959.1 802.9	1.0919 108.7 108.7	1.9712 [2.0000]	98.6%			
NMeFOSAA	(570.0 / 419.0) 107628 (570.0 / 483.0) 50562	(9.51 , 1.00) (0.01 , N/A , 0.0)	207.3 56.5	0.4698 94.1 94.1	0.5246 [0.5000]	104.9%			
NEtFOSAA	(584.0 / 419.0) 87898 (584.0 / 526.0) 53834	(9.69 , 1.00) (0.00 , N/A , 0.2)	160.8 1021.0	0.6125 102.0 102.0	0.4384 [0.5000]	87.7%			
NMeFOSE	(616.0 / 59.0) 77037	(10.58 , 1.00) (0.01 , N/A , 0.0)	859.9	N/A 0.0 0.0	1.9698 [2.0000]	98.5%			
NEtFOSE	(630.0 / 59.0) 11558	(10.68 , 1.00) (0.01 , N/A , 0.0)	245.0	N/A 0.0 0.0	2.3641 [2.0000]	118.2%			
HFPO-DA	(285.0 / 169.0) 152806 (285.0 / 185.0) 398634	(6.49 , 1.00) (0.00 , N/A , 0.0)	450.9 491.8	2.6088 94.8 94.8	0.9728 [1.0000]	97.3%			
ADONA	(377.0 / 85.0) 624401 (377.0 / 251.0) 77050	(7.40 , 1.14) (N/A , 0.00 , 0.4)	531.1 235.7	0.1234 107.3 107.3	0.9282 [0.9427]	98.5%			
9Cl-Pf3ONS	(531.0 / 351.0) 1672652 (533.0 / 353.0) 486691	(9.72 , 1.50) (N/A , 0.01 , -0.1)	545.9 501.9	0.2910 90.9 90.9	0.9474 [0.9333]	101.5%			
11Cl-PF3OUDS	(631.0 / 451.0) 866629 (633.0 / 453.0) 247969	(10.01 , 1.54) (N/A , 0.01 , 0.1)	1418.9 652.7	0.2861 97.7 97.7	0.9390 [0.9432]	99.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (2)
Acquired: 2022/12/27 - 17:23

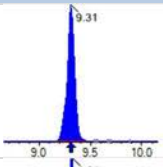
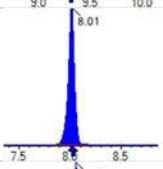
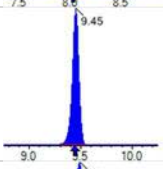
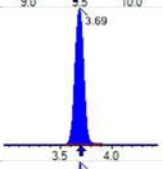
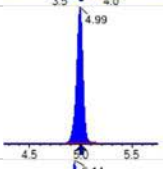
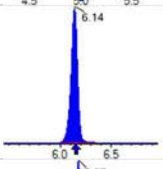
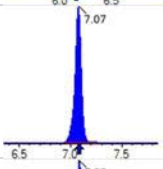
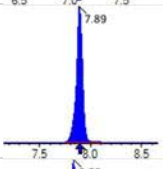
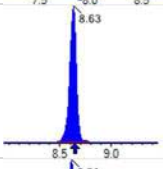
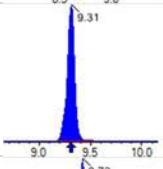
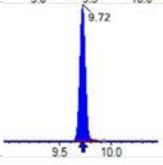
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 20018 (241.0 / 117.0) 29064	(4.48 , 0.90) (N/A , -0.01 , -0.1)	308.0 108.4	1.4518 106.3 106.3	1.7315 [2.0000]	86.6%			
5:3FTCA	(341.0 / 236.7) 116608 (341.0 / 217.0) 186380	(6.78 , 1.10) (N/A , -0.01 , 0.0)	411.5 290.3	1.5984 96.2 96.2	1.7705 [2.0000]	88.5%			
7:3FTCA	(441.0 / 317.0) 159963 (441.0 / 337.0) 130549	(8.60 , 1.40) (N/A , 0.00 , -0.1)	257.6 242.5	0.8161 97.6 97.6	1.9716 [2.0000]	98.6%			
PFEESA	(315.0 / 135.0) 369845 (315.0 / 83.0) 120770	(6.59 , 1.07) (N/A , -0.01 , -0.1)	557.7 300.8	0.3265 106.0 106.0	0.8648 [0.8925]	96.9%			
PFMPA	(229.0 / 85.0) 96792	(4.19 , 0.84) (N/A , -0.01 , 0.0)	683.2	N/A 0.0 0.0	0.9654 [1.0000]	96.5%			
PFMBA	(279.0 / 85.0) 247709	(5.38 , 1.08) (N/A , -0.01 , 0.0)	690.1	N/A 0.0 0.0	0.9438 [1.0000]	94.4%			
NFDHA	(295.0 / 201.0) 204242 (295.0 / 85.0) 179022	(6.02 , 0.98) (N/A , -0.01 , 0.1)	599.8 653.7	0.8765 100.9 100.9	0.9948 [1.0000]	99.5%			
13C3_PFBA_IIS	(216.0 / 172.0) 281426	(3.69 , N/A) (N/A , -0.01 , N/A)	564.0	N/A	1.0411 [1.0000]	104.1% { 96.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 391645	(6.14 , N/A) (N/A , -0.01 , N/A)	342.2	N/A	0.9862 [1.0000]	98.6% { 97.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 396973	(7.89 , N/A) (N/A , 0.00 , N/A)	784.8	N/A	0.9937 [1.0000]	99.4% { 99.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 349531	(8.63 , N/A) (N/A , 0.00 , N/A)	369.9	N/A	1.0574 [1.0000]	105.7% { 96.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (2)
Acquired: 2022/12/27 - 17:23

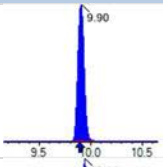
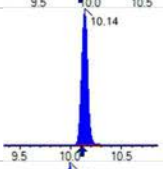
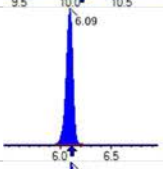
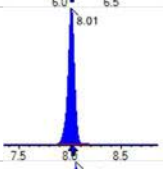
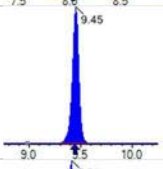
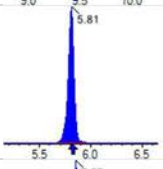
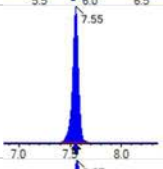
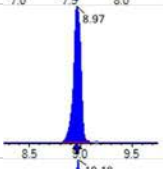
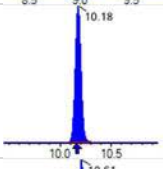
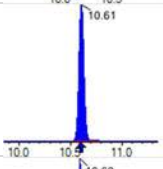
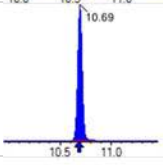
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 355779	(9.31 , N/A) (N/A , 0.00 , N/A)	304.3	N/A	0.9964 [1.0000]	99.6% { 107.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 699629	(8.01 , N/A) (N/A , 0.00 , N/A)	677.3	N/A	1.0031 [1.0000]	100.3% { 94.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 694269	(9.45 , N/A) (N/A , 0.01 , N/A)	590.6	N/A	1.0068 [1.0000]	100.7% { 105.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2442869	(3.69 , N/A) (N/A , -0.01 , N/A)	599.3	N/A	8.0776 [8.0000]	101.0% { 101.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1546738	(4.99 , N/A) (N/A , -0.01 , N/A)	575.6	N/A	4.3216 [4.0000]	108.0% { 101.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 942634	(6.14 , N/A) (N/A , -0.01 , N/A)	407.6	N/A	2.1639 [2.0000]	108.2% { 109.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 796921	(7.07 , N/A) (N/A , 0.00 , N/A)	470.3	N/A	2.0475 [2.0000]	102.4% { 95.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 944997	(7.89 , N/A) (N/A , 0.00 , N/A)	541.7	N/A	2.1724 [2.0000]	108.6% { 116.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 386179	(8.63 , N/A) (N/A , 0.00 , N/A)	379.6	N/A	1.0037 [1.0000]	100.4% { 100.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 490075	(9.31 , N/A) (N/A , 0.01 , N/A)	339.7	N/A	1.0530 [1.0000]	105.3% { 109.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 615478	(9.72 , N/A) (N/A , 0.01 , N/A)	330.4	N/A	1.0912 [1.0000]	109.1% { 101.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (2)
Acquired: 2022/12/27 - 17:23

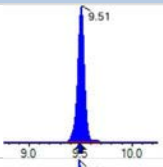
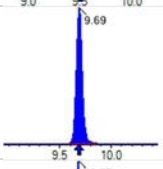
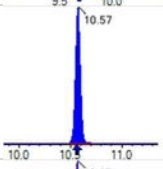
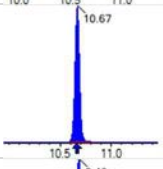
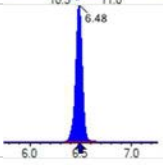
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 571140	(9.90 , N/A) (N/A , 0.01 , N/A)	854.6	N/A	0.9200 [1.0000]	92.0% { 83.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 436782	(10.14 , N/A) (N/A , 0.02 , N/A)	5773.5	N/A	1.0660 [1.0000]	106.6% { 99.2% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2447615	(6.09 , N/A) (N/A , -0.01 , N/A)	662.5	N/A	2.0776 [2.0000]	103.9% { 97.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1254248	(8.01 , N/A) (N/A , 0.00 , N/A)	673.0	N/A	2.0057 [2.0000]	100.3% { 98.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2000358	(9.45 , N/A) (N/A , 0.01 , N/A)	443.5	N/A	2.2247 [2.0000]	111.2% { 122.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 600888	(5.81 , N/A) (N/A , -0.01 , N/A)	587.9	N/A	4.3310 [4.0000]	108.3% { 116.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 741911	(7.55 , N/A) (N/A , 0.00 , N/A)	819.2	N/A	4.3030 [4.0000]	107.6% { 124.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 681581	(8.97 , N/A) (N/A , 0.01 , N/A)	489.1	N/A	4.0098 [4.0000]	100.2% { 111.6% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2811232	(10.18 , N/A) (N/A , 0.01 , N/A)	753.3	N/A	2.3516 [2.0000]	117.6% { 118.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 450627	(10.61 , N/A) (N/A , 0.01 , N/A)	824.8	N/A	1.9437 [2.0000]	97.2% { 98.9% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 413031	(10.69 , N/A) (N/A , 0.01 , N/A)	1201.9	N/A	1.9995 [2.0000]	100.0% { 101.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (2)
Acquired: 2022/12/27 - 17:23

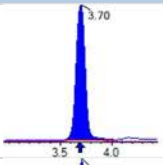
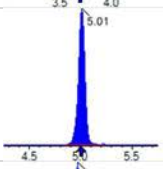
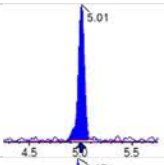
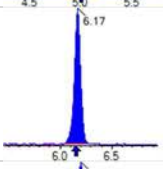
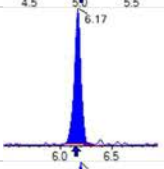
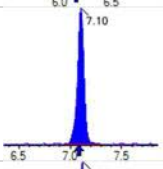
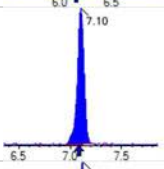
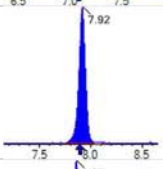
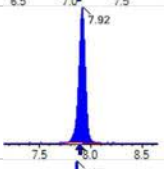
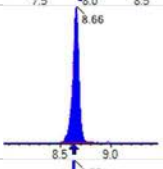
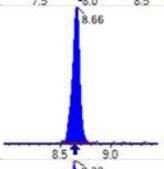
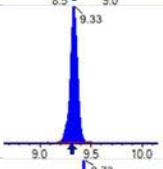
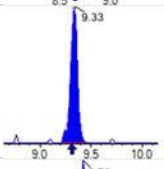
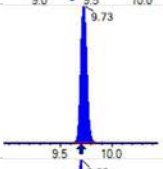
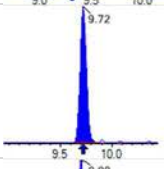
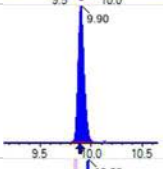
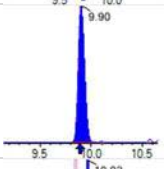
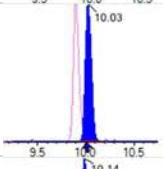
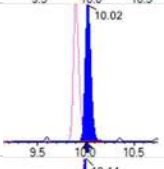
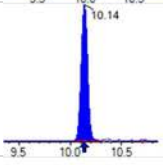
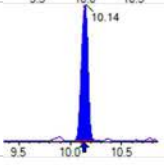
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 988216	(9.51 , N/A) (N/A , 0.01 , N/A)	372.9	N/A	4.0176 [4.0000]	100.4% { 94.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 924820	(9.69 , N/A) (N/A , 0.02 , N/A)	555.9	N/A	4.3898 [4.0000]	109.7% { 101.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 692788	(10.57 , N/A) (N/A , 0.01 , N/A)	1192.8	N/A	18.6518 [20.0000]	93.3% { 94.1% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 257876	(10.67 , N/A) (N/A , 0.01 , N/A)	1034.8	N/A	17.1678 [20.0000]	85.8% { 85.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2047332	(6.48 , N/A) (N/A , -0.01 , N/A)	865.8	N/A	8.4634 [8.0000]	105.8% { 104.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (3)
Acquired: 2022/12/27 - 17:36

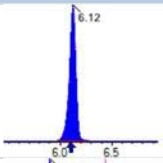
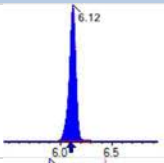
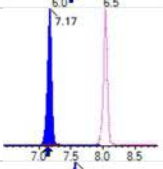
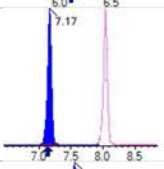
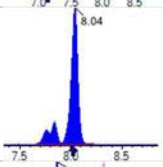
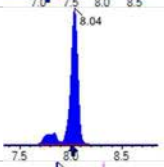
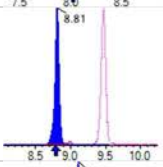
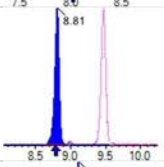
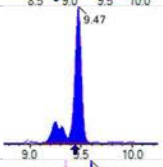
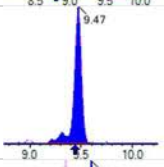
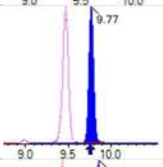
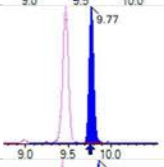
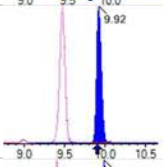
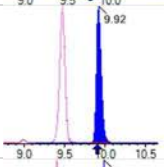
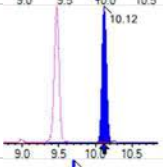
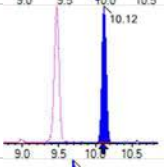
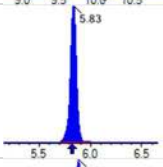
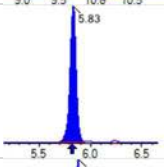
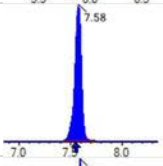
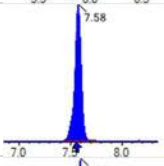
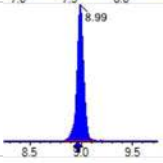
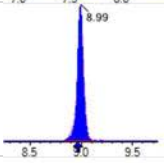
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1014800	(3.70 , 1.00) (0.00 , N/A , 0.0)	390.3	N/A 0.0 0.0	3.9630 [4.0000]	99.1%			
PFPeA	(263.0 / 219.0) 605627 (263.0 / 69.0) 7279	(5.01 , 1.00) (0.00 , N/A , 0.3)	469.5 101.4	0.0120 111.4 111.4	1.8844 [2.0000]	94.2%			
PFHxA	(313.0 / 269.0) 409243 (313.0 / 119.0) 36650	(6.17 , 1.00) (0.00 , N/A , -0.1)	462.2 155.7	0.0896 99.5 99.5	0.9807 [1.0000]	98.1%			
PFHpA	(363.0 / 319.0) 367158 (363.0 / 169.0) 117924	(7.10 , 1.00) (0.00 , N/A , 0.0)	411.5 298.9	0.3212 105.5 105.5	0.9439 [1.0000]	94.4%			
PFOA	(413.0 / 369.0) 387791 (413.0 / 169.0) 124760	(7.92 , 1.00) (0.00 , N/A , 0.0)	432.1 399.9	0.3217 95.8 95.8	0.9665 [1.0000]	96.7%			
PFNA	(463.0 / 419.0) 325843 (463.0 / 169.0) 64157	(8.66 , 1.00) (0.00 , N/A , -0.2)	409.3 257.1	0.1969 94.2 94.2	1.0396 [1.0000]	104.0%			
PFDA	(513.0 / 469.0) 384990 (513.0 / 169.0) 40596	(9.33 , 1.00) (0.00 , N/A , -0.1)	396.7 148.5	0.1054 118.3 118.3	0.8319 [1.0000]	83.2%			
PFUnA	(563.0 / 519.0) 495674 (563.0 / 169.0) 51675	(9.73 , 1.00) (0.00 , N/A , 0.3)	482.9 214.2	0.1043 98.9 98.9	1.1101 [1.0000]	111.0%			
PFDoA	(613.0 / 569.0) 488967 (613.0 / 169.0) 78447	(9.90 , 1.00) (0.00 , N/A , -0.3)	555.2 245.2	0.1604 125.0 125.0	0.8589 [1.0000]	85.9%			
PFTrDA	(663.0 / 619.0) 508368 (663.0 / 169.0) 98273	(10.03 , 1.01) (N/A , 0.00 , 0.2)	407.0 209.1	0.1933 84.7 84.7	1.0564 [1.0000]	105.6%			
PFTeDA	(713.0 / 669.0) 359126 (713.0 / 169.0) 74803	(10.14 , 1.00) (0.00 , N/A , -0.3)	327.2 176.1	0.2083 99.7 99.7	1.0248 [1.0000]	102.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (3)
Acquired: 2022/12/27 - 17:36

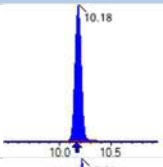
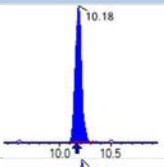
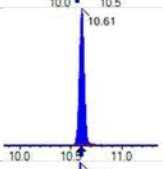
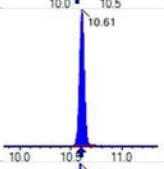
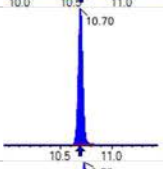
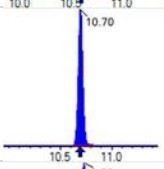
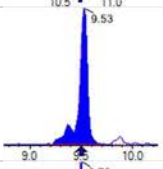
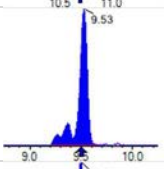
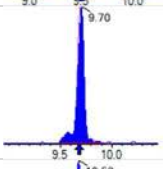
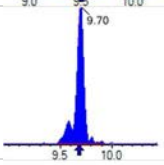
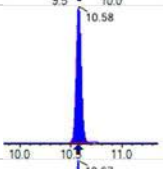
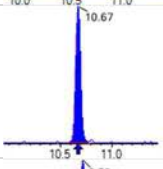
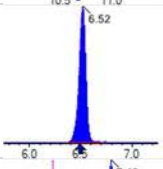
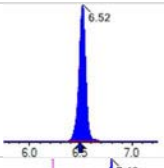
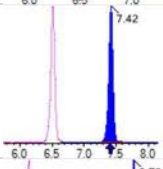
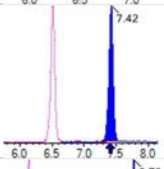
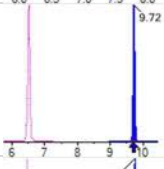
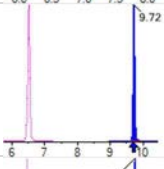
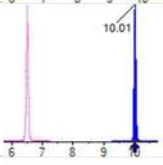
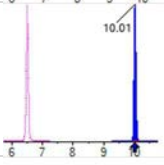
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 582544 (299.0 / 99.0) 368091	(6.12 , 1.00) (0.00 , N/A , 0.0)	540.4 466.9	0.6319 94.8 94.8	0.8355 [0.8847]	94.4%			
PFPeS	(349.0 / 80.0) 900300 (349.0 / 99.0) 347073	(7.17 , 0.89) (N/A , 0.03 , 0.1)	554.7 556.6	0.3855 104.7 104.7	0.7812 [0.9384]	83.2%			
PFHxS	(399.0 / 80.0) 836689 (399.0 / 99.0) 284608	(8.04 , 1.00) (0.00 , N/A , 0.1)	564.8 640.5	0.3402 106.4 106.4	0.7933 [0.9110]	87.1%			
PFHpS	(449.0 / 80.0) 779404 (449.0 / 99.0) 219866	(8.81 , 0.93) (N/A , 0.03 , 0.1)	653.0 431.0	0.2821 106.1 106.1	0.8983 [0.9514]	94.4%			
PFOS	(499.0 / 80.0) 1005570 (499.0 / 99.0) 222960	(9.47 , 1.00) (0.00 , N/A , 0.1)	340.8 742.9	0.2217 97.1 97.1	0.9502 [0.9275]	102.5%			
PFNS	(549.0 / 80.0) 962922 (549.0 / 99.0) 248076	(9.77 , 1.03) (N/A , 0.01 , -0.1)	667.9 431.6	0.2576 109.7 109.7	0.9132 [0.9599]	95.1%			
PFDS	(599.0 / 80.0) 1305704 (599.0 / 99.0) 254425	(9.92 , 1.05) (N/A , 0.01 , 0.1)	1094.8 604.4	0.1949 87.0 87.0	1.0127 [0.9631]	105.1%			
PFDoS	(699.0 / 80.0) 504784 (699.0 / 99.0) 114366	(10.12 , 1.07) (N/A , 0.01 , 0.2)	718.4 409.6	0.2266 110.7 110.7	0.9801 [0.9696]	101.1%			
4:2FTS	(327.0 / 307.0) 1507488 (327.0 / 81.0) 994640	(5.83 , 1.00) (0.00 , N/A , 0.2)	629.3 409.0	0.6598 102.3 102.3	3.2968 [3.7381]	88.2%			
6:2FTS	(427.0 / 407.0) 1054461 (427.0 / 81.0) 750316	(7.58 , 1.00) (0.00 , N/A , 0.1)	609.5 623.0	0.7116 100.6 100.6	3.8497 [3.7962]	101.4%			
8:2FTS	(527.0 / 507.0) 949292 (527.0 / 81.0) 805063	(8.99 , 1.00) (0.00 , N/A , 0.1)	699.3 613.5	0.8481 120.7 120.7	4.0700 [3.8332]	106.2%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (3)
Acquired: 2022/12/27 - 17:36

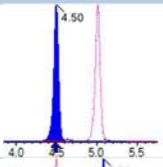
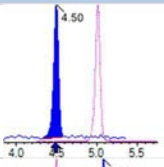
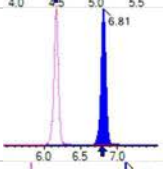
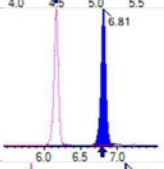
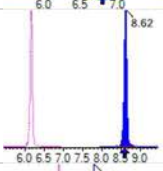
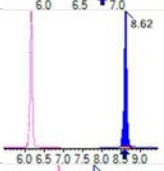
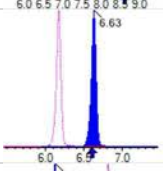
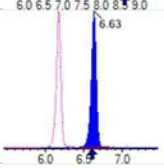
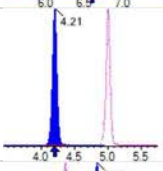
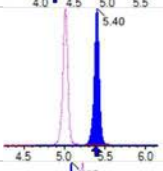
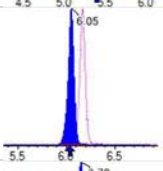
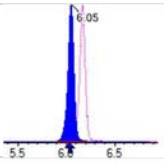
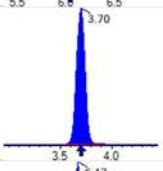
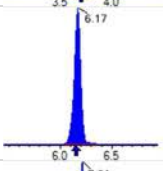
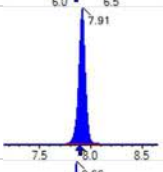
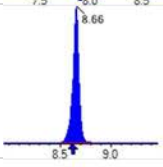
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1119098 (498.0 / 478.0) 27796	(10.18 , 1.00) (0.00 , N/A , -0.2)	696.3 543.0	0.0248 155.8 155.8	0.9301 [1.0000]	93.0%			
NMeFOSA	(512.0 / 219.0) 831514 (512.0 / 169.0) 537579	(10.61 , 1.00) (0.00 , N/A , -0.1)	1026.5 944.7	0.6465 95.0 95.0	4.2513 [4.0000]	106.3%			
NEtFOSA	(526.0 / 219.0) 749717 (526.0 / 169.0) 812083	(10.70 , 1.00) (0.00 , N/A , 0.0)	1098.0 1024.9	1.0832 107.9 107.9	3.8014 [4.0000]	95.0%			
NMeFOSAA	(570.0 / 419.0) 207604 (570.0 / 483.0) 111216	(9.53 , 1.00) (0.01 , N/A , 0.1)	234.8 1098.4	0.5357 107.3 107.3	0.9679 [1.0000]	96.8%			
NEtFOSAA	(584.0 / 419.0) 196954 (584.0 / 526.0) 107651	(9.70 , 1.00) (0.01 , N/A , 0.3)	556.4 791.9	0.5466 91.0 91.0	1.0040 [1.0000]	100.4%			
NMeFOSE	(616.0 / 59.0) 154251	(10.58 , 1.00) (0.00 , N/A , 0.0)	801.7	N/A 0.0 0.0	3.6090 [4.0000]	90.2%			
NEtFOSE	(630.0 / 59.0) 24180	(10.67 , 1.00) (0.01 , N/A , 0.0)	411.8	N/A 0.0 0.0	4.2561 [4.0000]	106.4%			
HFPO-DA	(285.0 / 169.0) 296732 (285.0 / 185.0) 757598	(6.52 , 1.00) (0.00 , N/A , 0.1)	414.7 810.6	2.5531 92.8 92.8	1.9128 [2.0000]	95.6%			
ADONA	(377.0 / 85.0) 1171156 (377.0 / 251.0) 144655	(7.42 , 1.14) (N/A , 0.02 , -0.1)	686.6 306.5	0.1235 107.4 107.4	1.7631 [1.8854]	93.5%			
9Cl-Pf3ONS	(531.0 / 351.0) 3508115 (533.0 / 353.0) 994286	(9.72 , 1.49) (N/A , 0.01 , 0.0)	609.5 532.3	0.2834 88.6 88.6	2.0122 [1.8665]	107.8%			
11Cl-PF3OUDS	(631.0 / 451.0) 1674382 (633.0 / 453.0) 527641	(10.01 , 1.54) (N/A , 0.01 , 0.1)	1072.1 487.9	0.3151 107.7 107.7	1.8372 [1.8864]	97.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (3)
Acquired: 2022/12/27 - 17:36

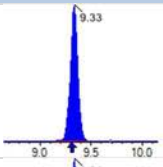
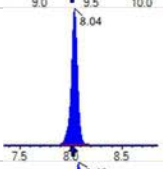
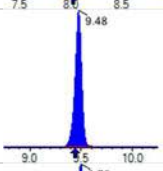
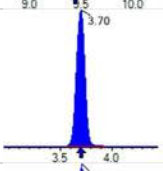
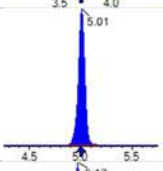
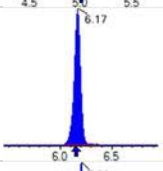
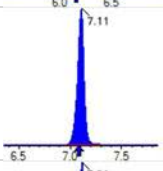
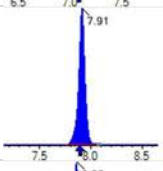
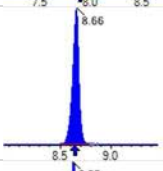
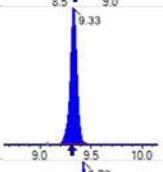
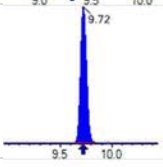
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 41076 (241.0 / 117.0) 54734	(4.50 , 0.90) (N/A , 0.01 , 0.0)	423.6 163.5	1.3325 97.6 97.6	3.6523 [4.0000]	91.3%			
5:3FTCA	(341.0 / 236.7) 239638 (341.0 / 217.0) 385069	(6.81 , 1.10) (N/A , 0.02 , 0.1)	535.2 431.3	1.6069 96.7 96.7	3.7439 [4.0000]	93.6%			
7:3FTCA	(441.0 / 317.0) 291164 (441.0 / 337.0) 241573	(8.62 , 1.40) (N/A , 0.03 , 0.0)	261.9 296.6	0.8297 99.3 99.3	3.6926 [4.0000]	92.3%			
PFEESA	(315.0 / 135.0) 741468 (315.0 / 83.0) 219092	(6.63 , 1.07) (N/A , 0.02 , -0.1)	735.2 432.8	0.2955 95.9 95.9	1.7840 [1.7849]	99.9%			
PFMPA	(229.0 / 85.0) 179186	(4.21 , 0.84) (N/A , 0.01 , 0.0)	745.3	N/A 0.0 0.0	1.8372 [2.0000]	91.9%			
PFMBA	(279.0 / 85.0) 484955	(5.40 , 1.08) (N/A , 0.01 , 0.0)	743.1	N/A 0.0 0.0	1.8994 [2.0000]	95.0%			
NFDHA	(295.0 / 201.0) 380734 (295.0 / 85.0) 345511	(6.05 , 0.98) (N/A , 0.02 , 0.1)	508.7 472.7	0.9075 104.5 104.5	1.9082 [2.0000]	95.4%			
13C3_PFBA_IIS	(216.0 / 172.0) 269582	(3.70 , N/A) (N/A , 0.00 , N/A)	580.4	N/A	0.9973 [1.0000]	99.7% { 92.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 362678	(6.17 , N/A) (N/A , 0.02 , N/A)	378.1	N/A	0.9132 [1.0000]	91.3% { 90.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 378608	(7.91 , N/A) (N/A , 0.02 , N/A)	578.9	N/A	0.9477 [1.0000]	94.8% { 95.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 315229	(8.66 , N/A) (N/A , 0.03 , N/A)	477.7	N/A	0.9536 [1.0000]	95.4% { 86.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (3)
Acquired: 2022/12/27 - 17:36

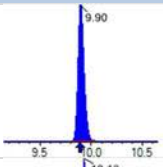
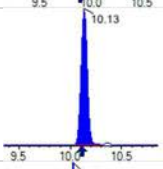
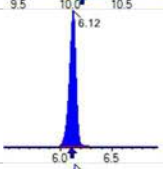
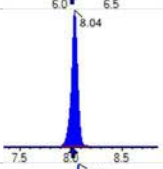
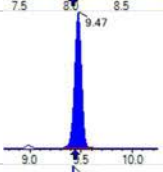
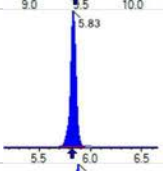
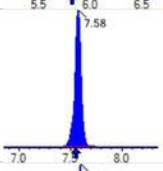
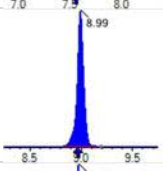
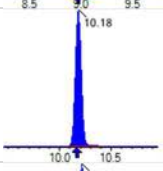
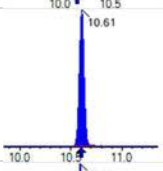
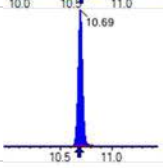
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 396509	(9.33 , N/A) (N/A , 0.03 , N/A)	421.2	N/A	1.1104 [1.0000]	111.0% { 119.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 676952	(8.04 , N/A) (N/A , 0.02 , N/A)	735.8	N/A	0.9706 [1.0000]	97.1% { 91.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 665722	(9.48 , N/A) (N/A , 0.03 , N/A)	573.7	N/A	0.9654 [1.0000]	96.5% { 101.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2442878	(3.70 , N/A) (N/A , 0.00 , N/A)	644.7	N/A	8.4326 [8.0000]	105.4% { 101.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1504608	(5.01 , N/A) (N/A , 0.01 , N/A)	562.4	N/A	4.5396 [4.0000]	113.5% { 99.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 916110	(6.17 , N/A) (N/A , 0.02 , N/A)	536.0	N/A	2.2710 [2.0000]	113.6% { 105.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 812292	(7.11 , N/A) (N/A , 0.03 , N/A)	439.5	N/A	2.2536 [2.0000]	112.7% { 97.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 863811	(7.91 , N/A) (N/A , 0.02 , N/A)	636.2	N/A	2.0821 [2.0000]	104.1% { 106.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 346096	(8.66 , N/A) (N/A , 0.03 , N/A)	390.0	N/A	0.9974 [1.0000]	99.7% { 90.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 519593	(9.33 , N/A) (N/A , 0.03 , N/A)	633.7	N/A	1.0017 [1.0000]	100.2% { 115.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 563842	(9.72 , N/A) (N/A , 0.01 , N/A)	626.0	N/A	0.8970 [1.0000]	89.7% { 93.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (3)
Acquired: 2022/12/27 - 17:36

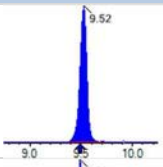
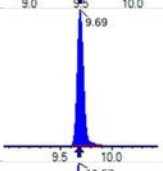
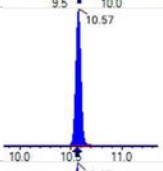
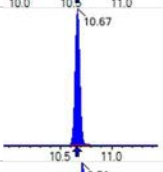
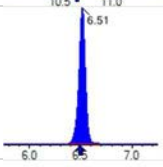
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 664288	(9.90 , N/A) (N/A , 0.01 , N/A)	403.5	N/A	0.9602 [1.0000]	96.0% { 97.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 385817	(10.13 , N/A) (N/A , 0.01 , N/A)	898.5	N/A	0.8449 [1.0000]	84.5% { 87.6% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2499957	(6.12 , N/A) (N/A , 0.02 , N/A)	486.7	N/A	2.1931 [2.0000]	109.7% { 99.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1372387	(8.04 , N/A) (N/A , 0.02 , N/A)	753.7	N/A	2.2681 [2.0000]	113.4% { 107.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1824079	(9.47 , N/A) (N/A , 0.03 , N/A)	325.4	N/A	2.1157 [2.0000]	105.8% { 111.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 641114	(5.83 , N/A) (N/A , 0.02 , N/A)	511.0	N/A	4.7758 [4.0000]	119.4% { 124.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 800490	(7.58 , N/A) (N/A , 0.03 , N/A)	687.1	N/A	4.7983 [4.0000]	120.0% { 133.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 692478	(8.99 , N/A) (N/A , 0.03 , N/A)	339.1	N/A	4.2104 [4.0000]	105.3% { 113.3% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2507357	(10.18 , N/A) (N/A , 0.02 , N/A)	744.8	N/A	2.1873 [2.0000]	109.4% { 105.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 449683	(10.61 , N/A) (N/A , 0.01 , N/A)	663.4	N/A	2.0228 [2.0000]	101.1% { 98.7% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 429143	(10.69 , N/A) (N/A , 0.01 , N/A)	1062.5	N/A	2.1666 [2.0000]	108.3% { 105.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (3)
Acquired: 2022/12/27 - 17:36

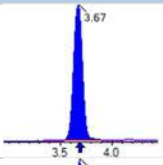
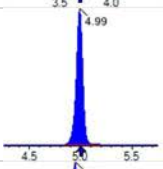
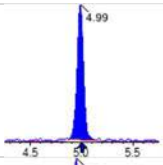
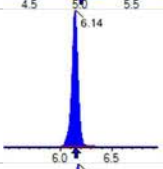
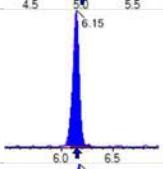
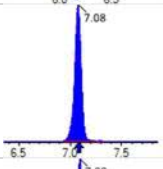
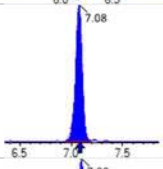
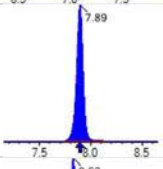
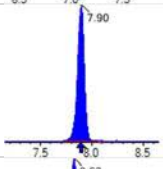
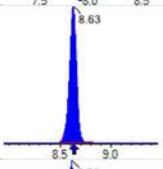
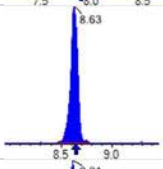
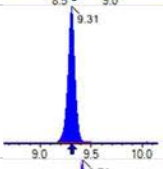
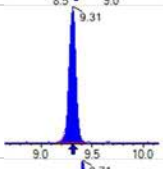
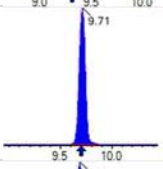
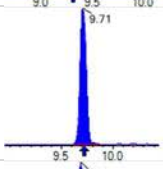
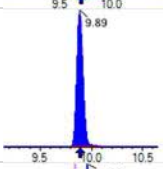
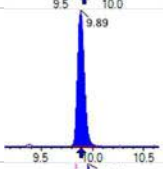
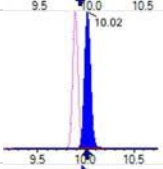
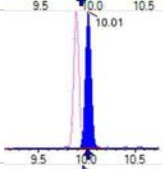
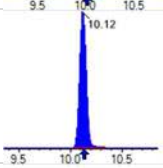
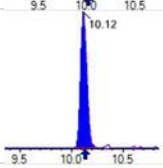
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1033157	(9.52 , N/A) (N/A , 0.03 , N/A)	421.0	N/A	4.3804 [4.0000]	109.5% { 98.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 904858	(9.69 , N/A) (N/A , 0.02 , N/A)	403.8	N/A	4.4792 [4.0000]	112.0% { 99.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 757114	(10.57 , N/A) (N/A , 0.01 , N/A)	1225.8	N/A	21.2577 [20.0000]	106.3% { 102.8% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 299660	(10.67 , N/A) (N/A , 0.01 , N/A)	1467.1	N/A	20.8050 [20.0000]	104.0% { 99.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2021796	(6.51 , N/A) (N/A , 0.02 , N/A)	748.7	N/A	9.0254 [8.0000]	112.8% { 103.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (4)
Acquired: 2022/12/27 - 17:49

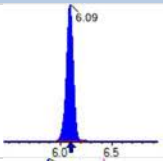
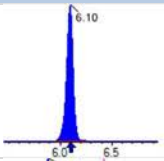
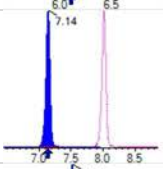
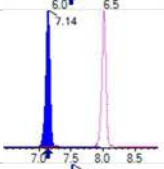
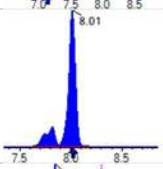
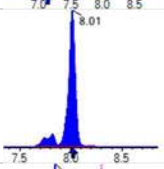
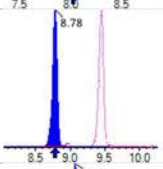
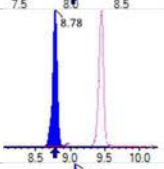
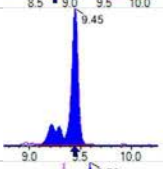
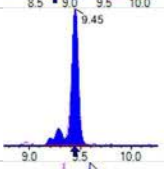
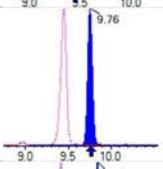
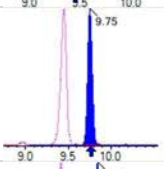
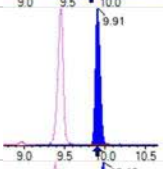
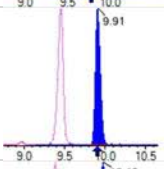
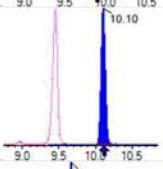
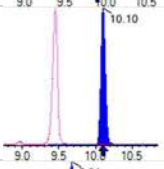
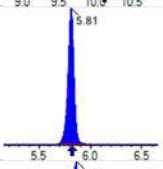
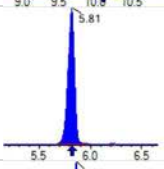
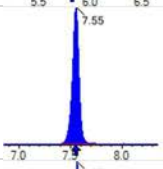
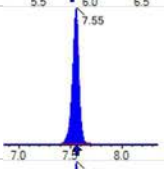
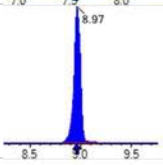
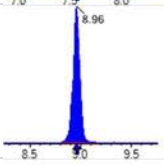
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2134503	(3.67 , 1.00) (0.00 , N/A , 0.0)	437.5	N/A 0.0 0.0	8.3066 [8.0000]	103.8%			
PFPeA	(263.0 / 219.0) 1307119 (263.0 / 69.0) 14733	(4.99 , 1.00) (0.00 , N/A , 0.2)	569.4 171.3	0.0113 104.4 104.4	4.0970 [4.0000]	102.4%			
PFHxA	(313.0 / 269.0) 851872 (313.0 / 119.0) 75481	(6.14 , 1.00) (0.00 , N/A , -0.1)	577.7 287.7	0.0886 98.4 98.4	2.0909 [2.0000]	104.5%			
PFHpA	(363.0 / 319.0) 792308 (363.0 / 169.0) 204777	(7.08 , 1.00) (0.00 , N/A , 0.1)	588.7 319.4	0.2585 84.9 84.9	2.0667 [2.0000]	103.3%			
PFOA	(413.0 / 369.0) 868332 (413.0 / 169.0) 285456	(7.89 , 1.00) (0.00 , N/A , -0.1)	587.7 469.4	0.3287 97.8 97.8	2.0453 [2.0000]	102.3%			
PFNA	(463.0 / 419.0) 654060 (463.0 / 169.0) 138788	(8.63 , 1.00) (0.00 , N/A , -0.2)	451.3 304.7	0.2122 101.5 101.5	1.9539 [2.0000]	97.7%			
PFDA	(513.0 / 469.0) 869903 (513.0 / 169.0) 96011	(9.31 , 1.00) (0.00 , N/A , 0.0)	511.7 366.5	0.1104 123.8 123.8	2.0540 [2.0000]	102.7%			
PFUnA	(563.0 / 519.0) 998041 (563.0 / 169.0) 104330	(9.71 , 1.00) (0.00 , N/A , 0.2)	615.9 230.8	0.1045 99.2 99.2	1.9233 [2.0000]	96.2%			
PFDoA	(613.0 / 569.0) 1049515 (613.0 / 169.0) 128361	(9.89 , 1.00) (-0.01 , N/A , 0.0)	694.5 386.2	0.1223 95.3 95.3	1.8360 [2.0000]	91.8%			
PFTrDA	(663.0 / 619.0) 966250 (663.0 / 169.0) 190238	(10.02 , 1.01) (N/A , 0.00 , 0.2)	677.8 298.8	0.1969 86.3 86.3	1.9998 [2.0000]	100.0%			
PFTeDA	(713.0 / 669.0) 647357 (713.0 / 169.0) 127509	(10.12 , 1.00) (0.00 , N/A , 0.3)	563.7 261.5	0.1970 94.3 94.3	2.0228 [2.0000]	101.1%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (4)
Acquired: 2022/12/27 - 17:49

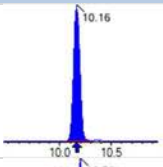
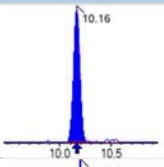
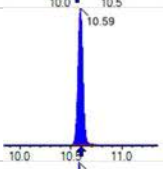
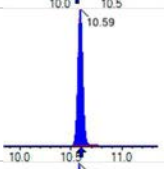
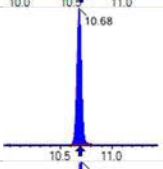
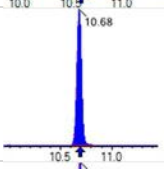
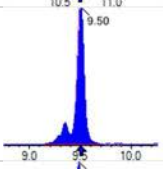
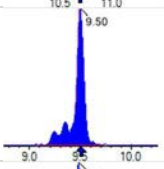
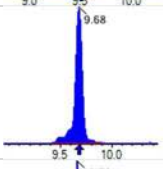
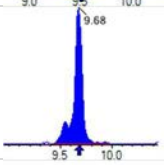
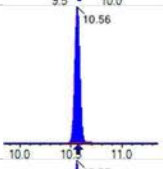
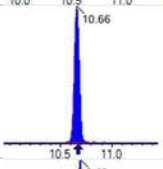
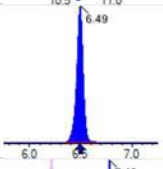
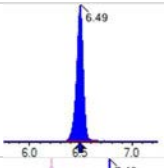
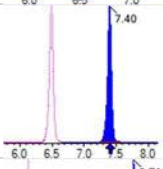
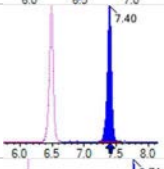
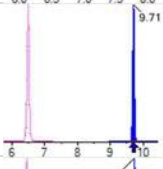
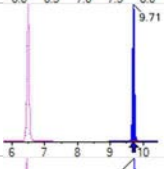
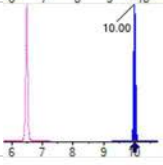
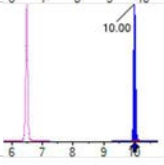
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 1176738 (299.0 / 99.0) 764720	(6.09 , 1.00) (0.00 , N/A , 0.0)	547.6 623.0	0.6499 97.5 97.5	1.6754 [1.7695]	94.7%			
PFPeS	(349.0 / 80.0) 2012796 (349.0 / 99.0) 730770	(7.14 , 0.89) (N/A , 0.00 , 0.0)	529.3 569.4	0.3631 98.6 98.6	1.9392 [1.8768]	103.3%			
PFHxS	(399.0 / 80.0) 1832508 (399.0 / 99.0) 591976	(8.01 , 1.00) (0.00 , N/A , 0.0)	660.0 588.0	0.3230 101.0 101.0	1.9292 [1.8220]	105.9%			
PFHpS	(449.0 / 80.0) 1678590 (449.0 / 99.0) 456601	(8.78 , 0.93) (N/A , 0.00 , 0.0)	648.0 687.0	0.2720 102.3 102.3	1.9397 [1.9028]	101.9%			
PFOS	(499.0 / 80.0) 2031541 (499.0 / 99.0) 454887	(9.45 , 1.00) (0.00 , N/A , -0.1)	323.7 511.1	0.2239 98.0 98.0	1.9247 [1.8550]	103.8%			
PFNS	(549.0 / 80.0) 2117170 (549.0 / 99.0) 507169	(9.76 , 1.03) (N/A , 0.00 , 0.1)	792.6 681.6	0.2396 102.0 102.0	2.0130 [1.9198]	104.9%			
PFDS	(599.0 / 80.0) 2808505 (599.0 / 99.0) 628458	(9.91 , 1.05) (N/A , 0.00 , 0.0)	1088.2 711.9	0.2238 99.9 99.9	2.1838 [1.9262]	113.4%			
PFDoS	(699.0 / 80.0) 1013842 (699.0 / 99.0) 222348	(10.10 , 1.07) (N/A , -0.01 , 0.1)	532.6 512.3	0.2193 107.1 107.1	1.9736 [1.9391]	101.8%			
4:2FTS	(327.0 / 307.0) 3481637 (327.0 / 81.0) 2043644	(5.81 , 1.00) (0.00 , N/A , -0.3)	664.6 579.6	0.5870 91.0 91.0	8.3003 [7.4762]	111.0%			
6:2FTS	(427.0 / 407.0) 1834284 (427.0 / 81.0) 1403976	(7.55 , 1.00) (0.00 , N/A , 0.0)	557.4 842.8	0.7654 108.3 108.3	7.4171 [7.5923]	97.7%			
8:2FTS	(527.0 / 507.0) 2099037 (527.0 / 81.0) 1371633	(8.97 , 1.00) (0.00 , N/A , 0.6)	430.8 458.3	0.6535 93.0 93.0	8.2742 [7.6663]	107.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (4)
Acquired: 2022/12/27 - 17:49

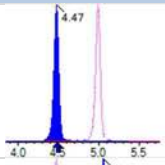
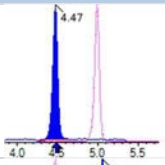
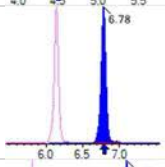
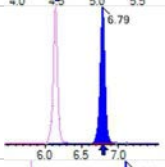
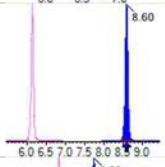
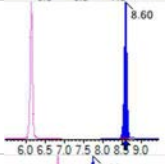
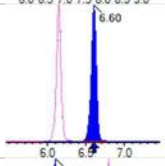
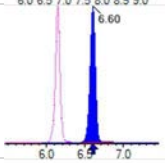
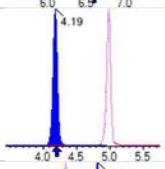
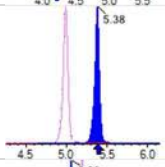
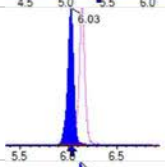
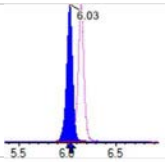
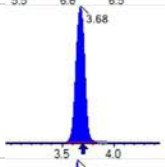
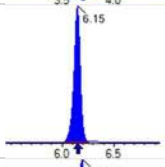
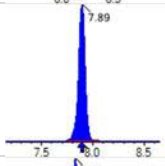
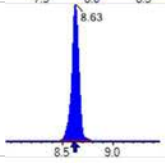
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 2241562 (498.0 / 478.0) 48093	(10.16 , 1.00) (0.00 , N/A , 0.0)	518.3 258.3	0.0215 134.6 134.6	2.1340 [2.0000]	106.7%			
NMeFOSA	(512.0 / 219.0) 1729996 (512.0 / 169.0) 1174162	(10.59 , 1.00) (0.00 , N/A , 0.1)	784.8 772.2	0.6787 99.8 99.8	9.0726 [8.0000]	113.4%			
NEtFOSA	(526.0 / 219.0) 1576571 (526.0 / 169.0) 1692636	(10.68 , 1.00) (0.00 , N/A , 0.0)	1417.3 1142.5	1.0736 106.9 106.9	8.0774 [8.0000]	101.0%			
NMeFOSAA	(570.0 / 419.0) 376637 (570.0 / 483.0) 222418	(9.50 , 1.00) (0.01 , N/A , 0.3)	307.0 337.0	0.5905 118.3 118.3	1.8882 [2.0000]	94.4%			
NEtFOSAA	(584.0 / 419.0) 396549 (584.0 / 526.0) 187070	(9.68 , 1.00) (0.00 , N/A , 0.2)	628.1 399.1	0.4717 78.5 78.5	2.1434 [2.0000]	107.2%			
NMeFOSE	(616.0 / 59.0) 373823	(10.56 , 1.00) (0.01 , N/A , 0.0)	849.7	N/A 0.0 0.0	8.6049 [8.0000]	107.6%			
NEtFOSE	(630.0 / 59.0) 46543	(10.66 , 1.00) (0.01 , N/A , 0.0)	615.4	N/A 0.0 0.0	7.7021 [8.0000]	96.3%			
HFPO-DA	(285.0 / 169.0) 634072 (285.0 / 185.0) 1560605	(6.49 , 1.00) (0.00 , N/A , 0.0)	484.3 538.3	2.4612 89.4 89.4	4.0422 [4.0000]	101.1%			
ADONA	(377.0 / 85.0) 2483108 (377.0 / 251.0) 291581	(7.40 , 1.14) (N/A , 0.00 , 0.1)	641.1 441.8	0.1174 102.1 102.1	3.6966 [3.7708]	98.0%			
9Cl-Pf3ONS	(531.0 / 351.0) 7374880 (533.0 / 353.0) 2198712	(9.71 , 1.50) (N/A , 0.00 , 0.0)	817.9 701.4	0.2981 93.2 93.2	4.1832 [3.7330]	112.1%			
11Cl-PF3OUDS	(631.0 / 451.0) 3918059 (633.0 / 453.0) 1258068	(10.00 , 1.54) (N/A , 0.00 , 0.1)	1085.8 977.6	0.3211 109.7 109.7	4.2514 [3.7728]	112.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (4)
Acquired: 2022/12/27 - 17:49

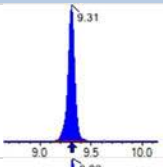
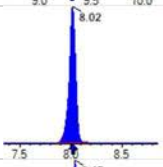
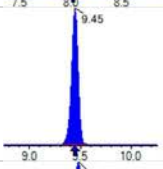
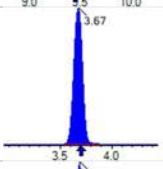
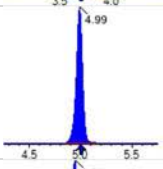
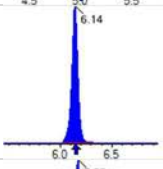
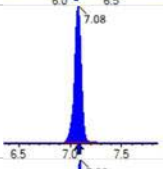
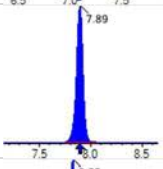
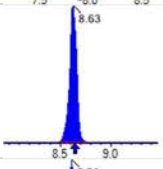
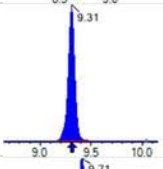
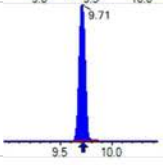
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 85562 (241.0 / 117.0) 119396	(4.47 , 0.90) (N/A , -0.01 , 0.1)	445.2 289.1	1.3954 102.2 102.2	7.6638 [8.0000]	95.8%			
5:3FTCA	(341.0 / 236.7) 484061 (341.0 / 217.0) 816194	(6.78 , 1.10) (N/A , 0.00 , 0.0)	371.1 451.0	1.6861 101.4 101.4	7.7460 [8.0000]	96.8%			
7:3FTCA	(441.0 / 317.0) 612484 (441.0 / 337.0) 578603	(8.60 , 1.40) (N/A , 0.00 , -0.1)	474.4 453.1	0.9447 113.0 113.0	7.9560 [8.0000]	99.5%			
PFEESA	(315.0 / 135.0) 1429553 (315.0 / 83.0) 442994	(6.60 , 1.07) (N/A , 0.00 , 0.1)	672.3 497.0	0.3099 100.6 100.6	3.5229 [3.5698]	98.7%			
PFMPA	(229.0 / 85.0) 407274	(4.19 , 0.84) (N/A , -0.01 , 0.0)	891.6	N/A 0.0 0.0	4.2065 [4.0000]	105.2%			
PFMBA	(279.0 / 85.0) 1047174	(5.38 , 1.08) (N/A , -0.01 , 0.0)	609.7	N/A 0.0 0.0	4.1315 [4.0000]	103.3%			
NFDHA	(295.0 / 201.0) 811528 (295.0 / 85.0) 731014	(6.03 , 0.98) (N/A , 0.00 , 0.1)	550.7 565.4	0.9008 103.7 103.7	4.1659 [4.0000]	104.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 275182	(3.68 , N/A) (N/A , -0.02 , N/A)	486.5	N/A	1.0180 [1.0000]	101.8% { 94.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 389076	(6.15 , N/A) (N/A , 0.00 , N/A)	361.0	N/A	0.9797 [1.0000]	98.0% { 97.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 408319	(7.89 , N/A) (N/A , 0.00 , N/A)	653.6	N/A	1.0221 [1.0000]	102.2% { 102.7% }			
13C5_PFNA_IIS	(468.0 / 423.0) 316510	(8.63 , N/A) (N/A , 0.01 , N/A)	380.5	N/A	0.9575 [1.0000]	95.8% { 87.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (4)
Acquired: 2022/12/27 - 17:49

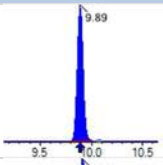
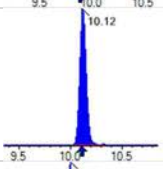
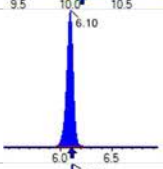
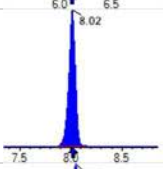
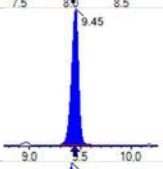
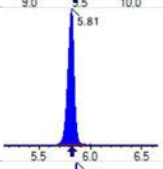
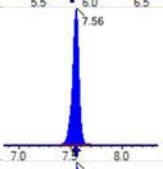
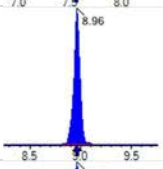
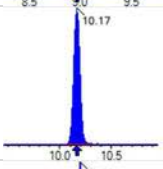
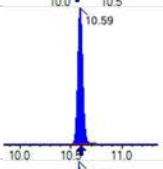
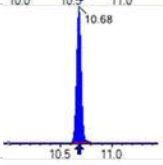
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 407921	(9.31 , N/A) (N/A , 0.00 , N/A)	382.8	N/A	1.1424 [1.0000]	114.2% { 122.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 685987	(8.02 , N/A) (N/A , 0.00 , N/A)	579.7	N/A	0.9836 [1.0000]	98.4% { 92.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 790524	(9.45 , N/A) (N/A , 0.00 , N/A)	526.8	N/A	1.1464 [1.0000]	114.6% { 119.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2451434	(3.67 , N/A) (N/A , -0.02 , N/A)	618.1	N/A	8.2899 [8.0000]	103.6% { 101.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1493631	(4.99 , N/A) (N/A , -0.01 , N/A)	603.3	N/A	4.2007 [4.0000]	105.0% { 98.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 894415	(6.14 , N/A) (N/A , 0.00 , N/A)	518.5	N/A	2.0668 [2.0000]	103.3% { 103.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 800604	(7.08 , N/A) (N/A , 0.00 , N/A)	529.5	N/A	2.0705 [2.0000]	103.5% { 96.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 914030	(7.89 , N/A) (N/A , 0.00 , N/A)	608.4	N/A	2.0428 [2.0000]	102.1% { 112.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 369645	(8.63 , N/A) (N/A , 0.00 , N/A)	547.5	N/A	1.0609 [1.0000]	106.1% { 96.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 475537	(9.31 , N/A) (N/A , 0.00 , N/A)	497.9	N/A	0.8911 [1.0000]	89.1% { 106.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 655289	(9.71 , N/A) (N/A , 0.00 , N/A)	560.8	N/A	1.0133 [1.0000]	101.3% { 108.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (4)
Acquired: 2022/12/27 - 17:49

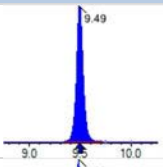
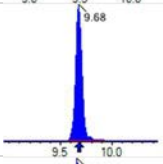
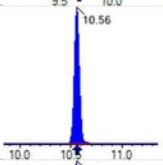
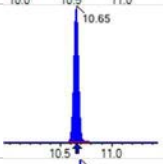
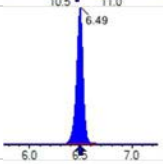
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 666988	(9.89 , N/A) (N/A , 0.00 , N/A)	503.6	N/A	0.9371 [1.0000]	93.7% { 97.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 352359	(10.12 , N/A) (N/A , 0.00 , N/A)	699.4	N/A	0.7500 [1.0000]	75.0% { 80.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2518397	(6.10 , N/A) (N/A , -0.01 , N/A)	574.6	N/A	2.1802 [2.0000]	109.0% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1235938	(8.02 , N/A) (N/A , 0.00 , N/A)	697.5	N/A	2.0157 [2.0000]	100.8% { 97.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1819366	(9.45 , N/A) (N/A , 0.00 , N/A)	299.6	N/A	1.7771 [2.0000]	88.9% { 111.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 588114	(5.81 , N/A) (N/A , 0.00 , N/A)	715.9	N/A	4.3232 [4.0000]	108.1% { 114.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 722758	(7.56 , N/A) (N/A , 0.00 , N/A)	734.2	N/A	4.2753 [4.0000]	106.9% { 120.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 753177	(8.96 , N/A) (N/A , 0.00 , N/A)	477.2	N/A	4.5191 [4.0000]	113.0% { 123.3% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2188858	(10.17 , N/A) (N/A , 0.00 , N/A)	602.8	N/A	1.6080 [2.0000]	80.4% { 91.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 438404	(10.59 , N/A) (N/A , -0.01 , N/A)	1009.0	N/A	1.6608 [2.0000]	83.0% { 96.2% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 424711	(10.68 , N/A) (N/A , -0.01 , N/A)	1157.4	N/A	1.8057 [2.0000]	90.3% { 104.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (4)
Acquired: 2022/12/27 - 17:49

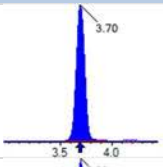
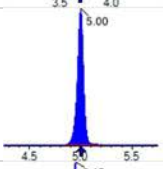
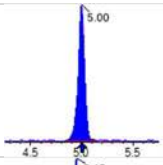
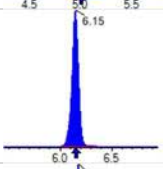
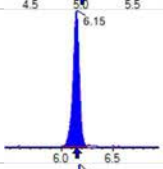
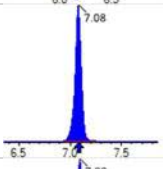
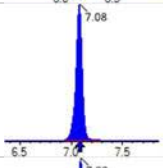
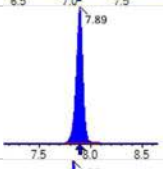
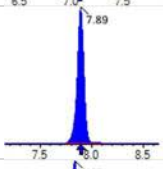
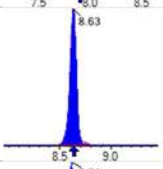
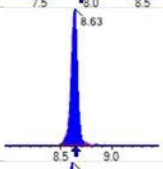
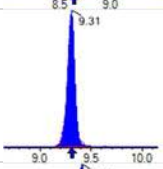
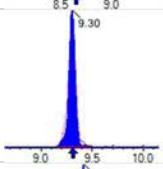
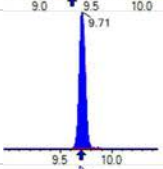
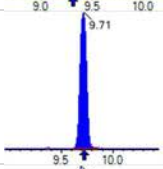
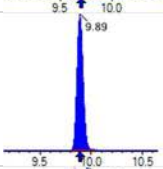
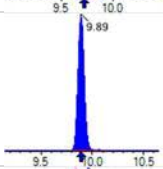
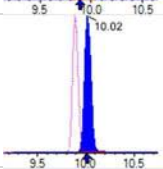
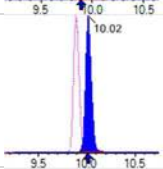
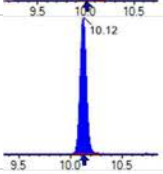
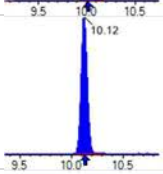
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 960848	(9.49 , N/A) (N/A , 0.00 , N/A)	360.1	N/A	3.4307 [4.0000]	85.8% { 91.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 853328	(9.68 , N/A) (N/A , 0.01 , N/A)	404.4	N/A	3.5572 [4.0000]	88.9% { 93.4% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 769555	(10.56 , N/A) (N/A , 0.00 , N/A)	925.5	N/A	18.1958 [20.0000]	91.0% { 104.5% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 318727	(10.65 , N/A) (N/A , 0.00 , N/A)	1093.1	N/A	18.6353 [20.0000]	93.2% { 105.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2044449	(6.49 , N/A) (N/A , 0.00 , N/A)	728.0	N/A	8.5073 [8.0000]	106.3% { 104.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (5)
Acquired: 2022/12/27 - 18:02

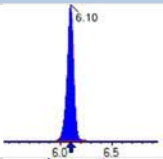
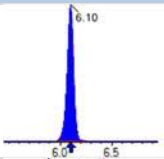
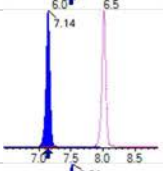
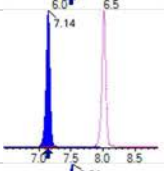
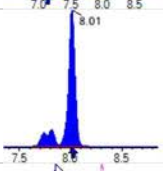
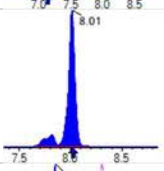
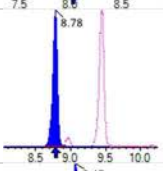
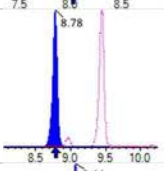
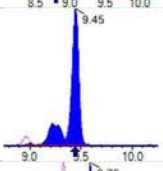
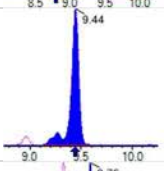
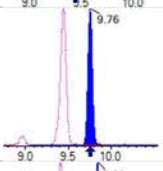
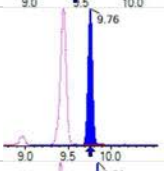
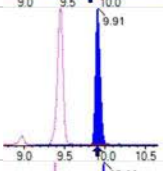
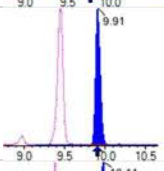
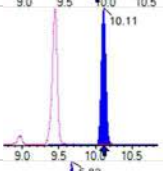
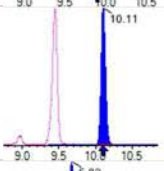
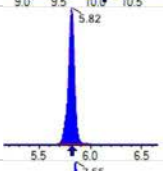
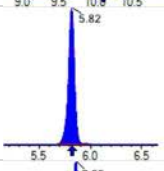
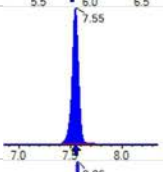
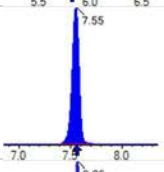
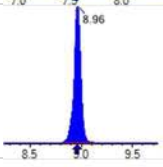
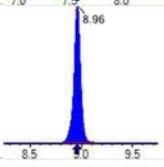
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 5163547	(3.70 , 1.00) (0.00 , N/A , 0.0)	565.5	N/A 0.0 0.0	20.4285 [20.0000]	102.1%			
PFPeA	(263.0 / 219.0) 3157784 (263.0 / 69.0) 34081	(5.00 , 1.00) (0.00 , N/A , 0.0)	553.6 326.3	0.0108 100.0 100.0	9.7307 [10.0000]	97.3%			
PFHxA	(313.0 / 269.0) 1972422 (313.0 / 119.0) 177542	(6.15 , 1.00) (0.00 , N/A , 0.0)	493.5 346.2	0.0900 100.0 100.0	5.0051 [5.0000]	100.1%			
PFHpA	(363.0 / 319.0) 1740007 (363.0 / 169.0) 529709	(7.08 , 1.00) (0.00 , N/A , 0.1)	501.7 456.2	0.3044 100.0 100.0	4.3687 [5.0000]	87.4%			
PFOA	(413.0 / 369.0) 1951806 (413.0 / 169.0) 655782	(7.89 , 1.00) (0.00 , N/A , 0.0)	637.3 565.4	0.3360 100.0 100.0	5.1719 [5.0000]	103.4%			
PFNA	(463.0 / 419.0) 1704795 (463.0 / 169.0) 356508	(8.63 , 1.00) (0.00 , N/A , -0.1)	598.9 601.6	0.2091 100.0 100.0	4.9078 [5.0000]	98.2%			
PFDA	(513.0 / 469.0) 2149855 (513.0 / 169.0) 191597	(9.31 , 1.00) (0.00 , N/A , 0.2)	387.0 331.9	0.0891 100.0 100.0	5.3804 [5.0000]	107.6%			
PFUnA	(563.0 / 519.0) 2482021 (563.0 / 169.0) 261533	(9.71 , 1.00) (0.00 , N/A , -0.1)	642.5 415.8	0.1054 100.0 100.0	5.1710 [5.0000]	103.4%			
PFDoA	(613.0 / 569.0) 2823844 (613.0 / 169.0) 362509	(9.89 , 1.00) (0.00 , N/A , -0.1)	1227.1 816.3	0.1284 100.0 100.0	4.8272 [5.0000]	96.5%			
PFTrDA	(663.0 / 619.0) 2238356 (663.0 / 169.0) 510836	(10.02 , 1.01) (N/A , 0.00 , 0.3)	1027.0 621.1	0.2282 100.0 100.0	4.5269 [5.0000]	90.5%			
PFTeDA	(713.0 / 669.0) 1644216 (713.0 / 169.0) 343419	(10.12 , 1.00) (0.00 , N/A , 0.1)	682.6 389.5	0.2089 100.0 100.0	4.1113 [5.0000]	82.2%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (5)
Acquired: 2022/12/27 - 18:02

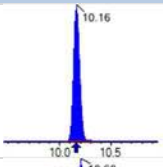
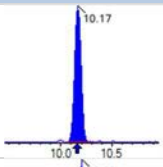
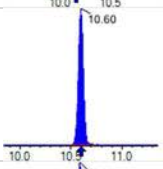
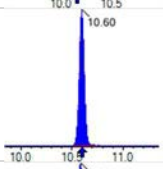
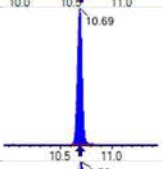
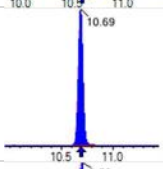
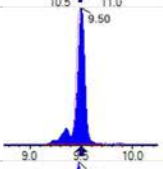
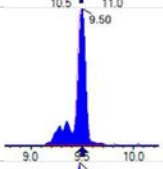
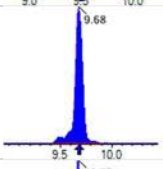
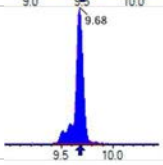
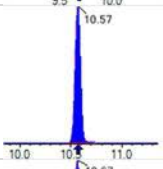
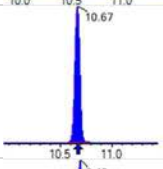
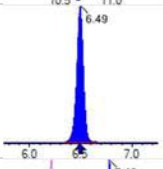
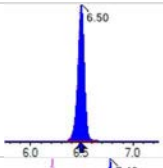
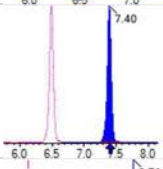
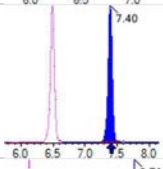
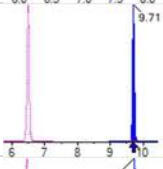
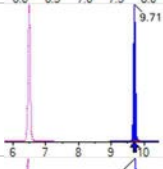
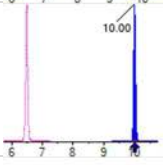
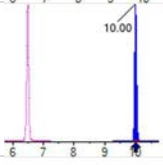
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2937542 (299.0 / 99.0) 1957415	(6.10 , 1.00) (0.00 , N/A , 0.0)	504.0 580.7	0.6663 100.0 100.0	4.1832 [4.4237]	94.6%			
PFPeS	(349.0 / 80.0) 5282225 (349.0 / 99.0) 1944624	(7.14 , 0.89) (N/A , 0.00 , -0.1)	727.7 578.9	0.3681 100.0 100.0	4.9391 [4.6919]	105.3%			
PFHxS	(399.0 / 80.0) 4398738 (399.0 / 99.0) 1406802	(8.01 , 1.00) (0.00 , N/A , 0.0)	845.5 797.7	0.3198 100.0 100.0	4.4943 [4.5549]	98.7%			
PFHpS	(449.0 / 80.0) 3973668 (449.0 / 99.0) 1056573	(8.78 , 0.93) (N/A , 0.00 , 0.1)	538.4 542.7	0.2659 100.0 100.0	5.1171 [4.7570]	107.6%			
PFOS	(499.0 / 80.0) 4453045 (499.0 / 99.0) 1017063	(9.45 , 1.00) (0.00 , N/A , 0.1)	430.2 739.1	0.2284 100.0 100.0	4.7015 [4.6375]	101.4%			
PFNS	(549.0 / 80.0) 5494383 (549.0 / 99.0) 1290855	(9.76 , 1.03) (N/A , 0.00 , -0.1)	901.4 733.3	0.2349 100.0 100.0	5.8217 [4.7994]	121.3%			
PFDS	(599.0 / 80.0) 6399815 (599.0 / 99.0) 1434117	(9.91 , 1.05) (N/A , 0.00 , 0.0)	1169.9 981.5	0.2241 100.0 100.0	5.5456 [4.8155]	115.2%			
PFDoS	(699.0 / 80.0) 2438736 (699.0 / 99.0) 499161	(10.11 , 1.07) (N/A , 0.00 , 0.2)	1587.3 723.7	0.2047 100.0 100.0	5.2904 [4.8478]	109.1%			
4:2FTS	(327.0 / 307.0) 7377622 (327.0 / 81.0) 4760128	(5.82 , 1.00) (0.00 , N/A , 0.0)	524.1 602.6	0.6452 100.0 100.0	20.1064 [18.6906]	107.6%			
6:2FTS	(427.0 / 407.0) 4341596 (427.0 / 81.0) 3069573	(7.55 , 1.00) (0.00 , N/A , -0.2)	566.4 769.4	0.7070 100.0 100.0	21.2101 [18.9808]	111.7%			
8:2FTS	(527.0 / 507.0) 3850466 (527.0 / 81.0) 2704473	(8.96 , 1.00) (0.00 , N/A , 0.1)	483.4 478.8	0.7024 100.0 100.0	18.7106 [19.1658]	97.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (5)
Acquired: 2022/12/27 - 18:02

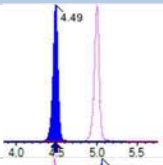
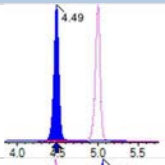
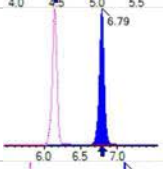
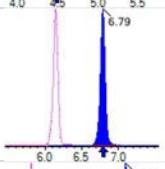
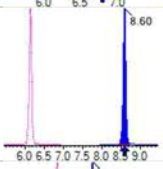
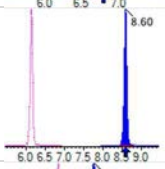
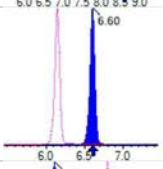
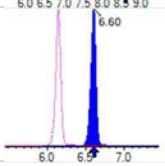
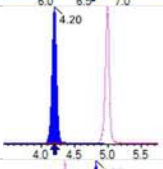
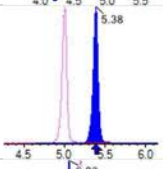
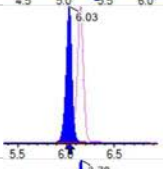
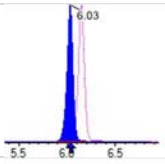
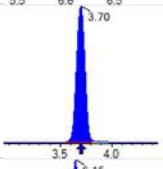
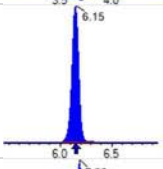
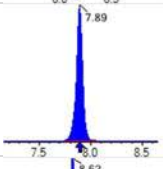
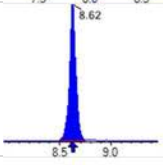
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 6533238 (498.0 / 478.0) 104132	(10.16 , 1.00) (0.00 , N/A , -0.3)	789.1 308.0	0.0159 100.0 100.0	5.7143 [5.0000]	114.3%			
NMeFOSA	(512.0 / 219.0) 4131434 (512.0 / 169.0) 2810177	(10.60 , 1.00) (0.00 , N/A , 0.1)	1414.3 1259.9	0.6802 100.0 100.0	20.8540 [20.0000]	104.3%			
NEtFOSA	(526.0 / 219.0) 3901575 (526.0 / 169.0) 3918277	(10.69 , 1.00) (0.00 , N/A , 0.1)	1348.4 973.4	1.0043 100.0 100.0	20.7923 [20.0000]	104.0%			
NMeFOSAA	(570.0 / 419.0) 974739 (570.0 / 483.0) 486449	(9.50 , 1.00) (0.01 , N/A , 0.3)	528.6 397.0	0.4991 100.0 100.0	4.4783 [5.0000]	89.6%			
NEtFOSAA	(584.0 / 419.0) 938439 (584.0 / 526.0) 563724	(9.68 , 1.00) (0.01 , N/A , 0.1)	779.6 538.4	0.6007 100.0 100.0	4.7374 [5.0000]	94.7%			
NMeFOSE	(616.0 / 59.0) 762846	(10.57 , 1.00) (0.01 , N/A , 0.0)	1114.3	N/A 0.0 0.0	18.3498 [20.0000]	91.7%			
NEtFOSE	(630.0 / 59.0) 107285	(10.67 , 1.00) (0.01 , N/A , 0.0)	699.3	N/A 0.0 0.0	18.7726 [20.0000]	93.9%			
HFPO-DA	(285.0 / 169.0) 1490387 (285.0 / 185.0) 4102385	(6.49 , 1.00) (0.00 , N/A , -0.1)	673.8 745.8	2.7526 100.0 100.0	9.8998 [10.0000]	99.0%			
ADONA	(377.0 / 85.0) 6528204 (377.0 / 251.0) 751093	(7.40 , 1.14) (N/A , 0.00 , 0.1)	637.3 562.0	0.1151 100.0 100.0	10.1265 [9.4270]	107.4%			
9Cl-Pf3ONS	(531.0 / 351.0) 16647748 (533.0 / 353.0) 5326080	(9.71 , 1.50) (N/A , 0.00 , 0.0)	840.3 781.6	0.3199 100.0 100.0	9.8391 [9.3325]	105.4%			
11Cl-PF3OUDS	(631.0 / 451.0) 8483339 (633.0 / 453.0) 2483230	(10.00 , 1.54) (N/A , 0.00 , 0.0)	1405.7 1078.4	0.2927 100.0 100.0	9.5914 [9.4321]	101.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (5)
Acquired: 2022/12/27 - 18:02

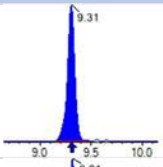
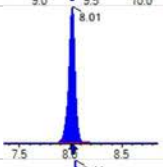
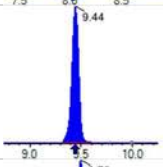
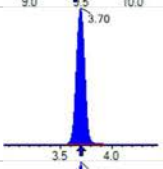
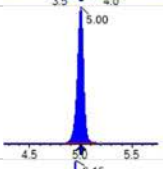
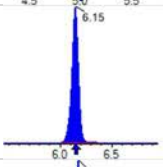
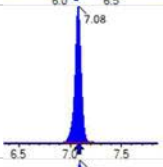
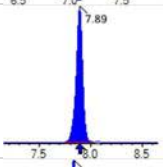
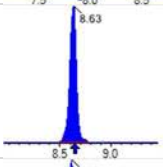
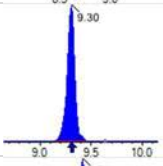
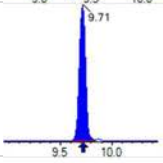
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 215936 (241.0 / 117.0) 294890	(4.49 , 0.90) (N/A , 0.00 , 0.1)	742.6 412.2	1.3656 100.0 100.0	19.0148 [20.0000]	95.1%			
5:3FTCA	(341.0 / 236.7) 1234482 (341.0 / 217.0) 2052138	(6.79 , 1.10) (N/A , 0.00 , 0.0)	472.2 627.3	1.6623 100.0 100.0	20.4231 [20.0000]	102.1%			
7:3FTCA	(441.0 / 317.0) 1566554 (441.0 / 337.0) 1309496	(8.60 , 1.40) (N/A , 0.00 , 0.0)	467.5 418.0	0.8359 100.0 100.0	21.0380 [20.0000]	105.2%			
PFEESA	(315.0 / 135.0) 3496086 (315.0 / 83.0) 1076676	(6.60 , 1.07) (N/A , 0.00 , -0.1)	720.5 853.0	0.3080 100.0 100.0	8.9073 [8.9246]	99.8%			
PFMPA	(229.0 / 85.0) 933005	(4.20 , 0.84) (N/A , 0.00 , 0.0)	905.3	N/A 0.0 0.0	9.4738 [10.0000]	94.7%			
PFMBA	(279.0 / 85.0) 2433416	(5.38 , 1.08) (N/A , 0.00 , 0.0)	660.4	N/A 0.0 0.0	9.4388 [10.0000]	94.4%			
NFDHA	(295.0 / 201.0) 1980280 (295.0 / 85.0) 1720011	(6.03 , 0.98) (N/A , 0.00 , 0.0)	540.3 542.4	0.8686 100.0 100.0	10.5096 [10.0000]	105.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 290997	(3.70 , N/A) (N/A , 0.00 , N/A)	752.5	N/A	1.0765 [1.0000]	107.7% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 400712	(6.15 , N/A) (N/A , 0.00 , N/A)	507.0	N/A	1.0090 [1.0000]	100.9% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 397445	(7.89 , N/A) (N/A , 0.00 , N/A)	447.2	N/A	0.9949 [1.0000]	99.5% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 363601	(8.62 , N/A) (N/A , 0.00 , N/A)	400.3	N/A	1.1000 [1.0000]	110.0% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (5)
Acquired: 2022/12/27 - 18:02

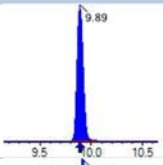
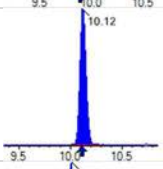
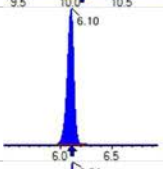
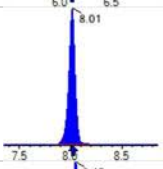
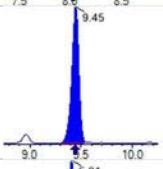
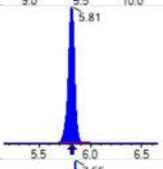
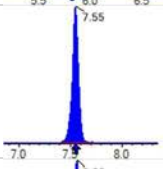
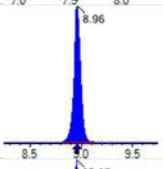
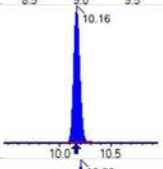
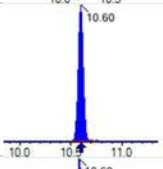
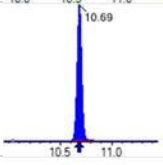
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 332089	(9.31 , N/A) (N/A , 0.00 , N/A)	255.6	N/A	0.9300 [1.0000]	93.0% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 744062	(8.01 , N/A) (N/A , 0.00 , N/A)	623.0	N/A	1.0668 [1.0000]	106.7% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 659187	(9.44 , N/A) (N/A , 0.00 , N/A)	426.2	N/A	0.9559 [1.0000]	95.6% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2411325	(3.70 , N/A) (N/A , 0.00 , N/A)	666.5	N/A	7.7111 [8.0000]	96.4% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1519275	(5.00 , N/A) (N/A , 0.00 , N/A)	594.4	N/A	4.1488 [4.0000]	103.7% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 865131	(6.15 , N/A) (N/A , 0.00 , N/A)	450.8	N/A	1.9411 [2.0000]	97.1% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 831738	(7.08 , N/A) (N/A , 0.00 , N/A)	591.2	N/A	2.0886 [2.0000]	104.4% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 812498	(7.89 , N/A) (N/A , 0.00 , N/A)	539.0	N/A	1.8656 [2.0000]	93.3% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 383578	(8.63 , N/A) (N/A , 0.00 , N/A)	346.2	N/A	0.9583 [1.0000]	95.8% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 448644	(9.30 , N/A) (N/A , 0.00 , N/A)	353.9	N/A	1.0327 [1.0000]	103.3% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 606142	(9.71 , N/A) (N/A , 0.00 , N/A)	375.4	N/A	1.1513 [1.0000]	115.1% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (5)
Acquired: 2022/12/27 - 18:02

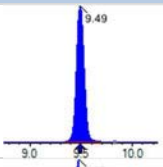
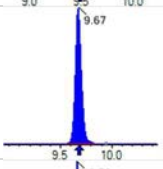
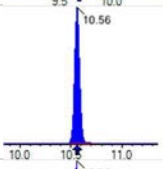
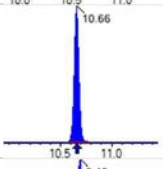
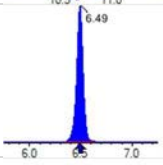
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 682569	(9.89 , N/A) (N/A , 0.00 , N/A)	448.5	N/A	1.1780 [1.0000]	117.8% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 440314	(10.12 , N/A) (N/A , 0.00 , N/A)	629.1	N/A	1.1512 [1.0000]	115.1% { 100.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2517849	(6.10 , N/A) (N/A , 0.00 , N/A)	490.0	N/A	2.0096 [2.0000]	100.5% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1273501	(8.01 , N/A) (N/A , 0.00 , N/A)	620.0	N/A	1.9149 [2.0000]	95.7% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1632602	(9.45 , N/A) (N/A , 0.00 , N/A)	159.0	N/A	1.9124 [2.0000]	95.6% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 514459	(5.81 , N/A) (N/A , 0.00 , N/A)	430.5	N/A	3.4866 [4.0000]	87.2% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 598225	(7.55 , N/A) (N/A , 0.00 , N/A)	598.0	N/A	3.2625 [4.0000]	81.6% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 610985	(8.96 , N/A) (N/A , 0.00 , N/A)	349.8	N/A	3.3798 [4.0000]	84.5% { 100.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2382534	(10.16 , N/A) (N/A , 0.00 , N/A)	757.8	N/A	2.0991 [2.0000]	105.0% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 455485	(10.60 , N/A) (N/A , 0.00 , N/A)	1109.6	N/A	2.0693 [2.0000]	103.5% { 100.0% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 408307	(10.69 , N/A) (N/A , 0.00 , N/A)	898.4	N/A	2.0818 [2.0000]	104.1% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL5
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (5)
Acquired: 2022/12/27 - 18:02

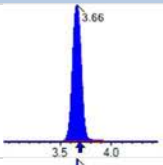
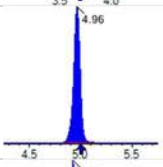
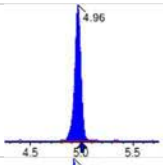
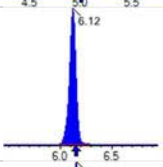
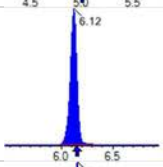
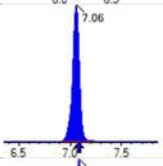
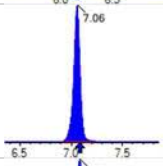
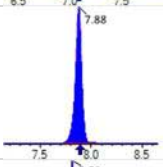
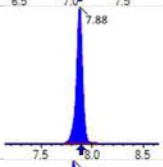
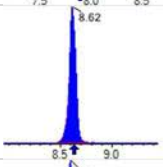
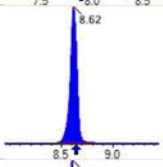
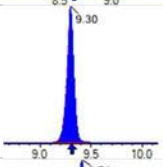
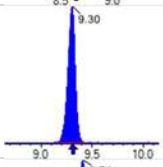
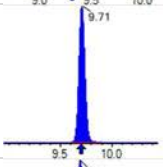
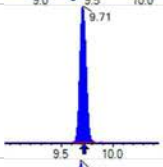
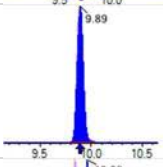
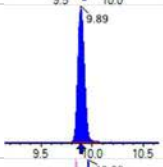
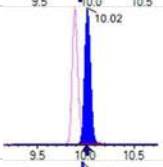
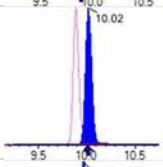
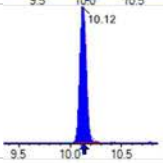
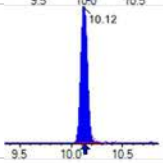
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1048445	(9.49 , N/A) (N/A , 0.00 , N/A)	262.5	N/A	4.4893 [4.0000]	112.2% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 913693	(9.67 , N/A) (N/A , 0.00 , N/A)	484.1	N/A	4.5677 [4.0000]	114.2% { 100.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 736423	(10.56 , N/A) (N/A , 0.00 , N/A)	1374.1	N/A	20.8817 [20.0000]	104.4% { 100.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 301435	(10.66 , N/A) (N/A , 0.00 , N/A)	1705.1	N/A	21.1357 [20.0000]	105.7% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1962119	(6.49 , N/A) (N/A , 0.00 , N/A)	660.6	N/A	7.9277 [8.0000]	99.1% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (6)
Acquired: 2022/12/27 - 18:14

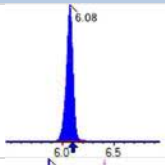
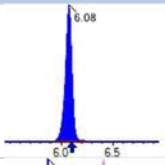
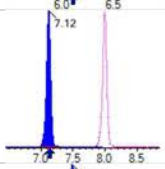
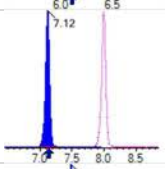
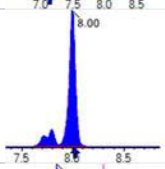
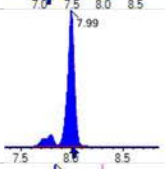
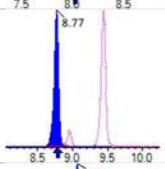
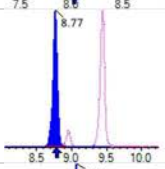
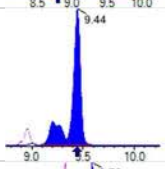
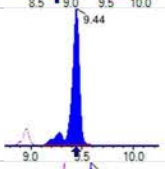
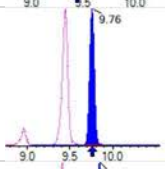
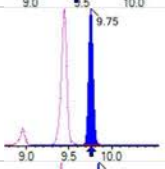
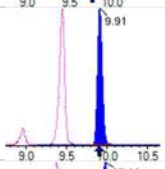
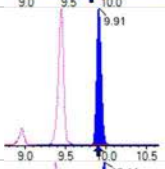
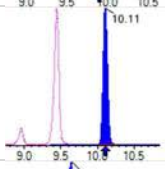
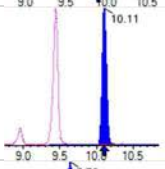
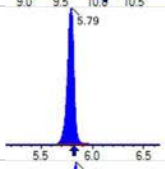
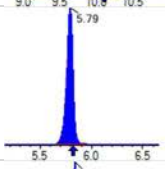
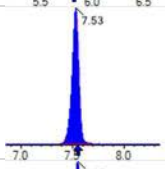
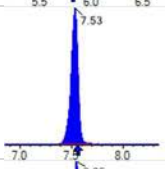
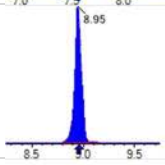
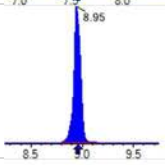
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 10416981	(3.66 , 1.00) (0.00 , N/A , 0.0)	527.7	N/A 0.0 0.0	42.1969 [40.0000]	105.5%			
PFPeA	(263.0 / 219.0) 6504005 (263.0 / 69.0) 66181	(4.96 , 1.00) (0.00 , N/A , 0.1)	561.1 464.3	0.0102 94.3 94.3	20.7935 [20.0000]	104.0%			
PFHxA	(313.0 / 269.0) 4097091 (313.0 / 119.0) 370488	(6.12 , 1.00) (0.00 , N/A , 0.1)	516.2 433.2	0.0904 100.5 100.5	9.6854 [10.0000]	96.9%			
PFHpA	(363.0 / 319.0) 3715890 (363.0 / 169.0) 1047848	(7.06 , 1.00) (0.00 , N/A , 0.1)	503.4 609.2	0.2820 92.6 92.6	10.0895 [10.0000]	100.9%			
PFOA	(413.0 / 369.0) 4294881 (413.0 / 169.0) 1421210	(7.88 , 1.00) (0.00 , N/A , 0.1)	659.9 612.0	0.3309 98.5 98.5	10.4028 [10.0000]	104.0%			
PFNA	(463.0 / 419.0) 3576853 (463.0 / 169.0) 684893	(8.62 , 1.00) (0.00 , N/A , -0.1)	674.0 468.7	0.1915 91.6 91.6	10.5898 [10.0000]	105.9%			
PFDA	(513.0 / 469.0) 3955133 (513.0 / 169.0) 408290	(9.30 , 1.00) (0.00 , N/A , -0.1)	511.9 499.8	0.1032 115.8 115.8	9.2328 [10.0000]	92.3%			
PFUnA	(563.0 / 519.0) 4675512 (563.0 / 169.0) 420680	(9.71 , 1.00) (0.00 , N/A , 0.0)	819.0 496.8	0.0900 85.4 85.4	9.8530 [10.0000]	98.5%			
PFDoA	(613.0 / 569.0) 5650202 (613.0 / 169.0) 693327	(9.89 , 1.00) (0.01 , N/A , 0.2)	897.9 537.3	0.1227 95.6 95.6	10.7946 [10.0000]	107.9%			
PFTrDA	(663.0 / 619.0) 4617095 (663.0 / 169.0) 883518	(10.02 , 1.01) (N/A , 0.00 , 0.0)	588.0 782.2	0.1914 83.8 83.8	10.4357 [10.0000]	104.4%			
PFTeDA	(713.0 / 669.0) 4308939 (713.0 / 169.0) 846432	(10.12 , 1.00) (0.00 , N/A , -0.1)	975.2 620.3	0.1964 94.0 94.0	11.6913 [10.0000]	116.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (6)
Acquired: 2022/12/27 - 18:14

