



2045 Mills Road West

TEL: (250) 655-5800

Sidney, BC, Canada V8L5X2

TOLL-FREE: 1-888-373-0881

SGS AXYS Client No.: 4066

Client Address: Tetra Tech, Inc. - Pacific Guardian Ctr.
737 Bishop St., Suite 2340, Mauka Tower
Honolulu, HI, US, 96813-3201

The SGS AXYS contact for these data is Dale Robinson.

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Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law."

"The sample(s) to which the findings recorded herein (the "Findings") relate was[were] drawn and [or] provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is[are] said to be extracted."

BATCH SUMMARY

Batch ID: WG82066	Date: 23-Aug-2022
Analysis Type: Per- and Polyfluoroalkyl Substances (PFAS)	Matrix Type: Aqueous
BATCH MAKEUP	
Contract: 4066 Samples: L35976-2 SIWWTP-BIOS-1A (FA89217-1) - SPLP L35976-3 LIWWTP-BIOS-1A (FA89217-2) - SPLP L35976-4 LIWWTP-BIOS-1A (FA89217-2) - SPLP_DUP L35976-5 HIWWTP-BIOS-1 (FA89217-5) - SPLP L35976-6 KIWWTP-BIOS-1A (FA89217-6) - SPLP	Blank: WG82066-101 Reference or Spike: WG82066-102 WG82066-103 Duplicate:
Comments: <ol style="list-style-type: none"> 1. Data are considered final. 2. All samples (listed above) were filtered prior to extraction and instrumental analysis. The results reported for all samples represent the dissolved phase for all samples and were reported as the acid form for all target analytes. 3. For the laboratory procedural blank sample (SGS AXYS ID: WG82066-101), the target analytes PFHxA and PFOA were both detected above the method criteria limits. Where the same compounds were detected in another sample at a concentration less than 10 times larger, the results were flagged with a 'B'. Data are not blank corrected and should be taken into consideration during data review and interpretation. 4. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples. 5. For the OPR and low level OPR samples (SGS AXYS IDs: WG82066-102 and -103), the percent recoveries for the target analyte NFDHA were above the upper method criteria limit (130%) and were flagged with an 'N'. The same compound was not detected in any of the field samples. 6. For some samples, the percent recovery for some surrogate compounds did not meet the minimum signal to noise requirement or was below 1%. The results for both the surrogate compound and related target analyte were deemed to be not quantifiable and were flagged as 'NQ'. Where the percent recovery for a surrogate compound was below 10%, the result for the related target analytes were flagged with an 'H'. In all other cases, where the percent recovery for a surrogate compound did not meet the method criteria limit, the result was flagged with a 'V'. As the isotope dilution method of quantification produces data that is recovery corrected, these variances from method criteria were deemed to not affect the quantification of the target analytes. Percent surrogate recoveries are used as general method performance indicator only. 	

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February 2017

FQA-006 Rev. 4. 20-Sep-2013

CHAIN OF CUSTODY

2045 Mills Road West TEL: (250) 655-5800 TOLL FREE 1-888-373-0881
 Sidney, British Columbia, Canada V8L 5X2 FAX: (250) 655-5811

SGS AXYS CLIENT #: 4066

REPORT TO:			INVOICE TO:			ANALYSIS REQUESTED				
Company <u>Hawaii DOH-HEER office</u>			Company <u>Tetrattech</u>			PFAS-MLA IIO TDP-MLA III TDF-CIC SPLP				
Address <u>2385 Walmano Home Rd #100 Pearl City, HI 96782</u>			Address <u>737 Bishop St Ste 2340 Honolulu HI 96813</u>							
Contact <u>Diana Felton</u>			Contact <u>Eric Jensen</u>							
Phone <u>808-586-0963</u>			Phone <u>808-225-7084</u>							
FAX			FAX							
E-mail <u>Liana.felton@doh.hawaii.gov</u>			E-mail <u>eric.jensen@tetrattech.com</u>							
Project Name/Number: <u>HDOH-PFAS-MM/</u>			Sampler's Name:							
Signature:										
Client Sample Identification		Matrix	Sampling Date	Sampling Time	Container Type/No.	SGS AXYS Lab Sample ID (Lab use only)				
<u>SIWWTP-BIOS-1A</u>		<u>biol.d</u>	<u>8/31/21</u>	<u>9:00am</u>	<u>HDP Bag</u>					
<u>LIWWTP-BIOS-1A</u>		<u>"</u>	<u>9/2/21</u>	<u>2:00pm</u>	<u>"</u>	X	X	X	X	(1)
<u>LIWWTP-BIOS-1B</u>		<u>"</u>	<u>9/2/21</u>	<u>2:00pm</u>	<u>"</u>	X	X		X	(2)
<u>LIWWTP-BIOS-1C</u>		<u>"</u>	<u>9/2/21</u>	<u>2:00pm</u>	<u>"</u>	X				(3)
<u>HIWWTP-BIOS-1</u>		<u>"</u>	<u>9/7/21</u>	<u>1:30pm</u>	<u>"</u>	X	X		X	(4)
<u>KIWWTP-BIOS-1A</u>		<u>"</u>	<u>9/14/21</u>	<u>1:30pm</u>	<u>"</u>	X	X		X	(5)
<u>KIWWTP-BIOS-1B</u>		<u>"</u>	<u>9/14/21</u>	<u>1:30pm</u>	<u>"</u>	X				(6)
<u>KIWWTP-BIOS-1C</u>		<u>"</u>	<u>9/14/21</u>	<u>1:30pm</u>	<u>"</u>	X				(7)
										(8)
Relinquished by (Signature) <u>[Signature]</u>		Date <u>9/21/21</u>	Time <u>10:00am</u>	Received by (Signature) <u>[Signature]</u>		Courier		Waybill No.		
Relinquished by (Signature) <u>FX</u>		Date	Time	Received by (Signature) <u>[Signature]</u>		Sample Receipt				
				Date <u>9/23/21</u> Time <u>1045</u>						
Remarks <u>INITIAL ASSESSMENT SP 23.4 FRI NO ICE</u>						Temp °C		Cooler		
LABEL VERIFICATION _____						Custody Seal #				
						Seal Intact Y/N				
						Sample Tag: Y/N				