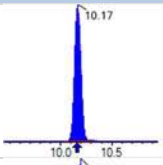
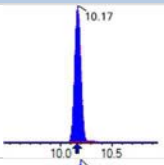
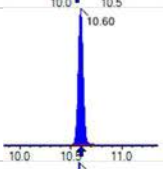
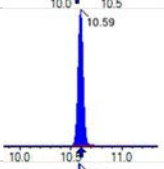
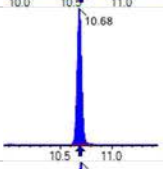
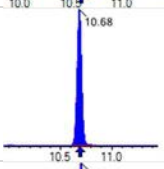
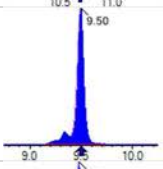
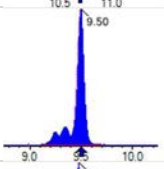
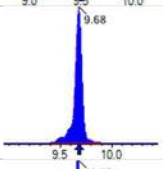
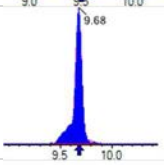
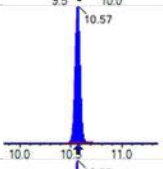
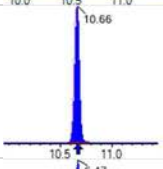
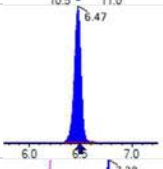
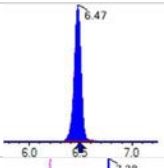
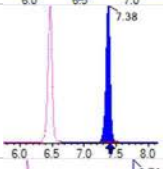
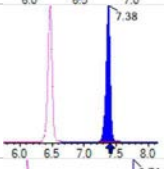
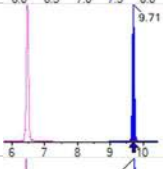
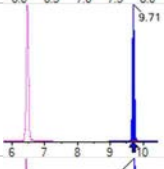
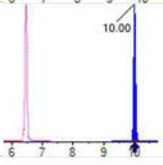
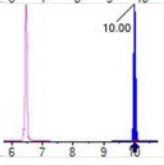
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 6166339 (299.0 / 99.0) 3921454	(6.08 , 1.00) (0.00 , N/A , 0.0)	547.7 510.2	0.6359 95.4 95.4	9.2898 [8.8473]	105.0%			
PFPeS	(349.0 / 80.0) 10242740 (349.0 / 99.0) 3757071	(7.12 , 0.89) (N/A , -0.02 , 0.0)	729.8 704.4	0.3668 99.6 99.6	9.8530 [9.3838]	105.0%			
PFHxS	(399.0 / 80.0) 9040946 (399.0 / 99.0) 2870785	(8.00 , 1.00) (0.00 , N/A , 0.1)	857.3 947.5	0.3175 99.3 99.3	9.5032 [9.1098]	104.3%			
PFHpS	(449.0 / 80.0) 8433758 (449.0 / 99.0) 2089689	(8.77 , 0.93) (N/A , -0.01 , 0.2)	580.6 547.5	0.2478 93.2 93.2	10.1542 [9.5141]	106.7%			
PFOS	(499.0 / 80.0) 10072767 (499.0 / 99.0) 2079051	(9.44 , 1.00) (0.00 , N/A , 0.0)	520.0 888.2	0.2064 90.4 90.4	9.9431 [9.2749]	107.2%			
PFNS	(549.0 / 80.0) 10894378 (549.0 / 99.0) 2866702	(9.76 , 1.03) (N/A , 0.00 , 0.2)	934.5 742.9	0.2631 112.0 112.0	10.7926 [9.5989]	112.4%			
PFDS	(599.0 / 80.0) 13020187 (599.0 / 99.0) 3213557	(9.91 , 1.05) (N/A , 0.00 , 0.0)	1250.5 1076.1	0.2468 110.1 110.1	10.5486 [9.6311]	109.5%			
PFDoS	(699.0 / 80.0) 5060751 (699.0 / 99.0) 1207704	(10.11 , 1.07) (N/A , 0.00 , 0.0)	1220.7 523.8	0.2386 116.6 116.6	10.2643 [9.6956]	105.9%			
4:2FTS	(327.0 / 307.0) 15033477 (327.0 / 81.0) 9425885	(5.79 , 1.00) (0.00 , N/A , -0.1)	521.2 588.9	0.6270 97.2 97.2	38.7780 [37.3811]	103.7%			
6:2FTS	(427.0 / 407.0) 9353875 (427.0 / 81.0) 6704957	(7.53 , 1.00) (-0.01 , N/A , -0.1)	617.7 582.3	0.7168 101.4 101.4	43.3715 [37.9617]	114.3%			
8:2FTS	(527.0 / 507.0) 9118630 (527.0 / 81.0) 6134745	(8.95 , 1.00) (0.00 , N/A , -0.2)	552.5 559.7	0.6728 95.8 95.8	38.2080 [38.3315]	99.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (6)
Acquired: 2022/12/27 - 18:14

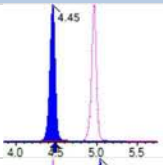
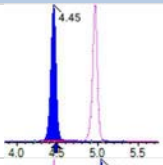
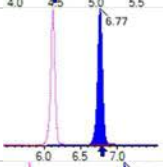
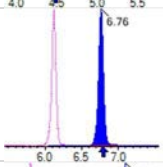
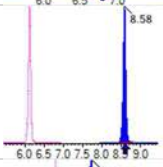
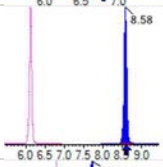
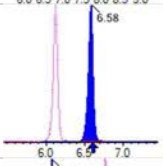
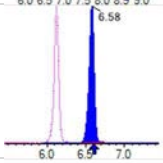
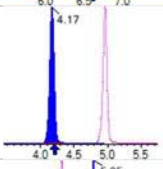
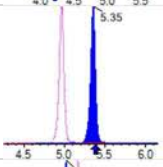
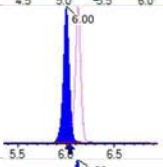
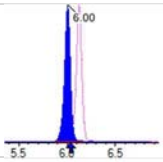
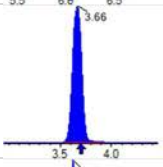
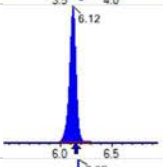
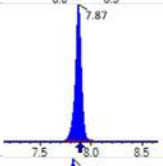
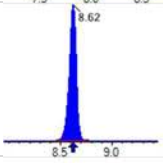
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 12283222 (498.0 / 478.0) 233455	(10.17 , 1.00) (0.00 , N/A , 0.0)	879.8 411.9	0.0190 119.2 119.2	10.9624 [10.0000]	109.6%			
NMeFOSA	(512.0 / 219.0) 8622299 (512.0 / 169.0) 5852261	(10.60 , 1.00) (0.00 , N/A , 0.0)	1409.3 1015.9	0.6787 99.8 99.8	43.1093 [40.0000]	107.8%			
NEtFOSA	(526.0 / 219.0) 8255679 (526.0 / 169.0) 8402934	(10.68 , 1.00) (0.00 , N/A , 0.0)	1398.2 1126.9	1.0178 101.3 101.3	45.2817 [40.0000]	113.2%			
NMeFOSAA	(570.0 / 419.0) 1987268 (570.0 / 483.0) 1055069	(9.50 , 1.00) (0.00 , N/A , 0.0)	555.0 472.8	0.5309 106.4 106.4	10.7064 [10.0000]	107.1%			
NEtFOSAA	(584.0 / 419.0) 1897275 (584.0 / 526.0) 1092200	(9.68 , 1.00) (0.00 , N/A , 0.1)	803.0 669.1	0.5757 95.8 95.8	11.3768 [10.0000]	113.8%			
NMeFOSE	(616.0 / 59.0) 1803698	(10.57 , 1.00) (0.01 , N/A , 0.0)	1368.9	N/A 0.0 0.0	39.5998 [40.0000]	99.0%			
NEtFOSE	(630.0 / 59.0) 240671	(10.66 , 1.00) (0.01 , N/A , 0.0)	1037.3	N/A 0.0 0.0	39.4669 [40.0000]	98.7%			
HFPO-DA	(285.0 / 169.0) 3263745 (285.0 / 185.0) 8454749	(6.47 , 1.00) (0.00 , N/A , 0.0)	705.0 708.2	2.5905 94.1 94.1	21.0697 [20.0000]	105.3%			
ADONA	(377.0 / 85.0) 13805850 (377.0 / 251.0) 1616925	(7.38 , 1.14) (N/A , -0.02 , -0.2)	733.4 516.7	0.1171 101.8 101.8	20.8134 [18.8540]	110.4%			
9Cl-Pf3ONS	(531.0 / 351.0) 29409195 (533.0 / 353.0) 10290303	(9.71 , 1.50) (N/A , 0.00 , 0.0)	677.8 755.3	0.3499 109.4 109.4	16.8928 [18.6651]	90.5%			
11Cl-PF3OUDS	(631.0 / 451.0) 17353905 (633.0 / 453.0) 5372258	(10.00 , 1.55) (N/A , 0.00 , -0.1)	944.2 817.5	0.3096 105.8 105.8	19.0689 [18.8642]	101.1%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (6)
Acquired: 2022/12/27 - 18:14

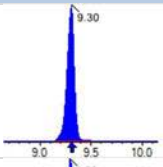
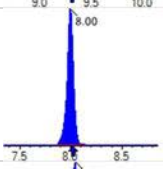
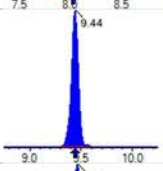
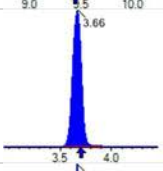
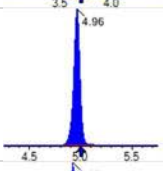
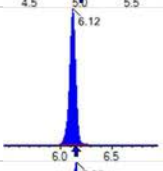
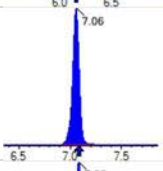
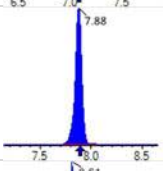
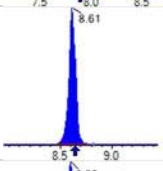
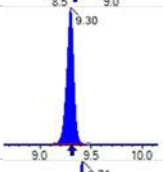
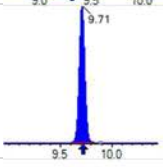
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 428182 (241.0 / 117.0) 584288	(4.45 , 0.90) (N/A , -0.03 , 0.1)	629.7 549.1	1.3646 99.9 99.9	39.1184 [40.0000]	97.8%			
5:3FTCA	(341.0 / 236.7) 2674090 (341.0 / 217.0) 4107874	(6.77 , 1.11) (N/A , -0.02 , 0.0)	544.5 526.8	1.5362 92.4 92.4	41.2138 [40.0000]	103.0%			
7:3FTCA	(441.0 / 317.0) 3137012 (441.0 / 337.0) 2753616	(8.58 , 1.40) (N/A , -0.01 , 0.1)	426.1 456.3	0.8778 105.0 105.0	39.2470 [40.0000]	98.1%			
PFEESA	(315.0 / 135.0) 7473606 (315.0 / 83.0) 2174254	(6.58 , 1.07) (N/A , -0.02 , 0.1)	651.0 617.6	0.2909 94.5 94.5	17.7387 [17.8492]	99.4%			
PFMPA	(229.0 / 85.0) 1939649	(4.17 , 0.84) (N/A , -0.03 , 0.0)	869.5	N/A 0.0 0.0	20.4338 [20.0000]	102.2%			
PFMBA	(279.0 / 85.0) 5545780	(5.35 , 1.08) (N/A , -0.03 , 0.0)	757.5	N/A 0.0 0.0	22.3177 [20.0000]	111.6%			
NFDHA	(295.0 / 201.0) 3929369 (295.0 / 85.0) 3672831	(6.00 , 0.98) (N/A , -0.03 , -0.1)	659.7 590.6	0.9347 107.6 107.6	19.4274 [20.0000]	97.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 285418	(3.66 , N/A) (N/A , -0.03 , N/A)	571.1	N/A	1.0559 [1.0000]	105.6% { 98.1% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 420125	(6.12 , N/A) (N/A , -0.02 , N/A)	504.3	N/A	1.0579 [1.0000]	105.8% { 104.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 432948	(7.87 , N/A) (N/A , -0.02 , N/A)	720.5	N/A	1.0838 [1.0000]	108.4% { 108.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 357609	(8.62 , N/A) (N/A , 0.00 , N/A)	419.2	N/A	1.0818 [1.0000]	108.2% { 98.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (6)
Acquired: 2022/12/27 - 18:14

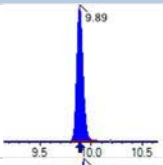
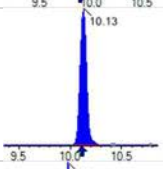
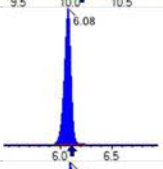
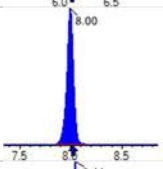
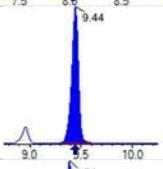
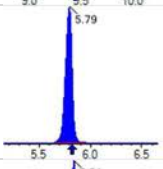
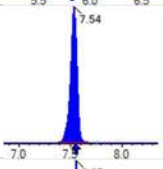
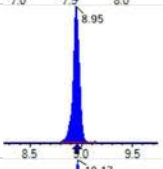
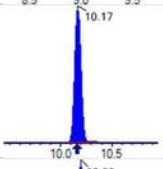
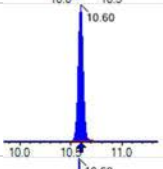
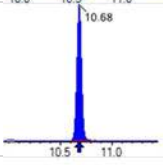
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 363202	(9.30 , N/A) (N/A , 0.00 , N/A)	373.2	N/A	1.0172 [1.0000]	101.7% { 109.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 734721	(8.00 , N/A) (N/A , -0.02 , N/A)	709.4	N/A	1.0534 [1.0000]	105.3% { 98.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 694254	(9.44 , N/A) (N/A , 0.00 , N/A)	478.8	N/A	1.0068 [1.0000]	100.7% { 105.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2355085	(3.66 , N/A) (N/A , -0.03 , N/A)	583.2	N/A	7.6784 [8.0000]	96.0% { 97.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1464370	(4.96 , N/A) (N/A , -0.03 , N/A)	662.7	N/A	3.8141 [4.0000]	95.4% { 96.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 928649	(6.12 , N/A) (N/A , -0.02 , N/A)	617.5	N/A	1.9873 [2.0000]	99.4% { 107.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 769100	(7.06 , N/A) (N/A , -0.02 , N/A)	536.3	N/A	1.8420 [2.0000]	92.1% { 92.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 888860	(7.88 , N/A) (N/A , -0.01 , N/A)	566.7	N/A	1.8735 [2.0000]	93.7% { 109.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 372979	(8.61 , N/A) (N/A , -0.02 , N/A)	479.8	N/A	0.9475 [1.0000]	94.7% { 97.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 480991	(9.30 , N/A) (N/A , -0.01 , N/A)	378.3	N/A	1.0123 [1.0000]	101.2% { 107.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 599240	(9.71 , N/A) (N/A , 0.00 , N/A)	412.9	N/A	1.0407 [1.0000]	104.1% { 98.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (6)
Acquired: 2022/12/27 - 18:14

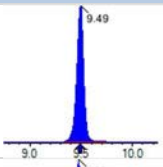
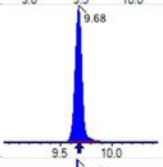
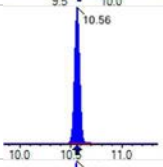
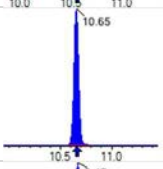
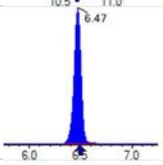
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 610747	(9.89 , N/A) (N/A , 0.00 , N/A)	433.9	N/A	0.9637 [1.0000]	96.4% { 89.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 405783	(10.13 , N/A) (N/A , 0.00 , N/A)	825.4	N/A	0.9701 [1.0000]	97.0% { 92.2% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2379985	(6.08 , N/A) (N/A , -0.03 , N/A)	525.5	N/A	1.9237 [2.0000]	96.2% { 94.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1237874	(8.00 , N/A) (N/A , -0.02 , N/A)	710.7	N/A	1.8850 [2.0000]	94.2% { 97.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1746178	(9.44 , N/A) (N/A , 0.00 , N/A)	140.3	N/A	1.9421 [2.0000]	97.1% { 107.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 543555	(5.79 , N/A) (N/A , -0.02 , N/A)	513.0	N/A	3.7307 [4.0000]	93.3% { 105.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 630296	(7.54 , N/A) (N/A , -0.01 , N/A)	619.6	N/A	3.4811 [4.0000]	87.0% { 105.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 708566	(8.95 , N/A) (N/A , -0.01 , N/A)	643.4	N/A	3.9694 [4.0000]	99.2% { 116.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2334950	(10.17 , N/A) (N/A , 0.00 , N/A)	725.9	N/A	1.9532 [2.0000]	97.7% { 98.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 459849	(10.60 , N/A) (N/A , 0.00 , N/A)	953.1	N/A	1.9836 [2.0000]	99.2% { 101.0% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 396716	(10.68 , N/A) (N/A , 0.00 , N/A)	697.6	N/A	1.9206 [2.0000]	96.0% { 97.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL6
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (6)
Acquired: 2022/12/27 - 18:14

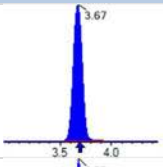
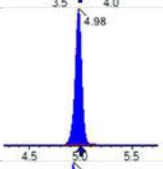
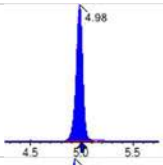
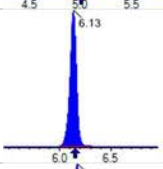
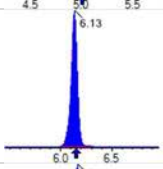
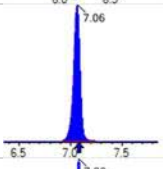
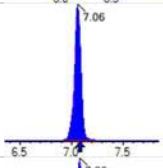
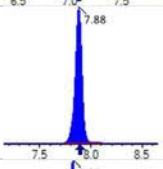
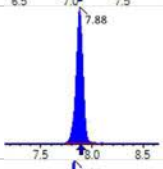
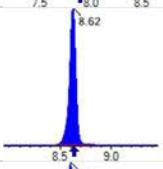
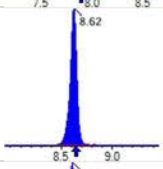
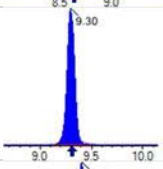
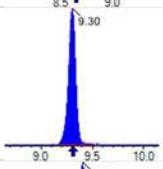
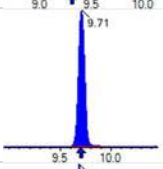
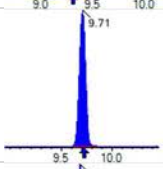
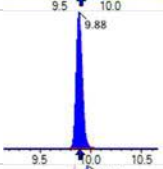
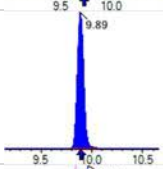
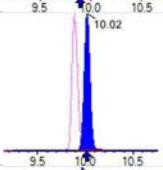
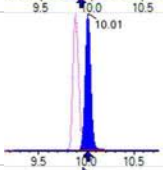
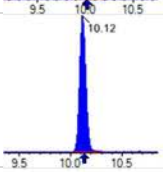
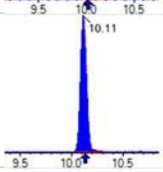
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 894097	(9.49 , N/A) (N/A , 0.00 , N/A)	374.4	N/A	3.6350 [4.0000]	90.9% { 85.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 769205	(9.68 , N/A) (N/A , 0.00 , N/A)	310.9	N/A	3.6512 [4.0000]	91.3% { 84.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 806849	(10.56 , N/A) (N/A , 0.00 , N/A)	1039.6	N/A	21.7231 [20.0000]	108.6% { 109.6% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 321638	(10.65 , N/A) (N/A , 0.00 , N/A)	1586.2	N/A	21.4132 [20.0000]	107.1% { 106.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2018877	(6.47 , N/A) (N/A , -0.02 , N/A)	639.3	N/A	7.7801 [8.0000]	97.3% { 102.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (7)
Acquired: 2022/12/27 - 18:27

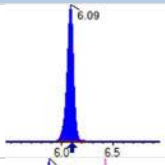
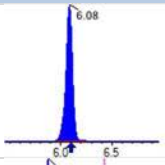
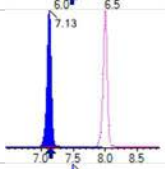
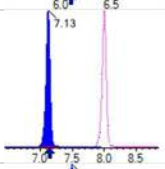
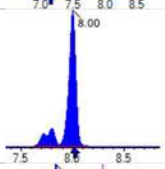
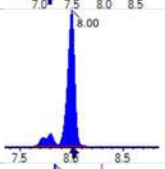
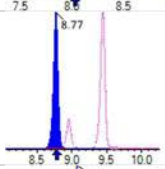
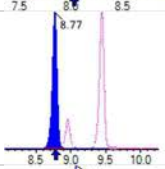
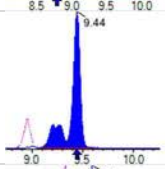
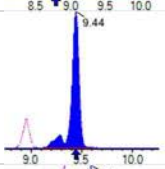
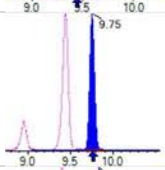
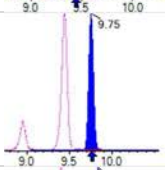
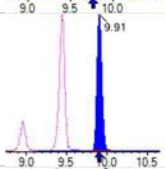
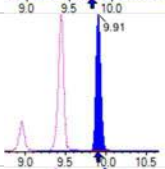
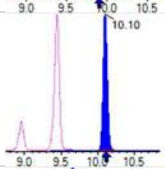
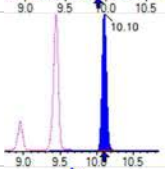
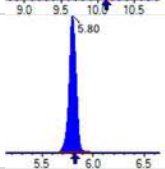
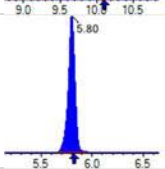
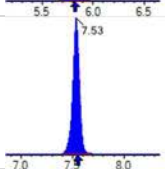
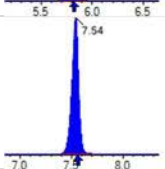
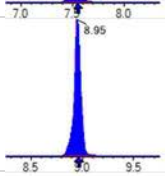
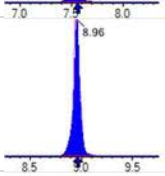
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 17822442	(3.67 , 1.00) (0.00 , N/A , 0.0)	570.6	N/A 0.0 0.0	82.6154 [80.0000]	103.3%			
PFPeA	(263.0 / 219.0) 11378042 (263.0 / 69.0) 122240	(4.98 , 1.00) (0.00 , N/A , 0.0)	529.0 475.6	0.0107 99.5 99.5	39.6286 [40.0000]	99.1%			
PFHxA	(313.0 / 269.0) 7345314 (313.0 / 119.0) 696377	(6.13 , 1.00) (0.00 , N/A , 0.0)	525.0 601.3	0.0948 105.3 105.3	20.6795 [20.0000]	103.4%			
PFHpA	(363.0 / 319.0) 7000325 (363.0 / 169.0) 2013165	(7.06 , 1.00) (0.00 , N/A , 0.1)	557.3 654.3	0.2876 94.5 94.5	19.3732 [20.0000]	96.9%			
PFOA	(413.0 / 369.0) 7619813 (413.0 / 169.0) 2531803	(7.88 , 1.00) (0.00 , N/A , 0.1)	627.5 640.5	0.3323 98.9 98.9	19.7159 [20.0000]	98.6%			
PFNA	(463.0 / 419.0) 6411707 (463.0 / 169.0) 1313032	(8.62 , 1.00) (0.00 , N/A , 0.0)	567.7 420.4	0.2048 97.9 97.9	20.7851 [20.0000]	103.9%			
PFDA	(513.0 / 469.0) 8631259 (513.0 / 169.0) 817187	(9.30 , 1.00) (0.00 , N/A , -0.2)	565.2 343.9	0.0947 106.2 106.2	21.7840 [20.0000]	108.9%			
PFUnA	(563.0 / 519.0) 7999515 (563.0 / 169.0) 776268	(9.71 , 1.00) (0.00 , N/A , 0.1)	627.1 676.6	0.0970 92.1 92.1	20.0466 [20.0000]	100.2%			
PFDoA	(613.0 / 569.0) 9603331 (613.0 / 169.0) 1080274	(9.88 , 1.00) (0.00 , N/A , -0.3)	979.4 828.7	0.1125 87.6 87.6	18.7015 [20.0000]	93.5%			
PFTrDA	(663.0 / 619.0) 8859783 (663.0 / 169.0) 1882278	(10.02 , 1.01) (N/A , 0.00 , 0.1)	721.1 946.6	0.2125 93.1 93.1	20.4122 [20.0000]	102.1%			
PFTeDA	(713.0 / 669.0) 8273144 (713.0 / 169.0) 1419916	(10.12 , 1.00) (0.00 , N/A , 0.2)	956.6 684.9	0.1716 82.2 82.2	21.4065 [20.0000]	107.0%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (7)
Acquired: 2022/12/27 - 18:27

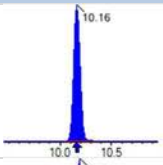
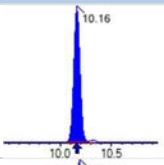
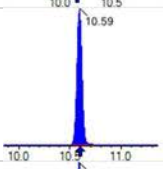
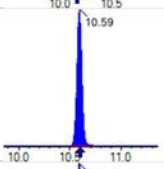
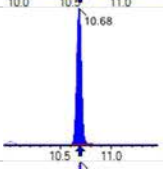
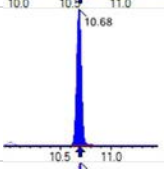
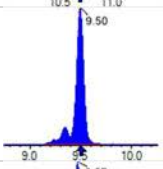
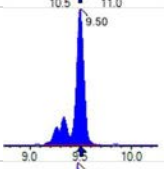
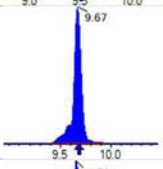
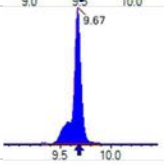
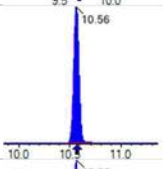
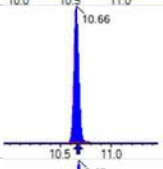
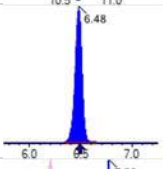
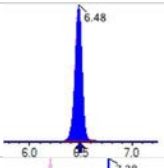
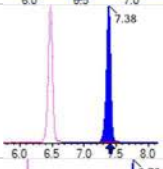
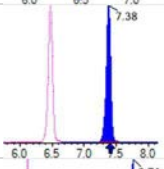
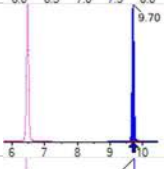
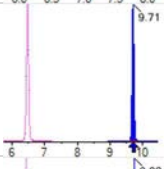
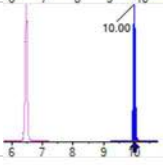
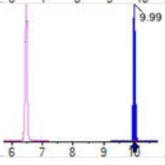
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 11277121 (299.0 / 99.0) 6959572	(6.09 , 1.00) (0.00 , N/A , 0.1)	510.1 486.0	0.6171 92.6 92.6	19.4660 [17.6947]	110.0%			
PFPeS	(349.0 / 80.0) 18747113 (349.0 / 99.0) 6982813	(7.13 , 0.89) (N/A , -0.02 , 0.0)	604.4 560.2	0.3725 101.2 101.2	19.4395 [18.7676]	103.6%			
PFHxS	(399.0 / 80.0) 16498532 (399.0 / 99.0) 5676869	(8.00 , 1.00) (0.00 , N/A , 0.1)	750.9 927.3	0.3441 107.6 107.6	18.6939 [18.2197]	102.6%			
PFHpS	(449.0 / 80.0) 15700233 (449.0 / 99.0) 4113272	(8.77 , 0.93) (N/A , -0.01 , 0.1)	634.0 604.0	0.2620 98.5 98.5	18.2799 [19.0281]	96.1%			
PFOS	(499.0 / 80.0) 17069249 (499.0 / 99.0) 3990338	(9.44 , 1.00) (0.00 , N/A , 0.1)	393.2 947.5	0.2338 102.4 102.4	16.2941 [18.5499]	87.8%			
PFNS	(549.0 / 80.0) 17904932 (549.0 / 99.0) 4858107	(9.75 , 1.03) (N/A , 0.00 , 0.0)	914.3 772.5	0.2713 115.5 115.5	17.1530 [19.1977]	89.3%			
PFDS	(599.0 / 80.0) 22289315 (599.0 / 99.0) 5260310	(9.91 , 1.05) (N/A , 0.00 , 0.0)	993.3 869.8	0.2360 105.3 105.3	17.4630 [19.2621]	90.7%			
PFDoS	(699.0 / 80.0) 9843470 (699.0 / 99.0) 2041952	(10.10 , 1.07) (N/A , -0.01 , -0.1)	899.8 939.6	0.2074 101.3 101.3	19.3067 [19.3913]	99.6%			
4:2FTS	(327.0 / 307.0) 25295344 (327.0 / 81.0) 15311685	(5.80 , 1.00) (0.00 , N/A , -0.1)	611.6 535.6	0.6053 93.8 93.8	74.2078 [74.7622]	99.3%			
6:2FTS	(427.0 / 407.0) 16506583 (427.0 / 81.0) 12210918	(7.53 , 1.00) (0.00 , N/A , -0.2)	661.0 797.3	0.7398 104.6 104.6	78.6007 [75.9234]	103.5%			
8:2FTS	(527.0 / 507.0) 14476123 (527.0 / 81.0) 10354278	(8.95 , 1.00) (0.01 , N/A , -0.1)	541.0 595.7	0.7153 101.8 101.8	66.0815 [76.6631]	86.2%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (7)
Acquired: 2022/12/27 - 18:27

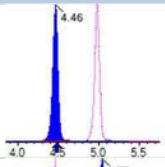
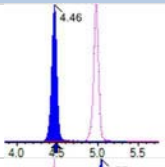
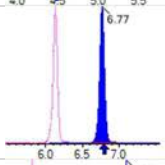
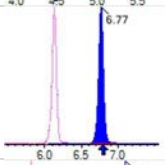
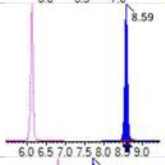
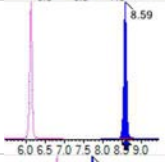
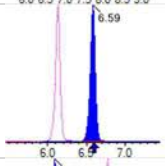
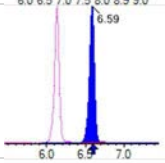
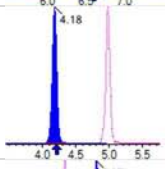
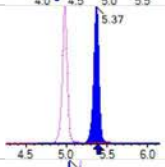
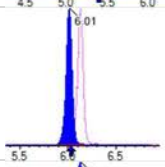
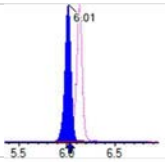
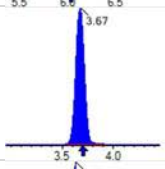
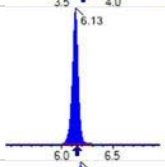
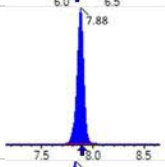
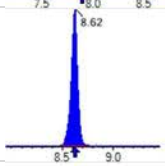
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 19164277 (498.0 / 478.0) 428338	(10.16 , 1.00) (0.00 , N/A , 0.0)	768.4 542.3	0.0224 140.2 140.2	18.8200 [20.0000]	94.1%			
NMeFOSA	(512.0 / 219.0) 15465408 (512.0 / 169.0) 11131036	(10.59 , 1.00) (0.00 , N/A , 0.0)	1280.3 1258.5	0.7197 105.8 105.8	72.9039 [80.0000]	91.1%			
NEtFOSA	(526.0 / 219.0) 14764837 (526.0 / 169.0) 15828042	(10.68 , 1.00) (0.00 , N/A , 0.0)	1421.4 1508.3	1.0720 106.7 106.7	82.0567 [80.0000]	102.6%			
NMeFOSAA	(570.0 / 419.0) 3793223 (570.0 / 483.0) 1873914	(9.50 , 1.00) (0.00 , N/A , 0.0)	669.9 404.3	0.4940 99.0 99.0	19.3060 [20.0000]	96.5%			
NEtFOSAA	(584.0 / 419.0) 2901144 (584.0 / 526.0) 1868736	(9.67 , 1.00) (0.00 , N/A , -0.1)	985.5 758.1	0.6441 107.2 107.2	17.2038 [20.0000]	86.0%			
NMeFOSE	(616.0 / 59.0) 3257786	(10.56 , 1.00) (0.01 , N/A , 0.0)	1314.5	N/A 0.0 0.0	78.0399 [80.0000]	97.5%			
NEtFOSE	(630.0 / 59.0) 385753	(10.66 , 1.00) (0.01 , N/A , 0.0)	1298.2	N/A 0.0 0.0	70.2852 [80.0000]	87.9%			
HFPO-DA	(285.0 / 169.0) 5612986 (285.0 / 185.0) 14924418	(6.48 , 1.00) (0.00 , N/A , 0.0)	647.9 706.3	2.6589 96.6 96.6	40.5437 [40.0000]	101.4%			
ADONA	(377.0 / 85.0) 22841831 (377.0 / 251.0) 2798379	(7.38 , 1.14) (N/A , -0.01 , 0.1)	628.0 687.6	0.1225 106.5 106.5	38.5298 [37.7080]	102.2%			
9Cl-Pf3ONS	(531.0 / 351.0) 49852920 (533.0 / 353.0) 17661471	(9.70 , 1.50) (N/A , 0.00 , -0.1)	898.6 968.8	0.3543 110.7 110.7	32.0402 [37.3302]	85.8%			
11Cl-PF3OUDS	(631.0 / 451.0) 31723928 (633.0 / 453.0) 10362873	(10.00 , 1.54) (N/A , 0.00 , 0.0)	1190.7 788.0	0.3267 111.6 111.6	39.0034 [37.7283]	103.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (7)
Acquired: 2022/12/27 - 18:27

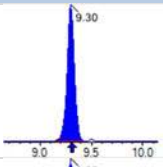
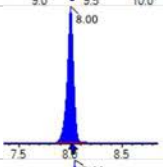
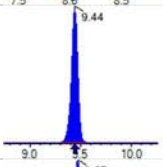
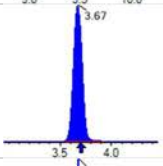
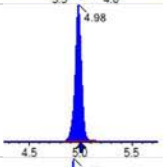
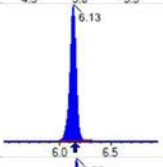
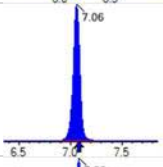
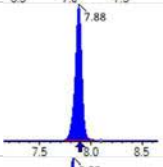
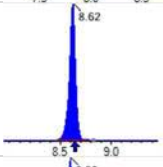
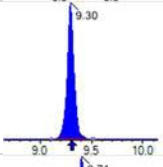
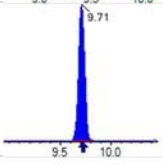
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 791196 (241.0 / 117.0) 1106548	(4.46 , 0.90) (N/A , -0.02 , 0.1)	579.9 612.4	1.3986 102.4 102.4	78.7465 [80.0000]	98.4%			
5:3FTCA	(341.0 / 236.7) 4911755 (341.0 / 217.0) 7859521	(6.77 , 1.10) (N/A , -0.02 , 0.0)	625.0 524.3	1.6001 96.3 96.3	90.1556 [80.0000]	112.7%			
7:3FTCA	(441.0 / 317.0) 6316811 (441.0 / 337.0) 5322218	(8.59 , 1.40) (N/A , -0.01 , 0.0)	463.8 470.2	0.8425 100.8 100.8	94.1189 [80.0000]	117.6%			
PFEESA	(315.0 / 135.0) 13209074 (315.0 / 83.0) 3850208	(6.59 , 1.07) (N/A , -0.02 , -0.1)	652.9 627.8	0.2915 94.6 94.6	37.3383 [35.6984]	104.6%			
PFMPA	(229.0 / 85.0) 3389506	(4.18 , 0.84) (N/A , -0.02 , 0.0)	963.0	N/A 0.0 0.0	38.9007 [40.0000]	97.3%			
PFMBA	(279.0 / 85.0) 9135232	(5.37 , 1.08) (N/A , -0.01 , 0.0)	668.1	N/A 0.0 0.0	40.0498 [40.0000]	100.1%			
NFDHA	(295.0 / 201.0) 7023682 (295.0 / 85.0) 6542262	(6.01 , 0.98) (N/A , -0.02 , 0.0)	648.4 630.7	0.9315 107.2 107.2	41.3567 [40.0000]	103.4%			
13C3_PFBA_IIS	(216.0 / 172.0) 248472	(3.67 , N/A) (N/A , -0.02 , N/A)	560.8	N/A	0.9192 [1.0000]	91.9% { 85.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 429479	(6.13 , N/A) (N/A , -0.01 , N/A)	524.0	N/A	1.0815 [1.0000]	108.1% { 107.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 382953	(7.88 , N/A) (N/A , -0.01 , N/A)	509.2	N/A	0.9586 [1.0000]	95.9% { 96.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 321598	(8.62 , N/A) (N/A , 0.00 , N/A)	506.5	N/A	0.9729 [1.0000]	97.3% { 88.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (7)
Acquired: 2022/12/27 - 18:27

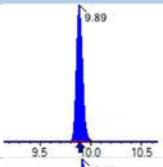
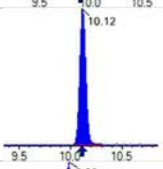
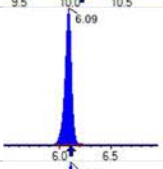
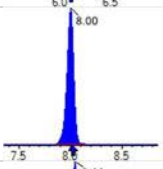
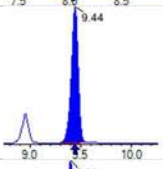
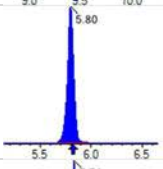
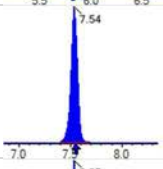
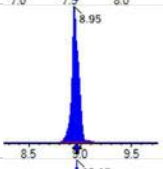
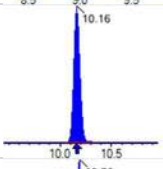
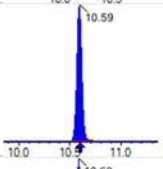
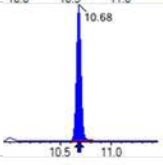
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 361543	(9.30 , N/A) (N/A , -0.01 , N/A)	359.6	N/A	1.0125 [1.0000]	101.3% { 108.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 689856	(8.00 , N/A) (N/A , -0.01 , N/A)	593.4	N/A	0.9891 [1.0000]	98.9% { 92.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 751313	(9.44 , N/A) (N/A , 0.00 , N/A)	591.9	N/A	1.0896 [1.0000]	109.0% { 114.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2058029	(3.67 , N/A) (N/A , -0.02 , N/A)	591.5	N/A	7.7076 [8.0000]	96.3% { 85.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1344175	(4.98 , N/A) (N/A , -0.02 , N/A)	561.5	N/A	3.4248 [4.0000]	85.6% { 88.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 779762	(6.13 , N/A) (N/A , -0.01 , N/A)	449.7	N/A	1.6323 [2.0000]	81.6% { 90.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 754584	(7.06 , N/A) (N/A , -0.02 , N/A)	450.2	N/A	1.7679 [2.0000]	88.4% { 90.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 832073	(7.88 , N/A) (N/A , -0.01 , N/A)	531.7	N/A	1.9828 [2.0000]	99.1% { 102.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 340639	(8.62 , N/A) (N/A , -0.01 , N/A)	425.8	N/A	0.9622 [1.0000]	96.2% { 88.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 444885	(9.30 , N/A) (N/A , -0.01 , N/A)	290.4	N/A	0.9406 [1.0000]	94.1% { 99.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 503923	(9.71 , N/A) (N/A , 0.00 , N/A)	481.8	N/A	0.8792 [1.0000]	87.9% { 83.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (7)
Acquired: 2022/12/27 - 18:27

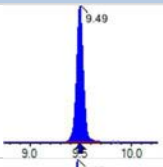
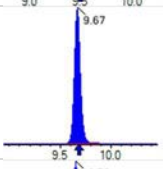
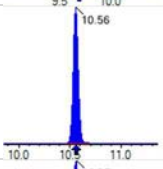
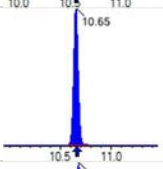
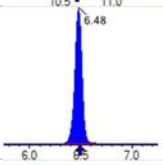
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 599166	(9.89 , N/A) (N/A , 0.00 , N/A)	775.9	N/A	0.9498 [1.0000]	95.0% { 87.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 425512	(10.12 , N/A) (N/A , -0.01 , N/A)	553.0	N/A	1.0219 [1.0000]	102.2% { 96.6% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2077191	(6.09 , N/A) (N/A , -0.02 , N/A)	528.8	N/A	1.7881 [2.0000]	89.4% { 82.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1148365	(8.00 , N/A) (N/A , -0.01 , N/A)	826.5	N/A	1.8624 [2.0000]	93.1% { 90.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1805693	(9.44 , N/A) (N/A , 0.00 , N/A)	110.3	N/A	1.8558 [2.0000]	92.8% { 110.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 477926	(5.80 , N/A) (N/A , -0.02 , N/A)	623.1	N/A	3.4935 [4.0000]	87.3% { 92.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 613745	(7.54 , N/A) (N/A , -0.01 , N/A)	728.1	N/A	3.6101 [4.0000]	90.3% { 102.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 650395	(8.95 , N/A) (N/A , -0.01 , N/A)	438.1	N/A	3.8805 [4.0000]	97.0% { 106.5% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2121989	(10.16 , N/A) (N/A , 0.00 , N/A)	636.6	N/A	1.6403 [2.0000]	82.0% { 89.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 487723	(10.59 , N/A) (N/A , -0.01 , N/A)	855.6	N/A	1.9440 [2.0000]	97.2% { 107.1% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 391529	(10.68 , N/A) (N/A , -0.01 , N/A)	684.7	N/A	1.7515 [2.0000]	87.6% { 95.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL7
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (7)
Acquired: 2022/12/27 - 18:27

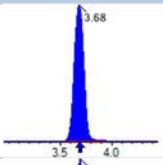
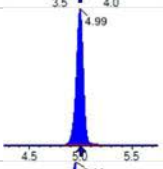
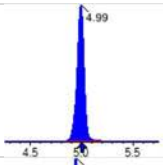
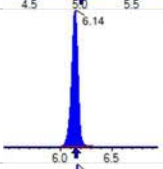
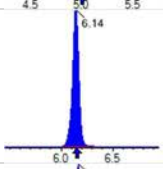
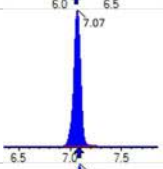
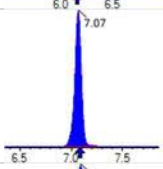
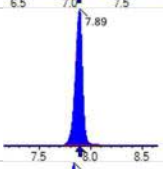
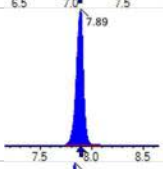
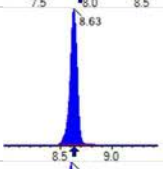
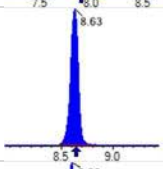
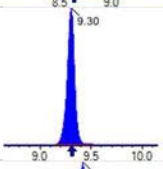
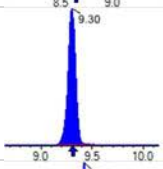
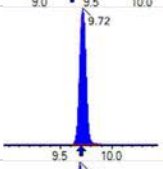
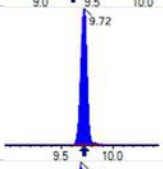
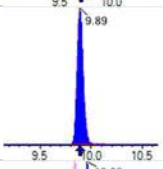
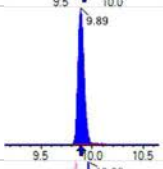
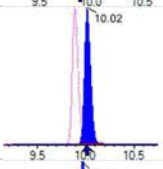
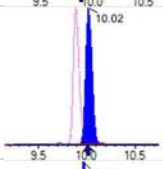
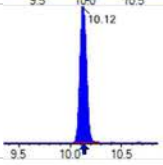
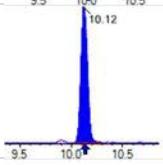
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 946424	(9.49 , N/A) (N/A , 0.00 , N/A)	446.6	N/A	3.5556 [4.0000]	88.9% { 90.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 777815	(9.67 , N/A) (N/A , 0.00 , N/A)	378.7	N/A	3.4117 [4.0000]	85.3% { 85.1% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 739481	(10.56 , N/A) (N/A , -0.01 , N/A)	1116.7	N/A	18.3973 [20.0000]	92.0% { 100.4% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 289482	(10.65 , N/A) (N/A , -0.01 , N/A)	1189.8	N/A	17.8087 [20.0000]	89.0% { 96.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1804359	(6.48 , N/A) (N/A , -0.02 , N/A)	645.2	N/A	6.8019 [8.0000]	85.0% { 92.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (8)
Acquired: 2022/12/27 - 18:40

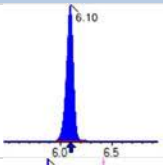
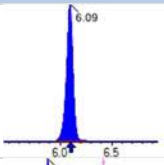
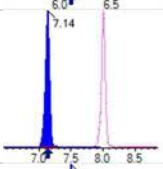
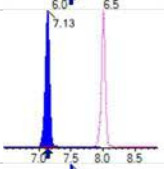
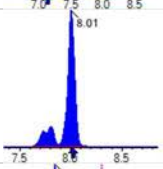
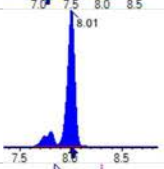
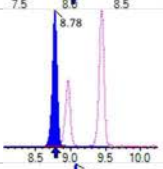
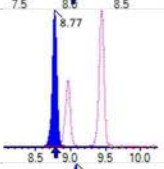
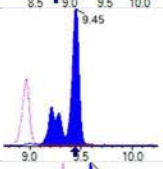
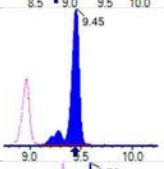
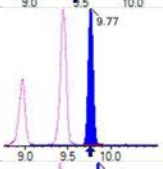
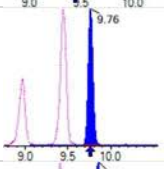
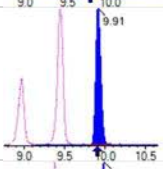
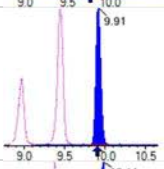
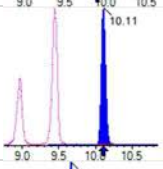
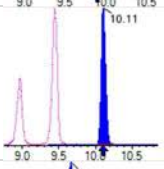
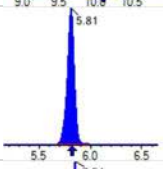
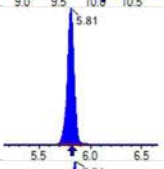
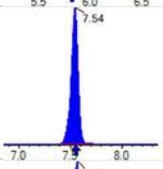
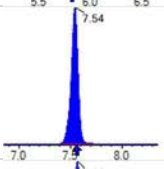
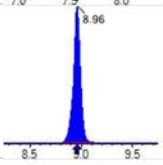
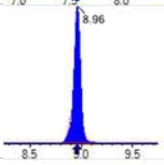
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 36997561	(3.68 , 1.00) (0.00 , N/A , 0.0)	598.5	N/A 0.0 0.0	192.2567 [200.0000]	96.1%			
PFPeA	(263.0 / 219.0) 24876294 (263.0 / 69.0) 262691	(4.99 , 1.00) (0.00 , N/A , 0.1)	524.7 400.1	0.0106 97.8 97.8	96.7401 [100.0000]	96.7%			
PFHxA	(313.0 / 269.0) 16852095 (313.0 / 119.0) 1592448	(6.14 , 1.00) (0.00 , N/A , 0.1)	521.0 447.2	0.0945 105.0 105.0	47.6559 [50.0000]	95.3%			
PFHpA	(363.0 / 319.0) 16075685 (363.0 / 169.0) 4622893	(7.07 , 1.00) (0.00 , N/A , 0.1)	521.5 483.5	0.2876 94.5 94.5	46.5964 [50.0000]	93.2%			
PFOA	(413.0 / 369.0) 16716744 (413.0 / 169.0) 5432951	(7.89 , 1.00) (0.00 , N/A , 0.1)	594.5 645.9	0.3250 96.7 96.7	46.3310 [50.0000]	92.7%			
PFNA	(463.0 / 419.0) 13475734 (463.0 / 169.0) 2658224	(8.63 , 1.00) (0.00 , N/A , 0.2)	596.5 519.0	0.1973 94.3 94.3	47.9032 [50.0000]	95.8%			
PFDA	(513.0 / 469.0) 15603441 (513.0 / 169.0) 1621396	(9.30 , 1.00) (0.00 , N/A , 0.1)	463.8 443.6	0.1039 116.6 116.6	47.1138 [50.0000]	94.2%			
PFUnA	(563.0 / 519.0) 17364435 (563.0 / 169.0) 1411923	(9.72 , 1.00) (0.00 , N/A , -0.1)	541.4 497.2	0.0813 77.2 77.2	51.8328 [50.0000]	103.7%			
PFDoA	(613.0 / 569.0) 19844068 (613.0 / 169.0) 2509797	(9.89 , 1.00) (0.00 , N/A , 0.2)	1155.0 574.5	0.1265 98.5 98.5	50.9268 [50.0000]	101.9%			
PFTrDA	(663.0 / 619.0) 14540959 (663.0 / 169.0) 3176658	(10.02 , 1.01) (N/A , 0.00 , -0.2)	913.8 477.0	0.2185 95.7 95.7	44.1490 [50.0000]	88.3%			
PFTeDA	(713.0 / 669.0) 14363802 (713.0 / 169.0) 2587655	(10.12 , 1.00) (0.00 , N/A , 0.0)	743.7 457.6	0.1802 86.3 86.3	52.7219 [50.0000]	105.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (8)
Acquired: 2022/12/27 - 18:40

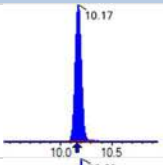
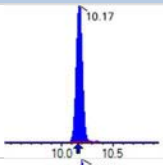
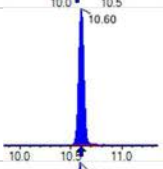
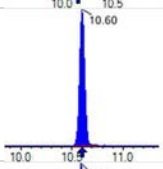
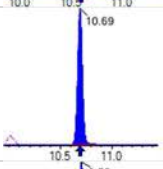
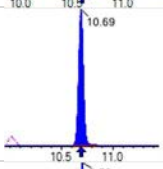
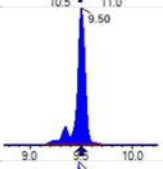
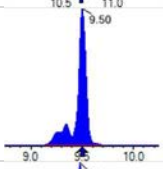
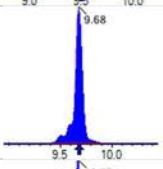
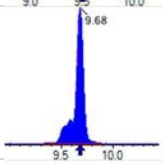
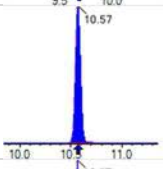
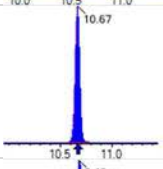
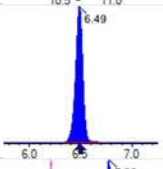
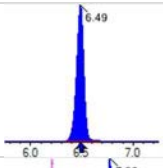
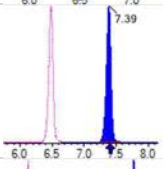
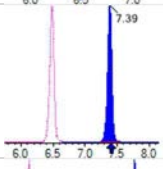
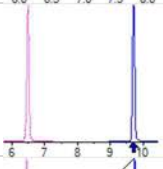
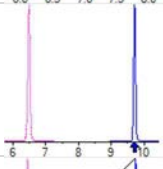
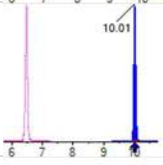
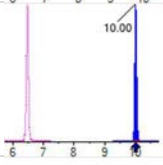
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 23293125 (299.0 / 99.0) 16031671	(6.10 , 1.00) (0.00 , N/A , 0.2)	487.7 599.7	0.6883 103.3 103.3	43.1570 [44.2367]	97.6%			
PFPeS	(349.0 / 80.0) 40257998 (349.0 / 99.0) 14507218	(7.14 , 0.89) (N/A , -0.01 , 0.1)	579.1 626.4	0.3604 97.9 97.9	44.2166 [46.9191]	94.2%			
PFHxS	(399.0 / 80.0) 36249609 (399.0 / 99.0) 11959667	(8.01 , 1.00) (0.00 , N/A , 0.0)	843.8 816.6	0.3299 103.2 103.2	43.5052 [45.5491]	95.5%			
PFHpS	(449.0 / 80.0) 34165710 (449.0 / 99.0) 9559711	(8.78 , 0.93) (N/A , -0.01 , 0.2)	527.3 756.6	0.2798 105.2 105.2	50.8733 [47.5703]	106.9%			
PFOS	(499.0 / 80.0) 37426955 (499.0 / 99.0) 8507309	(9.45 , 1.00) (0.00 , N/A , 0.0)	296.2 967.9	0.2273 99.5 99.5	45.6913 [46.3746]	98.5%			
PFNS	(549.0 / 80.0) 34827827 (549.0 / 99.0) 10345288	(9.77 , 1.03) (N/A , 0.01 , 0.1)	790.8 576.7	0.2970 126.4 126.4	42.6703 [47.9943]	88.9%			
PFDS	(599.0 / 80.0) 40028553 (599.0 / 99.0) 10858587	(9.91 , 1.05) (N/A , 0.01 , 0.0)	1017.2 1059.5	0.2713 121.1 121.1	40.1073 [48.1553]	83.3%			
PFDoS	(699.0 / 80.0) 19338482 (699.0 / 99.0) 4062404	(10.11 , 1.07) (N/A , 0.00 , 0.1)	2147.9 788.7	0.2101 102.6 102.6	48.5080 [48.4781]	100.1%			
4:2FTS	(327.0 / 307.0) 52533701 (327.0 / 81.0) 33743951	(5.81 , 1.00) (0.00 , N/A , 0.1)	457.5 626.3	0.6423 99.6 99.6	169.5946 [186.9055]	90.7%			
6:2FTS	(427.0 / 407.0) 33976168 (427.0 / 81.0) 23921293	(7.54 , 1.00) (0.00 , N/A , 0.0)	590.8 563.0	0.7041 99.6 99.6	167.4568 [189.8085]	88.2%			
8:2FTS	(527.0 / 507.0) 30916525 (527.0 / 81.0) 22675414	(8.96 , 1.00) (0.00 , N/A , -0.2)	506.6 542.7	0.7334 104.4 104.4	151.2327 [191.6577]	78.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (8)
Acquired: 2022/12/27 - 18:40

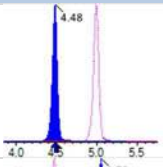
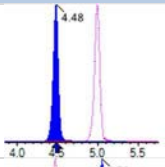
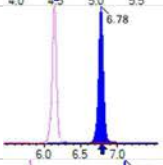
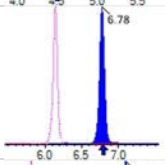
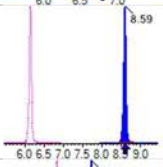
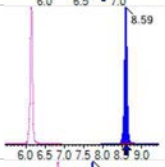
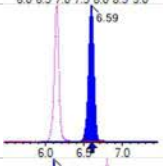
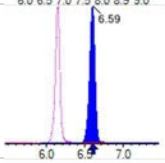
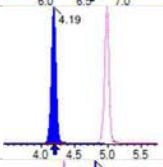
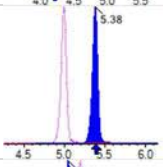
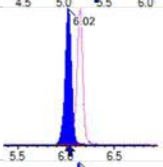
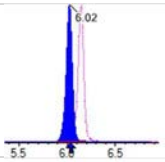
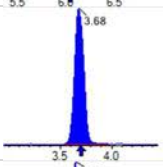
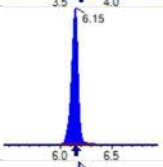
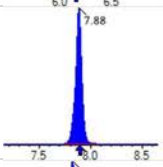
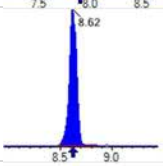
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 41417537 (498.0 / 478.0) 1002957	(10.17 , 1.00) (0.00 , N/A , 0.0)	797.6 720.1	0.0242 151.9 151.9	43.7961 [50.0000]	87.6%			
NMeFOSA	(512.0 / 219.0) 28178500 (512.0 / 169.0) 21249739	(10.60 , 1.00) (0.00 , N/A , 0.1)	1125.8 1011.1	0.7541 110.9 110.9	140.1897 [200.0000]	70.1%			
NEtFOSA	(526.0 / 219.0) 28044055 (526.0 / 169.0) 30021271	(10.69 , 1.00) (0.00 , N/A , 0.0)	998.8 951.1	1.0705 106.6 106.6	168.4066 [200.0000]	84.2%			
NMeFOSAA	(570.0 / 419.0) 7800625 (570.0 / 483.0) 4348294	(9.50 , 1.00) (0.00 , N/A , 0.0)	646.9 602.6	0.5574 111.7 111.7	45.9743 [50.0000]	91.9%			
NEtFOSAA	(584.0 / 419.0) 5857252 (584.0 / 526.0) 3661003	(9.68 , 1.00) (0.01 , N/A , -0.1)	896.7 574.4	0.6250 104.1 104.1	49.2503 [50.0000]	98.5%			
NMeFOSE	(616.0 / 59.0) 7139535	(10.57 , 1.00) (0.01 , N/A , 0.0)	1279.7	N/A 0.0 0.0	207.1536 [200.0000]	103.6%			
NEtFOSE	(630.0 / 59.0) 818300	(10.67 , 1.00) (0.01 , N/A , 0.0)	1394.6	N/A 0.0 0.0	184.6227 [200.0000]	92.3%			
HFPO-DA	(285.0 / 169.0) 12095594 (285.0 / 185.0) 30401904	(6.49 , 1.00) (0.00 , N/A , 0.0)	619.0 572.4	2.5135 91.3 91.3	94.6915 [100.0000]	94.7%			
ADONA	(377.0 / 85.0) 44124675 (377.0 / 251.0) 6294120	(7.39 , 1.14) (N/A , -0.01 , 0.0)	543.8 692.3	0.1426 124.0 124.0	80.6681 [94.2700]	85.6%			
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 [93.3254]	N/A%			QC,
11Cl-PF3OUDS	(631.0 / 451.0) 54134223 (633.0 / 453.0) 19497896	(10.01 , 1.54) (N/A , 0.01 , 0.2)	1003.0 1229.7	0.3602 123.0 123.0	72.1344 [94.3208]	76.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (8)
Acquired: 2022/12/27 - 18:40

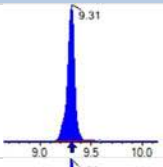
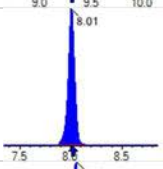
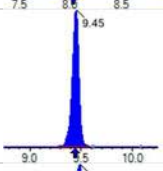
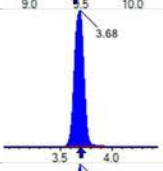
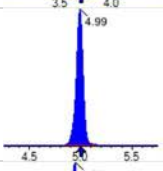
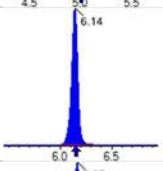
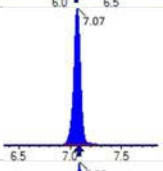
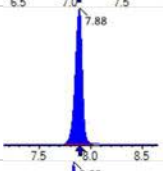
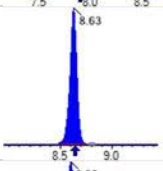
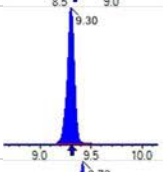
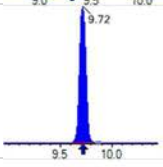
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 1997810 (241.0 / 117.0) 2597899	(4.48 , 0.90) (N/A , -0.01 , 0.0)	708.2 713.0	1.3004 95.2 95.2	222.0142 [200.0000]	111.0%			
5:3FTCA	(341.0 / 236.7) 11224360 (341.0 / 217.0) 17876902	(6.78 , 1.10) (N/A , -0.01 , 0.0)	580.9 559.9	1.5927 95.8 95.8	206.9430 [200.0000]	103.5%			
7:3FTCA	(441.0 / 317.0) 13750008 (441.0 / 337.0) 12189740	(8.59 , 1.40) (N/A , 0.00 , 0.1)	449.3 527.9	0.8865 106.1 106.1	205.7856 [200.0000]	102.9%			
PFEESA	(315.0 / 135.0) 28886828 (315.0 / 83.0) 8797358	(6.59 , 1.07) (N/A , -0.01 , -0.1)	725.1 696.4	0.3045 98.9 98.9	82.0190 [89.2459]	91.9%			
PFMPA	(229.0 / 85.0) 7979636	(4.19 , 0.84) (N/A , -0.01 , 0.0)	926.2	N/A 0.0 0.0	102.2546 [100.0000]	102.3%			
PFMBA	(279.0 / 85.0) 20519621	(5.38 , 1.08) (N/A , -0.01 , 0.0)	639.3	N/A 0.0 0.0	100.4454 [100.0000]	100.4%			
NFDHA	(295.0 / 201.0) 15990959 (295.0 / 85.0) 13998734	(6.02 , 0.98) (N/A , -0.01 , 0.0)	572.8 576.5	0.8754 100.8 100.8	94.5776 [100.0000]	94.6%			
13C3_PFBA_IIS	(216.0 / 172.0) 217703	(3.68 , N/A) (N/A , -0.01 , N/A)	472.5	N/A	0.8054 [1.0000]	80.5% { 74.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 356626	(6.15 , N/A) (N/A , 0.00 , N/A)	422.7	N/A	0.8980 [1.0000]	89.8% { 89.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 380991	(7.88 , N/A) (N/A , -0.01 , N/A)	642.9	N/A	0.9537 [1.0000]	95.4% { 95.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 276233	(8.62 , N/A) (N/A , 0.00 , N/A)	375.4	N/A	0.8357 [1.0000]	83.6% { 76.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (8)
Acquired: 2022/12/27 - 18:40

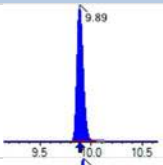
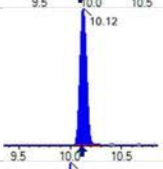
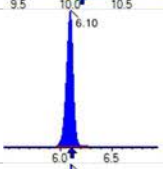
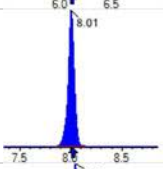
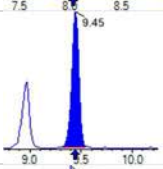
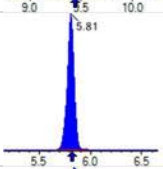
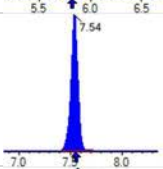
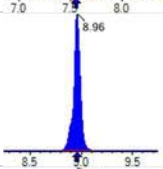
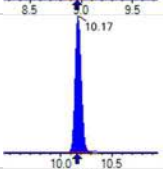
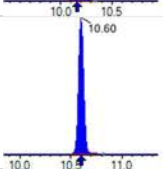
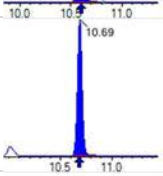
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 320157	(9.31 , N/A) (N/A , 0.00 , N/A)	299.3	N/A	0.8966 [1.0000]	89.7% { 96.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 627539	(8.01 , N/A) (N/A , -0.01 , N/A)	806.0	N/A	0.8998 [1.0000]	90.0% { 84.3% }			
13C4_PFOS_IIS	(503.0 / 79.9) 568216	(9.45 , N/A) (N/A , 0.00 , N/A)	395.9	N/A	0.8240 [1.0000]	82.4% { 86.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1835849	(3.68 , N/A) (N/A , -0.01 , N/A)	541.1	N/A	7.8473 [8.0000]	98.1% { 76.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1203862	(4.99 , N/A) (N/A , -0.01 , N/A)	527.1	N/A	3.6939 [4.0000]	92.3% { 79.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 776299	(6.14 , N/A) (N/A , 0.00 , N/A)	448.6	N/A	1.9571 [2.0000]	97.9% { 89.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 720456	(7.07 , N/A) (N/A , -0.01 , N/A)	426.1	N/A	2.0328 [2.0000]	101.6% { 86.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 776806	(7.88 , N/A) (N/A , -0.01 , N/A)	518.3	N/A	1.8607 [2.0000]	93.0% { 95.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 310642	(8.63 , N/A) (N/A , 0.00 , N/A)	352.0	N/A	1.0216 [1.0000]	102.2% { 81.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 371862	(9.30 , N/A) (N/A , 0.00 , N/A)	247.2	N/A	0.8879 [1.0000]	88.8% { 82.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 423055	(9.72 , N/A) (N/A , 0.00 , N/A)	364.8	N/A	0.8335 [1.0000]	83.4% { 69.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (8)
Acquired: 2022/12/27 - 18:40

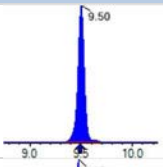
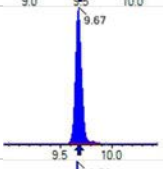
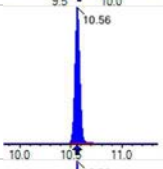
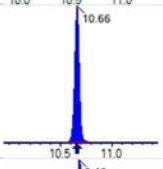
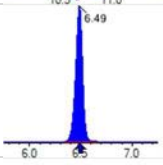
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 454660	(9.89 , N/A) (N/A , 0.00 , N/A)	474.4	N/A	0.8139 [1.0000]	81.4% { 66.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 299962	(10.12 , N/A) (N/A , 0.00 , N/A)	1274.6	N/A	0.8135 [1.0000]	81.4% { 68.1% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1935222	(6.10 , N/A) (N/A , -0.01 , N/A)	478.9	N/A	1.8313 [2.0000]	91.6% { 76.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1084168	(8.01 , N/A) (N/A , -0.01 , N/A)	854.0	N/A	1.9329 [2.0000]	96.6% { 85.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1411926	(9.45 , N/A) (N/A , 0.00 , N/A)	67.0	N/A	1.9187 [2.0000]	95.9% { 86.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 434306	(5.81 , N/A) (N/A , -0.01 , N/A)	517.5	N/A	3.4899 [4.0000]	87.2% { 84.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 592965	(7.54 , N/A) (N/A , -0.01 , N/A)	575.7	N/A	3.8342 [4.0000]	95.9% { 99.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 606946	(8.96 , N/A) (N/A , 0.00 , N/A)	694.8	N/A	3.9809 [4.0000]	99.5% { 99.3% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1970700	(10.17 , N/A) (N/A , 0.01 , N/A)	682.3	N/A	2.0142 [2.0000]	100.7% { 82.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 462130	(10.60 , N/A) (N/A , 0.00 , N/A)	830.8	N/A	2.4356 [2.0000]	121.8% { 101.5% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 362352	(10.69 , N/A) (N/A , 0.00 , N/A)	386.0	N/A	2.1433 [2.0000]	107.2% { 88.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-CAL8
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (8)
Acquired: 2022/12/27 - 18:40

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 817305	(9.50 , N/A) (N/A , 0.01 , N/A)	324.3	N/A	4.0599 [4.0000]	101.5% { 78.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 548551	(9.67 , N/A) (N/A , 0.00 , N/A)	392.8	N/A	3.1814 [4.0000]	79.5% { 60.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 610519	(10.56 , N/A) (N/A , 0.00 , N/A)	1001.0	N/A	20.0832 [20.0000]	100.4% { 82.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 233778	(10.66 , N/A) (N/A , 0.00 , N/A)	1021.8	N/A	19.0161 [20.0000]	95.1% { 77.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1664825	(6.49 , N/A) (N/A , -0.01 , N/A)	662.7	N/A	7.5580 [8.0000]	94.5% { 84.8% }			

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2253007
Laboratory ID: SB03988-SCV1
Sequence: SB03988
Standard ID: 22L0308

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	7.96	-0.5	30.00
PFPEA	4.00	3.80	-5.1	30.00
PFHXA	2.00	1.91	-4.3	30.00
PFHPA	2.00	2.04	1.8	30.00
PFOA	2.00	1.91	-4.6	30.00
PFNA	2.00	1.94	-3.0	30.00
PFDA	2.00	2.06	3.2	30.00
PFUnA	2.00	2.11	5.6	30.00
PFDOA	2.00	1.82	-8.9	30.00
PFTRDA	2.00	2.17	8.3	30.00
PFTEDA	2.00	2.50	24.8	30.00
PFBS	1.77	1.86	5.0	30.00
PFPES	1.88	1.90	1.2	30.00
PFHXS	1.83	1.74	-4.7	30.00
PFHPS	1.91	1.66	-13.0	30.00
PFOS	1.86	1.41	-24.4	30.00
PFNS	1.92	1.77	-7.7	30.00
PFDS	1.93	1.86	-3.7	30.00
PFDOS	1.94	1.81	-6.7	30.00
4:2FTS	7.50	7.71	2.8	30.00
6:2FTS	7.60	8.61	13.3	30.00
8:2FTS	7.68	6.94	-9.6	30.00
PFOSA	2.00	1.93	-3.5	30.00
NMeFOSA	8.00	7.89	-1.4	30.00
NEtFOSA	8.00	7.56	-5.5	30.00
NMeFOSAA	2.00	1.83	-8.6	30.00
NEtFOSAA	2.00	2.03	1.7	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2253007
Laboratory ID: SB03988-SCV1
Sequence: SB03988
Standard ID: 22L0308

NMeFOSE	8.00	6.76	-15.5	30.00
NEtFOSE	8.00	8.23	2.8	30.00
HFPO-DA	4.00	3.94	-1.4	30.00
ADONA	3.78	3.81	0.7	30.00
PFEESA	3.56	3.02	-15.2	30.00
PFMPA	4.00	3.52	-12.0	30.00
PFMBA	4.00	3.68	-7.9	30.00
NFDHA	4.00	3.91	-2.2	30.00
9CL-PF3ONS	3.74	3.69	-1.3	30.00
11CL-PF3OUDS	3.78	3.88	2.7	30.00
3:3FTCA	8.00	6.95	-13.1	30.00
5:3FTCA	8.00	6.99	-12.6	30.00
7:3FTCA	8.00	7.40	-7.5	30.00
13C4-PFBA	8.00	8.49	6.2	30.00
13C5-PFPEA	4.00	4.54	13.4	30.00
13C5-PFHXA	2.00	2.23	11.5	30.00
13C4-PFHPA	2.00	2.08	4.2	30.00
13C8-PFOA	2.00	2.15	7.6	30.00
13C9-PFNA	1.00	1.08	7.7	30.00
13C6-PFDA	1.00	1.05	4.6	30.00
13C7-PFUnA	1.00	1.10	9.5	30.00
13C2-PFDOA	1.00	1.09	9.1	30.00
13C2-PFTEDA	1.00	0.927	-7.3	30.00
13C3-PFBS	2.00	2.23	11.6	30.00
13C3-PFHXS	2.00	2.06	3.2	30.00
13C8-PFOS	2.00	2.36	18.0	30.00
13C2-4:2FTS	4.00	4.20	4.9	30.00
13C2-6:2FTS	4.00	3.96	-0.9	30.00
13C2-8:2FTS	4.00	4.32	8.1	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2253007
Laboratory ID: SB03988-SCV1
Sequence: SB03988
Standard ID: 22L0308

13C8-PFOSA	2.00	2.18	9.2	30.00
D5-NETFOSA	2.00	2.35	17.3	30.00
D3-NMEFOSA	2.00	2.27	13.3	30.00
D3-NMEFOSAA	4.00	4.49	12.4	30.00
D5-NETFOSAA	4.00	4.14	3.5	30.00
D7-NMEFOSE	20.0	25.6	27.8	30.00
D9-NETFOSE	20.0	23.5	17.5	30.00
13C3-HFPO-DA	8.00	8.51	6.4	30.00

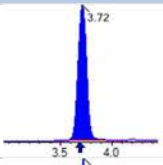
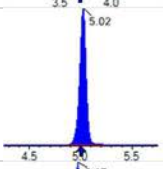
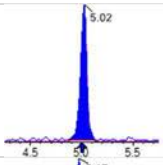
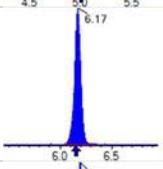
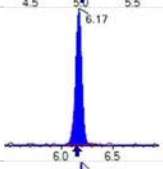
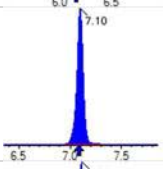
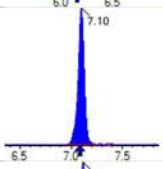
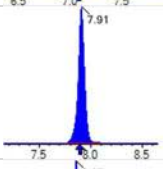
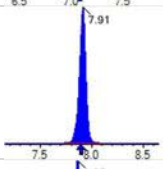
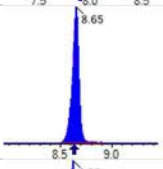
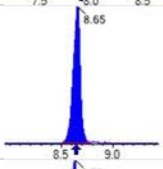
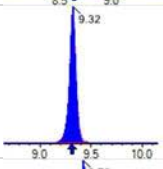
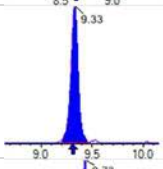
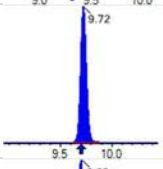
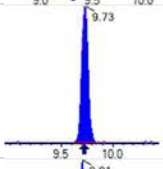
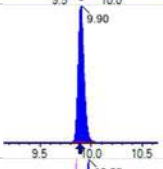
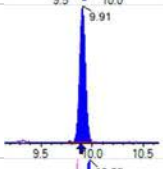
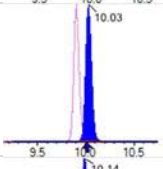
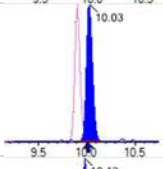
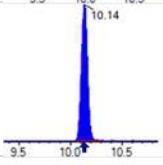
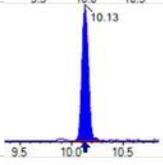
* Values outside of QC limits

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (10)
Acquired: 2022/12/27 - 19:06

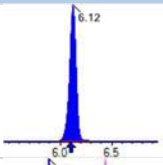
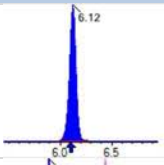
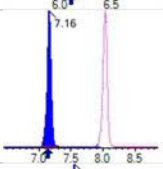
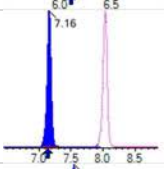
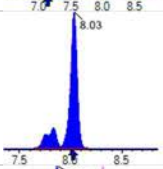
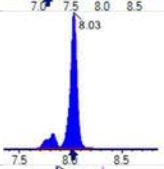
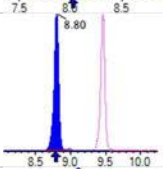
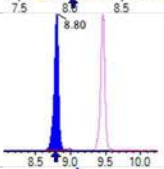
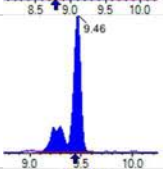
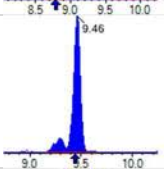
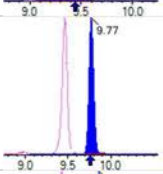
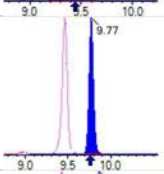
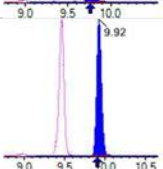
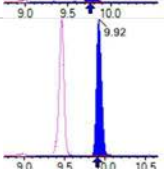
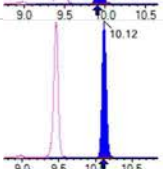
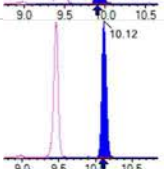
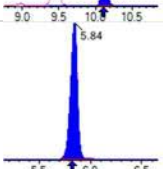
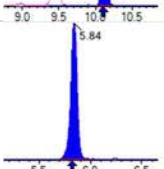
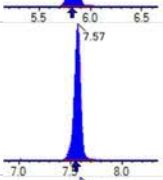
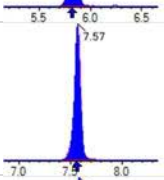
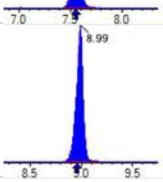
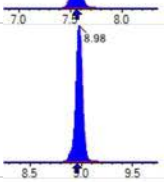
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2025875	(3.72 , 1.00) (0.00 , N/A , 0.0)	475.4	N/A 0.0 0.0	7.9600 [8.0000]	99.5%			
PFPeA	(263.0 / 219.0) 1239150 (263.0 / 69.0) 13224	(5.02 , 1.00) (0.00 , N/A , 0.1)	505.2 147.4	0.0107 98.9 98.9	3.7957 [4.0000]	94.9%			
PFHxA	(313.0 / 269.0) 796820 (313.0 / 119.0) 74864	(6.17 , 1.00) (0.00 , N/A , 0.0)	476.8 260.3	0.0940 104.4 104.4	1.9131 [2.0000]	95.7%			
PFHpA	(363.0 / 319.0) 744591 (363.0 / 169.0) 203780	(7.10 , 1.00) (0.00 , N/A , -0.1)	469.1 431.4	0.2737 89.9 89.9	2.0352 [2.0000]	101.8%			
PFOA	(413.0 / 369.0) 779430 (413.0 / 169.0) 249349	(7.91 , 1.00) (0.00 , N/A , -0.2)	605.2 503.1	0.3199 95.2 95.2	1.9076 [2.0000]	95.4%			
PFNA	(463.0 / 419.0) 626203 (463.0 / 169.0) 119829	(8.65 , 1.00) (0.00 , N/A , -0.1)	526.2 336.1	0.1914 91.5 91.5	1.9402 [2.0000]	97.0%			
PFDA	(513.0 / 469.0) 855738 (513.0 / 169.0) 81512	(9.32 , 1.00) (0.00 , N/A , -0.6)	569.7 243.2	0.0953 106.9 106.9	2.0638 [2.0000]	103.2%			
PFUnA	(563.0 / 519.0) 988647 (563.0 / 169.0) 91942	(9.72 , 1.00) (0.00 , N/A , -0.4)	589.5 396.8	0.0930 88.3 88.3	2.1126 [2.0000]	105.6%			
PFDoA	(613.0 / 569.0) 1011939 (613.0 / 169.0) 121253	(9.90 , 1.00) (0.00 , N/A , -0.4)	705.1 354.4	0.1198 93.3 93.3	1.8219 [2.0000]	91.1%			
PFTrDA	(663.0 / 619.0) 1016481 (663.0 / 169.0) 166408	(10.03 , 1.01) (N/A , 0.01 , 0.2)	877.5 305.6	0.1637 71.7 71.7	2.1651 [2.0000]	108.3%			
PFTeDA	(713.0 / 669.0) 823329 (713.0 / 169.0) 138435	(10.14 , 1.00) (0.00 , N/A , 0.3)	473.4 255.0	0.1681 80.5 80.5	2.4954 [2.0000]	124.8%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (10)
Acquired: 2022/12/27 - 19:06

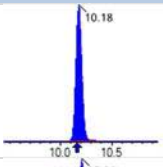
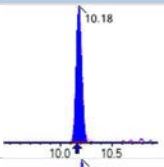
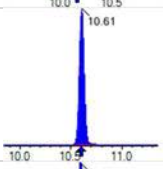
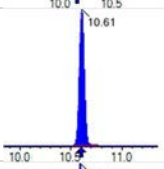
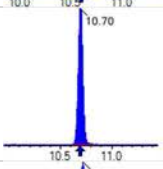
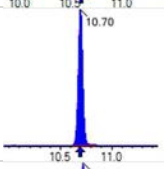
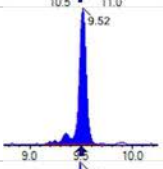
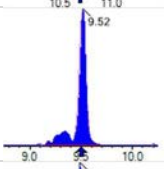
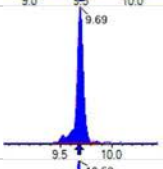
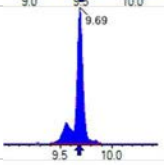
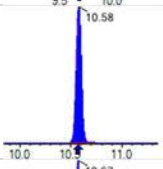
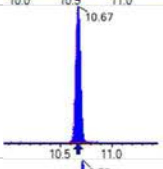
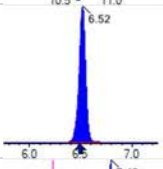
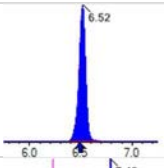
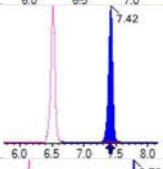
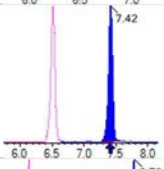
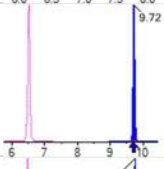
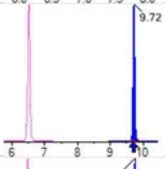
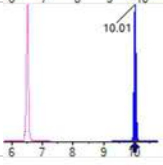
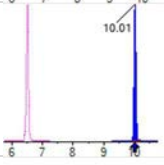
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 1196837 (299.0 / 99.0) 732502	(6.12 , 1.00) (0.00 , N/A , 0.1)	614.9 594.9	0.6120 91.8 91.8	1.8579 [1.7695]	105.0%			
PFPeS	(349.0 / 80.0) 1812053 (349.0 / 99.0) 676544	(7.16 , 0.89) (N/A , 0.02 , 0.0)	664.2 576.2	0.3734 101.4 101.4	1.9021 [1.8768]	101.4%			
PFHxS	(399.0 / 80.0) 1521204 (399.0 / 99.0) 529961	(8.03 , 1.00) (0.00 , N/A , 0.1)	586.6 680.3	0.3484 108.9 108.9	1.7448 [1.8220]	95.8%			
PFHpS	(449.0 / 80.0) 1559514 (449.0 / 99.0) 427164	(8.80 , 0.93) (N/A , 0.02 , 0.0)	630.5 430.1	0.2739 103.0 103.0	1.6618 [1.9028]	87.3%			
PFOS	(499.0 / 80.0) 1610036 (499.0 / 99.0) 376326	(9.46 , 1.00) (0.00 , N/A , 0.1)	345.4 569.4	0.2337 102.3 102.3	1.4066 [1.8550]	75.8%			24876293.84 732740000
PFNS	(549.0 / 80.0) 2021181 (549.0 / 99.0) 477406	(9.77 , 1.03) (N/A , 0.01 , 0.1)	665.4 474.9	0.2362 100.5 100.5	1.7722 [1.9198]	92.3%			
PFDS	(599.0 / 80.0) 2592972 (599.0 / 99.0) 558127	(9.92 , 1.05) (N/A , 0.02 , 0.1)	926.0 618.5	0.2152 96.1 96.1	1.8593 [1.9262]	96.5%			
PFDoS	(699.0 / 80.0) 1008552 (699.0 / 99.0) 209472	(10.12 , 1.07) (N/A , 0.01 , 0.1)	936.2 582.9	0.2077 101.5 101.5	1.8104 [1.9391]	93.4%			
4:2FTS	(327.0 / 307.0) 2813195 (327.0 / 81.0) 1705177	(5.84 , 1.00) (0.00 , N/A , 0.1)	699.7 557.0	0.6061 93.9 93.9	7.7129 [7.4762]	103.2%			
6:2FTS	(427.0 / 407.0) 1769217 (427.0 / 81.0) 1224890	(7.57 , 1.00) (-0.01 , N/A , 0.1)	712.4 572.5	0.6923 97.9 97.9	8.6093 [7.5923]	113.4%			
8:2FTS	(527.0 / 507.0) 1509163 (527.0 / 81.0) 1131163	(8.99 , 1.00) (0.00 , N/A , 0.6)	551.2 458.4	0.7495 106.7 106.7	6.9407 [7.6663]	90.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (10)
Acquired: 2022/12/27 - 19:06

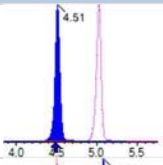
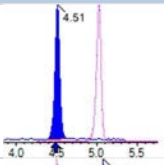
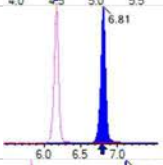
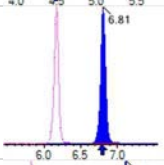
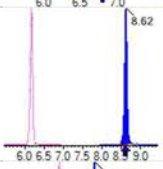
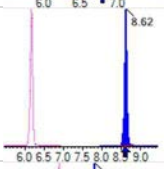
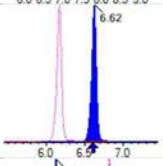
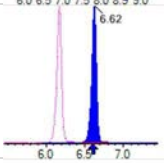
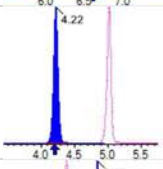
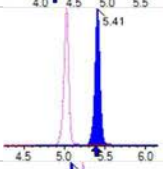
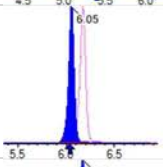
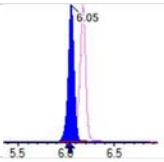
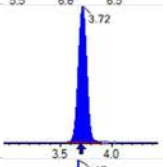
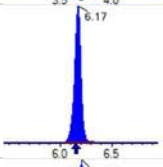
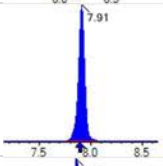
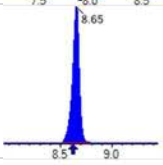
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 2248241 (498.0 / 478.0) 52918	(10.18 , 1.00) (0.00 , N/A , 0.0)	926.7 320.6	0.0235 147.7 147.7	1.9292 [2.0000]	96.5%			
NMeFOSA	(512.0 / 219.0) 1675884 (512.0 / 169.0) 1099956	(10.61 , 1.00) (0.00 , N/A , 0.0)	1098.7 955.8	0.6563 96.5 96.5	7.8872 [8.0000]	98.6%			
NEtFOSA	(526.0 / 219.0) 1565649 (526.0 / 169.0) 1668857	(10.70 , 1.00) (0.00 , N/A , 0.0)	1216.5 1323.9	1.0659 106.1 106.1	7.5589 [8.0000]	94.5%			
NMeFOSAA	(570.0 / 419.0) 390268 (570.0 / 483.0) 208038	(9.52 , 1.00) (0.00 , N/A , -0.1)	326.1 354.8	0.5331 106.8 106.8	1.8288 [2.0000]	91.4%			
NEtFOSAA	(584.0 / 419.0) 357604 (584.0 / 526.0) 236787	(9.69 , 1.00) (0.00 , N/A , 0.3)	431.9 537.2	0.6621 110.2 110.2	2.0343 [2.0000]	101.7%			
NMeFOSE	(616.0 / 59.0) 336960	(10.58 , 1.00) (0.01 , N/A , 0.0)	1062.8	N/A 0.0 0.0	6.7628 [8.0000]	84.5%			
NEtFOSE	(630.0 / 59.0) 51211	(10.67 , 1.00) (0.01 , N/A , 0.0)	634.3	N/A 0.0 0.0	8.2278 [8.0000]	102.8%			
HFPO-DA	(285.0 / 169.0) 586202 (285.0 / 185.0) 1543536	(6.52 , 1.00) (0.00 , N/A , 0.0)	635.2 667.4	2.6331 95.7 95.7	3.9424 [4.0000]	98.6%			
ADONA	(377.0 / 85.0) 2424152 (377.0 / 251.0) 268625	(7.42 , 1.14) (N/A , 0.02 , 0.0)	633.0 342.2	0.1108 96.3 96.3	3.8072 [3.7708]	101.0%			
9Cl-Pf3ONS	(531.0 / 351.0) 6169299 (533.0 / 353.0) 1968292	(9.72 , 1.49) (N/A , 0.01 , -0.1)	664.7 722.0	0.3190 99.7 99.7	3.6917 [3.7330]	98.9%			
11Cl-PF3OUDS	(631.0 / 451.0) 3391732 (633.0 / 453.0) 1108978	(10.01 , 1.54) (N/A , 0.01 , 0.1)	1196.5 860.6	0.3270 111.7 111.7	3.8826 [3.7728]	102.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (10)
Acquired: 2022/12/27 - 19:06

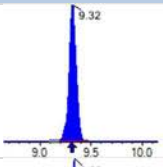
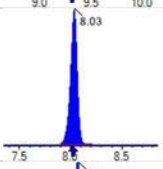
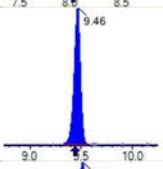
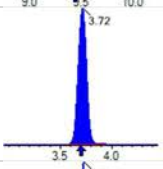
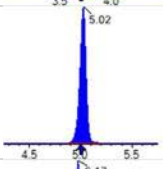
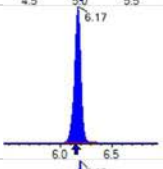
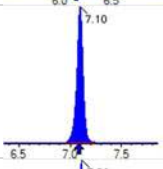
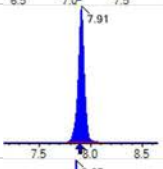
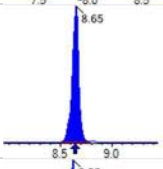
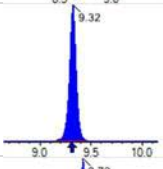
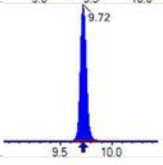
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 79446 (241.0 / 117.0) 107676	(4.51 , 0.90) (N/A , 0.02 , 0.1)	556.4 280.3	1.3553 99.2 99.2	6.9542 [8.0000]	86.9%			
5:3FTCA	(341.0 / 236.7) 446490 (341.0 / 217.0) 714770	(6.81 , 1.10) (N/A , 0.02 , 0.2)	535.4 509.5	1.6009 96.3 96.3	6.9890 [8.0000]	87.4%			
7:3FTCA	(441.0 / 317.0) 582223 (441.0 / 337.0) 502871	(8.62 , 1.40) (N/A , 0.02 , 0.1)	449.7 426.3	0.8637 103.3 103.3	7.3981 [8.0000]	92.5%			
PFEESA	(315.0 / 135.0) 1252313 (315.0 / 83.0) 404798	(6.62 , 1.07) (N/A , 0.02 , -0.1)	640.6 474.6	0.3232 105.0 105.0	3.0189 [3.5698]	84.6%			
PFMPA	(229.0 / 85.0) 348558	(4.22 , 0.84) (N/A , 0.02 , 0.0)	934.7	N/A 0.0 0.0	3.5182 [4.0000]	88.0%			
PFMBA	(279.0 / 85.0) 955599	(5.41 , 1.08) (N/A , 0.02 , 0.0)	719.9	N/A 0.0 0.0	3.6846 [4.0000]	92.1%			
NFDHA	(295.0 / 201.0) 778853 (295.0 / 85.0) 668163	(6.05 , 0.98) (N/A , 0.03 , 0.2)	599.6 551.4	0.8579 98.8 98.8	3.9110 [4.0000]	97.8%			
13C3_PFBA_IIS	(216.0 / 172.0) 266017	(3.72 , N/A) (N/A , 0.02 , N/A)	531.7	N/A	0.9841 [1.0000]	98.4% { 91.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 368731	(6.17 , N/A) (N/A , 0.02 , N/A)	531.9	N/A	0.9285 [1.0000]	92.8% { 92.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 373009	(7.91 , N/A) (N/A , 0.02 , N/A)	592.9	N/A	0.9337 [1.0000]	93.4% { 93.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 300536	(8.65 , N/A) (N/A , 0.03 , N/A)	608.8	N/A	0.9092 [1.0000]	90.9% { 82.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (10)
Acquired: 2022/12/27 - 19:06

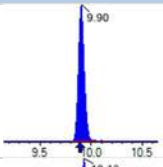
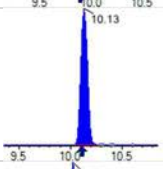
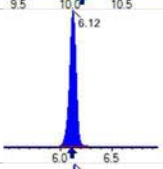
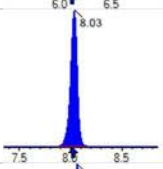
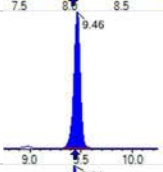
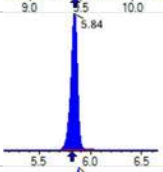
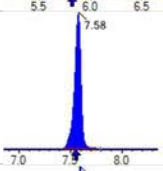
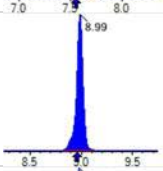
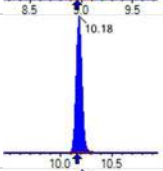
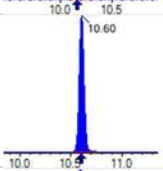
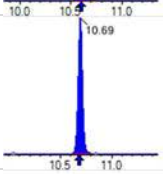
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 340355	(9.32 , N/A) (N/A , 0.01 , N/A)	388.7	N/A	0.9532 [1.0000]	95.3% { 102.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 614664	(8.03 , N/A) (N/A , 0.02 , N/A)	506.0	N/A	0.8813 [1.0000]	88.1% { 82.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 645552	(9.46 , N/A) (N/A , 0.02 , N/A)	376.2	N/A	0.9362 [1.0000]	93.6% { 97.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2427965	(3.72 , N/A) (N/A , 0.02 , N/A)	607.3	N/A	8.4934 [8.0000]	106.2% { 100.7% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1528362	(5.02 , N/A) (N/A , 0.03 , N/A)	526.0	N/A	4.5356 [4.0000]	113.4% { 100.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 914351	(6.17 , N/A) (N/A , 0.03 , N/A)	440.3	N/A	2.2294 [2.0000]	111.5% { 105.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 764029	(7.10 , N/A) (N/A , 0.02 , N/A)	567.1	N/A	2.0849 [2.0000]	104.2% { 91.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 879671	(7.91 , N/A) (N/A , 0.02 , N/A)	555.2	N/A	2.1521 [2.0000]	107.6% { 108.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 356393	(8.65 , N/A) (N/A , 0.02 , N/A)	364.3	N/A	1.0773 [1.0000]	107.7% { 92.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 465568	(9.32 , N/A) (N/A , 0.02 , N/A)	435.6	N/A	1.0457 [1.0000]	104.6% { 103.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 590973	(9.72 , N/A) (N/A , 0.01 , N/A)	387.9	N/A	1.0953 [1.0000]	109.5% { 97.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (10)
Acquired: 2022/12/27 - 19:06

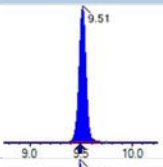
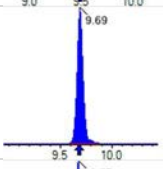
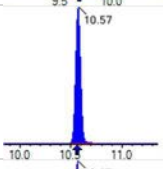
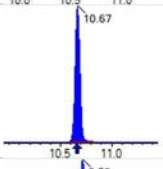
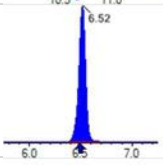
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 648087	(9.90 , N/A) (N/A , 0.01 , N/A)	678.1	N/A	1.0913 [1.0000]	109.1% { 94.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 363266	(10.13 , N/A) (N/A , 0.01 , N/A)	942.6	N/A	0.9267 [1.0000]	92.7% { 82.5% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2309786	(6.12 , N/A) (N/A , 0.02 , N/A)	660.4	N/A	2.2316 [2.0000]	111.6% { 91.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1134401	(8.03 , N/A) (N/A , 0.02 , N/A)	875.3	N/A	2.0648 [2.0000]	103.2% { 89.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1972947	(9.46 , N/A) (N/A , 0.02 , N/A)	327.9	N/A	2.3598 [2.0000]	118.0% { 120.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 511386	(5.84 , N/A) (N/A , 0.03 , N/A)	452.4	N/A	4.1954 [4.0000]	104.9% { 99.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 600578	(7.58 , N/A) (N/A , 0.03 , N/A)	545.9	N/A	3.9648 [4.0000]	99.1% { 100.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 645563	(8.99 , N/A) (N/A , 0.03 , N/A)	514.3	N/A	4.3229 [4.0000]	108.1% { 105.7% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2428477	(10.18 , N/A) (N/A , 0.02 , N/A)	800.0	N/A	2.1847 [2.0000]	109.2% { 101.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 488523	(10.60 , N/A) (N/A , 0.01 , N/A)	1048.3	N/A	2.2662 [2.0000]	113.3% { 107.3% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 450697	(10.69 , N/A) (N/A , 0.01 , N/A)	1018.6	N/A	2.3465 [2.0000]	117.3% { 110.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-SCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (10)
Acquired: 2022/12/27 - 19:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1027916	(9.51 , N/A) (N/A , 0.02 , N/A)	465.3	N/A	4.4944 [4.0000]	112.4% { 98.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 810814	(9.69 , N/A) (N/A , 0.02 , N/A)	362.0	N/A	4.1391 [4.0000]	103.5% { 88.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 882614	(10.57 , N/A) (N/A , 0.01 , N/A)	1417.3	N/A	25.5557 [20.0000]	127.8% { 119.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 328289	(10.67 , N/A) (N/A , 0.01 , N/A)	1140.5	N/A	23.5048 [20.0000]	117.5% { 108.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1937939	(6.52 , N/A) (N/A , 0.02 , N/A)	868.8	N/A	8.5091 [8.0000]	106.4% { 98.8% }			

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2253007
Laboratory ID: SB03989-LCV1
Sequence: SB03989
Standard ID: 22L0300

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.540	34.9 *	30.00
PFPEA	0.200	0.207	3.7	30.00
PFHXA	0.100	0.0952	-4.8	30.00
PFHPA	0.100	0.103	2.8	30.00
PFOA	0.100	0.112	11.7	30.00
PFNA	0.100	0.0950	-5.0	30.00
PFDA	0.100	0.107	7.4	30.00
PFUnA	0.100	0.118	18.3	30.00
PFDOA	0.100	0.0989	-1.1	30.00
PFTRDA	0.100	0.0800	-20.0	30.00
PFTEDA	0.100	0.102	1.6	30.00
PFBS	0.0885	0.0850	-4.0	30.00
PFPES	0.0940	0.0869	-7.6	30.00
PFHXS	0.0915	0.0978	6.8	30.00
PFHPS	0.0955	0.0954	-0.1	30.00
PFOS	0.0930	0.111	19.3	30.00
PFNS	0.0960	0.107	11.7	30.00
PFDS	0.0965	0.109	12.7	30.00
PFDOS	0.0970	0.105	8.4	30.00
4:2FTS	0.375	0.389	3.6	30.00
6:2FTS	0.380	0.445	17.1	30.00
8:2FTS	0.384	0.363	-5.5	30.00
PFOSA	0.100	0.103	3.1	30.00
NMeFOSA	0.400	0.457	14.3	30.00
NEtFOSA	0.400	0.402	0.5	30.00
NMeFOSAA	0.100	0.127	27.4	30.00
NEtFOSAA	0.100	0.106	6.1	30.00
NMeFOSE	0.400	0.398	-0.5	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC
SDG:
Client: AECOM
Project: Red Hill AFFF Assessment Sampling
Calibration: 2253007
Laboratory ID: SB03989-LCV1
Sequence: SB03989
Standard ID: 22L0300

NEtFOSE	0.400	0.396	-1.0	30.00
HFPO-DA	0.200	0.196	-2.0	30.00
ADONA	0.189	0.188	-0.4	30.00
PFEESA	0.178	0.177	-0.4	30.00
PFMPA	0.200	0.207	3.3	30.00
PFMBA	0.200	0.176	-12.0	30.00
NFDHA	0.200	0.221	10.3	30.00
9CL-PF3ONS	0.187	0.189	0.9	30.00
11CL-PF3OUDS	0.189	0.192	1.7	30.00
3:3FTCA	0.400	0.386	-3.4	30.00
5:3FTCA	0.400	0.516	29.0	30.00
7:3FTCA	0.400	0.359	-10.3	30.00

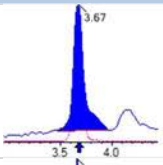
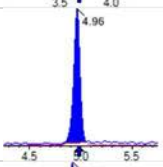
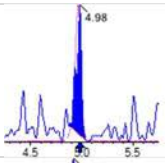
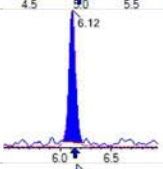
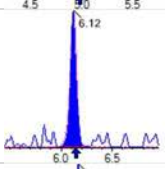
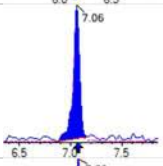
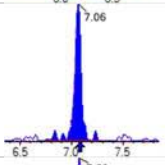
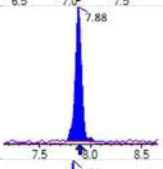
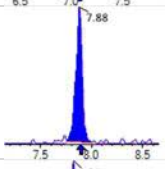
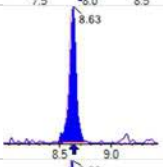
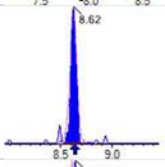
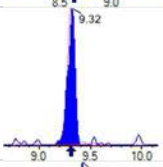
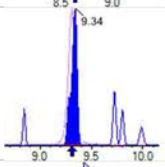
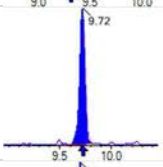
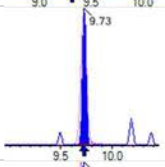
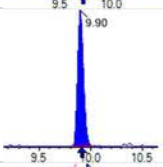
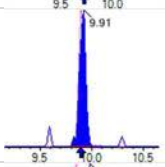
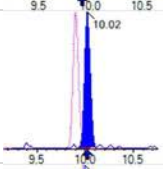
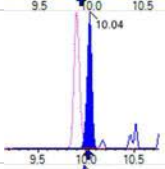
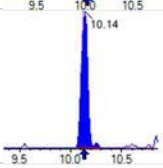
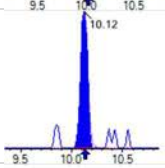
* Values outside of QC limits

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (2)
Acquired: 2022/12/27 - 19:45

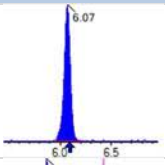
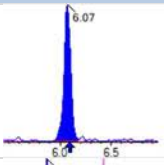
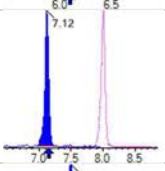
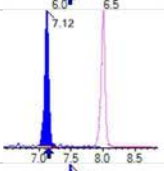
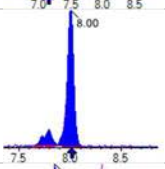
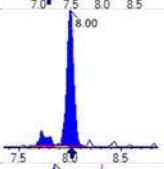
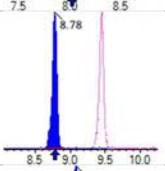
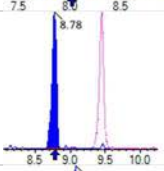
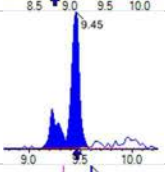
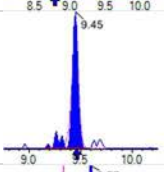
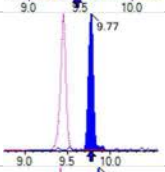
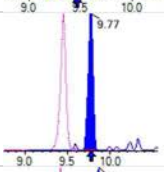
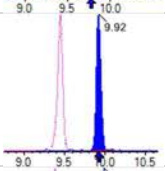
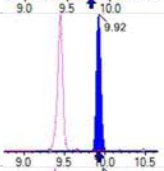
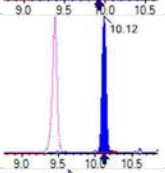
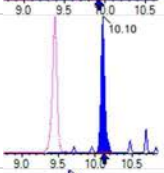
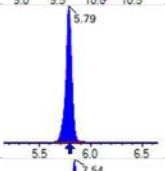
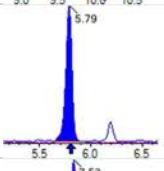
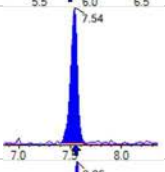
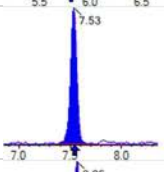
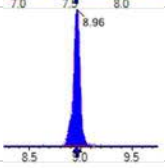
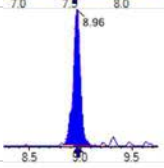
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 134887	(3.67 , 1.00) (0.00 , N/A , 0.0)	109.9	N/A 0.0 0.0	0.5395 [0.4000]	134.9%			QC,
PFPeA	(263.0 / 219.0) 63485 (263.0 / 69.0) 695	(4.96 , 1.00) (0.00 , N/A , -1.0)	221.3 21.8	0.0110 101.5 103.2	0.2073 [0.2000]	103.7%			
PFHxA	(313.0 / 269.0) 35347 (313.0 / 119.0) 4984	(6.12 , 1.00) (-0.01 , N/A , -0.1)	85.0 35.6	0.1410 156.7 163.2	0.0952 [0.1000]	95.2%			IR2,
PFHpA	(363.0 / 319.0) 38125 (363.0 / 169.0) 11892	(7.06 , 1.00) (0.00 , N/A , -0.3)	96.1 2973.7	0.3119 102.5 104.9	0.1028 [0.1000]	102.8%			
PFOA	(413.0 / 369.0) 43933 (413.0 / 169.0) 12665	(7.88 , 1.00) (0.00 , N/A , 0.0)	169.1 103.0	0.2883 85.8 92.0	0.1117 [0.1000]	111.7%			
PFNA	(463.0 / 419.0) 29106 (463.0 / 169.0) 7125	(8.63 , 1.00) (0.01 , N/A , 0.5)	96.9 125.1	0.2448 117.1 116.1	0.0950 [0.1000]	95.0%			
PFDA	(513.0 / 469.0) 42365 (513.0 / 169.0) 3980	(9.32 , 1.00) (0.01 , N/A , -1.0)	92.3 52.1	0.0939 105.4 119.2	0.1074 [0.1000]	107.4%			
PFUnA	(563.0 / 519.0) 52405 (563.0 / 169.0) 3472	(9.72 , 1.00) (0.00 , N/A , -0.6)	180.7 92.3	0.0662 62.9 57.8	0.1183 [0.1000]	118.3%			
PFDoA	(613.0 / 569.0) 58142 (613.0 / 169.0) 7848	(9.90 , 1.00) (0.00 , N/A , -0.8)	304.2 147.2	0.1350 105.1 101.2	0.0989 [0.1000]	98.9%			
PFTrDA	(663.0 / 619.0) 39722 (663.0 / 169.0) 7343	(10.02 , 1.01) (N/A , 0.00 , -0.9)	154.4 70.6	0.1849 81.0 88.2	0.0800 [0.1000]	80.0%			
PFTeDA	(713.0 / 669.0) 37837 (713.0 / 169.0) 4643	(10.14 , 1.00) (0.01 , N/A , 0.8)	128.8 38.7	0.1227 58.8 66.6	0.1016 [0.1000]	101.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (2)
Acquired: 2022/12/27 - 19:45

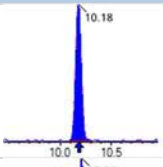
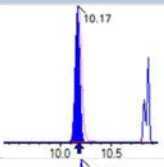
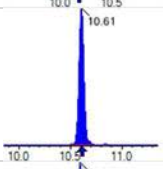
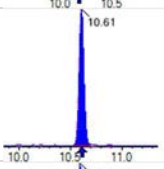
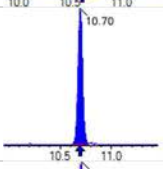
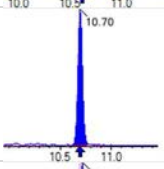
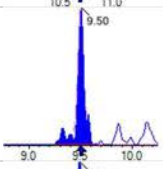
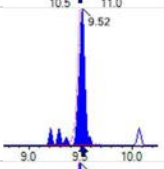
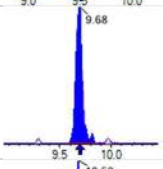
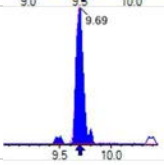
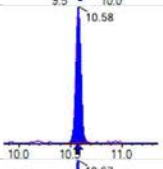
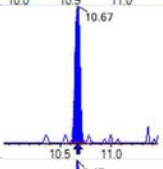
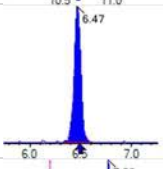
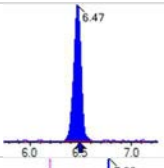
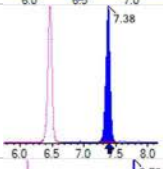
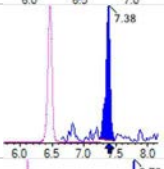
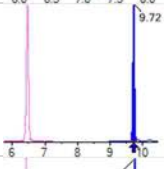
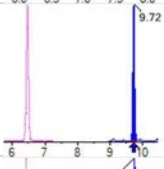
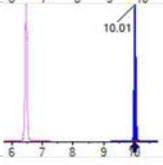
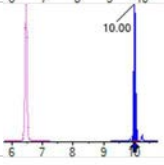
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 54014 (299.0 / 99.0) 34812	(6.07 , 1.00) (0.00 , N/A , 0.0)	377.0 153.5	0.6445 96.7 108.3	0.0850 [0.0885]	96.0%			
PFPeS	(349.0 / 80.0) 81244 (349.0 / 99.0) 32489	(7.12 , 0.89) (N/A , -0.01 , 0.1)	296.2 182.6	0.3999 108.6 105.4	0.0869 [0.0938]	92.6%			
PFHxS	(399.0 / 80.0) 83651 (399.0 / 99.0) 28205	(8.00 , 1.00) (0.00 , N/A , 0.2)	307.5 195.0	0.3372 105.4 106.6	0.0978 [0.0911]	107.3%			
PFHpS	(449.0 / 80.0) 73898 (449.0 / 99.0) 21543	(8.78 , 0.93) (N/A , 0.00 , 0.2)	284.7 188.9	0.2915 109.6 107.1	0.0954 [0.0951]	100.3%			
PFOS	(499.0 / 80.0) 104806 (499.0 / 99.0) 17913	(9.45 , 1.00) (0.00 , N/A , 0.2)	82.3 753.5	0.1709 74.8 75.9	0.1109 [0.0927]	119.6%			
PFNS	(549.0 / 80.0) 101005 (549.0 / 99.0) 22881	(9.77 , 1.03) (N/A , 0.00 , 0.1)	172.5 78.8	0.2265 96.4 96.1	0.1073 [0.0960]	111.8%			
PFDS	(599.0 / 80.0) 125191 (599.0 / 99.0) 36806	(9.92 , 1.05) (N/A , 0.00 , -0.1)	285.1 512.3	0.2940 131.2 122.2	0.1087 [0.0963]	112.9%			
PFDoS	(699.0 / 80.0) 48369 (699.0 / 99.0) 10972	(10.12 , 1.07) (N/A , 0.01 , 1.1)	289.2 78.8	0.2268 110.8 112.5	0.1052 [0.0970]	108.5%			
4:2FTS	(327.0 / 307.0) 141954 (327.0 / 81.0) 88928	(5.79 , 1.00) (0.00 , N/A , -0.1)	525.2 151.5	0.6265 97.1 104.2	0.3885 [0.3738]	103.9%			
6:2FTS	(427.0 / 407.0) 91248 (427.0 / 81.0) 71343	(7.54 , 1.00) (0.00 , N/A , 0.4)	165.8 214.0	0.7819 110.6 114.0	0.4448 [0.3796]	117.2%			
8:2FTS	(527.0 / 507.0) 68741 (527.0 / 81.0) 49665	(8.96 , 1.00) (0.00 , N/A , 0.0)	372.3 119.3	0.7225 102.9 97.2	0.3630 [0.3833]	94.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (2)
Acquired: 2022/12/27 - 19:45

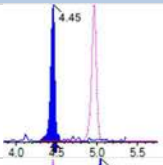
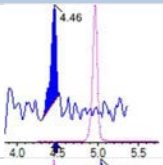
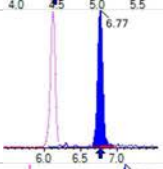
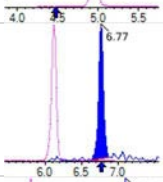
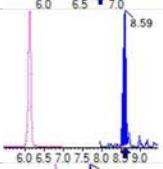
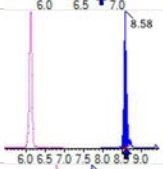
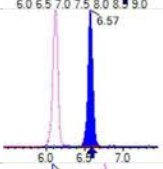
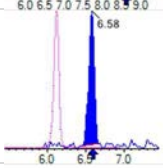
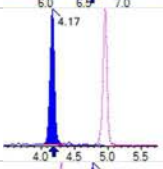
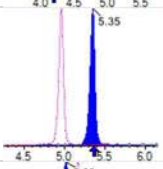
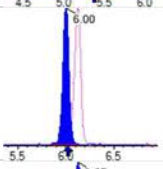
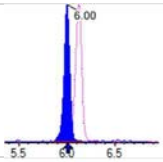
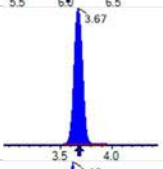
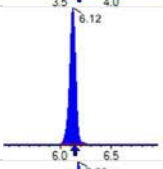
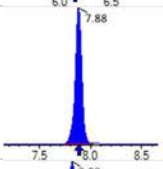
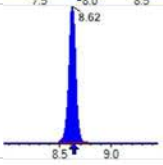
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 120169 (498.0 / 478.0) 1078	(10.18 , 1.00) (0.00 , N/A , 0.6)	214.4 892.4	0.0090 56.3 35.7	0.1031 [0.1000]	103.1%			
NMeFOSA	(512.0 / 219.0) 91955 (512.0 / 169.0) 59923	(10.61 , 1.00) (0.00 , N/A , -0.1)	536.9 398.3	0.6517 95.8 97.3	0.4572 [0.4000]	114.3%			
NEtFOSA	(526.0 / 219.0) 86288 (526.0 / 169.0) 89759	(10.70 , 1.00) (0.00 , N/A , 0.1)	574.9 357.5	1.0402 103.6 100.9	0.4019 [0.4000]	100.5%			
NMeFOSAA	(570.0 / 419.0) 22114 (570.0 / 483.0) 9473	(9.50 , 1.00) (0.01 , N/A , -0.6)	82.7 18590.9	0.4284 85.8 82.8	0.1274 [0.1000]	127.4%			
NEtFOSAA	(584.0 / 419.0) 16037 (584.0 / 526.0) 12046	(9.68 , 1.00) (0.00 , N/A , -0.3)	101.1 13019.3	0.7512 125.0 136.6	0.1061 [0.1000]	106.1%			
NMeFOSE	(616.0 / 59.0) 19199	(10.58 , 1.00) (0.01 , N/A , 0.0)	211.7	N/A 0.0 0.0	0.3982 [0.4000]	99.5%			
NEtFOSE	(630.0 / 59.0) 2750	(10.67 , 1.00) (0.00 , N/A , 0.0)	81.0	N/A 0.0 0.0	0.3960 [0.4000]	99.0%			
HFPO-DA	(285.0 / 169.0) 29901 (285.0 / 185.0) 78716	(6.47 , 1.00) (0.00 , N/A , 0.0)	308.2 307.7	2.6325 95.6 98.5	0.1960 [0.2000]	98.0%			
ADONA	(377.0 / 85.0) 122985 (377.0 / 251.0) 15316	(7.38 , 1.14) (N/A , -0.01 , -0.1)	486.8 51.5	0.1245 108.2 112.8	0.1883 [0.1885]	99.9%			
9Cl-Pf3ONS	(531.0 / 351.0) 323386 (533.0 / 353.0) 99993	(9.72 , 1.50) (N/A , 0.00 , -0.1)	322.6 235.0	0.3092 96.6 98.5	0.1887 [0.1867]	101.1%			
11Cl-PF3OUDS	(631.0 / 451.0) 172201 (633.0 / 453.0) 52016	(10.01 , 1.55) (N/A , 0.01 , 0.6)	789.3 377.6	0.3021 103.2 84.8	0.1922 [0.1886]	101.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (2)
Acquired: 2022/12/27 - 19:45

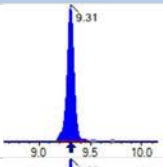
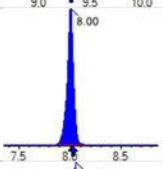
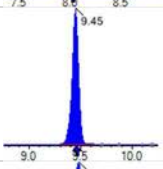
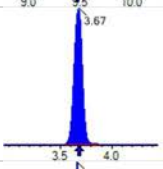
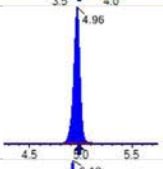
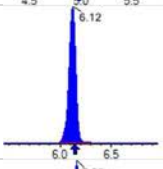
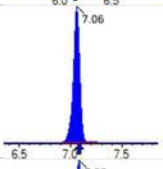
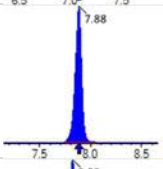
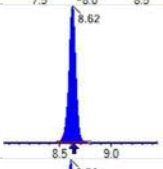
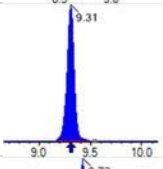
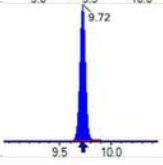
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 4140 (241.0 / 117.0) 5679	(4.45 , 0.90) (N/A , -0.02 , -0.1)	110.3 21.3	1.3719 100.5 102.4	0.3863 [0.4000]	96.6%			
5:3FTCA	(341.0 / 236.7) 29374 (341.0 / 217.0) 36837	(6.77 , 1.11) (N/A , -0.01 , 0.1)	179.0 91.7	1.2541 75.4 77.8	0.5159 [0.4000]	129.0%			
7:3FTCA	(441.0 / 317.0) 25176 (441.0 / 337.0) 28460	(8.59 , 1.40) (N/A , 0.00 , 0.6)	94.4 206.9	1.1304 135.2 131.5	0.3589 [0.4000]	89.7%			
PFEESA	(315.0 / 135.0) 65570 (315.0 / 83.0) 20381	(6.57 , 1.07) (N/A , -0.02 , -0.4)	369.7 78.9	0.3108 100.9 100.6	0.1773 [0.1785]	99.4%			
PFMPA	(229.0 / 85.0) 19198	(4.17 , 0.84) (N/A , -0.01 , 0.0)	259.8	N/A 0.0 0.0	0.2066 [0.2000]	103.3%			
PFMBA	(279.0 / 85.0) 42825	(5.35 , 1.08) (N/A , -0.02 , 0.0)	342.3	N/A 0.0 0.0	0.1760 [0.2000]	88.0%			
NFDHA	(295.0 / 201.0) 39156 (295.0 / 85.0) 36211	(6.00 , 0.98) (N/A , -0.02 , -0.1)	302.7 263.9	0.9248 106.5 103.1	0.2206 [0.2000]	110.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 267976	(3.67 , N/A) (N/A , -0.01 , N/A)	572.9	N/A	0.9913 [1.0000]	99.1% { 93.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 367562	(6.12 , N/A) (N/A , -0.01 , N/A)	658.8	N/A	0.9255 [1.0000]	92.6% { 89.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 374305	(7.88 , N/A) (N/A , -0.01 , N/A)	499.2	N/A	0.9370 [1.0000]	93.7% { 95.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 299703	(8.62 , N/A) (N/A , -0.01 , N/A)	486.7	N/A	0.9067 [1.0000]	90.7% { 87.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (2)
Acquired: 2022/12/27 - 19:45

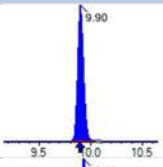
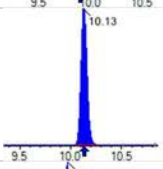
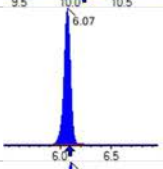
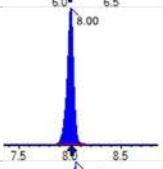
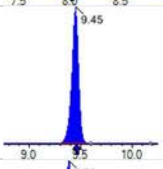
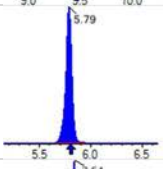
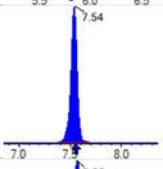
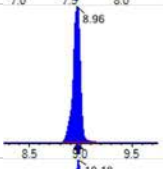
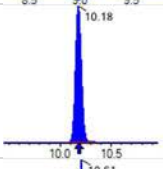
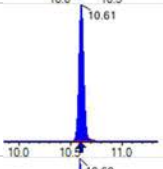
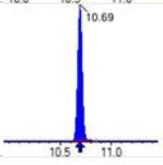
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 333458	(9.31 , N/A) (N/A , 0.00 , N/A)	285.9	N/A	0.9339 [1.0000]	93.4% { 92.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 592209	(8.00 , N/A) (N/A , -0.01 , N/A)	703.2	N/A	0.8491 [1.0000]	84.9% { 90.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 647807	(9.45 , N/A) (N/A , 0.00 , N/A)	315.8	N/A	0.9394 [1.0000]	93.9% { 95.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2385119	(3.67 , N/A) (N/A , 0.00 , N/A)	654.1	N/A	8.2825 [8.0000]	103.5% { 101.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1433537	(4.96 , N/A) (N/A , -0.01 , N/A)	626.0	N/A	4.2677 [4.0000]	106.7% { 100.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 814972	(6.12 , N/A) (N/A , -0.02 , N/A)	506.7	N/A	1.9934 [2.0000]	99.7% { 86.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 774731	(7.06 , N/A) (N/A , -0.01 , N/A)	574.7	N/A	2.1209 [2.0000]	106.0% { 96.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 846784	(7.88 , N/A) (N/A , -0.01 , N/A)	519.7	N/A	2.0645 [2.0000]	103.2% { 103.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 338235	(8.62 , N/A) (N/A , -0.01 , N/A)	388.5	N/A	1.0252 [1.0000]	102.5% { 90.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 442845	(9.31 , N/A) (N/A , 0.00 , N/A)	298.7	N/A	1.0152 [1.0000]	101.5% { 104.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 559601	(9.72 , N/A) (N/A , 0.00 , N/A)	436.0	N/A	1.0586 [1.0000]	105.9% { 87.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (2)
Acquired: 2022/12/27 - 19:45

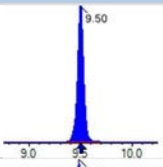
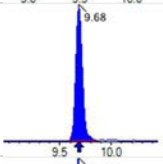
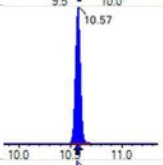
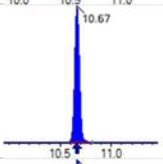
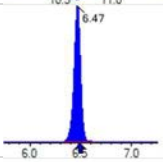
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 685640	(9.90 , N/A) (N/A , 0.00 , N/A)	760.4	N/A	1.1784 [1.0000]	117.8% { 108.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 410063	(10.13 , N/A) (N/A , 0.00 , N/A)	1004.4	N/A	1.0677 [1.0000]	106.8% { 92.7% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2279780	(6.07 , N/A) (N/A , -0.02 , N/A)	533.2	N/A	2.2861 [2.0000]	114.3% { 105.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1113383	(8.00 , N/A) (N/A , -0.01 , N/A)	695.3	N/A	2.1034 [2.0000]	105.2% { 98.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1628808	(9.45 , N/A) (N/A , -0.01 , N/A)	415.2	N/A	1.9414 [2.0000]	97.1% { 88.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 512280	(5.79 , N/A) (N/A , -0.01 , N/A)	663.1	N/A	4.3621 [4.0000]	109.1% { 95.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 599546	(7.54 , N/A) (N/A , -0.01 , N/A)	714.0	N/A	4.1081 [4.0000]	102.7% { 88.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 562235	(8.96 , N/A) (N/A , -0.01 , N/A)	507.8	N/A	3.9076 [4.0000]	97.7% { 77.7% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2429698	(10.18 , N/A) (N/A , 0.00 , N/A)	894.3	N/A	2.1782 [2.0000]	108.9% { 96.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 462442	(10.61 , N/A) (N/A , 0.00 , N/A)	927.3	N/A	2.1378 [2.0000]	106.9% { 100.3% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 467162	(10.69 , N/A) (N/A , 0.00 , N/A)	1418.7	N/A	2.4237 [2.0000]	121.2% { 94.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-LCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (2)
Acquired: 2022/12/27 - 19:45

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) 836265	(9.50 , N/A) (N/A , 0.00 , N/A)	436.5	N/A	3.6437 [4.0000]	91.1% { 83.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 697196	(9.68 , N/A) (N/A , 0.00 , N/A)	337.3	N/A	3.5467 [4.0000]	88.7% { 96.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 854180	(10.57 , N/A) (N/A , 0.00 , N/A)	1050.2	N/A	24.6463 [20.0000]	123.2% { 88.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 366383	(10.67 , N/A) (N/A , 0.00 , N/A)	1240.6	N/A	26.1410 [20.0000]	130.7% { 87.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1987852	(6.47 , N/A) (N/A , -0.01 , N/A)	663.2	N/A	8.7560 [8.0000]	109.4% { 95.9% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2253007
Standard ID:	22L0304	Sequence:	SB03989

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03989-CCV1	PFBA	20.0	20.3	102	ng/mL	+/- 30.00%
	PFPEA	10.0	10.1	101	ng/mL	+/- 30.00%
	PFHXA	5.00	4.71	94.2	ng/mL	+/- 30.00%
	PFHPA	5.00	4.97	99.4	ng/mL	+/- 30.00%
	PFOA	5.00	5.36	107	ng/mL	+/- 30.00%
	PFNA	5.00	4.66	93.2	ng/mL	+/- 30.00%
	PFDA	5.00	5.43	109	ng/mL	+/- 30.00%
	PFUnA	5.00	4.16	83.3	ng/mL	+/- 30.00%
	PFDOA	5.00	4.95	99.0	ng/mL	+/- 30.00%
	PFTRDA	5.00	5.19	104	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.86	97.3	ng/mL	+/- 30.00%
	PFBS	4.42	5.23	118	ng/mL	+/- 30.00%
	PFPES	4.70	5.09	108	ng/mL	+/- 30.00%
	PFHXS	4.58	4.72	103	ng/mL	+/- 30.00%
	PFHPS	4.78	4.55	95.2	ng/mL	+/- 30.00%
	PFOS	4.65	3.96	85.2	ng/mL	+/- 30.00%
	PFNS	4.80	4.98	104	ng/mL	+/- 30.00%
	PFDS	4.82	4.52	93.9	ng/mL	+/- 30.00%
	PFDOS	4.85	5.37	111	ng/mL	+/- 30.00%
	4:2FTS	18.8	19.3	102	ng/mL	+/- 30.00%
	6:2FTS	19.0	18.6	97.8	ng/mL	+/- 30.00%
	8:2FTS	19.2	15.4	80.1	ng/mL	+/- 30.00%
	PFOSA	5.00	5.11	102	ng/mL	+/- 30.00%
	NMeFOSA	20.0	22.7	114	ng/mL	+/- 30.00%
	NEtFOSA	20.0	19.6	97.8	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.74	94.9	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	6.25	125	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.4	97.2	ng/mL	+/- 30.00%
	NEtFOSE	20.0	19.1	95.3	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.46	94.6	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2253007
Standard ID:	22L0304	Sequence:	SB03989

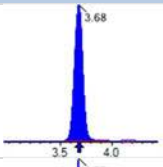
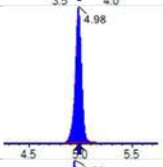
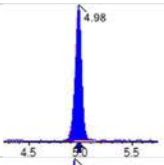
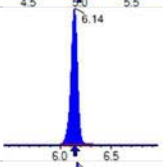
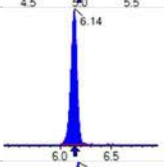
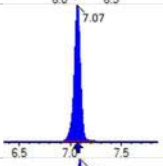
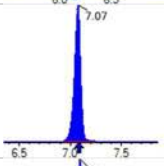
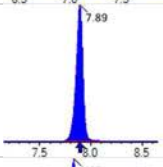
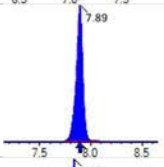
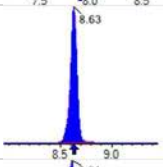
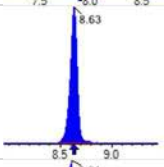
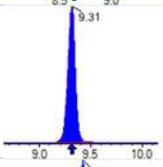
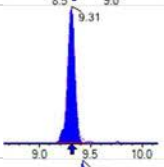
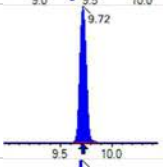
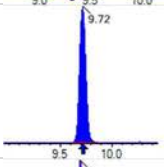
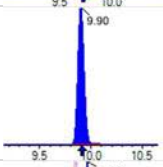
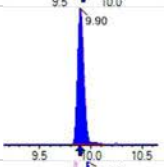
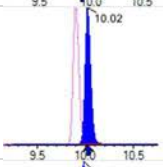
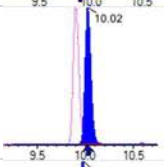
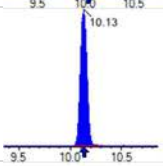
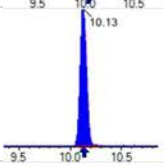
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03989-CCV1	ADONA	9.45	9.37	99.2	ng/mL	+/- 30.00%
	PFEESA	8.90	7.71	86.6	ng/mL	+/- 30.00%
	PFMPA	10.0	10.1	101	ng/mL	+/- 30.00%
	PFMBA	10.0	10.1	101	ng/mL	+/- 30.00%
	NFDHA	10.0	9.55	95.5	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	9.04	96.7	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.20	97.3	ng/mL	+/- 30.00%
	3:3FTCA	20.0	19.9	99.5	ng/mL	+/- 30.00%
	5:3FTCA	20.0	19.2	95.8	ng/mL	+/- 30.00%
	7:3FTCA	20.0	19.3	96.5	ng/mL	+/- 30.00%

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (3)
Acquired: 2022/12/27 - 19:57

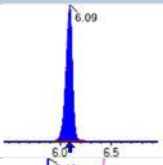
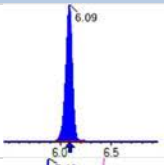
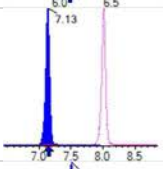
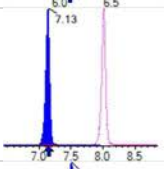
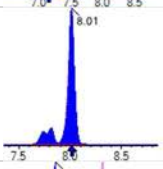
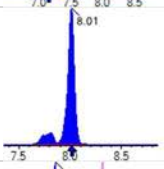
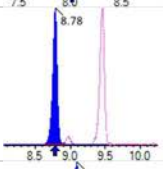
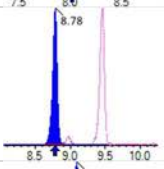
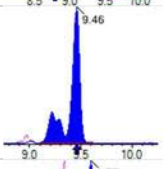
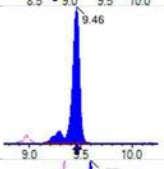
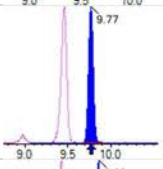
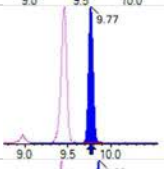
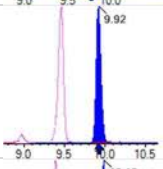
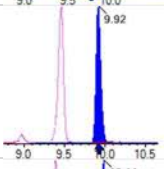
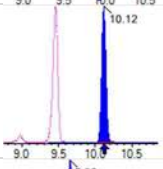
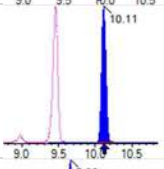
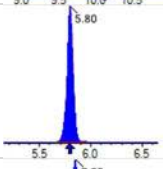
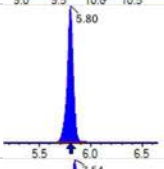
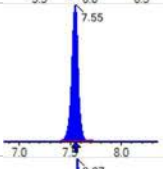
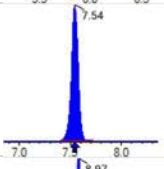
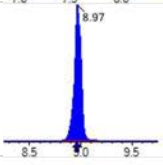
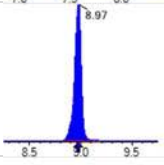
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 5025895	(3.68 , 1.00) (0.00 , N/A , 0.0)	644.0	N/A 0.0 0.0	20.3065 [20.0000]	101.5%			
PFPeA	(263.0 / 219.0) 3061018 (263.0 / 69.0) 32489	(4.98 , 1.00) (0.00 , N/A , -0.1)	602.6 331.1	0.0106 98.3 100.0	10.0754 [10.0000]	100.8%			
PFHxA	(313.0 / 269.0) 2033923 (313.0 / 119.0) 175693	(6.14 , 1.00) (0.00 , N/A , 0.2)	559.2 443.7	0.0864 96.0 100.0	4.7110 [5.0000]	94.2%			
PFHpA	(363.0 / 319.0) 1907103 (363.0 / 169.0) 566900	(7.07 , 1.00) (0.00 , N/A , -0.2)	593.8 425.6	0.2973 97.6 100.0	4.9706 [5.0000]	99.4%			
PFOA	(413.0 / 369.0) 2039133 (413.0 / 169.0) 638857	(7.89 , 1.00) (0.00 , N/A , 0.0)	683.1 517.1	0.3133 93.2 100.0	5.3642 [5.0000]	107.3%			
PFNA	(463.0 / 419.0) 1580877 (463.0 / 169.0) 333241	(8.63 , 1.00) (0.00 , N/A , -0.1)	488.2 306.4	0.2108 100.8 100.0	4.6602 [5.0000]	93.2%			
PFDA	(513.0 / 469.0) 2040428 (513.0 / 169.0) 160767	(9.31 , 1.00) (0.00 , N/A , 0.2)	520.5 337.5	0.0788 88.4 100.0	5.4275 [5.0000]	108.5%			
PFUnA	(563.0 / 519.0) 2112525 (563.0 / 169.0) 242223	(9.72 , 1.00) (0.00 , N/A , 0.2)	777.1 572.0	0.1147 108.8 100.0	4.1628 [5.0000]	83.3%			
PFDoA	(613.0 / 569.0) 2677273 (613.0 / 169.0) 356940	(9.90 , 1.00) (0.00 , N/A , 0.2)	730.5 398.3	0.1333 103.9 100.0	4.9515 [5.0000]	99.0%			
PFTrDA	(663.0 / 619.0) 2371857 (663.0 / 169.0) 497035	(10.02 , 1.01) (N/A , 0.00 , -0.1)	465.7 519.6	0.2096 91.8 100.0	5.1898 [5.0000]	103.8%			
PFTeDA	(713.0 / 669.0) 1954114 (713.0 / 169.0) 360040	(10.13 , 1.00) (0.00 , N/A , 0.2)	1046.9 370.9	0.1842 88.2 100.0	4.8632 [5.0000]	97.3%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (3)
Acquired: 2022/12/27 - 19:57

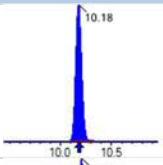
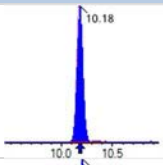
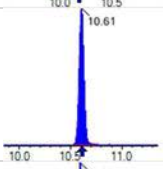
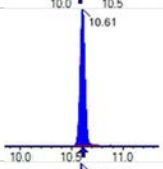
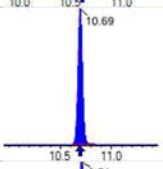
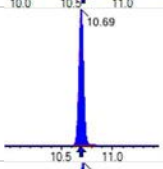
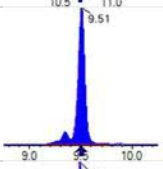
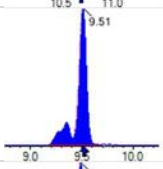
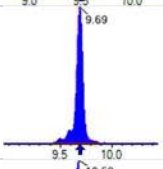
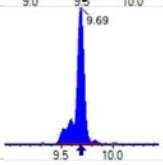
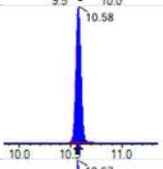
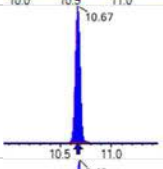
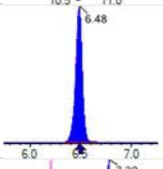
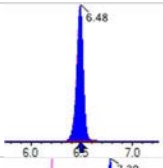
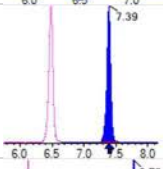
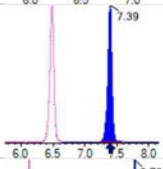
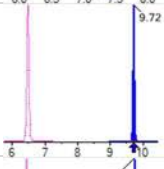
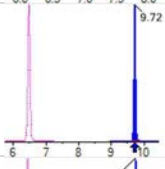
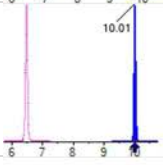
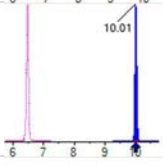
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 3146005 (299.0 / 99.0) 1871748	(6.09 , 1.00) (0.00 , N/A , 0.2)	617.6 554.6	0.5950 89.3 100.0	5.2348 [4.4237]	118.3%			
PFPeS	(349.0 / 80.0) 4818695 (349.0 / 99.0) 1828681	(7.13 , 0.89) (N/A , 0.00 , 0.0)	551.1 587.9	0.3795 103.1 100.0	5.0904 [4.6919]	108.5%			
PFHxS	(399.0 / 80.0) 4085332 (399.0 / 99.0) 1291891	(8.01 , 1.00) (0.00 , N/A , 0.1)	767.9 760.3	0.3162 98.9 100.0	4.7158 [4.5549]	103.5%			
PFHpS	(449.0 / 80.0) 3997173 (449.0 / 99.0) 1087853	(8.78 , 0.93) (N/A , 0.00 , 0.0)	567.4 564.0	0.2722 102.4 100.0	4.5515 [4.7570]	95.7%			
PFOS	(499.0 / 80.0) 4243280 (499.0 / 99.0) 955378	(9.46 , 1.00) (0.00 , N/A , 0.1)	402.4 800.0	0.2252 98.6 100.0	3.9614 [4.6375]	85.4%			
PFNS	(549.0 / 80.0) 5311468 (549.0 / 99.0) 1251761	(9.77 , 1.03) (N/A , 0.00 , 0.1)	737.6 560.2	0.2357 100.3 100.0	4.9764 [4.7994]	103.7%			
PFDS	(599.0 / 80.0) 5904128 (599.0 / 99.0) 1420923	(9.92 , 1.05) (N/A , 0.00 , 0.1)	911.6 455.3	0.2407 107.4 100.0	4.5239 [4.8155]	93.9%			
PFDoS	(699.0 / 80.0) 2798575 (699.0 / 99.0) 564466	(10.12 , 1.07) (N/A , 0.00 , 0.0)	1338.3 895.3	0.2017 98.5 100.0	5.3682 [4.8478]	110.7%			
4:2FTS	(327.0 / 307.0) 7350514 (327.0 / 81.0) 4420546	(5.80 , 1.00) (0.00 , N/A , -0.1)	686.2 622.2	0.6014 93.2 100.0	19.2696 [18.6906]	103.1%			
6:2FTS	(427.0 / 407.0) 4321539 (427.0 / 81.0) 2962890	(7.55 , 1.00) (0.00 , N/A , 0.1)	626.7 652.6	0.6856 97.0 100.0	18.5764 [18.9808]	97.9%			
8:2FTS	(527.0 / 507.0) 3747666 (527.0 / 81.0) 2785229	(8.97 , 1.00) (0.00 , N/A , -0.1)	531.5 611.5	0.7432 105.8 100.0	15.3706 [19.1658]	80.2%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (3)
Acquired: 2022/12/27 - 19:57

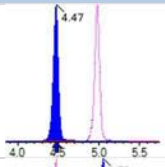
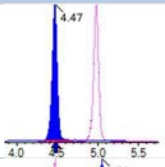
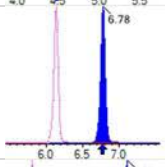
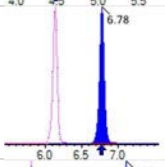
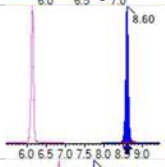
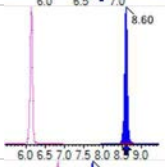
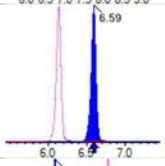
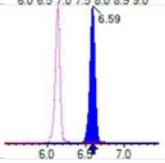
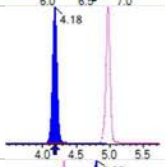
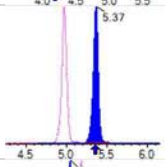
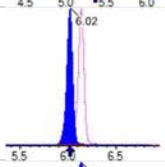
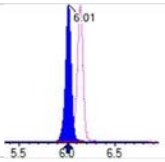
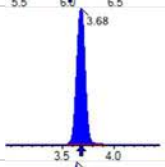
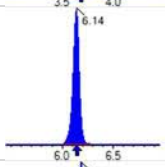
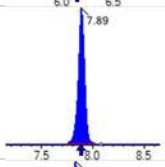
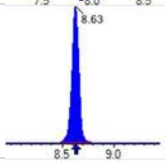
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 6161618 (498.0 / 478.0) 154699	(10.18 , 1.00) (0.00 , N/A , -0.3)	826.2 555.0	0.0251 157.5 100.0	5.1080 [5.0000]	102.2%			
NMeFOSA	(512.0 / 219.0) 4551200 (512.0 / 169.0) 3046899	(10.61 , 1.00) (0.00 , N/A , 0.0)	964.7 985.6	0.6695 98.4 100.0	22.7004 [20.0000]	113.5%			
NEtFOSA	(526.0 / 219.0) 4422648 (526.0 / 169.0) 4558450	(10.69 , 1.00) (0.00 , N/A , 0.0)	1332.4 1369.3	1.0307 102.6 100.0	19.5576 [20.0000]	97.8%			
NMeFOSAA	(570.0 / 419.0) 983013 (570.0 / 483.0) 508338	(9.51 , 1.00) (0.00 , N/A , -0.2)	418.2 448.2	0.5171 103.6 100.0	4.7450 [5.0000]	94.9%			
NEtFOSAA	(584.0 / 419.0) 979460 (584.0 / 526.0) 538676	(9.69 , 1.00) (0.01 , N/A , 0.0)	1429.7 443.4	0.5500 91.6 100.0	6.2510 [5.0000]	125.0%			
NMeFOSE	(616.0 / 59.0) 1054583	(10.58 , 1.00) (0.01 , N/A , 0.0)	1310.5	N/A 0.0 0.0	19.4353 [20.0000]	97.2%			
NEtFOSE	(630.0 / 59.0) 151244	(10.67 , 1.00) (0.01 , N/A , 0.0)	1014.7	N/A 0.0 0.0	19.0531 [20.0000]	95.3%			
HFPO-DA	(285.0 / 169.0) 1503898 (285.0 / 185.0) 4021284	(6.48 , 1.00) (0.00 , N/A , 0.0)	608.0 650.8	2.6739 97.1 100.0	9.4560 [10.0000]	94.6%			
ADONA	(377.0 / 85.0) 6382441 (377.0 / 251.0) 704541	(7.39 , 1.14) (N/A , 0.00 , -0.1)	713.8 557.2	0.1104 95.9 100.0	9.3716 [9.4270]	99.4%			
9Cl-Pf3ONS	(531.0 / 351.0) 16152829 (533.0 / 353.0) 5070276	(9.72 , 1.50) (N/A , 0.00 , -0.1)	699.5 616.1	0.3139 98.1 100.0	9.0368 [9.3325]	96.8%			
11Cl-PF3OUDS	(631.0 / 451.0) 8591708 (633.0 / 453.0) 3060622	(10.01 , 1.54) (N/A , 0.00 , 0.0)	1019.5 931.2	0.3562 121.7 100.0	9.1951 [9.4321]	97.5%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (3)
Acquired: 2022/12/27 - 19:57

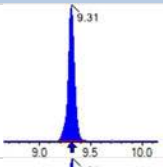
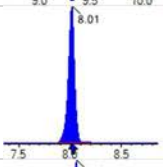
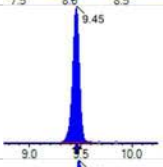
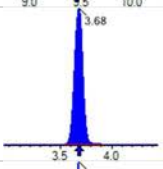
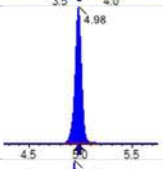
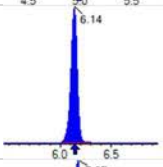
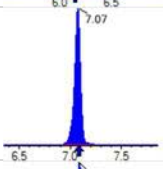
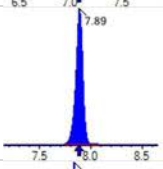
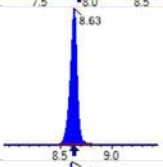
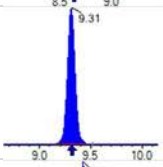
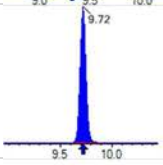
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 211614 (241.0 / 117.0) 283436	(4.47 , 0.90) (N/A , 0.00 , 0.1)	617.4 438.7	1.3394 98.1 100.0	19.9043 [20.0000]	99.5%			
5:3FTCA	(341.0 / 236.7) 1268368 (341.0 / 217.0) 2044775	(6.78 , 1.10) (N/A , 0.00 , 0.0)	534.3 573.7	1.6121 97.0 100.0	19.1537 [20.0000]	95.8%			
7:3FTCA	(441.0 / 317.0) 1574441 (441.0 / 337.0) 1353182	(8.60 , 1.40) (N/A , 0.00 , 0.0)	393.8 468.7	0.8595 102.8 100.0	19.3000 [20.0000]	96.5%			
PFEESA	(315.0 / 135.0) 3314483 (315.0 / 83.0) 1023907	(6.59 , 1.07) (N/A , 0.00 , 0.1)	520.1 825.0	0.3089 100.3 100.0	7.7081 [8.9246]	86.4%			
PFMPA	(229.0 / 85.0) 928225	(4.18 , 0.84) (N/A , 0.00 , 0.0)	829.1	N/A 0.0 0.0	10.0677 [10.0000]	100.7%			
PFMBA	(279.0 / 85.0) 2431522	(5.37 , 1.08) (N/A , 0.00 , 0.0)	679.1	N/A 0.0 0.0	10.0743 [10.0000]	100.7%			
NFDHA	(295.0 / 201.0) 1972081 (295.0 / 85.0) 1769722	(6.02 , 0.98) (N/A , 0.00 , 0.2)	660.9 614.0	0.8974 103.3 100.0	9.5534 [10.0000]	95.5%			
13C3_PFBA_IIS	(216.0 / 172.0) 287566	(3.68 , N/A) (N/A , 0.00 , N/A)	557.9	N/A	1.0638 [1.0000]	106.4% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 409906	(6.14 , N/A) (N/A , 0.00 , N/A)	848.8	N/A	1.0322 [1.0000]	103.2% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 391505	(7.89 , N/A) (N/A , 0.00 , N/A)	725.6	N/A	0.9800 [1.0000]	98.0% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 343117	(8.63 , N/A) (N/A , 0.00 , N/A)	460.3	N/A	1.0380 [1.0000]	103.8% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (3)
Acquired: 2022/12/27 - 19:57

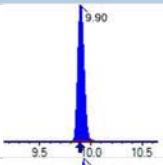
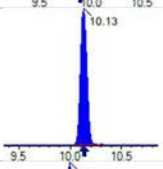
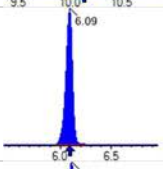
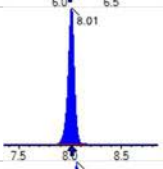
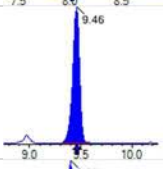
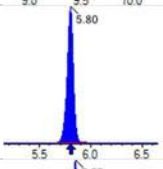
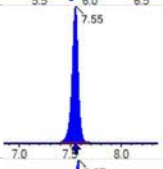
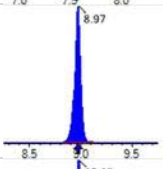
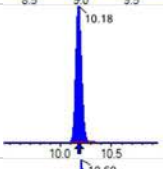
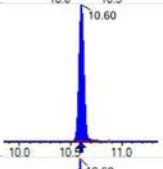
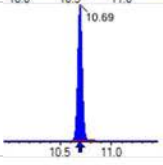
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 362369	(9.31 , N/A) (N/A , 0.00 , N/A)	498.0	N/A	1.0148 [1.0000]	101.5% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 657587	(8.01 , N/A) (N/A , 0.00 , N/A)	742.8	N/A	0.9428 [1.0000]	94.3% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 675402	(9.45 , N/A) (N/A , 0.00 , N/A)	399.7	N/A	0.9795 [1.0000]	97.9% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2361150	(3.68 , N/A) (N/A , 0.00 , N/A)	685.6	N/A	7.6407 [8.0000]	95.5% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1422331	(4.98 , N/A) (N/A , 0.00 , N/A)	620.7	N/A	3.7970 [4.0000]	94.9% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 947787	(6.14 , N/A) (N/A , 0.00 , N/A)	590.1	N/A	2.0788 [2.0000]	103.9% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 801225	(7.07 , N/A) (N/A , 0.00 , N/A)	617.9	N/A	1.9668 [2.0000]	98.3% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 818417	(7.89 , N/A) (N/A , 0.00 , N/A)	660.8	N/A	1.9077 [2.0000]	95.4% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 374596	(8.63 , N/A) (N/A , 0.00 , N/A)	397.4	N/A	0.9918 [1.0000]	99.2% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 422118	(9.31 , N/A) (N/A , 0.00 , N/A)	425.9	N/A	0.8905 [1.0000]	89.0% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 640852	(9.72 , N/A) (N/A , 0.00 , N/A)	624.4	N/A	1.1156 [1.0000]	111.6% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (3)
Acquired: 2022/12/27 - 19:57

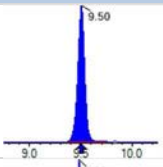
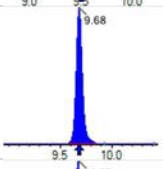
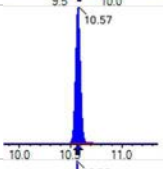
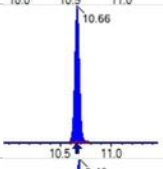
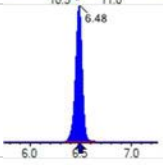
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 630893	(9.90 , N/A) (N/A , 0.00 , N/A)	695.0	N/A	0.9978 [1.0000]	99.8% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 442401	(10.13 , N/A) (N/A , 0.00 , N/A)	1105.6	N/A	1.0600 [1.0000]	106.0% { 100.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2154824	(6.09 , N/A) (N/A , 0.00 , N/A)	512.0	N/A	1.9460 [2.0000]	97.3% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1127216	(8.01 , N/A) (N/A , 0.00 , N/A)	718.1	N/A	1.9178 [2.0000]	95.9% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1846333	(9.46 , N/A) (N/A , 0.00 , N/A)	218.4	N/A	2.1108 [2.0000]	105.5% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 534829	(5.80 , N/A) (N/A , 0.00 , N/A)	579.1	N/A	4.1013 [4.0000]	102.5% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 679885	(7.55 , N/A) (N/A , 0.00 , N/A)	795.2	N/A	4.1954 [4.0000]	104.9% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 723892	(8.97 , N/A) (N/A , 0.00 , N/A)	484.2	N/A	4.5310 [4.0000]	113.3% { 100.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2513692	(10.18 , N/A) (N/A , 0.00 , N/A)	752.1	N/A	2.1614 [2.0000]	108.1% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 460952	(10.60 , N/A) (N/A , 0.00 , N/A)	885.1	N/A	2.0438 [2.0000]	102.2% { 100.0% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 492057	(10.69 , N/A) (N/A , 0.00 , N/A)	1109.1	N/A	2.4486 [2.0000]	122.4% { 100.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (3)
Acquired: 2022/12/27 - 19:57

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 997917	(9.50 , N/A) (N/A , 0.00 , N/A)	293.3	N/A	4.1704 [4.0000]	104.3% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 722719	(9.68 , N/A) (N/A , 0.00 , N/A)	539.3	N/A	3.5263 [4.0000]	88.2% { 100.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 961194	(10.57 , N/A) (N/A , 0.00 , N/A)	776.1	N/A	26.6009 [20.0000]	133.0% { 100.0% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 418687	(10.66 , N/A) (N/A , 0.00 , N/A)	1329.6	N/A	28.6523 [20.0000]	143.3% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2072821	(6.48 , N/A) (N/A , 0.00 , N/A)	906.8	N/A	8.1871 [8.0000]	102.3% { 100.0% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2253007
Standard ID:	22L0304	Sequence:	SB03989

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03989-CCV2	PFBA	20.0	20.3	101	ng/mL	+/- 30.00%
	PFPEA	10.0	9.70	97.0	ng/mL	+/- 30.00%
	PFHXA	5.00	4.72	94.4	ng/mL	+/- 30.00%
	PFHPA	5.00	4.90	98.0	ng/mL	+/- 30.00%
	PFOA	5.00	4.81	96.3	ng/mL	+/- 30.00%
	PFNA	5.00	5.01	100	ng/mL	+/- 30.00%
	PFDA	5.00	5.23	105	ng/mL	+/- 30.00%
	PFUnA	5.00	4.86	97.1	ng/mL	+/- 30.00%
	PFDOA	5.00	4.99	99.8	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.66	93.2	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.73	94.6	ng/mL	+/- 30.00%
	PFBS	4.42	4.68	106	ng/mL	+/- 30.00%
	PFPES	4.70	5.22	111	ng/mL	+/- 30.00%
	PFHXS	4.58	4.73	103	ng/mL	+/- 30.00%
	PFHPS	4.78	4.41	92.3	ng/mL	+/- 30.00%
	PFOS	4.65	4.12	88.7	ng/mL	+/- 30.00%
	PFNS	4.80	4.73	98.5	ng/mL	+/- 30.00%
	PFDS	4.82	4.51	93.6	ng/mL	+/- 30.00%
	PFDOS	4.85	4.62	95.3	ng/mL	+/- 30.00%
	4:2FTS	18.8	24.0	128	ng/mL	+/- 30.00%
	6:2FTS	19.0	22.7	119	ng/mL	+/- 30.00%
	8:2FTS	19.2	21.6	113	ng/mL	+/- 30.00%
	PFOSA	5.00	4.72	94.5	ng/mL	+/- 30.00%
	NMeFOSA	20.0	21.3	107	ng/mL	+/- 30.00%
	NEtFOSA	20.0	20.8	104	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.72	94.4	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.00	100	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.0	90.0	ng/mL	+/- 30.00%
	NEtFOSE	20.0	17.6	87.9	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:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2253007
Standard ID:	22L0304	Sequence:	SB03989

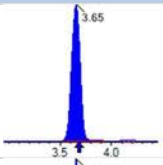
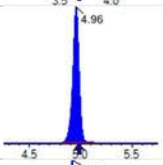
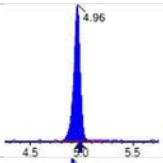
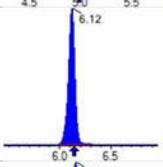
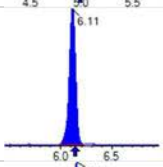
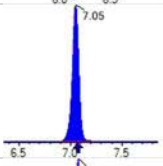
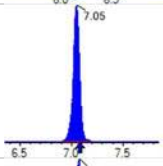
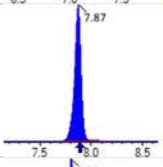
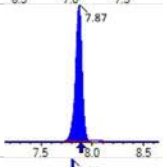
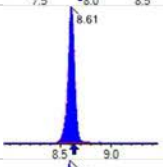
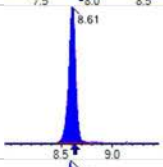
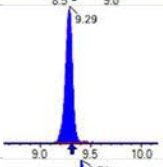
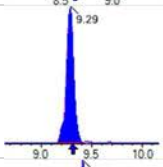
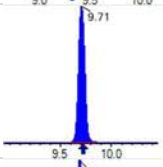
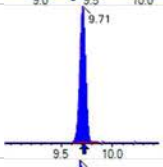
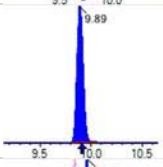
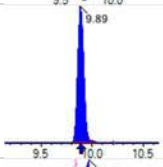
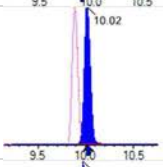
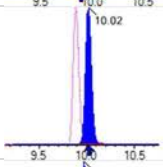
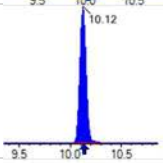
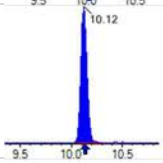
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03989-CCV2	ADONA	9.45	9.49	100	ng/mL	+/- 30.00%
	PFEESA	8.90	8.81	99.0	ng/mL	+/- 30.00%
	PFMPA	10.0	9.92	99.2	ng/mL	+/- 30.00%
	PFMBA	10.0	9.91	99.1	ng/mL	+/- 30.00%
	NFDHA	10.0	9.88	98.8	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	9.74	104	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	8.65	91.5	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.8	94.2	ng/mL	+/- 30.00%
	5:3FTCA	20.0	20.0	99.9	ng/mL	+/- 30.00%
	7:3FTCA	20.0	19.9	99.7	ng/mL	+/- 30.00%

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (17)
Acquired: 2022/12/27 - 23:24

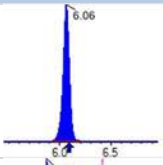
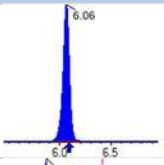
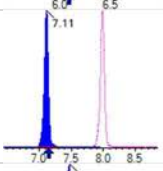
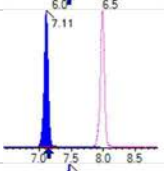
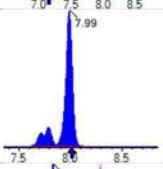
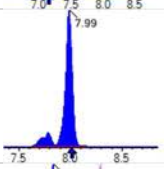
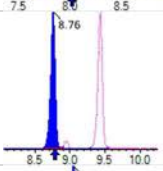
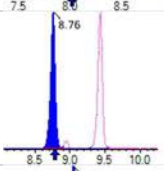
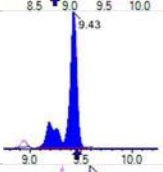
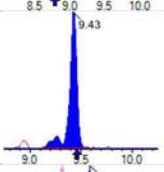
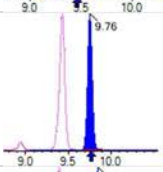
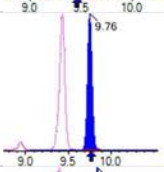
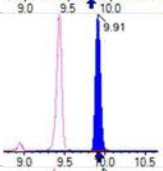
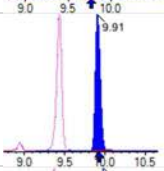
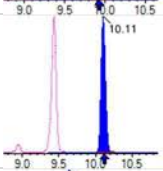
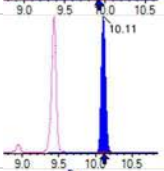
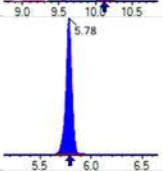
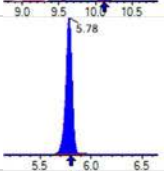
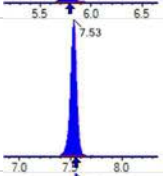
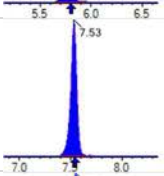
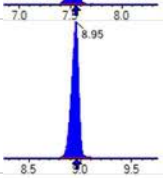
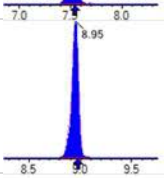
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 5073835	(3.65 , 1.00) (0.00 , N/A , 0.0)	577.2	N/A 0.0 0.0	20.2968 [20.0000]	101.5%			
PFPeA	(263.0 / 219.0) 3043765 (263.0 / 69.0) 33511	(4.96 , 1.00) (0.00 , N/A , -0.1)	637.1 316.8	0.0110 102.0 103.7	9.6974 [10.0000]	97.0%			
PFHxA	(313.0 / 269.0) 1933697 (313.0 / 119.0) 171525	(6.12 , 1.00) (0.00 , N/A , 0.2)	502.0 399.9	0.0887 98.5 102.7	4.7189 [5.0000]	94.4%			
PFHpA	(363.0 / 319.0) 1861601 (363.0 / 169.0) 518975	(7.05 , 1.00) (0.00 , N/A , 0.1)	604.3 496.8	0.2788 91.6 93.8	4.9015 [5.0000]	98.0%			
PFOA	(413.0 / 369.0) 2000550 (413.0 / 169.0) 629455	(7.87 , 1.00) (0.00 , N/A , 0.1)	598.5 570.0	0.3146 93.6 100.4	4.8132 [5.0000]	96.3%			
PFNA	(463.0 / 419.0) 1470042 (463.0 / 169.0) 324963	(8.61 , 1.00) (0.00 , N/A , 0.1)	477.5 331.0	0.2211 105.7 104.9	5.0089 [5.0000]	100.2%			
PFDA	(513.0 / 469.0) 2001224 (513.0 / 169.0) 209230	(9.29 , 1.00) (0.00 , N/A , 0.0)	451.5 339.1	0.1046 117.3 132.7	5.2272 [5.0000]	104.5%			
PFUnA	(563.0 / 519.0) 2301040 (563.0 / 169.0) 226597	(9.71 , 1.00) (0.00 , N/A , 0.0)	758.3 291.6	0.0985 93.5 85.9	4.8571 [5.0000]	97.1%			
PFDoA	(613.0 / 569.0) 2637046 (613.0 / 169.0) 325048	(9.89 , 1.00) (0.00 , N/A , 0.2)	1064.5 437.9	0.1233 96.0 92.5	4.9893 [5.0000]	99.8%			
PFTrDA	(663.0 / 619.0) 2081838 (663.0 / 169.0) 485461	(10.02 , 1.01) (N/A , -0.01 , -0.1)	720.4 447.1	0.2332 102.2 111.3	4.6600 [5.0000]	93.2%			
PFTeDA	(713.0 / 669.0) 1850226 (713.0 / 169.0) 381579	(10.12 , 1.00) (0.00 , N/A , 0.1)	906.0 491.8	0.2062 98.7 111.9	4.7306 [5.0000]	94.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (17)
Acquired: 2022/12/27 - 23:24

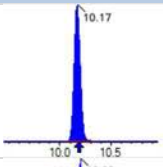
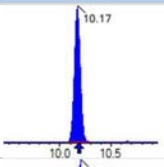
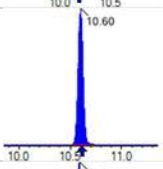
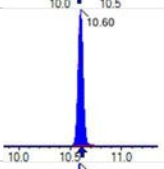
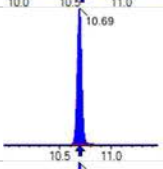
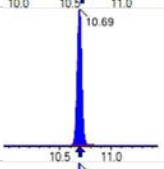
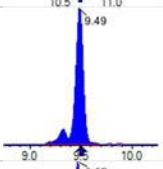
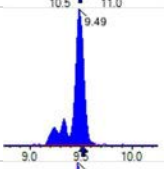
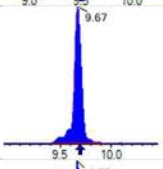
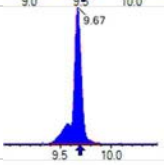
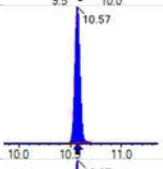
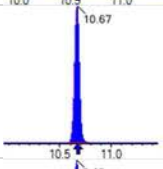
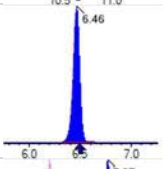
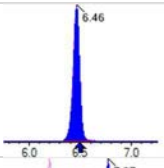
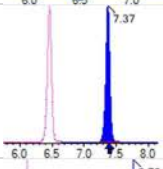
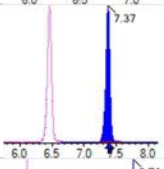
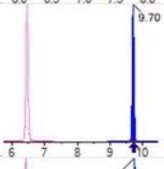
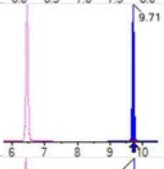
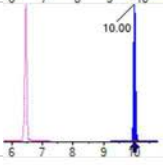
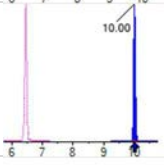
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2882211 (299.0 / 99.0) 1871198	(6.06 , 1.00) (0.00 , N/A , 0.0)	634.5 701.2	0.6492 97.4 109.1	4.6849 [4.4237]	105.9%			
PFPeS	(349.0 / 80.0) 4870501 (349.0 / 99.0) 1673471	(7.11 , 0.89) (N/A , -0.02 , 0.1)	618.4 634.5	0.3436 93.3 90.5	5.2210 [4.6919]	111.3%			
PFHxS	(399.0 / 80.0) 4041932 (399.0 / 99.0) 1287327	(7.99 , 1.00) (0.00 , N/A , 0.2)	685.0 832.1	0.3185 99.6 100.7	4.7345 [4.5549]	103.9%			
PFHpS	(449.0 / 80.0) 3772756 (449.0 / 99.0) 986547	(8.76 , 0.93) (N/A , -0.03 , 0.1)	582.4 500.7	0.2615 98.3 96.1	4.4111 [4.7570]	92.7%			
PFOS	(499.0 / 80.0) 4301095 (499.0 / 99.0) 919568	(9.43 , 1.00) (0.00 , N/A , 0.0)	325.4 538.5	0.2138 93.6 95.0	4.1230 [4.6375]	88.9%			
PFNS	(549.0 / 80.0) 4916901 (549.0 / 99.0) 1147454	(9.76 , 1.03) (N/A , -0.01 , 0.1)	845.3 879.9	0.2334 99.3 99.0	4.7302 [4.7994]	98.6%			
PFDS	(599.0 / 80.0) 5732348 (599.0 / 99.0) 1280822	(9.91 , 1.05) (N/A , -0.01 , 0.2)	896.2 664.0	0.2234 99.7 92.8	4.5100 [4.8155]	93.7%			
PFDoS	(699.0 / 80.0) 2345662 (699.0 / 99.0) 571285	(10.11 , 1.07) (N/A , -0.01 , -0.1)	1117.9 761.7	0.2435 119.0 120.7	4.6201 [4.8478]	95.3%			
4:2FTS	(327.0 / 307.0) 7843567 (327.0 / 81.0) 4344749	(5.78 , 1.00) (0.00 , N/A , -0.1)	563.3 609.8	0.5539 85.9 92.1	24.0295 [18.6906]	128.6%			
6:2FTS	(427.0 / 407.0) 4953277 (427.0 / 81.0) 3602540	(7.53 , 1.00) (0.00 , N/A , -0.3)	726.2 713.1	0.7273 102.9 106.1	22.7006 [18.9808]	119.6%			
8:2FTS	(527.0 / 507.0) 4322498 (527.0 / 81.0) 3015993	(8.95 , 1.00) (0.00 , N/A , 0.0)	465.6 633.1	0.6977 99.3 93.9	21.6080 [19.1658]	112.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (17)
Acquired: 2022/12/27 - 23:24

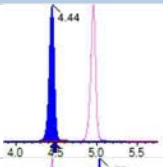
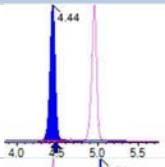
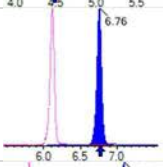
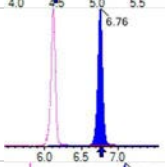
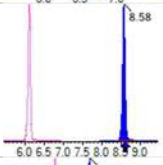
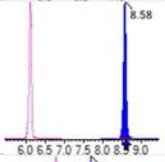
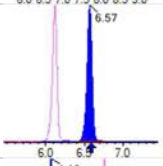
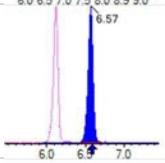
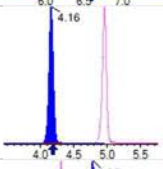
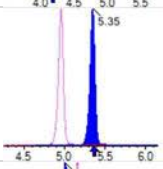
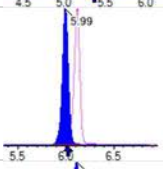
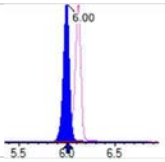
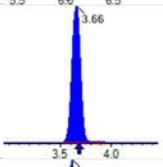
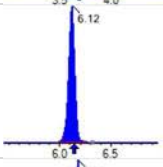
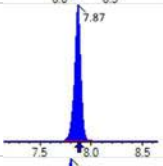
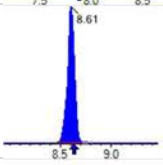
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 6061307 (498.0 / 478.0) 130356	(10.17 , 1.00) (0.00 , N/A , -0.2)	1275.5 570.3	0.0215 134.9 85.7	4.7241 [5.0000]	94.5%			
NMeFOSA	(512.0 / 219.0) 4625960 (512.0 / 169.0) 3160310	(10.60 , 1.00) (0.00 , N/A , 0.0)	1311.0 1147.6	0.6832 100.4 102.0	21.3268 [20.0000]	106.6%			
NEtFOSA	(526.0 / 219.0) 4559358 (526.0 / 169.0) 4890133	(10.69 , 1.00) (0.00 , N/A , 0.0)	1017.3 1180.0	1.0725 106.8 104.1	20.7902 [20.0000]	104.0%			
NMeFOSAA	(570.0 / 419.0) 948549 (570.0 / 483.0) 489754	(9.49 , 1.00) (0.00 , N/A , -0.1)	495.8 386.1	0.5163 103.5 99.8	4.7199 [5.0000]	94.4%			
NEtFOSAA	(584.0 / 419.0) 837497 (584.0 / 526.0) 568354	(9.67 , 1.00) (0.00 , N/A , 0.1)	1005.3 687.2	0.6786 113.0 123.4	5.0037 [5.0000]	100.1%			
NMeFOSE	(616.0 / 59.0) 1094985	(10.57 , 1.00) (0.01 , N/A , 0.0)	828.6	N/A 0.0 0.0	18.0048 [20.0000]	90.0%			
NEtFOSE	(630.0 / 59.0) 152870	(10.67 , 1.00) (0.01 , N/A , 0.0)	835.1	N/A 0.0 0.0	17.5835 [20.0000]	87.9%			
HFPO-DA	(285.0 / 169.0) 1573509 (285.0 / 185.0) 4272430	(6.46 , 1.00) (0.00 , N/A , 0.0)	590.8 696.2	2.7152 98.6 101.5	10.3750 [10.0000]	103.7%			
ADONA	(377.0 / 85.0) 6161538 (377.0 / 251.0) 739327	(7.37 , 1.14) (N/A , -0.02 , -0.1)	595.1 516.4	0.1200 104.3 108.7	9.4873 [9.4270]	100.6%			
9Cl-Pf3ONS	(531.0 / 351.0) 16610590 (533.0 / 353.0) 4962093	(9.70 , 1.50) (N/A , -0.01 , -0.1)	982.9 779.7	0.2987 93.4 95.2	9.7449 [9.3325]	104.4%			
11Cl-PF3OUDS	(631.0 / 451.0) 7705858 (633.0 / 453.0) 2461803	(10.00 , 1.55) (N/A , -0.01 , 0.1)	888.5 730.0	0.3195 109.1 89.7	8.6482 [9.4321]	91.7%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (17)
Acquired: 2022/12/27 - 23:24

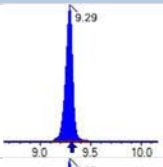
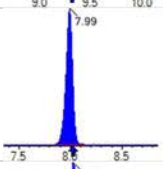
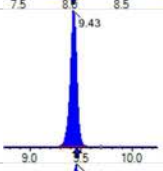
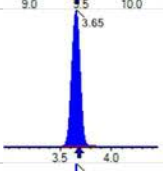
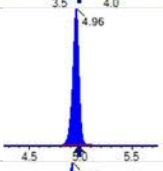
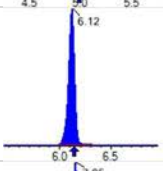
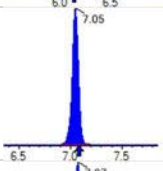
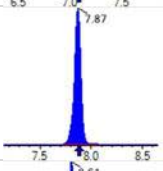
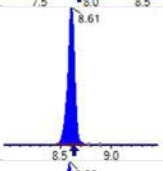
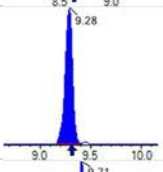
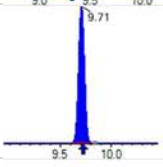
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 206951 (241.0 / 117.0) 282744	(4.44 , 0.90) (N/A , -0.03 , 0.2)	593.3 398.9	1.3662 100.0 102.0	18.8415 [20.0000]	94.2%			
5:3FTCA	(341.0 / 236.7) 1255288 (341.0 / 217.0) 1940590	(6.76 , 1.10) (N/A , -0.02 , 0.0)	585.4 595.0	1.5459 93.0 95.9	19.9721 [20.0000]	99.9%			
7:3FTCA	(441.0 / 317.0) 1543709 (441.0 / 337.0) 1315269	(8.58 , 1.40) (N/A , -0.02 , 0.0)	449.4 397.8	0.8520 101.9 99.1	19.9374 [20.0000]	99.7%			
PFEESA	(315.0 / 135.0) 3596414 (315.0 / 83.0) 1044984	(6.57 , 1.07) (N/A , -0.02 , 0.0)	515.2 580.5	0.2906 94.3 94.1	8.8120 [8.9246]	98.7%			
PFMPA	(229.0 / 85.0) 944954	(4.16 , 0.84) (N/A , -0.02 , 0.0)	1060.8	N/A 0.0 0.0	9.9205 [10.0000]	99.2%			
PFMBA	(279.0 / 85.0) 2470314	(5.35 , 1.08) (N/A , -0.02 , 0.0)	707.8	N/A 0.0 0.0	9.9068 [10.0000]	99.1%			
NFDHA	(295.0 / 201.0) 1935666 (295.0 / 85.0) 1719216	(5.99 , 0.98) (N/A , -0.02 , 0.0)	634.4 751.3	0.8882 102.3 99.0	9.8795 [10.0000]	98.8%			
13C3_PFBA_IIS	(216.0 / 172.0) 281710	(3.66 , N/A) (N/A , -0.02 , N/A)	651.3	N/A	1.0421 [1.0000]	104.2% { 98.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 400765	(6.12 , N/A) (N/A , -0.02 , N/A)	373.4	N/A	1.0092 [1.0000]	100.9% { 97.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 405187	(7.87 , N/A) (N/A , -0.02 , N/A)	723.6	N/A	1.0143 [1.0000]	101.4% { 103.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 308653	(8.61 , N/A) (N/A , -0.02 , N/A)	443.9	N/A	0.9337 [1.0000]	93.4% { 90.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (17)
Acquired: 2022/12/27 - 23:24

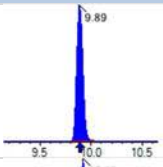
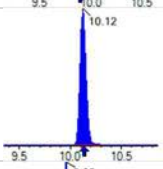
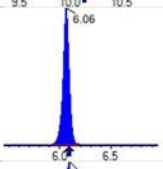
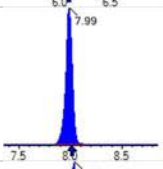
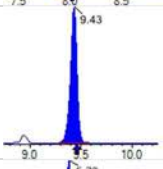
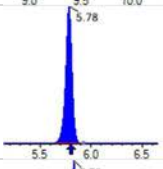
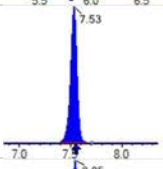
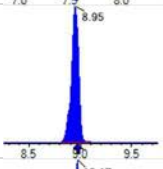
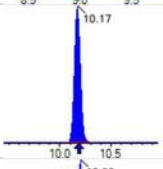
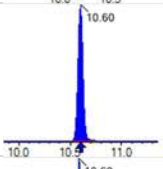
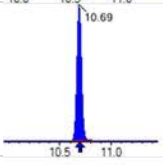
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 366742	(9.29 , N/A) (N/A , -0.02 , N/A)	278.6	N/A	1.0271 [1.0000]	102.7% { 101.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 664778	(7.99 , N/A) (N/A , -0.02 , N/A)	676.4	N/A	0.9531 [1.0000]	95.3% { 101.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 671297	(9.43 , N/A) (N/A , -0.02 , N/A)	451.6	N/A	0.9735 [1.0000]	97.4% { 99.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2384813	(3.65 , N/A) (N/A , -0.02 , N/A)	770.5	N/A	7.8777 [8.0000]	98.5% { 101.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1469448	(4.96 , N/A) (N/A , -0.02 , N/A)	602.6	N/A	4.0122 [4.0000]	100.3% { 103.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 899577	(6.12 , N/A) (N/A , -0.02 , N/A)	501.9	N/A	2.0181 [2.0000]	100.9% { 94.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 793137	(7.05 , N/A) (N/A , -0.03 , N/A)	657.6	N/A	1.9914 [2.0000]	99.6% { 99.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 894841	(7.87 , N/A) (N/A , -0.02 , N/A)	524.9	N/A	2.0154 [2.0000]	100.8% { 109.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 324087	(8.61 , N/A) (N/A , -0.02 , N/A)	423.8	N/A	0.9538 [1.0000]	95.4% { 86.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 429870	(9.28 , N/A) (N/A , -0.03 , N/A)	383.5	N/A	0.8960 [1.0000]	89.6% { 101.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 598258	(9.71 , N/A) (N/A , -0.02 , N/A)	678.5	N/A	1.0290 [1.0000]	102.9% { 93.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (17)
Acquired: 2022/12/27 - 23:24

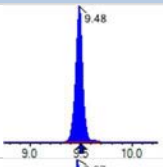
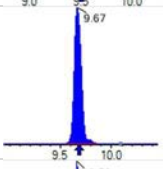
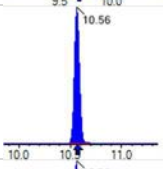
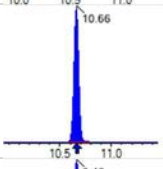
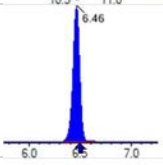
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 616706	(9.89 , N/A) (N/A , -0.01 , N/A)	903.0	N/A	0.9637 [1.0000]	96.4% { 97.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 430625	(10.12 , N/A) (N/A , -0.01 , N/A)	1679.3	N/A	1.0195 [1.0000]	102.0% { 97.3% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2205881	(6.06 , N/A) (N/A , -0.03 , N/A)	573.6	N/A	1.9705 [2.0000]	98.5% { 102.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1110827	(7.99 , N/A) (N/A , -0.02 , N/A)	743.5	N/A	1.8695 [2.0000]	93.5% { 98.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1798131	(9.43 , N/A) (N/A , -0.02 , N/A)	219.8	N/A	2.0683 [2.0000]	103.4% { 97.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 457655	(5.78 , N/A) (N/A , -0.02 , N/A)	637.9	N/A	3.4716 [4.0000]	86.8% { 85.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 637696	(7.53 , N/A) (N/A , -0.02 , N/A)	720.2	N/A	3.8925 [4.0000]	97.3% { 93.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 593915	(8.95 , N/A) (N/A , -0.02 , N/A)	417.9	N/A	3.6772 [4.0000]	91.9% { 82.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2673716	(10.17 , N/A) (N/A , -0.01 , N/A)	1010.3	N/A	2.3131 [2.0000]	115.7% { 106.4% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 498700	(10.60 , N/A) (N/A , -0.01 , N/A)	696.5	N/A	2.2247 [2.0000]	111.2% { 108.2% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 477194	(10.69 , N/A) (N/A , 0.00 , N/A)	904.5	N/A	2.3892 [2.0000]	119.5% { 97.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (17)
Acquired: 2022/12/27 - 23:24

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 968051	(9.48 , N/A) (N/A , -0.02 , N/A)	243.5	N/A	4.0703 [4.0000]	101.8% { 97.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 772017	(9.67 , N/A) (N/A , -0.02 , N/A)	297.8	N/A	3.7899 [4.0000]	94.7% { 106.8% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1077309	(10.56 , N/A) (N/A , -0.01 , N/A)	1213.7	N/A	29.9967 [20.0000]	150.0% { 112.1% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 458558	(10.66 , N/A) (N/A , 0.00 , N/A)	1300.2	N/A	31.5726 [20.0000]	157.9% { 109.5% }			S2,
13C3_HFPODA_EIS	(287.0 / 169.0) 1976672	(6.46 , N/A) (N/A , -0.02 , N/A)	702.8	N/A	7.9854 [8.0000]	99.8% { 95.4% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2253007
Standard ID:	22L0304	Sequence:	SB03989

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03989-CCV3	PFBA	20.0	20.4	102	ng/mL	+/- 30.00%
	PFPEA	10.0	9.76	97.6	ng/mL	+/- 30.00%
	PFHXA	5.00	4.94	98.8	ng/mL	+/- 30.00%
	PFHPA	5.00	5.24	105	ng/mL	+/- 30.00%
	PFOA	5.00	5.22	104	ng/mL	+/- 30.00%
	PFNA	5.00	4.32	86.4	ng/mL	+/- 30.00%
	PFDA	5.00	5.46	109	ng/mL	+/- 30.00%
	PFUnA	5.00	4.85	97.0	ng/mL	+/- 30.00%
	PFDOA	5.00	4.81	96.3	ng/mL	+/- 30.00%
	PFTRDA	5.00	6.23	125	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.60	91.9	ng/mL	+/- 30.00%
	PFBS	4.42	4.55	103	ng/mL	+/- 30.00%
	PFPES	4.70	4.76	101	ng/mL	+/- 30.00%
	PFHXS	4.58	4.77	104	ng/mL	+/- 30.00%
	PFHPS	4.78	4.99	104	ng/mL	+/- 30.00%
	PFOS	4.65	4.55	97.8	ng/mL	+/- 30.00%
	PFNS	4.80	5.53	115	ng/mL	+/- 30.00%
	PFDS	4.82	5.23	108	ng/mL	+/- 30.00%
	PFDOS	4.85	5.35	110	ng/mL	+/- 30.00%
	4:2FTS	18.8	22.2	118	ng/mL	+/- 30.00%
	6:2FTS	19.0	20.5	108	ng/mL	+/- 30.00%
	8:2FTS	19.2	20.8	109	ng/mL	+/- 30.00%
	PFOSA	5.00	5.21	104	ng/mL	+/- 30.00%
	NMeFOSA	20.0	22.7	114	ng/mL	+/- 30.00%
	NEtFOSA	20.0	20.1	100	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.49	89.9	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.10	102	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.6	98.0	ng/mL	+/- 30.00%
	NEtFOSE	20.0	23.5	118	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.69	96.9	ng/mL	+/- 30.00%

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0160
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2253007
Standard ID:	22L0304	Sequence:	SB03989

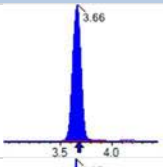
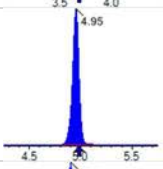
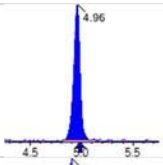
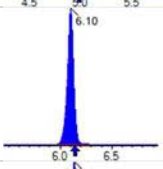
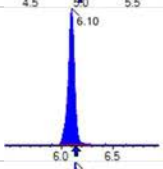
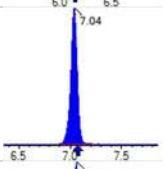
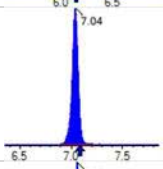
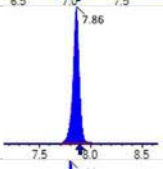
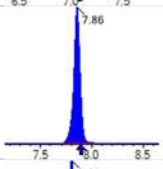
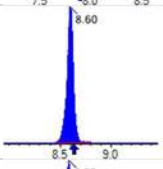
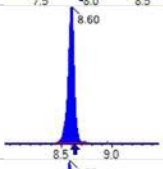
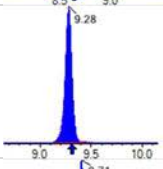
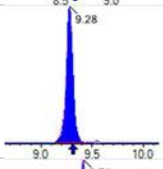
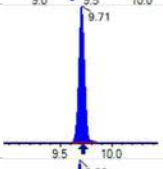
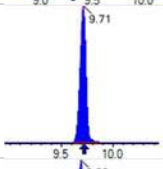
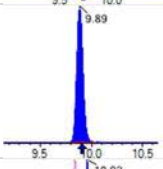
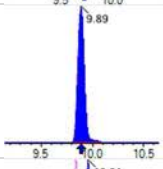
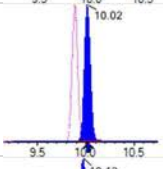
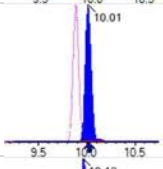
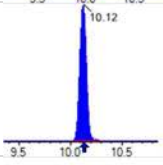
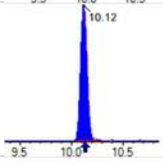
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03989-CCV3	ADONA	9.45	9.50	101	ng/mL	+/- 30.00%
	PFEESA	8.90	8.52	95.7	ng/mL	+/- 30.00%
	PFMPA	10.0	9.90	99.0	ng/mL	+/- 30.00%
	PFMBA	10.0	10.2	102	ng/mL	+/- 30.00%
	NFDHA	10.0	10.8	108	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	8.67	92.8	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	8.91	94.2	ng/mL	+/- 30.00%
	3:3FTCA	20.0	19.8	99.0	ng/mL	+/- 30.00%
	5:3FTCA	20.0	20.1	100	ng/mL	+/- 30.00%
	7:3FTCA	20.0	21.4	107	ng/mL	+/- 30.00%

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (32)
Acquired: 2022/12/28 - 02:37

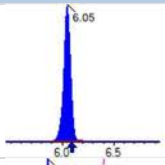
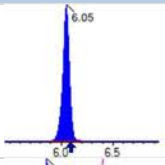
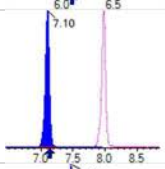
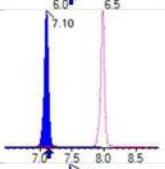
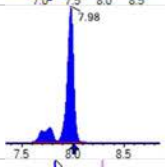
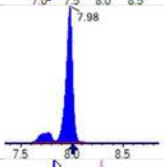
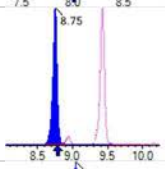
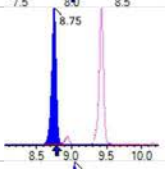
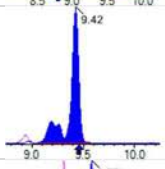
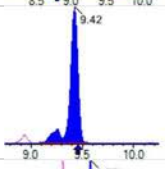
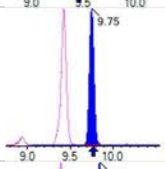
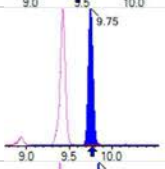
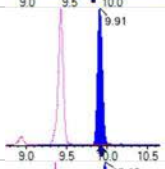
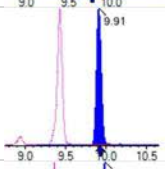
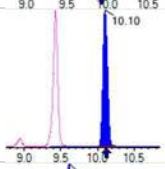
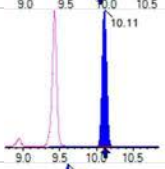
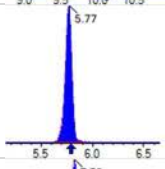
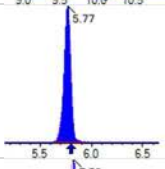
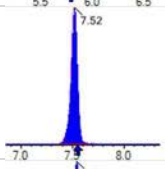
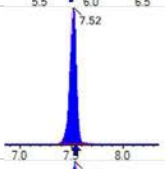
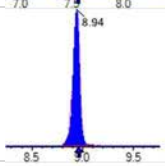
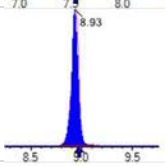
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 4799564	(3.66 , 1.00) (0.00 , N/A , 0.0)	549.9	N/A 0.0 0.0	20.3671 [20.0000]	101.8%			
PFPeA	(263.0 / 219.0) 2933324 (263.0 / 69.0) 32270	(4.95 , 1.00) (0.00 , N/A , -0.1)	632.2 270.2	0.0110 101.9 103.7	9.7599 [10.0000]	97.6%			
PFHxA	(313.0 / 269.0) 1914185 (313.0 / 119.0) 168157	(6.10 , 1.00) (0.00 , N/A , 0.1)	475.1 401.8	0.0878 97.6 101.7	4.9421 [5.0000]	98.8%			
PFHpA	(363.0 / 319.0) 1836908 (363.0 / 169.0) 520756	(7.04 , 1.00) (0.00 , N/A , -0.1)	481.5 515.1	0.2835 93.1 95.4	5.2440 [5.0000]	104.9%			
PFOA	(413.0 / 369.0) 2030052 (413.0 / 169.0) 669292	(7.86 , 1.00) (0.00 , N/A , 0.2)	690.4 669.5	0.3297 98.1 105.2	5.2157 [5.0000]	104.3%			
PFNA	(463.0 / 419.0) 1581742 (463.0 / 169.0) 360834	(8.60 , 1.00) (0.00 , N/A , 0.1)	431.3 470.6	0.2281 109.1 108.2	4.3223 [5.0000]	86.4%			
PFDA	(513.0 / 469.0) 2311419 (513.0 / 169.0) 193939	(9.28 , 1.00) (0.00 , N/A , 0.0)	550.5 348.6	0.0839 94.1 106.5	5.4642 [5.0000]	109.3%			
PFUnA	(563.0 / 519.0) 2123562 (563.0 / 169.0) 233455	(9.71 , 1.00) (0.00 , N/A , -0.3)	757.9 480.5	0.1099 104.3 95.9	4.8475 [5.0000]	97.0%			
PFDoA	(613.0 / 569.0) 2375989 (613.0 / 169.0) 328548	(9.89 , 1.00) (0.00 , N/A , -0.2)	692.3 499.4	0.1383 107.7 103.7	4.8128 [5.0000]	96.3%			
PFTrDA	(663.0 / 619.0) 2599343 (663.0 / 169.0) 536434	(10.02 , 1.01) (N/A , -0.01 , 0.1)	763.2 548.7	0.2064 90.4 98.5	6.2292 [5.0000]	124.6%			
PFTeDA	(713.0 / 669.0) 1747862 (713.0 / 169.0) 373524	(10.12 , 1.00) (0.00 , N/A , 0.2)	880.5 486.6	0.2137 102.3 116.0	4.5959 [5.0000]	91.9%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (32)
Acquired: 2022/12/28 - 02:37