SGS North America Inc - Orlando

Chain of Custody

SGS - ORLANDO JOB #: FA8 PAGE 1 OF 1

4405 Vineland Road, Suite C-15 Orlando, FL 32811
 TEL 407-425-6700 FAX 407-425-0707
 www.sgs.com

Client / Reporting Information				Project Information				SGS - ORLANDO Quote #				SKIFF #																										
Hawaii DOH HEER Office				Project Name:				Analytical Information Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid				LAB USE ONLY																										
Address:				Street																																		
City:		State: FL		Zip:		City										State																						
Project Contact: Diane Felton				Project #																																		
808-586-0963				Fax #																																		
Sampler(s) Name(s) (Printed)				Client Purchase Order #																																		
Sampler 1:				Sampler 2:																																		
SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION			CONTAINER INFORMATION											TOP MLA 111 (raw aliquots)	PFAS MLA 110 (dried and ground aliquots)	TOF by CIC	PFAS by SPLP																			
		DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH																							
1	FA89217-1				solid	8											1	2	1	4																		
2	FA89217-2				solid	7											1	1		4																		
3	FA89217-3				solid	1											3	1																				
4	FA89217-4				solid	1											1	1																				
5	FA89217-5				solid	7											1	1		4																		
6	FA89217-6				solid	7											1	1		4																		
7	FA89217-7				solid	1											1	1																				
8	FA89217-8				solid	1											1	1																				
	Leachate Blank																																					
	Leachate Duplicate																																					
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks																														
10 Day (Business) _____ 7 Day _____ 5 Day _____ 3 Day RUSH _____ 2 Day RUSH _____ 1 Day RUSH _____ Other _____		Approved By: / Date: _____ _____		<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input type="checkbox"/> FULLT1 (EPA LEVEL 4) <input type="checkbox"/> EDD'S				MLA 111 2 x 5gr Raw aliquots (not dried) (Bottles sent for all samples) MLA 110 small jar dried and ground TOF by CIC (100gr aliquot) SPLP PFAS (2 x 500ml, 2 x 60ml)				Remaining Dried Sample sent for Archival Remaining Wet sent for spare																										
Sample Custody must be documented below each time samples change possession, including courier delivery.																																						
Relinquished by Sampler/Affiliation		Date Time:		Received By/Affiliation		Relinquished By/Affiliation		Date Time:		Received By/Affiliation		Relinquished By/Affiliation		Date Time:		Received By/Affiliation																						
1 Norman Farmer		10/11/2021		2		3		14 Oct 2021 12:00		4		5		6		7																						
5				6		7				8																												

Lab Use Only : Cooler Temperature (s) Celsius (corrected):



SGS ACCUTEST - ORLANDO

SPLP SAMPLE PREP SHEET

Analyst CP

Method: 1312SPLP

Scan as: SPLPE_MMDDYY

Therm. ID: 170614817 Corr. Factor (±°C): 0

Date / Time Tumbling Started: 10/06/21 12:36 {mm/dd/yy 24:00}

Starting Room Temp. (21-25 °C)°C: 22/22 {obs/corr}

Date / Time Tumbling Finished: 10/07/21 08:00 {mm/dd/yy 24:00}

Lo/Hi Room Temp. (21-25 °C)°C: 22/23 22/23
obs corr

Balance ID: 8341326 pH Fluid 1 (4.15-4.25): — *pH Fluid 3: — *

pH Meter ID: — pH Fluid 2 (4.95-5.05): 4.98 *

Tumbler ID T-1 RPM (28-32) 30

Tumbler ID T-2 RPM (28-32) 36

Tumbler ID — RPM (28-32) —

Sample ID	Bottle Number	Analysis** M / SO / GN	Original Matrix	Amount of Solids (g)	Volume of Fluid (ml)	Fluid Type 1 / 2 / 3	Filtration Date/Time {mm/dd/yy 24:00}	Filtrate Added (ml) If Solids <100%	Extraction Bottle #
<u>FA89217-2</u>	<u>1</u>	<u>SO</u>	<u>SO</u>	<u>100.00</u>	<u>2000</u>	<u>2</u>	<u>10/07/21/08:00</u>	<u>N/A</u>	<u>10.</u>
<u>(D)FA89217-2</u>	<u>1</u>	<u> </u>	<u> </u>	<u>100.00</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>11.</u>
<u>-5</u>	<u>1</u>	<u> </u>	<u> </u>	<u>100.00</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>12.</u>
<u>-6</u>	<u>1</u>	<u> </u>	<u> </u>	<u>100.00</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>13.</u>
<u>-1</u>	<u>1</u>	<u> </u>	<u> </u>	<u>100.00</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>14.</u>
<u>LB</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>9.</u>

CP 10/06/21

* Fluid pH must be checked with each use. Fluid is unbuffered and the exact pH may not be attainable. ** M = Metals, SO = Semivolatile Organics, GN = Cyanide or Nutrients

Fluid 1 Lot #: —

Fluid 2 Lot #: 4325

Fluid 3 Lot #: N/A DI Water

Filter Lot #: 400174

Relinquished By: [Signature]

Date: 10/7/21

Accepted By: [Signature]

Date: 10/7/21

L35976

Client ID	Axys ID	
SPLP BLANK	L35976-1	
SIWWTP-BIOS-1A (FA89217-1) - SPLP	L35976-2	
SIWWTP-BIOS-1A (FA89217-2) - SPLP	L35976-3	LIWWTP-BIOS-1A (FA89217-2) - SPLP
SIWWTP-BIOS-1A (FA89217-2) - SPLP_DUP	L35976-4	LIWWTP-BIOS-1A (FA89217-2) - SPLP_DUP
SIWWTP-BIOS-1A (FA89217-5) - SPLP	L35976-5	HIWWTP-BIOS-1 (FA89217-5) - SPLP
SIWWTP-BIOS-1A (FA89217-6) - SPLP	L35976-6	KIWWTP-BIOS-1A (FA89217-6) - SPLP

(IDs corrected by DPR 23-Dec-21)

12:00

14-Oct-2021

Received by: 

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
SIWWTP-BIOS-1A (FA89217-1) -
SPLP
Sample Collection:
07-Oct-2021 08:00

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)

Contract No.: 4066

Lab Sample I.D.:

L35976-2 R

Matrix: AQUEOUS

Sample Size: 0.493 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 22:39:00