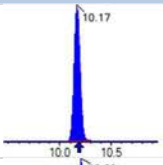
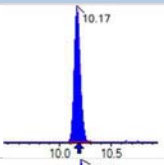
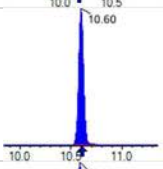
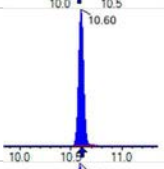
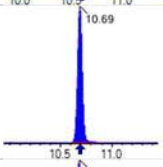
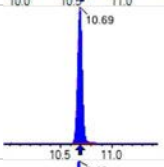
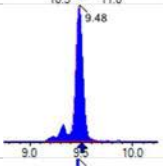
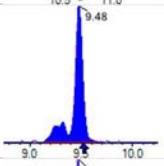
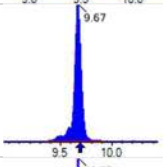
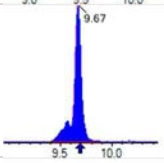
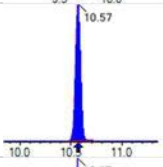
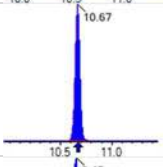
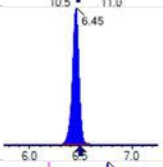
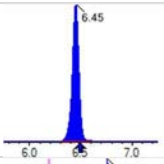
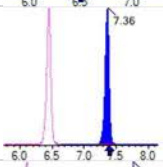
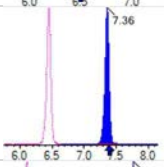
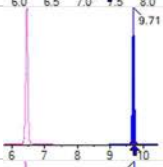
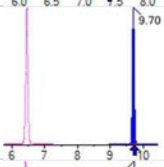
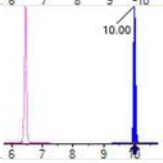
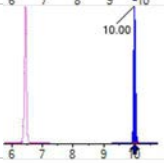
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2609540 (299.0 / 99.0) 1726725	(6.05 , 1.00) (0.00 , N/A , 0.0)	573.4 579.3	0.6617 99.3 111.2	4.5485 [4.4237]	102.8%			
PFPeS	(349.0 / 80.0) 4675610 (349.0 / 99.0) 1635634	(7.10 , 0.89) (N/A , -0.03 , -0.1)	786.8 565.5	0.3498 95.0 92.2	4.7637 [4.6919]	101.5%			
PFHxS	(399.0 / 80.0) 4288237 (399.0 / 99.0) 1404285	(7.98 , 1.00) (0.00 , N/A , 0.1)	685.5 970.6	0.3275 102.4 103.6	4.7741 [4.5549]	104.8%			
PFHpS	(449.0 / 80.0) 4060344 (449.0 / 99.0) 1050149	(8.75 , 0.93) (N/A , -0.03 , 0.1)	669.0 730.0	0.2586 97.3 95.0	4.9868 [4.7570]	104.8%			
PFOS	(499.0 / 80.0) 4515150 (499.0 / 99.0) 879710	(9.42 , 1.00) (0.00 , N/A , 0.0)	403.7 620.8	0.1948 85.3 86.5	4.5465 [4.6375]	98.0%			
PFNS	(549.0 / 80.0) 5469435 (549.0 / 99.0) 1247899	(9.75 , 1.03) (N/A , -0.02 , 0.0)	588.5 601.3	0.2282 97.1 96.8	5.5271 [4.7994]	115.2%			
PFDS	(599.0 / 80.0) 6323397 (599.0 / 99.0) 1350213	(9.91 , 1.05) (N/A , -0.01 , 0.0)	1050.3 612.6	0.2135 95.3 88.7	5.2259 [4.8155]	108.5%			
PFDoS	(699.0 / 80.0) 2586381 (699.0 / 99.0) 595073	(10.10 , 1.07) (N/A , -0.01 , -0.2)	1194.6 592.1	0.2301 112.4 114.1	5.3511 [4.8478]	110.4%			
4:2FTS	(327.0 / 307.0) 6925145 (327.0 / 81.0) 4321164	(5.77 , 1.00) (0.00 , N/A , 0.2)	659.0 772.4	0.6240 96.7 103.8	22.2096 [18.6906]	118.8%			
6:2FTS	(427.0 / 407.0) 4446653 (427.0 / 81.0) 3379452	(7.52 , 1.00) (0.01 , N/A , 0.1)	700.6 811.2	0.7600 107.5 110.9	20.5356 [18.9808]	108.2%			
8:2FTS	(527.0 / 507.0) 3993601 (527.0 / 81.0) 2580307	(8.94 , 1.00) (0.00 , N/A , 0.3)	508.9 456.2	0.6461 92.0 86.9	20.8457 [19.1658]	108.8%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (32)
Acquired: 2022/12/28 - 02:37

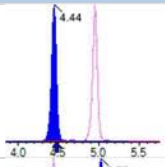
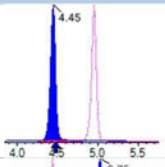
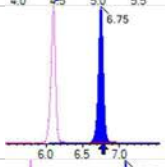
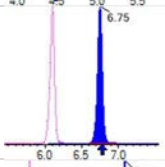
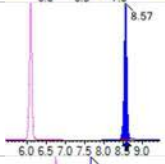
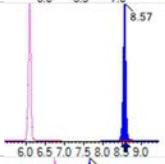
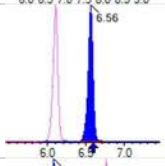
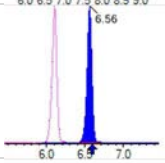
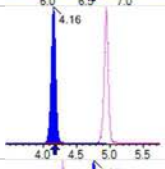
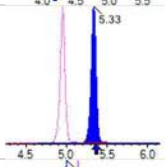
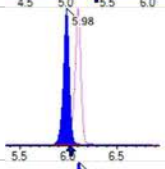
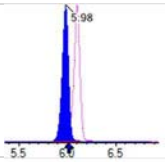
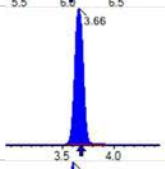
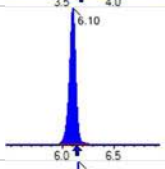
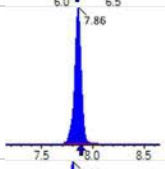
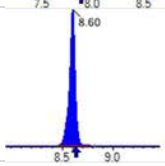
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 5981357 (498.0 / 478.0) 117384	(10.17 , 1.00) (0.00 , N/A , 0.0)	995.9 321.7	0.0196 123.1 78.2	5.2116 [5.0000]	104.2%			
NMeFOSA	(512.0 / 219.0) 4388734 (512.0 / 169.0) 3046364	(10.60 , 1.00) (0.00 , N/A , 0.0)	1107.0 1165.2	0.6941 102.0 103.7	22.7295 [20.0000]	113.6%			
NEtFOSA	(526.0 / 219.0) 4308135 (526.0 / 169.0) 4455666	(10.69 , 1.00) (0.00 , N/A , -0.1)	1485.5 1443.3	1.0342 103.0 100.3	20.0812 [20.0000]	100.4%			
NMeFOSAA	(570.0 / 419.0) 913989 (570.0 / 483.0) 514779	(9.48 , 1.00) (0.01 , N/A , 0.2)	486.1 455.0	0.5632 112.9 108.9	4.4930 [5.0000]	89.9%			
NEtFOSAA	(584.0 / 419.0) 868107 (584.0 / 526.0) 545275	(9.67 , 1.00) (0.00 , N/A , -0.1)	721.6 550.7	0.6281 104.6 114.2	5.0979 [5.0000]	102.0%			
NMeFOSE	(616.0 / 59.0) 1027368	(10.57 , 1.00) (0.00 , N/A , 0.0)	1641.9	N/A 0.0 0.0	19.5943 [20.0000]	98.0%			
NEtFOSE	(630.0 / 59.0) 184152	(10.67 , 1.00) (0.01 , N/A , 0.0)	1478.2	N/A 0.0 0.0	23.5147 [20.0000]	117.6%			
HFPO-DA	(285.0 / 169.0) 1537892 (285.0 / 185.0) 4126798	(6.45 , 1.00) (0.00 , N/A , 0.1)	676.2 788.2	2.6834 97.5 100.4	9.6867 [10.0000]	96.9%			
ADONA	(377.0 / 85.0) 6459496 (377.0 / 251.0) 786510	(7.36 , 1.14) (N/A , -0.03 , 0.1)	804.3 587.7	0.1218 105.8 110.3	9.5014 [9.4270]	100.8%			
9Cl-Pf3ONS	(531.0 / 351.0) 15474146 (533.0 / 353.0) 4740886	(9.71 , 1.50) (N/A , -0.01 , 0.2)	676.0 706.1	0.3064 95.8 97.6	8.6723 [9.3325]	92.9%			
11Cl-PF3OUDS	(631.0 / 451.0) 8306531 (633.0 / 453.0) 2886057	(10.00 , 1.55) (N/A , -0.01 , 0.1)	1128.0 909.6	0.3474 118.7 97.5	8.9055 [9.4321]	94.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (32)
Acquired: 2022/12/28 - 02:37

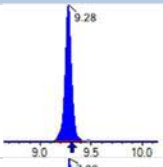
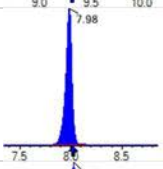
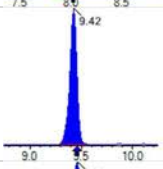
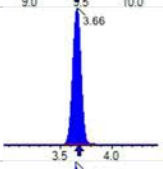
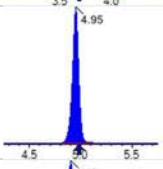
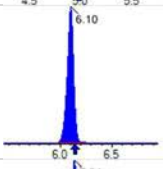
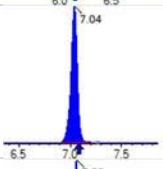
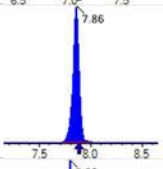
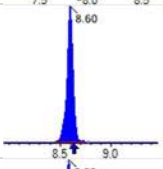
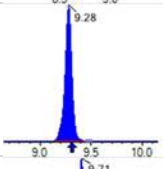
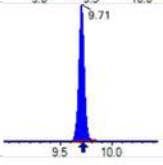
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 208295 (241.0 / 117.0) 272794	(4.44 , 0.90) (N/A , -0.02 , 0.0)	503.8 377.6	1.3097 95.9 97.8	19.8047 [20.0000]	99.0%			
5:3FTCA	(341.0 / 236.7) 1191940 (341.0 / 217.0) 2017090	(6.75 , 1.11) (N/A , -0.03 , 0.0)	498.9 471.0	1.6923 101.8 105.0	20.0638 [20.0000]	100.3%			
7:3FTCA	(441.0 / 317.0) 1566707 (441.0 / 337.0) 1421241	(8.57 , 1.40) (N/A , -0.03 , 0.0)	446.3 492.5	0.9072 108.5 105.5	21.4076 [20.0000]	107.0%			
PFEESA	(315.0 / 135.0) 3287338 (315.0 / 83.0) 1041424	(6.56 , 1.08) (N/A , -0.03 , 0.1)	505.5 774.8	0.3168 102.9 102.6	8.5217 [8.9246]	95.5%			
PFMPA	(229.0 / 85.0) 902624	(4.16 , 0.84) (N/A , -0.02 , 0.0)	895.6	N/A 0.0 0.0	9.8962 [10.0000]	99.0%			
PFMBA	(279.0 / 85.0) 2440561	(5.33 , 1.08) (N/A , -0.03 , 0.0)	773.8	N/A 0.0 0.0	10.2215 [10.0000]	102.2%			
NFDHA	(295.0 / 201.0) 1991106 (295.0 / 85.0) 1730753	(5.98 , 0.98) (N/A , -0.04 , 0.0)	531.7 649.8	0.8692 100.1 96.9	10.7517 [10.0000]	107.5%			
13C3_PFBA_IIS	(216.0 / 172.0) 277161	(3.66 , N/A) (N/A , -0.02 , N/A)	646.3	N/A	1.0253 [1.0000]	102.5% { 96.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 403972	(6.10 , N/A) (N/A , -0.04 , N/A)	523.1	N/A	1.0172 [1.0000]	101.7% { 98.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 395959	(7.86 , N/A) (N/A , -0.03 , N/A)	521.9	N/A	0.9912 [1.0000]	99.1% { 101.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 345972	(8.60 , N/A) (N/A , -0.03 , N/A)	342.8	N/A	1.0466 [1.0000]	104.7% { 100.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (32)
Acquired: 2022/12/28 - 02:37

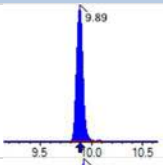
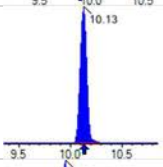
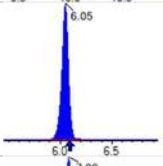
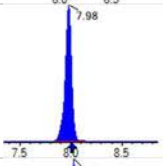
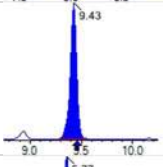
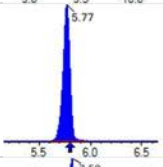
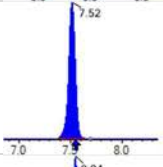
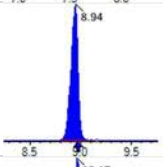
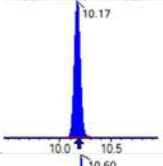
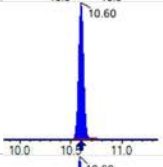
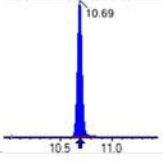
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 400567	(9.28 , N/A) (N/A , -0.03 , N/A)	238.5	N/A	1.1218 [1.0000]	112.2% { 110.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 642146	(7.98 , N/A) (N/A , -0.03 , N/A)	539.0	N/A	0.9207 [1.0000]	92.1% { 97.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 612727	(9.42 , N/A) (N/A , -0.03 , N/A)	367.1	N/A	0.8886 [1.0000]	88.9% { 90.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2248115	(3.66 , N/A) (N/A , -0.02 , N/A)	611.4	N/A	7.5480 [8.0000]	94.4% { 95.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1407061	(4.95 , N/A) (N/A , -0.02 , N/A)	572.9	N/A	3.8114 [4.0000]	95.3% { 98.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 850277	(6.10 , N/A) (N/A , -0.04 , N/A)	578.6	N/A	1.8924 [2.0000]	94.6% { 89.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 731496	(7.04 , N/A) (N/A , -0.03 , N/A)	432.6	N/A	1.8220 [2.0000]	91.1% { 91.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 837965	(7.86 , N/A) (N/A , -0.03 , N/A)	511.0	N/A	1.9313 [2.0000]	96.6% { 102.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 404102	(8.60 , N/A) (N/A , -0.04 , N/A)	409.8	N/A	1.0611 [1.0000]	106.1% { 107.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 474969	(9.28 , N/A) (N/A , -0.03 , N/A)	439.7	N/A	0.9064 [1.0000]	90.6% { 112.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 553206	(9.71 , N/A) (N/A , -0.02 , N/A)	730.5	N/A	0.8712 [1.0000]	87.1% { 86.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (32)
Acquired: 2022/12/28 - 02:37

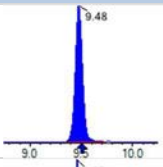
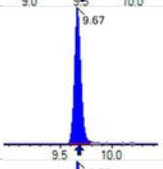
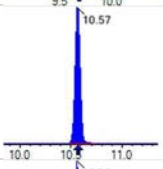
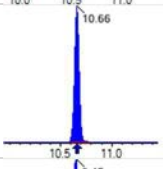
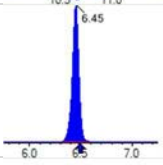
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 576030	(9.89 , N/A) (N/A , -0.01 , N/A)	435.5	N/A	0.8242 [1.0000]	82.4% { 91.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 418720	(10.13 , N/A) (N/A , 0.00 , N/A)	4733.0	N/A	0.9076 [1.0000]	90.8% { 94.6% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2057085	(6.05 , N/A) (N/A , -0.04 , N/A)	510.7	N/A	1.9024 [2.0000]	95.1% { 95.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1168756	(7.98 , N/A) (N/A , -0.03 , N/A)	731.1	N/A	2.0363 [2.0000]	101.8% { 103.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1711806	(9.43 , N/A) (N/A , -0.03 , N/A)	210.7	N/A	2.1572 [2.0000]	107.9% { 92.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 437177	(5.77 , N/A) (N/A , -0.03 , N/A)	448.3	N/A	3.4331 [4.0000]	85.8% { 81.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 632826	(7.52 , N/A) (N/A , -0.03 , N/A)	629.1	N/A	3.9989 [4.0000]	100.0% { 93.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 568793	(8.94 , N/A) (N/A , -0.03 , N/A)	480.4	N/A	3.6458 [4.0000]	91.1% { 78.6% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2391665	(10.17 , N/A) (N/A , -0.01 , N/A)	622.1	N/A	2.2669 [2.0000]	113.3% { 95.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 443928	(10.60 , N/A) (N/A , -0.01 , N/A)	812.0	N/A	2.1697 [2.0000]	108.5% { 96.3% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 466821	(10.69 , N/A) (N/A , 0.00 , N/A)	691.0	N/A	2.5606 [2.0000]	128.0% { 94.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCV3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (32)
Acquired: 2022/12/28 - 02:37

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 979894	(9.48 , N/A) (N/A , -0.03 , N/A)	376.5	N/A	4.5139 [4.0000]	112.8% { 98.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 785438	(9.67 , N/A) (N/A , -0.02 , N/A)	369.5	N/A	4.2243 [4.0000]	105.6% { 108.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 928790	(10.57 , N/A) (N/A , -0.01 , N/A)	1161.7	N/A	28.3334 [20.0000]	141.7% { 96.6% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 413062	(10.66 , N/A) (N/A , 0.00 , N/A)	1219.4	N/A	31.1587 [20.0000]	155.8% { 98.7% }			S2,
13C3_HFPODA_EIS	(287.0 / 169.0) 2069197	(6.45 , N/A) (N/A , -0.03 , N/A)	757.8	N/A	8.2928 [8.0000]	103.7% { 99.8% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
Client: AECOM
Sequence: SB03988
Calibration: 2253007

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03988-ICB1	PFBA	0.00	ng/mL	0.75	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.0254	ng/mL	0.10	U
	PFTEDA	0.0463	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	0.0164	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	0.0148	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.0202	ng/mL	0.10	U
	NEtFOSAA	0.0362	ng/mL	0.10	U
	NMeFOSE	0.0780	ng/mL	0.40	U
	NEtFOSE	0.0604	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: SB03988
Calibration: 2253007

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

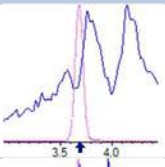
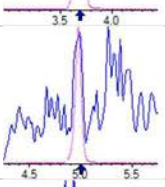
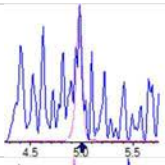
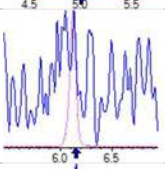
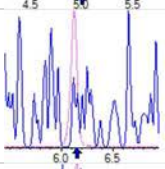
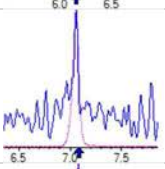
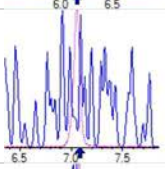
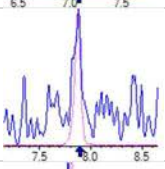
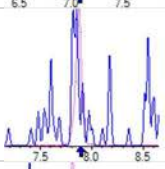
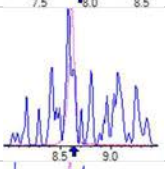
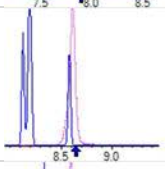
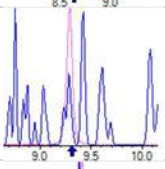
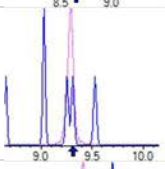
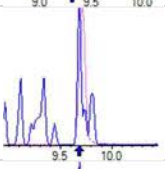
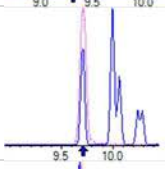
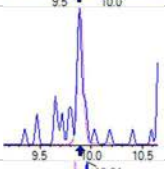
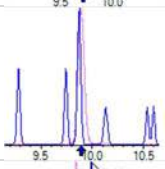
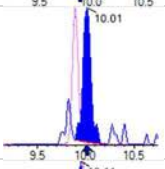
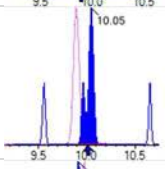
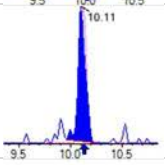
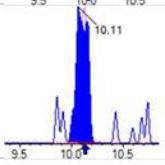
Lab Sample ID	Analyte	Found	Units	RL	C
SB03988-ICB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.0543	ng/mL	0.40	U
	13C4-PFBA	8.54	ng/mL		
	13C5-PFPEA	3.99	ng/mL		
	13C5-PFHXA	2.07	ng/mL		
	13C4-PFHPA	2.04	ng/mL		
	13C8-PFOA	2.10	ng/mL		
	13C9-PFNA	1.04	ng/mL		
	13C6-PFDA	1.17	ng/mL		
	13C7-PFUnA	1.22	ng/mL		
	13C2-PFDOA	1.20	ng/mL		
	13C2-PFTEDA	1.49	ng/mL		
	13C3-PFBS	2.33	ng/mL		
	13C3-PFHXS	2.28	ng/mL		
	13C8-PFOS	2.19	ng/mL		
	13C2-4:2FTS	4.73	ng/mL		
	13C2-6:2FTS	4.34	ng/mL		
	13C2-8:2FTS	4.52	ng/mL		
	13C8-PFOSA	1.96	ng/mL		
	D5-NETFOSA	2.44	ng/mL		
	D3-NMEFOSA	2.13	ng/mL		
	D3-NMEFOSAA	3.93	ng/mL		
	D5-NETFOSAA	4.05	ng/mL		
	D7-NMEFOSE	23.2	ng/mL		
	D9-NETFOSE	23.9	ng/mL		
	13C3-HFPO-DA	8.36	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (9)
Acquired: 2022/12/27 - 18:53

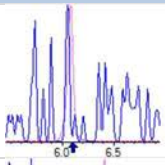
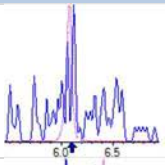
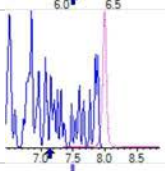
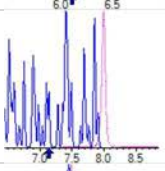
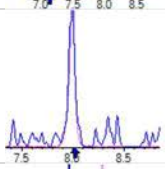
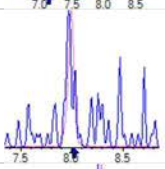
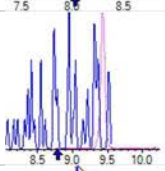
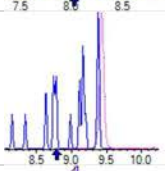
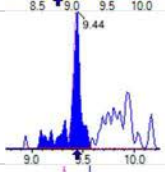
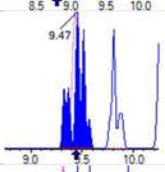
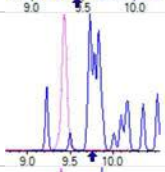
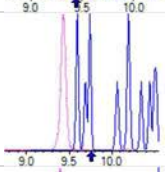
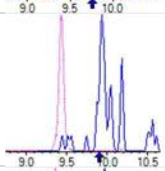
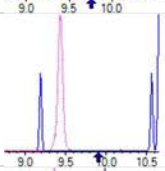
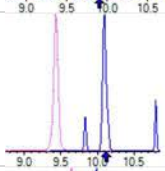
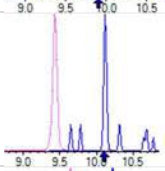
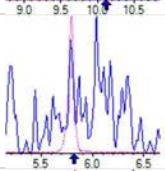
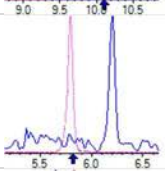
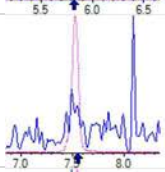
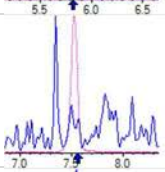
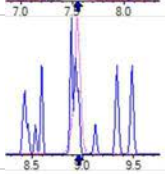
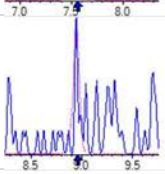
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	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) 10431 (663.0 / 169.0) 1328	(10.01 , 1.01) (N/A , -0.01 , -2.2)	33.3 135.5	0.1273 55.8 55.8	0.0254	N/A			
PFTeDA	(713.0 / 669.0) 19524 (713.0 / 169.0) 9254	(10.11 , 1.00) (-0.02 , N/A , -0.1)	54.0 20.8	0.4739 226.9 226.9	0.0463	N/A			IR2,

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (9)
Acquired: 2022/12/27 - 18:53

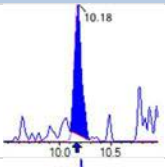
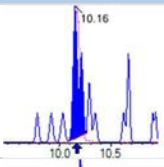
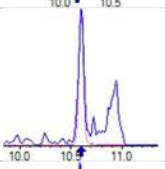
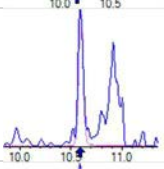
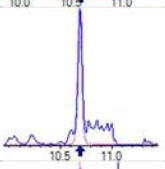
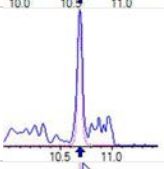
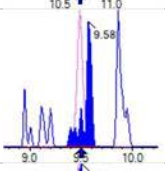
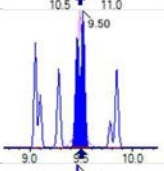
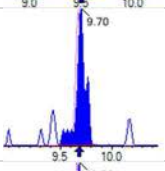
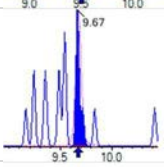
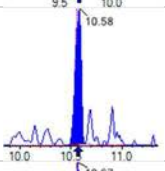
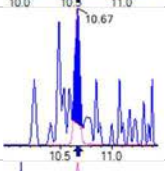
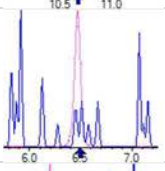
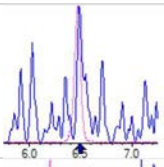
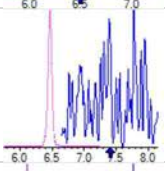
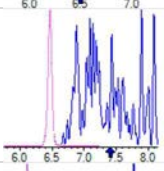
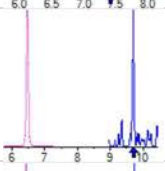
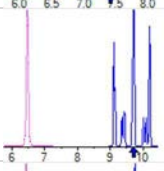
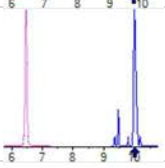
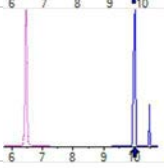
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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) 17852 (499.0 / 99.0) 4020	(9.44 , 1.00) (0.01 , N/A , -2.1)	38.3 527.7	0.2252 98.6 98.6	0.0164	N/A			MI5 DG 2022-12-28
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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (9)
Acquired: 2022/12/27 - 18:53

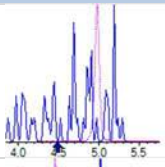
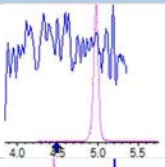
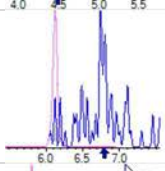
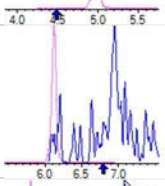
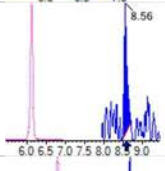
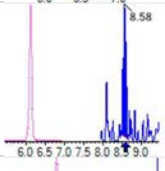
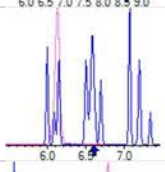
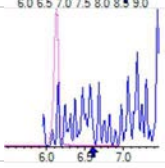
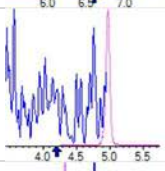
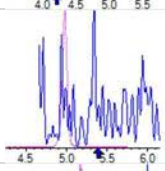
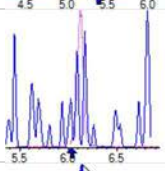
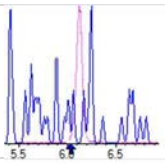
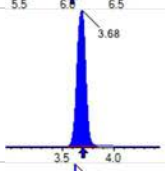
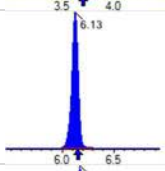
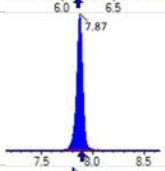
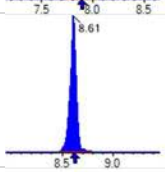
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 15819 (498.0 / 478.0) 2011	(10.18 , 1.00) (0.01 , N/A , 1.0)	22.1 18.9	0.1271 797.6 797.6	0.0148	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) 3856 (570.0 / 483.0) 3131	(9.58 , 1.01) (0.09 , N/A , 4.8)	33.0 467.1	0.8119 162.7 162.7	0.0202	N/A			IR2,
NEtFOSAA	(584.0 / 419.0) 6366 (584.0 / 526.0) 1341	(9.70 , 1.00) (0.02 , N/A , 1.8)	84.2 56.3	0.2106 35.1 35.1	0.0362	N/A			IR1,
NMeFOSE	(616.0 / 59.0) 3623	(10.58 , 1.00) (0.01 , N/A , 0.0)	35.0	N/A 0.0 0.0	0.0780	N/A			
NEtFOSE	(630.0 / 59.0) 391	(10.67 , 1.00) (0.01 , N/A , 0.0)	9.7	N/A 0.0 0.0	0.0604	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (9)
Acquired: 2022/12/27 - 18:53

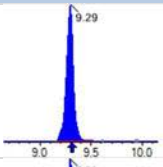
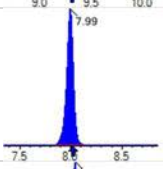
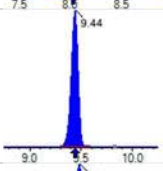
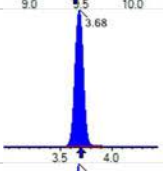
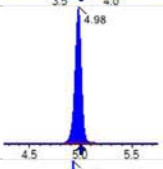
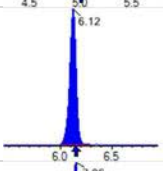
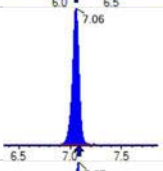
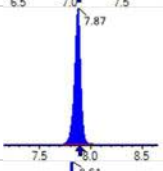
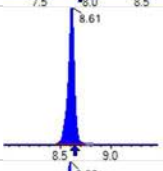
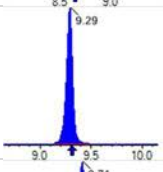
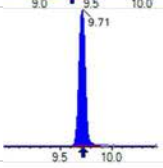
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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) 3882 (441.0 / 337.0) 3410	(8.56 , 1.40) (N/A , -0.04 , -0.8)	15.2 20.9	0.8784 105.1 105.1	0.0543	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) 237428	(3.68 , N/A) (N/A , -0.01 , N/A)	626.4	N/A	0.8783 [1.0000]	87.8% { 81.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 361379	(6.13 , N/A) (N/A , -0.02 , N/A)	496.8	N/A	0.9100 [1.0000]	91.0% { 90.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 374814	(7.87 , N/A) (N/A , -0.02 , N/A)	670.6	N/A	0.9382 [1.0000]	93.8% { 94.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 304663	(8.61 , N/A) (N/A , -0.01 , N/A)	485.6	N/A	0.9217 [1.0000]	92.2% { 83.8% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (9)
Acquired: 2022/12/27 - 18:53

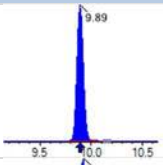
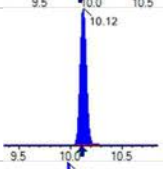
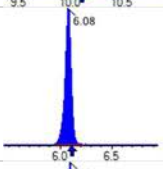
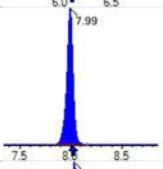
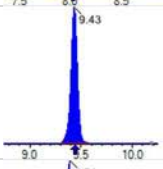
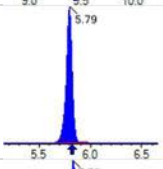
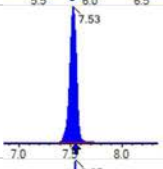
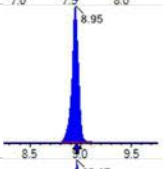
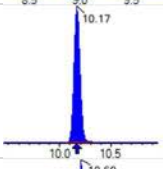
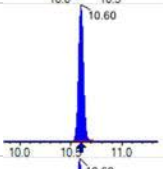
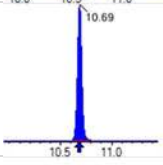
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 269973	(9.29 , N/A) (N/A , -0.01 , N/A)	293.1	N/A	0.7561 [1.0000]	75.6% { 81.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 560720	(7.99 , N/A) (N/A , -0.02 , N/A)	869.2	N/A	0.8039 [1.0000]	80.4% { 75.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 661332	(9.44 , N/A) (N/A , -0.01 , N/A)	449.9	N/A	0.9591 [1.0000]	95.9% { 100.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2178288	(3.68 , N/A) (N/A , -0.01 , N/A)	655.7	N/A	8.5375 [8.0000]	106.7% { 90.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1318486	(4.98 , N/A) (N/A , -0.02 , N/A)	639.0	N/A	3.9924 [4.0000]	99.8% { 86.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 830193	(6.12 , N/A) (N/A , -0.02 , N/A)	565.3	N/A	2.0654 [2.0000]	103.3% { 96.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 734215	(7.06 , N/A) (N/A , -0.02 , N/A)	506.9	N/A	2.0443 [2.0000]	102.2% { 88.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 864019	(7.87 , N/A) (N/A , -0.02 , N/A)	669.3	N/A	2.1037 [2.0000]	105.2% { 106.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 347869	(8.61 , N/A) (N/A , -0.02 , N/A)	511.1	N/A	1.0372 [1.0000]	103.7% { 90.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 413388	(9.29 , N/A) (N/A , -0.01 , N/A)	341.5	N/A	1.1705 [1.0000]	117.1% { 92.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 522316	(9.71 , N/A) (N/A , 0.00 , N/A)	467.3	N/A	1.2204 [1.0000]	122.0% { 86.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (9)
Acquired: 2022/12/27 - 18:53

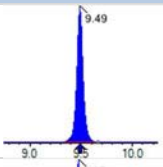
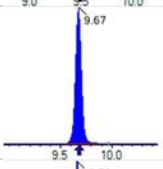
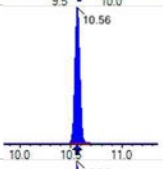
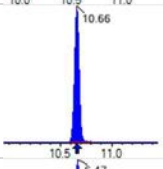
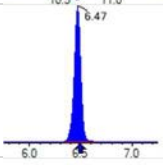
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 566455	(9.89 , N/A) (N/A , 0.00 , N/A)	295.8	N/A	1.2025 [1.0000]	120.2% { 83.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 464707	(10.12 , N/A) (N/A , 0.00 , N/A)	5773.7	N/A	1.4946 [1.0000]	149.5% { 105.5% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2197962	(6.08 , N/A) (N/A , -0.02 , N/A)	529.2	N/A	2.3278 [2.0000]	116.4% { 87.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1140915	(7.99 , N/A) (N/A , -0.02 , N/A)	725.2	N/A	2.2764 [2.0000]	113.8% { 89.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1878974	(9.43 , N/A) (N/A , -0.01 , N/A)	532.9	N/A	2.1938 [2.0000]	109.7% { 115.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 525532	(5.79 , N/A) (N/A , -0.02 , N/A)	543.4	N/A	4.7263 [4.0000]	118.2% { 102.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 599185	(7.53 , N/A) (N/A , -0.02 , N/A)	564.2	N/A	4.3362 [4.0000]	108.4% { 100.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 616325	(8.95 , N/A) (N/A , -0.01 , N/A)	435.5	N/A	4.5241 [4.0000]	113.1% { 100.9% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2231848	(10.17 , N/A) (N/A , 0.00 , N/A)	663.7	N/A	1.9599 [2.0000]	98.0% { 93.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 470024	(10.60 , N/A) (N/A , 0.00 , N/A)	1002.2	N/A	2.1284 [2.0000]	106.4% { 103.2% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 479184	(10.69 , N/A) (N/A , 0.00 , N/A)	815.8	N/A	2.4353 [2.0000]	121.8% { 117.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03988-ICB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27A (9)
Acquired: 2022/12/27 - 18:53

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) 920519	(9.49 , N/A) (N/A , 0.00 , N/A)	530.4	N/A	3.9288 [4.0000]	98.2% { 87.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 812004	(9.67 , N/A) (N/A , 0.00 , N/A)	385.1	N/A	4.0462 [4.0000]	101.2% { 88.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 822384	(10.56 , N/A) (N/A , 0.00 , N/A)	1088.1	N/A	23.2435 [20.0000]	116.2% { 111.7% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 341574	(10.66 , N/A) (N/A , 0.00 , N/A)	977.5	N/A	23.8725 [20.0000]	119.4% { 113.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1866505	(6.47 , N/A) (N/A , -0.02 , N/A)	693.7	N/A	8.3622 [8.0000]	104.5% { 95.1% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
Client: AECOM
Sequence: SB03989
Calibration: 2253007

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-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	0.0171	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: SB03989
Calibration: 2253007

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

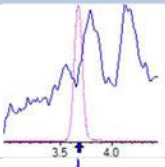
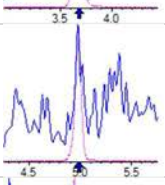
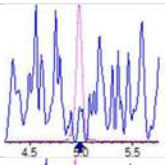
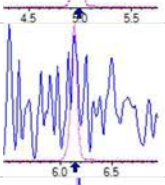
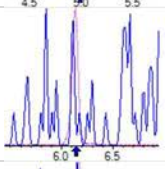
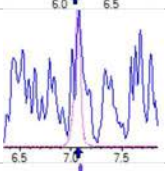
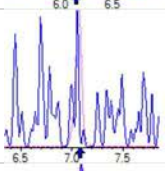
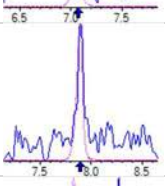
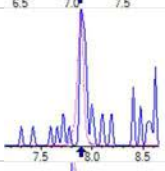
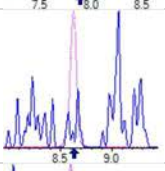
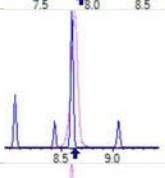
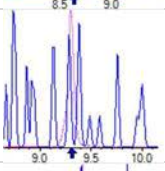
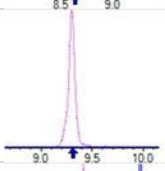
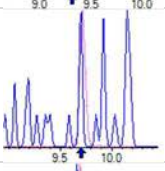
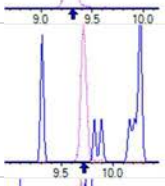
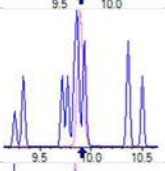
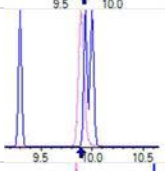
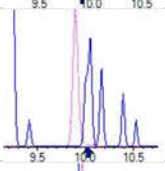
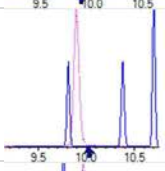
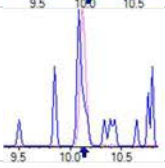
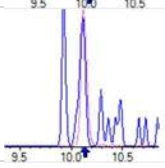
Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-CCB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.93	ng/mL		
	13C5-PFPEA	4.26	ng/mL		
	13C5-PFHXA	2.07	ng/mL		
	13C4-PFHPA	1.95	ng/mL		
	13C8-PFOA	2.15	ng/mL		
	13C9-PFNA	1.02	ng/mL		
	13C6-PFDA	1.04	ng/mL		
	13C7-PFUnA	1.07	ng/mL		
	13C2-PFDOA	1.07	ng/mL		
	13C2-PFTEDA	1.16	ng/mL		
	13C3-PFBS	2.20	ng/mL		
	13C3-PFHXS	1.95	ng/mL		
	13C8-PFOS	2.13	ng/mL		
	13C2-4:2FTS	3.89	ng/mL		
	13C2-6:2FTS	3.66	ng/mL		
	13C2-8:2FTS	3.77	ng/mL		
	13C8-PFOSA	2.44	ng/mL		
	D5-NETFOSA	2.46	ng/mL		
	D3-NMEFOSA	2.31	ng/mL		
	D3-NMEFOSAA	4.35	ng/mL		
	D5-NETFOSAA	4.42	ng/mL		
	D7-NMEFOSE	26.7	ng/mL		
	D9-NETFOSE	28.1	ng/mL		
	13C3-HFPO-DA	8.29	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (1)
Acquired: 2022/12/27 - 19:32

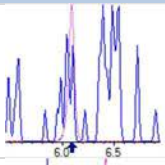
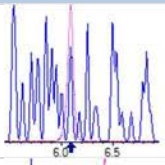
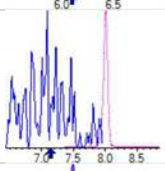
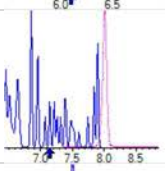
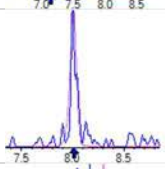
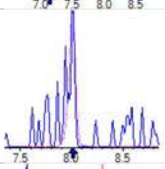
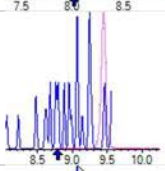
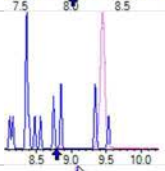
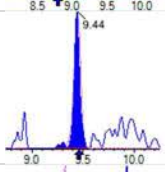
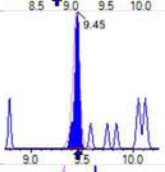
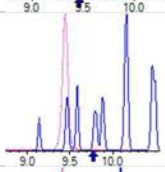
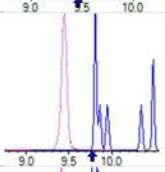
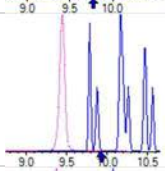
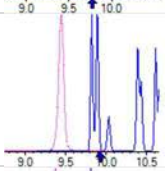
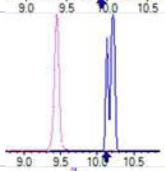
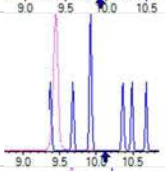
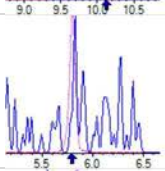
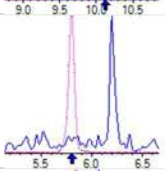
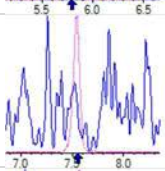
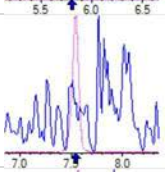
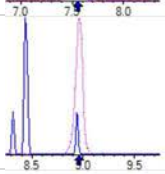
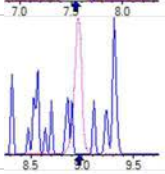
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (1)
Acquired: 2022/12/27 - 19:32

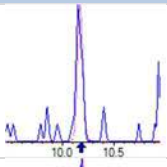
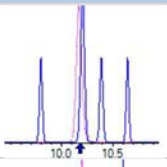
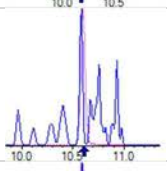
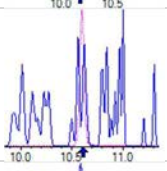
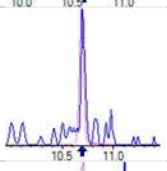
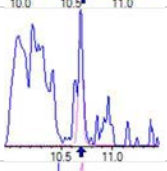
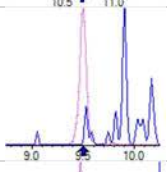
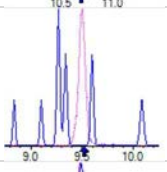
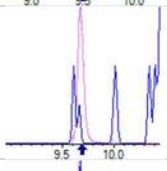
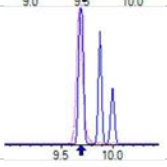
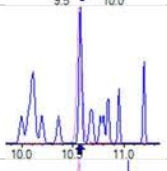
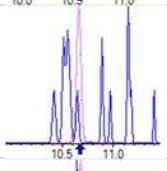
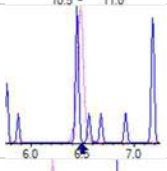
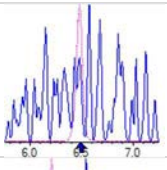
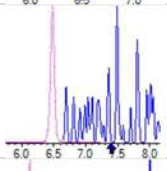
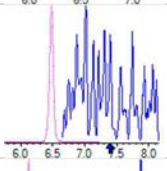
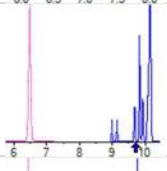
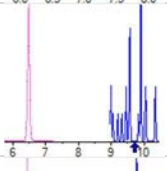
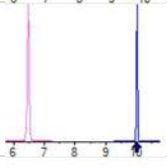
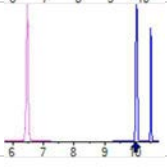
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 17771 (499.0 / 99.0) 2373	(9.44 , 1.00) (-0.01 , N/A , -0.9)	1500.8 186.7	0.1335 58.5 59.3	0.0171	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (1)
Acquired: 2022/12/27 - 19:32

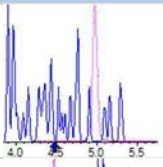
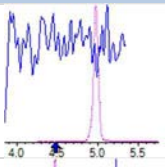
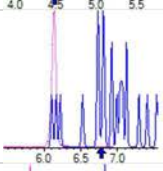
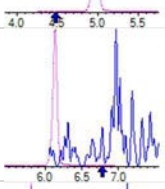
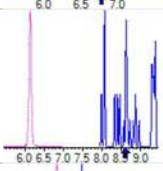
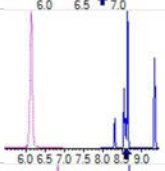
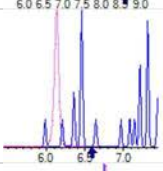
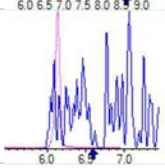
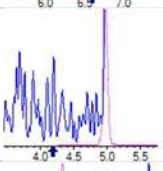
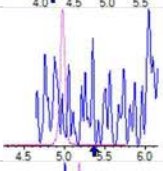
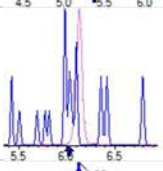
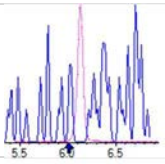
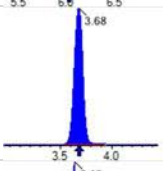
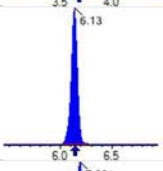
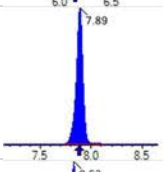
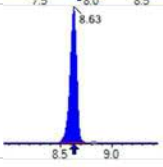
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (1)
Acquired: 2022/12/27 - 19:32

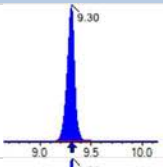
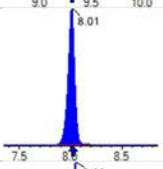
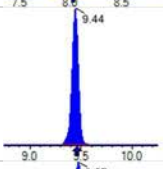
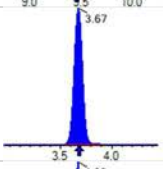
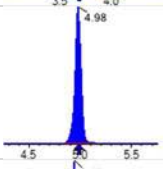
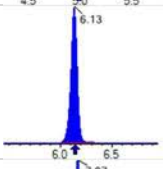
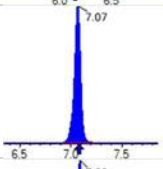
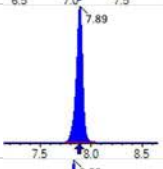
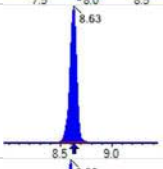
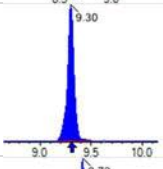
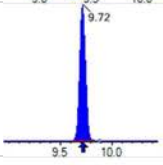
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 311594	(3.68 , N/A) (N/A , 0.00 , N/A)	614.3	N/A	1.1527 [1.0000]	115.3% { 108.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 423747	(6.13 , N/A) (N/A , 0.00 , N/A)	687.1	N/A	1.0670 [1.0000]	106.7% { 103.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 395133	(7.89 , N/A) (N/A , 0.00 , N/A)	542.4	N/A	0.9891 [1.0000]	98.9% { 100.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 336161	(8.63 , N/A) (N/A , 0.00 , N/A)	457.8	N/A	1.0170 [1.0000]	101.7% { 98.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (1)
Acquired: 2022/12/27 - 19:32

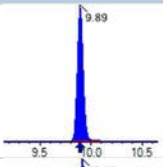
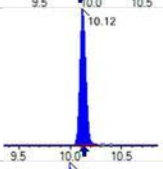
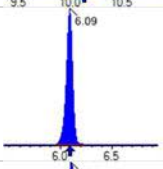
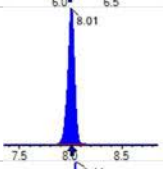
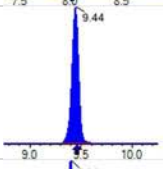
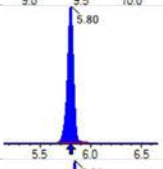
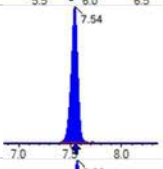
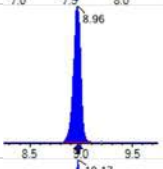
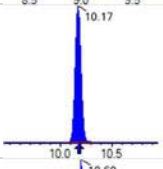
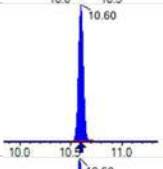
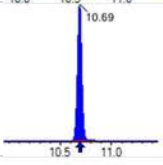
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 355692	(9.30 , N/A) (N/A , -0.01 , N/A)	380.2	N/A	0.9961 [1.0000]	99.6% { 98.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 681185	(8.01 , N/A) (N/A , 0.00 , N/A)	581.8	N/A	0.9767 [1.0000]	97.7% { 103.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 649656	(9.44 , N/A) (N/A , -0.01 , N/A)	541.9	N/A	0.9421 [1.0000]	94.2% { 96.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2656779	(3.67 , N/A) (N/A , 0.00 , N/A)	741.7	N/A	7.9344 [8.0000]	99.2% { 112.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1651330	(4.98 , N/A) (N/A , 0.00 , N/A)	564.3	N/A	4.2643 [4.0000]	106.6% { 116.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 974040	(6.13 , N/A) (N/A , -0.01 , N/A)	503.9	N/A	2.0666 [2.0000]	103.3% { 102.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 819584	(7.07 , N/A) (N/A , -0.01 , N/A)	469.1	N/A	1.9462 [2.0000]	97.3% { 102.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 929554	(7.89 , N/A) (N/A , 0.00 , N/A)	641.6	N/A	2.1468 [2.0000]	107.3% { 113.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 378987	(8.63 , N/A) (N/A , -0.01 , N/A)	521.8	N/A	1.0241 [1.0000]	102.4% { 101.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 482118	(9.30 , N/A) (N/A , -0.01 , N/A)	284.5	N/A	1.0361 [1.0000]	103.6% { 114.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 604296	(9.72 , N/A) (N/A , -0.01 , N/A)	410.9	N/A	1.0717 [1.0000]	107.2% { 94.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (1)
Acquired: 2022/12/27 - 19:32

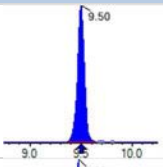
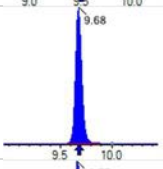
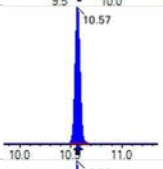
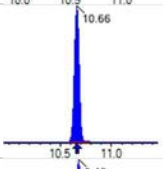
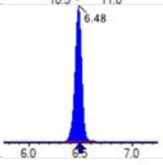
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 666415	(9.89 , N/A) (N/A , -0.01 , N/A)	554.7	N/A	1.0738 [1.0000]	107.4% { 105.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 473683	(10.12 , N/A) (N/A , -0.01 , N/A)	1960.4	N/A	1.1563 [1.0000]	115.6% { 107.1% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2525491	(6.09 , N/A) (N/A , 0.00 , N/A)	667.5	N/A	2.2017 [2.0000]	110.1% { 117.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1188542	(8.01 , N/A) (N/A , 0.00 , N/A)	624.6	N/A	1.9521 [2.0000]	97.6% { 105.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1794488	(9.44 , N/A) (N/A , -0.01 , N/A)	578.5	N/A	2.1328 [2.0000]	106.6% { 97.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 525622	(5.80 , N/A) (N/A , 0.00 , N/A)	448.4	N/A	3.8911 [4.0000]	97.3% { 98.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 613682	(7.54 , N/A) (N/A , 0.00 , N/A)	703.6	N/A	3.6557 [4.0000]	91.4% { 90.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 623647	(8.96 , N/A) (N/A , -0.01 , N/A)	594.2	N/A	3.7683 [4.0000]	94.2% { 86.2% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2727038	(10.17 , N/A) (N/A , -0.01 , N/A)	927.5	N/A	2.4378 [2.0000]	121.9% { 108.5% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 500118	(10.60 , N/A) (N/A , -0.01 , N/A)	1404.7	N/A	2.3054 [2.0000]	115.3% { 108.5% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 475370	(10.69 , N/A) (N/A , 0.00 , N/A)	913.9	N/A	2.4593 [2.0000]	123.0% { 96.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (1)
Acquired: 2022/12/27 - 19:32

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) 1001073	(9.50 , N/A) (N/A , 0.00 , N/A)	369.7	N/A	4.3494 [4.0000]	108.7% { 100.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 870812	(9.68 , N/A) (N/A , -0.01 , N/A)	361.2	N/A	4.4172 [4.0000]	110.4% { 120.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 927426	(10.57 , N/A) (N/A , 0.00 , N/A)	726.2	N/A	26.6835 [20.0000]	133.4% { 96.5% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 394442	(10.66 , N/A) (N/A , 0.00 , N/A)	1028.9	N/A	28.0628 [20.0000]	140.3% { 94.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2169125	(6.48 , N/A) (N/A , 0.00 , N/A)	692.1	N/A	8.2876 [8.0000]	103.6% { 104.6% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
Client: AECOM
Sequence: SB03989
Calibration: 2253007

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-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	0.0224	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: SB03989
Calibration: 2253007

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

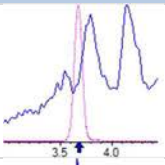
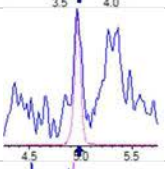
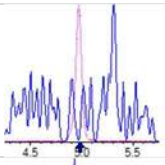
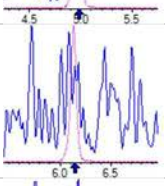
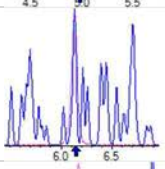
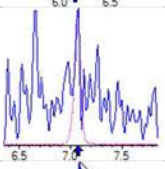
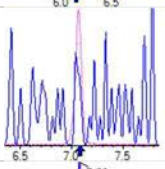
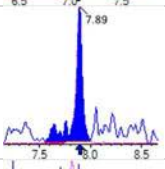
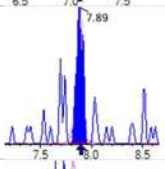
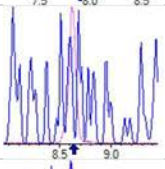
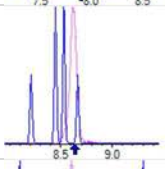
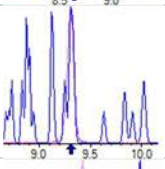
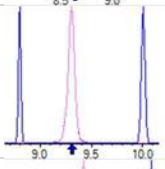
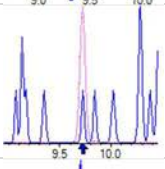
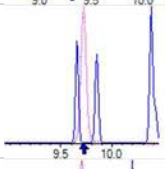
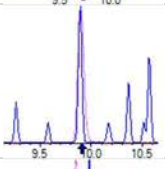
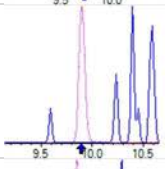
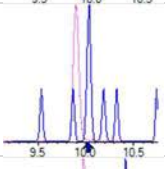
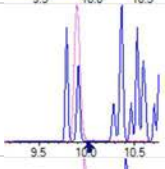
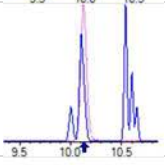
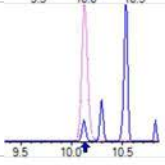
Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-CCB2	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.87	ng/mL		
	13C5-PFPEA	4.52	ng/mL		
	13C5-PFHXA	2.17	ng/mL		
	13C4-PFHPA	2.12	ng/mL		
	13C8-PFOA	1.95	ng/mL		
	13C9-PFNA	0.938	ng/mL		
	13C6-PFDA	1.13	ng/mL		
	13C7-PFUnA	1.19	ng/mL		
	13C2-PFDOA	1.15	ng/mL		
	13C2-PFTEDA	1.43	ng/mL		
	13C3-PFBS	2.10	ng/mL		
	13C3-PFHXS	2.06	ng/mL		
	13C8-PFOS	2.22	ng/mL		
	13C2-4:2FTS	4.02	ng/mL		
	13C2-6:2FTS	3.98	ng/mL		
	13C2-8:2FTS	3.58	ng/mL		
	13C8-PFOSA	2.21	ng/mL		
	D5-NETFOSA	2.33	ng/mL		
	D3-NMEFOSA	2.24	ng/mL		
	D3-NMEFOSAA	4.18	ng/mL		
	D5-NETFOSAA	4.07	ng/mL		
	D7-NMEFOSE	25.6	ng/mL		
	D9-NETFOSE	25.4	ng/mL		
	13C3-HFPO-DA	8.73	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (4)
Acquired: 2022/12/27 - 20:36

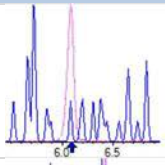
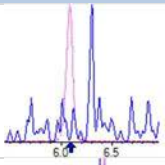
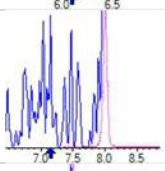
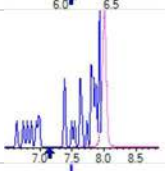
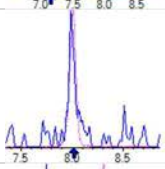
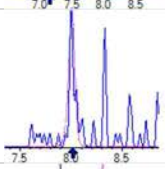
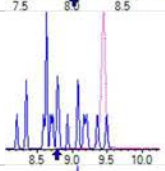
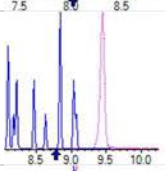
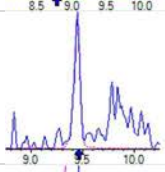
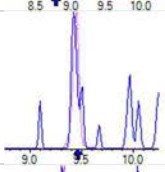
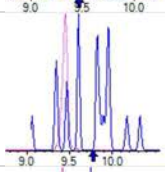
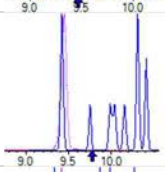
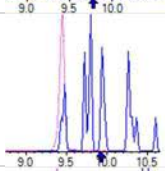
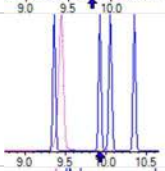
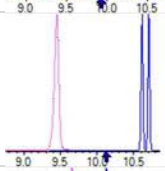
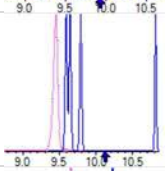
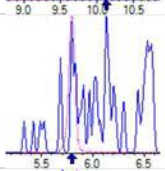
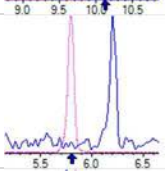
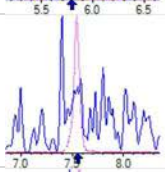
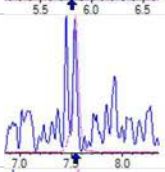
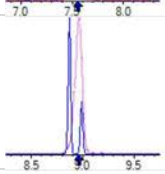
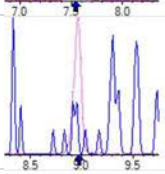
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	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) 8840 (413.0 / 169.0) 1222	(7.89 , 1.00) (0.00 , N/A , 0.3)	58.6 16.5	0.1382 41.1 44.1	0.0224	N/A			IR1,MI5 DG 2022-12-28
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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (4)
Acquired: 2022/12/27 - 20:36

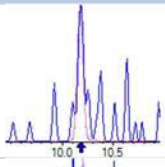
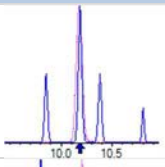
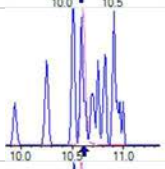
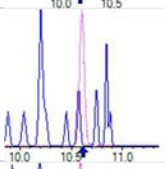
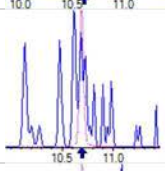
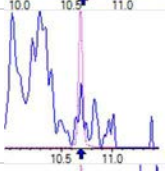
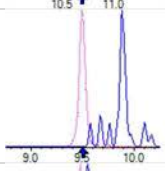
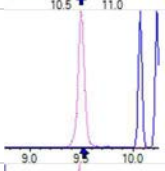
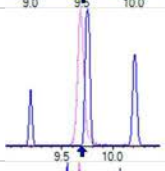
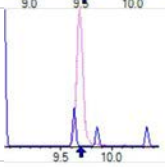
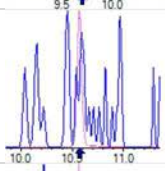
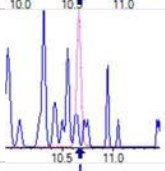
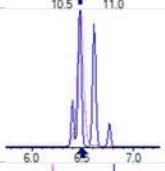
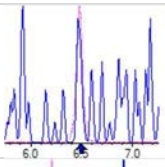
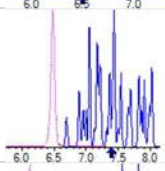
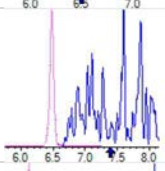
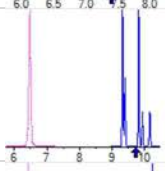
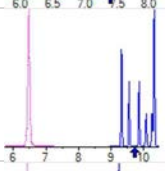
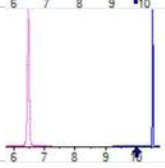
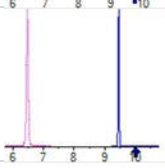
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (4)
Acquired: 2022/12/27 - 20:36

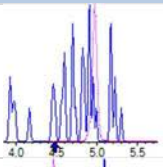
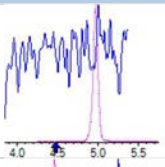
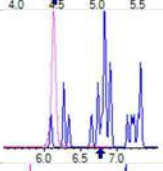
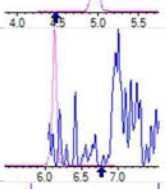
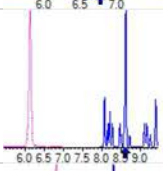
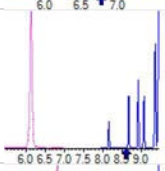
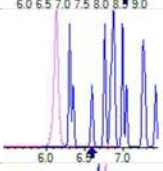
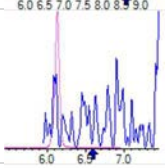
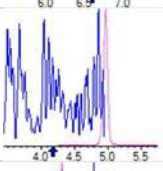
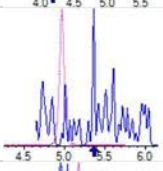
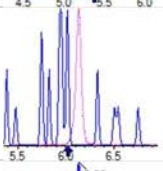
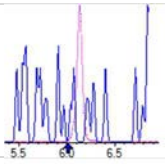
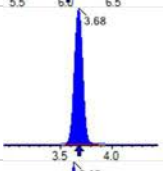
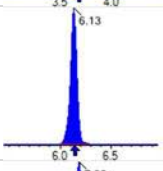
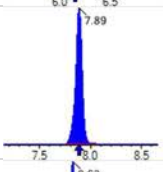
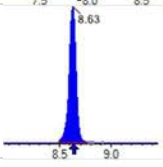
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (4)
Acquired: 2022/12/27 - 20:36

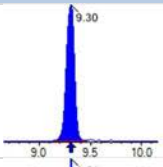
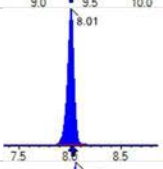
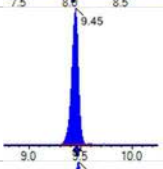
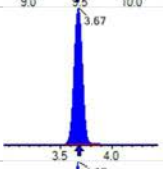
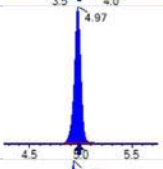
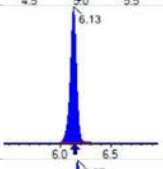
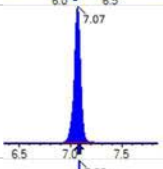
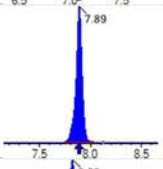
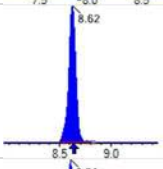
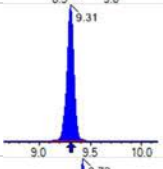
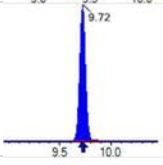
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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) 312338	(3.68 , N/A) (N/A , 0.00 , N/A)	728.7	N/A	1.1554 [1.0000]	115.5% { 108.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 378255	(6.13 , N/A) (N/A , 0.00 , N/A)	427.0	N/A	0.9525 [1.0000]	95.2% { 92.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 397766	(7.89 , N/A) (N/A , 0.00 , N/A)	531.5	N/A	0.9957 [1.0000]	99.6% { 101.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 320093	(8.63 , N/A) (N/A , 0.00 , N/A)	360.4	N/A	0.9683 [1.0000]	96.8% { 93.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (4)
Acquired: 2022/12/27 - 20:36

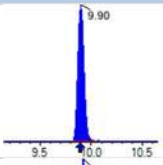
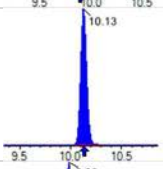
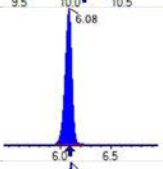
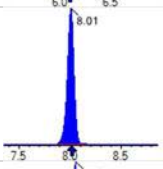
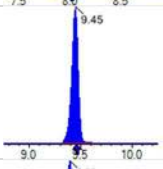
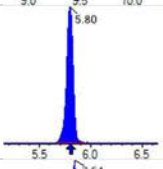
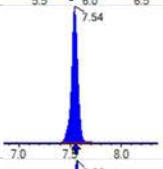
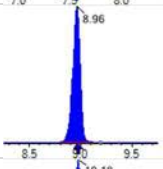
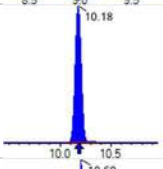
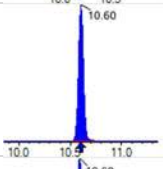
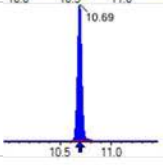
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 296577	(9.30 , N/A) (N/A , -0.01 , N/A)	243.0	N/A	0.8306 [1.0000]	83.1% { 81.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 648775	(8.01 , N/A) (N/A , 0.00 , N/A)	657.2	N/A	0.9302 [1.0000]	93.0% { 98.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 658427	(9.45 , N/A) (N/A , -0.01 , N/A)	468.4	N/A	0.9548 [1.0000]	95.5% { 97.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2642364	(3.67 , N/A) (N/A , 0.00 , N/A)	641.7	N/A	7.8726 [8.0000]	98.4% { 111.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1563971	(4.97 , N/A) (N/A , -0.01 , N/A)	546.7	N/A	4.5244 [4.0000]	113.1% { 110.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 912572	(6.13 , N/A) (N/A , -0.01 , N/A)	566.9	N/A	2.1691 [2.0000]	108.5% { 96.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 796123	(7.07 , N/A) (N/A , -0.01 , N/A)	490.1	N/A	2.1178 [2.0000]	105.9% { 99.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 850381	(7.89 , N/A) (N/A , 0.00 , N/A)	626.5	N/A	1.9510 [2.0000]	97.5% { 103.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 330515	(8.62 , N/A) (N/A , -0.01 , N/A)	345.6	N/A	0.9380 [1.0000]	93.8% { 88.2% }			
13C6_PFDA_EIS	(519.0 / 474.0) 437882	(9.31 , N/A) (N/A , 0.00 , N/A)	288.6	N/A	1.1286 [1.0000]	112.9% { 103.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 557941	(9.72 , N/A) (N/A , 0.00 , N/A)	541.5	N/A	1.1867 [1.0000]	118.7% { 87.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (4)
Acquired: 2022/12/27 - 20:36

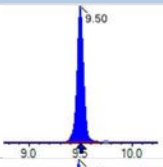
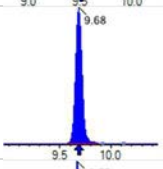
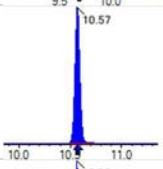
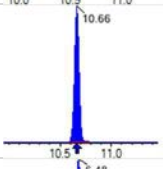
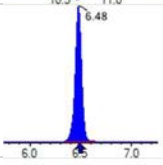
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 593456	(9.90 , N/A) (N/A , 0.00 , N/A)	527.8	N/A	1.1468 [1.0000]	114.7% { 94.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 486965	(10.13 , N/A) (N/A , 0.00 , N/A)	900.9	N/A	1.4257 [1.0000]	142.6% { 110.1% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2288774	(6.08 , N/A) (N/A , -0.01 , N/A)	505.9	N/A	2.0950 [2.0000]	104.8% { 106.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1196544	(8.01 , N/A) (N/A , 0.00 , N/A)	685.2	N/A	2.0634 [2.0000]	103.2% { 106.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1891524	(9.45 , N/A) (N/A , -0.01 , N/A)	573.0	N/A	2.2182 [2.0000]	110.9% { 102.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 517448	(5.80 , N/A) (N/A , 0.00 , N/A)	648.5	N/A	4.0219 [4.0000]	100.5% { 96.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 636160	(7.54 , N/A) (N/A , 0.00 , N/A)	696.0	N/A	3.9789 [4.0000]	99.5% { 93.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 564896	(8.96 , N/A) (N/A , -0.01 , N/A)	462.4	N/A	3.5838 [4.0000]	89.6% { 78.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2505176	(10.18 , N/A) (N/A , 0.00 , N/A)	935.2	N/A	2.2096 [2.0000]	110.5% { 99.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 493292	(10.60 , N/A) (N/A , 0.00 , N/A)	892.9	N/A	2.2436 [2.0000]	112.2% { 107.0% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 457270	(10.69 , N/A) (N/A , 0.00 , N/A)	1117.6	N/A	2.3342 [2.0000]	116.7% { 92.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB2
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (4)
Acquired: 2022/12/27 - 20:36

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 976085	(9.50 , N/A) (N/A , -0.01 , N/A)	435.4	N/A	4.1843 [4.0000]	104.6% { 97.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 813920	(9.68 , N/A) (N/A , 0.00 , N/A)	371.4	N/A	4.0737 [4.0000]	101.8% { 112.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 902474	(10.57 , N/A) (N/A , 0.00 , N/A)	996.4	N/A	25.6197 [20.0000]	128.1% { 93.9% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 361734	(10.66 , N/A) (N/A , 0.00 , N/A)	1225.3	N/A	25.3929 [20.0000]	127.0% { 86.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 2038929	(6.48 , N/A) (N/A , 0.00 , N/A)	617.8	N/A	8.7271 [8.0000]	109.1% { 98.4% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
Client: AECOM
Sequence: SB03989
Calibration: 2253007

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-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	0.00975	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	0.0136	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: SB03989
Calibration: 2253007

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

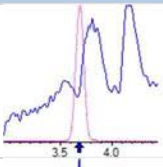
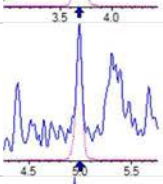
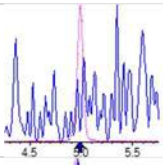
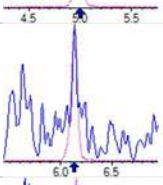
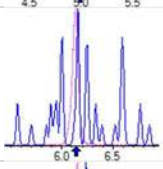
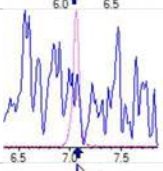
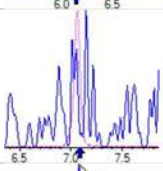
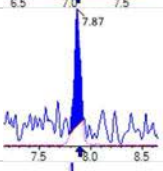
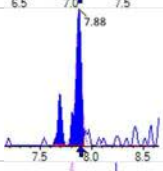
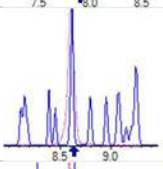
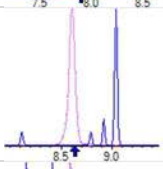
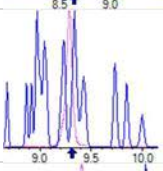
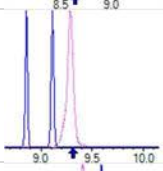
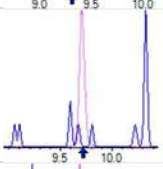
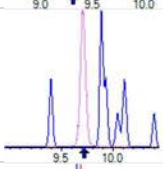
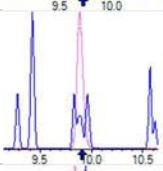
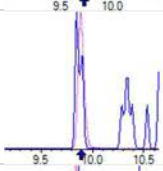
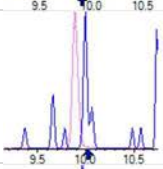
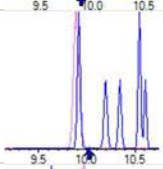
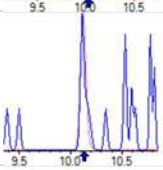
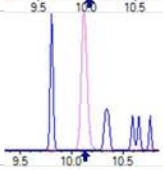
Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-CCB3	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.90	ng/mL		
	13C5-PFPEA	4.54	ng/mL		
	13C5-PFHXA	2.16	ng/mL		
	13C4-PFHPA	2.10	ng/mL		
	13C8-PFOA	2.25	ng/mL		
	13C9-PFNA	1.09	ng/mL		
	13C6-PFDA	1.01	ng/mL		
	13C7-PFUnA	1.12	ng/mL		
	13C2-PFDOA	1.09	ng/mL		
	13C2-PFTEDA	1.30	ng/mL		
	13C3-PFBS	2.05	ng/mL		
	13C3-PFHXS	2.00	ng/mL		
	13C8-PFOS	2.64	ng/mL		
	13C2-4:2FTS	3.96	ng/mL		
	13C2-6:2FTS	3.60	ng/mL		
	13C2-8:2FTS	3.99	ng/mL		
	13C8-PFOSA	2.58	ng/mL		
	D5-NETFOSA	2.93	ng/mL		
	D3-NMEFOSA	2.55	ng/mL		
	D3-NMEFOSAA	4.91	ng/mL		
	D5-NETFOSAA	5.10	ng/mL		
	D7-NMEFOSE	33.7	ng/mL		
	D9-NETFOSE	30.9	ng/mL		
	13C3-HFPO-DA	8.98	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (18)
Acquired: 2022/12/27 - 23:36

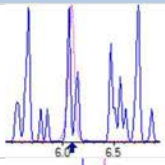
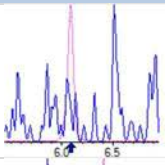
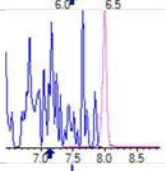
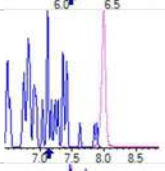
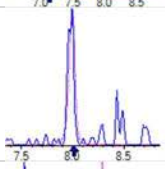
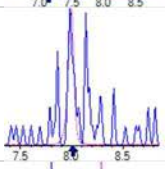
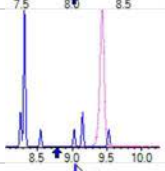
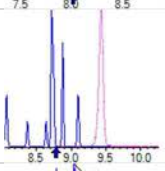
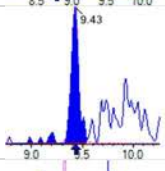
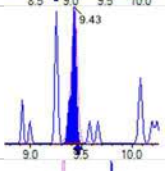
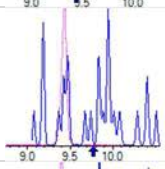
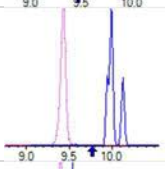
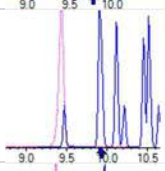
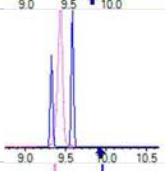
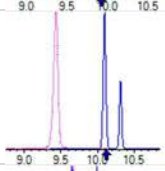
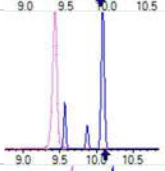
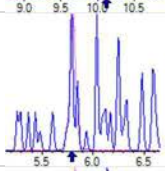
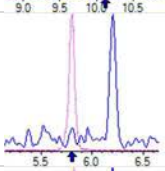
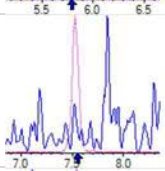
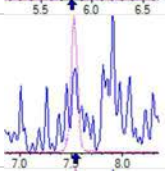
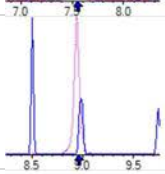
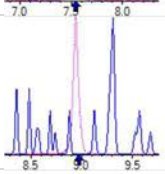
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	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) 3904 (413.0 / 169.0) 2779	(7.87 , 1.00) (0.00 , N/A , -0.4)	18.4 32.1	0.7120 211.9 227.3	0.0097	N/A			IR2,
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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (18)
Acquired: 2022/12/27 - 23:36

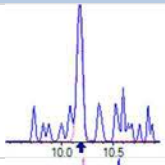
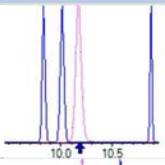
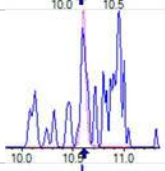
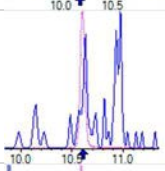
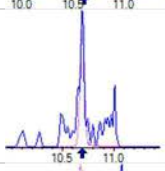
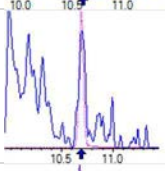
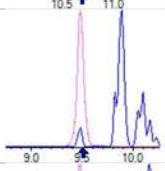
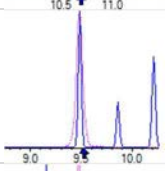
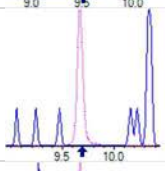
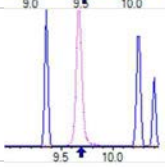
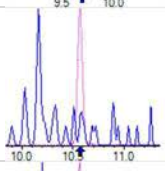
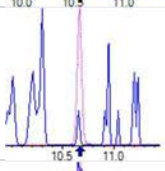
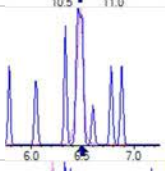
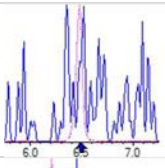
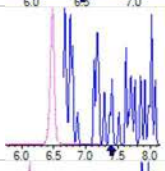
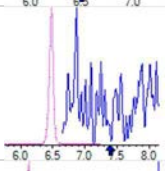
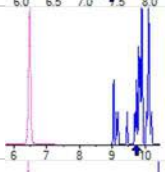
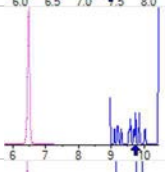
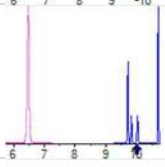
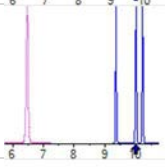
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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) 15629 (499.0 / 99.0) 2694	(9.43 , 1.00) (-0.01 , N/A , -0.3)	25.6 42.7	0.1724 75.5 76.6	0.0136	N/A			MI5 DG 2022-12-28
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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (18)
Acquired: 2022/12/27 - 23:36

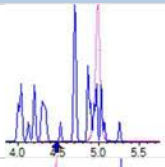
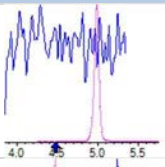
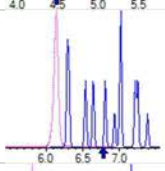
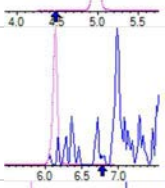
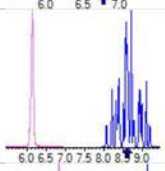
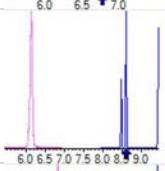
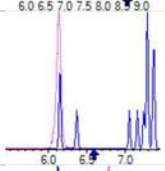
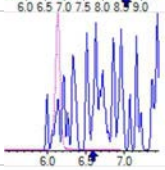
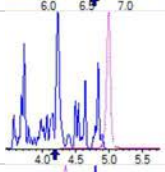
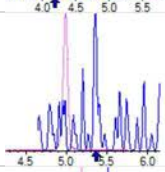
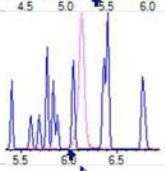
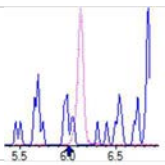
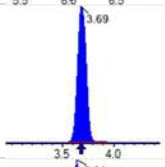
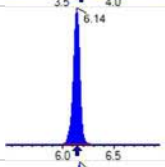
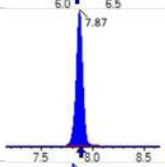
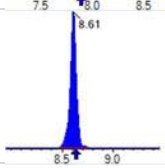
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (18)
Acquired: 2022/12/27 - 23:36

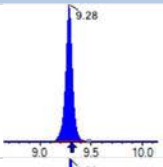
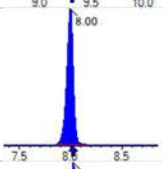
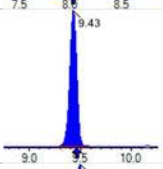
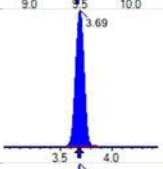
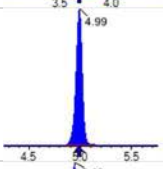
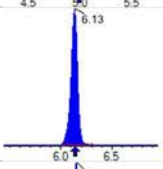
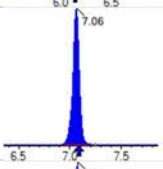
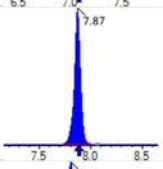
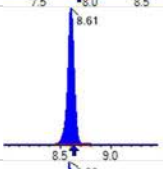
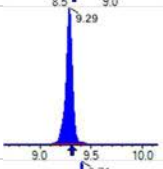
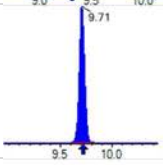
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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) 275866	(3.69 , N/A) (N/A , 0.01 , N/A)	588.7	N/A	1.0205 [1.0000]	102.1% { 95.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 355375	(6.14 , N/A) (N/A , 0.00 , N/A)	637.5	N/A	0.8949 [1.0000]	89.5% { 86.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 349324	(7.87 , N/A) (N/A , -0.02 , N/A)	545.3	N/A	0.8744 [1.0000]	87.4% { 89.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 292882	(8.61 , N/A) (N/A , -0.02 , N/A)	560.7	N/A	0.8860 [1.0000]	88.6% { 85.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (18)
Acquired: 2022/12/27 - 23:36

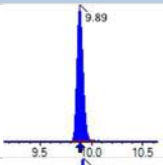
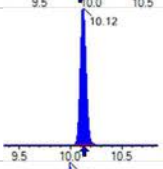
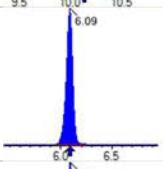
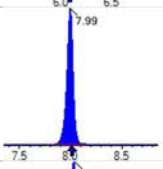
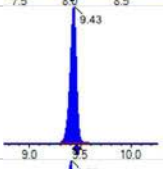
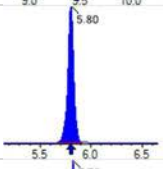
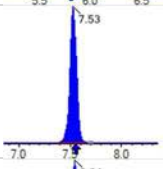
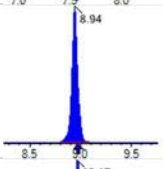
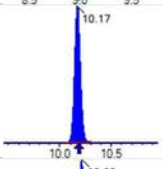
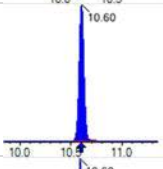
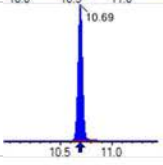
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 341507	(9.28 , N/A) (N/A , -0.02 , N/A)	355.8	N/A	0.9564 [1.0000]	95.6% { 94.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 647492	(8.00 , N/A) (N/A , -0.02 , N/A)	687.4	N/A	0.9284 [1.0000]	92.8% { 98.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 576474	(9.43 , N/A) (N/A , -0.02 , N/A)	493.5	N/A	0.8360 [1.0000]	83.6% { 85.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2342102	(3.69 , N/A) (N/A , 0.01 , N/A)	774.4	N/A	7.9005 [8.0000]	98.8% { 99.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1475923	(4.99 , N/A) (N/A , 0.01 , N/A)	634.5	N/A	4.5446 [4.0000]	113.6% { 103.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 852424	(6.13 , N/A) (N/A , 0.00 , N/A)	513.5	N/A	2.1566 [2.0000]	107.8% { 89.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 740635	(7.06 , N/A) (N/A , -0.01 , N/A)	530.2	N/A	2.0971 [2.0000]	104.9% { 92.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 862061	(7.87 , N/A) (N/A , -0.02 , N/A)	578.8	N/A	2.2520 [2.0000]	112.6% { 105.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 352424	(8.61 , N/A) (N/A , -0.03 , N/A)	427.8	N/A	1.0931 [1.0000]	109.3% { 94.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 450774	(9.29 , N/A) (N/A , -0.02 , N/A)	324.6	N/A	1.0090 [1.0000]	100.9% { 106.8% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 603911	(9.71 , N/A) (N/A , -0.01 , N/A)	494.2	N/A	1.1155 [1.0000]	111.5% { 94.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (18)
Acquired: 2022/12/27 - 23:36

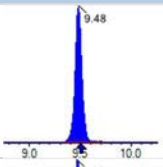
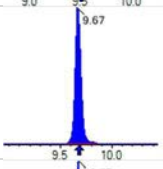
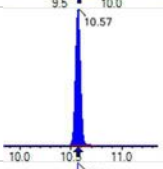
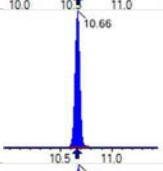
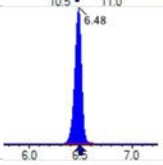
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 649051	(9.89 , N/A) (N/A , -0.01 , N/A)	721.0	N/A	1.0892 [1.0000]	108.9% { 102.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 509625	(10.12 , N/A) (N/A , -0.01 , N/A)	324230.8	N/A	1.2957 [1.0000]	129.6% { 115.2% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2230208	(6.09 , N/A) (N/A , 0.00 , N/A)	458.8	N/A	2.0455 [2.0000]	102.3% { 103.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1156456	(7.99 , N/A) (N/A , -0.02 , N/A)	718.5	N/A	1.9982 [2.0000]	99.9% { 102.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1974246	(9.43 , N/A) (N/A , -0.02 , N/A)	584.1	N/A	2.6444 [2.0000]	132.2% { 106.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 507851	(5.80 , N/A) (N/A , 0.00 , N/A)	472.0	N/A	3.9552 [4.0000]	98.9% { 95.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 574574	(7.53 , N/A) (N/A , -0.02 , N/A)	537.4	N/A	3.6008 [4.0000]	90.0% { 84.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 627989	(8.94 , N/A) (N/A , -0.03 , N/A)	579.8	N/A	3.9920 [4.0000]	99.8% { 86.8% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2559479	(10.17 , N/A) (N/A , -0.01 , N/A)	702.9	N/A	2.5785 [2.0000]	128.9% { 101.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 491361	(10.60 , N/A) (N/A , 0.00 , N/A)	750.1	N/A	2.5525 [2.0000]	127.6% { 106.6% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 502624	(10.69 , N/A) (N/A , 0.00 , N/A)	950.4	N/A	2.9304 [2.0000]	146.5% { 102.1% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB3
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (18)
Acquired: 2022/12/27 - 23:36

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 1002813	(9.48 , N/A) (N/A , -0.02 , N/A)	373.0	N/A	4.9100 [4.0000]	122.8% { 100.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 892894	(9.67 , N/A) (N/A , -0.01 , N/A)	227.6	N/A	5.1042 [4.0000]	127.6% { 123.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1040706	(10.57 , N/A) (N/A , 0.00 , N/A)	1143.4	N/A	33.7439 [20.0000]	168.7% { 108.3% }			S2,
D9_NEtFOSE_EIS	(639.0 / 58.9) 385450	(10.66 , N/A) (N/A , 0.00 , N/A)	1230.9	N/A	30.9044 [20.0000]	154.5% { 92.1% }			S2,
13C3_HFPODA_EIS	(287.0 / 169.0) 1971111	(6.48 , N/A) (N/A , -0.01 , N/A)	714.3	N/A	8.9800 [8.0000]	112.2% { 95.1% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
Client: AECOM
Sequence: SB03989
Calibration: 2253007

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-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	0.0138	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: SB03989
Calibration: 2253007

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

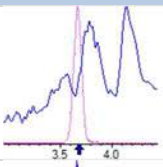
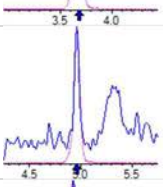
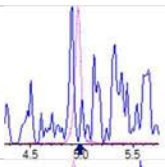
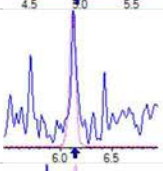
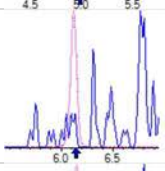
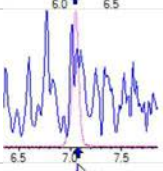
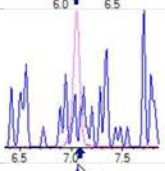
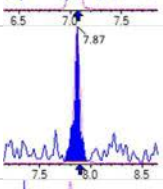
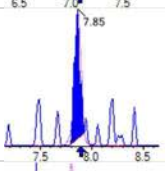
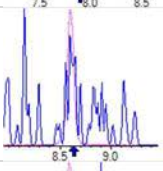
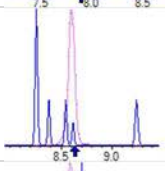
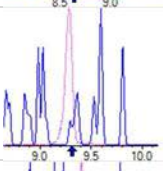
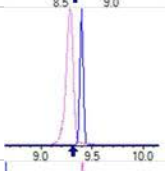
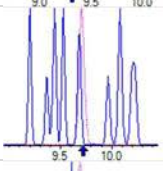
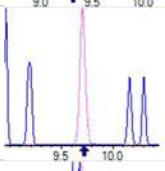
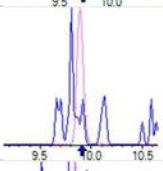
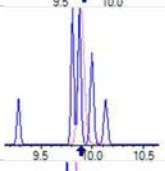
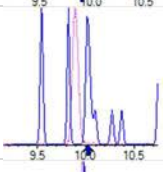
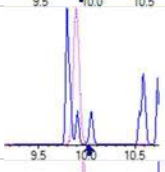
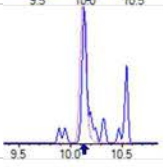
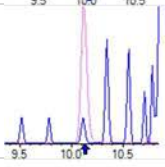
Lab Sample ID	Analyte	Found	Units	RL	C
SB03989-CCB4	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	8.22	ng/mL		
	13C5-PFPEA	4.24	ng/mL		
	13C5-PFHXA	2.34	ng/mL		
	13C4-PFHPA	2.07	ng/mL		
	13C8-PFOA	2.13	ng/mL		
	13C9-PFNA	1.02	ng/mL		
	13C6-PFDA	0.967	ng/mL		
	13C7-PFUnA	1.13	ng/mL		
	13C2-PFDOA	0.915	ng/mL		
	13C2-PFTEDA	1.18	ng/mL		
	13C3-PFBS	2.16	ng/mL		
	13C3-PFHXS	2.01	ng/mL		
	13C8-PFOS	2.14	ng/mL		
	13C2-4:2FTS	4.25	ng/mL		
	13C2-6:2FTS	4.26	ng/mL		
	13C2-8:2FTS	3.48	ng/mL		
	13C8-PFOSA	2.30	ng/mL		
	D5-NETFOSA	2.64	ng/mL		
	D3-NMEFOSA	2.33	ng/mL		
	D3-NMEFOSAA	4.43	ng/mL		
	D5-NETFOSAA	4.55	ng/mL		
	D7-NMEFOSE	29.9	ng/mL		
	D9-NETFOSE	32.8	ng/mL		
	13C3-HFPO-DA	8.99	ng/mL		

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (33)
Acquired: 2022/12/28 - 02:50

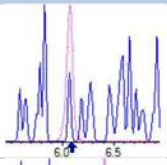
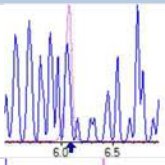
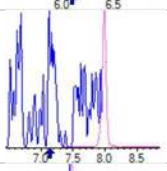
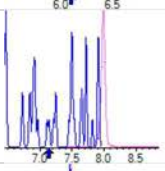
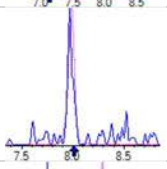
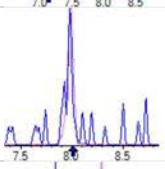
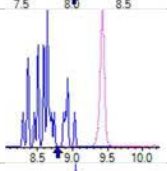
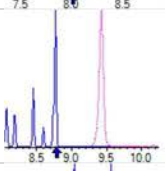
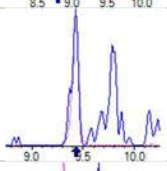
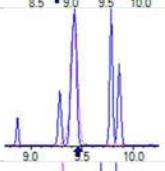
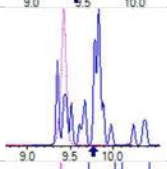
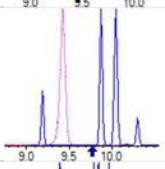
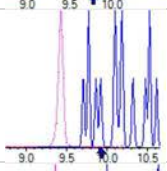
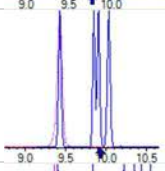
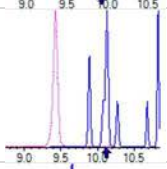
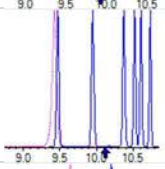
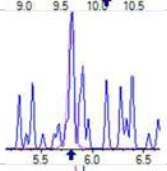
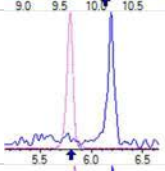
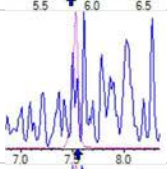
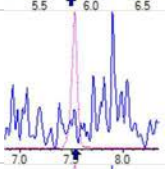
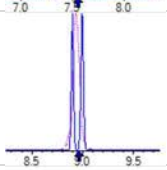
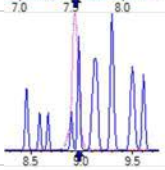
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	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) 5607 (413.0 / 169.0) 1501	(7.87 , 1.00) (0.00 , N/A , 0.8)	27.6 19.6	0.2677 79.7 85.5	0.0138	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (33)
Acquired: 2022/12/28 - 02:50

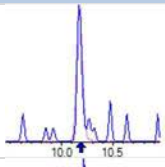
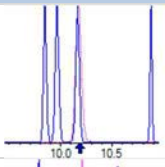
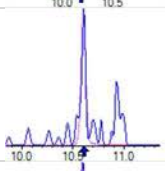
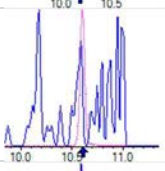
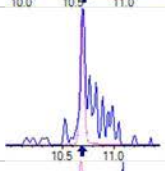
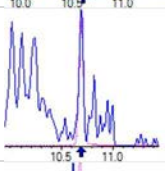
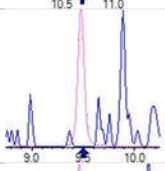
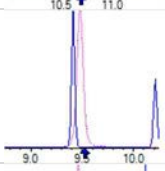
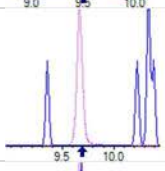
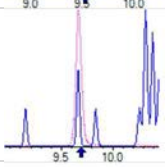
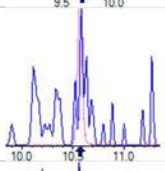
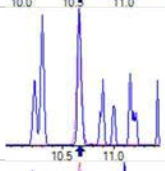
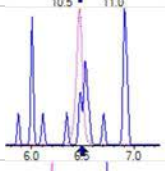
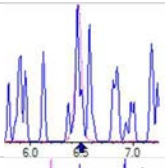
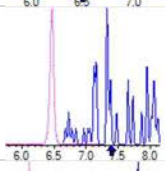
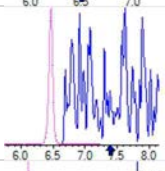
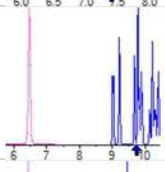
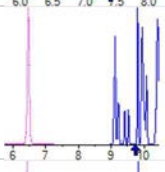
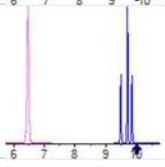
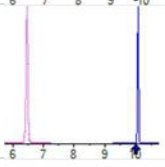
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (33)
Acquired: 2022/12/28 - 02:50

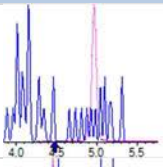
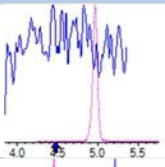
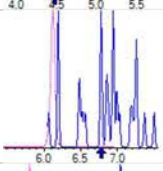
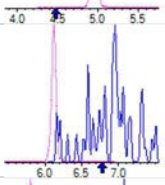
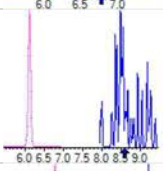
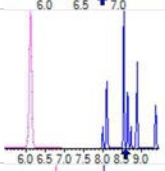
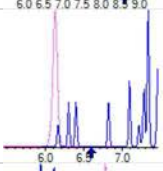
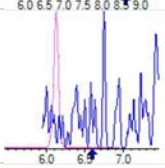
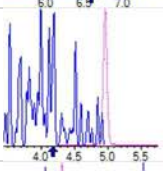
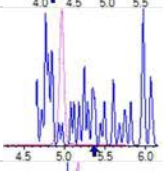
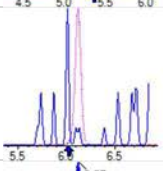
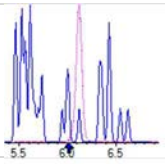
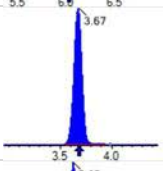
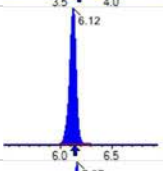
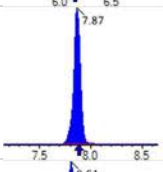
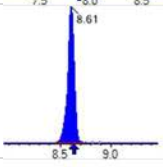
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (33)
Acquired: 2022/12/28 - 02:50

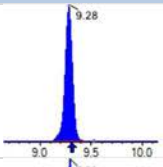
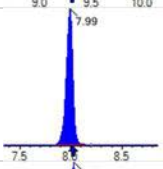
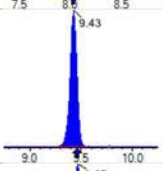
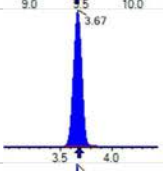
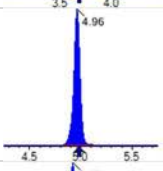
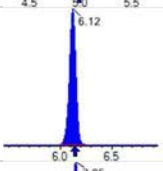
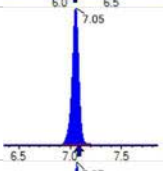
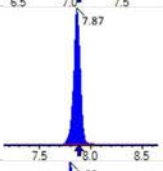
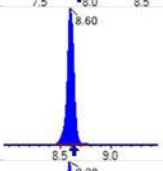
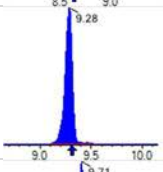
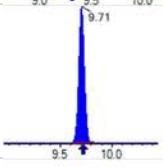
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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) 250648	(3.67 , N/A) (N/A , -0.01 , N/A)	636.2	N/A	0.9272 [1.0000]	92.7% { 87.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 378051	(6.12 , N/A) (N/A , -0.01 , N/A)	419.9	N/A	0.9520 [1.0000]	95.2% { 92.2% }			
13C4_PFOA_IIS	(417.0 / 372.0) 375540	(7.87 , N/A) (N/A , -0.02 , N/A)	525.6	N/A	0.9401 [1.0000]	94.0% { 95.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 331793	(8.61 , N/A) (N/A , -0.02 , N/A)	473.1	N/A	1.0037 [1.0000]	100.4% { 96.7% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (33)
Acquired: 2022/12/28 - 02:50

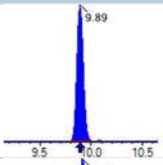
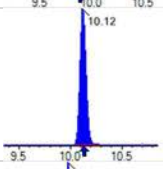
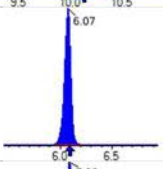
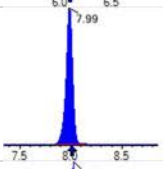
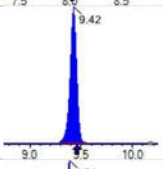
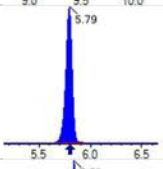
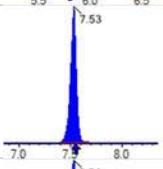
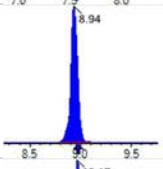
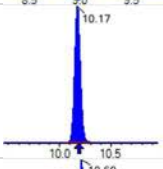
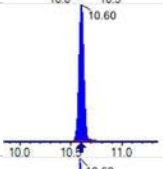
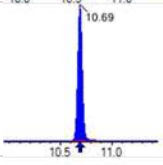
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 337028	(9.28 , N/A) (N/A , -0.03 , N/A)	308.9	N/A	0.9439 [1.0000]	94.4% { 93.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 642716	(7.99 , N/A) (N/A , -0.02 , N/A)	587.2	N/A	0.9215 [1.0000]	92.2% { 97.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 620265	(9.43 , N/A) (N/A , -0.03 , N/A)	536.3	N/A	0.8995 [1.0000]	90.0% { 91.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2215000	(3.67 , N/A) (N/A , -0.01 , N/A)	802.1	N/A	8.2235 [8.0000]	102.8% { 93.8% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1463184	(4.96 , N/A) (N/A , -0.01 , N/A)	600.6	N/A	4.2351 [4.0000]	105.9% { 102.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 983307	(6.12 , N/A) (N/A , -0.02 , N/A)	581.7	N/A	2.3385 [2.0000]	116.9% { 103.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 779335	(7.05 , N/A) (N/A , -0.02 , N/A)	580.0	N/A	2.0743 [2.0000]	103.7% { 97.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 875639	(7.87 , N/A) (N/A , -0.02 , N/A)	638.2	N/A	2.1278 [2.0000]	106.4% { 107.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 370917	(8.60 , N/A) (N/A , -0.03 , N/A)	434.1	N/A	1.0155 [1.0000]	101.6% { 99.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 426226	(9.28 , N/A) (N/A , -0.03 , N/A)	240.7	N/A	0.9667 [1.0000]	96.7% { 101.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 605776	(9.71 , N/A) (N/A , -0.02 , N/A)	636.1	N/A	1.1338 [1.0000]	113.4% { 94.5% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (33)
Acquired: 2022/12/28 - 02:50

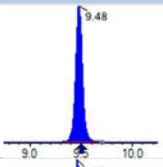
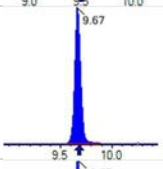
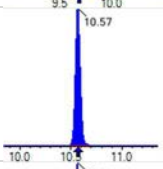
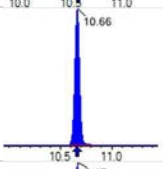
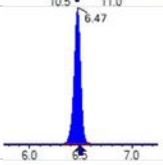
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 537901	(9.89 , N/A) (N/A , -0.01 , N/A)	449.8	N/A	0.9147 [1.0000]	91.5% { 85.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 456744	(10.12 , N/A) (N/A , -0.01 , N/A)	875.3	N/A	1.1767 [1.0000]	117.7% { 103.2% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2338528	(6.07 , N/A) (N/A , -0.02 , N/A)	611.9	N/A	2.1607 [2.0000]	108.0% { 108.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1154455	(7.99 , N/A) (N/A , -0.02 , N/A)	690.6	N/A	2.0096 [2.0000]	100.5% { 102.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1719248	(9.42 , N/A) (N/A , -0.03 , N/A)	490.4	N/A	2.1402 [2.0000]	107.0% { 93.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 542126	(5.79 , N/A) (N/A , -0.01 , N/A)	703.7	N/A	4.2535 [4.0000]	106.3% { 101.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 675442	(7.53 , N/A) (N/A , -0.02 , N/A)	749.0	N/A	4.2644 [4.0000]	106.6% { 99.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 543083	(8.94 , N/A) (N/A , -0.04 , N/A)	477.9	N/A	3.4779 [4.0000]	86.9% { 75.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 2455600	(10.17 , N/A) (N/A , 0.00 , N/A)	570.8	N/A	2.2992 [2.0000]	115.0% { 97.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 483116	(10.60 , N/A) (N/A , 0.00 , N/A)	949.9	N/A	2.3325 [2.0000]	116.6% { 104.8% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 487272	(10.69 , N/A) (N/A , 0.00 , N/A)	1759.3	N/A	2.6403 [2.0000]	132.0% { 99.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: SB03989-CCB4
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (33)
Acquired: 2022/12/28 - 02:50

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 974250	(9.48 , N/A) (N/A , -0.03 , N/A)	319.0	N/A	4.4334 [4.0000]	110.8% { 97.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 856425	(9.67 , N/A) (N/A , -0.02 , N/A)	398.6	N/A	4.5501 [4.0000]	113.8% { 118.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 993808	(10.57 , N/A) (N/A , 0.00 , N/A)	846.4	N/A	29.9483 [20.0000]	149.7% { 103.4% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 439693	(10.66 , N/A) (N/A , 0.00 , N/A)	1412.9	N/A	32.7646 [20.0000]	163.8% { 105.0% }			S2,
13C3_HFPODA_EIS	(287.0 / 169.0) 2098792	(6.47 , N/A) (N/A , -0.02 , N/A)	615.5	N/A	8.9882 [8.0000]	112.4% { 101.3% }			

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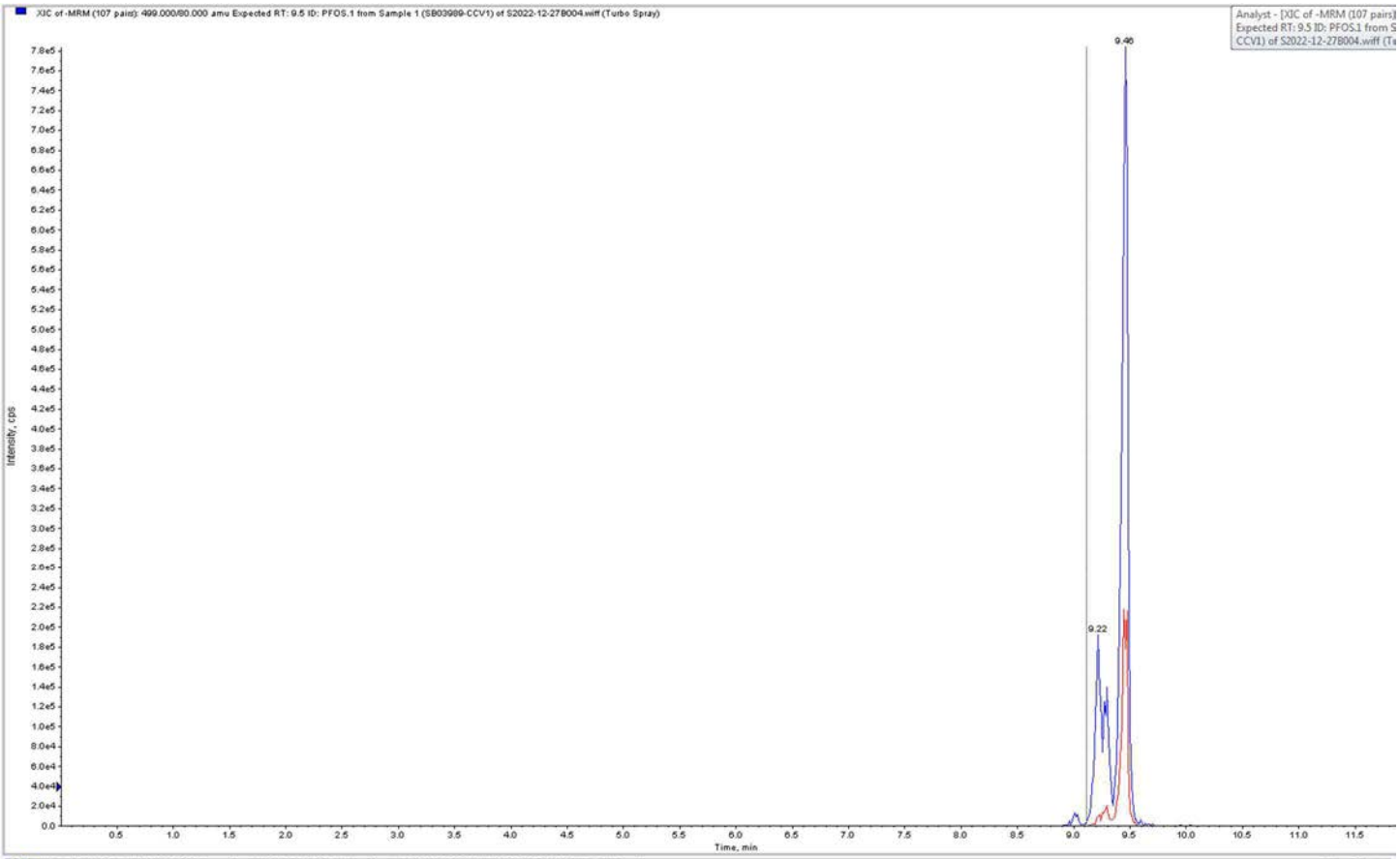
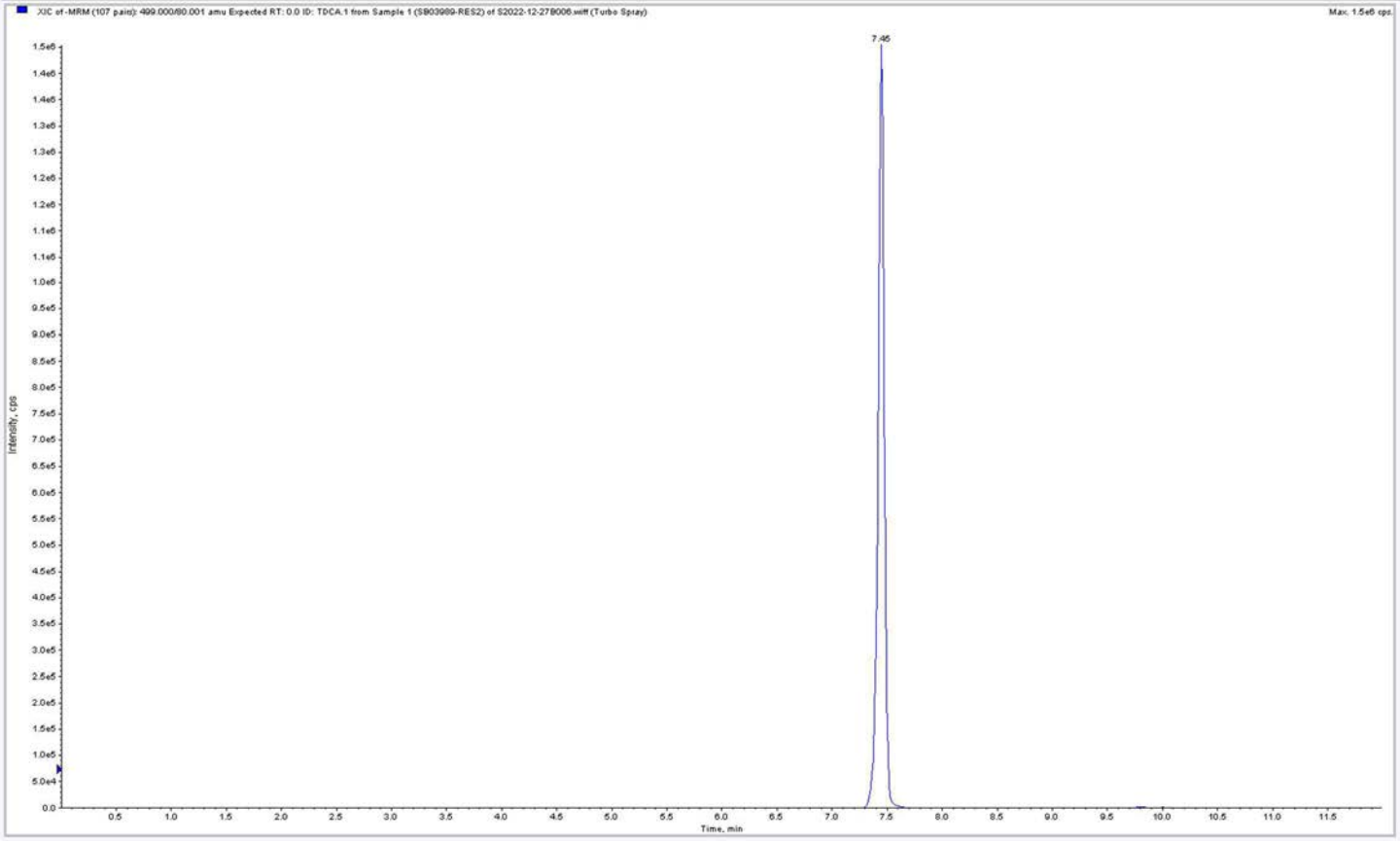
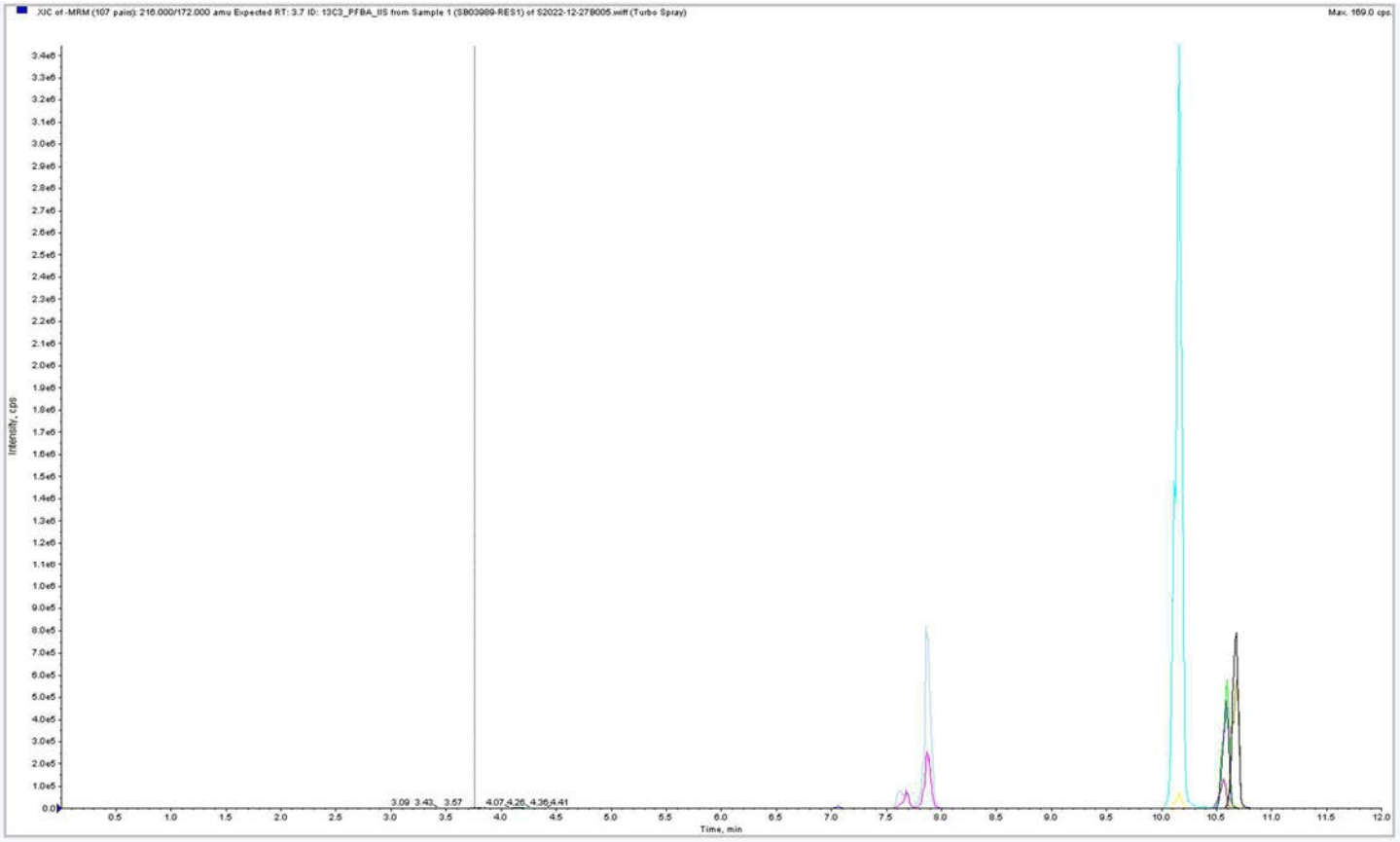
BILE STANDARD CHECK S2022-12-27B/SB03989

TDCA	=	7.45		
PFOS	=	9.00		
TDCA-PFOS	=	1.55	> 1.0	PASS





S2022-12-27B/SB03989 Column Resolution



QUALITY CONTROL RAW DATA

ANALYSIS DATA SHEET

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Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-BLK1	File ID:	S2022-12-27B (19)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/27/22 23:49
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Column:	1			Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.20 U	0.40	0.20	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.20 U	0.40	0.20	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.20 U	0.40	0.20	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPES	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.0845 J	0.40	0.20	0.064	J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.20 U	0.40	0.20	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.20 U	0.40	0.20	0.10	U
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	[illegible]	[illegible]	[illegible]	U

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-BLK1	File ID:	S2022-12-27B (19)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/27/22 23:49
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Instrument:	Saphira				
Column:	1				

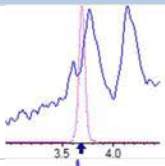
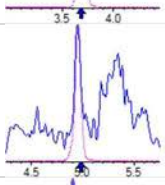
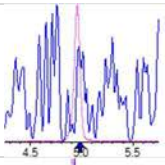
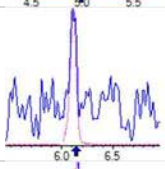
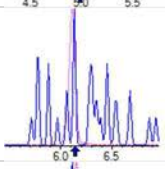
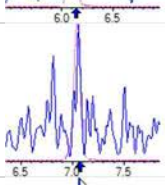
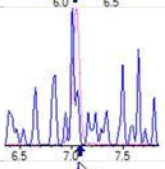
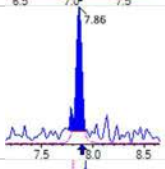
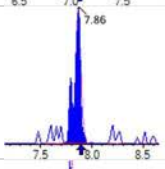
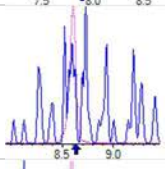
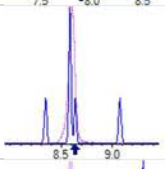
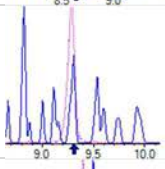
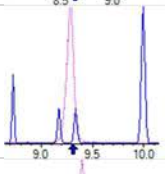
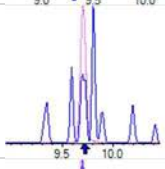
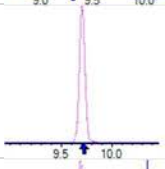
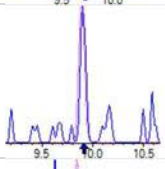
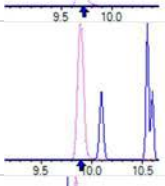
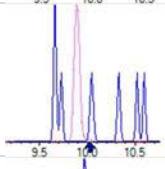
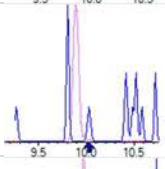
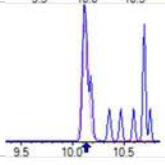
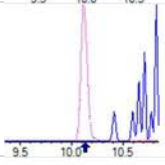
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.40 U	0.80	0.40	0.12	U
PFEESA	0.40 U	0.80	0.40	0.11	U
PFMPA	0.40 U	0.80	0.40	0.054	U
PFMBA	0.40 U	0.80	0.40	0.091	U
NFDHA	0.40 U	0.80	0.40	0.30	U
9CL-PF3ONS	0.40 U	0.80	0.40	0.21	U
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21	U
3:3FTCA	0.80 U	1.6	0.80	0.57	U
5:3FTCA	0.80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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (19)
Acquired: 2022/12/27 - 23:49

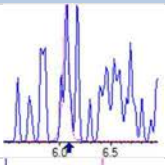
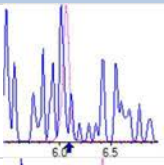
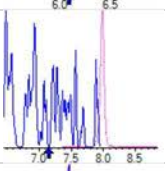
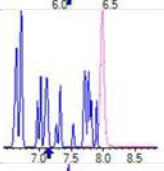
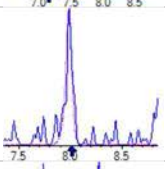
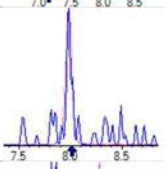
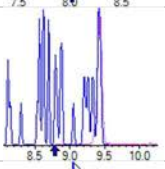
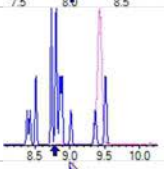
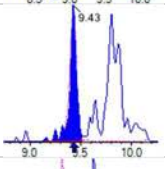
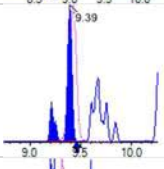
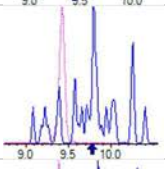
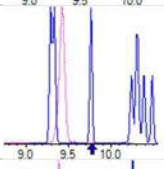
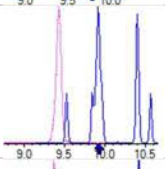
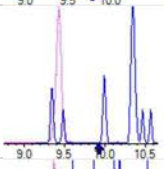
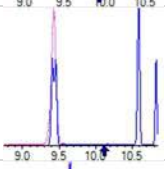
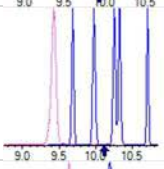
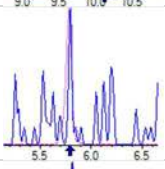
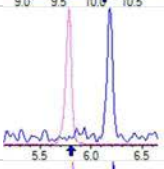
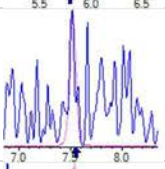
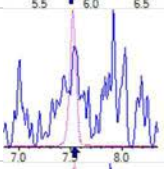
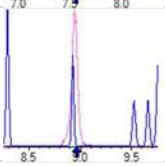
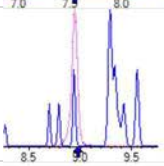
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	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) 7956 (413.0 / 169.0) 3316	(7.86 , 1.00) (0.00 , N/A , 0.0)	33.9 38.3	0.4168 124.0 133.0	0.0188	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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (19)
Acquired: 2022/12/27 - 23:49

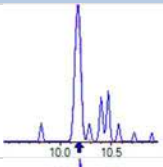
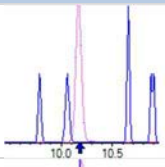
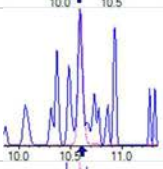
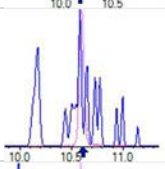
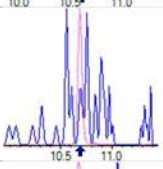
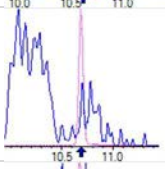
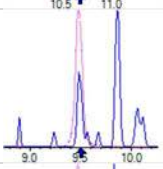
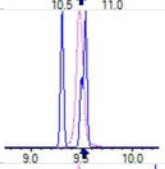
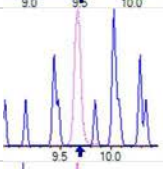
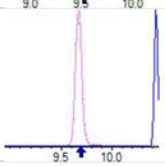
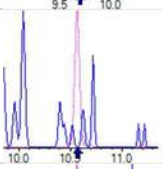
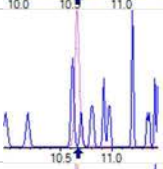
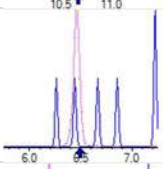
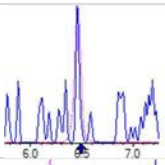
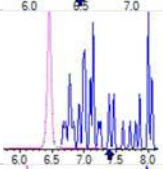
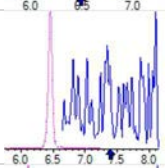
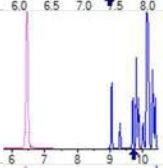
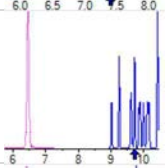
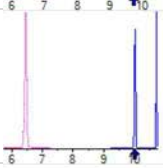
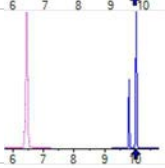
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A , N/A) (N/A , N/A , N/A)	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) 19946 (499.0 / 99.0) 3498	(9.43 , 1.00) (0.00 , N/A , 2.1)	33.4 189.8	0.1754 76.8 77.9	0.0211	N/A			MI5 DG 2022-12-28
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			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (19)
Acquired: 2022/12/27 - 23:49

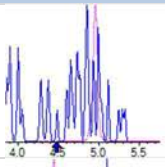
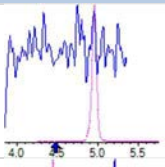
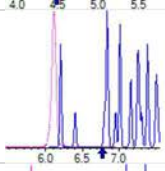
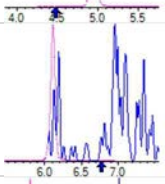
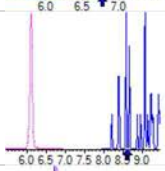
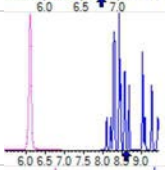
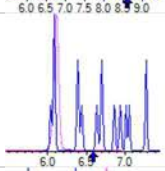
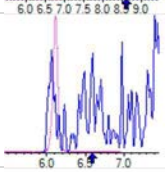
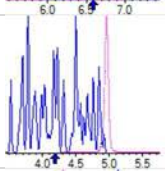
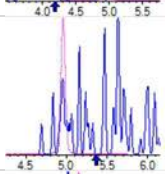
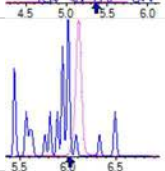
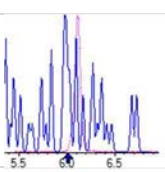
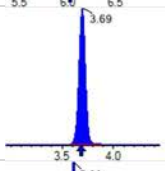
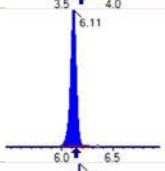
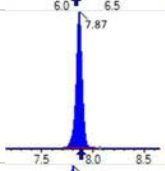
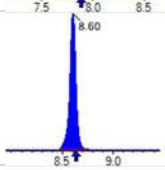
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A , N/A) (N/A , N/A , N/A)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

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (19)
Acquired: 2022/12/27 - 23:49

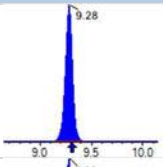
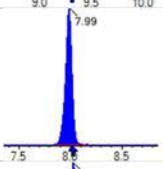
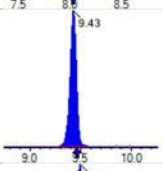
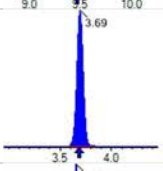
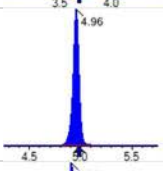
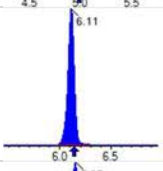
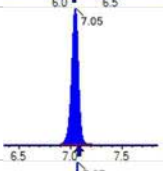
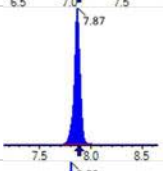
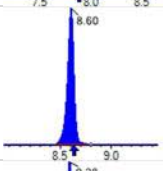
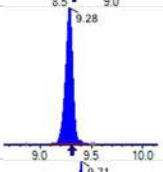
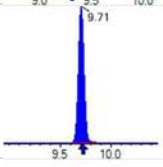
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A , N/A) (N/A , N/A , 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) 337043	(3.69 , N/A) (N/A , 0.02 , N/A)	663.2	N/A	1.2468 [1.0000]	124.7% { 117.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 533070	(6.11 , N/A) (N/A , -0.02 , N/A)	610.3	N/A	1.3423 [1.0000]	134.2% { 130.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 511281	(7.87 , N/A) (N/A , -0.02 , N/A)	644.2	N/A	1.2798 [1.0000]	128.0% { 130.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 405398	(8.60 , N/A) (N/A , -0.03 , N/A)	560.4	N/A	1.2264 [1.0000]	122.6% { 118.2% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (19)
Acquired: 2022/12/27 - 23:49

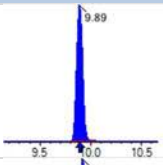
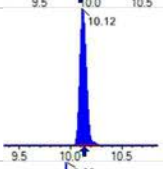
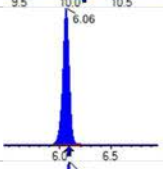
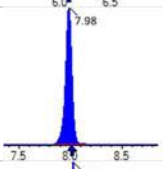
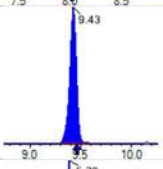
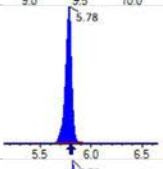
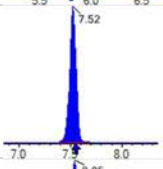
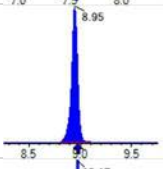
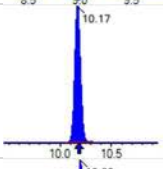
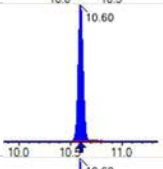
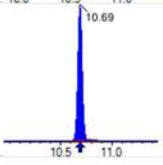
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 414885	(9.28 , N/A) (N/A , -0.03 , N/A)	466.6	N/A	1.1619 [1.0000]	116.2% { 114.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 810437	(7.99 , N/A) (N/A , -0.03 , N/A)	616.6	N/A	1.1620 [1.0000]	116.2% { 123.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 820135	(9.43 , N/A) (N/A , -0.02 , N/A)	531.9	N/A	1.1894 [1.0000]	118.9% { 121.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2308751	(3.69 , N/A) (N/A , 0.02 , N/A)	873.8	N/A	6.3744 [8.0000]	79.7% { 97.8% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1359859	(4.96 , N/A) (N/A , -0.02 , N/A)	672.4	N/A	2.7914 [4.0000]	69.8% { 95.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 843729	(6.11 , N/A) (N/A , -0.03 , N/A)	549.1	N/A	1.4230 [2.0000]	71.2% { 89.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 674870	(7.05 , N/A) (N/A , -0.03 , N/A)	514.8	N/A	1.2739 [2.0000]	63.7% { 84.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 911325	(7.87 , N/A) (N/A , -0.02 , N/A)	599.6	N/A	1.6266 [2.0000]	81.3% { 111.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 315141	(8.60 , N/A) (N/A , -0.03 , N/A)	507.4	N/A	0.7062 [1.0000]	70.6% { 84.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 401056	(9.28 , N/A) (N/A , -0.03 , N/A)	387.8	N/A	0.7389 [1.0000]	73.9% { 95.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 573970	(9.71 , N/A) (N/A , -0.02 , N/A)	463.7	N/A	0.8727 [1.0000]	87.3% { 89.6% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (19)
Acquired: 2022/12/27 - 23:49

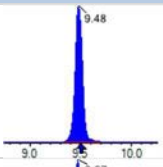
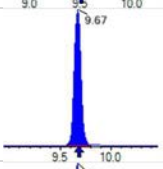
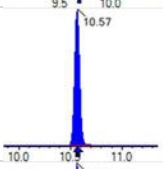
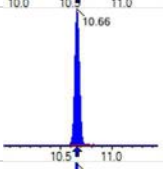
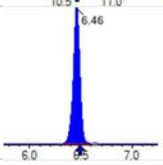
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 582224	(9.89 , N/A) (N/A , -0.01 , N/A)	419.7	N/A	0.8043 [1.0000]	80.4% { 92.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 429479	(10.12 , N/A) (N/A , -0.01 , N/A)	994.0	N/A	0.8988 [1.0000]	89.9% { 97.1% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2028816	(6.06 , N/A) (N/A , -0.03 , N/A)	615.0	N/A	1.4866 [2.0000]	74.3% { 94.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1075224	(7.98 , N/A) (N/A , -0.03 , N/A)	579.3	N/A	1.4843 [2.0000]	74.2% { 95.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1627713	(9.43 , N/A) (N/A , -0.03 , N/A)	429.1	N/A	1.5325 [2.0000]	76.6% { 88.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 475028	(5.78 , N/A) (N/A , -0.02 , N/A)	604.5	N/A	2.9557 [4.0000]	73.9% { 88.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 663735	(7.52 , N/A) (N/A , -0.02 , N/A)	670.3	N/A	3.3233 [4.0000]	83.1% { 97.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 631256	(8.95 , N/A) (N/A , -0.03 , N/A)	509.0	N/A	3.2060 [4.0000]	80.1% { 87.2% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1629547	(10.17 , N/A) (N/A , -0.01 , N/A)	899.5	N/A	1.1539 [2.0000]	57.7% { 64.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 215376	(10.60 , N/A) (N/A , -0.01 , N/A)	534.3	N/A	0.7864 [2.0000]	39.3% { 46.7% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 188956	(10.69 , N/A) (N/A , 0.00 , N/A)	889.5	N/A	0.7744 [2.0000]	38.7% { 38.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BLK1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (19)
Acquired: 2022/12/27 - 23:49

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) 852652	(9.48 , N/A) (N/A , -0.02 , N/A)	354.8	N/A	2.9345 [4.0000]	73.4% { 85.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 827212	(9.67 , N/A) (N/A , -0.01 , N/A)	351.0	N/A	3.3239 [4.0000]	83.1% { 114.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 522391	(10.57 , N/A) (N/A , -0.01 , N/A)	883.5	N/A	11.9058 [20.0000]	59.5% { 54.3% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 245806	(10.66 , N/A) (N/A , 0.00 , N/A)	968.5	N/A	13.8528 [20.0000]	69.3% { 58.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1897138	(6.46 , N/A) (N/A , -0.02 , N/A)	577.6	N/A	5.7619 [8.0000]	72.0% { 91.5% }			

ANALYSIS DATA SHEET

LCS

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-BS1	File ID:	S2022-12-27B (20)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/28/22 00:02
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Instrument:	Saphira				
Column:	1				

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	19.6	1.6	0.21	
PFPEA	9.23	0.80	0.065	
PFHXA	4.27	0.40	0.055	
PFHPA	4.91	0.40	0.041	
PFOA	5.38	0.40	0.15	
PFNA	5.37	0.40	0.082	
PFDA	4.55	0.40	0.10	IR2
PFUnA	4.94	0.40	0.16	
PFDOA	4.41	0.40	0.11	
PFTRDA	4.61	0.40	0.20	
PFTEDA	4.62	0.40	0.20	
PFBS	4.03	0.40	0.037	
PFPES	5.15	0.40	0.063	
PFHXS	4.60	0.40	0.032	
PFHPS	4.15	0.40	0.051	
PFOS	3.78	0.40	0.064	
PFNS	4.36	0.40	0.12	
PFDS	4.28	0.40	0.15	
PFDOS	4.66	0.40	0.12	
4:2FTS	18.1	1.6	0.29	
6:2FTS	20.8	1.6	0.31	
8:2FTS	19.9	1.6	0.082	
PFOSA	4.80	0.40	0.10	
NMeFOSA	20.1	1.6	0.47	
NEtFOSA	19.7	1.6	0.41	
NMeFOSAA	4.03	0.40	0.11	
NEtFOSAA	4.43	0.40	0.11	
NMeFOSE	18.2	1.6	1.0	
NEtFOSE	18.5	1.6	1.0	
HFPO-DA	9.24			

ANALYSIS DATA SHEET

LCS

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-BS1	File ID:	S2022-12-27B (20)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/28/22 00:02
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Instrument:	Saphira				
Column:	1				

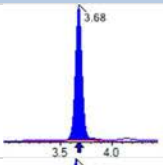
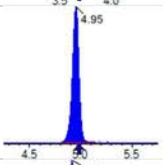
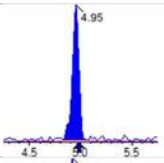
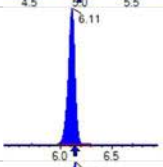
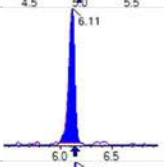
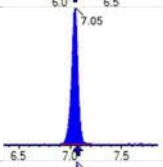
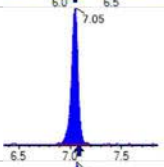
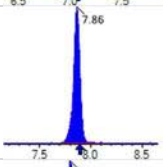
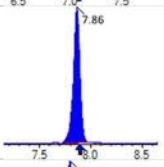
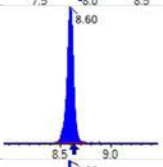
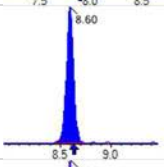
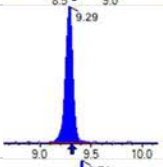
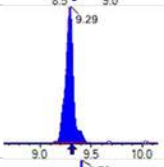
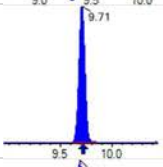
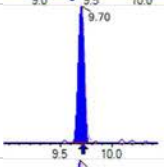
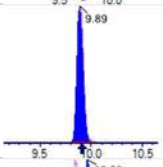
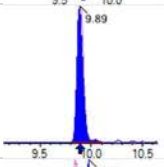
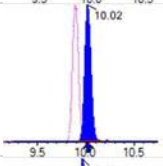
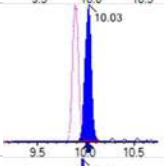
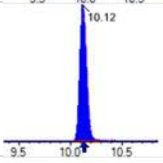
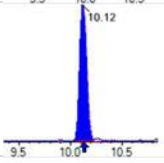
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	8.66	0.80	0.12	
PFEESA	7.31	0.80	0.11	
PFMPA	9.67	0.80	0.054	
PFMBA	9.82	0.80	0.091	
NFDHA	8.95	0.80	0.30	
9CL-PF3ONS	10.4	0.80	0.21	
11CL-PF3OUDS	9.69	0.80	0.21	
3:3FTCA	17.6	1.6	0.57	
5:3FTCA	16.4	1.6	0.44	
7:3FTCA	17.9	1.6	0.55	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (20)
Acquired: 2022/12/28 - 00:02

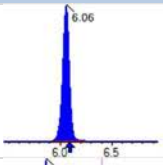
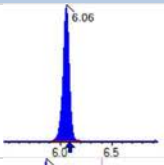
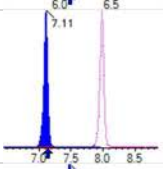
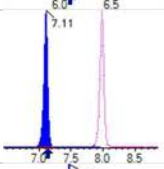
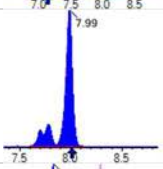
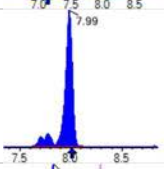
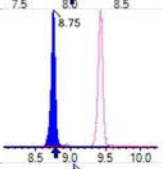
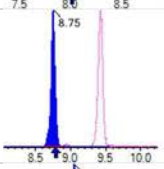
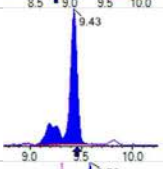
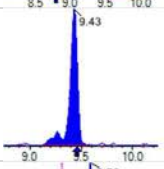
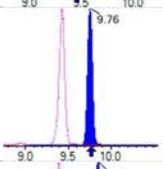
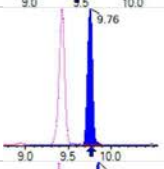
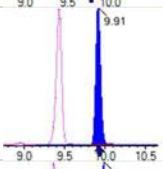
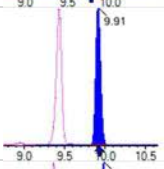
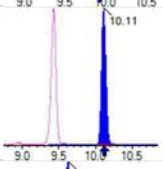
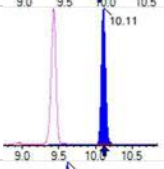
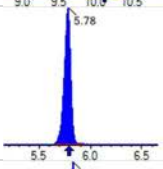
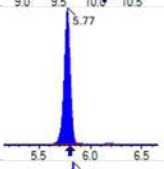
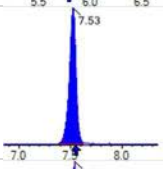
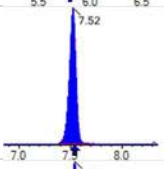
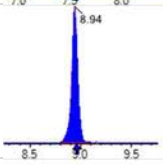
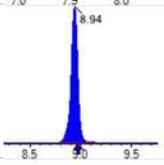
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 946948	(3.68 , 1.00) (0.00 , N/A , 0.0)	359.9	N/A 0.0 0.0	4.9055 [4.0000]	122.6%			
PFPeA	(263.0 / 219.0) 582107 (263.0 / 69.0) 6974	(4.95 , 1.00) (0.00 , N/A , 0.0)	529.2 105.1	0.0120 111.0 112.9	2.3087 [2.0000]	115.4%			
PFHxA	(313.0 / 269.0) 398833 (313.0 / 119.0) 30043	(6.11 , 1.00) (0.00 , N/A , -0.1)	393.9 167.1	0.0753 83.7 87.2	1.0672 [1.0000]	106.7%			
PFHpA	(363.0 / 319.0) 379320 (363.0 / 169.0) 101539	(7.05 , 1.00) (0.00 , N/A , 0.0)	390.0 266.7	0.2677 87.9 90.1	1.2281 [1.0000]	122.8%			
PFOA	(413.0 / 369.0) 437163 (413.0 / 169.0) 138957	(7.86 , 1.00) (0.00 , N/A , 0.0)	553.8 364.9	0.3179 94.6 101.5	1.3439 [1.0000]	134.4%			QC,
PFNA	(463.0 / 419.0) 370722 (463.0 / 169.0) 68231	(8.60 , 1.00) (0.00 , N/A , 0.2)	477.0 348.8	0.1840 88.0 87.3	1.3435 [1.0000]	134.3%			QC,
PFDA	(513.0 / 469.0) 405376 (513.0 / 169.0) 51219	(9.29 , 1.00) (0.00 , N/A , -0.3)	342.3 228.2	0.1263 141.8 160.4	1.1383 [1.0000]	113.8%			IR2,
PFUnA	(563.0 / 519.0) 563938 (563.0 / 169.0) 62236	(9.71 , 1.00) (0.00 , N/A , 0.4)	574.9 201.8	0.1104 104.7 96.2	1.2344 [1.0000]	123.4%			
PFDoA	(613.0 / 569.0) 598796 (613.0 / 169.0) 82645	(9.89 , 1.00) (-0.01 , N/A , 0.1)	654.8 181.5	0.1380 107.5 103.5	1.1031 [1.0000]	110.3%			
PFTrDA	(663.0 / 619.0) 528921 (663.0 / 169.0) 90211	(10.02 , 1.01) (N/A , 0.00 , -0.3)	486.2 190.8	0.1706 74.7 81.4	1.1527 [1.0000]	115.3%			
PFTeDA	(713.0 / 669.0) 412088 (713.0 / 169.0) 65509	(10.12 , 1.00) (0.00 , N/A , 0.0)	554.8 316.3	0.1590 76.1 86.3	1.1543 [1.0000]	115.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (20)
Acquired: 2022/12/28 - 00:02

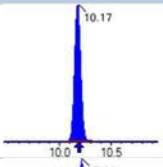
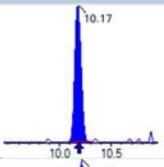
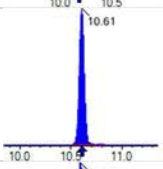
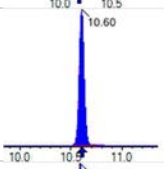
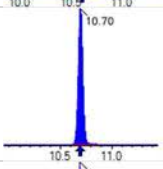
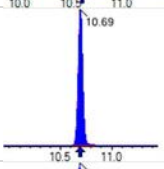
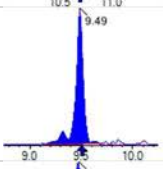
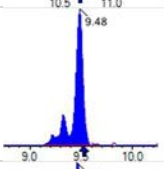
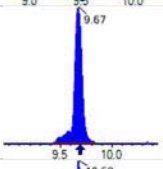
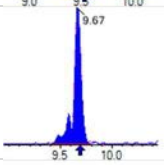
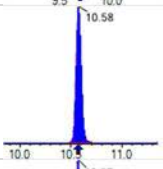
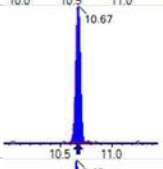
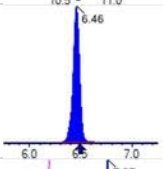
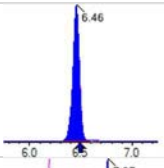
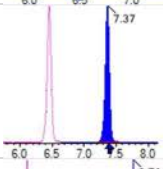
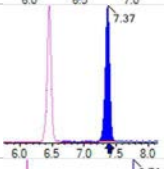
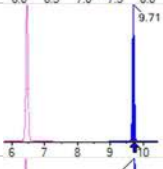
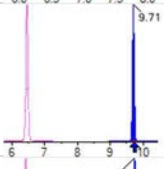
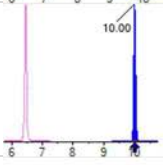
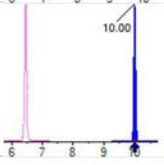
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 526236 (299.0 / 99.0) 356684	(6.06 , 1.00) (0.00 , N/A , -0.2)	500.5 431.7	0.6778 101.7 113.9	1.0079 [0.8847]	113.9%			
PFPeS	(349.0 / 80.0) 999847 (349.0 / 99.0) 355475	(7.11 , 0.89) (N/A , -0.02 , 0.0)	655.0 699.8	0.3555 96.6 93.7	1.2869 [0.9384]	137.1%			QC,
PFHxS	(399.0 / 80.0) 818214 (399.0 / 99.0) 278128	(7.99 , 1.00) (0.00 , N/A , 0.0)	531.4 549.8	0.3399 106.3 107.5	1.1508 [0.9110]	126.3%			
PFHpS	(449.0 / 80.0) 831907 (449.0 / 99.0) 213311	(8.75 , 0.93) (N/A , -0.03 , 0.2)	717.8 736.7	0.2564 96.4 94.2	1.0379 [0.9514]	109.1%			
PFOS	(499.0 / 80.0) 925032 (499.0 / 99.0) 227451	(9.43 , 1.00) (0.00 , N/A , -0.2)	230.2 310.4	0.2459 107.7 109.2	0.9462 [0.9275]	102.0%			
PFNS	(549.0 / 80.0) 1060986 (549.0 / 99.0) 268119	(9.76 , 1.03) (N/A , -0.01 , -0.1)	543.3 369.5	0.2527 107.6 107.2	1.0891 [0.9599]	113.5%			
PFDS	(599.0 / 80.0) 1274917 (599.0 / 99.0) 282393	(9.91 , 1.05) (N/A , -0.01 , 0.0)	843.2 570.7	0.2215 98.8 92.0	1.0703 [0.9631]	111.1%			
PFDoS	(699.0 / 80.0) 554866 (699.0 / 99.0) 131751	(10.11 , 1.07) (N/A , 0.00 , 0.2)	808.6 783.9	0.2374 116.0 117.7	1.1661 [0.9696]	120.3%			
4:2FTS	(327.0 / 307.0) 1524296 (327.0 / 81.0) 992742	(5.78 , 1.00) (0.00 , N/A , 0.3)	660.6 490.0	0.6513 100.9 108.3	4.5136 [3.7381]	120.7%			
6:2FTS	(427.0 / 407.0) 941891 (427.0 / 81.0) 729809	(7.53 , 1.00) (0.00 , N/A , 0.1)	35.3 441.4	0.7748 109.6 113.0	5.1924 [3.7962]	136.8%			QC,
8:2FTS	(527.0 / 507.0) 1027950 (527.0 / 81.0) 671715	(8.94 , 1.00) (0.00 , N/A , 0.1)	419.5 549.5	0.6535 93.0 87.9	4.9671 [3.8332]	129.6%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (20)
Acquired: 2022/12/28 - 00:02

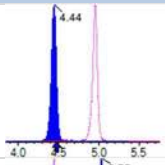
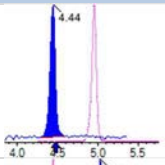
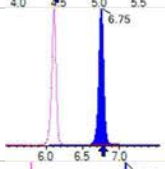
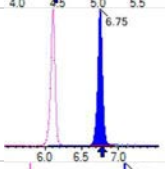
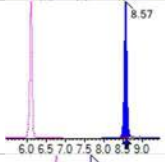
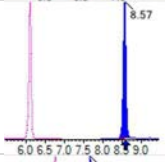
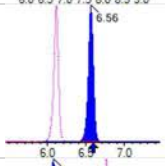
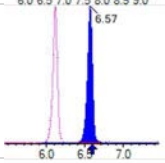
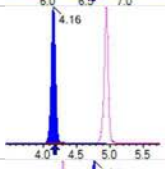
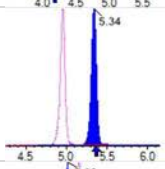
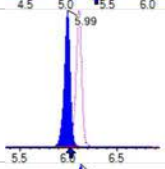
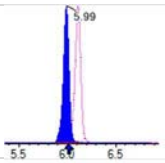
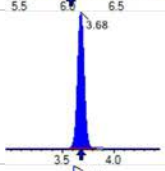
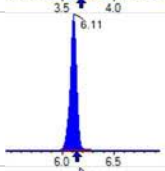
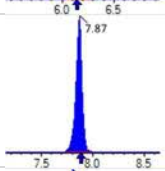
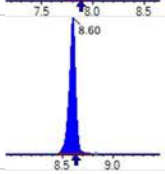
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 985678 (498.0 / 478.0) 19487	(10.17 , 1.00) (0.00 , N/A , -0.1)	783.5 126.6	0.0198 124.0 78.7	1.1996 [1.0000]	120.0%			
NMeFOSA	(512.0 / 219.0) 440134 (512.0 / 169.0) 302173	(10.61 , 1.00) (0.00 , N/A , 0.1)	938.2 904.5	0.6865 100.9 102.6	5.0185 [4.0000]	125.5%			
NEtFOSA	(526.0 / 219.0) 427949 (526.0 / 169.0) 435015	(10.70 , 1.00) (0.00 , N/A , 0.1)	1100.1 738.7	1.0165 101.2 98.6	4.9335 [4.0000]	123.3%			
NMeFOSAA	(570.0 / 419.0) 201961 (570.0 / 483.0) 125079	(9.49 , 1.00) (0.00 , N/A , 0.2)	176.4 376.8	0.6193 124.1 119.8	1.0081 [1.0000]	100.8%			
NEtFOSAA	(584.0 / 419.0) 209349 (584.0 / 526.0) 119787	(9.67 , 1.00) (0.01 , N/A , 0.3)	648.6 228.1	0.5722 95.3 104.0	1.1076 [1.0000]	110.8%			
NMeFOSE	(616.0 / 59.0) 127086	(10.58 , 1.00) (0.00 , N/A , 0.0)	624.0	N/A 0.0 0.0	4.5498 [4.0000]	113.7%			
NEtFOSE	(630.0 / 59.0) 18919	(10.67 , 1.00) (0.01 , N/A , 0.0)	397.2	N/A 0.0 0.0	4.6126 [4.0000]	115.3%			
HFPO-DA	(285.0 / 169.0) 312027 (285.0 / 185.0) 793760	(6.46 , 1.00) (0.00 , N/A , 0.1)	503.8 437.9	2.5439 92.4 95.1	2.3099 [2.0000]	115.5%			
ADONA	(377.0 / 85.0) 1252622 (377.0 / 251.0) 166126	(7.37 , 1.14) (N/A , -0.03 , -0.1)	610.7 308.2	0.1326 115.3 120.1	2.1655 [1.8854]	114.9%			
9Cl-Pf3ONS	(531.0 / 351.0) 3932331 (533.0 / 353.0) 1118663	(9.71 , 1.50) (N/A , -0.01 , 0.0)	929.4 753.5	0.2845 88.9 90.6	2.5901 [1.8665]	138.8%			QC,
11Cl-PF3OUDS	(631.0 / 451.0) 1922863 (633.0 / 453.0) 573736	(10.00 , 1.55) (N/A , -0.01 , -0.1)	882.3 1057.1	0.2984 101.9 83.8	2.4229 [1.8864]	128.4%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (20)
Acquired: 2022/12/28 - 00:02

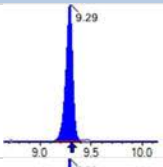
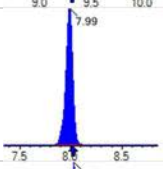
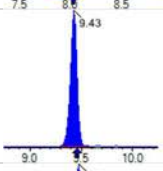
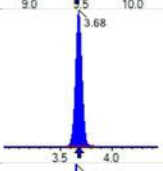
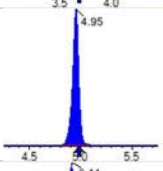
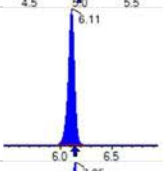
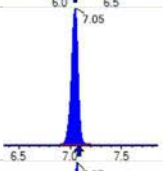
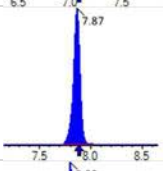
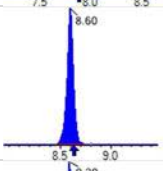
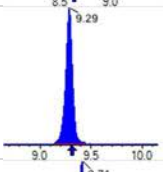
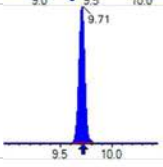
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 38754 (241.0 / 117.0) 52576	(4.44 , 0.90) (N/A , -0.03 , 0.1)	451.4 163.4	1.3567 99.3 101.3	4.3923 [4.0000]	109.8%			
5:3FTCA	(341.0 / 236.7) 234513 (341.0 / 217.0) 388394	(6.75 , 1.11) (N/A , -0.02 , 0.1)	432.2 418.7	1.6562 99.6 102.7	4.0910 [4.0000]	102.3%			
7:3FTCA	(441.0 / 317.0) 316858 (441.0 / 337.0) 281547	(8.57 , 1.40) (N/A , -0.03 , -0.1)	422.3 415.6	0.8886 106.3 103.4	4.4869 [4.0000]	112.2%			
PFEESA	(315.0 / 135.0) 680229 (315.0 / 83.0) 200979	(6.56 , 1.07) (N/A , -0.03 , -0.2)	658.3 470.0	0.2955 95.9 95.6	1.8274 [1.7849]	102.4%			
PFMPA	(229.0 / 85.0) 184903	(4.16 , 0.84) (N/A , -0.02 , 0.0)	903.3	N/A 0.0 0.0	2.4165 [2.0000]	120.8%			
PFMBA	(279.0 / 85.0) 491695	(5.34 , 1.08) (N/A , -0.03 , 0.0)	634.7	N/A 0.0 0.0	2.4547 [2.0000]	122.7%			
NFDHA	(295.0 / 201.0) 399745 (295.0 / 85.0) 367480	(5.99 , 0.98) (N/A , -0.03 , 0.1)	650.3 588.6	0.9193 105.8 102.4	2.2370 [2.0000]	111.9%			
13C3_PFBA_IIS	(216.0 / 172.0) 273960	(3.68 , N/A) (N/A , 0.00 , N/A)	667.6	N/A	1.0135 [1.0000]	101.3% { 95.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 417633	(6.11 , N/A) (N/A , -0.03 , N/A)	489.1	N/A	1.0516 [1.0000]	105.2% { 101.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 442710	(7.87 , N/A) (N/A , -0.02 , N/A)	689.0	N/A	1.1082 [1.0000]	110.8% { 113.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 364777	(8.60 , N/A) (N/A , -0.03 , N/A)	441.2	N/A	1.1035 [1.0000]	110.4% { 106.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (20)
Acquired: 2022/12/28 - 00:02

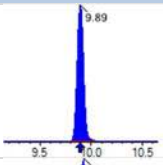
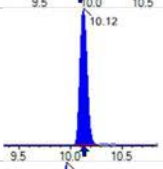
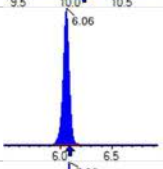
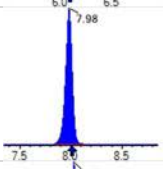
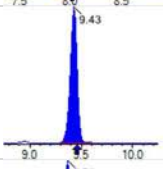
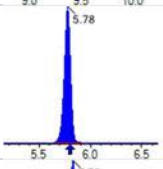
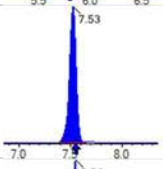
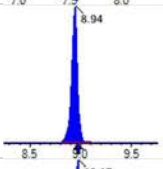
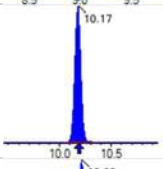
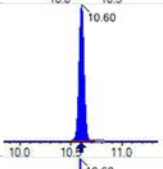
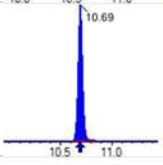
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 450593	(9.29 , N/A) (N/A , -0.02 , N/A)	353.3	N/A	1.2619 [1.0000]	126.2% { 124.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 681241	(7.99 , N/A) (N/A , -0.02 , N/A)	815.2	N/A	0.9768 [1.0000]	97.7% { 103.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 768643	(9.43 , N/A) (N/A , -0.03 , N/A)	368.7	N/A	1.1147 [1.0000]	111.5% { 113.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1841572	(3.68 , N/A) (N/A , 0.00 , N/A)	806.2	N/A	6.2553 [8.0000]	78.2% { 78.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1180408	(4.95 , N/A) (N/A , -0.02 , N/A)	615.5	N/A	3.0928 [4.0000]	77.3% { 83.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 820460	(6.11 , N/A) (N/A , -0.03 , N/A)	607.3	N/A	1.7663 [2.0000]	88.3% { 86.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 645003	(7.05 , N/A) (N/A , -0.03 , N/A)	557.6	N/A	1.5540 [2.0000]	77.7% { 80.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 700352	(7.87 , N/A) (N/A , -0.02 , N/A)	609.5	N/A	1.4437 [2.0000]	72.2% { 85.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 304713	(8.60 , N/A) (N/A , -0.03 , N/A)	500.2	N/A	0.7588 [1.0000]	75.9% { 81.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 399879	(9.29 , N/A) (N/A , -0.02 , N/A)	408.6	N/A	0.6784 [1.0000]	67.8% { 94.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 576920	(9.71 , N/A) (N/A , -0.01 , N/A)	861.3	N/A	0.8076 [1.0000]	80.8% { 90.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (20)
Acquired: 2022/12/28 - 00:02

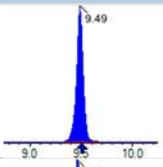
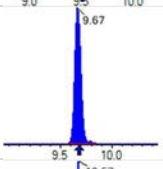
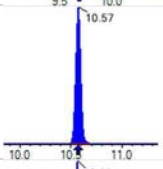
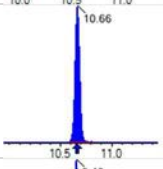
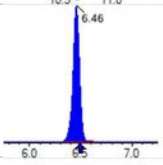
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 633390	(9.89 , N/A) (N/A , -0.01 , N/A)	692.7	N/A	0.8056 [1.0000]	80.6% { 100.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 393062	(10.12 , N/A) (N/A , 0.00 , N/A)	1481.3	N/A	0.7574 [1.0000]	75.7% { 88.8% }			
13C3_PFBS_EIS	(302.0 / 80.0) 1872142	(6.06 , N/A) (N/A , -0.03 , N/A)	659.3	N/A	1.6320 [2.0000]	81.6% { 86.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 925134	(7.98 , N/A) (N/A , -0.03 , N/A)	669.2	N/A	1.5193 [2.0000]	76.0% { 82.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1685189	(9.43 , N/A) (N/A , -0.03 , N/A)	361.2	N/A	1.6929 [2.0000]	84.6% { 91.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 473491	(5.78 , N/A) (N/A , -0.02 , N/A)	686.2	N/A	3.5049 [4.0000]	87.6% { 88.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 530138	(7.53 , N/A) (N/A , -0.02 , N/A)	638.7	N/A	3.1578 [4.0000]	78.9% { 78.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 614429	(8.94 , N/A) (N/A , -0.03 , N/A)	438.1	N/A	3.7123 [4.0000]	92.8% { 84.9% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1712198	(10.17 , N/A) (N/A , 0.00 , N/A)	680.5	N/A	1.2937 [2.0000]	64.7% { 68.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 201638	(10.60 , N/A) (N/A , 0.00 , N/A)	458.0	N/A	0.7856 [2.0000]	39.3% { 43.7% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 188752	(10.69 , N/A) (N/A , 0.00 , N/A)	716.6	N/A	0.8253 [2.0000]	41.3% { 38.4% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-BS1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (20)
Acquired: 2022/12/28 - 00:02

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 965033	(9.49 , N/A) (N/A , -0.02 , N/A)	357.9	N/A	3.5437 [4.0000]	88.6% { 96.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 871821	(9.67 , N/A) (N/A , -0.02 , N/A)	750.9	N/A	3.7378 [4.0000]	93.4% { 120.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 494799	(10.57 , N/A) (N/A , 0.00 , N/A)	1079.9	N/A	12.0324 [20.0000]	60.2% { 51.5% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 216339	(10.66 , N/A) (N/A , 0.00 , N/A)	1205.2	N/A	13.0089 [20.0000]	65.0% { 51.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1760589	(6.46 , N/A) (N/A , -0.03 , N/A)	760.8	N/A	6.8252 [8.0000]	85.3% { 84.9% }			

ANALYSIS DATA SHEET

MRL Check

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-MRL1	File ID:	S2022-12-27B (21)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/28/22 00:15
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Instrument:	Saphira				
Column:	1				

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	2.34	1.6	0.21	
PFPEA	0.982	0.80	0.065	
PFHXA	0.494	0.40	0.055	
PFHPA	0.571	0.40	0.041	
PFOA	0.548	0.40	0.15	
PFNA	0.413	0.40	0.082	
PFDA	0.569	0.40	0.10	
PFUnA	0.537	0.40	0.16	
PFDOA	0.497	0.40	0.11	
PFTRDA	0.460	0.40	0.20	IR2
PFTEDA	0.484	0.40	0.20	
PFBS	0.436	0.40	0.037	
PFPES	0.485	0.40	0.063	
PFHXS	0.426	0.40	0.032	
PFHPS	0.412	0.40	0.051	
PFOS	0.470	0.40	0.064	
PFNS	0.433	0.40	0.12	
PFDS	0.409	0.40	0.15	
PFDOS	0.536	0.40	0.12	
4:2FTS	1.94	1.6	0.29	
6:2FTS	1.74	1.6	0.31	
8:2FTS	1.75	1.6	0.082	
PFOSA	0.466	0.40	0.10	
NMeFOSA	1.92	1.6	0.47	
NEtFOSA	1.96	1.6	0.41	
NMeFOSAA	0.575	0.40	0.11	
NEtFOSAA	0.417	0.40	0.11	
NMeFOSE	1.72	1.6	1.0	
NEtFOSE	1.87	1.6	1.0	
HFPO-DA	1.15	[illegible]	[illegible]	

ANALYSIS DATA SHEET

MRL Check

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM		Project:	Red Hill AFFF Assessment Sampling	
Matrix:	Water	Laboratory ID:	BBL0460-MRL1	File ID:	S2022-12-27B (21)
Sampled:		Prepared:	12/27/22 07:41	Analyzed:	12/28/22 00:15
Solids:		Preparation:	1633	Dilution:	1
Batch:	BBL0460	Sequence:	SB03989	Calibration:	2253007
Instrument:	Saphira				
Column:	1				

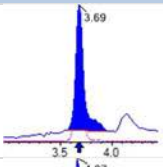
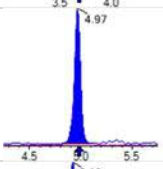
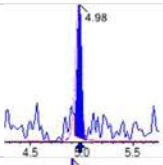
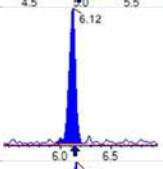
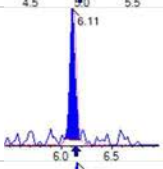
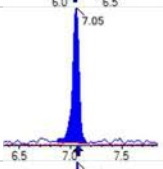
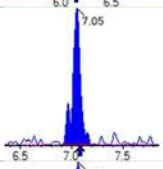
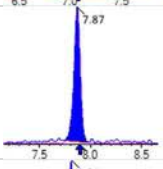
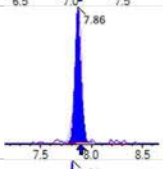
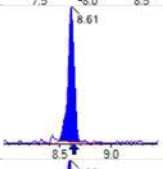
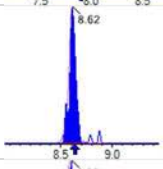
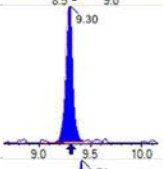
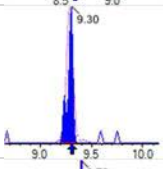
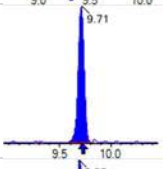
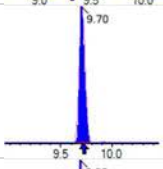
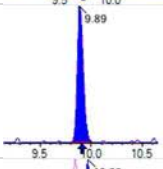
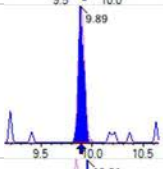
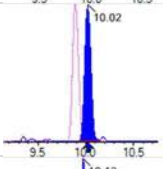
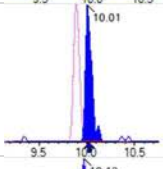
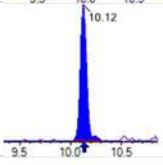
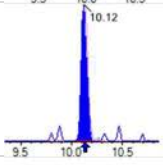
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	0.876	0.80	0.12	
PFEESA	0.766	0.80	0.11	J
PFMPA	0.893	0.80	0.054	
PFMBA	0.939	0.80	0.091	
NFDHA	0.938	0.80	0.30	
9CL-PF3ONS	0.920	0.80	0.21	
11CL-PF3OUDS	0.727	0.80	0.21	J
3:3FTCA	1.81	1.6	0.57	
5:3FTCA	2.10	1.6	0.44	
7:3FTCA	1.87	1.6	0.55	

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (21)
Acquired: 2022/12/28 - 00:15

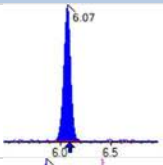
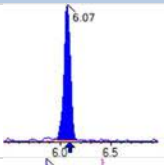
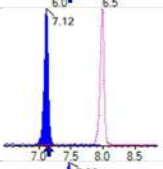
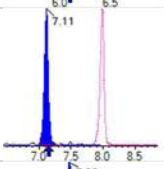
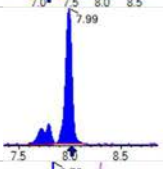
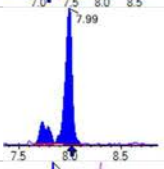
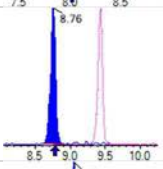
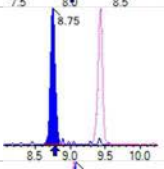
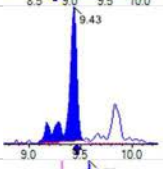
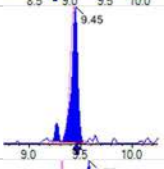
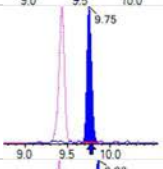
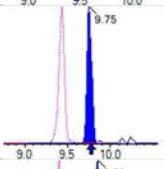
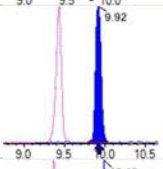
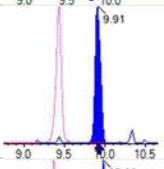
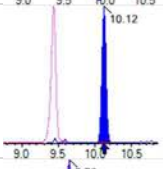
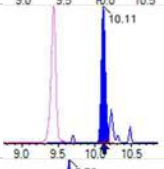
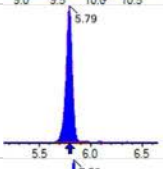
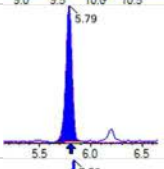
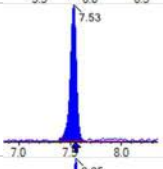
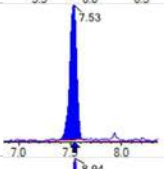
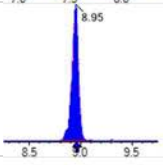
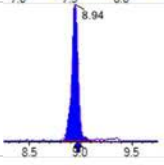
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 124062	(3.69 , 1.00) (0.00 , N/A , 0.0)	114.9	N/A 0.0 0.0	0.5861 [0.4000]	146.5%			QC,
PFPeA	(263.0 / 219.0) 65810 (263.0 / 69.0) 783	(4.97 , 1.00) (0.00 , N/A , -0.5)	191.3 21.0	0.0119 110.2 112.1	0.2454 [0.2000]	122.7%			
PFHxA	(313.0 / 269.0) 46602 (313.0 / 119.0) 3955	(6.12 , 1.00) (0.00 , N/A , 0.7)	108.2 41.7	0.0849 94.3 98.3	0.1236 [0.1000]	123.6%			
PFHpA	(363.0 / 319.0) 50417 (363.0 / 169.0) 15791	(7.05 , 1.00) (0.00 , N/A , 0.2)	111.3 286.0	0.3132 102.9 105.4	0.1428 [0.1000]	142.8%			QC,
PFOA	(413.0 / 369.0) 50196 (413.0 / 169.0) 17182	(7.87 , 1.00) (0.00 , N/A , 0.2)	127.6 172.9	0.3423 101.9 109.3	0.1369 [0.1000]	136.9%			QC,
PFNA	(463.0 / 419.0) 33188 (463.0 / 169.0) 7460	(8.61 , 1.00) (0.00 , N/A , -0.2)	144.2 146.4	0.2248 107.5 106.6	0.1032 [0.1000]	103.2%			
PFDA	(513.0 / 469.0) 51314 (513.0 / 169.0) 4963	(9.30 , 1.00) (0.01 , N/A , -0.2)	112.1 121.0	0.0967 108.5 122.8	0.1422 [0.1000]	142.2%			QC,
PFUnA	(563.0 / 519.0) 60865 (563.0 / 169.0) 6156	(9.71 , 1.00) (0.00 , N/A , 0.2)	234.2 337.1	0.1011 96.0 88.2	0.1343 [0.1000]	134.3%			QC,
PFDoA	(613.0 / 569.0) 63913 (613.0 / 169.0) 6331	(9.89 , 1.00) (0.00 , N/A , 0.2)	174.9 48.0	0.0991 77.2 74.3	0.1242 [0.1000]	124.2%			
PFTrDA	(663.0 / 619.0) 50030 (663.0 / 169.0) 16033	(10.02 , 1.01) (N/A , 0.00 , 0.4)	145.5 132.3	0.3205 140.4 152.9	0.1150 [0.1000]	115.0%			IR2,
PFTeDA	(713.0 / 669.0) 50572 (713.0 / 169.0) 8964	(10.12 , 1.00) (-0.01 , N/A , 0.3)	137.4 65.4	0.1773 84.9 96.2	0.1211 [0.1000]	121.1%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (21)
Acquired: 2022/12/28 - 00:15

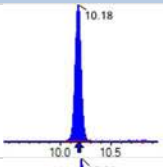
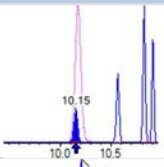
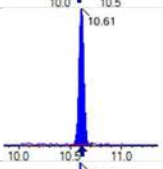
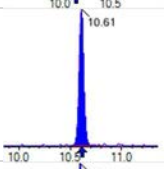
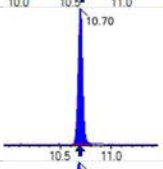
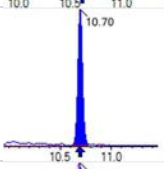
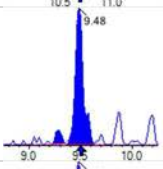
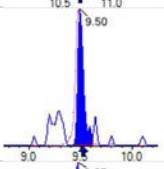
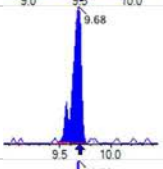
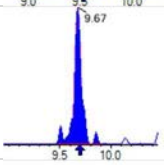
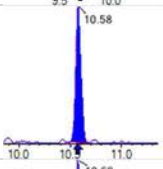
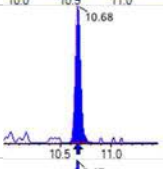
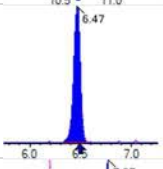
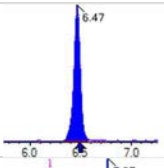
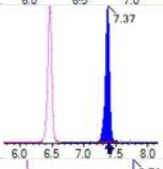
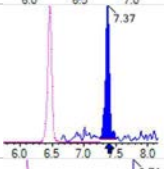
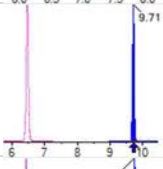
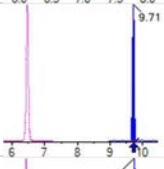
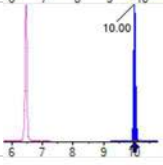
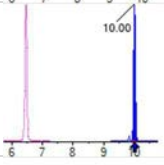
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 63648 (299.0 / 99.0) 37431	(6.07 , 1.00) (0.00 , N/A , 0.0)	248.4 167.1	0.5881 88.3 98.8	0.1089 [0.0885]	123.1%			
PFPeS	(349.0 / 80.0) 112121 (349.0 / 99.0) 36511	(7.12 , 0.89) (N/A , -0.02 , 0.1)	315.5 211.9	0.3256 88.5 85.8	0.1213 [0.0938]	129.2%			
PFHxS	(399.0 / 80.0) 90197 (399.0 / 99.0) 33712	(7.99 , 1.00) (0.00 , N/A , -0.1)	301.4 207.5	0.3738 116.9 118.2	0.1066 [0.0911]	117.0%			
PFHpS	(449.0 / 80.0) 80554 (449.0 / 99.0) 24326	(8.76 , 0.93) (N/A , -0.02 , 0.5)	171.6 120.9	0.3020 113.6 111.0	0.1030 [0.0951]	108.2%			
PFOS	(499.0 / 80.0) 112183 (499.0 / 99.0) 28788	(9.43 , 1.00) (0.00 , N/A , -0.8)	68.9 15.8	0.2566 112.4 114.0	0.1176 [0.0927]	126.7%			
PFNS	(549.0 / 80.0) 102919 (549.0 / 99.0) 25965	(9.75 , 1.03) (N/A , -0.02 , 0.0)	178.2 152.5	0.2523 107.4 107.1	0.1082 [0.0960]	112.8%			
PFDS	(599.0 / 80.0) 118999 (599.0 / 99.0) 26400	(9.92 , 1.05) (N/A , 0.00 , 0.5)	355.9 135.3	0.2219 99.0 92.2	0.1023 [0.0963]	106.3%			
PFDoS	(699.0 / 80.0) 62178 (699.0 / 99.0) 9000	(10.12 , 1.07) (N/A , 0.01 , 0.6)	296.1 72.9	0.1447 70.7 71.8	0.1339 [0.0970]	138.1%			QC,
4:2FTS	(327.0 / 307.0) 158800 (327.0 / 81.0) 100028	(5.79 , 1.00) (0.00 , N/A , 0.2)	452.8 218.3	0.6299 97.6 104.7	0.4850 [0.3738]	129.8%			
6:2FTS	(427.0 / 407.0) 98705 (427.0 / 81.0) 72974	(7.53 , 1.00) (0.00 , N/A , 0.1)	195.0 198.6	0.7393 104.6 107.8	0.4361 [0.3796]	114.9%			
8:2FTS	(527.0 / 507.0) 92944 (527.0 / 81.0) 65874	(8.95 , 1.00) (0.00 , N/A , 0.4)	443.3 204.5	0.7088 100.9 95.4	0.4381 [0.3833]	114.3%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (21)
Acquired: 2022/12/28 - 00:15

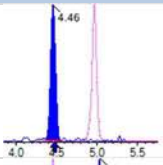
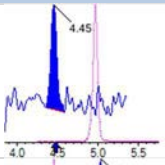
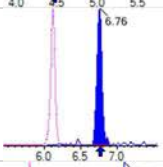
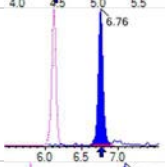
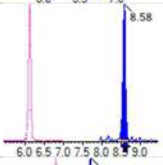
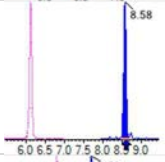
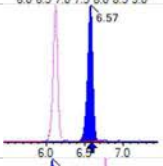
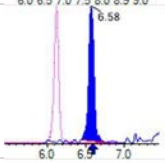
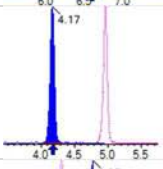
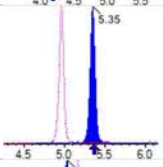
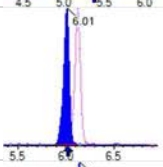
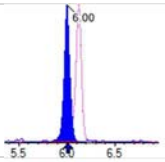
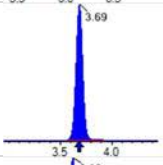
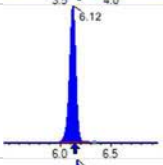
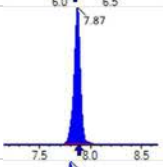
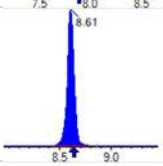
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 96351 (498.0 / 478.0) 274	(10.18 , 1.00) (0.00 , N/A , 1.3)	262.0 17.5	0.0028 17.8 11.3	0.1166 [0.1000]	116.6%			
NMeFOSA	(512.0 / 219.0) 41659 (512.0 / 169.0) 32444	(10.61 , 1.00) (0.00 , N/A , -0.1)	307.2 309.9	0.7788 114.5 116.3	0.4800 [0.4000]	120.0%			
NEtFOSA	(526.0 / 219.0) 44282 (526.0 / 169.0) 46507	(10.70 , 1.00) (0.00 , N/A , 0.1)	445.8 259.5	1.0502 104.6 101.9	0.4903 [0.4000]	122.6%			
NMeFOSAA	(570.0 / 419.0) 27510 (570.0 / 483.0) 7534	(9.48 , 1.00) (0.00 , N/A , -0.8)	88.7 108.1	0.2739 54.9 53.0	0.1436 [0.1000]	143.6%			QC,MI5 DG 2022-12-28
NEtFOSAA	(584.0 / 419.0) 19730 (584.0 / 526.0) 14784	(9.68 , 1.00) (0.00 , N/A , 0.0)	174.6 1808.2	0.7493 124.7 136.2	0.1042 [0.1000]	104.2%			
NMeFOSE	(616.0 / 59.0) 12028	(10.58 , 1.00) (0.01 , N/A , 0.0)	169.0	N/A 0.0 0.0	0.4290 [0.4000]	107.2%			
NEtFOSE	(630.0 / 59.0) 1957	(10.68 , 1.00) (0.01 , N/A , 0.0)	81.8	N/A 0.0 0.0	0.4677 [0.4000]	116.9%			
HFPO-DA	(285.0 / 169.0) 42028 (285.0 / 185.0) 86792	(6.47 , 1.00) (0.00 , N/A , 0.0)	440.5 339.8	2.0651 75.0 77.2	0.2884 [0.2000]	144.2%			QC,
ADONA	(377.0 / 85.0) 136659 (377.0 / 251.0) 18791	(7.37 , 1.14) (N/A , -0.02 , 0.0)	450.2 68.7	0.1375 119.5 124.6	0.2190 [0.1885]	116.2%			
9Cl-Pf3ONS	(531.0 / 351.0) 376617 (533.0 / 353.0) 119231	(9.71 , 1.50) (N/A , -0.01 , 0.1)	453.1 301.0	0.3166 99.0 100.9	0.2299 [0.1867]	123.2%			
11Cl-PF3OUDS	(631.0 / 451.0) 155578 (633.0 / 453.0) 48559	(10.00 , 1.55) (N/A , -0.01 , 0.1)	447.9 2608.5	0.3121 106.6 87.6	0.1817 [0.1886]	96.3%			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (21)
Acquired: 2022/12/28 - 00:15

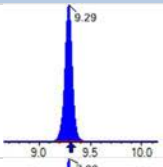
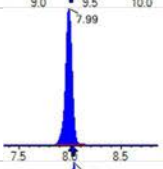
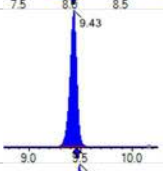
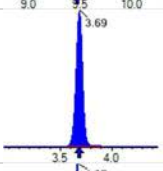
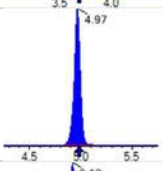
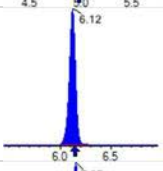
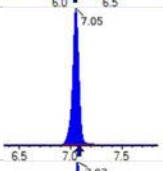
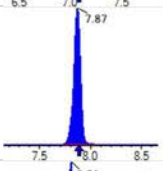
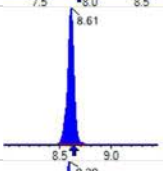
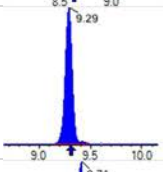
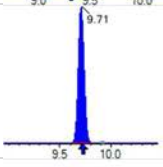
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 4235 (241.0 / 117.0) 6049	(4.46 , 0.90) (N/A , -0.01 , 0.2)	140.4 24.5	1.4284 104.6 106.6	0.4513 [0.4000]	112.8%			
5:3FTCA	(341.0 / 236.7) 30317 (341.0 / 217.0) 45733	(6.76 , 1.10) (N/A , -0.02 , -0.1)	81.9 130.5	1.5085 90.7 93.6	0.5243 [0.4000]	131.1%			QC,
7:3FTCA	(441.0 / 317.0) 33258 (441.0 / 337.0) 29002	(8.58 , 1.40) (N/A , -0.02 , 0.3)	121.2 225.3	0.8720 104.3 101.5	0.4669 [0.4000]	116.7%			
PFEESA	(315.0 / 135.0) 71905 (315.0 / 83.0) 24606	(6.57 , 1.07) (N/A , -0.02 , 0.0)	361.5 92.0	0.3422 111.1 110.8	0.1915 [0.1785]	107.3%			
PFMPA	(229.0 / 85.0) 18176	(4.17 , 0.84) (N/A , -0.01 , 0.0)	353.4	N/A 0.0 0.0	0.2233 [0.2000]	111.7%			
PFMBA	(279.0 / 85.0) 50006	(5.35 , 1.08) (N/A , -0.02 , 0.0)	475.0	N/A 0.0 0.0	0.2347 [0.2000]	117.4%			
NFDHA	(295.0 / 201.0) 42283 (295.0 / 85.0) 35628	(6.01 , 0.98) (N/A , -0.01 , 0.4)	348.4 217.2	0.8426 97.0 93.9	0.2346 [0.2000]	117.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 293902	(3.69 , N/A) (N/A , 0.01 , N/A)	672.9	N/A	1.0872 [1.0000]	108.7% { 102.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 453656	(6.12 , N/A) (N/A , -0.01 , N/A)	388.0	N/A	1.1423 [1.0000]	114.2% { 110.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 434918	(7.87 , N/A) (N/A , -0.02 , N/A)	685.1	N/A	1.0887 [1.0000]	108.9% { 111.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 380996	(8.61 , N/A) (N/A , -0.02 , N/A)	340.9	N/A	1.1526 [1.0000]	115.3% { 111.0% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (21)
Acquired: 2022/12/28 - 00:15

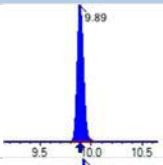
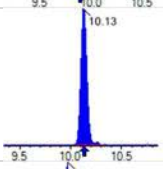
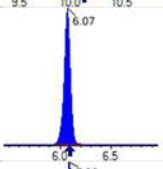
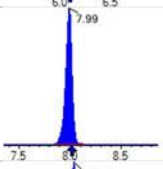
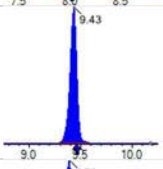
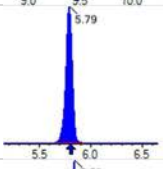
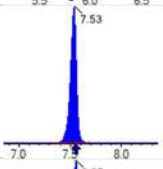
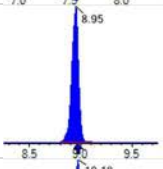
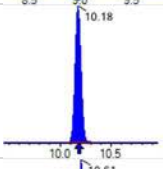
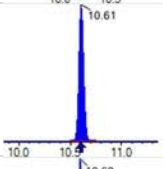
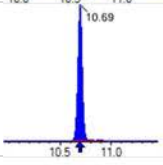
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 380384	(9.29 , N/A) (N/A , -0.02 , N/A)	408.7	N/A	1.0653 [1.0000]	106.5% { 105.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 780417	(7.99 , N/A) (N/A , -0.02 , N/A)	684.6	N/A	1.1189 [1.0000]	111.9% { 118.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 785069	(9.43 , N/A) (N/A , -0.02 , N/A)	470.1	N/A	1.1385 [1.0000]	113.9% { 116.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2019205	(3.69 , N/A) (N/A , 0.01 , N/A)	722.8	N/A	6.3933 [8.0000]	79.9% { 85.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1255454	(4.97 , N/A) (N/A , -0.01 , N/A)	653.2	N/A	3.0283 [4.0000]	75.7% { 88.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 827615	(6.12 , N/A) (N/A , -0.02 , N/A)	597.8	N/A	1.6402 [2.0000]	82.0% { 87.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 737336	(7.05 , N/A) (N/A , -0.02 , N/A)	633.0	N/A	1.6354 [2.0000]	81.8% { 92.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 789462	(7.87 , N/A) (N/A , -0.02 , N/A)	563.7	N/A	1.6565 [2.0000]	82.8% { 96.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 355186	(8.61 , N/A) (N/A , -0.03 , N/A)	585.7	N/A	0.8469 [1.0000]	84.7% { 94.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 405059	(9.29 , N/A) (N/A , -0.02 , N/A)	380.0	N/A	0.8140 [1.0000]	81.4% { 96.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 572344	(9.71 , N/A) (N/A , -0.01 , N/A)	584.2	N/A	0.9491 [1.0000]	94.9% { 89.3% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (21)
Acquired: 2022/12/28 - 00:15

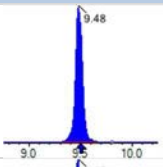
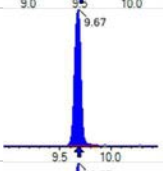
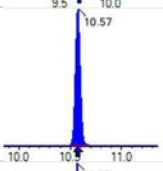
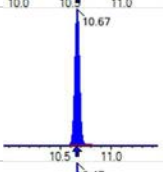
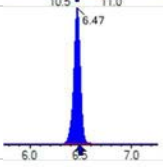
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDoA_EIS	(615.0 / 570.0) 600514	(9.89 , N/A) (N/A , -0.01 , N/A)	648.5	N/A	0.9048 [1.0000]	90.5% { 95.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 459946	(10.13 , N/A) (N/A , 0.00 , N/A)	815.9	N/A	1.0499 [1.0000]	105.0% { 104.0% }			
13C3_PFBS_EIS	(302.0 / 80.0) 2095330	(6.07 , N/A) (N/A , -0.02 , N/A)	676.7	N/A	1.5944 [2.0000]	79.7% { 97.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1100925	(7.99 , N/A) (N/A , -0.02 , N/A)	724.6	N/A	1.5783 [2.0000]	78.9% { 97.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 1644888	(9.43 , N/A) (N/A , -0.02 , N/A)	503.3	N/A	1.6178 [2.0000]	80.9% { 89.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 459030	(5.79 , N/A) (N/A , -0.01 , N/A)	733.7	N/A	2.9660 [4.0000]	74.2% { 85.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 661531	(7.53 , N/A) (N/A , -0.01 , N/A)	670.8	N/A	3.4397 [4.0000]	86.0% { 97.3% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 629820	(8.95 , N/A) (N/A , -0.02 , N/A)	561.3	N/A	3.3217 [4.0000]	83.0% { 87.0% }			
13C8_PFOSA_EIS	(506.0 / 78.0) 1721675	(10.18 , N/A) (N/A , 0.00 , N/A)	925.9	N/A	1.2736 [2.0000]	63.7% { 68.5% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 199530	(10.61 , N/A) (N/A , 0.00 , N/A)	739.8	N/A	0.7611 [2.0000]	38.1% { 43.3% }			
D5_NEtFOSA_EIS	(531.0 / 169.0) 196532	(10.69 , N/A) (N/A , 0.00 , N/A)	747.1	N/A	0.8414 [2.0000]	42.1% { 39.9% }			