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 22

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng/L

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	RATIO	RRT
PFBA	H	18.9	3.49 (S)		1.006
PFPeA		21.9	0.812 (Q)		1.001
PFHxA		34.1	0.582 (S)	5.08	1.000
PFHpA		2.70	0.406 (Q)	2.24	1.001
PFOA	B	6.83	0.406 (Q)	1.90	
PFNA	J	1.49	0.406 (Q)	3.09	
PFDA	J	1.05	0.406 (Q)	3.81	1.000
PFUnA	U		0.406 (Q)		
PFDoA	U		0.325 (Q)		
PFTTrDA	U		0.406 (Q)		
PFTeDA	U		0.406 (Q)		
PFBS	U		0.743 (S)		
PFPeS	R	5.18	0.716 (S)	10.9	0.878
PFHxS	R	2.70	0.570 (S)	46.6	
PFHpS	U		0.531 (S)		
PFOS		10.9	0.406 (Q)	2.72	
PFNS	U		0.406 (Q)		
PFDS	U		0.406 (Q)		
PFDoS	U		0.406 (Q)		
4:2 FTS	NQ				
6:2 FTS		35.7	1.46 (Q)	0.42	1.000
8:2 FTS	U		1.38 (Q)		
PFOSA	J	0.438	0.406 (Q)		
N-MeFOSA	U		0.406 (Q)		
N-EtFOSA	U		1.14 (Q)		
MeFOSAA	U		0.406 (Q)		
EtFOSAA	U		0.406 (Q)		
N-MeFOSE	U		4.06 (Q)		
N-EtFOSE	U		4.06 (Q)		
HFPO-DA	U		1.62 (Q)		
ADONA	U		1.62 (Q)		
9CI-PF3ONS	U		1.63 (Q)		
11CI-PF3OUdS	U		1.63 (Q)		
3:3 FTCA	U		1.68 (S)		
5:3 FTCA		419	10.2 (Q)	1.23	1.050
7:3 FTCA	J	14.6	10.2 (Q)	0.57	1.363
PFEESA	U		0.406 (Q)		
PFMPA	U		0.812 (Q)		

PFMBA	U	0.406 (Q)
NFDHA	U	3.56 (S)

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; R = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in the associated blank and concentration in sample is less than 10X the concentration in the associated blank; J = concentration less than limit of quantification; H = concentration is estimated; NQ = data not quantifiable.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.
SIWWTP-BIOS-1A (FA89217-1) -
SPLP
Sample Collection:
07-Oct-2021 08:00

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)

Contract No.: 4066

Lab Sample I.D.:

L35976-2 R

Matrix: AQUEOUS

Sample Size: 0.493 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 22:39:00

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 22

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng absolute

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	RATIO	RRT
13C4-PFBA	V	40.0	1.09	2.73		0.997
13C5-PFPeA	V	20.0	2.47	12.3		0.877
13C5-PFHxA	V	10.0	3.67	36.7	20.4	1.000
13C4-PFHpA		10.0	6.48	64.8		0.888
13C8-PFOA		10.0	8.12	81.2		1.000
13C9-PFNA		5.00	4.19	83.9		1.000
13C6-PFDA		5.00	4.03	80.6		1.000
13C7-PFUnA		5.00	3.64	72.8		1.041
13C2-PFDoA		5.00	2.81	56.2		1.073
13C2-PFTeDA	V	5.00	1.22	24.4		1.159
13C3-PFBS		10.0	7.71	77.0	2.96	0.792
13C3-PFHxS		10.0	8.76	87.5	2.29	1.000
13C8-PFOS		10.1	8.35	83.0	2.21	1.000
13C2-4:2 FTS	NQ					
13C2-6:2 FTS		20.0	14.5	72.4	1.93	1.001
13C2-8:2 FTS		20.0	12.1	60.6	3.19	1.270
13C8-PFOA		10.0	9.09	90.9		1.139
D3-N-MeFOSA		10.0	5.65	56.5		1.317
D5-N-EtFOSA		10.0	4.80	48.0		1.351
D3-MeFOSAA	V	20.0	7.10	35.5		1.307
D5-EtFOSAA	V	20.0	8.97	44.8		1.329
d7-NMe-FOSE		100	52.8	52.6		1.300
d9-NEt-FOSE	V	100	47.9	47.8		1.337
13C3-HFPO-DA	V	40.0	15.5	38.6	2.92	1.030

(1) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits; NQ = data not quantifiable.

(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
LIWWTP-BIOS-1A (FA89217-2) -
SPLP
Sample Collection:
07-Oct-2021 08:00

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)

Contract No.: 4066

Lab Sample I.D.:

L35976-3 R

Matrix: AQUEOUS

Sample Size:

0.485 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date:

11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID:

LCMS/MS

Analysis Date: 10-Aug-2022 Time: 22:52:05

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC2L_336 S: 23

Injection Volume (uL): 2

Blank Data Filename:

FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC2L_336 S: 15

Concentration Units: ng/L

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	RATIO	RRT
PFBA	H	29.2	3.95 (S)		1.006
PFPeA		25.0	1.34 (S)		1.000
PFHxA		152	0.855 (S)	4.88	1.000
PFHpA		7.53	0.412 (Q)	2.23	1.000
PFOA		28.9	0.412 (Q)	2.04	
PFNA		1.74	0.412 (Q)	3.02	
PFDA		3.59	0.412 (Q)	3.20	1.000
PFUnA	U		0.412 (Q)		
PFDoA	J	0.731	0.330 (Q)	9.06	1.000
PFTTrDA	U		0.412 (Q)		
PFTeDA	U		0.814 (S)		
PFBS		19.8	0.772 (S)	2.79	1.000
PFPeS	U		0.453 (S)		
PFHxS		2.67	0.412 (Q)	2.14	
PFHpS	U		0.412 (Q)		
PFOS		17.5	0.412 (Q)	2.78	
PFNS	U		0.412 (Q)		
PFDS	U		0.412 (Q)		
PFDoS	U		0.412 (Q)		
4:2 FTS	U		1.65 (Q)		
6:2 FTS		78.5	1.49 (Q)	0.44	1.000
8:2 FTS	U		1.40 (Q)		
PFOSA	J	0.541	0.412 (Q)		
N-MeFOSA	U		0.412 (Q)		
N-EtFOSA	U		1.15 (Q)		
MeFOSAA		1.88	0.412 (Q)	2.03	
EtFOSAA	J	1.12	0.412 (Q)	1.11	
N-MeFOSE	U		4.12 (Q)		
N-EtFOSE	U		4.12 (Q)		
HFPO-DA	U		1.65 (Q)		
ADONA	U		1.65 (Q)		
9CI-PF3ONS	U		1.65 (Q)		
11CI-PF3OUdS	U		1.65 (Q)		
3:3 FTCA	U		1.65 (Q)		
5:3 FTCA		1230	10.3 (Q)	1.29	1.051
7:3 FTCA		202	10.3 (Q)	0.70	1.363
PFEESA	U		0.412 (Q)		
PFMPA	U		0.825 (Q)		