APPL
AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES
A METIRI GROUP COMPANY

Chemist: DAG
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: BBL0460-MRL1
DF , IV: 1 , 10.0µL
Acquisition Method: 1633 2022-12-27.dam

Quant Method: 1633 - S2022-12-27
Path: S2022-12-27B (21)
Acquired: 2022/12/28 - 00:15

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min] , R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 922588	(9.48 , N/A) (N/A , -0.02 , N/A)	555.4	N/A	3.3170 [4.0000]	82.9% { 92.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 873563	(9.67 , N/A) (N/A , -0.01 , N/A)	364.1	N/A	3.6669 [4.0000]	91.7% { 120.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 496702	(10.57 , N/A) (N/A , 0.00 , N/A)	963.3	N/A	11.8259 [20.0000]	59.1% { 51.7% }			
D9_NEtFOSE_EIS	(639.0 / 58.9) 220743	(10.67 , N/A) (N/A , 0.00 , N/A)	1153.4	N/A	12.9961 [20.0000]	65.0% { 52.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1899329	(6.47 , N/A) (N/A , -0.02 , N/A)	636.8	N/A	6.7784 [8.0000]	84.7% { 91.6% }			

PREPARATION BATCH SUMMARY

EPA 1633

Laboratory:	APPL, LLC			Work Order:	22L0160
Client:	AECOM			Project:	Red Hill AFFF Assessment Sampling
Batch:	BBL0460	Batch Matrix:	Water	Preparation:	1633

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT g	FINAL VOL. ml
AF-RHMW12A-WGN01LF-2212W3	22L0160-01	12/27/22 07:41	527.22	2.00
AF-RHMW12A-WGFD01LF-2212W3	22L0160-02	12/27/22 07:41	491.26	2.00
AF-RHMW16-WGN01LF-2212W3	22L0160-03	12/27/22 07:41	533.90	2.00
Blank	BBL0460-BLK1	12/27/22 07:41	500.00	2.00
LCS	BBL0460-BS1	12/27/22 07:41	500.00	2.00
MRL Check	BBL0460-MRL1	12/27/22 07:41	500.00	2.00

PREPARATION BENCH SHEET
Organics

Print Date/Time: 12/28/2022 10:48 am

BBL0460

Matrix: Water

Prepared using: PFAS - 1633

Analyses
1633

Spiking Solution(s)
22L0269 PFAS - MIX 1633 10ng/mL

Surrogate Solution(s)
22L0357 MPFAC-HIF-ES 20.0ng/mL

Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (g)	Final (ml)	ul Spike	ul Surrogate	Extraction Comments
22L0148-01	AF-HDMW225303-WGN01LF-2212W3	01/03/2023	01/17/2023	12/27/2022 7:41:00AM	497.75	2		200	"Report relevant surrogates"
22L0148-01RE1	AF-HDMW225303-WGN01LF-2212W3	01/03/2023	01/17/2023	12/27/2022 7:41:00AM	497.75	2		200	"Report relevant surrogates"
22L0148-02	AF-RHMW10-WGN01LF-2212W3	01/03/2023	01/17/2023	12/27/2022 7:41:00AM	534.8	2		200	"Report relevant surrogates"
22L0148-02RE1	AF-RHMW10-WGN01LF-2212W3	01/03/2023	01/17/2023	12/27/2022 7:41:00AM	534.8	2		200	"Report relevant surrogates"
22L0160-01	AF-RHMW12A-WGN01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	527.22	2		200	"Report relevant surrogates"
22L0160-01RE1	AF-RHMW12A-WGN01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	527.22	2		200	"Report relevant surrogates"
22L0160-02	AF-RHMW12A-WGFD01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	491.26	2		200	"Report relevant surrogates"
22L0160-02RE1	AF-RHMW12A-WGFD01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	491.26	2		200	"Report relevant surrogates"
22L0160-03	AF-RHMW16-WGN01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	533.9	2		200	"Report relevant surrogates"
22L0160-03RE1	AF-RHMW16-WGN01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	533.9	2		200	"Report relevant surrogates"
BBL0460-BLK1	Blank			12/27/2022 7:41:00AM	500	2	0	200	
BBL0460-BS1	LCS			12/27/2022 7:41:00AM	500	2	200	200	
BBL0460-MRL1	MRL Check			12/27/2022 7:41:00AM	500	2	20	200	

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

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PREPARATION BENCH SHEET
Organics

Print Date/Time: 12/28/2022 10:48 am

BBL0460

(Continued)

Matrix: Water

Prepared using: PFAS - 1633

Analyses

1633

Spiking Solution(s)

22L0269	PFAS - MIX 1633 10ng/mL

Surrogate Solution(s)

22L0357	MPFAC-HIF-ES 20.0ng/mL

Start Date/Time _____

StopDate/Time _____

Reagents

Standard	Description	LotNum
22C0296	Envi-carb	122395
22K0511	Reagent -0.3M Formic Acid	M13H051
22L0094	Reagent - 0.05MFA wash	x
22L0360	Am. Ac. preservative	P28I056
22L0369	Reagent - 1.0% Ammonia Hydroxide	219481

Batch Comments:

Spiked by: DAG 12/27/22 9:00
Balance #: WB2
Cartridge: Biotage
Concentration: 12/27/22 3:50 - 7:00 PM

Spiking Witnessed By _____ Date _____

Preparation Reviewed By _____ Date _____

Extracts Received By _____ Date _____

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PREPARATION BENCH SHEET
Organics

Print Date/Time: 12/27/2022 8:14 am

BBL0460

Matrix: Water

Prepared using: PFAS - 1633

Analyses
1633

Spiking Solution(s)

Surrogate Solution(s)
22L0357 MPFAC-HIF-ES 20.0ng/mL

Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (g)	Final (ml)	ul Spike	ul Surrogate	Extraction Comments
22L0148-01	AF-HDMW225303-WGN01LF-2212W3	01/03/2023	01/17/2023	12/27/2022 7:41:00AM	500	2		200	"Report relevant surrogates"
22L0148-02	AF-RHMW10-WGN01LF-2212W3	01/03/2023	01/17/2023	12/27/2022 7:41:00AM	500	2		200	"Report relevant surrogates"
22L0160-01	AF-RHMW12A-WGN01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	500	2		200	"Report relevant surrogates"
22L0160-02	AF-RHMW12A-WGFD01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	500	2		200	"Report relevant surrogates"
22L0160-03	AF-RHMW16-WGN01LF-2212W3	01/04/2023	01/18/2023	12/27/2022 7:41:00AM	500	2		200	"Report relevant surrogates"
BBL0460-BLK1	Blank			12/27/2022 7:41:00AM	500	2		200	
BBL0460-BS1	LCS			12/27/2022 7:41:00AM	500	2		200	
BBL0460-MRL1	MRL Check			12/27/2022 7:41:00AM	500	2		200	

tart Date/Time _____

topDate/Time _____

Reagents

Standard	Description	LotNum

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

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INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Sequence:	SB03988	Instrument:	Saphira
Calibration:	2253007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SB03988-CAL1	S2022-12-27A (1)	12/27/22 17:10
Cal Standard	SB03988-CAL2	S2022-12-27A (2)	12/27/22 17:23
Cal Standard	SB03988-CAL3	S2022-12-27A (3)	12/27/22 17:36
Cal Standard	SB03988-CAL4	S2022-12-27A (4)	12/27/22 17:49
Cal Standard	SB03988-CAL5	S2022-12-27A (5)	12/27/22 18:02
Cal Standard	SB03988-CAL6	S2022-12-27A (6)	12/27/22 18:14
Cal Standard	SB03988-CAL7	S2022-12-27A (7)	12/27/22 18:27
Cal Standard	SB03988-CAL8	S2022-12-27A (8)	12/27/22 18:40
Initial Cal Blank	SB03988-ICB1	S2022-12-27A (9)	12/27/22 18:53
Secondary Cal Check	SB03988-SCV1	S2022-12-27A (10)	12/27/22 19:06

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory:	APPL, LLC	SDG:	
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Sequence:	SB03989	Instrument:	Saphira
Calibration:	2253007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SB03989-CCB1	S2022-12-27B (1)	12/27/22 19:32
Low Cal Check	SB03989-LCV1	S2022-12-27B (2)	12/27/22 19:45
Calibration Check	SB03989-CCV1	S2022-12-27B (3)	12/27/22 19:57
Calibration Blank	SB03989-CCB2	S2022-12-27B (4)	12/27/22 20:36
Calibration Check	SB03989-CCV2	S2022-12-27B (17)	12/27/22 23:24
Calibration Blank	SB03989-CCB3	S2022-12-27B (18)	12/27/22 23:36
Blank	BBL0460-BLK1	S2022-12-27B (19)	12/27/22 23:49
LCS	BBL0460-BS1	S2022-12-27B (20)	12/28/22 00:02
MRL Check	BBL0460-MRL1	S2022-12-27B (21)	12/28/22 00:15
AF-RHMW12A-WGN01LF-2212W3	22L0160-01	S2022-12-27B (26)	12/28/22 01:20
AF-RHMW12A-WGFD01LF-2212W3	22L0160-02	S2022-12-27B (28)	12/28/22 01:45
AF-RHMW16-WGN01LF-2212W3	22L0160-03	S2022-12-27B (30)	12/28/22 02:11
Calibration Check	SB03989-CCV3	S2022-12-27B (32)	12/28/22 02:37
Calibration Blank	SB03989-CCB4	S2022-12-27B (33)	12/28/22 02:50

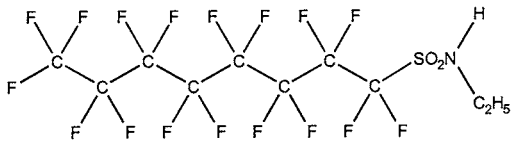
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

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

STRUCTURE:

CAS #: 4151-50-2



MOLECULAR FORMULA:	$C_{10}H_6F_{17}NO_2S$	**MOLECULAR WEIGHT:**	527.20
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/12/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/12/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/16/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

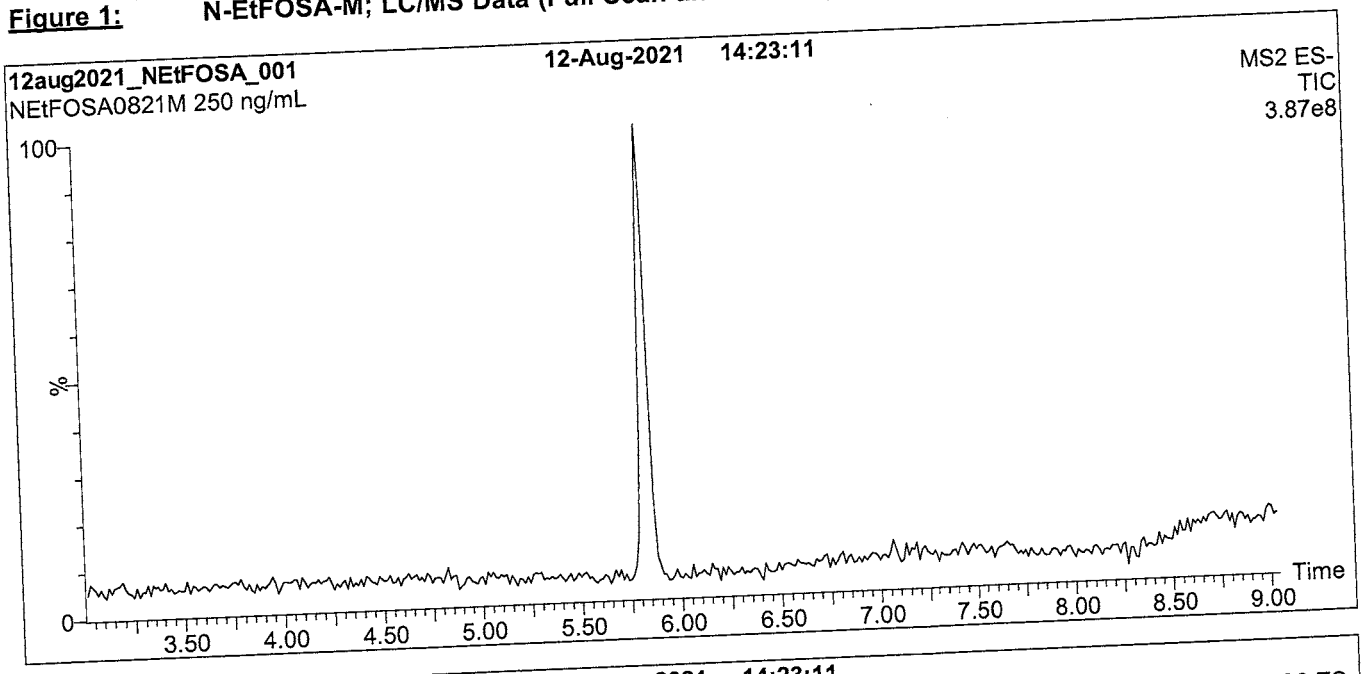
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

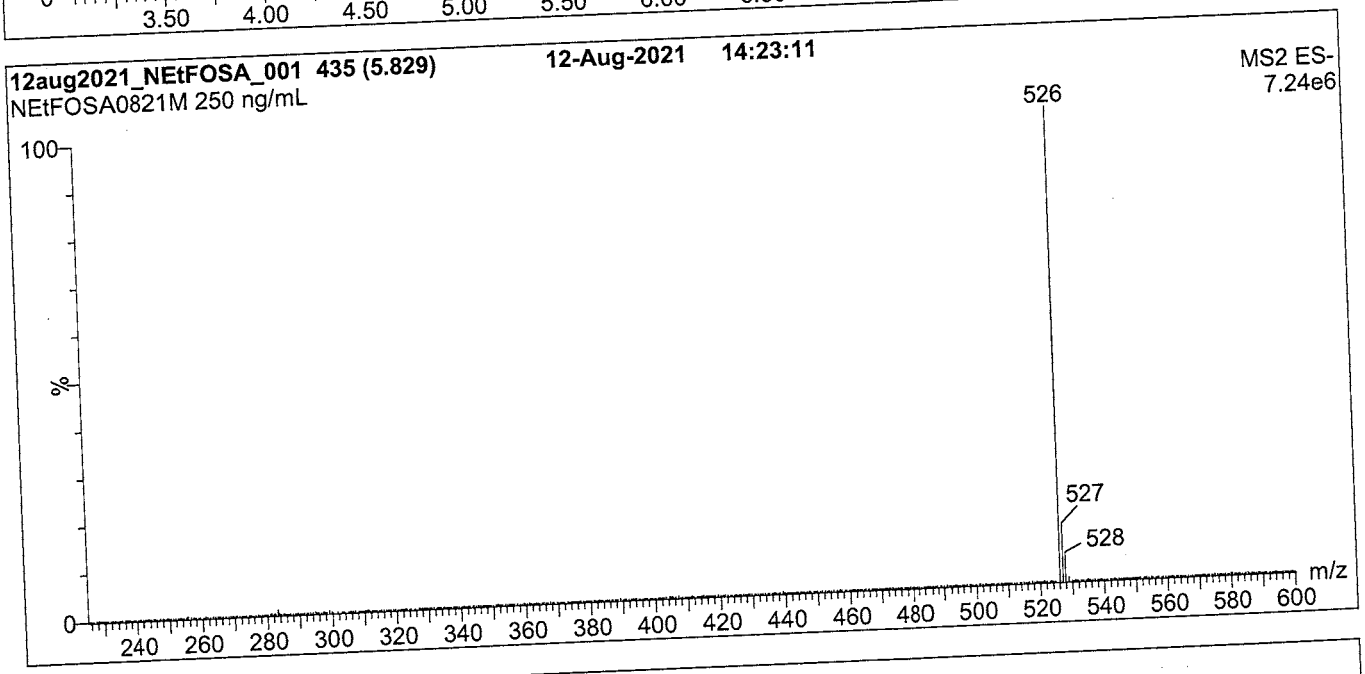
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

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





Conditions for Figure 1:

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

Chromatographic Conditions:

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

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

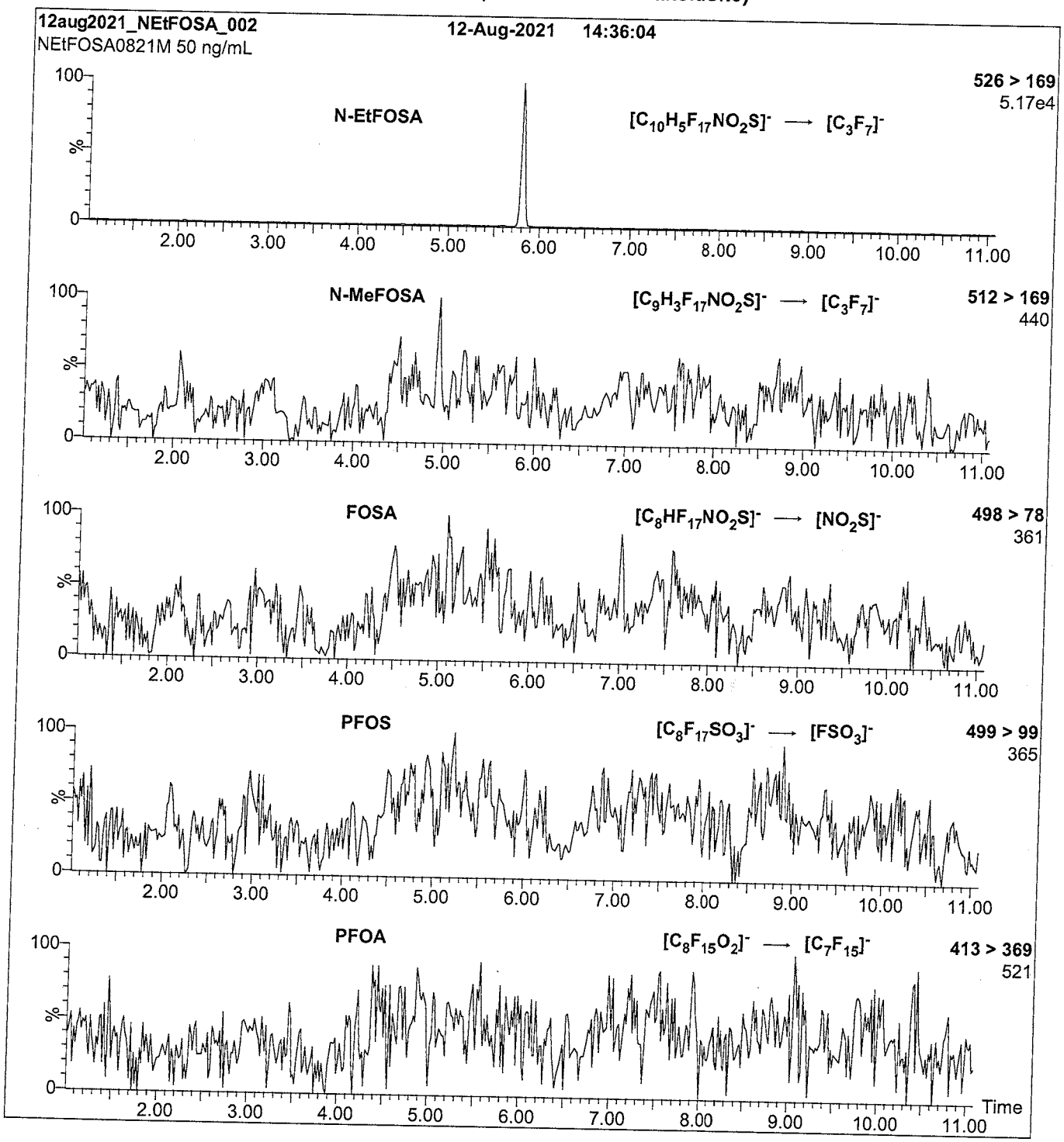
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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



Conditions for Figure 2:

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

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 24

Analytical Standard Record

21J0007

Description:	PFAS - SAS N-EtFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Analyte Spike	Prepared:	08/12/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NEtFOSA0821M)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:05 by HGH

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

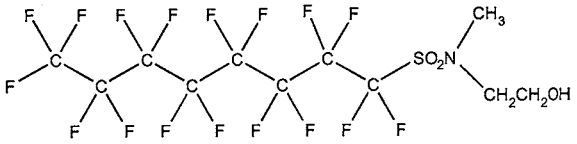
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M

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

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



MOLECULAR FORMULA:	$C_{11}H_8F_{17}NO_3S$	**MOLECULAR WEIGHT:**	557.22
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/22/2021 (HRGC/LRMS) 09/23/2021 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	09/23/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/28/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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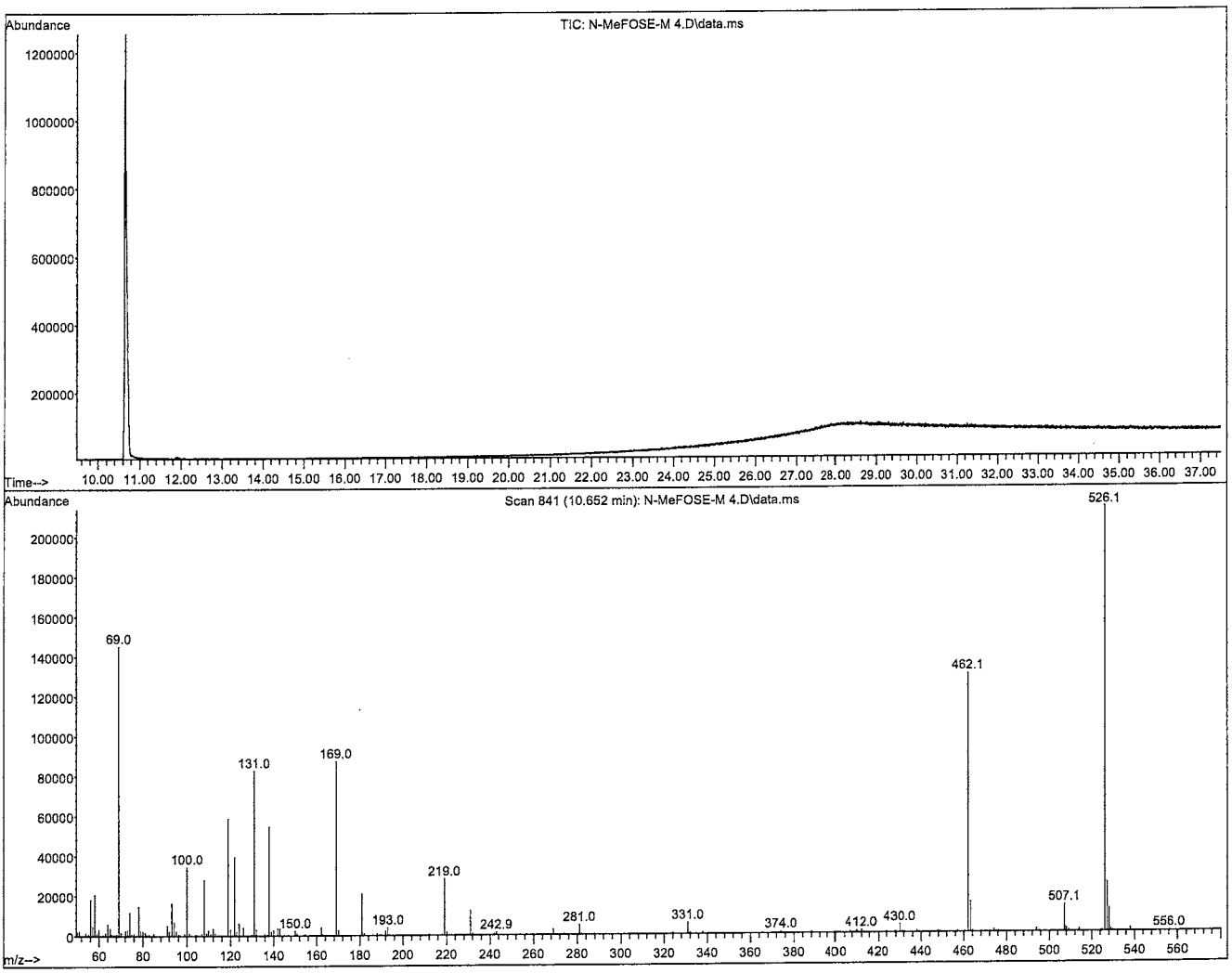
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

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



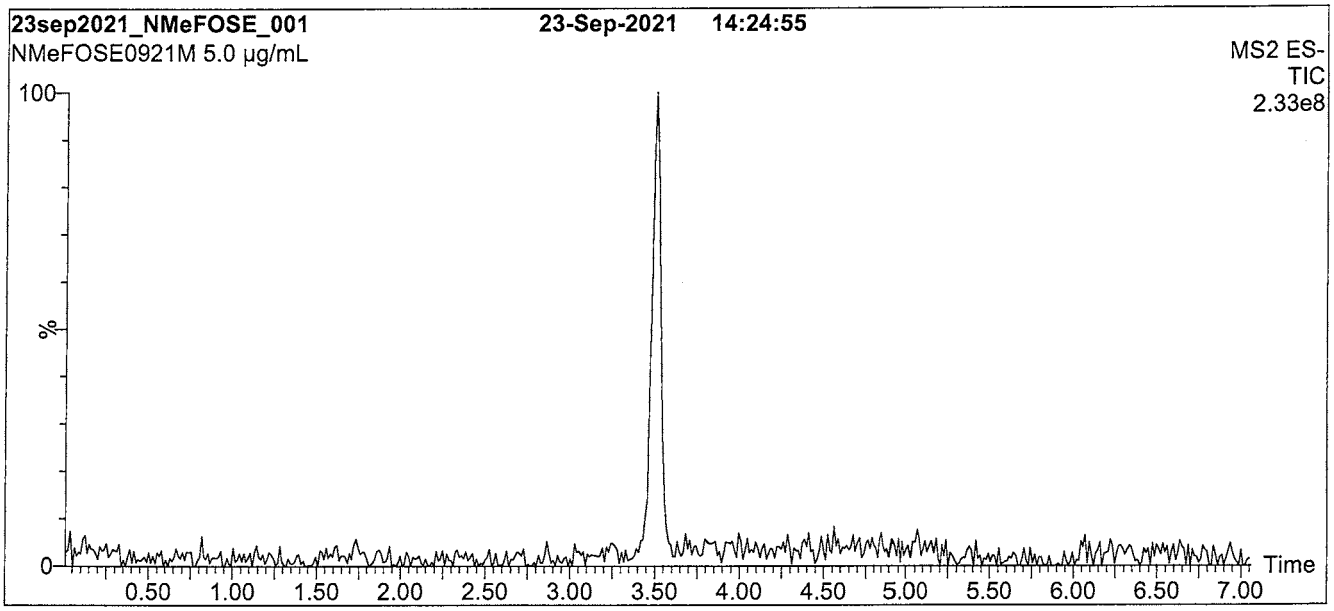
Conditions for Figure 1:

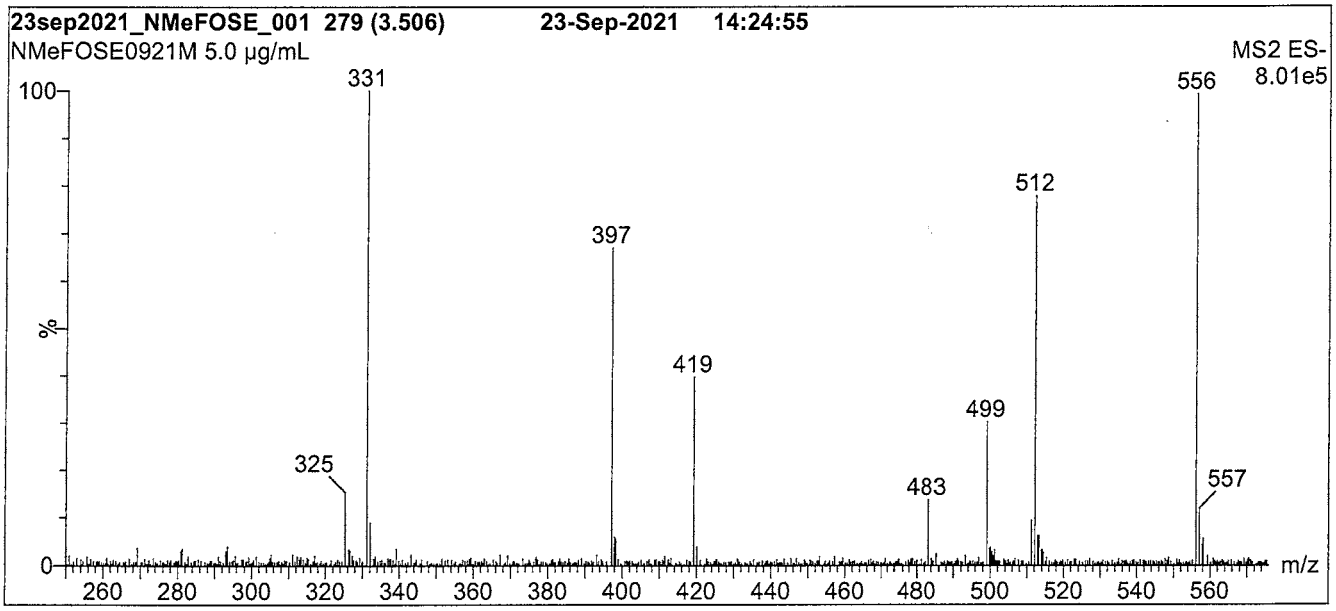
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min)
	10°C/min to 310°C
	310°C (10 min)
Ionization:	EI+
Detector:	230°C
	Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

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

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

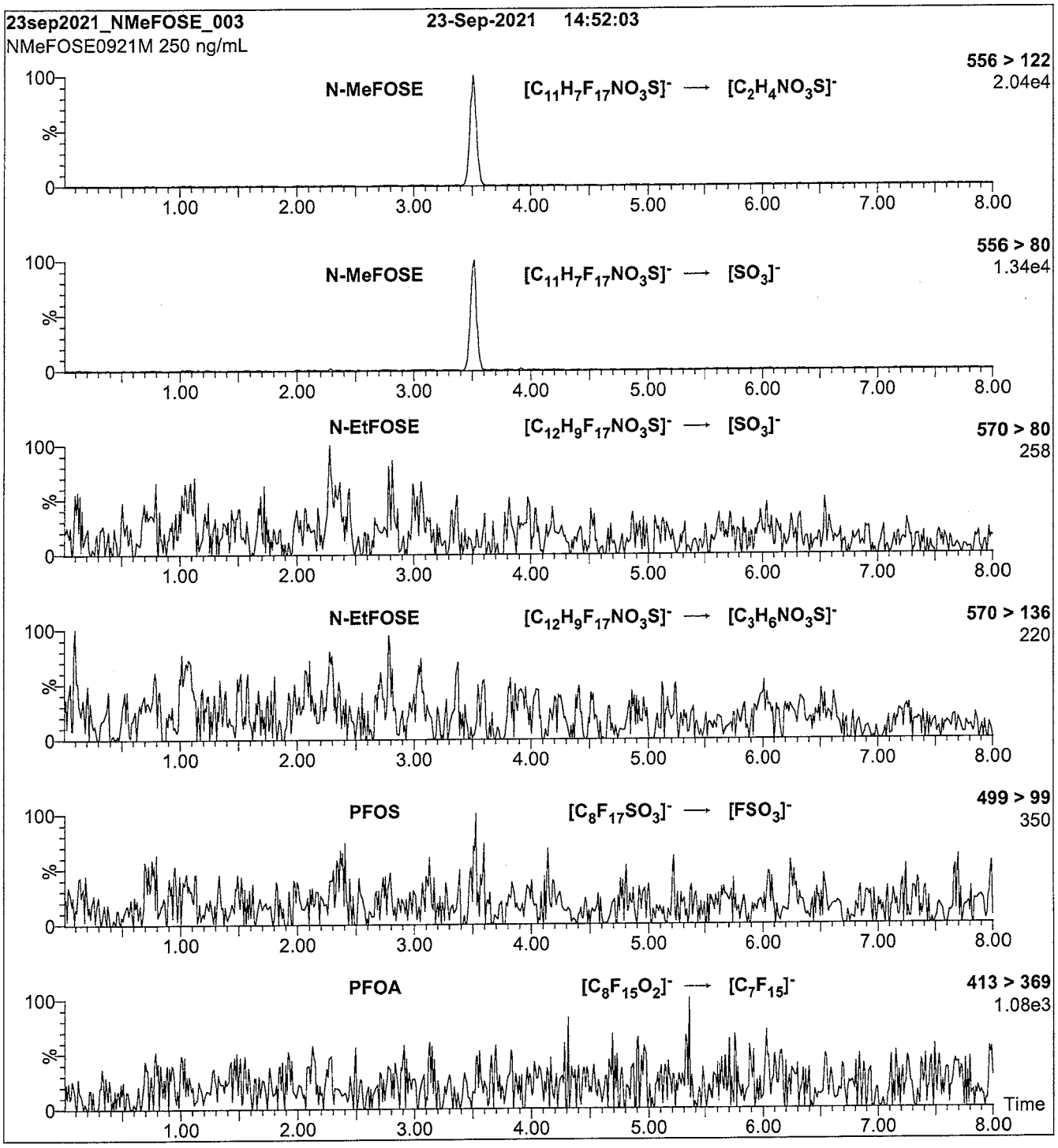
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 3:

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

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 36

Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NMeFOSE0921M)
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

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

Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NMeFOSE0921M)
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

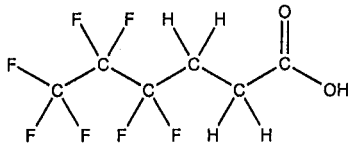
Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSE		24448-09-7	50	ug/mL

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

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

STRUCTURE:
CAS #: 356-02-5



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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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

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

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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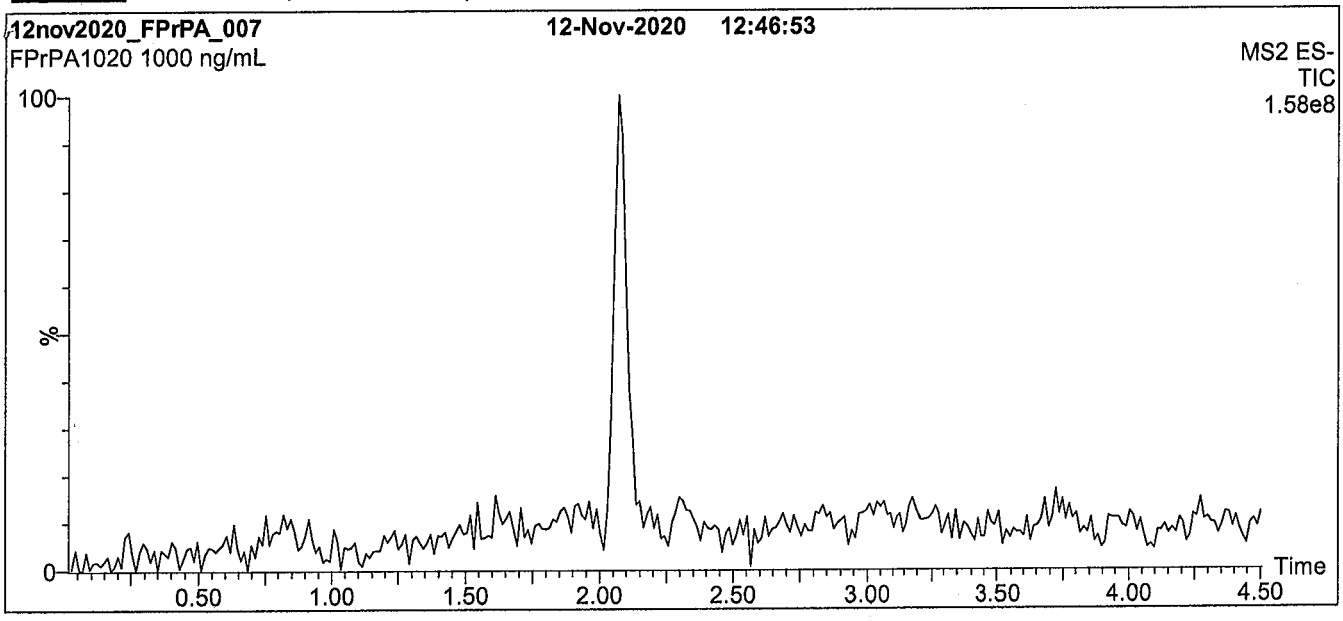
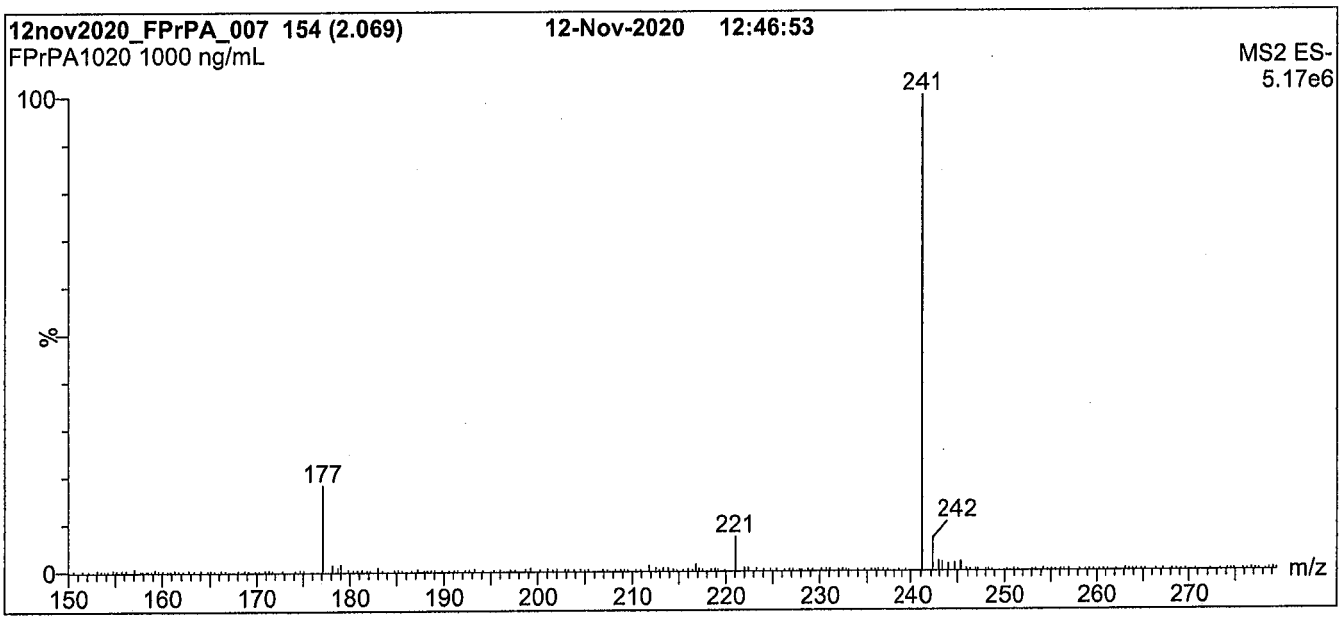
Figure 1: **FPrPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

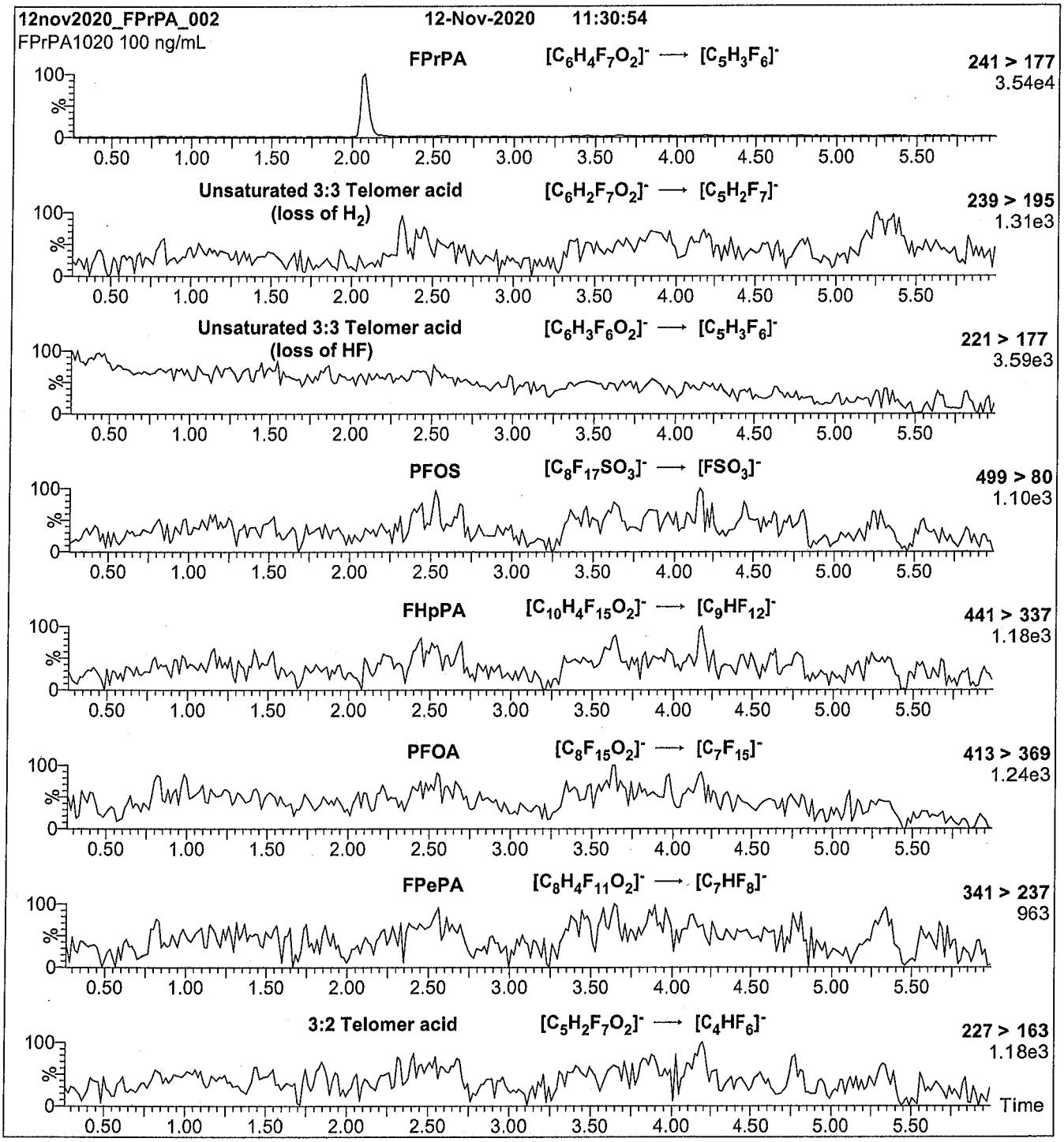
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

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

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

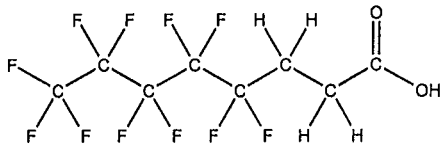
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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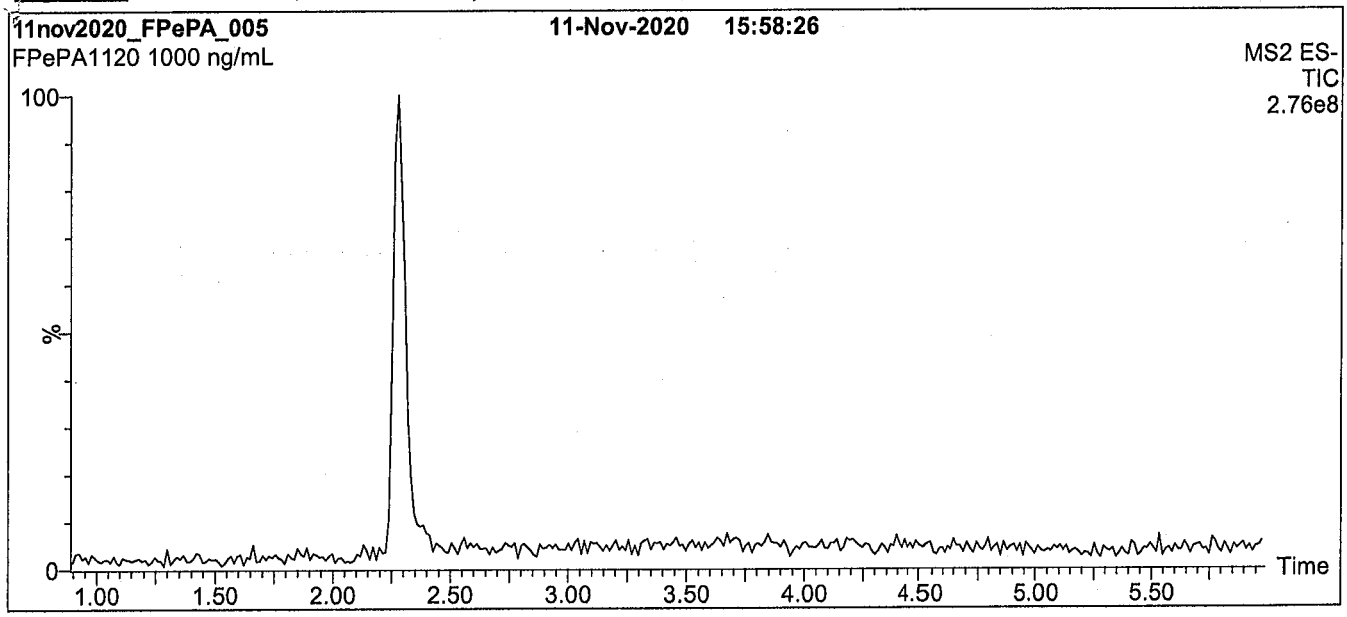
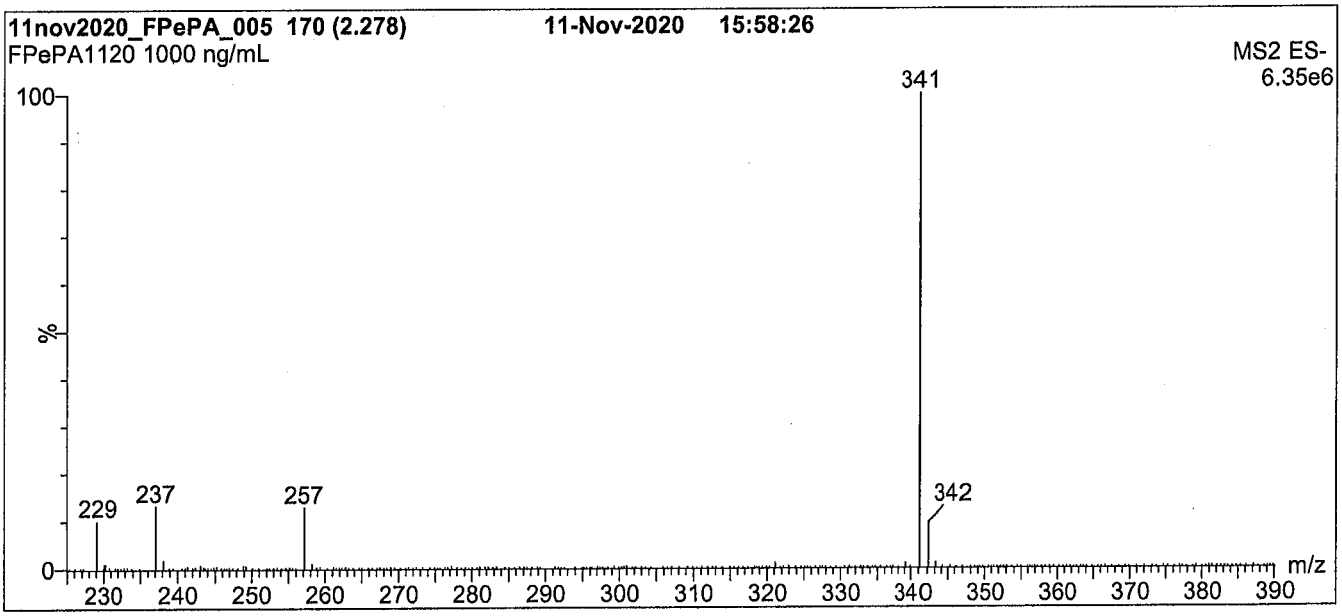
Figure 1: **FPePA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

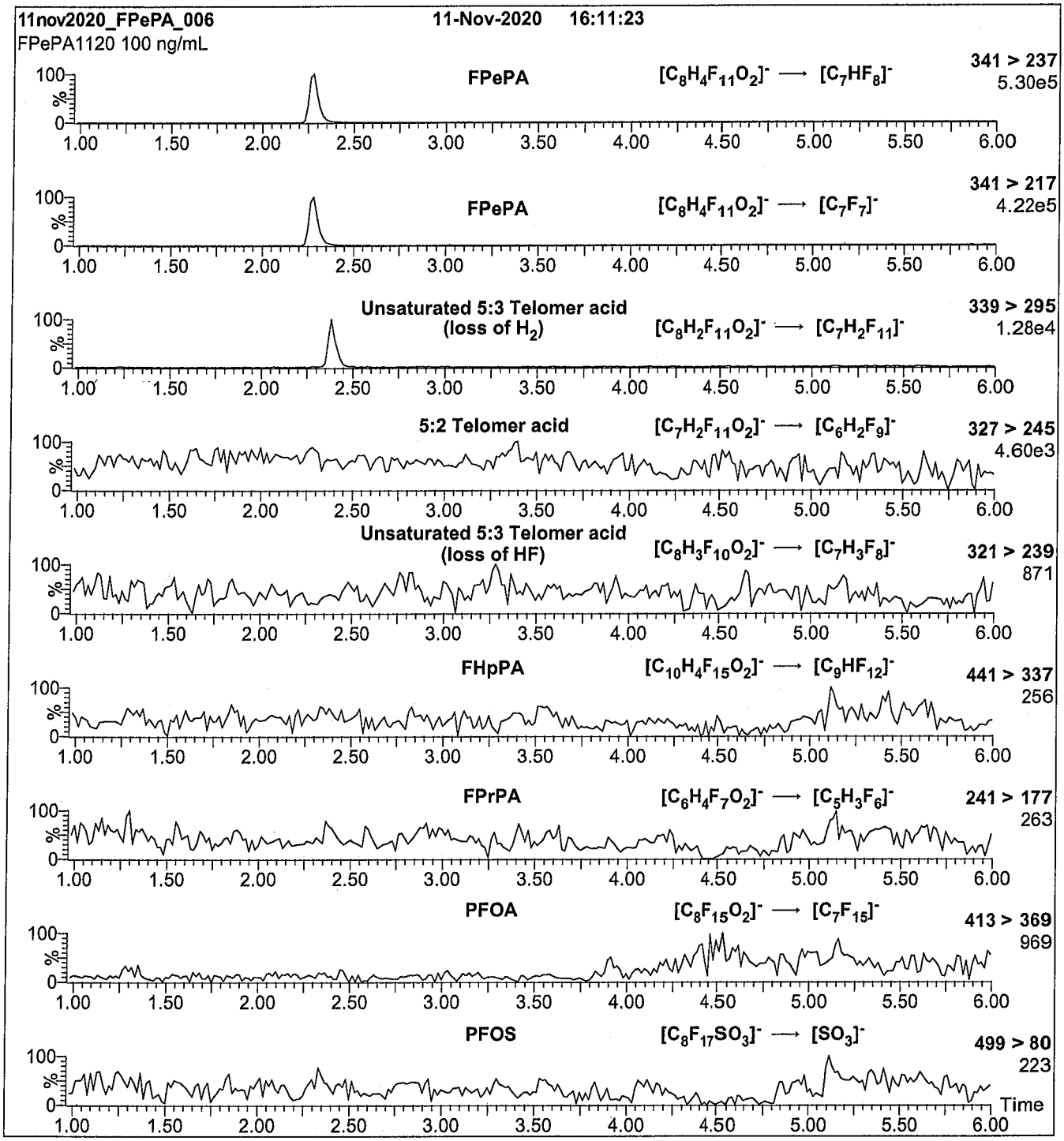
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

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

Analytical Standard Record

21L0005

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

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

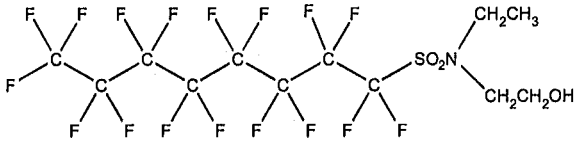
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M

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

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



MOLECULAR FORMULA:	$C_{12}H_{10}F_{17}NO_3S$	**MOLECULAR WEIGHT:**	571.25
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/22/2021 (HRGC/LRMS) 09/23/2021 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	09/23/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

ANAB ANSI National Accreditation Board ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER

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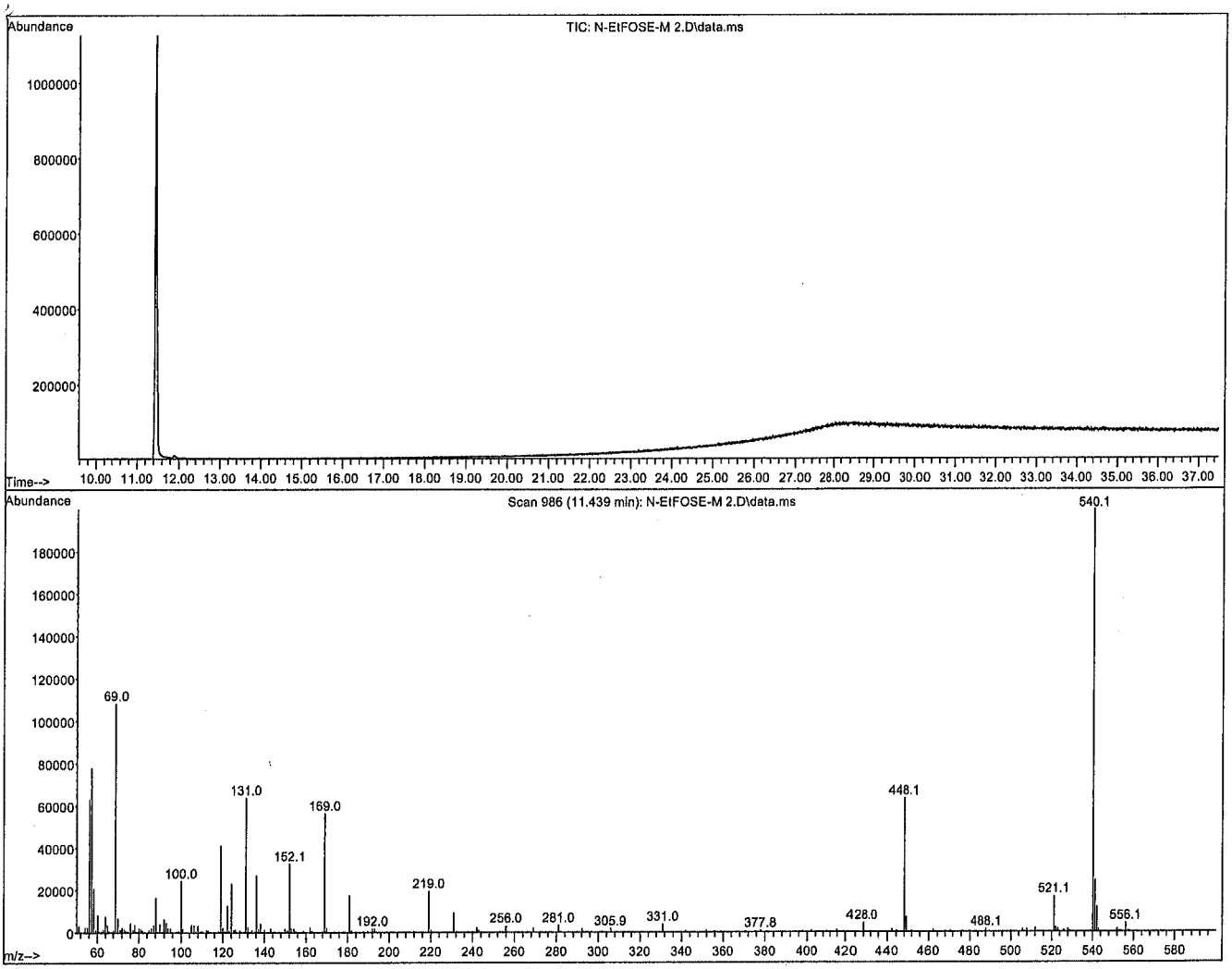
Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



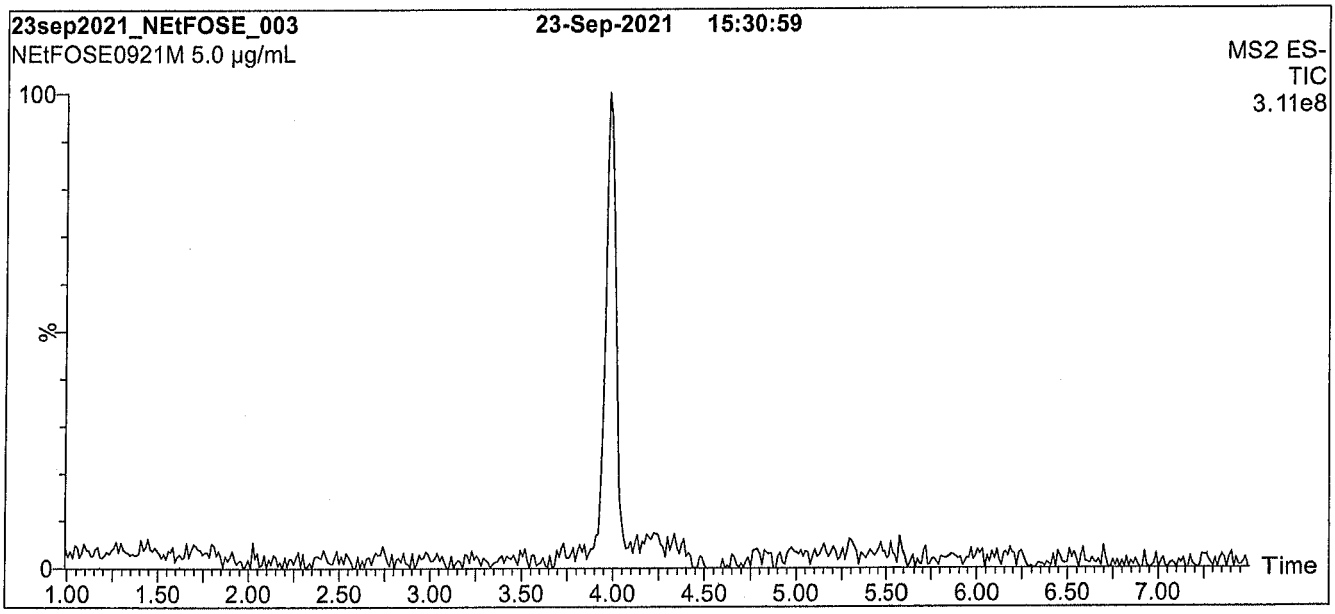
Conditions for Figure 1:

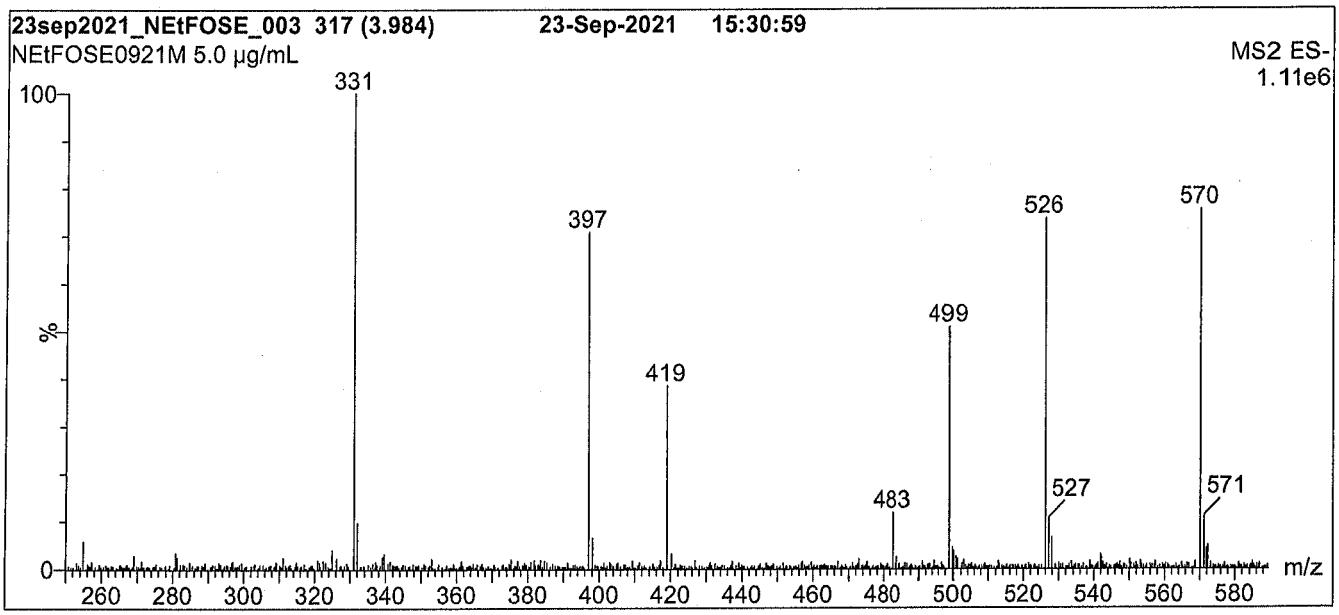
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min)
	10°C/min to 325°C
	325°C (10 min)
Ionization:	EI+
Detector:	230°C
	Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

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

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

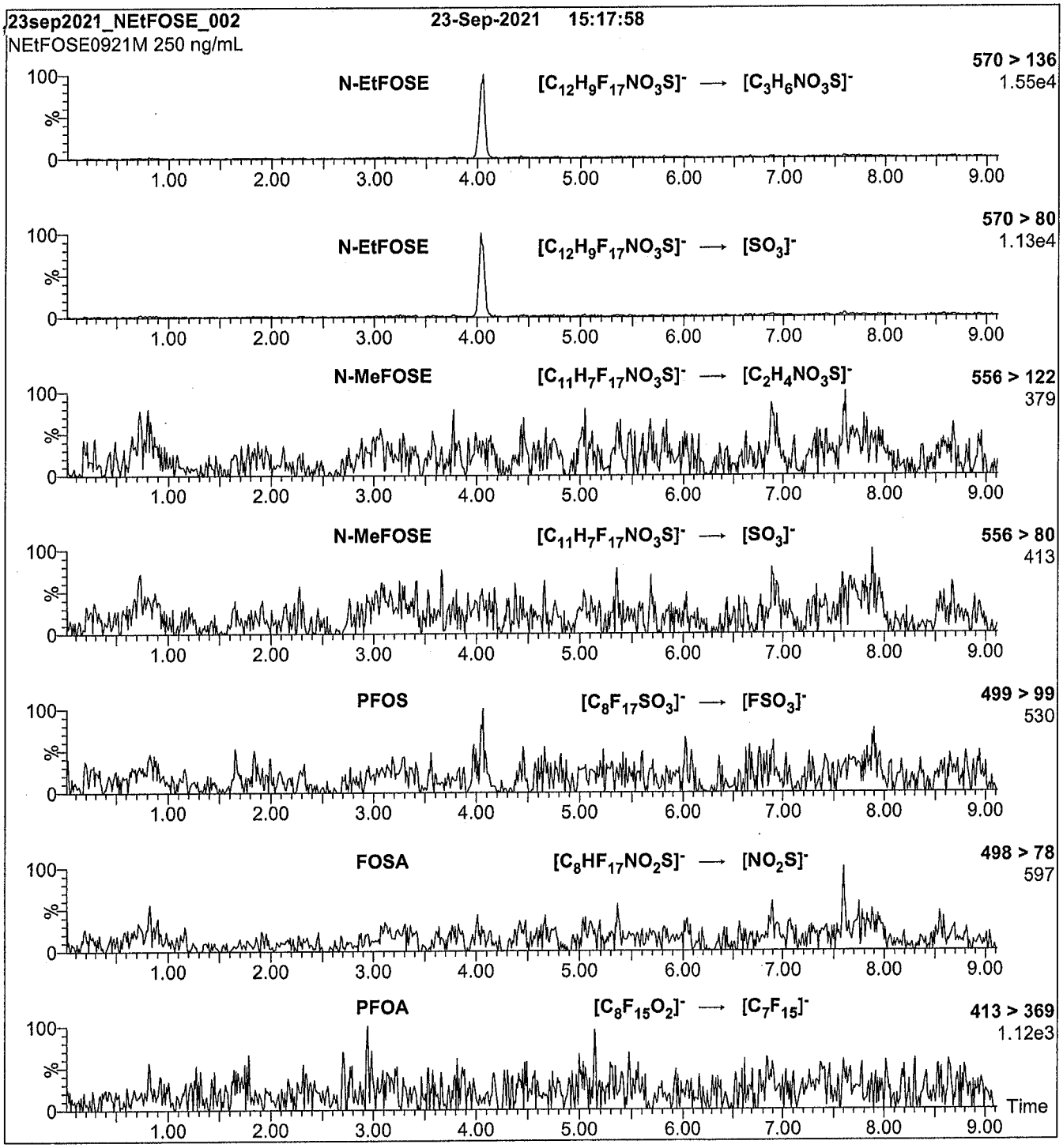
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 3:

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

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 32

Analytical Standard Record

21L0006

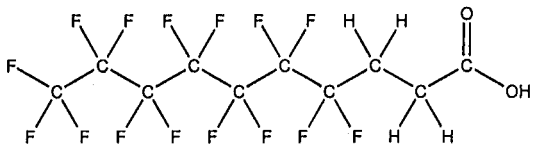
Description:	PFAS - SAS EtFOSE 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 17:22 by HGH
Comments:	5:3 FTCA 50.0ug/mL		

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FHpPA	**LOT NUMBER:**	FHpPA1020
COMPOUND:	3-Perfluoroheptyl propanoic acid		
STRUCTURE:		**CAS #:**	812-70-4



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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

INTENDED USE:

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HANDLING:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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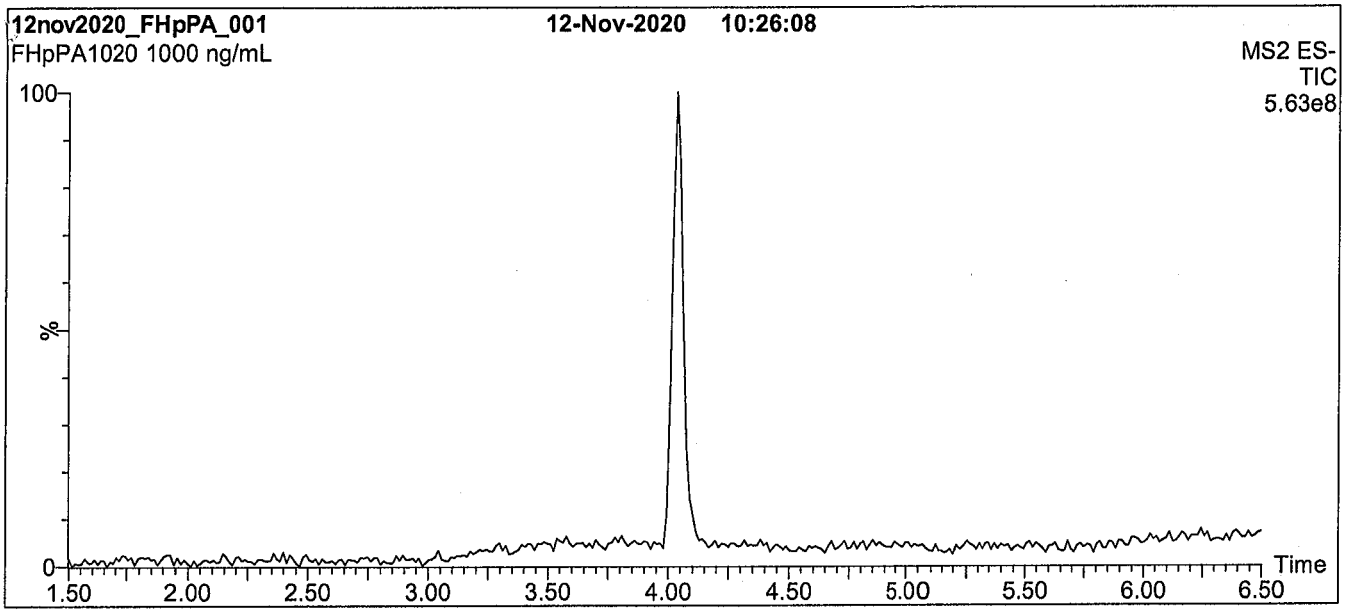
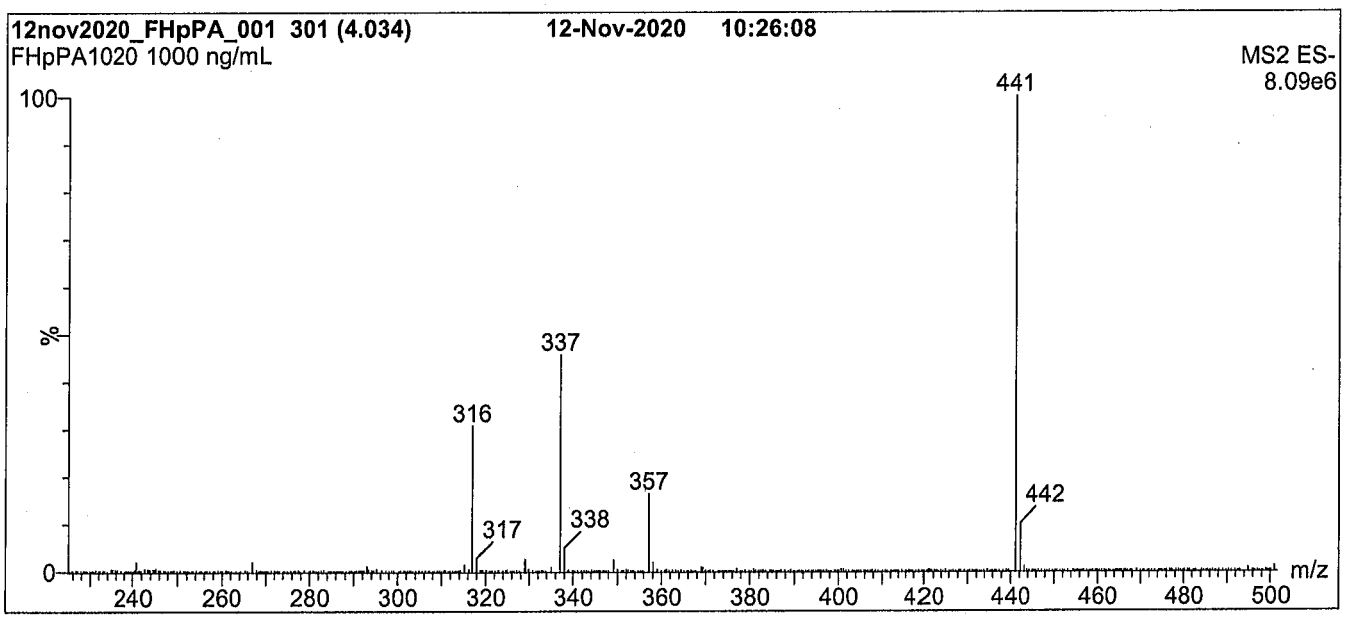
Figure 1: **FHpPA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

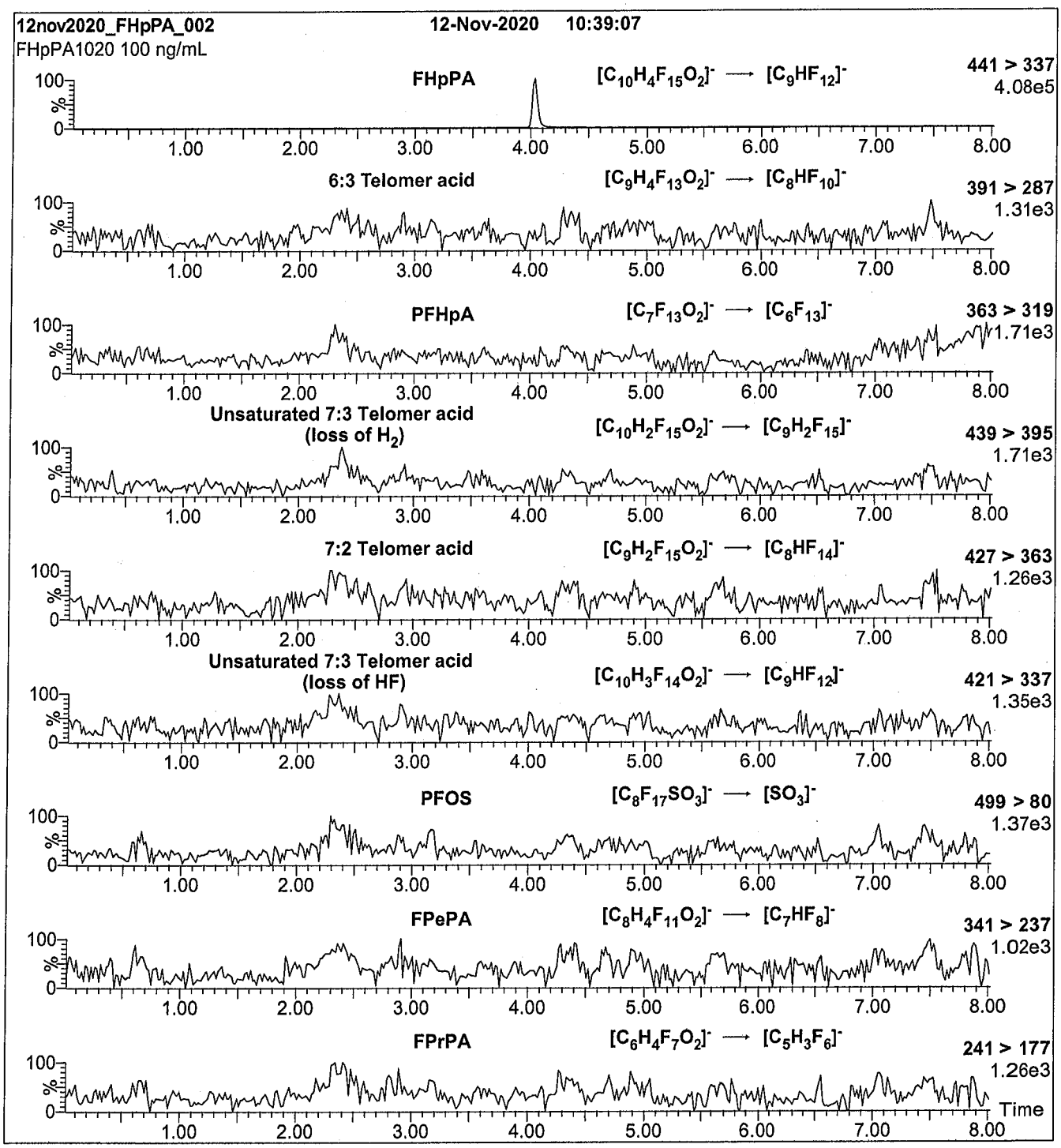
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

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

Analytical Standard Record

21L0007

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

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

WELLINGTON LABORATORIES

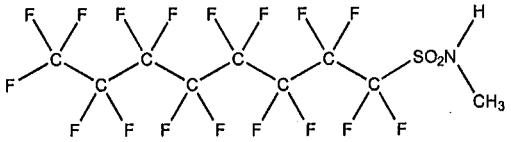
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



MOLECULAR FORMULA:	$C_9H_4F_{17}NO_2S$	**MOLECULAR WEIGHT:**	513.17
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	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.

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Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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CALA Testing Accreditation No. A1226

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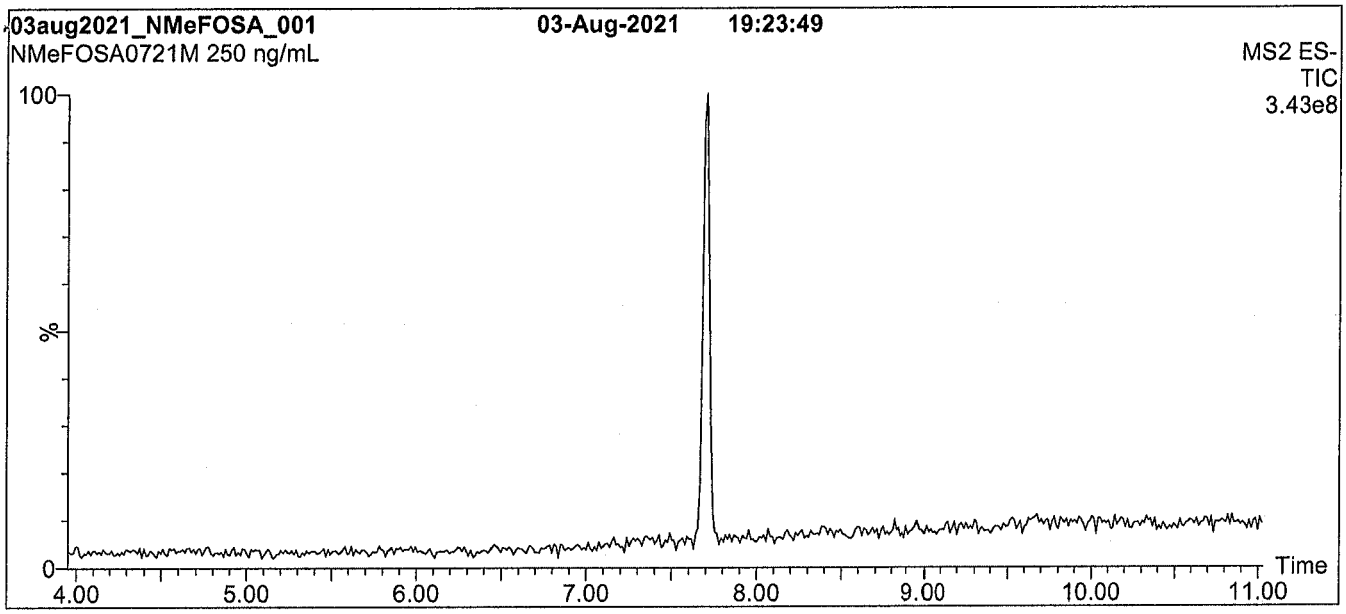
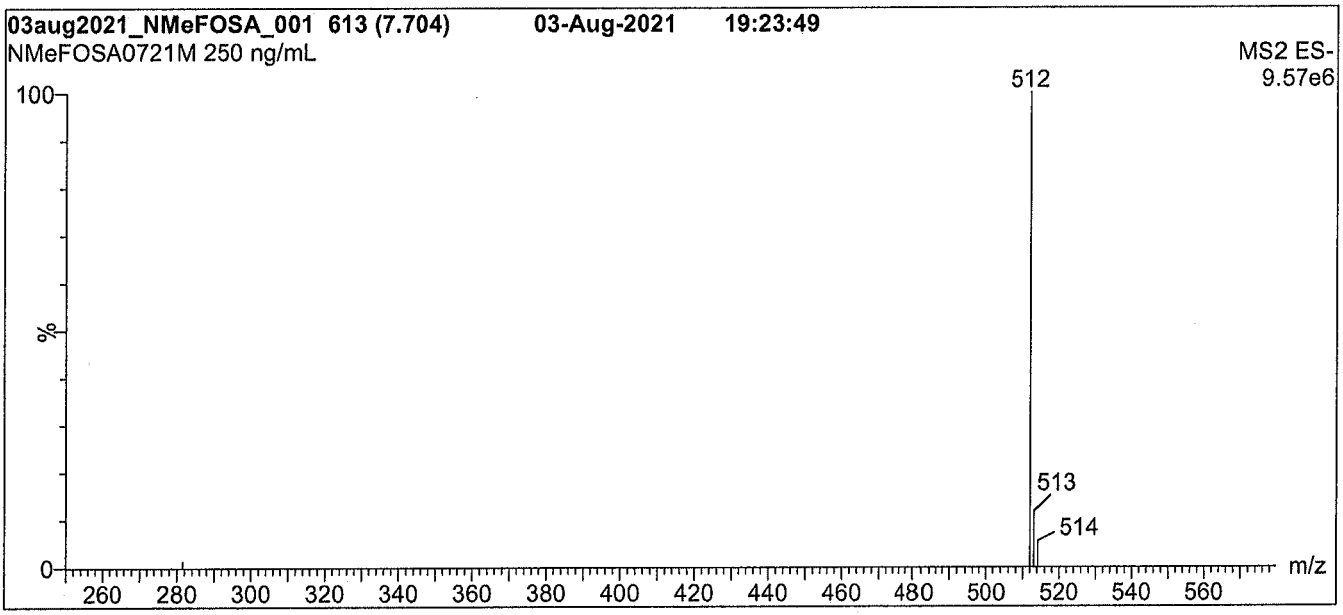
Figure 1: **N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

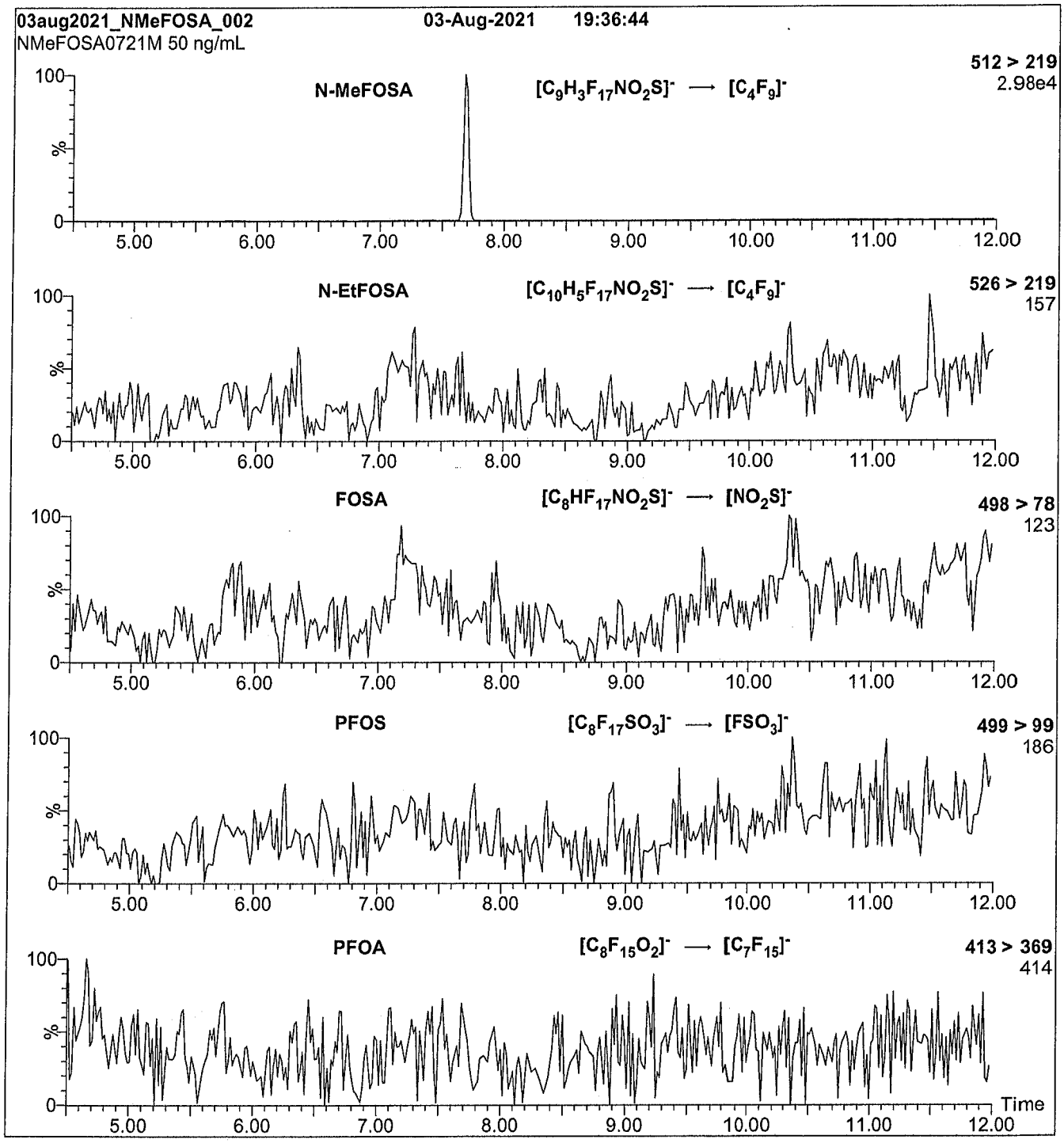
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 2:

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

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 24

Analytical Standard Record

21L0008

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

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

WELLINGTON LABORATORIES

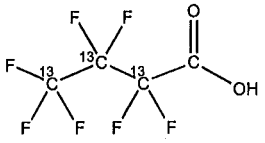
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3PFBA
COMPOUND: Perfluoro-n-(2,3,4-$^{13}C_3$)butanoic acid

LOT NUMBER: M3PFBA0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}CHF_7O_2$	**MOLECULAR WEIGHT:**	217.02
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99%^{13}C (2,3,4-$^{13}C_3$)
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)
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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-($^{13}C_3$)propanoic acid and also contains ~1.0% of perfluoro-n-(1,2,3,4-$^{13}C_4$)butanoic acid due to the naturally occurring isotopic abundance of ^{13}C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/25/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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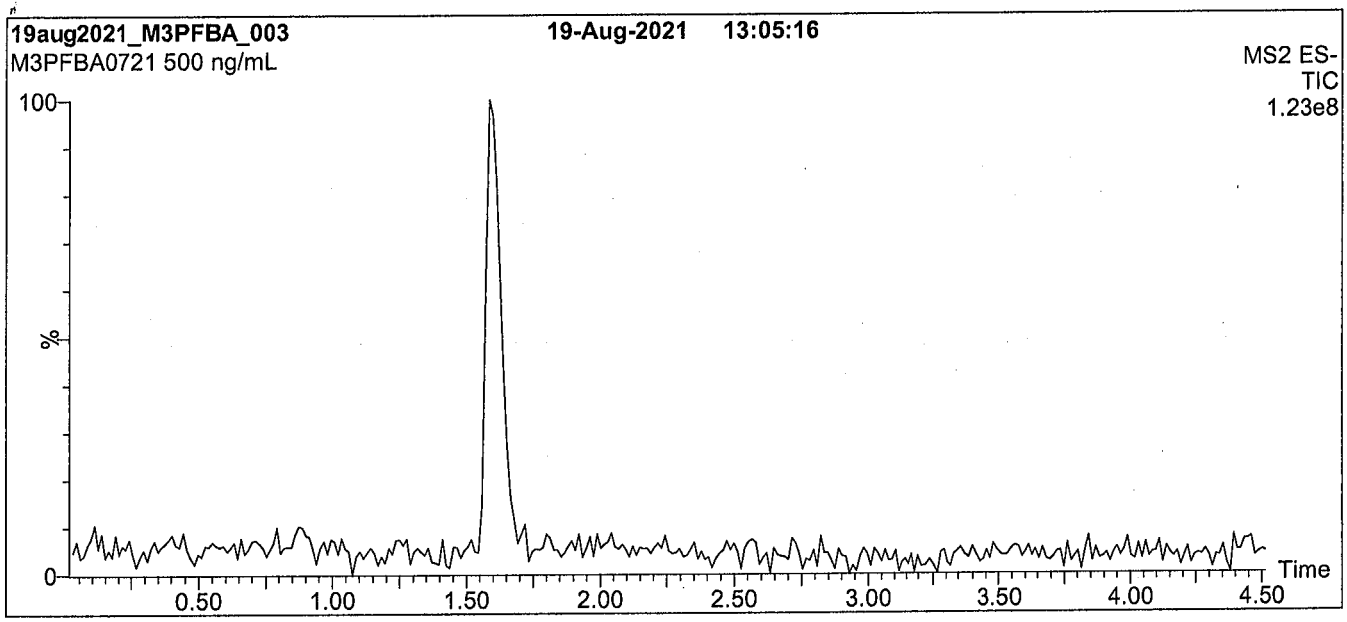
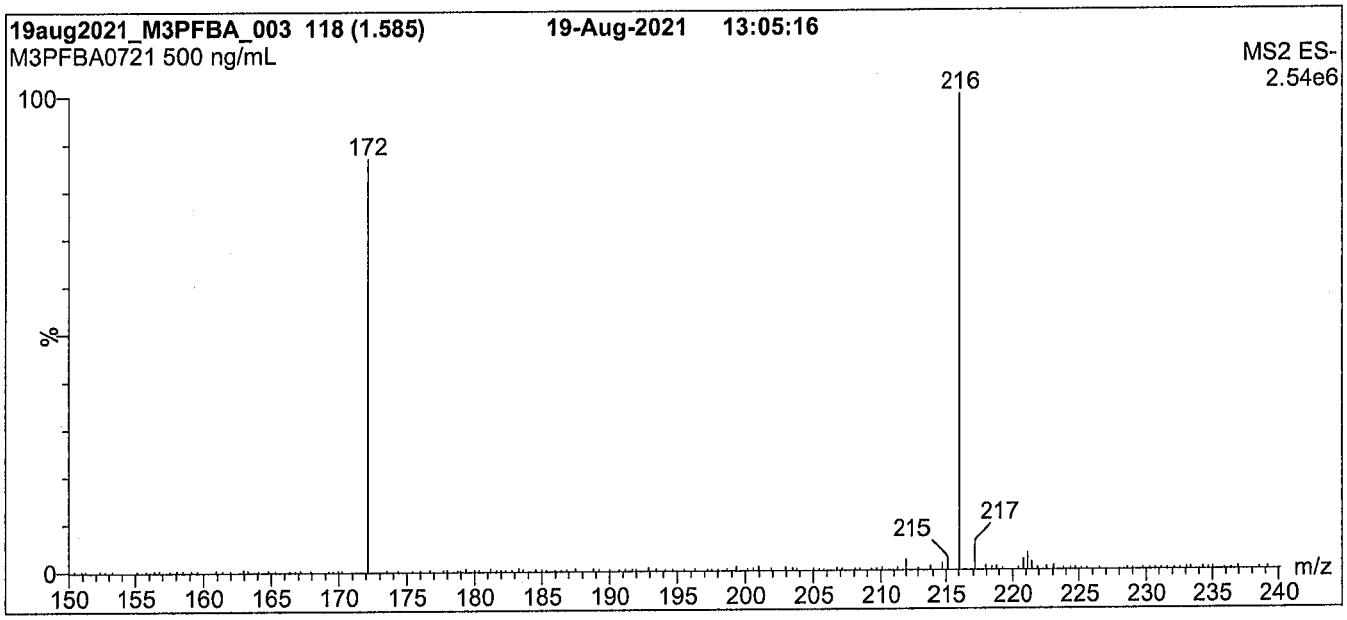
Figure 1: **M3PFBA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

Mobile phase: Gradient
Start: 60% H_2O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 12 min

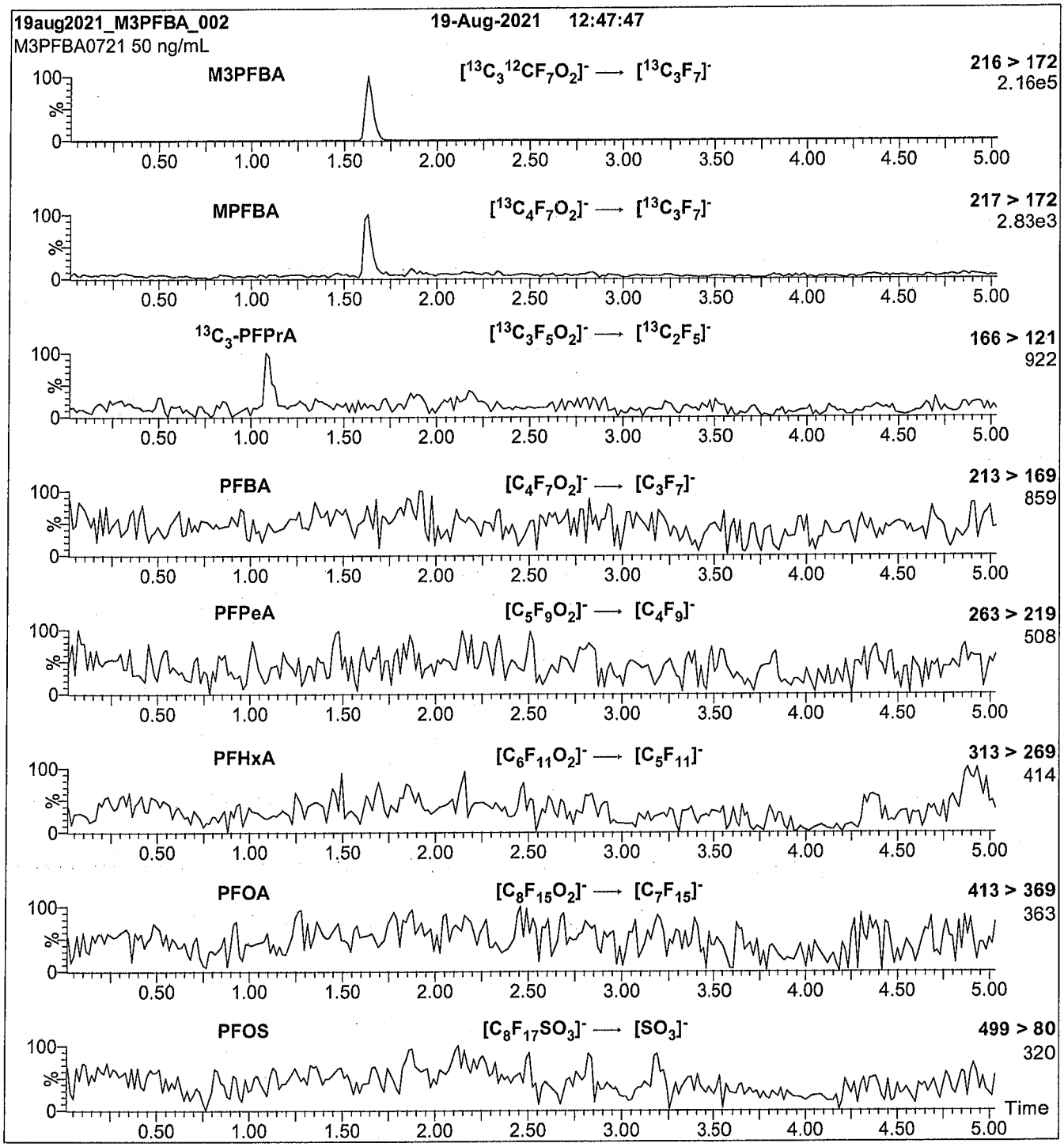
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (M3PFBA)