PFMBA	U	0.412 (Q)
NFDHA	U	2.41 (S)

- (1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; J = concentration less than limit of quantification; H = concentration is estimated.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 23-Aug-2022 07:05:48; Application: XMLTransformer-1.18.38; Report Filename: PFC_FC_LC_PFAS_L35976-3_Form1A_FC2L_336S23_SJ3107371.html; Workgroup: WG82066; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.
LIWWTP-BIOS-1A (FA89217-2) -
SPLP
Sample Collection:
07-Oct-2021 08:00

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)
L35976-3 R

Contract No.: 4066

Lab Sample I.D.:

Matrix: AQUEOUS

Sample Size: 0.485 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 22:52:05

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 23

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng absolute

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	RATIO	RRT
13C4-PFBA	V	40.0	1.14	2.85		0.997
13C5-PFPeA	V	20.0	2.47	12.3		0.877
13C5-PFHxA		10.0	5.10	51.0	20.4	1.000
13C4-PFHpA		10.0	7.23	72.3		0.886
13C8-PFOA		10.0	8.68	86.8		1.000
13C9-PFNA		5.00	4.26	85.2		1.000
13C6-PFDA		5.00	4.43	88.6		1.000
13C7-PFUnA		5.00	3.18	63.6		1.040
13C2-PFDoA	V	5.00	1.43	28.6		1.071
13C2-PFTeDA	V	5.00	0.605	12.1		1.159
13C3-PFBS		10.0	9.07	90.5	3.20	0.790
13C3-PFHxS		10.0	8.78	87.7	2.24	1.000
13C8-PFOS		10.1	8.61	85.6	2.25	1.000
13C2-4:2 FTS	V	20.2	3.31	16.4	1.93	0.833
13C2-6:2 FTS		20.0	16.8	84.1	1.85	1.001
13C2-8:2 FTS		20.0	12.9	64.4	3.10	1.268
13C8-PFOA		10.0	8.27	82.7		1.138
D3-N-MeFOSA	V	10.0	4.13	41.3		1.315
D5-N-EtFOSA		10.0	4.37	43.7		1.350
D3-MeFOSAA	V	20.0	7.22	36.1		1.306
D5-EtFOSAA	V	20.0	8.80	44.0		1.326
d7-NMe-FOSE	V	100	32.0	31.9		1.300
d9-NEt-FOSE	V	100	26.7	26.6		1.334
13C3-HFPO-DA		40.0	20.2	50.6	2.84	1.030

(1) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.

(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
LIWWTP-BIOS-1A (FA89217-2) -
SPLP_DUP
Sample Collection:
07-Oct-2021 08:00

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)
L35976-4 R

Contract No.: 4066

Lab Sample I.D.:

Matrix: AQUEOUS

Sample Size: 0.494 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 23:05:10

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 24

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng/L

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	RATIO	RRT
PFBA	H	30.7	4.24 (S)		1.006
PFPeA	H	22.6	1.19 (S)		1.001
PFHxA		180	0.785 (S)	4.89	0.999
PFHpA		7.96	0.405 (Q)	2.38	1.000
PFOA		34.0	0.405 (Q)	2.06	
PFNA		2.32	0.405 (Q)	3.29	
PFDA		6.04	0.405 (Q)	3.07	1.000
PFUnA	J	0.677	0.405 (Q)	5.83	1.000
PFDoA	R J	1.13	0.324 (Q)	13.8	1.000
PFTTrDA	R J	1.45	0.405 (Q)	6.82	0.959
PFTeDA	U		0.932 (S)		
PFBS		22.5	0.405 (Q)	2.87	1.000
PFPeS	U		0.410 (S)		
PFHxS		3.00	0.405 (Q)	2.48	
PFHpS	U		0.405 (Q)		
PFOS		34.6	0.405 (Q)	2.50	
PFNS	U		0.405 (Q)		
PFDS	U		0.405 (Q)		
PFDoS	U		0.405 (Q)		
4:2 FTS	NQ				
6:2 FTS		87.9	1.46 (Q)	0.44	1.000
8:2 FTS	U		1.38 (Q)		
PFOSA	J	0.990	0.405 (Q)		
N-MeFOSA	U		0.405 (Q)		
N-EtFOSA	U		1.13 (Q)		
MeFOSAA		4.36	0.405 (Q)	2.13	
EtFOSAA		2.29	0.405 (Q)	1.20	
N-MeFOSE	U		4.05 (Q)		
N-EtFOSE	U		4.05 (Q)		
HFPO-DA	U		1.62 (Q)		
ADONA	U		1.62 (Q)		
9CI-PF3ONS	U		1.62 (Q)		
11CI-PF3OUdS	U		1.62 (Q)		
3:3 FTCA	U H		1.62 (Q)		
5:3 FTCA		1650	10.1 (Q)	1.32	1.051
7:3 FTCA		412	10.1 (Q)	0.68	1.363
PFEESA	U		0.405 (Q)		
PFMPA	U H		0.809 (Q)		

PFMBA
NFDHA

U H
U

0.405 (Q)
2.83 (S)

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; R = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than limit of quantification; H = concentration is estimated; NQ = data not quantifiable.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.
LIWWTP-BIOS-1A (FA89217-2) -
SPLP_DUP
Sample Collection:
07-Oct-2021 08:00

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)

Contract No.: 4066

Lab Sample I.D.:

L35976-4 R

Matrix: AQUEOUS

Sample Size: 0.494 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 23:05:10

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 24

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng absolute

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	RATIO	RRT
13C4-PFBA	V	40.0	0.901	2.25		0.997
13C5-PFPeA	V	20.0	1.97	9.84		0.875
13C5-PFHxA	V	10.0	3.71	37.1	24.0	1.000
13C4-PFHpA		10.0	6.95	69.5		0.887
13C8-PFOA		10.0	8.61	86.1		1.000
13C9-PFNA		5.00	4.40	88.0		1.000
13C6-PFDA		5.00	4.25	85.0		0.999
13C7-PFUnA		5.00	3.01	60.2		1.040
13C2-PFDoA	V	5.00	1.34	26.8		1.070
13C2-PFTeDA	V	5.00	0.524	10.5		1.159
13C3-PFBS		10.0	8.90	88.8	3.38	0.791
13C3-PFHxS		10.0	9.31	92.9	2.37	1.000
13C8-PFOS		10.1	8.47	84.2	2.19	1.000
13C2-4:2 FTS	NQ					
13C2-6:2 FTS		20.0	16.3	81.4	1.95	1.002
13C2-8:2 FTS		20.0	13.1	65.5	3.18	1.269
13C8-PFOA		10.0	8.51	85.1		1.138
D3-N-MeFOSA	V	10.0	3.77	37.7		1.316
D5-N-EtFOSA	V	10.0	3.51	35.1		1.350
D3-MeFOSAA	V	20.0	6.34	31.7		1.306
D5-EtFOSAA	V	20.0	7.67	38.4		1.328
d7-NMe-FOSE	V	100	20.3	20.2		1.300
d9-NEt-FOSE	V	100	16.3	16.3		1.337
13C3-HFPO-DA	V	40.0	15.9	39.7	2.91	1.030

(1) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits; NQ = data not quantifiable.

(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
HIWWTP-BIOS-1 (FA89217-5) -
SPLP
Sample Collection:
07-Oct-2021 08:00

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)
L35976-5 R

Contract No.: 4066

Lab Sample I.D.:

Matrix: AQUEOUS

Sample Size: 0.472 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 23:18:16

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 25

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng/L

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	RATIO	RRT
PFBA		6.97	1.69 (Q)		1.003
PFPeA		8.59	0.847 (Q)		1.000
PFHxA		25.9	0.423 (Q)	4.87	1.000
PFHpA	J	1.01	0.423 (Q)	1.70	1.000
PFOA	B	6.07	0.423 (Q)	2.14	
PFNA	J	1.01	0.423 (Q)	2.79	
PFDA	J	1.48	0.423 (Q)	3.09	1.000
PFUnA	U		0.423 (Q)		
PFDoA	R J	0.441	0.339 (Q)	24.2	1.000
PFTTrDA	R J	0.752	0.423 (Q)	17.6	0.958
PFTeDA	U		0.480 (S)		
PFBS	R	4.18	0.423 (Q)	8.55	0.997
PFPeS	U		1.97 (S)		
PFHxS	U		0.530 (S)		
PFHpS	U		0.423 (Q)		
PFOS		8.07	0.423 (Q)	2.76	
PFNS	U		0.423 (Q)		
PFDS	U		0.423 (Q)		
PFDoS	U		0.423 (Q)		
4:2 FTS	U		1.69 (Q)		
6:2 FTS	U		1.53 (Q)		
8:2 FTS	U		1.44 (Q)		
PFOSA	U		0.423 (Q)		
N-MeFOSA	U		0.423 (Q)		
N-EtFOSA	U		1.19 (Q)		
MeFOSAA	J	1.17	0.423 (Q)	1.35	
EtFOSAA	U		0.423 (Q)		
N-MeFOSE	U		4.23 (Q)		
N-EtFOSE	U		4.23 (Q)		
HFPO-DA	U		1.69 (Q)		
ADONA	U		1.69 (Q)		
9CI-PF3ONS	U		1.70 (Q)		
11CI-PF3OUdS	U		1.70 (Q)		
3:3 FTCA	U		1.69 (Q)		
5:3 FTCA		435	10.6 (Q)	1.32	1.051
7:3 FTCA		63.3	10.6 (Q)	0.69	1.364
PFEESA	U		0.423 (Q)		
PFMPA	U		0.847 (Q)		

PFMBA	U	0.423 (Q)
NFDHA	U	0.847 (Q)

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; R = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; B = analyte found in the associated blank and concentration in sample is less than 10X the concentration in the associated blank; J = concentration less than limit of quantification.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
HIWWTP-BIOS-1 (FA89217-5) -
SPLP
Sample Collection:
07-Oct-2021 08:00

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)
L35976-5 R

Contract No.: 4066

Lab Sample I.D.:

Matrix: AQUEOUS

Sample Size: 0.472 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 23:18:16

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 25

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng absolute

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	RATIO	RRT
13C4-PFBA	V	40.0	5.15	12.9		1.000
13C5-PFPeA		20.0	12.1	60.3		0.877
13C5-PFHxA		10.0	7.84	78.4	21.2	1.000
13C4-PFHpA		10.0	7.74	77.4		0.886
13C8-PFOA		10.0	8.05	80.5		0.999
13C9-PFNA		5.00	4.19	83.9		1.000
13C6-PFDA		5.00	3.94	78.8		1.000
13C7-PFUnA		5.00	3.37	67.4		1.041
13C2-PFDoA		5.00	2.70	54.0		1.073
13C2-PFTeDA	V	5.00	1.15	22.9		1.159
13C3-PFBS		10.0	8.00	79.9	2.74	0.790
13C3-PFHxS		10.0	8.54	85.2	2.41	1.001
13C8-PFOS		10.1	8.19	81.4	2.08	1.000
13C2-4:2 FTS		20.2	13.5	66.9	1.90	0.834
13C2-6:2 FTS		20.0	15.4	77.3	2.07	1.002
13C2-8:2 FTS		20.0	11.1	55.6	3.25	1.270
13C8-PFOA		10.0	7.40	74.0		1.138
D3-N-MeFOSA		10.0	5.00	50.0		1.315
D5-N-EtFOSA		10.0	4.62	46.2		1.349
D3-MeFOSAA	V	20.0	6.01	30.0		1.307
D5-EtFOSAA	V	20.0	8.25	41.3		1.330
d7-NMe-FOSE	V	100	49.3	49.1		1.300
d9-NEt-FOSE	V	100	38.6	38.6		1.334
13C3-HFPO-DA		40.0	30.4	76.0	2.86	1.030

(1) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.

(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
KIWWTP-BIOS-1A (FA89217-6) -
SPLP
Sample Collection:
07-Oct-2021 08:00

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)
L35976-6 R

Contract No.: 4066

Lab Sample I.D.:

Matrix: AQUEOUS

Sample Size: 0.492 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 23:31:21