Mobile phase: Same as Figure 1

Flow: 300 µL/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

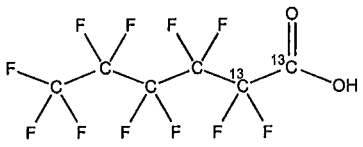
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFHxA
COMPOUND: Perfluoro-n-(1,2-$^{13}C_2$)hexanoic acid

LOT NUMBER: MPFHxA0921

STRUCTURE:

CAS #: 960315-47-3



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_4HF_{11}O_2$	**MOLECULAR WEIGHT:**	316.04
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2-$^{13}C_2$)
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: _____ **Date:** 10/22/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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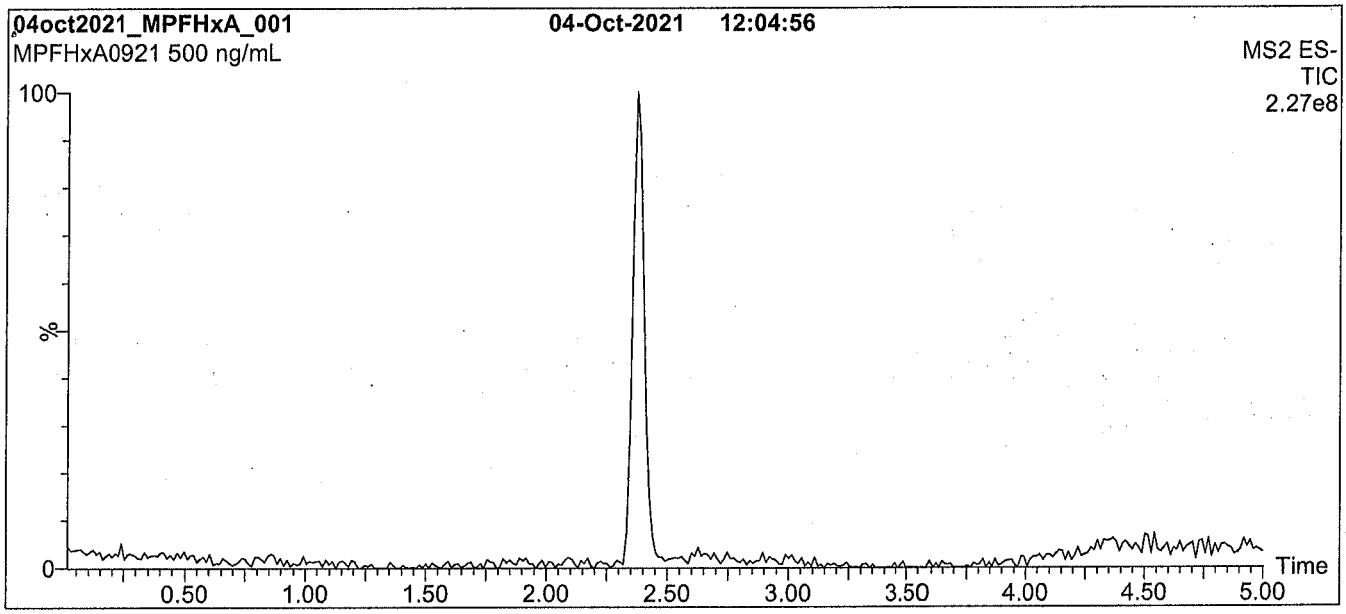
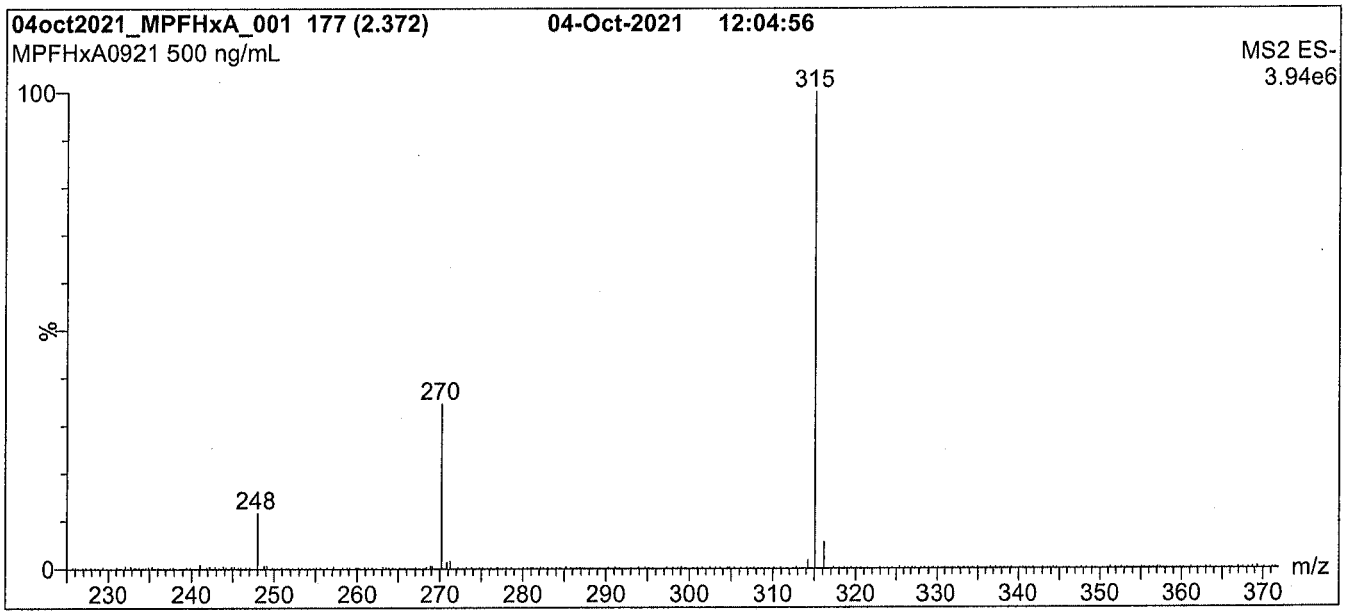
Figure 1: **MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

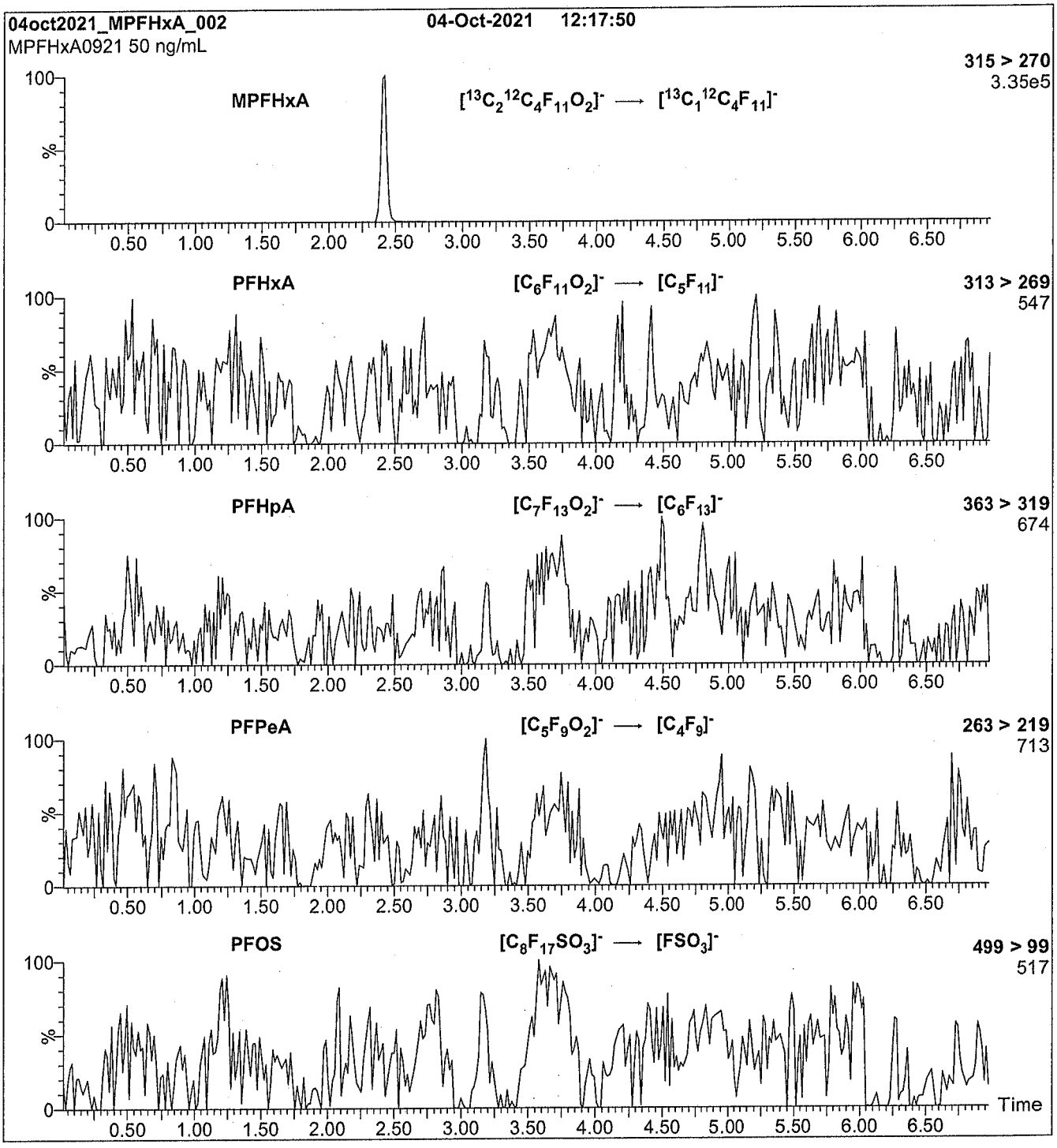
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 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 µL/min

MS Parameters:

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 8

Analytical Standard Record

22A0117

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

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

Analytical Standard Record

22A0117

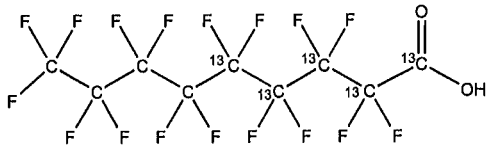
Description:	PFAS - IIS MPFHxA 50ug/mL	Expires:	10/04/2026
Standard Type:	Analyte Spike	Prepared:	10/04/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFNA
LOT NUMBER: MPFNA1021
COMPOUND: Perfluoro-n-(1,2,3,4,5-$^{13}C_5$)nonanoic acid
STRUCTURE:
CAS #: 960315-49-5



MOLECULAR FORMULA: $^{13}C_5{}^{12}C_4HF_{17}O_2$
MOLECULAR WEIGHT: 469.04
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)
CHEMICAL PURITY: >98%
ISOTOPIC PURITY: ≥99% ^{13}C ($1,2,3,4,5\text{-}^{13}C_5$)
LAST TESTED: (mm/dd/yyyy) 10/29/2021
EXPIRY DATE: (mm/dd/yyyy) 10/29/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/01/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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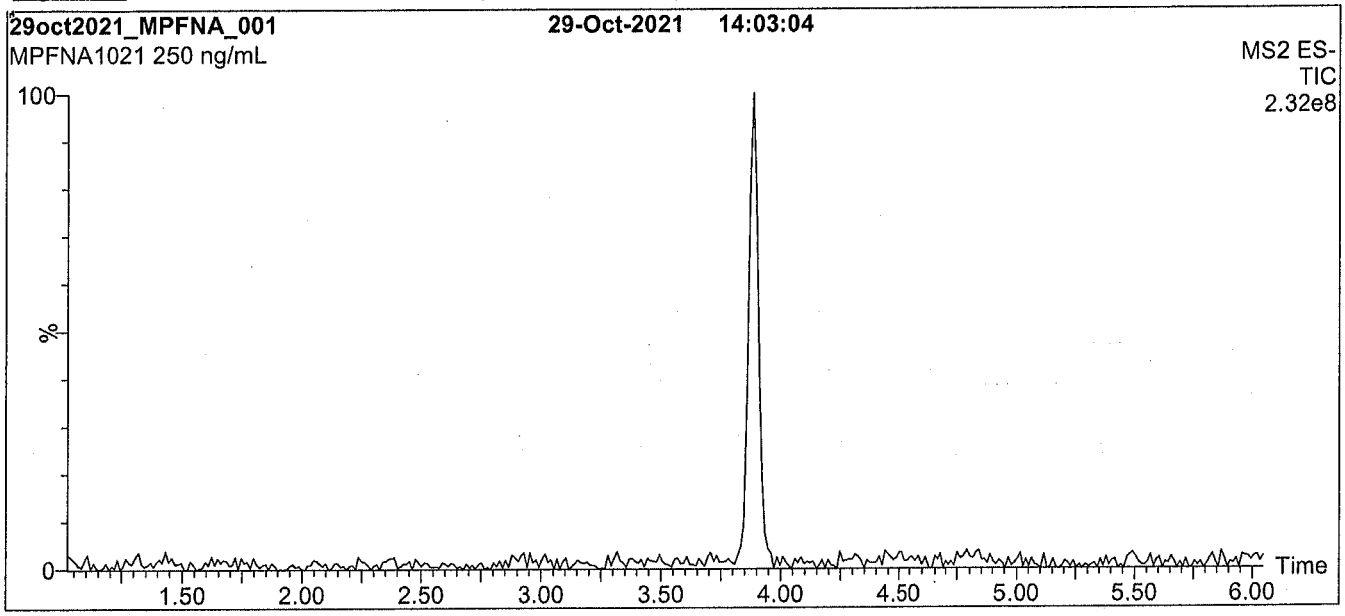
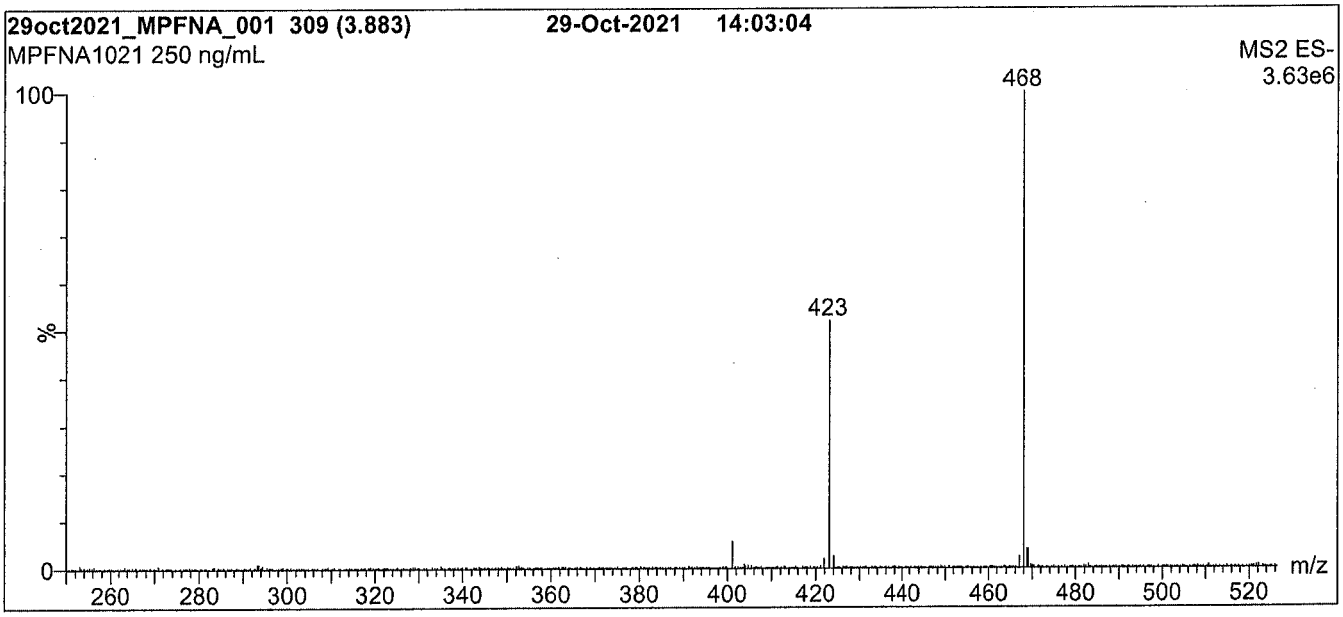
Figure 1: **MPFNA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

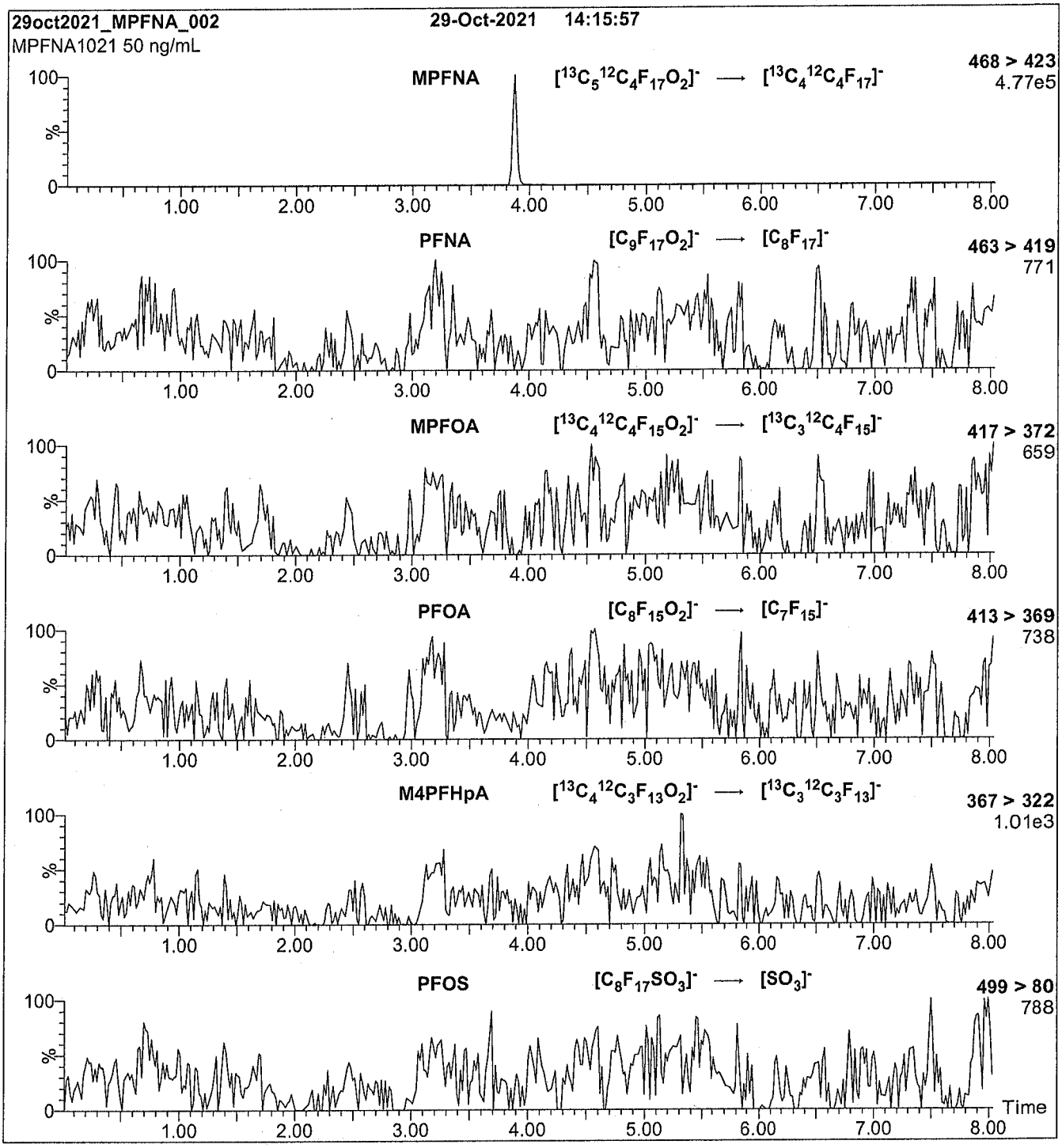
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.16e-3
Collision Energy (eV) = 10

Analytical Standard Record

22A0118

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

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

Analytical Standard Record

22A0118

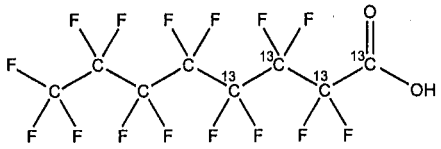
Description:	PFAS - IIS MPFNA 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFOA	**LOT NUMBER:**	MPFOA1121
COMPOUND:	Perfluoro-n-(1,2,3,4-$^{13}C_4$)octanoic acid		
STRUCTURE:		**CAS #:**	960315-48-4



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_4HF_{15}O_2$	**MOLECULAR WEIGHT:**	418.04
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	12/07/2021		
EXPIRY DATE: (mm/dd/yyyy)	12/07/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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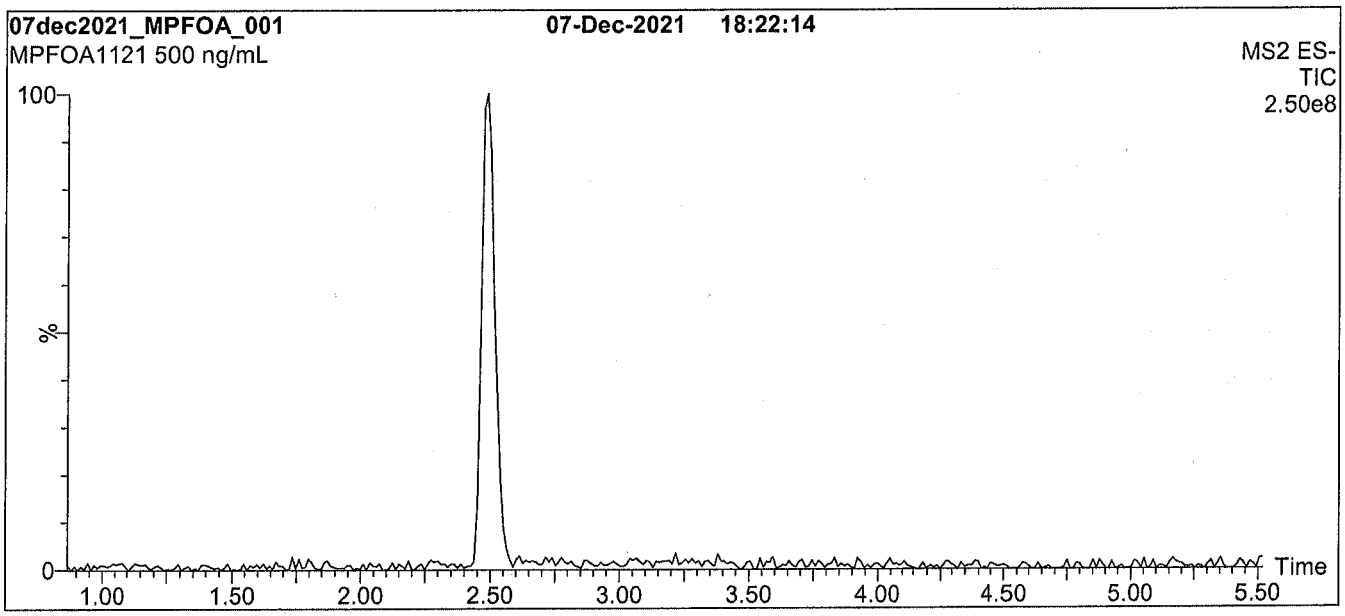
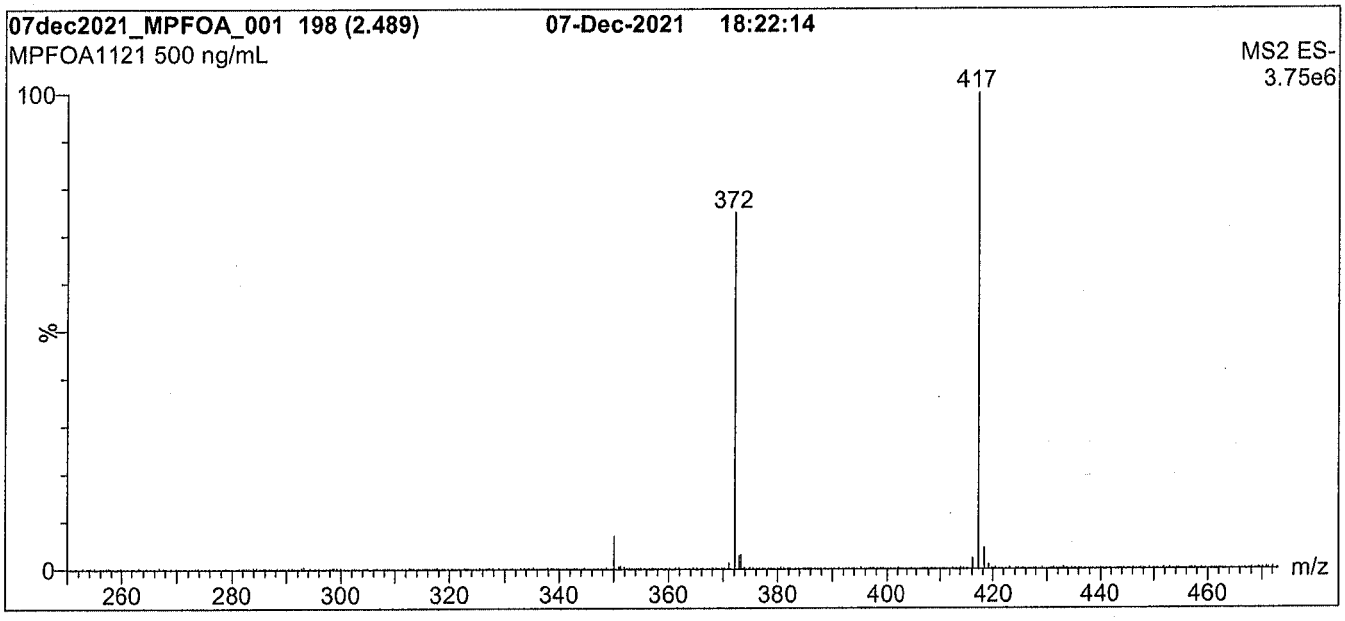
Figure 1: **MPFOA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

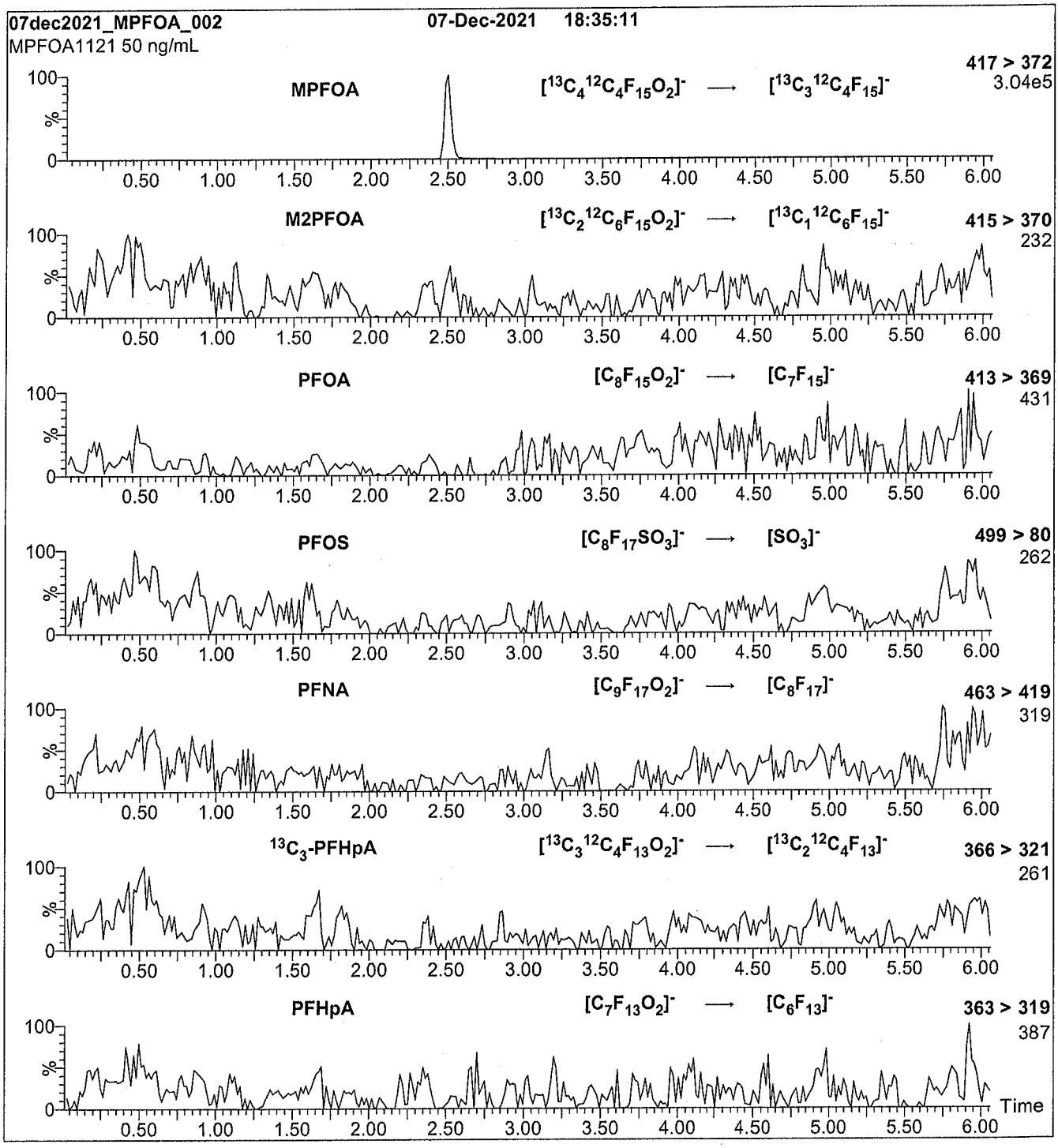
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (MPFOA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 8

Analytical Standard Record

22A0119

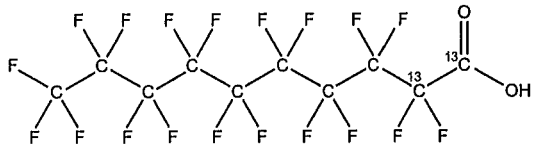
Description:	PFAS - IIS MPFOA 50ug/mL	Expires:	12/07/2026
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

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-$^{13}C_2$)decanoic acid		
STRUCTURE:		**CAS #:**	960315-50-8



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8HF_{19}O_2$	**MOLECULAR WEIGHT:**	516.07
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2-$^{13}C_2$)
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: _____ **Date:** 12/13/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

HANDLING:

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

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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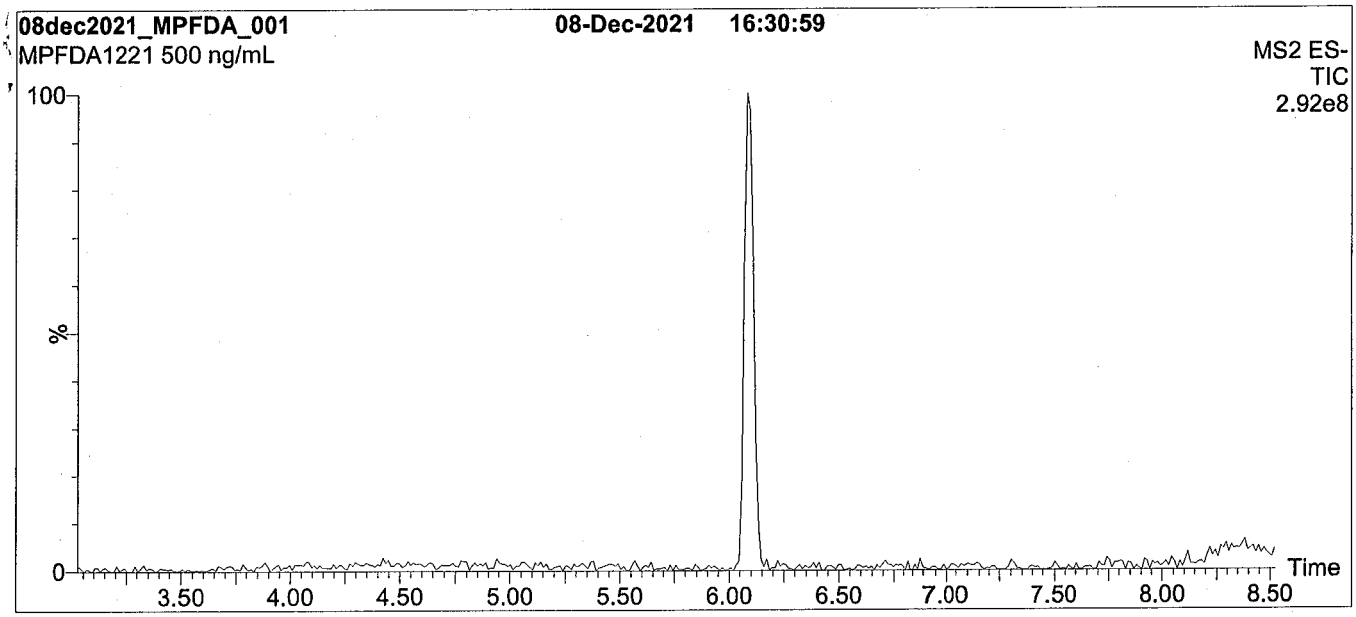
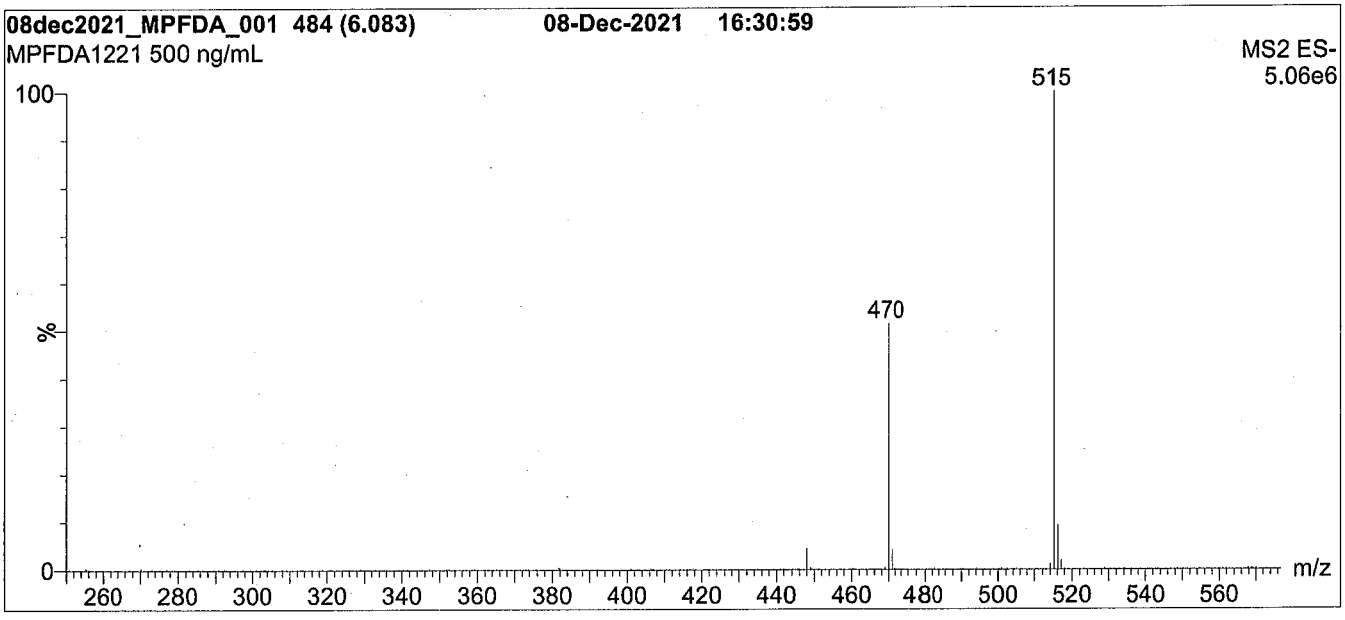
Figure 1: **MPFDA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

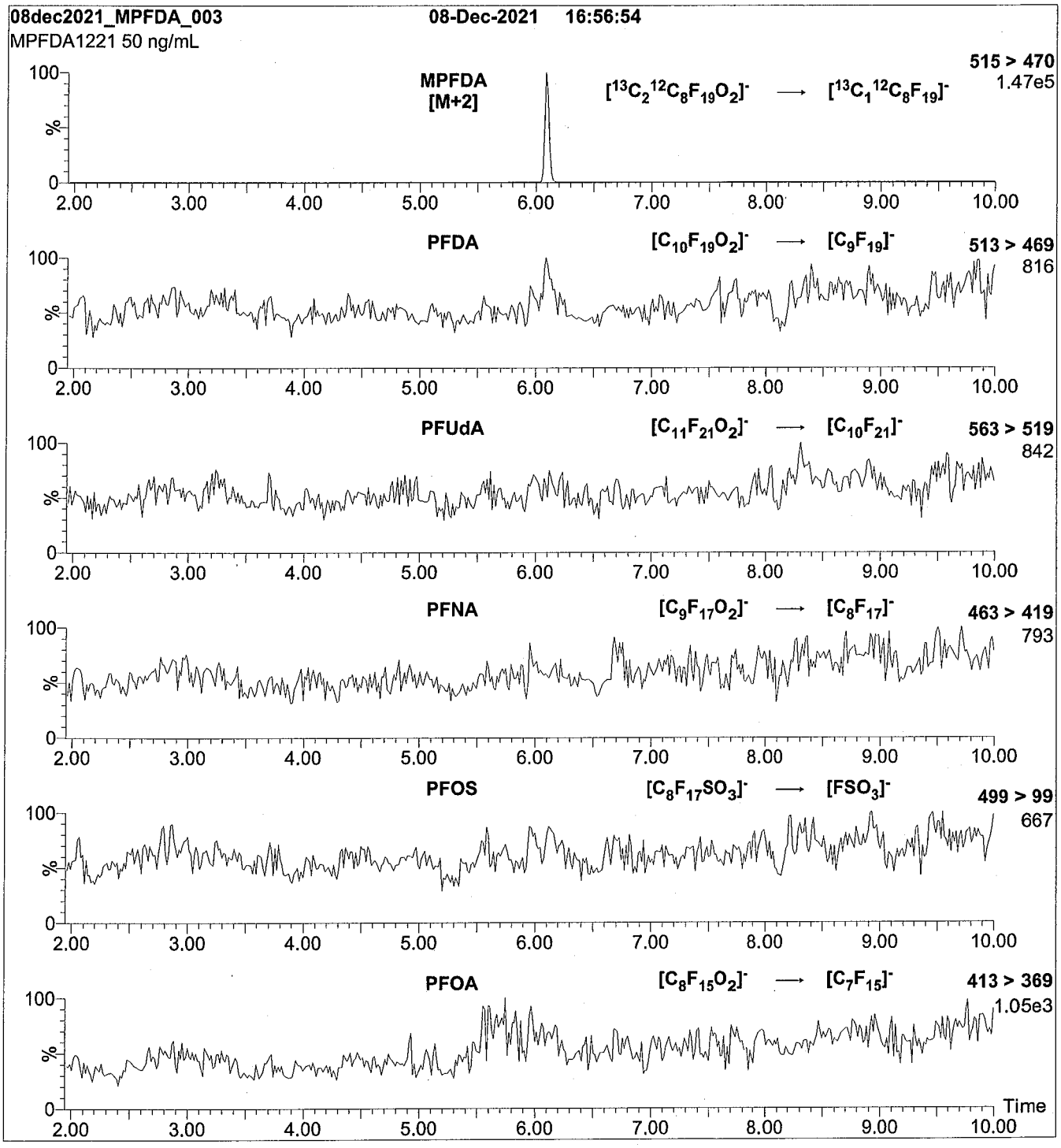
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (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: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300 µL/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

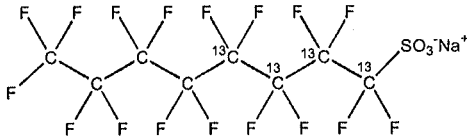
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0821

COMPOUND: Sodium perfluoro-1-(1,2,3,4-$^{13}C_4$)octanesulfonate

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



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	526.08
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 47.9 ± 2.4 µg/mL (MPFOS acid) 47.8 ± 2.4 µg/mL (MPFOS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	08/18/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/18/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.4% sodium perfluoro-1-($^{13}C_3$)heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

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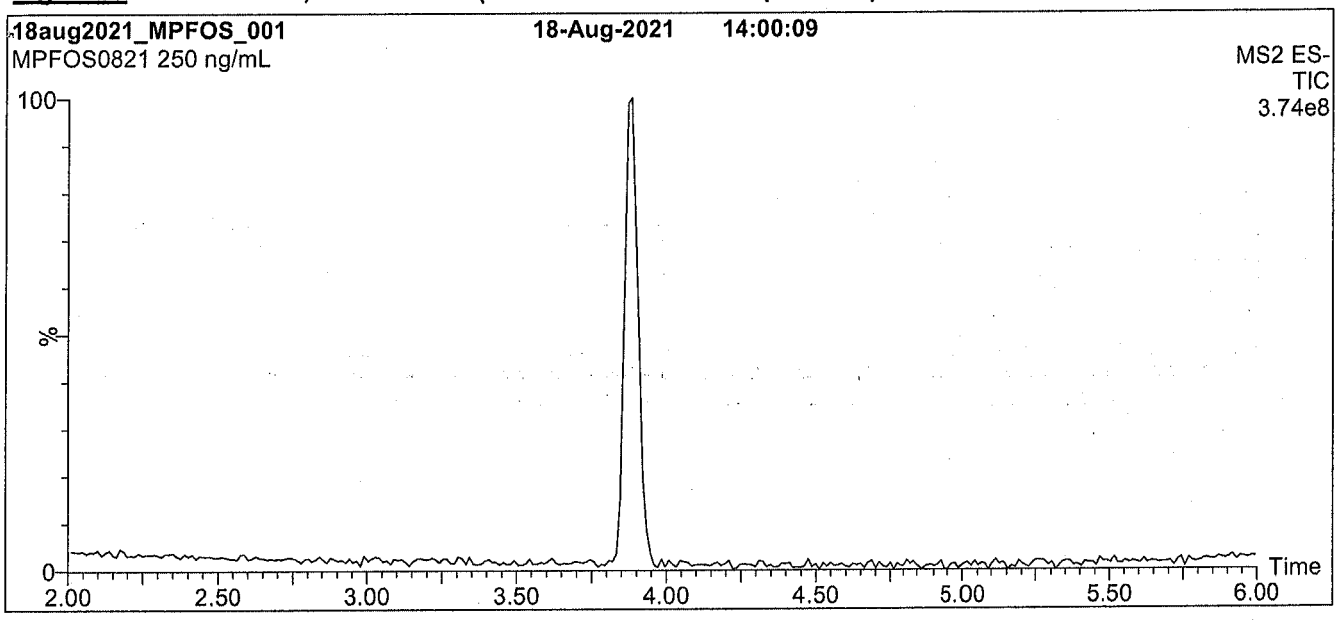
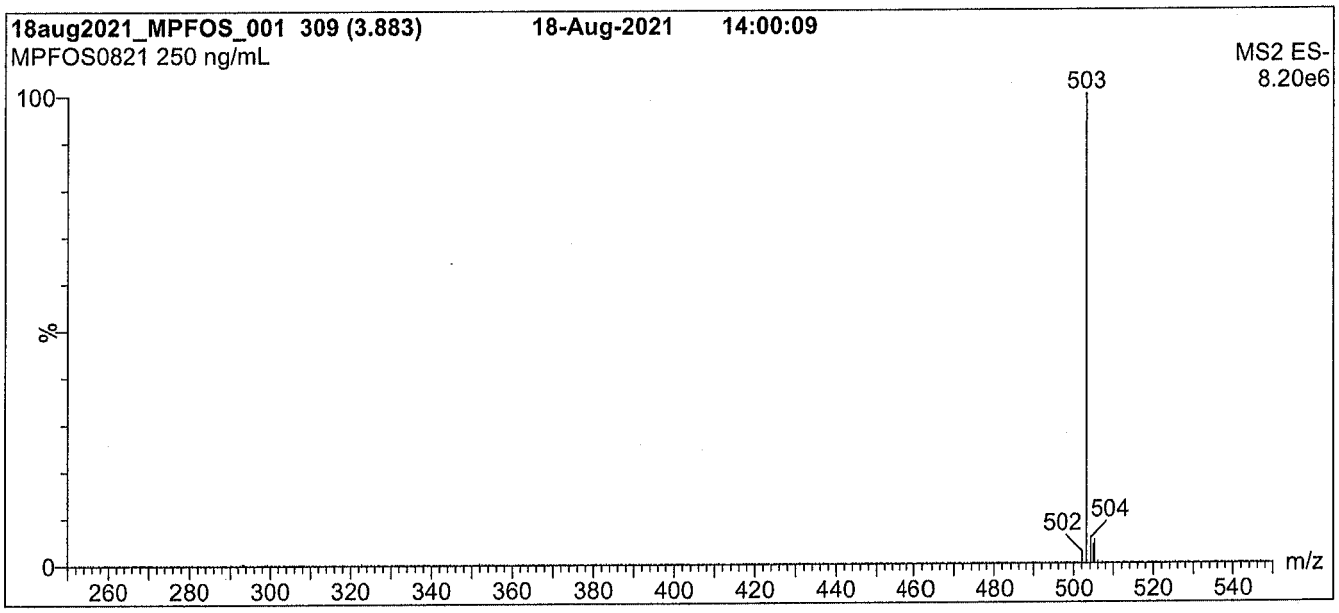




Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

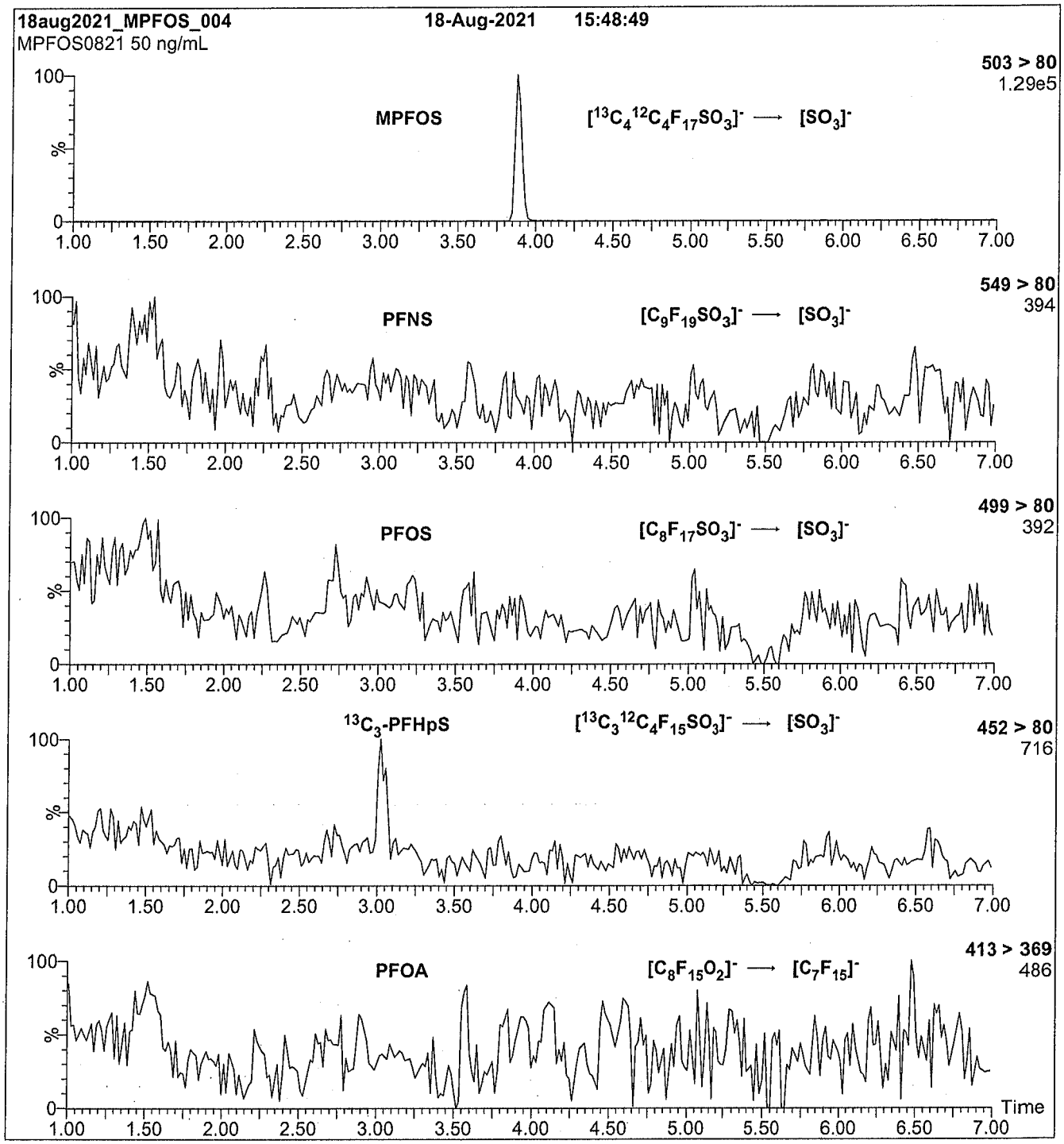
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 42

Analytical Standard Record

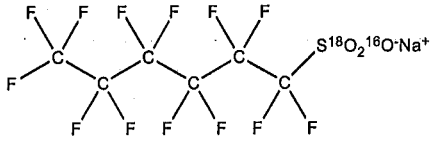
22A0121

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($^{18}O_2$)sulfonate		
STRUCTURE:		**CAS #:**	1585941-14-5
MOLECULAR FORMULA:	$C_6F_{13}S^{18}O_2{}^{16}ONa$	**MOLECULAR WEIGHT:**	426.10
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 47.4 ± 2.4 µg/mL (MPFHxS acid) 47.3 ± 2.4 µg/mL (MPFHxS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	>94% ($^{18}O_2$)
LAST TESTED: (mm/dd/yyyy)	10/29/2021		
EXPIRY DATE: (mm/dd/yyyy)	10/29/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS ($C_6F_{13}S^{18}O_2{}^{16}O^-$) has been observed to be up to 10% lower than for PFHxS ($C_6F_{13}S^{16}O_3^-$) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane($^{18}O_2$)sulfonate ($^{18}O_2$-PFOS) and ~0.3% of sodium perfluoro-1-heptane($^{18}O_2$)sulfonate ($^{18}O_2$-PFHpS).
- Due to the isotopic purity of the starting material ($^{18}O_2$ >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: _____ **Date:** 11/05/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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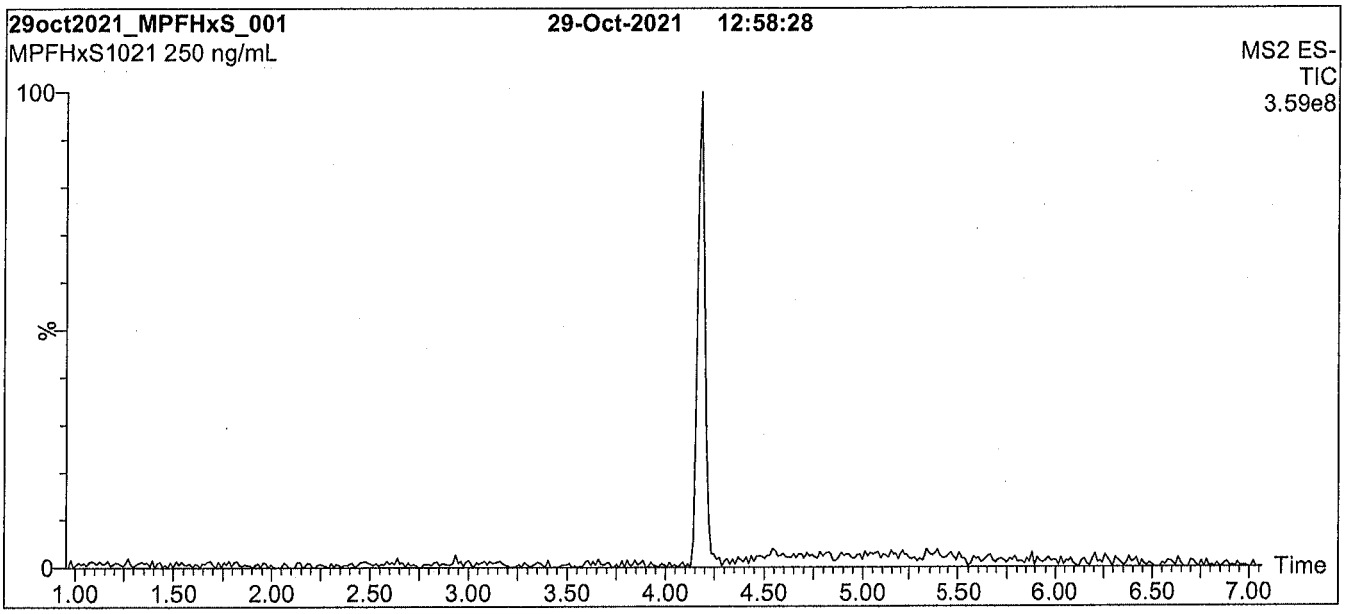

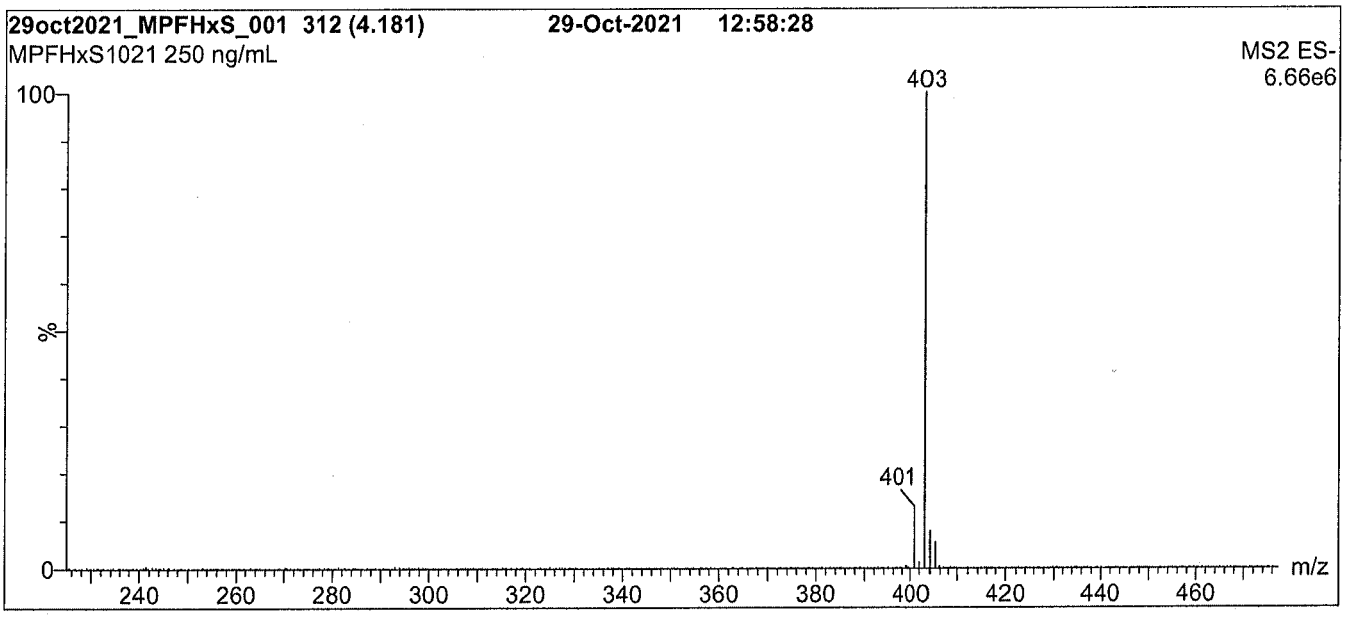

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Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

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Start: 50% H_2O / 50% (80:20 MeOH:ACN)
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Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

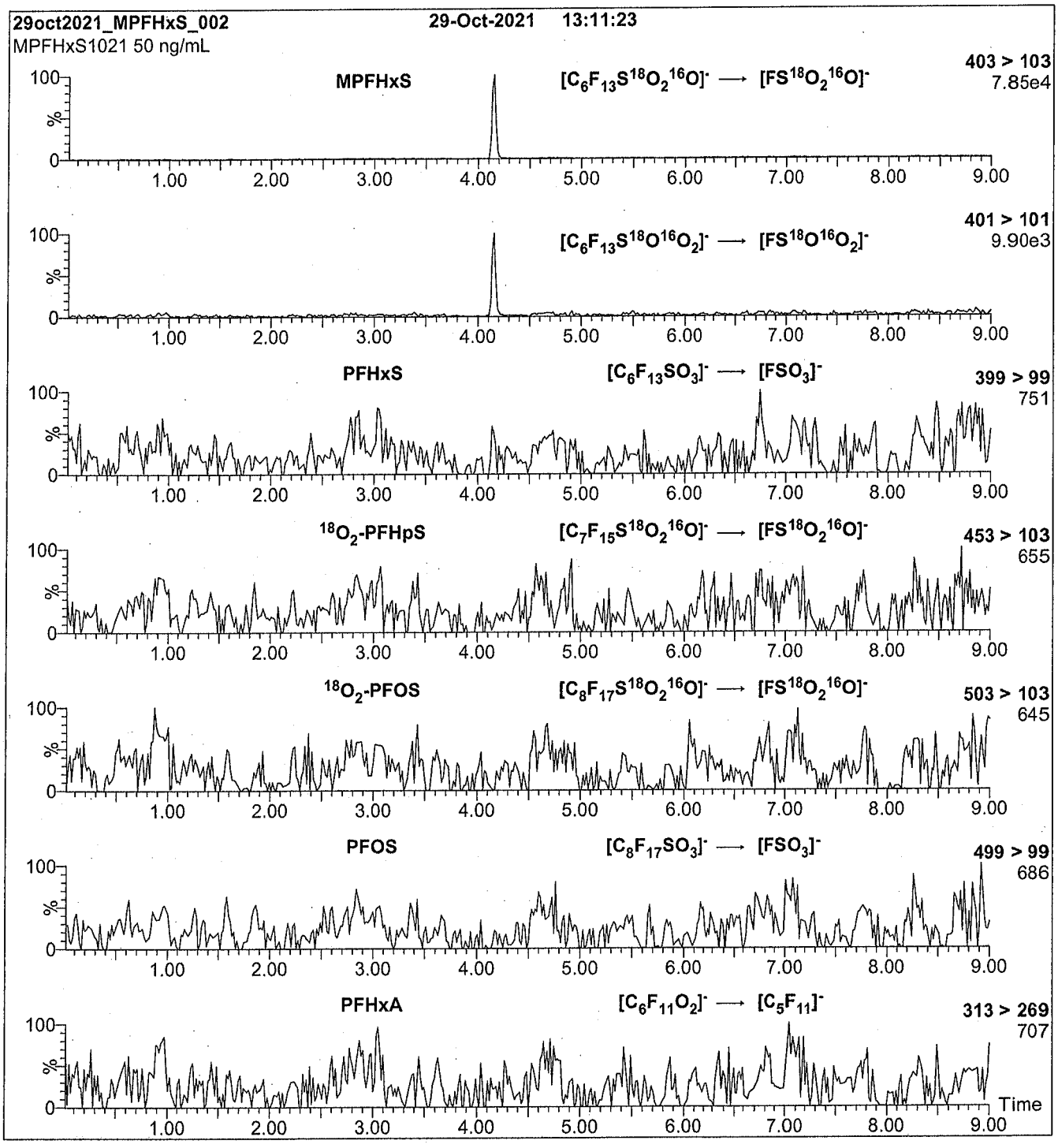
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 µL/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
18O2-PFHXS		18O2-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
18O2-PFHXS		18O2-PFHXS	50	ug/mL

Analytical Standard Record

22A0234

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

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

Parent Standards used:

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

Analytical Standard Record

22A0234

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

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13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHXS	22A0122	18O2-PFHXS	5	ug/mL

Parent Standards used:

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

Analytical Standard Record

22A0234

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

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

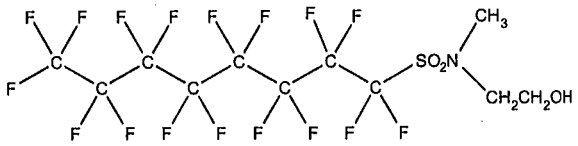
Parent Standards used:

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M
LOT NUMBER: NMeFOSE0921M 22C0307
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol
STRUCTURE:
CAS #: 24448-09-7



MOLECULAR FORMULA: $C_{11}H_8F_{17}NO_3S$
MOLECULAR WEIGHT: 557.22
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/22/2021 (HRGC/LRMS)
09/23/2021 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 09/23/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/28/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

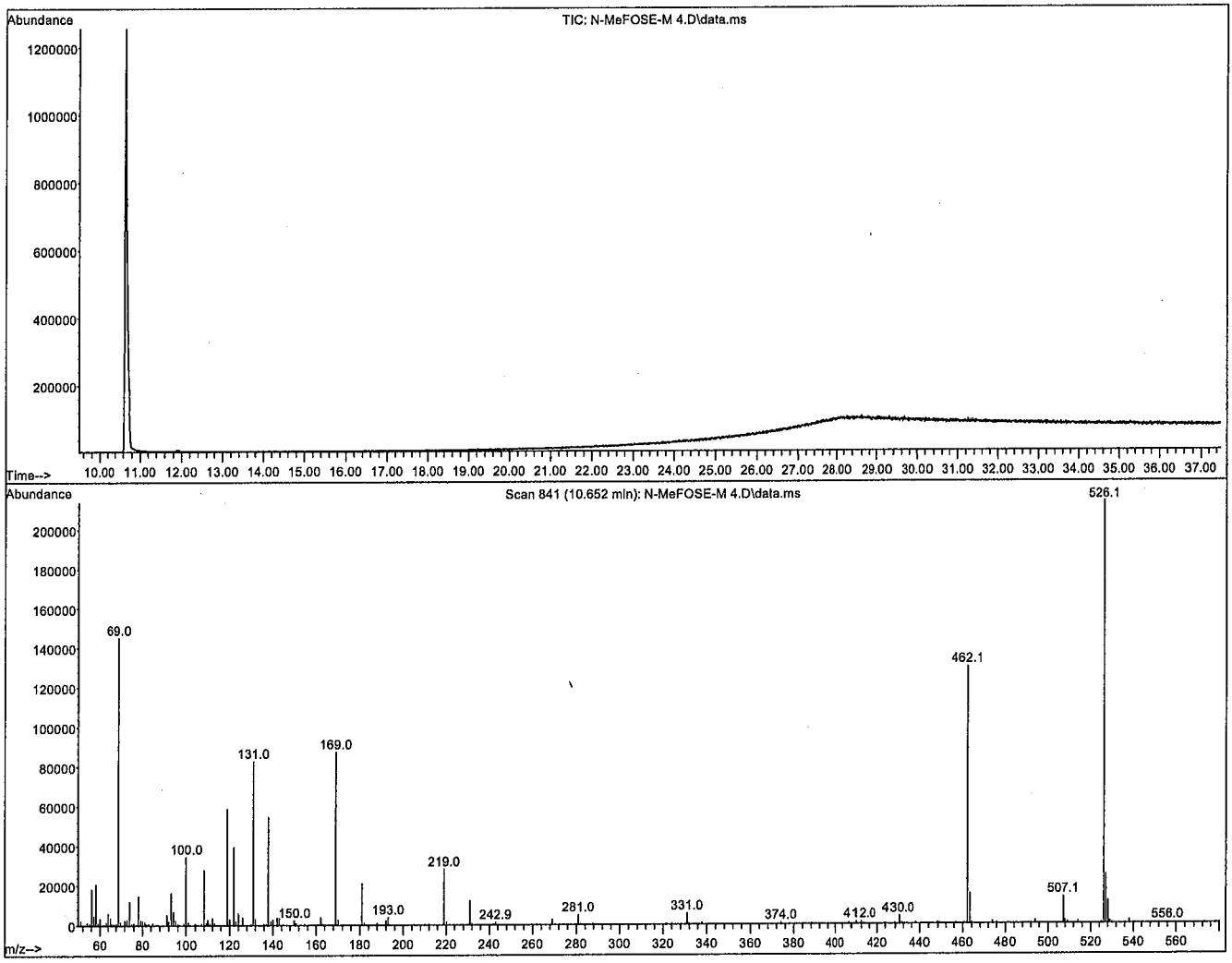
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER

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

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



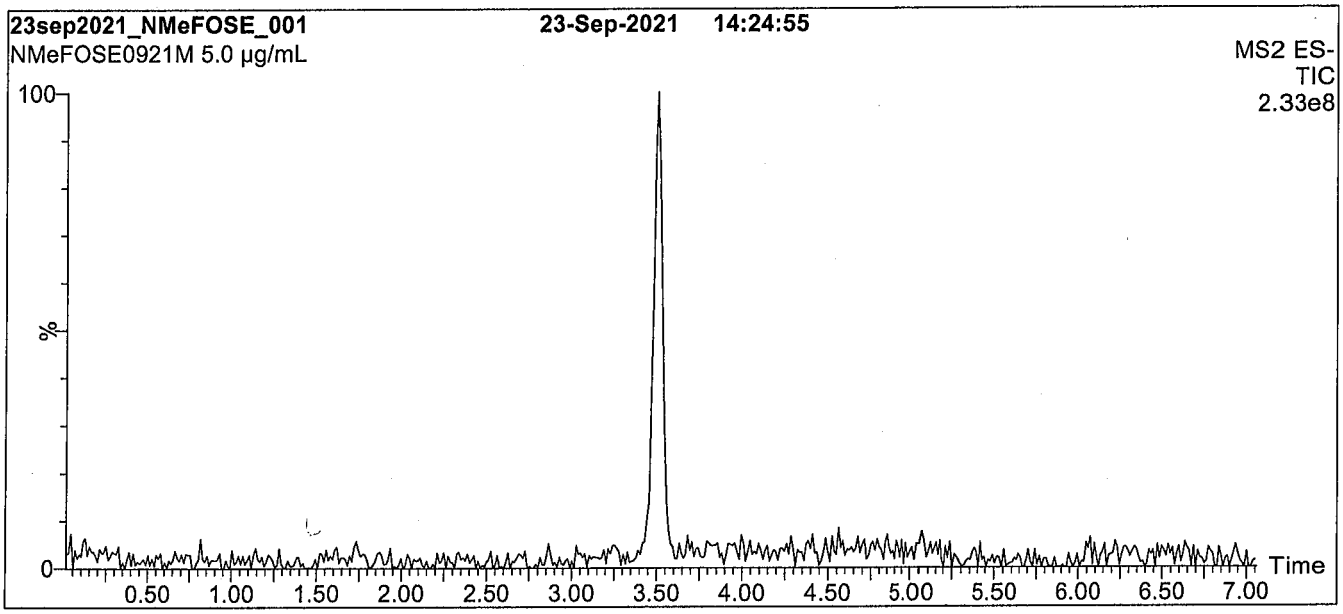
Conditions for Figure 1:

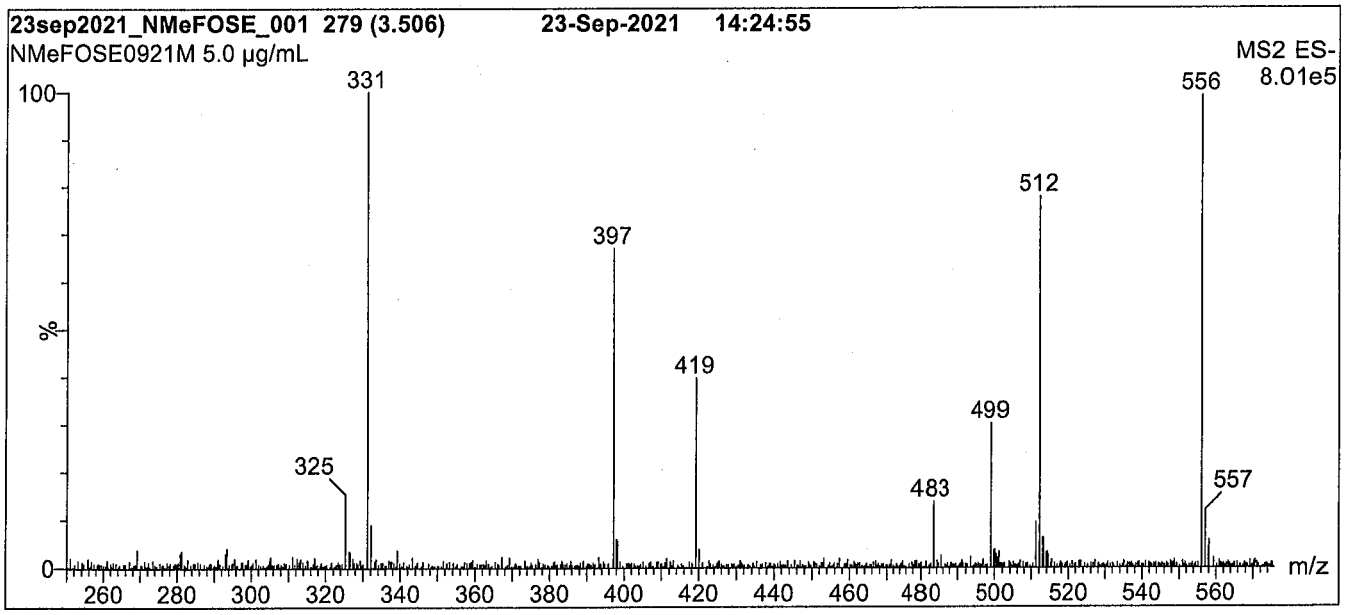
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min)
	10°C/min to 310°C
	310°C (10 min)
Ionization:	EI+
Detector:	230°C
	Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

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

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

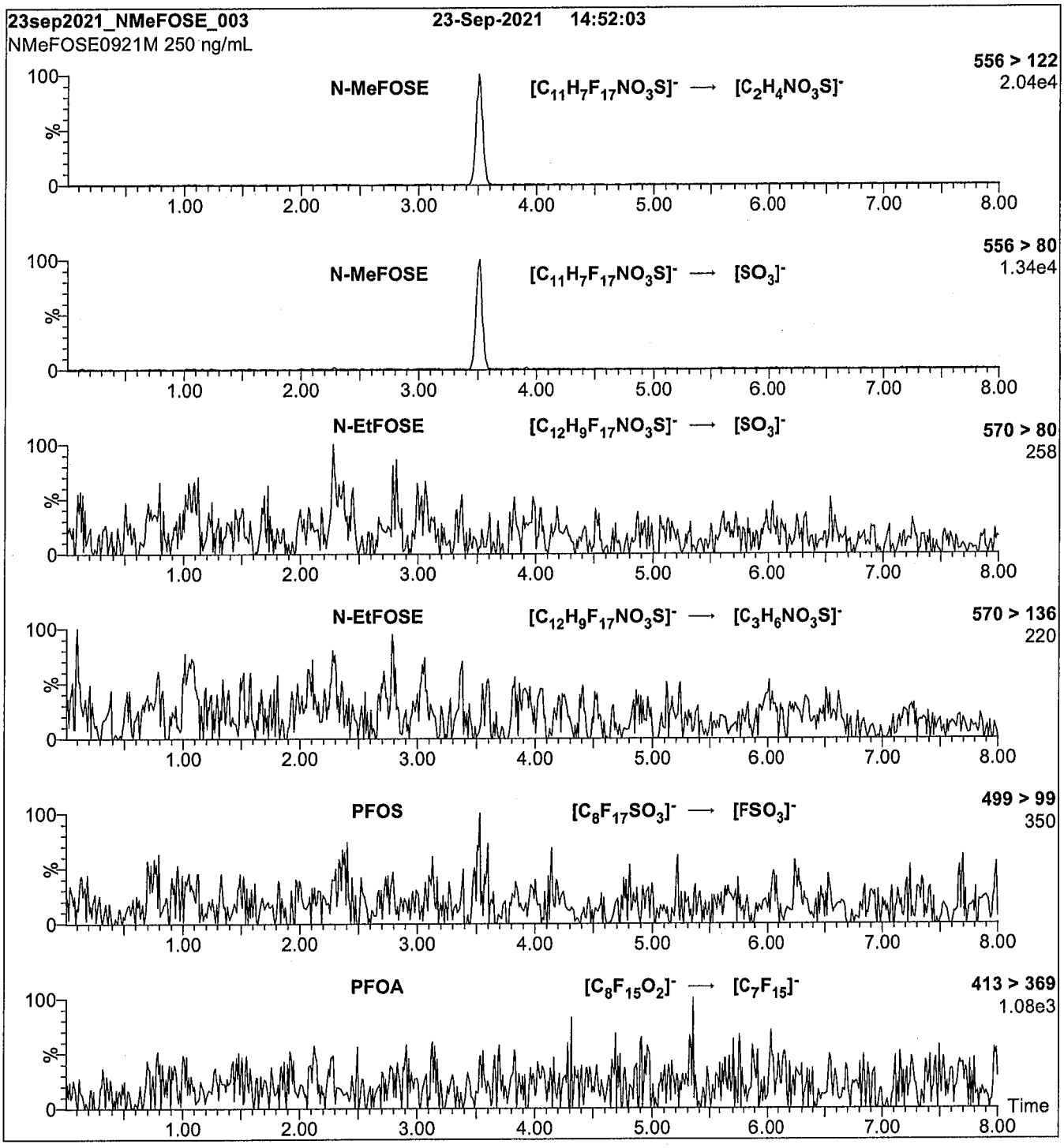
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 3:

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

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 36

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

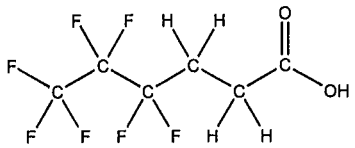
Reviewed By

Date

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:	$C_6H_5F_7O_2$	**MOLECULAR WEIGHT:**	242.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	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 ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 02/04/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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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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QUALITY MANAGEMENT:

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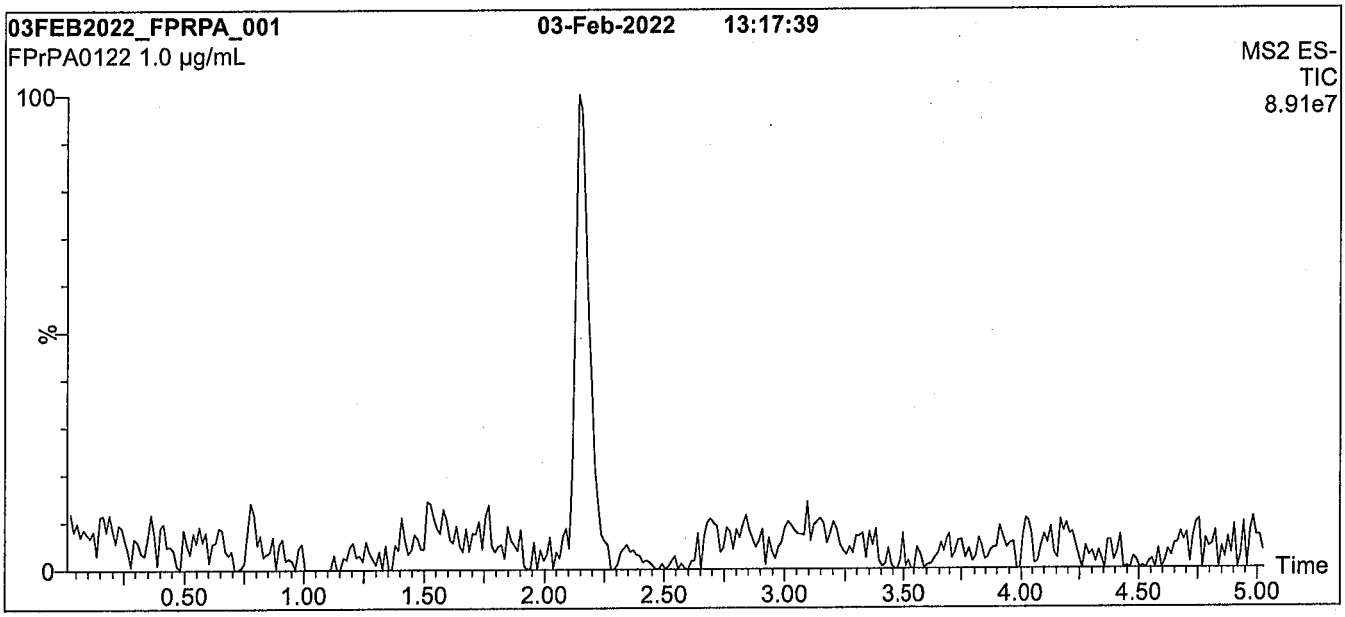
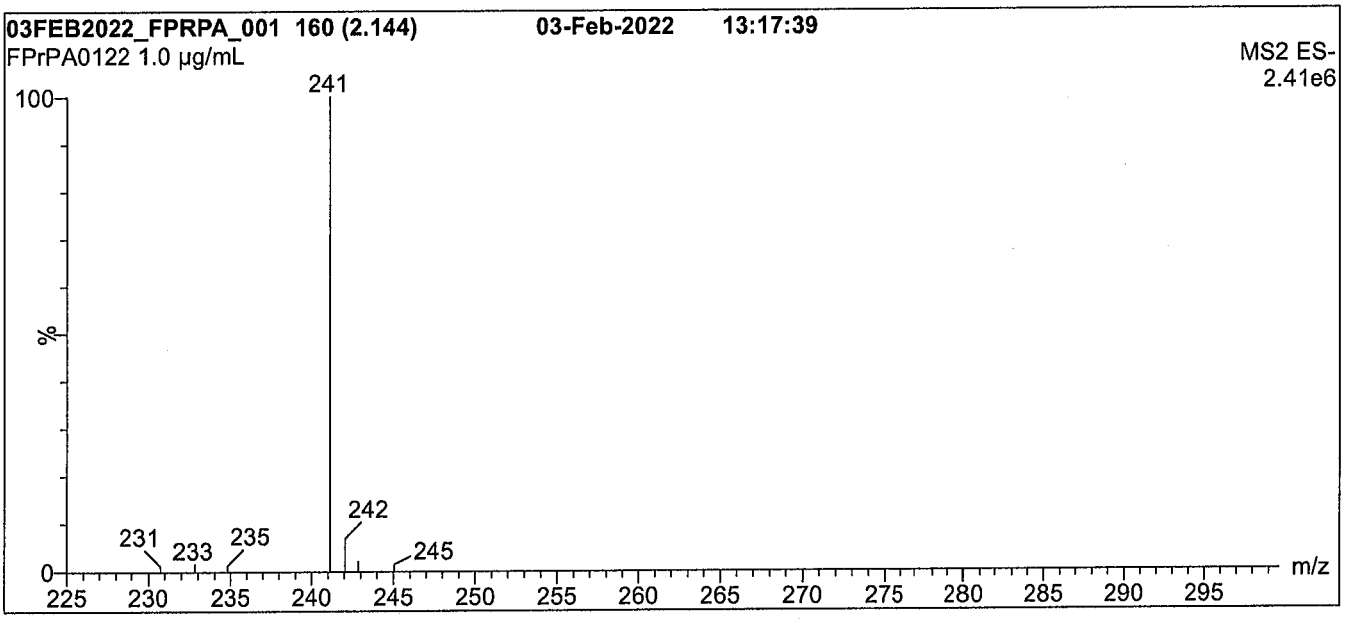
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

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





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

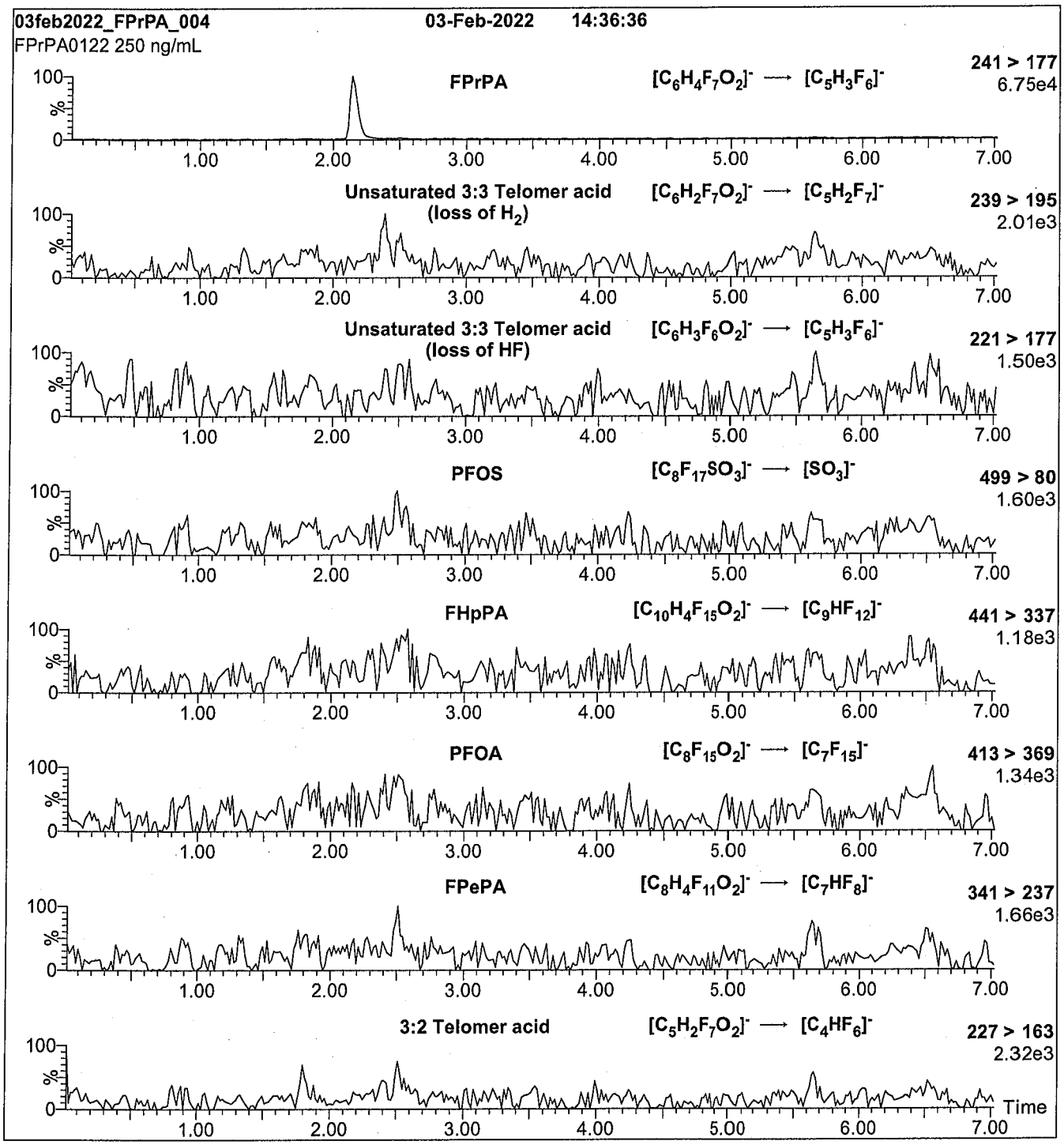
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (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 µL/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

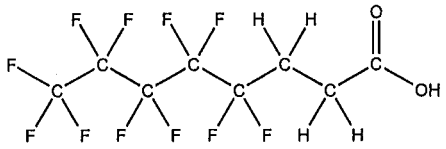
Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FPePA	**LOT NUMBER:**	FPePA1221 22C0309
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 ± 2.5 µg/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: _____ **Date:** 01/06/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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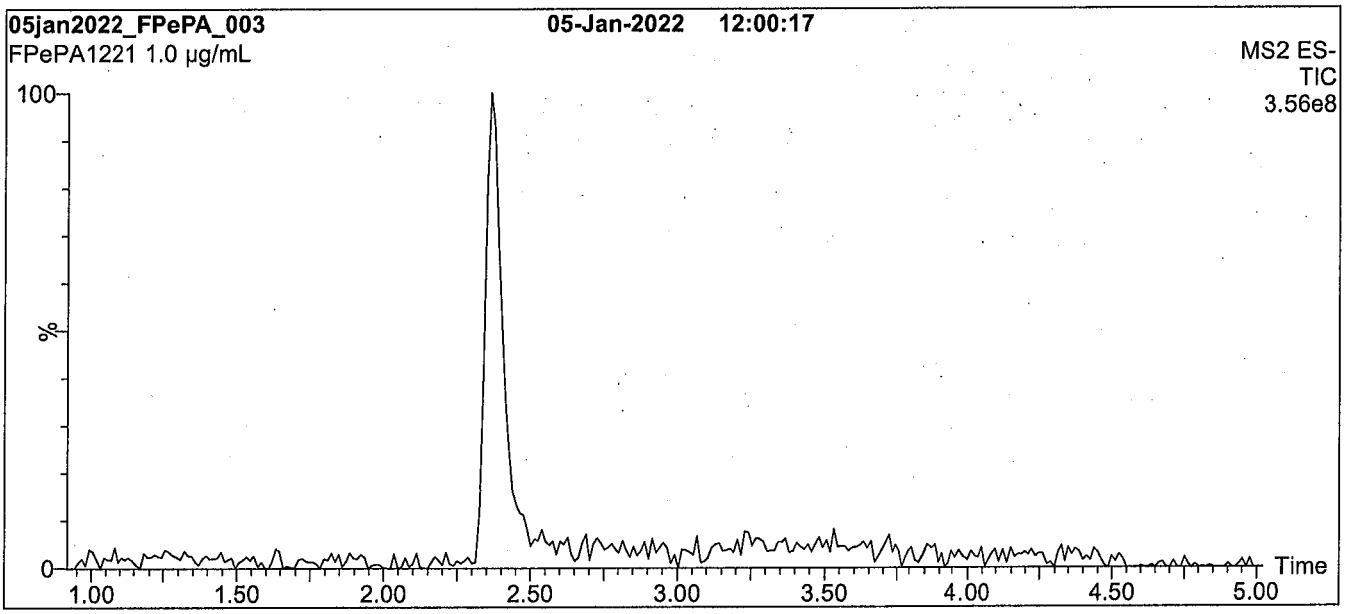
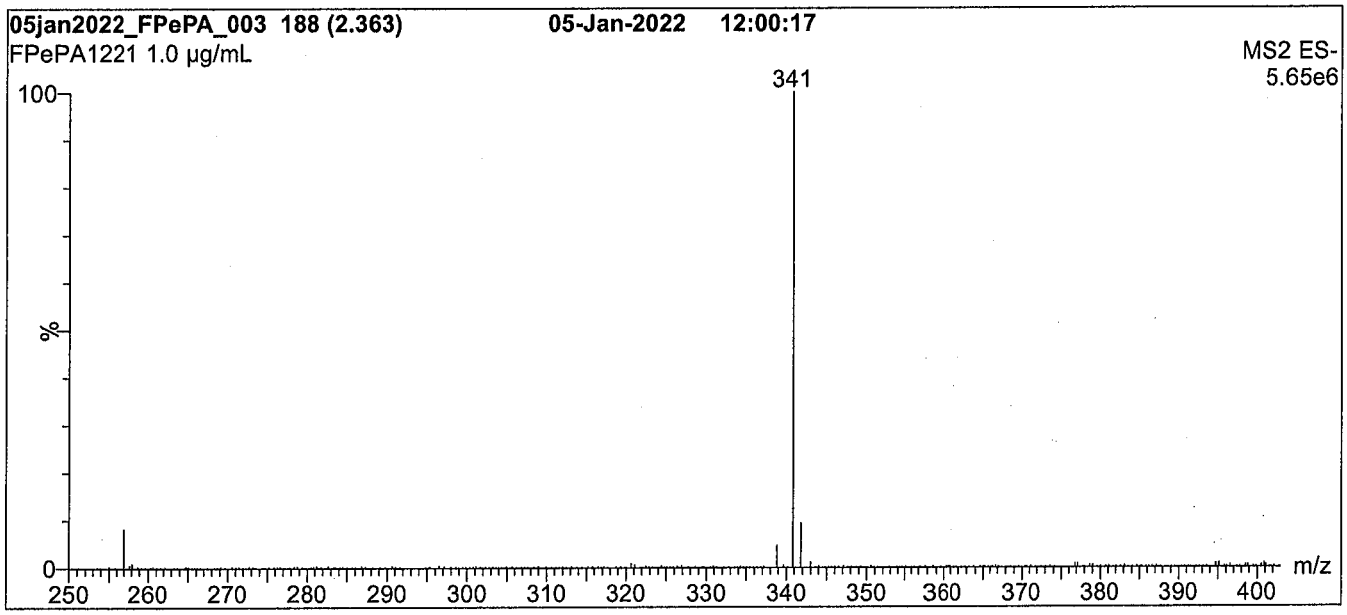
Figure 1: **FPePA; LC/MS Data (Full Scan and Mass Spectrum)**





Conditions for Figure 1:

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

Chromatographic Conditions:

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

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

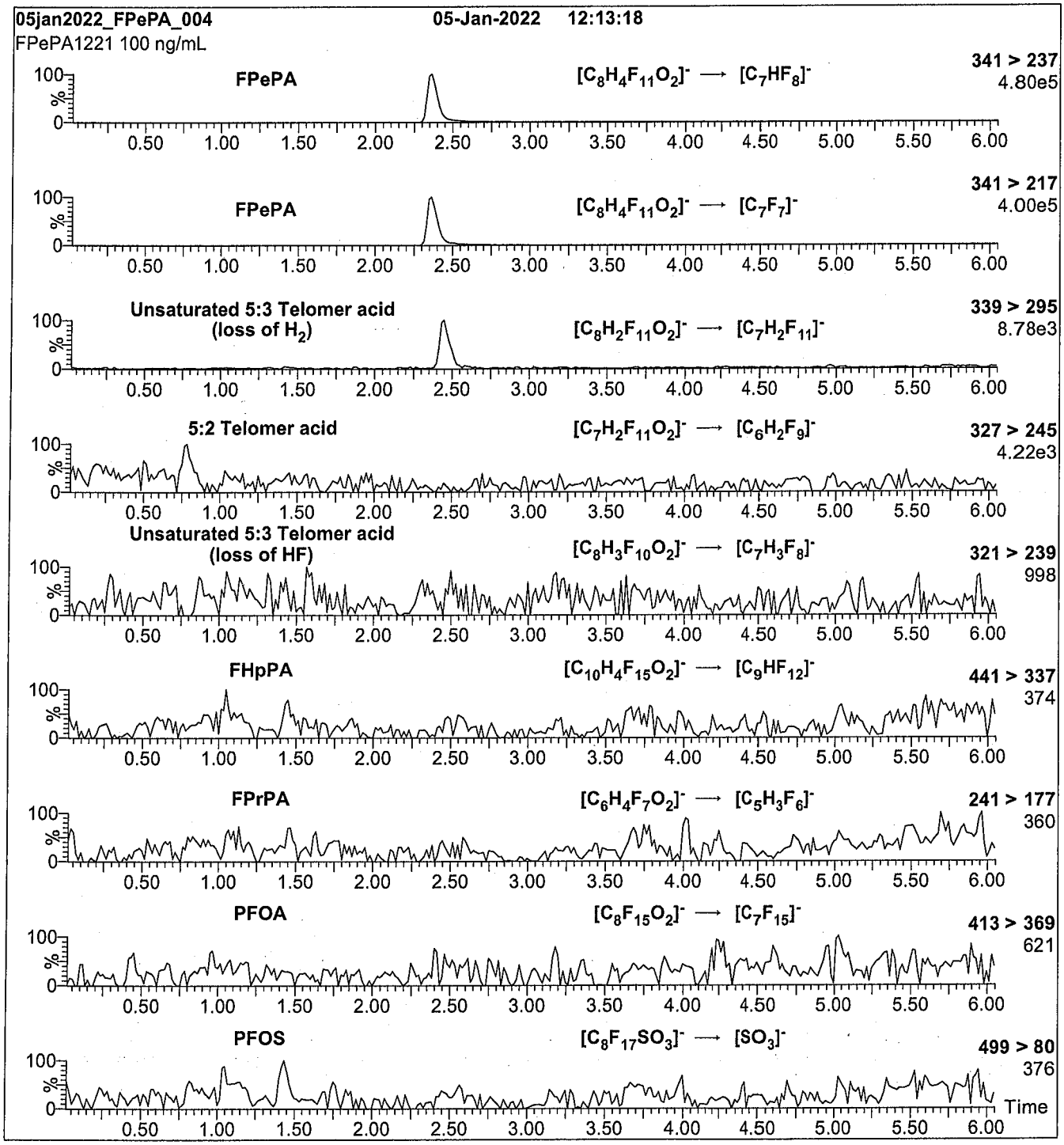
Flow: 300 µL/min

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 µL/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#: FPePA1221)
Final Volume (mls):	1	Department:	PFAS
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

Reviewed By

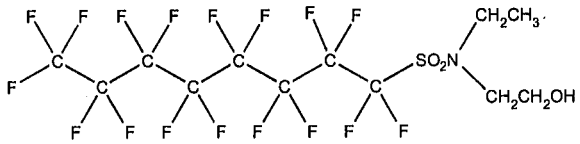
Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M
LOT NUMBER: NEtFOSE0921M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol 22C0310