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 26

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng/L

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	RATIO	RRT
PFBA	H	21.3	3.98 (S)		1.003
PFPeA		84.6	0.813 (Q)		1.001
PFHxA		75.5	0.556 (S)	4.94	1.000
PFHpA		10.8	0.407 (Q)	3.05	1.000
PFOA		65.3	0.407 (Q)	2.02	
PFNA		3.46	0.407 (Q)	3.31	
PFDA		20.9	0.407 (Q)	3.03	1.000
PFUnA	J	0.427	0.407 (Q)	4.36	1.000
PFDoA		1.38	0.325 (Q)	11.3	0.999
PFTTrDA	U		0.407 (Q)		
PFTeDA	U		1.77 (S)		
PFBS		24.7	0.407 (Q)	2.60	1.000
PFPeS	U		0.409 (Q)		
PFHxS	J	1.07	0.407 (Q)	2.41	
PFHpS	U		0.407 (Q)		
PFOS		15.5	0.407 (Q)	2.68	
PFNS	U		0.407 (Q)		
PFDS	U		0.407 (Q)		
PFDoS	U		0.407 (Q)		
4:2 FTS	U		1.63 (Q)		
6:2 FTS	J	1.58	1.47 (Q)	0.46	0.999
8:2 FTS	U		1.38 (Q)		
PFOSA	U		0.407 (Q)		
N-MeFOSA	U		0.407 (Q)		
N-EtFOSA	U		1.14 (Q)		
MeFOSAA		1.69	0.407 (Q)	2.78	
EtFOSAA	J	0.684	0.407 (Q)	1.30	
N-MeFOSE	U		4.07 (Q)		
N-EtFOSE	U		4.07 (Q)		
HFPO-DA	U		1.63 (Q)		
ADONA	U		1.63 (Q)		
9CI-PF3ONS	U		1.63 (Q)		
11CI-PF3OUdS	U		1.63 (Q)		
3:3 FTCA	U		1.63 (Q)		
5:3 FTCA		656	10.2 (Q)	1.29	1.050
7:3 FTCA		173	10.2 (Q)	0.65	1.363
PFEESA	U		0.407 (Q)		
PFMPA	U		0.813 (Q)		

PFMBA	U	0.407 (Q)
NFDHA	U	3.76 (S)

- (1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; J = concentration less than limit of quantification; H = concentration is estimated.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 23-Aug-2022 07:05:48; Application: XMLTransformer-1.18.38; Report Filename: PFC_FC_LC_PFAS_L35976-6_Form1A_FC2L_336S26_SJ3107374.html; Workgroup: WG82066; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.
KIWWTP-BIOS-1A (FA89217-6) -
SPLP
Sample Collection:
07-Oct-2021 08:00

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

HDOH - PFAS IN MULTIMEDIA
(TO-17403)
L35976-6 R

Contract No.: 4066

Lab Sample I.D.:

Matrix: AQUEOUS

Sample Size: 0.492 L

Sample Receipt Date: 14-Oct-2021

Initial Calibration Date: 11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022 Time: 23:31:21

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC2L_336 S: 26

Injection Volume (uL): 2

Blank Data Filename: FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC2L_336 S: 15

Concentration Units: ng absolute

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	RATIO	RRT
13C4-PFBA	V	40.0	1.60	3.99		0.997
13C5-PFPeA	V	20.0	4.50	22.5		0.877
13C5-PFHxA		10.0	7.06	70.6	23.1	1.000
13C4-PFHpA		10.0	7.80	78.0		0.886
13C8-PFOA		10.0	8.59	85.9		1.000
13C9-PFNA		5.00	4.39	87.7		1.000
13C6-PFDA		5.00	4.04	80.8		0.999
13C7-PFUnA		5.00	3.23	64.7		1.040
13C2-PFDoA	V	5.00	2.03	40.7		1.072
13C2-PFTeDA	V	5.00	0.781	15.6		1.158
13C3-PFBS		10.0	7.37	73.6	2.70	0.791
13C3-PFHxS		10.0	8.94	89.3	2.48	1.000
13C8-PFOS		10.1	8.34	82.9	2.08	1.000
13C2-4:2 FTS	V	20.2	7.74	38.4	1.73	0.834
13C2-6:2 FTS		20.0	16.1	80.5	2.01	1.002
13C2-8:2 FTS		20.0	24.5	122	3.01	1.269
13C8-PFOA		10.0	7.89	78.9		1.138
D3-N-MeFOSA		10.0	4.59	45.9		1.314
D5-N-EtFOSA		10.0	4.20	42.0		1.348
D3-MeFOSAA		20.0	13.0	64.8		1.307
D5-EtFOSAA		20.0	13.8	68.9		1.329
d7-NMe-FOSE	V	100	23.4	23.3		1.299
d9-NEt-FOSE	V	100	29.0	28.9		1.333
13C3-HFPO-DA		40.0	32.1	80.3	2.85	1.030

(1) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.

(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

CLIENT SAMPLE NO.

Lab Blank

Sample Collection:

N/A

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

N/A

Contract No.: 4066

Lab Sample I.D.:

WG82066-101

Matrix: AQUEOUS

Sample Size:

0.500 L

Sample Receipt Date: N/A

Initial Calibration Date:

11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID:

LCMS/MS

Analysis Date: 10-Aug-2022 Time: 22:25:55

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC2L_336 S: 21

Injection Volume (uL): 2

Blank Data Filename:

FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC2L_336 S: 15

Concentration Units: ng/L

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

COMPOUND	LAB FLAG ¹	CONC. FOUND	REPORTING LIMIT (RL) ²	RATIO	RRT
PFBA	U		1.60 (Q)		
PFPeA	U		0.800 (Q)		
PFHxA		2.22	0.400 (Q)	4.73	1.000
PFHpA	U		0.400 (Q)		
PFOA	J	1.06	0.400 (Q)	2.05	
PFNA	U		0.400 (Q)		
PFDA	U		0.400 (Q)		
PFUnA	U		0.400 (Q)		
PFDoA	U		0.320 (Q)		
PFTTrDA	U		0.400 (Q)		
PFTeDA	U		0.400 (Q)		
PFBS	U		0.400 (Q)		
PFPeS	U		0.402 (Q)		
PFHxS	U		0.400 (Q)		
PFHpS	U		0.400 (Q)		
PFOS	U		0.400 (Q)		
PFNS	U		0.400 (Q)		
PFDS	U		0.400 (Q)		
PFDoS	U		0.400 (Q)		
4:2 FTS	U		1.60 (Q)		
6:2 FTS	U		1.44 (Q)		
8:2 FTS	U		1.36 (Q)		
PFOSA	U		0.400 (Q)		
N-MeFOSA	U		0.400 (Q)		
N-EtFOSA	U		1.12 (Q)		
MeFOSAA	U		0.400 (Q)		
EtFOSAA	U		0.400 (Q)		
N-MeFOSE	U		4.00 (Q)		
N-EtFOSE	U		4.00 (Q)		
HFPO-DA	U		1.60 (Q)		
ADONA	U		1.60 (Q)		
9Cl-PF3ONS	U		1.60 (Q)		
11Cl-PF3OUdS	U		1.60 (Q)		
3:3 FTCA	U		1.60 (Q)		
5:3 FTCA	U		10.0 (Q)		
7:3 FTCA	U		10.0 (Q)		
PFEESA	U		0.400 (Q)		
PFMPA	U		0.800 (Q)		
PFMBA	U		0.400 (Q)		

NFDHA

U

0.800 (Q)

- (1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; J = concentration less than limit of quantification.
- (2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 23-Aug-2022 07:05:48; Application: XMLTransformer-1.18.38; Report Filename: PFC_FC_LC_PFAS_WG82066-101_Form1A_FC2L_336S21_SJ3107815.html; Workgroup: WG82066; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.