STRUCTURE:
CAS #: 1691-99-2



MOLECULAR FORMULA:	$C_{12}H_{10}F_{17}NO_3S$	**MOLECULAR WEIGHT:**	571.25
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/22/2021 (HRGC/LRMS) 09/23/2021 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	09/23/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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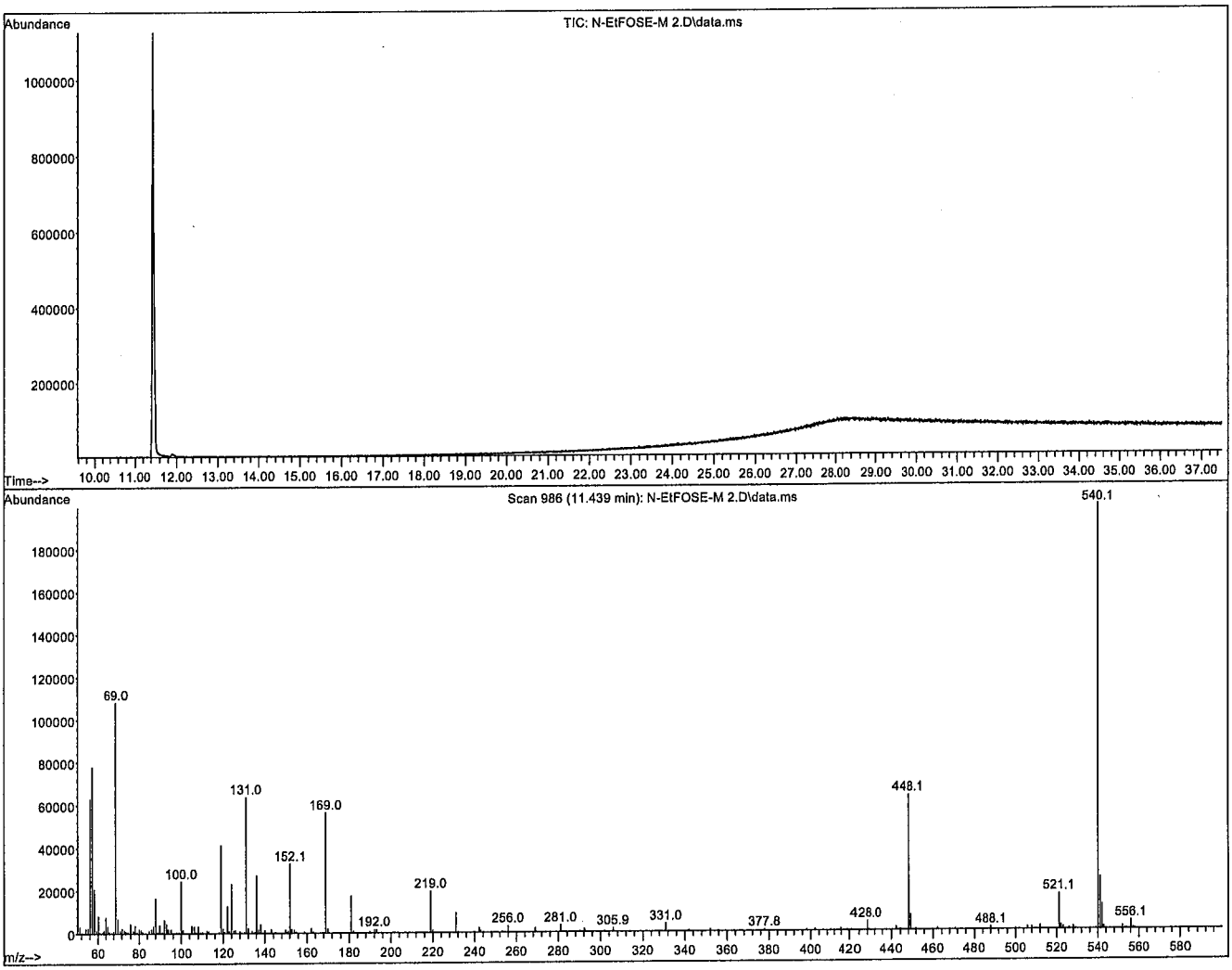
Figure 1: **N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**



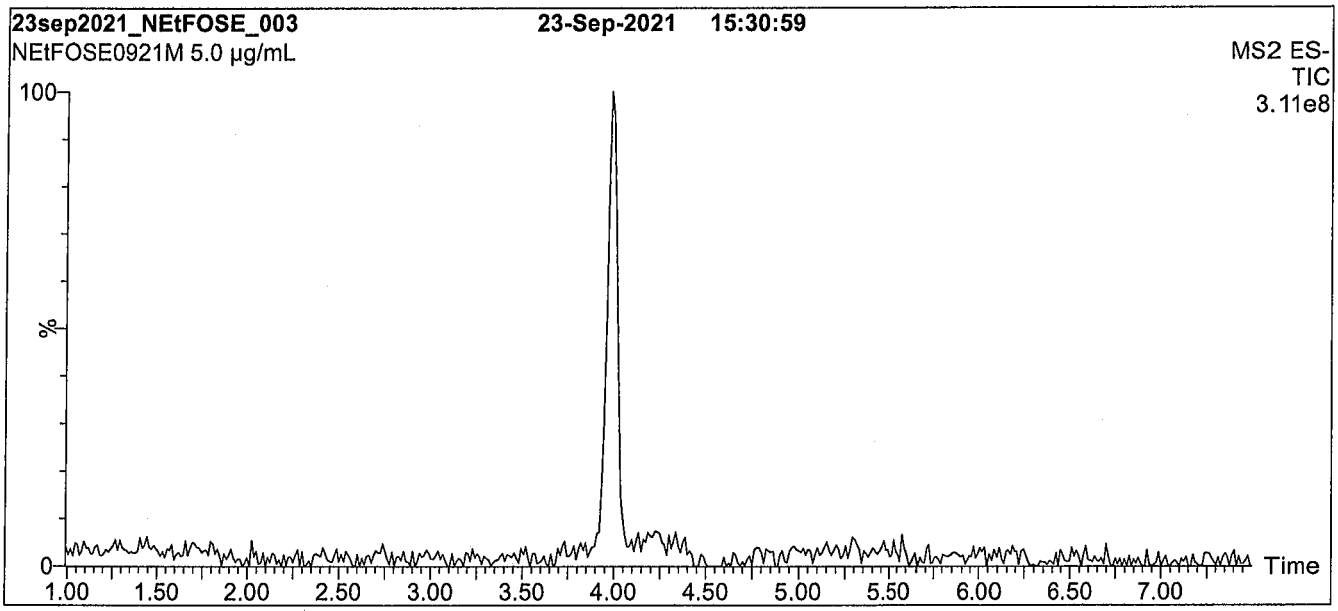
Conditions for Figure 1:

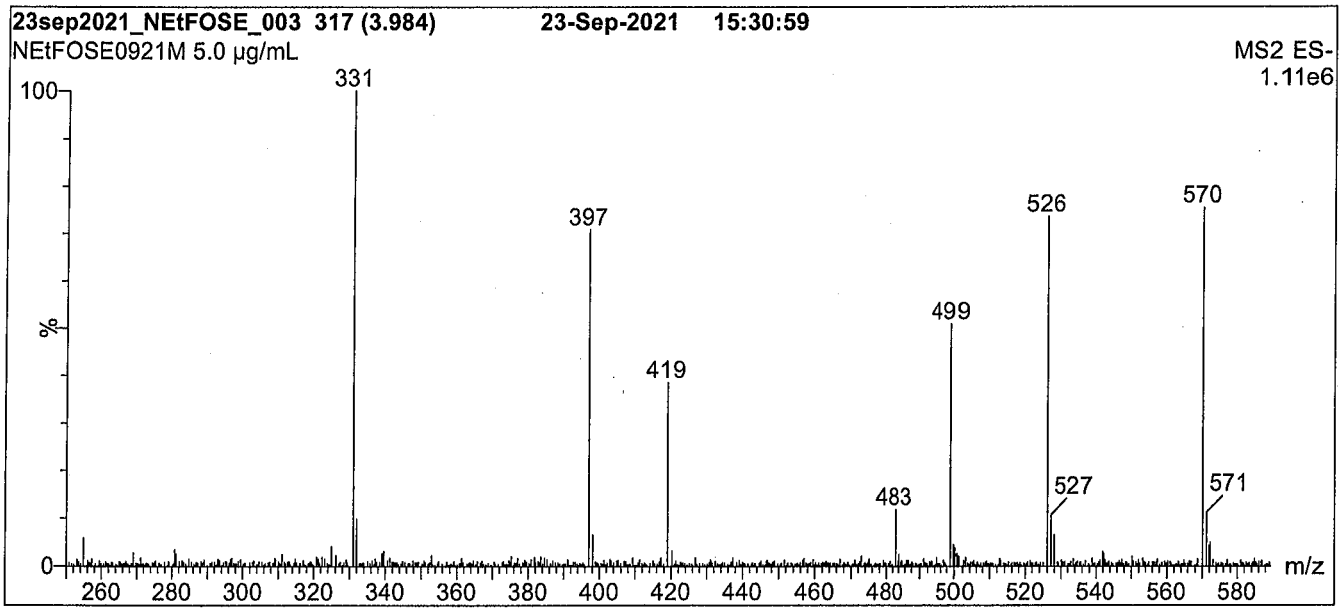
Agilent 7890A HRGC
Agilent 5975C MSD

Chromatographic Conditions:

Column:	30 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W
Flow:	Constant at 1 mL/min
Injector:	250°C (Splitless Injection)
Oven:	100°C (5 min)
	10°C/min to 325°C
	325°C (10 min)
Ionization:	EI+
Detector:	230°C
	Full Scan (50-1000 amu)

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





Conditions for Figure 2:

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

Chromatographic Conditions:

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

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

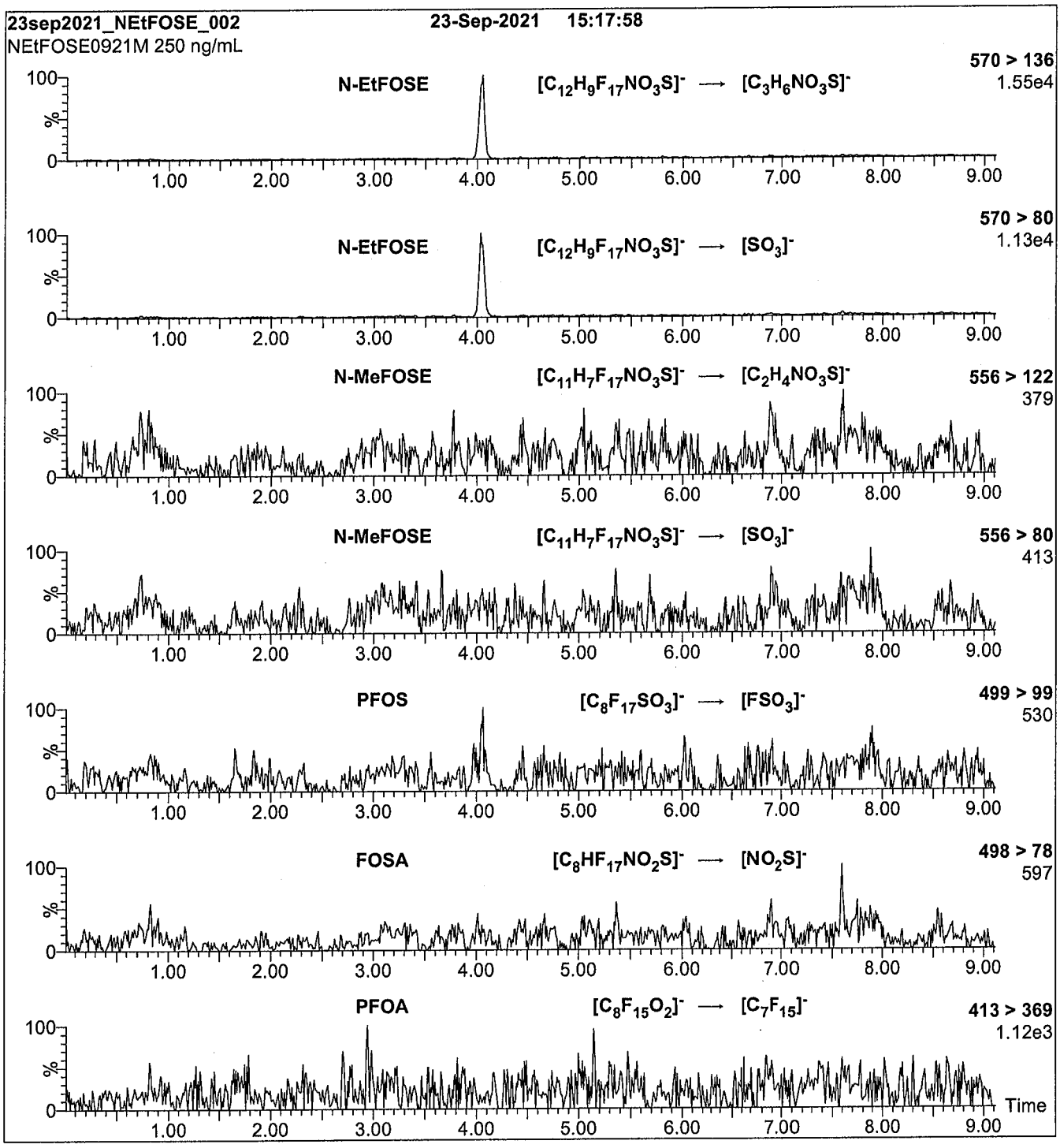
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 3:

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

Mobile phase: Same as Figure 2

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.14e-3
Collision Energy (eV) = 32

Analytical Standard Record

22C0310

Description:	PFAS - SAS NEtFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NEtFOSE0921M)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

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

Reviewed By

Date

WELLINGTON LABORATORIES

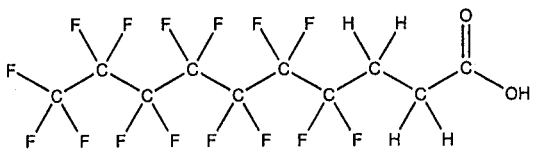
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FHpPA
COMPOUND: 3-Perfluoroheptyl propanoic acid

LOT NUMBER: FHpPA1020
22C0311

STRUCTURE:

CAS #: 812-70-4



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

MOLECULAR WEIGHT: 442.12
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

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

ANAB ANSI National Accreditation Board ACCREDITED ISO17034 REFERENCE MATERIAL PRODUCER

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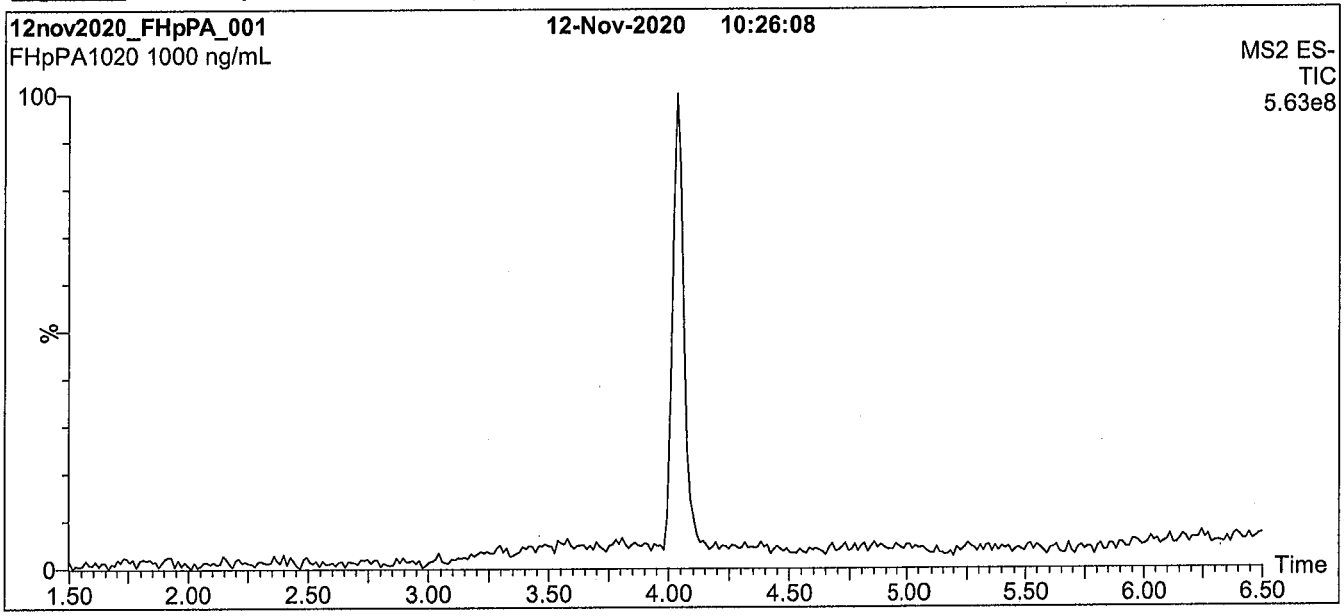
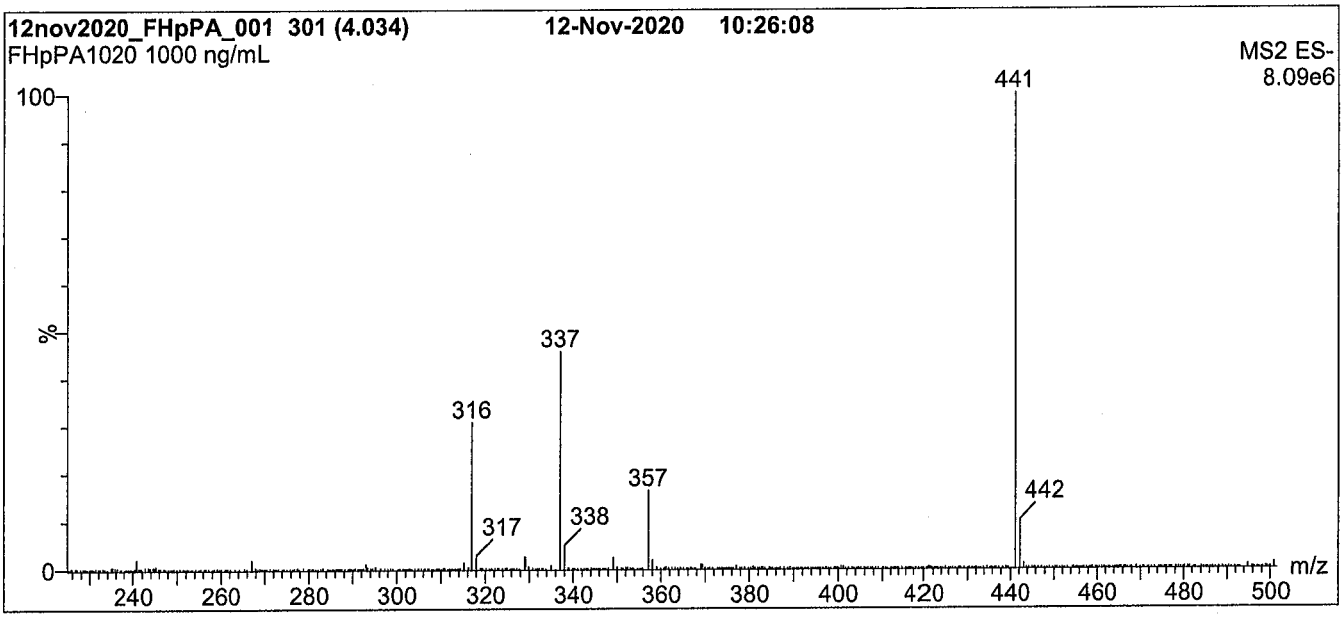




Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

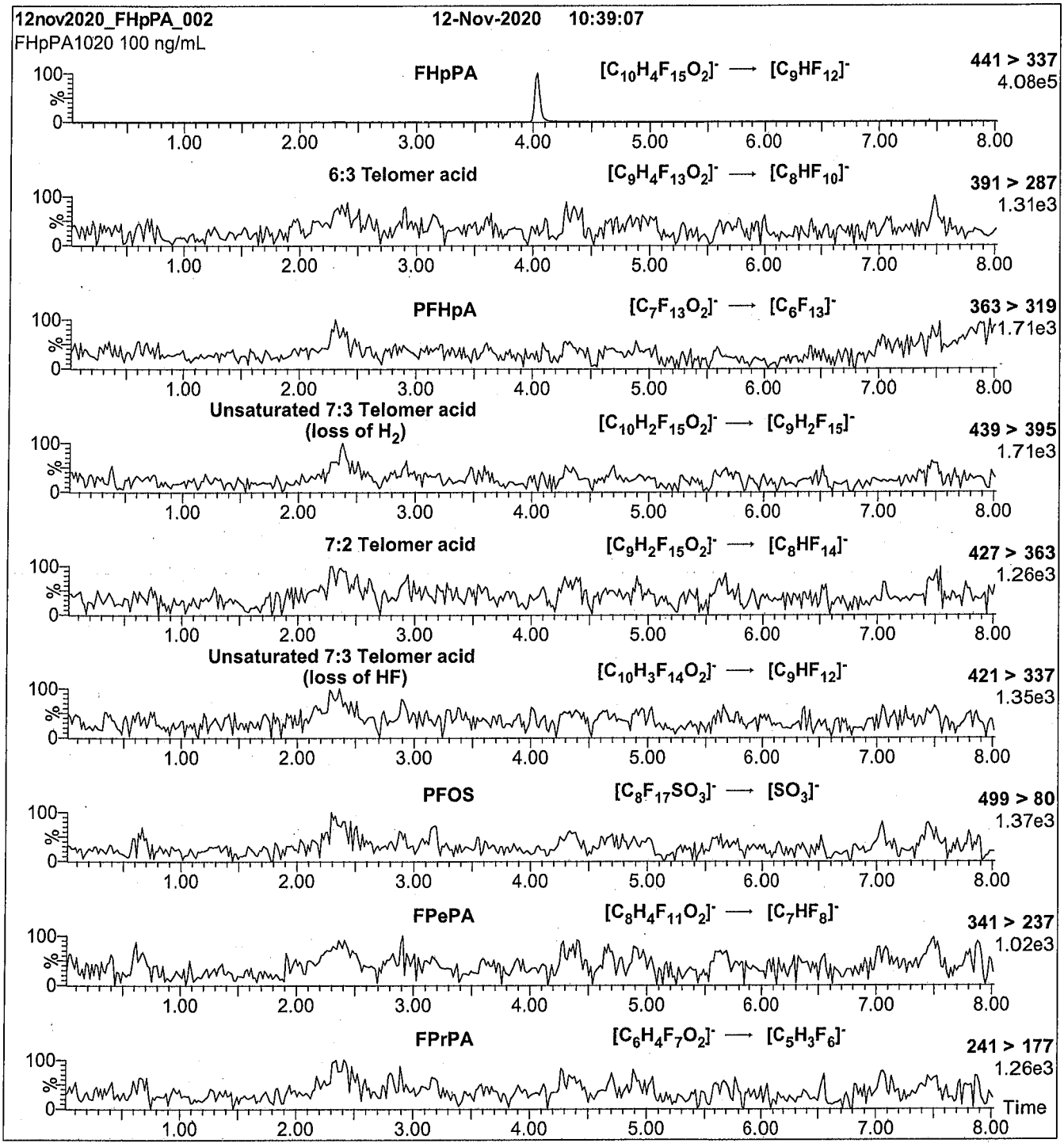
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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



Conditions for Figure 2:

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

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

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#: HHpPA1020)
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

Reviewed By

Date

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#: HHpPA1020)
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

Reviewed By

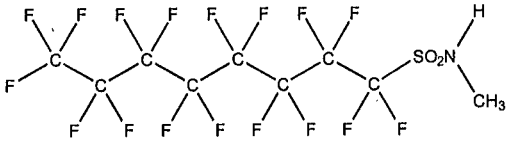
Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide
LOT NUMBER: NMeFOSA0721M
22C0312
CAS #: 31506-32-8

STRUCTURE:



MOLECULAR FORMULA: $C_9H_4F_{17}NO_2S$
MOLECULAR WEIGHT: 513.17
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

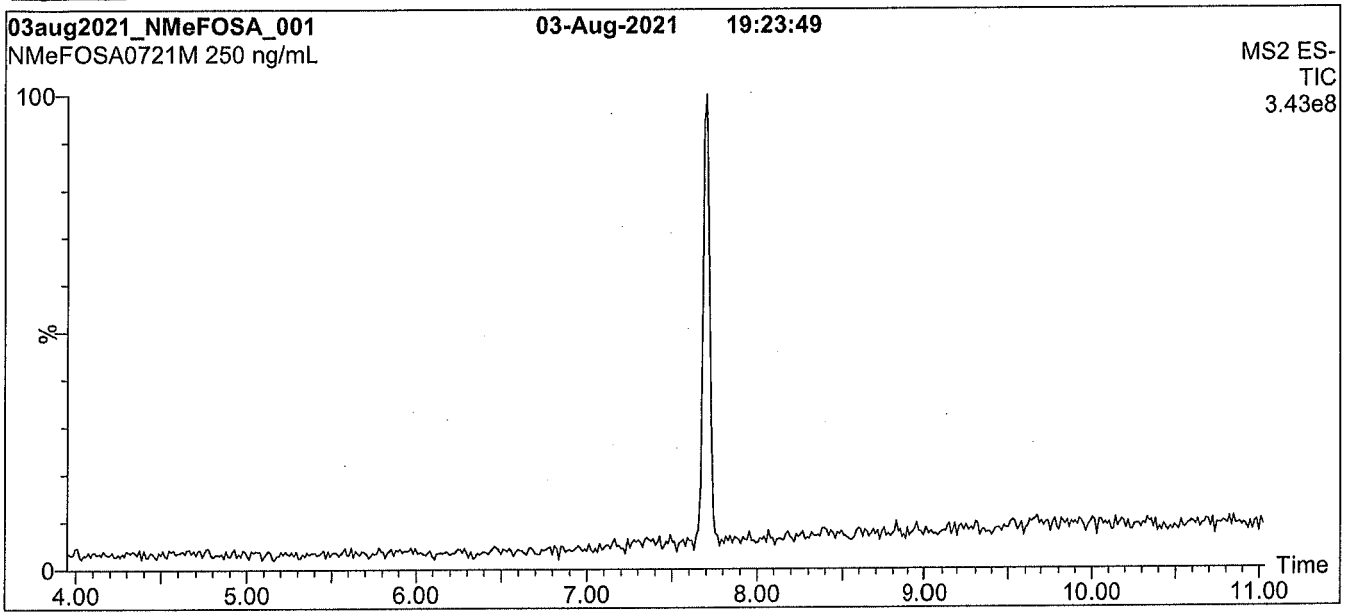
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

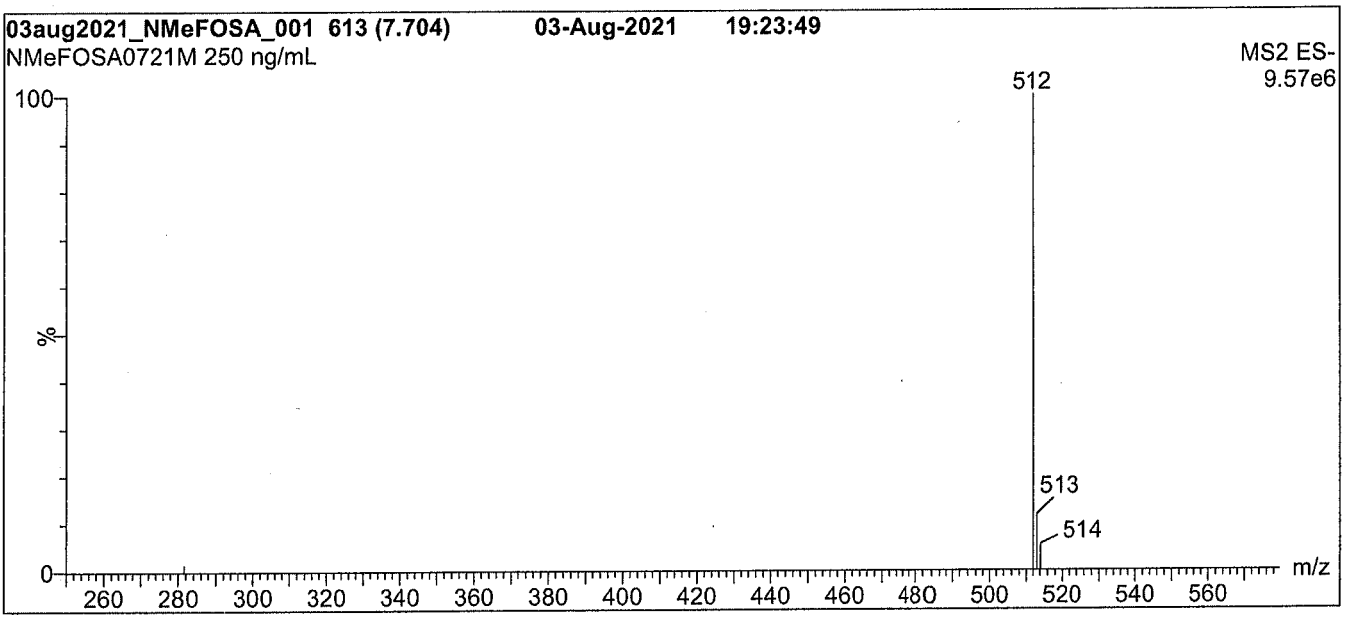
CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

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





Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

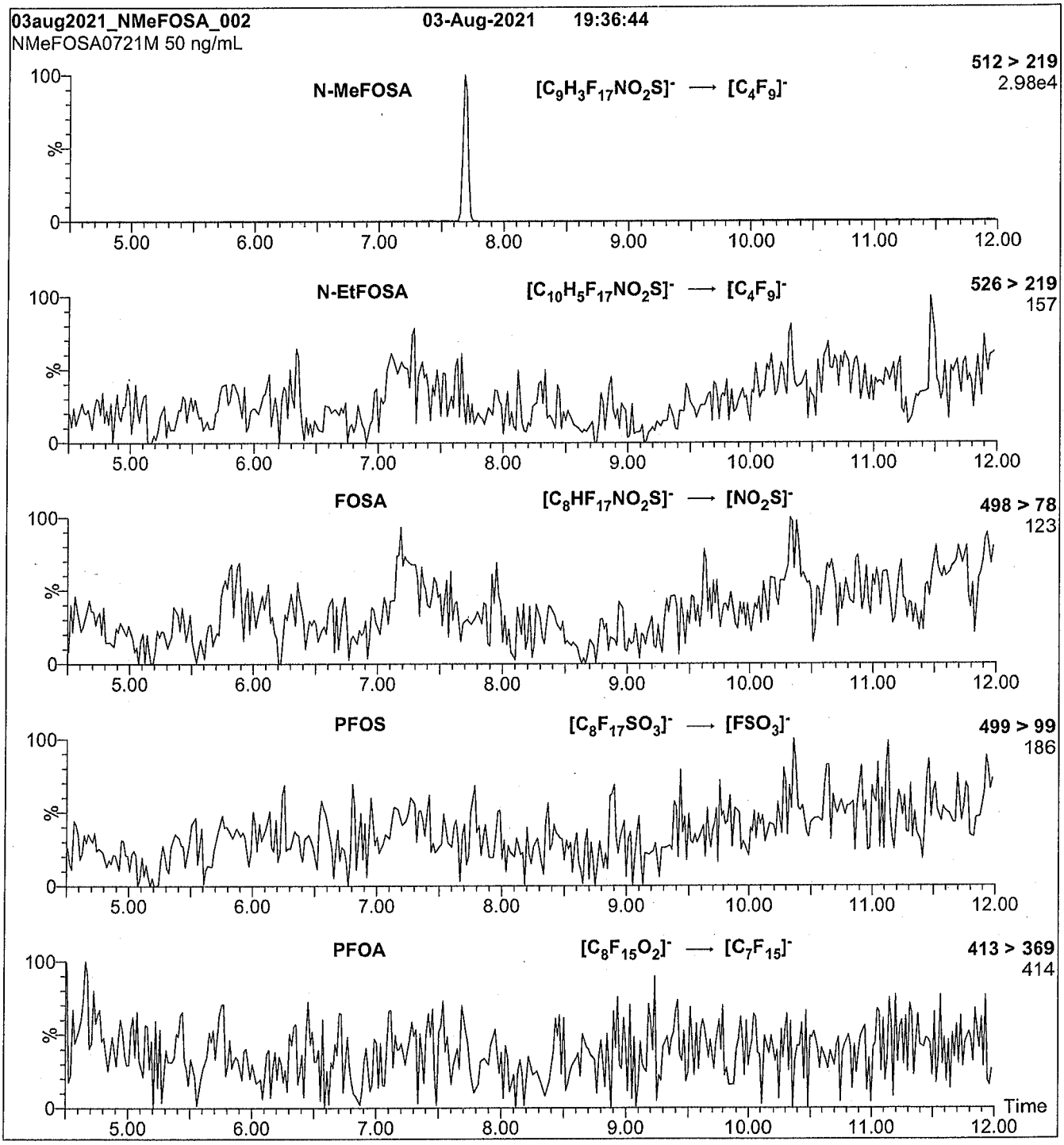
Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

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

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



Conditions for Figure 2:

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

Mobile phase: Same as Figure 1

Flow: 300 µL/min

MS Parameters:

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 24

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

Reviewed By

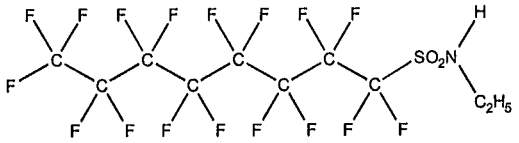
Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide
LOT NUMBER: NEtFOSA0821M
22C0313
CAS #: 4151-50-2

STRUCTURE:



MOLECULAR FORMULA:	$C_{10}H_6F_{17}NO_2S$	**MOLECULAR WEIGHT:**	527.20
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/12/2021		
EXPIRY DATE: (mm/dd/yyyy)	08/12/2026		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

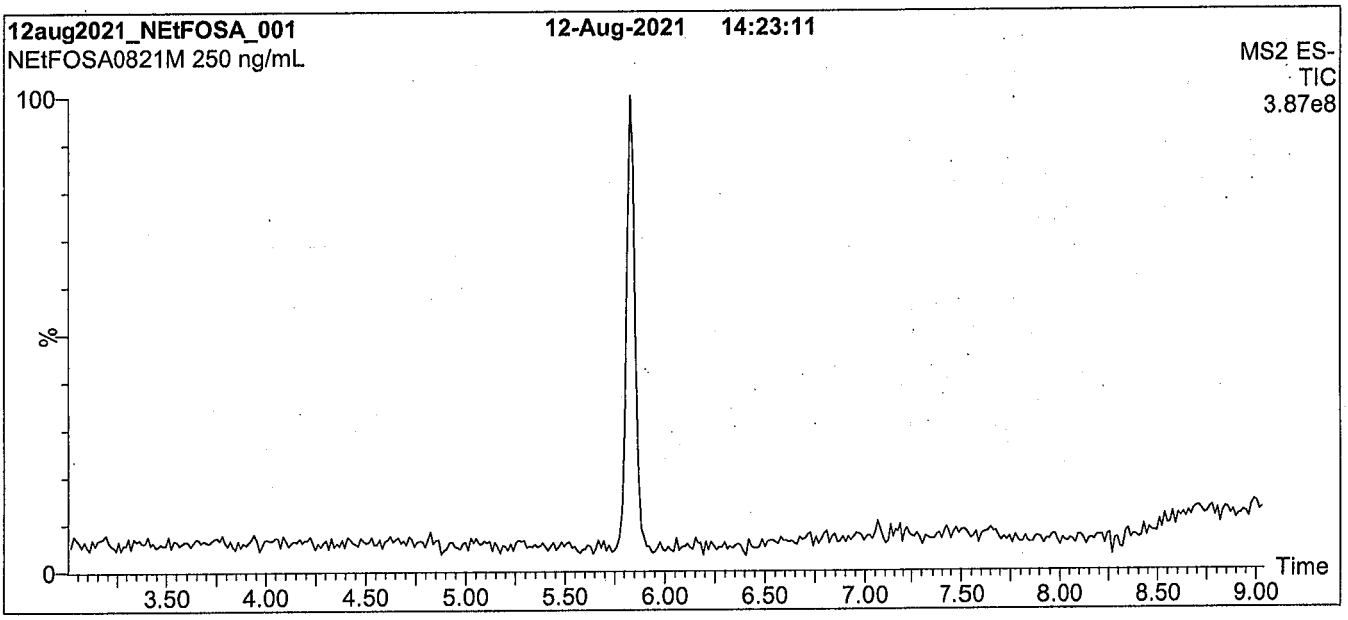
- See page 2 for further details.

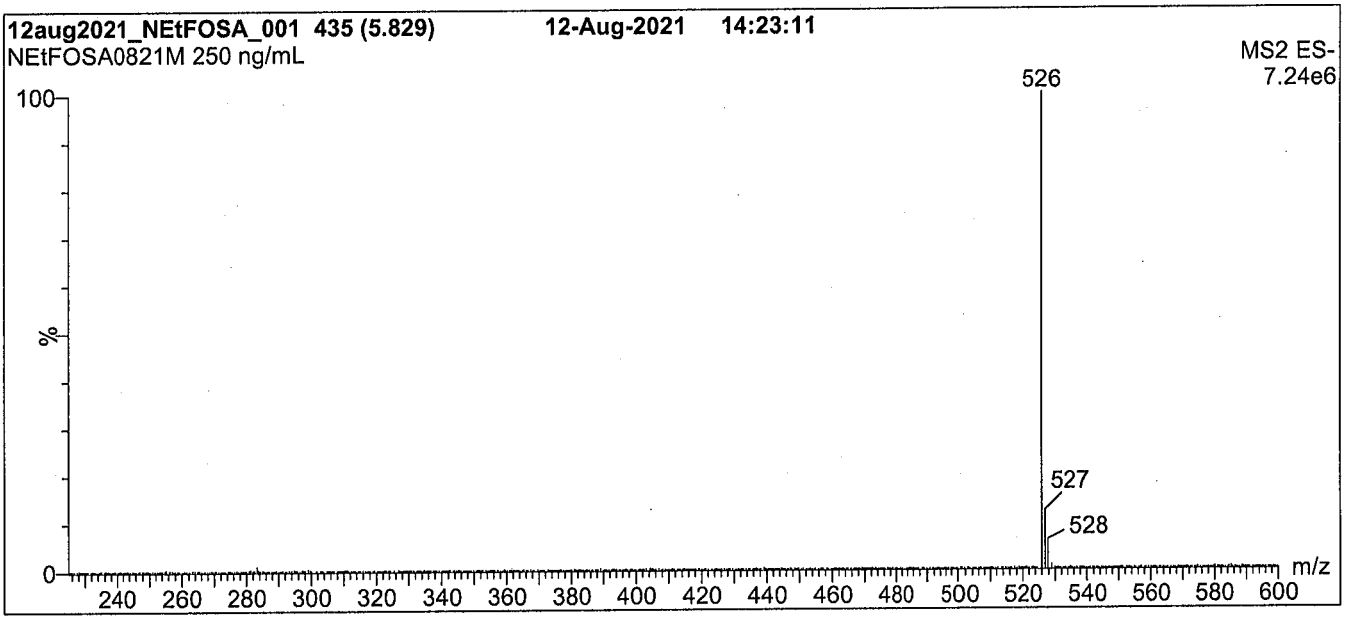
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/16/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

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

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





Conditions for Figure 1:

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

Chromatographic Conditions:

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

Mobile phase: Gradient
Start: 30% H_2O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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

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:	PFAS
Vials:	1	Last Edit:	08/17/2022 10:49 by LYA

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

Reviewed By

Date

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

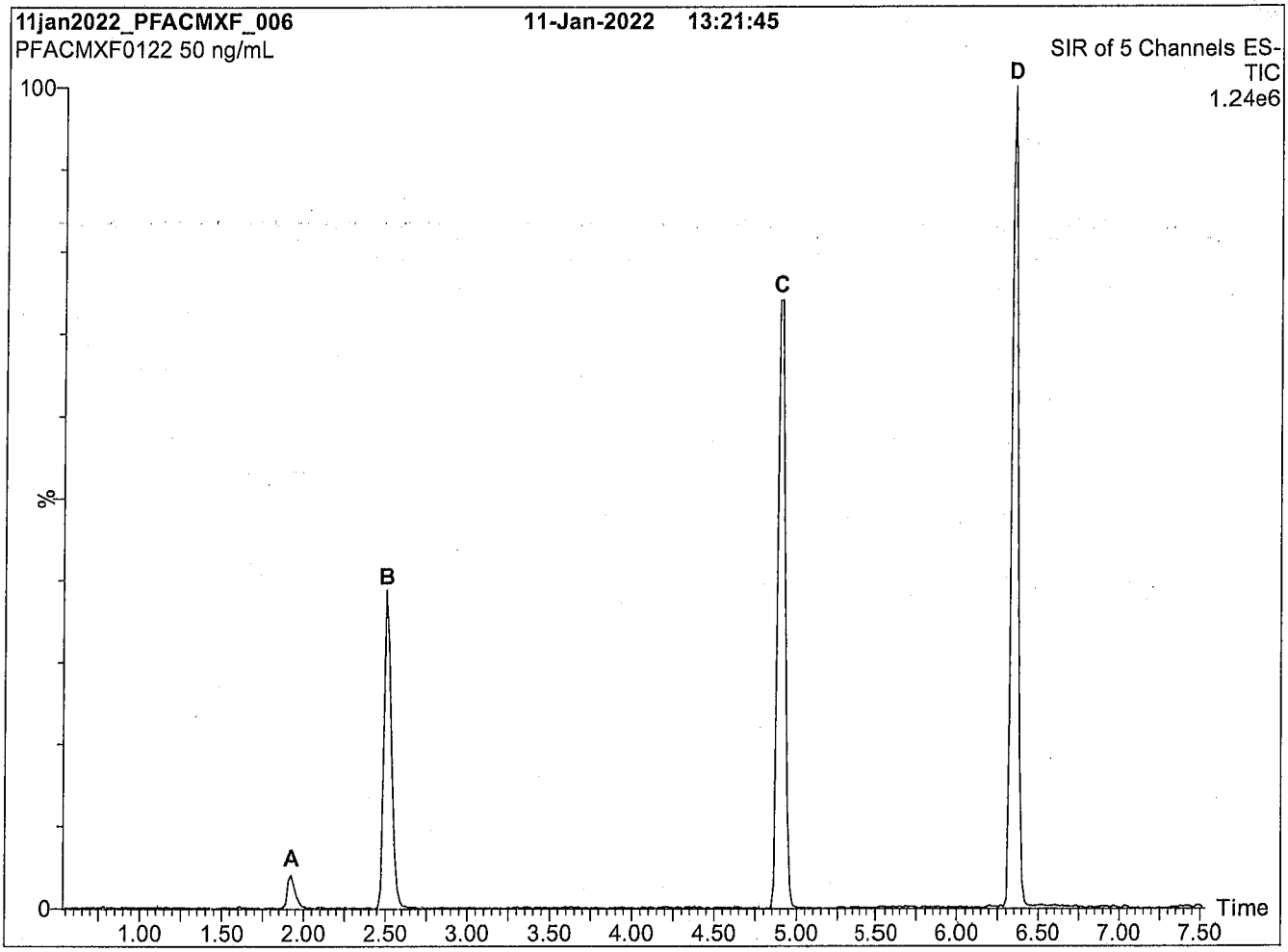
Table A: **PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))**

Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 01/12/2022
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **PFAC-MXF; LC/MS Data (SIR)**



Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

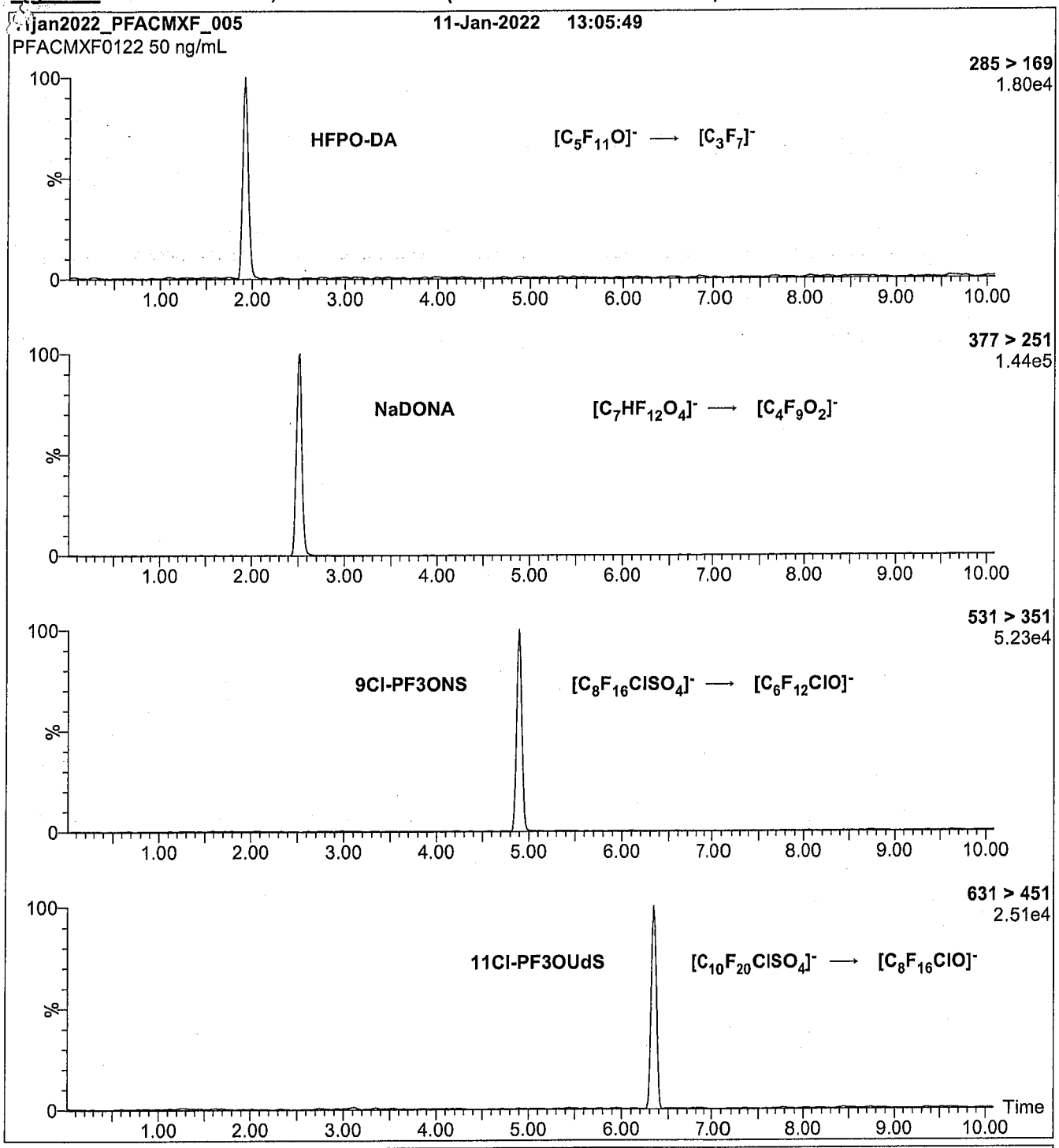
Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (15-74)
Desolvation Temperature (°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 µL/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

Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH 22F0059

Native Per- and Poly-fluoroalkyl Substance Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0921
SOLVENT(S):	Methanol / Isopropanol (2%) / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	09/09/2021
LAST TESTED: (mm/dd/yyyy)	09/14/2021
EXPIRY DATE: (mm/dd/yyyy)	09/14/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_9, C_{10} and C_{12} linear; C_6 and C_8 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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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

Table A: **PFAC-MXH; Components and Concentrations (µg/mL, ± 5% in methanol / isopropanol (2%) / water (<1%))**

Compound	Acronym	Concentration* (µg/mL)	Peak Assignment in Figure 1
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: ∑ branched isomers	0.240	17
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	0.775	22
	N-EtFOSAA: ∑ branched isomers	0.225	21

Compound	Acronym	Concentration* (µg/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	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: ∑ 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: ∑ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1.00	0.965	24
Sodium perfluoro-1-dodecanesulfonate	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-perfluorodecanesulfonate	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: _____ **Date:** 09/23/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

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

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

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

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

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

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

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

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-hexanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$CF_3CF_2CF_2CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FSO_3^-K^+$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2SO_3^-K^+$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2CF_2SO_3^-K^+$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2CF_2CF_2SO_3^-K^+$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3\underset{\displaystyle CF_3}{\underset{\vert}{C}}CF_2CF_2SO_3^-K^+$	0.2	
7	Other Unidentified Isomers		0.5	

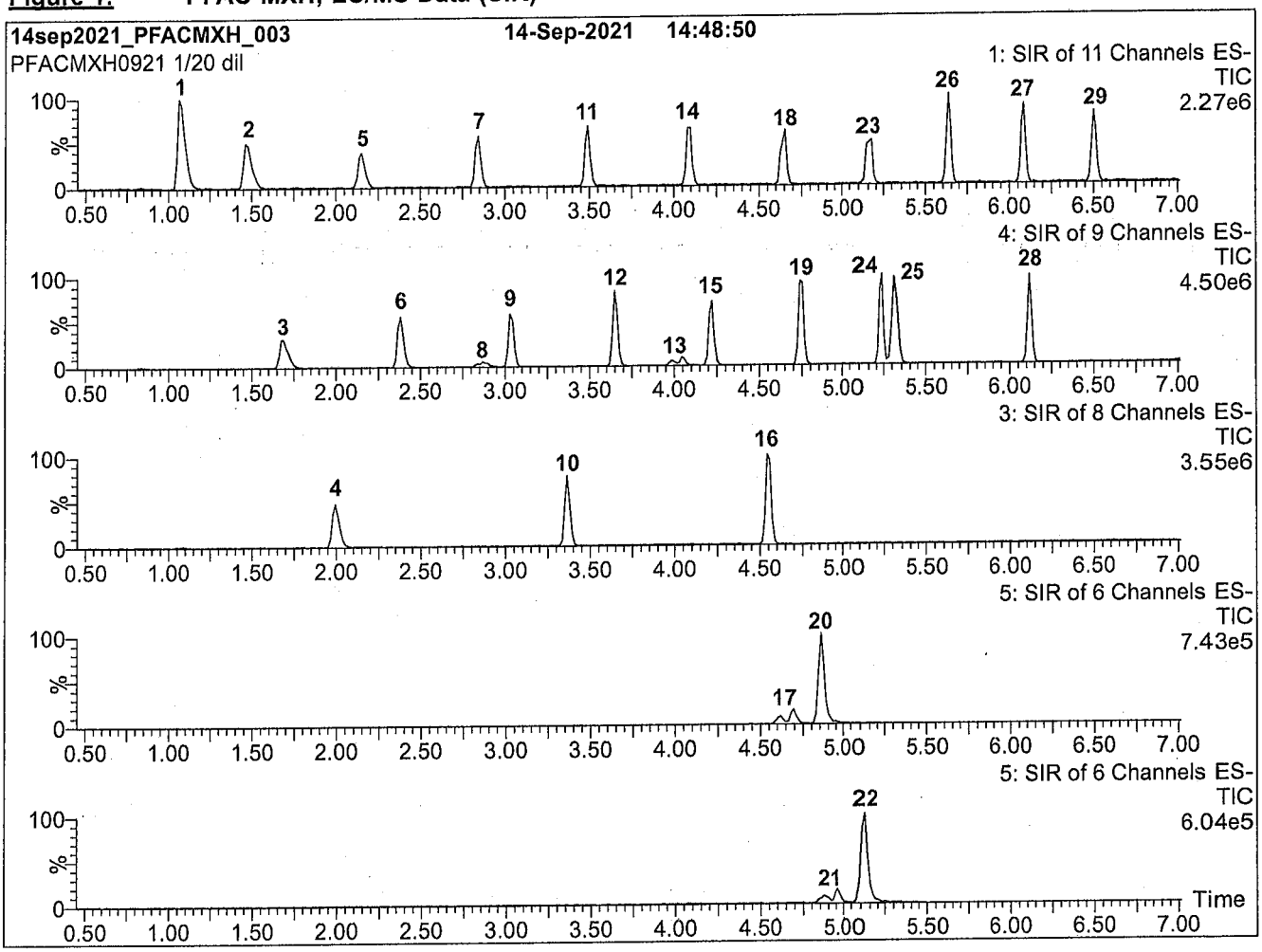
* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

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

Isomer	Compound	Structure	Percent Composition by ^{19}F-NMR	
1	Potassium perfluoro-1-octanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	$CF_3CF_2CF_2CF_2CF_2CF_2CF(CF_3)SO_3^-K^+$	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF_2CF(CF_3)CF_2SO_3^-K^+$	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF_2CF(CF_3)CF_2CF_2CF_2SO_3^-K^+$	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	$CF_3CF_2CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2CF_2SO_3^-K^+$	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3C(CF_3)_2CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)_2CF_2CF_2CF_2SO_3^-K^+$	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF(CF_3)CF_2CF_2SO_3^-K^+$	0.07	

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

Figure 1: **PFAC-MXH; LC/MS Data (SIR)**



Conditions for Figure 1:

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

Chromatographic Conditions:

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

Mobile phase: Gradient
Start: 50% H_2O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 9 min and hold for 2 min
before returning to initial conditions in 1 min.
Time: 15 min

Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = variable (2-74)
Desolvation Temperature (°C) = 350
Desolvation Gas Flow (L/hr) = 1000

Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**

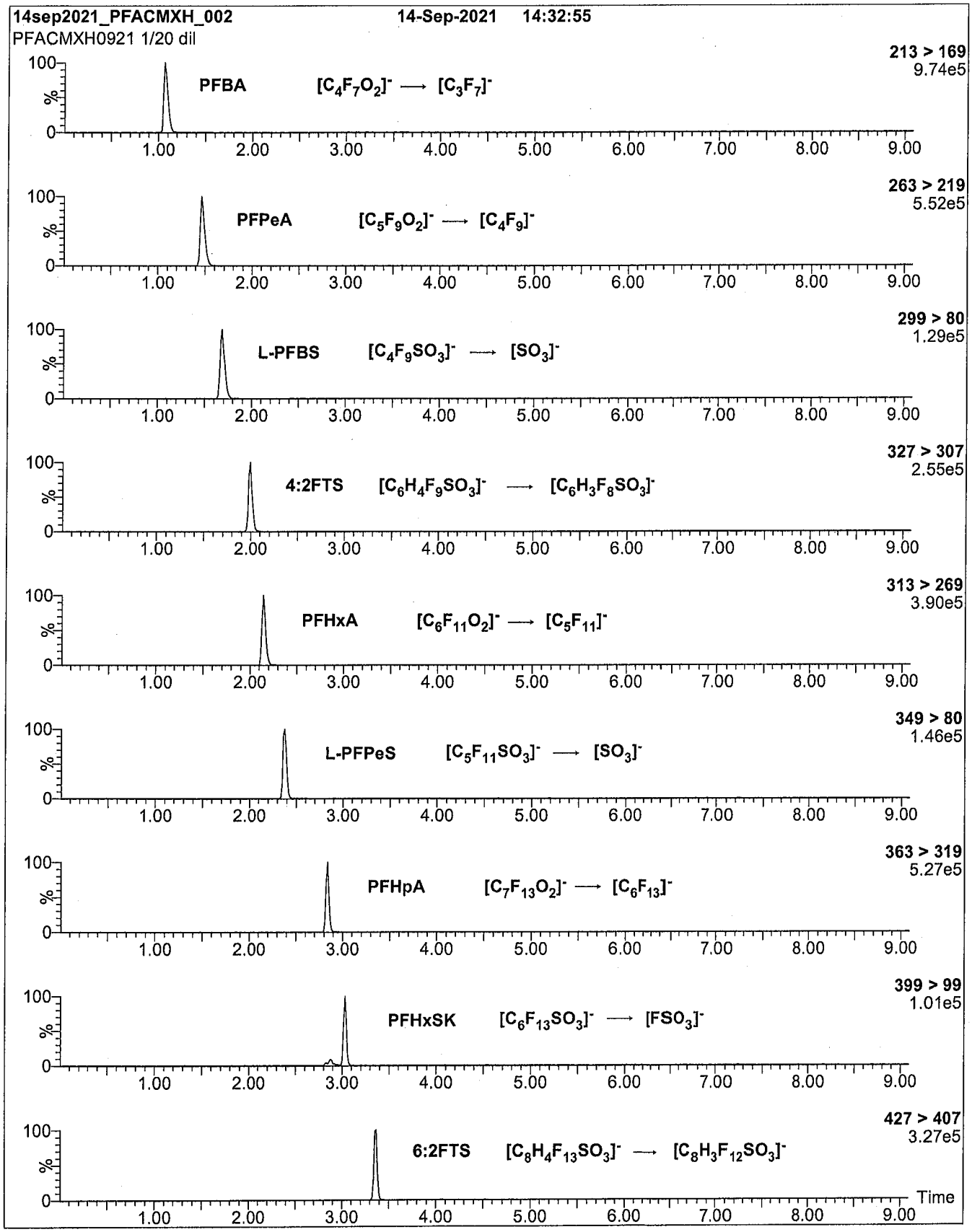


Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**

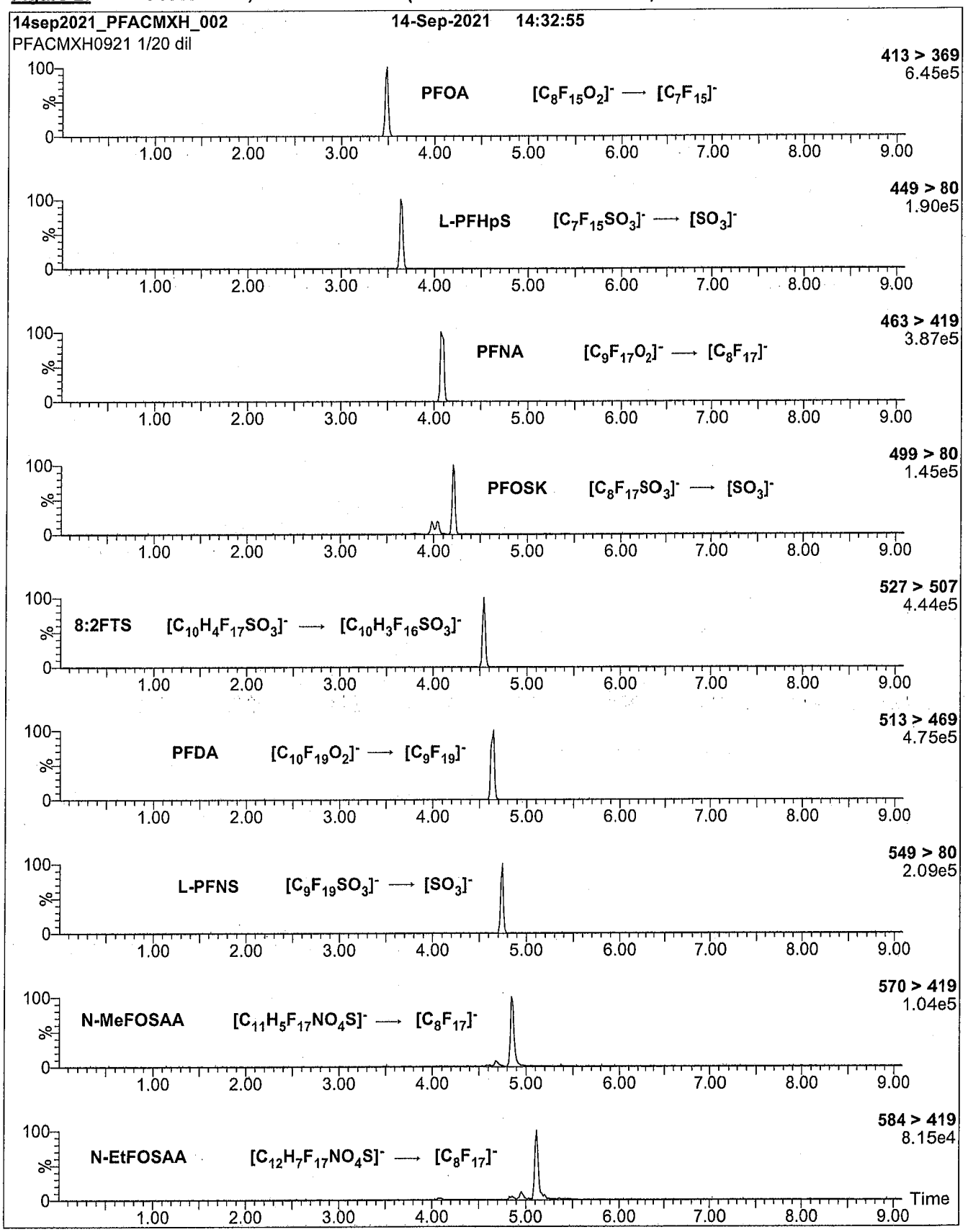
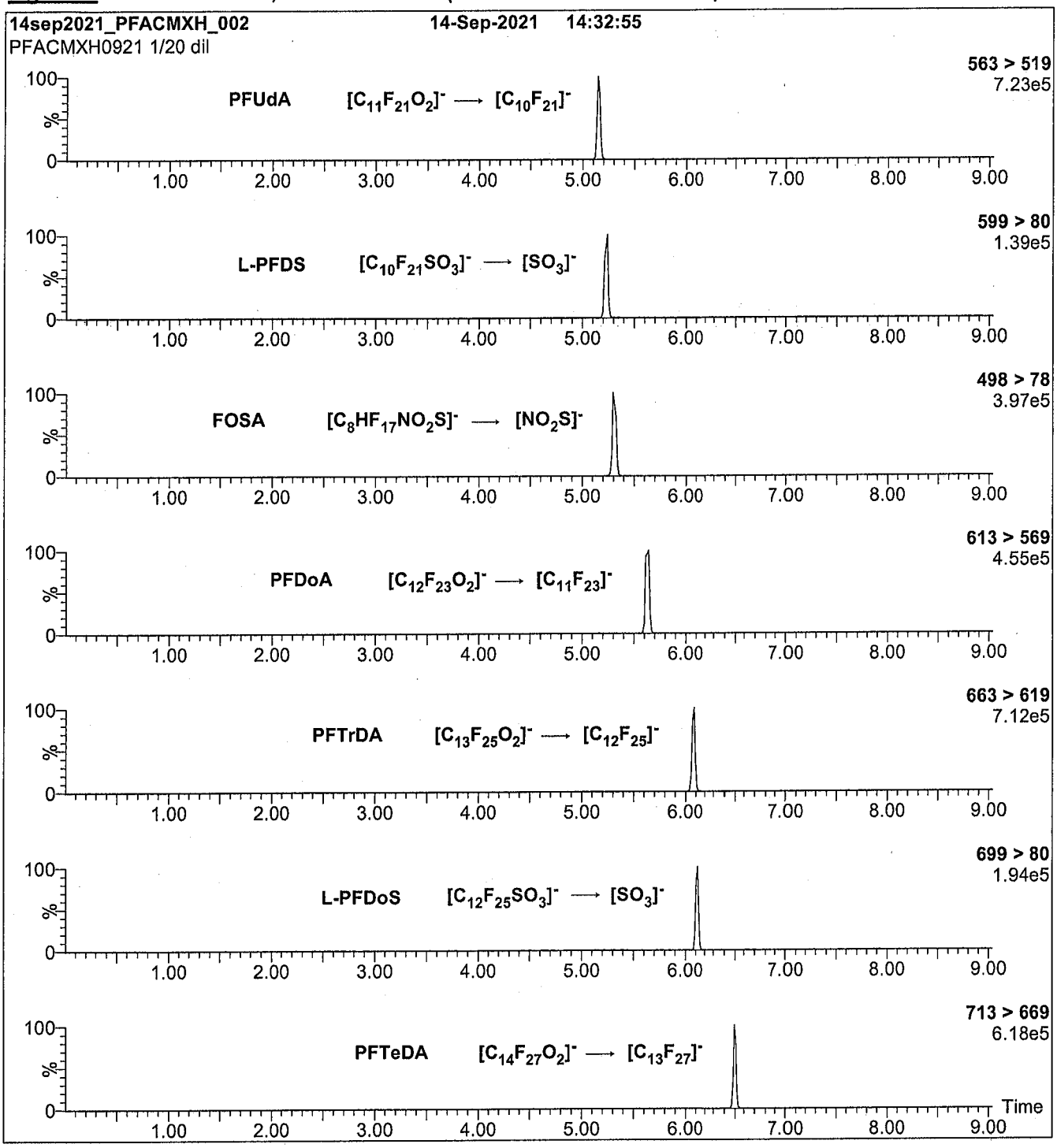


Figure 2: **PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFAC-MXH)

Mobile phase: Same as Figure 1

Flow: 300 µL/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

Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG 22F0061

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG0222
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	02/07/2022
LAST TESTED: (mm/dd/yyyy)	02/22/2022
EXPIRY DATE: (mm/dd/yyyy)	02/22/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

INTENDED USE:

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

HANDLING:

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

SYNTHESIS / CHARACTERIZATION:

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

HOMOGENEITY:

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

UNCERTAINTY:

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

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

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

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

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

TRACEABILITY:

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

EXPIRY DATE / PERIOD OF VALIDITY:

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

LIMITED WARRANTY:

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

QUALITY MANAGEMENT:

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

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

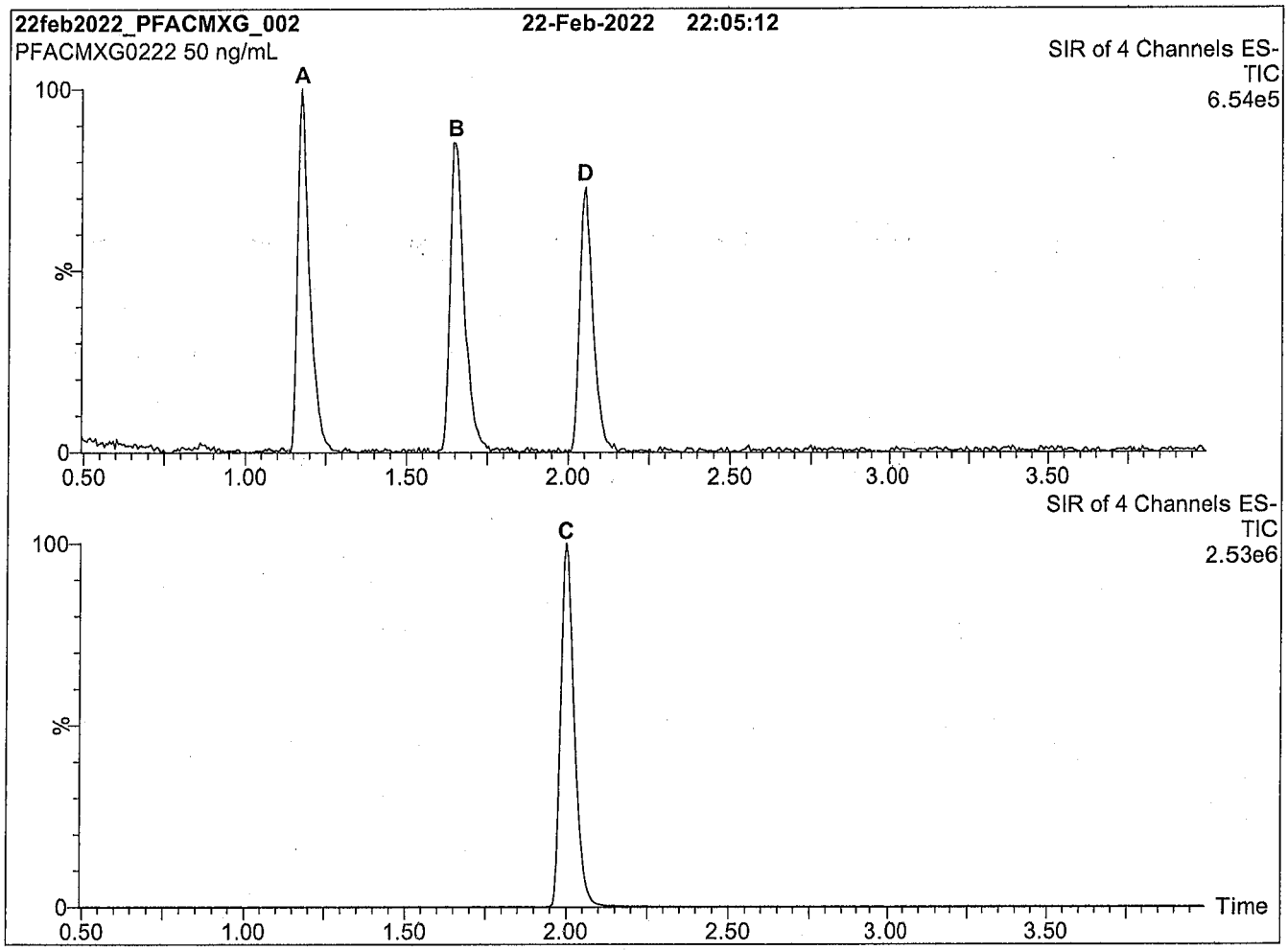
Table A: **PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
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: _____ **Date:** 03/03/2022
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **PFAC-MXG; LC/MS Data (SIR)**



Conditions for Figure 1:

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

Chromatographic Conditions:

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

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

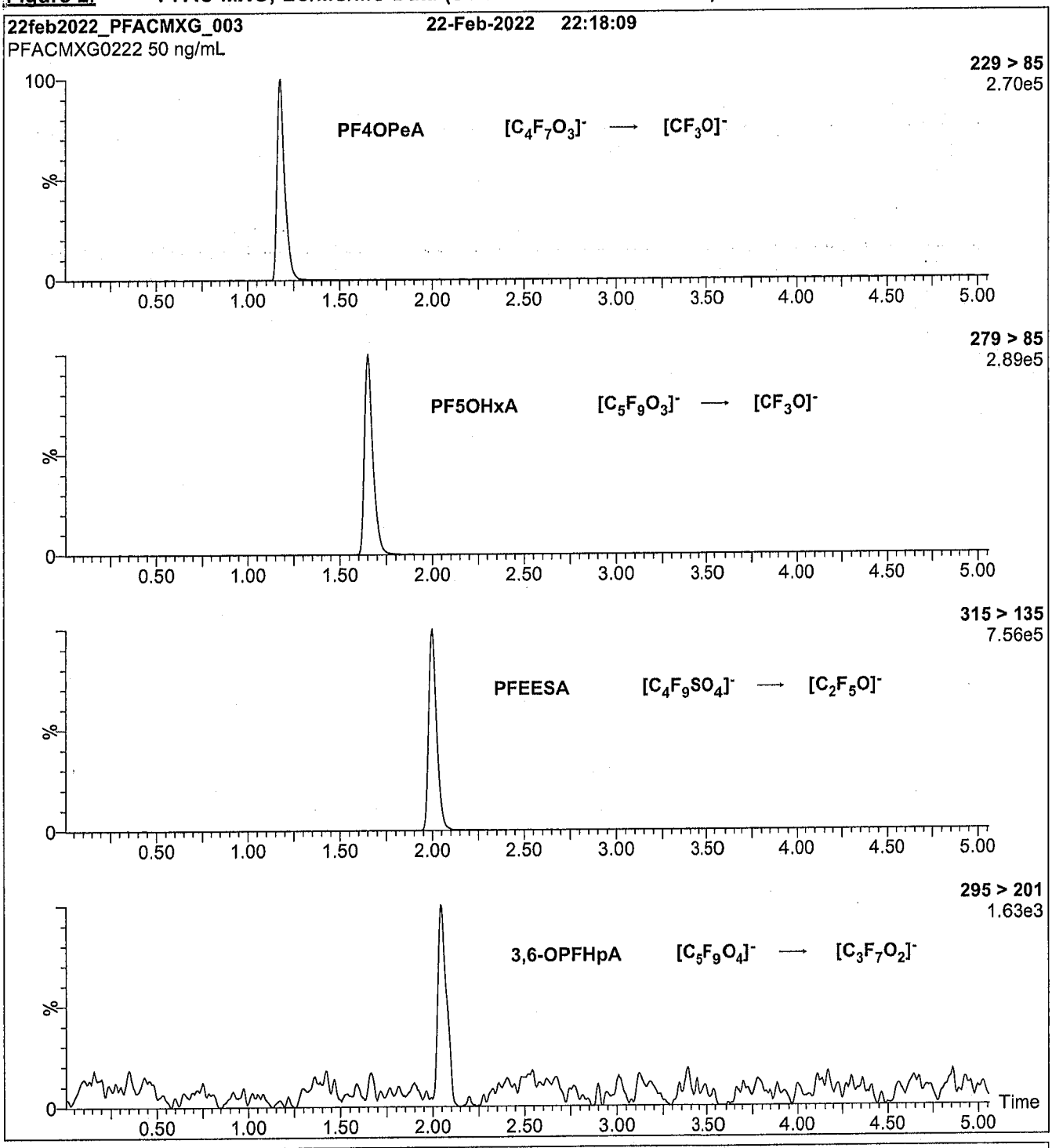
Flow: 300 µL/min

MS Parameters:

Experiment: SIR

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = variable (15-35)
Desolvation Temperature (°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 µL/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 NFHDA 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

Reviewed By

Date

Analytical Standard Record

22I0153

Description:	PFAS - MIX 1633 200ng/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	09/13/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	6	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE	22C0307	24448-09-7	0.8	ug/mL
3:3FTCA	22C0308	113507-82-7	0.8	ug/mL
5:3FTCA	22C0309	914637-49-3	0.8	ug/mL
NEtFOSE	22C0310	1691-99-2	0.8	ug/mL
7:3FTCA	22C0311	812-70-4	0.8	ug/mL
NMeFOSA	22C0312	31506-32-8	0.8	ug/mL
NEtFOSA	22C0313	4151-50-2	0.8	ug/mL
11CL-PF3OUDS	22F0058	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22F0058	756426-58-1	0.374	ug/mL
ADONA	22F0058	919005-14-4	0.378	ug/mL
HFPO-DA	22F0058	13252-13-6	0.4	ug/mL
4:2FTS	22F0059	757124-72-4	0.75	ug/mL
6:2FTS	22F0059	27619-97-2	0.76	ug/mL
8:2FTS	22F0059	39108-34-4	0.768	ug/mL
NEtFOSAA	22F0059	2991-50-6	0.2	ug/mL
NMeFOSAA	22F0059	2355-31-9	0.2	ug/mL
PFBA	22F0059	375-22-4	0.8	ug/mL
PFBS	22F0059	375-73-5	0.177	ug/mL
PFDA	22F0059	335-76-2	0.2	ug/mL
PFDOA	22F0059	307-55-1	0.2	ug/mL
PFDOS	22F0059	79780-39-5	0.194	ug/mL
PFDS	22F0059	335-77-3	0.193	ug/mL
PFHPA	22F0059	375-85-9	0.2	ug/mL
PFHPS	22F0059	375-92-8	0.191	ug/mL
PFHXA	22F0059	307-24-4	0.2	ug/mL
PFHXS	22F0059	355-46-4	0.183	ug/mL
PFNA	22F0059	375-95-1	0.2	ug/mL
PFNS	22F0059	68259-12-1	0.192	ug/mL
PFOA	22F0059	335-67-1	0.2	ug/mL
PFOS	22F0059	1763-23-1	0.186	ug/mL
PFOSA	22F0059	754-91-6	0.2	ug/mL
PFPEA	22F0059	2706-90-3	0.4	ug/mL
PFPES	22F0059	630402-22-1	0.188	ug/mL
PFTEDA	22F0059	376-06-7	0.2	ug/mL
PFTRDA	22F0059	72629-94-8	0.2	ug/mL
PFUnA	22F0059	2058-94-8	0.2	ug/mL
NFDHA	22F0061	151772-58-6	0.4	ug/mL
PFEESA	22F0061	113507-82-7	0.356	ug/mL
PFMBA	22F0061	863090-89-5	0.4	ug/mL
PFMPA	22F0061	377-73-1	0.4	ug/mL

Reviewed By

Date

Analytical Standard Record

22I0153

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22C0307	PFAS - SAS N-MeFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0308	PFAS - SAS FPrPA 50ug/mL	03/15/2022	Wellington Laboratories	FPrPA0122	02/03/2027	03/15/2022 15:59	by DAG	0.096
22C0309	PFAS - SAS FPePA 50ug/mL	03/15/2022	Wellington Laboratories	FPePA1221	01/05/2027	03/15/2022 15:59	by DAG	0.096
22C0310	PFAS - SAS NEtFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0311	PFAS - SAS FHpPA 50ug/mL	03/15/2022	Wellington Laboratories	HHpPA1020	11/12/2025	03/15/2022 16:00	by DAG	0.096
22C0312	PFAS - SAS NMeFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSA0721M	08/03/2026	03/15/2022 16:00	by DAG	0.096
22C0313	PFAS - SAS NEtFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSA0821M	08/12/2026	08/17/2022 10:49	by LYA	0.096
22F0058	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	09/15/2022 09:32	by DAG	1.2
22F0059	PFAS - MIX MXH 2ug/mL	09/09/2021	Wellington Laboratories	PFACMXH0921	09/14/2026	09/15/2022 09:33	by DAG	1.2
22F0061	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	09/15/2022 09:34	by DAG	1.2

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG0222
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	02/07/2022
LAST TESTED: (mm/dd/yyyy)	02/22/2022
EXPIRY DATE: (mm/dd/yyyy)	02/22/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

Table A: **PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
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: _____ **Date:** 03/03/2022
(mm/dd/yyyy)
B.G. Chittim, General Manager

Analytical Standard Record

22I0342

Description:	PFAS - MIX MXG 2ug/mL	Expires:	02/22/2027
Standard Type:	Other	Prepared:	02/07/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:55 by DAG
Comments:	contains NFHDA 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

Reviewed By

Date

Analytical Standard Record

22I0343

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	09/26/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:47 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL

Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0122
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/10/2022
LAST TESTED: (mm/dd/yyyy)	01/11/2022
EXPIRY DATE: (mm/dd/yyyy)	01/11/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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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
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 01/12/2022
(mm/dd/yyyy)
B.G. Chittim, General Manager

Analytical Standard Record

22I0343

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:54 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL

Reviewed By

Date

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

APPL ID:22I0334

PFAC-MXH

Native PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0822
SOLVENT(S):	Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	08/05/2022
LAST TESTED: (mm/dd/yyyy)	08/08/2022
EXPIRY DATE: (mm/dd/yyyy)	08/08/2027
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_9, C_{10} and C_{12} linear; C_6 and C_8 linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

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

DOCUMENTATION/ DATA ATTACHED:

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

ADDITIONAL INFORMATION:

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

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Table A: **PFAC-MXH; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	4000	1
Perfluoro-n-pentanoic acid	PFPeA	2000	2
Perfluoro-n-hexanoic acid	PFHxA	1000	5
Perfluoro-n-heptanoic acid	PFHpA	1000	7
Perfluoro-n-octanoic acid	PFOA	1000	11
Perfluoro-n-nonanoic acid	PFNA	1000	14
Perfluoro-n-decanoic acid	PFDA	1000	18
Perfluoro-n-undecanoic acid	PFUdA	1000	24
Perfluoro-n-dodecanoic acid	PFDoA	1000	26
Perfluoro-n-tridecanoic acid	PFTrDA	1000	27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000	29
Perfluoro-1-octanesulfonamide	FOSA	1000	23
N-methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	760	20
	N-MeFOSAA: ∑ branched isomers	240	17
N-ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	775	22
	N-EtFOSAA: ∑ branched isomers	225	21

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

[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: _____ **Date:** 08/09/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

Analytical Standard Record

22I0344

Description:	PFAS - MIX MXH 1-4ug/mL	Expires:	08/08/2027
Standard Type:	Other	Prepared:	08/05/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
4:2FTS		757124-72-4	3.75	ug/mL
6:2FTS		27619-97-2	3.8	ug/mL
8:2FTS		39108-34-4	3.84	ug/mL
NEtFOSAA		2991-50-6	1	ug/mL
NMeFOSAA		2355-31-9	1	ug/mL
PFBA		375-22-4	4	ug/mL
PFBS		375-73-5	0.887	ug/mL
PFDA		335-76-2	1	ug/mL
PFDOA		307-55-1	1	ug/mL
PFDOS		79780-39-5	0.97	ug/mL
PFDS		335-77-3	0.965	ug/mL
PFHPA		375-85-9	1	ug/mL
PFHPS		375-92-8	0.953	ug/mL
PFHXA		307-24-4	1	ug/mL
PFHXS		355-46-4	0.914	ug/mL
PFNA		375-95-1	1	ug/mL
PFNS		68259-12-1	0.962	ug/mL
PFOA		335-67-1	1	ug/mL
PFOS		1763-23-1	0.928	ug/mL
PFOSA		754-91-6	1	ug/mL
PFPEA		2706-90-3	2	ug/mL
PFPES		630402-22-1	0.941	ug/mL
PFTEDA		376-06-7	1	ug/mL
PFTRDA		72629-94-8	1	ug/mL
PFUnA		2058-94-8	1	ug/mL

Reviewed By

Date

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

Reviewed By

Date

Analytical Standard Record

22J0448

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22I0153	PFAS - MIX 1633 200ng/mL	09/13/2022	In house	x	01/11/2025	09/15/2022 09:34	by DAG	1

Analytical Standard Record

22J0552

Description:	PFAS - MIX 1633 200ng/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	10/31/2022
Solvent:	MeOH 62244	Prepared By:	Dipti Gokal
Final Volume (mls):	6	Department:	PFAS
Vials:	1	Last Edit:	10/31/2022 14:57 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NEtFOSA	21J0007	4151-50-2	0.8	ug/mL
NMeFOSE	21J0014	24448-09-7	0.8	ug/mL
3:3FTCA	21L0004	113507-82-7	0.8	ug/mL
5:3FTCA	21L0005	914637-49-3	0.8	ug/mL
NEtFOSE	21L0006	1691-99-2	0.8	ug/mL
7:3FTCA	21L0007	812-70-4	0.8	ug/mL
NMeFOSA	21L0008	31506-32-8	0.8	ug/mL
NFDHA	22I0342	151772-58-6	0.4	ug/mL
PFEESA	22I0342	113507-82-7	0.356	ug/mL
PFMBA	22I0342	863090-89-5	0.4	ug/mL
PFMPA	22I0342	377-73-1	0.4	ug/mL
11CL-PF3OUDS	22I0343	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22I0343	756426-58-1	0.374	ug/mL
ADONA	22I0343	919005-14-4	0.378	ug/mL
HFPO-DA	22I0343	13252-13-6	0.4	ug/mL
4:2FTS	22I0344	757124-72-4	0.75	ug/mL
6:2FTS	22I0344	27619-97-2	0.76	ug/mL
8:2FTS	22I0344	39108-34-4	0.768	ug/mL
NEtFOSAA	22I0344	2991-50-6	0.2	ug/mL
NMeFOSAA	22I0344	2355-31-9	0.2	ug/mL
PFBA	22I0344	375-22-4	0.8	ug/mL
PFBS	22I0344	375-73-5	0.177	ug/mL
PFDA	22I0344	335-76-2	0.2	ug/mL
PFDOA	22I0344	307-55-1	0.2	ug/mL
PFDOS	22I0344	79780-39-5	0.194	ug/mL
PFDS	22I0344	335-77-3	0.193	ug/mL
PFHPA	22I0344	375-85-9	0.2	ug/mL
PFHPS	22I0344	375-92-8	0.191	ug/mL
PFHXA	22I0344	307-24-4	0.2	ug/mL
PFHXS	22I0344	355-46-4	0.183	ug/mL
PFNA	22I0344	375-95-1	0.2	ug/mL
PFNS	22I0344	68259-12-1	0.192	ug/mL
PFOA	22I0344	335-67-1	0.2	ug/mL
PFOS	22I0344	1763-23-1	0.186	ug/mL
PFOSA	22I0344	754-91-6	0.2	ug/mL
PFPEA	22I0344	2706-90-3	0.4	ug/mL
PFPES	22I0344	630402-22-1	0.188	ug/mL
PFTEDA	22I0344	376-06-7	0.2	ug/mL
PFTRDA	22I0344	72629-94-8	0.2	ug/mL
PFUnA	22I0344	2058-94-8	0.2	ug/mL

Reviewed By

Date

Analytical Standard Record

22J0552

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
21J0007	PFAS - SAS N-EtFOSA 50ug/mL	08/12/2021	Wellington Laboratories	NEtFOSA0821M	08/12/2026	10/31/2022 14:36	by DAG	0.096
21J0014	PFAS - SAS N-MeFOSE 50ug/mL	09/22/2021	Wellington Laboratories	NMeFOSE0921M	09/23/2026	10/31/2022 14:35	by DAG	0.096
21L0004	PFAS - SAS 3:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPrPA1020	11/12/2025	10/31/2022 14:39	by DAG	0.096
21L0005	PFAS - SAS 5:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	11/11/2025	10/31/2022 14:41	by DAG	0.096
21L0006	PFAS - SAS EtFOSE 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	09/23/2026	10/31/2022 14:41	by DAG	0.096
21L0007	PFAS - SAS 7:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FHpPA1020	11/12/2025	10/31/2022 14:42	by DAG	0.096
21L0008	PFAS - SAS N-MeFOSA 50ug/mL	12/07/2021	Wellington Laboratories	NMeFOSA0721M	08/03/2026	10/31/2022 14:42	by DAG	0.096
22I0342	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	10/31/2022 14:48	by DAG	1.2
22I0343	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	10/31/2022 14:55	by DAG	1.2
22I0344	PFAS - MIX MXH 1-4ug/mL	08/05/2022	Wellington Laboratories	PFACMXH0822	08/08/2027	10/31/2022 14:56	by DAG	1.2

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0822
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/20/2022
LAST TESTED: (mm/dd/yyyy)	08/02/2022
EXPIRY DATE: (mm/dd/yyyy)	08/02/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4-C_{12}, C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4, C_6, and C_8), three mass-labelled (one ^{13}C and two ^{2}H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^{2}H) 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 ≥99%. The individual ^{2}H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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Table A: **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
Perfluoro-n-($^{13}C_4$)butanoic acid	MPFBA	2000	1
Perfluoro-n-($^{13}C_5$)pentanoic acid	M5PFPeA	1000	2
Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid	M5PFHxA	500	5
Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid	M4PFHpA	500	7
Perfluoro-n-($^{13}C_8$)octanoic acid	M8PFOA	500	10
Perfluoro-n-($^{13}C_9$)nonanoic acid	M9PFNA	250	11
Perfluoro-n-(1,2,3,4,5,6-$^{13}C_6$)decanoic acid	M6PFDA	250	14
Perfluoro-n-(1,2,3,4,5,6,7-$^{13}C_7$)undecanoic acid	M7PFUdA	250	17
Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid	MPFDoA	250	19
Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid	M2PFTeDA	250	23
Perfluoro-1-($^{13}C_8$)octanesulfonamide	M8FOSA	500	18
N-methyl-d_3-perfluoro-1-octanesulfonamide	d-N-MeFOSA	500	21
N-ethyl-d_5-perfluoro-1-octanesulfonamide	d-N-EtFOSA	500	24
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000	15
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000	16
2-(N-methyl-d_3-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d7-N-MeFOSE	5000	20
2-(N-ethyl-d_5-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d9-N-EtFOSE	5000	22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)($^{13}C_3$)propanoic acid	M3HFPO-DA	2000	6

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4-$^{13}C_3$)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3-$^{13}C_3$)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-($^{13}C_8$)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 08/02/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0822
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/20/2022
LAST TESTED: (mm/dd/yyyy)	08/02/2022
EXPIRY DATE: (mm/dd/yyyy)	08/02/2025
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4-C_{12}, C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4, C_6, and C_8), three mass-labelled (one ^{13}C and two ^{2}H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^{2}H) 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 ≥99%. The individual ^{2}H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

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

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Table A: **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
Perfluoro-n-($^{13}C_4$)butanoic acid	MPFBA	2000	1
Perfluoro-n-($^{13}C_5$)pentanoic acid	M5PFPeA	1000	2
Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid	M5PFHxA	500	5
Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid	M4PFHpA	500	7
Perfluoro-n-($^{13}C_8$)octanoic acid	M8PFOA	500	10
Perfluoro-n-($^{13}C_9$)nonanoic acid	M9PFNA	250	11
Perfluoro-n-(1,2,3,4,5,6-$^{13}C_6$)decanoic acid	M6PFDA	250	14
Perfluoro-n-(1,2,3,4,5,6,7-$^{13}C_7$)undecanoic acid	M7PFUdA	250	17
Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid	MPFDoA	250	19
Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid	M2PFTeDA	250	23
Perfluoro-1-($^{13}C_8$)octanesulfonamide	M8FOSA	500	18
N-methyl-d_3-perfluoro-1-octanesulfonamide	d-N-MeFOSA	500	21
N-ethyl-d_5-perfluoro-1-octanesulfonamide	d-N-EtFOSA	500	24
N-methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000	15
N-ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000	16
2-(N-methyl-d_3-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d7-N-MeFOSE	5000	20
2-(N-ethyl-d_5-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d9-N-EtFOSE	5000	22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)($^{13}C_3$)propanoic acid	M3HFPO-DA	2000	6

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4-$^{13}C_3$)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3-$^{13}C_3$)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-($^{13}C_8$)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 08/02/2022 (mm/dd/yyyy)

B.G. Chittim, General Manager

Analytical Standard Record

22K0502

Description:	PFAS IIS 7C 40ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	11/28/2022
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	11/28/2022 15:10 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22A0234	13C2-PFDA	0.04	ug/mL
13C2-PFHXA	22A0234	13C2-PFHxA	0.04	ug/mL
13C3-PFBA	22A0234	13C3-PFBA	0.04	ug/mL
13C4-PFOA	22A0234	13C4-PFOA	0.04	ug/mL
13C4-PFOS	22A0234	13C4-PFOS	0.04	ug/mL
13C5-PFNA	22A0234	13C5-PFNA	0.04	ug/mL
18O2-PFHXS	22A0234	18O2-PFHXS	0.04	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22A0234	PFAS IIS 7C 5ug/mL	01/20/2022	In house	*	01/20/2023	01/20/2022 15:49	by HGH	0.2

Reviewed By

Date

Analytical Standard Record

22K0503

Description:	1633- IIS Static 1ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	11/28/2022
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mls):	2	Department:	PFAS
Vials:	1	Last Edit:	11/28/2022 15:11 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22K0502	13C2-PFDA	0.001	ug/mL
13C2-PFHXA	22K0502	13C2-PFHxA	0.001	ug/mL
13C3-PFBA	22K0502	13C3-PFBA	0.001	ug/mL
13C4-PFOA	22K0502	13C4-PFOA	0.001	ug/mL
13C4-PFOS	22K0502	13C4-PFOS	0.001	ug/mL
13C5-PFNA	22K0502	13C5-PFNA	0.001	ug/mL
18O2-PFHXS	22K0502	18O2-PFHXS	0.001	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22K0502	PFAS IIS 7C 40ng/mL	11/28/2022	In house	*	01/20/2023	11/28/2022 15:10	by DAG	0.05

Reviewed By

Date

Analytical Standard Record

22L0269

Description:	PFAS - MIX 1633 10ng/mL	Expires:	06/12/2023
Standard Type:	Analyte Spike	Prepared:	12/14/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	12/14/2022 12:00 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS	22J0552	763051-92-9	0.0189	ug/mL
3:3FTCA	22J0552	113507-82-7	0.04	ug/mL
4:2FTS	22J0552	757124-72-4	0.0375	ug/mL
5:3FTCA	22J0552	914637-49-3	0.04	ug/mL
6:2FTS	22J0552	27619-97-2	0.038	ug/mL
7:3FTCA	22J0552	812-70-4	0.04	ug/mL
8:2FTS	22J0552	39108-34-4	0.0384	ug/mL
9CL-PF3ONS	22J0552	756426-58-1	0.0187	ug/mL
ADONA	22J0552	919005-14-4	0.0189	ug/mL
HFPO-DA	22J0552	13252-13-6	0.02	ug/mL
NEtFOSA	22J0552	4151-50-2	0.04	ug/mL
NEtFOSAA	22J0552	2991-50-6	0.01	ug/mL
NEtFOSE	22J0552	1691-99-2	0.04	ug/mL
NFDHA	22J0552	151772-58-6	0.02	ug/mL
NMeFOSA	22J0552	31506-32-8	0.04	ug/mL
NMeFOSAA	22J0552	2355-31-9	0.01	ug/mL
NMeFOSE	22J0552	24448-09-7	0.04	ug/mL
PFBA	22J0552	375-22-4	0.04	ug/mL
PFBS	22J0552	375-73-5	0.00885	ug/mL
PFDA	22J0552	335-76-2	0.01	ug/mL
PFDOA	22J0552	307-55-1	0.01	ug/mL
PFDOS	22J0552	79780-39-5	0.0097	ug/mL
PFDS	22J0552	335-77-3	0.00965	ug/mL
PFEESA	22J0552	113507-82-7	0.0178	ug/mL
PFHPA	22J0552	375-85-9	0.01	ug/mL
PFHPS	22J0552	375-92-8	0.00955	ug/mL
PFHXA	22J0552	307-24-4	0.01	ug/mL
PFHXS	22J0552	355-46-4	0.00915	ug/mL
PFMBA	22J0552	863090-89-5	0.02	ug/mL
PFMPA	22J0552	377-73-1	0.02	ug/mL
PFNA	22J0552	375-95-1	0.01	ug/mL
PFNS	22J0552	68259-12-1	0.0096	ug/mL
PFOA	22J0552	335-67-1	0.01	ug/mL
PFOS	22J0552	1763-23-1	0.0093	ug/mL
PFOSA	22J0552	754-91-6	0.01	ug/mL
PFPEA	22J0552	2706-90-3	0.02	ug/mL
PFPES	22J0552	630402-22-1	0.0094	ug/mL
PFTEDA	22J0552	376-06-7	0.01	ug/mL
PFTRDA	22J0552	72629-94-8	0.01	ug/mL
PFUnA	22J0552	2058-94-8	0.01	ug/mL

Reviewed By

Date

Analytical Standard Record

22L0269

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22J0552	PFAS - MIX 1633 200ng/mL	10/31/2022	In house	x	01/11/2025	10/31/2022 15:40	by DAG	0.5

Analytical Standard Record

22L0272

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	06/12/2023
Standard Type:	Surrogate Spike	Prepared:	12/14/2022
Solvent:	MeOH/62244	Prepared By:	Andonios Karas
Final Volume (mls):	10	Department:	PFAS
Vials:	3	Last Edit:	12/14/2022 13:55 by ABK
Comments:	Half the concentration of previous EIS solution used for 1633/B-15. Double the spiking volume from 100 uL to 200 uL		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS	22K0095	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22K0095	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22K0095	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22K0095	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22K0095	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22K0095	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22K0095	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22K0095	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22K0095	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22K0095	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22K0095	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22K0095	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22K0095	13C6-PFDA	0.01	ug/mL
13C7-PFUnA	22K0095	13C7-PFUDA	0.01	ug/mL
13C8-PFOA	22K0095	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22K0095	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22K0095	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22K0095	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22K0095	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22K0095	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22K0095	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22K0095	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22K0095	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSE	22K0095	D9-NETFOSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22K0095	MPFAC-HIF-ES-EIS	07/20/2022	Wellington Laboratories	MPFACHIFES0822	08/02/2025	11/04/2022 12:16	by DAG	0.4

Reviewed By

Date

Analytical Standard Record

22L0357

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	06/19/2023
Standard Type:	Surrogate Spike	Prepared:	12/21/2022
Solvent:	MeOH/62244	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	12/21/2022 10:47 by DAG
Comments:	Half the concentration of previous EIS solution used for 1633/B-15. Double the spiking volume from 100 uL to 200 uL		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS	22K0096	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22K0096	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22K0096	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22K0096	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22K0096	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22K0096	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22K0096	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22K0096	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22K0096	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22K0096	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22K0096	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22K0096	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22K0096	13C6-PFDA	0.01	ug/mL
13C7-PFUnA	22K0096	13C7-PFUDA	0.01	ug/mL
13C8-PFOA	22K0096	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22K0096	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22K0096	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22K0096	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22K0096	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22K0096	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22K0096	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22K0096	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22K0096	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSE	22K0096	D9-NETFOSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22K0096	MPFAC-HIF-ES-EIS	07/20/2022	Wellington Laboratories	MPFACHIFES0822	08/02/2025	11/04/2022 12:16	by DAG	0.4

Reviewed By

Date