Lab Blank

Sample Collection:

N/A

PERFLUORINATED ORGANICS ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

N/A

Contract No.: 4066

Lab Sample I.D.:

WG82066-101

Matrix: AQUEOUS

Sample Size:

0.500 L

Sample Receipt Date: N/A

Initial Calibration Date:

11-Apr-2022

Extraction Date: 09-Aug-2022

Instrument ID:

LCMS/MS

Analysis Date: 10-Aug-2022 Time: 22:25:55

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC2L_336 S: 21

Injection Volume (uL): 2

Blank Data Filename:

FC2L_336 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC2L_336 S: 15

Concentration Units: ng absolute

This page is part of a total report that contains information necessary for accreditation compliance.
Results are compliant with NELAP accreditation described in the total report. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG ¹	SPIKE CONC.	CONC. FOUND	R(%) ²	RATIO	RRT
13C4-PFBA		40.0	35.3	88.4		1.000
13C5-PFPeA		20.0	19.8	98.9		0.877
13C5-PFHxA		10.0	8.32	83.2	21.8	1.000
13C4-PFHpA		10.0	8.37	83.7		0.886
13C8-PFOA		10.0	8.28	82.8		1.000
13C9-PFNA		5.00	4.44	88.7		1.000
13C6-PFDA		5.00	4.38	87.6		1.000
13C7-PFUnA		5.00	4.26	85.2		1.040
13C2-PFDoA		5.00	3.89	77.9		1.071
13C2-PFTeDA		5.00	2.91	58.1		1.157
13C3-PFBS		10.0	8.31	82.9	2.65	0.790
13C3-PFHxS		10.0	7.80	77.9	2.28	0.999
13C8-PFOS		10.1	7.26	72.1	2.12	1.000
13C2-4:2 FTS		20.2	23.0	114	1.77	0.833
13C2-6:2 FTS		20.0	17.6	88.1	2.13	1.002
13C2-8:2 FTS		20.0	16.0	79.6	3.07	1.269
13C8-PFOSA		10.0	8.29	82.9		1.135
D3-N-MeFOSA		10.0	6.39	63.9		1.314
D5-N-EtFOSA		10.0	5.89	58.9		1.348
D3-MeFOSAA		20.0	14.5	72.7		1.306
D5-EtFOSAA		20.0	15.1	75.3		1.328
d7-NMe-FOSE		100	67.6	67.4		1.297
d9-NEt-FOSE		100	54.6	54.6		1.331
13C3-HFPO-DA		40.0	37.3	93.3	2.91	1.030

(1) Where applicable, custom lab flags have been used on this report.

(2) R(%) = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 8A

PERFLUORINATED ORGANICS ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4066	Lab Sample I.D.:	WG82066-102
Matrix:	AQUEOUS	Initial Calibration Date:	11-Apr-2022
Extraction Date:	09-Aug-2022	Instrument ID:	LCMS/MS
Analysis Date:	10-Aug-2022 Time: 21:59:45	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC2L_336 S: 19
Injection Volume (uL):	2	Blank Data Filename:	FC2L_336 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC2L_336 S: 15

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 1 mL EXTRACT VOLUME.

COMPOUND	LAB FLAG ¹	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
PFBA			20.0	20.7	103	1.003
PFPeA			10.0	9.99	99.9	1.001
PFHxA		4.91	5.00	5.29	106	1.000
PFHpA		2.03	5.00	5.03	101	1.000
PFOA		2.13	5.00	5.43	109	
PFNA		2.92	5.00	5.21	104	
PFDA		3.05	5.00	5.04	101	1.001
PFUnA		4.37	5.00	5.29	106	1.000
PFDoA		7.63	4.06	4.33	107	1.000
PFTTrDA		3.07	5.00	5.35	107	0.958
PFTeDA		2.64	5.00	5.12	102	1.000
PFBS		2.59	5.00	5.07	101	1.000
PFPeS		2.32	5.00	5.36	107	0.876
PFHxS		2.42	5.00	5.12	102	
PFHpS		1.99	5.00	5.20	104	0.936
PFOS		2.50	5.00	4.91	98.2	
PFNS		2.30	5.00	5.16	103	1.038
PFDS		2.19	5.00	5.15	103	1.071
PFDoS		2.22	5.00	4.00	80.0	1.166
4:2 FTS		0.45	20.0	23.6	118	1.000
6:2 FTS		0.43	18.0	19.5	109	1.000
8:2 FTS		0.55	16.9	17.8	105	1.000
PFOSA			5.00	5.24	105	
N-MeFOSA		0.56	5.00	5.10	102	
N-EtFOSA		0.53	14.0	13.1	93.4	
MeFOSAA		2.24	5.00	5.97	119	
EtFOSAA		1.17	5.00	5.00	100	
N-MeFOSE			50.0	51.1	102	
N-EtFOSE			50.0	56.2	112	
HFPO-DA		2.93	20.0	21.8	109	1.000
ADONA		1.15	20.0	19.5	97.6	1.100
9CI-PF3ONS		3.24	20.0	17.6	88.1	0.970
11CI-PF3OUdS		3.12	20.0	16.6	82.8	1.038
3:3 FTCA		1.86	20.0	19.3	96.6	0.881
5:3 FTCA		1.29	125	145	116	1.049

COMPOUND	LAB FLAG ¹	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
7:3 FTCA		0.68	125	128	102	1.361
PFEESA		9.64	5.00	5.03	101	1.036
PFMPA			10.0	9.33	93.3	0.679
PFMBA			5.00	4.73	94.6	1.056
NFDHA	N		10.0	16.6	166	0.989

(1) Where applicable, custom lab flags have been used on this report; N = authentic recovery in the OPR is not within method/contract control limits.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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SGS AXYS METHOD MLA-110 Rev 02

Form 8B

PERFLUORINATED ORGANICS ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4066	Lab Sample I.D.:	WG82066-102
Matrix:	AQUEOUS	Initial Calibration Date:	11-Apr-2022
Extraction Date:	09-Aug-2022	Instrument ID:	LCMS/MS
Analysis Date:	10-Aug-2022 Time: 21:59:45	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC2L_336 S: 19
Injection Volume (uL):	2	Blank Data Filename:	FC2L_336 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC2L_336 S: 15

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 1 mL EXTRACT VOLUME.

LABELED COMPOUND	LAB FLAG ¹	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
13C4-PFBA			40.0	35.0	87.5	1.000
13C5-PFPeA			20.0	19.5	97.5	0.878
13C5-PFHxA		24.7	10.0	8.26	82.6	1.000
13C4-PFHpA			10.0	8.55	85.5	0.886
13C8-PFOA			10.0	8.62	86.2	1.000
13C9-PFNA			5.00	4.34	86.9	1.000
13C6-PFDA			5.00	4.44	88.7	0.999
13C7-PFUnA			5.00	4.32	86.3	1.040
13C2-PFDoA			5.00	4.15	83.0	1.071
13C2-PFTeDA			5.00	3.30	66.0	1.157
13C3-PFBS		2.66	10.0	8.78	87.6	0.791
13C3-PFHxS		2.27	10.0	8.57	85.6	1.000
13C8-PFOS		2.15	10.1	8.78	87.2	1.000
13C2-4:2 FTS		1.67	20.2	21.4	106	0.834
13C2-6:2 FTS		2.08	20.0	17.4	87.1	1.002
13C2-8:2 FTS		3.29	20.0	16.5	82.6	1.269
13C8-PFOA			10.0	8.84	88.4	1.135
D3-N-MeFOSA			10.0	7.19	71.9	1.312
D5-N-EtFOSA			10.0	6.82	68.2	1.346
D3-MeFOSAA			20.0	15.4	77.1	1.306
D5-EtFOSAA			20.0	15.9	79.7	1.327
d7-NMe-FOSE			100	79.7	79.5	1.297
d9-NEt-FOSE			100	66.1	66.0	1.332
13C3-HFPO-DA		2.70	40.0	36.0	89.9	1.030

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

SGS AXYS METHOD MLA-110 Rev 02

Form 8A

PERFLUORINATED ORGANICS ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4066	Lab Sample I.D.:	WG82066-103
Matrix:	AQUEOUS	Initial Calibration Date:	11-Apr-2022
Extraction Date:	09-Aug-2022	Instrument ID:	LCMS/MS
Analysis Date:	10-Aug-2022 Time: 21:46:40	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC2L_336 S: 18
Injection Volume (uL):	2	Blank Data Filename:	FC2L_336 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC2L_336 S: 15

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 1 mL EXTRACT VOLUME.

COMPOUND	LAB FLAG ¹	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
PFBA			6.40	6.25	97.6	1.006
PFPeA			3.20	3.05	95.4	1.000
PFHxA		4.50	1.60	1.58	98.9	1.000
PFHpA		2.02	1.60	1.52	94.9	1.000
PFOA		2.26	1.60	1.72	107	
PFNA		3.17	1.60	1.68	105	
PFDA		3.20	1.60	1.54	96.1	1.000
PFUnA		4.07	1.60	1.54	96.0	1.000
PFDoA		7.21	1.30	1.32	102	1.000
PFTTrDA		2.93	1.60	1.60	99.7	0.959
PFTTeDA		2.62	1.60	1.38	86.5	0.999
PFBS		2.82	1.60	1.57	98.1	1.000
PFPeS		2.20	1.60	1.57	98.2	0.876
PFHxS		2.14	1.60	1.47	92.1	
PFHpS		2.08	1.60	1.59	99.7	0.936
PFOS		2.68	1.60	1.58	98.7	
PFNS		2.14	1.60	1.51	94.1	1.038
PFDS		2.42	1.60	1.58	99.0	1.072
PFDoS		2.31	1.60	1.24	77.7	1.167
4:2 FTS		0.42	6.40	6.50	101	1.000
6:2 FTS		0.41	5.75	5.65	98.4	1.000
8:2 FTS		0.57	5.42	5.69	105	1.000
PFOSA			1.60	1.59	99.2	
N-MeFOSA		0.52	1.60	1.39	87.0	
N-EtFOSA		0.52	4.48	3.92	87.4	
MeFOSAA		1.80	1.60	1.68	105	
EtFOSAA		1.05	1.60	1.31	82.2	
N-MeFOSE			16.0	15.4	96.0	
N-EtFOSE			16.0	16.0	100	
HFPO-DA		2.78	6.40	6.80	106	1.001
ADONA		1.19	6.40	6.32	98.7	1.101
9CI-PF3ONS		3.21	6.40	5.75	89.8	0.970
11CI-PF3OUdS		3.18	6.40	5.27	82.3	1.038
3:3 FTCA		1.74	6.40	5.10	79.7	0.881
5:3 FTCA		1.24	40.0	42.5	106	1.049

COMPOUND	LAB FLAG ¹	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
7:3 FTCA		0.67	40.0	37.2	92.9	1.360
PFEESA		9.21	1.60	1.55	97.0	1.036
PFMPA			3.20	2.80	87.5	0.679
PFMBA			1.60	1.46	91.3	1.056
NFDHA	N		3.20	5.40	169	0.990

(1) Where applicable, custom lab flags have been used on this report; N = authentic recovery in the OPR is not within method/contract control limits.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

For Axys Internal Use Only [XSL Template: FC2-Form8A.xsl; Created: 23-Aug-2022 07:05:48; Application: XMLTransformer-1.18.38; Report Filename: PFC_FC_LC_PFAS_WG82066-103_Form8A_SJ3107811.html; Workgroup: WG82066; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 8B

PERFLUORINATED ORGANICS ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4066	Lab Sample I.D.:	WG82066-103
Matrix:	AQUEOUS	Initial Calibration Date:	11-Apr-2022
Extraction Date:	09-Aug-2022	Instrument ID:	LCMS/MS
Analysis Date:	10-Aug-2022 Time: 21:46:40	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC2L_336 S: 18
Injection Volume (uL):	2	Blank Data Filename:	FC2L_336 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC2L_336 S: 15

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON A 1 mL EXTRACT VOLUME.

LABELLED COMPOUND	LAB FLAG ¹	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
13C4-PFBA			40.0	38.0	95.0	0.997
13C5-PFPeA			20.0	20.9	105	0.878
13C5-PFHxA		23.5	10.0	9.12	91.2	1.000
13C4-PFHpA			10.0	9.57	95.7	0.886
13C8-PFOA			10.0	9.43	94.3	1.000
13C9-PFNA			5.00	4.83	96.7	1.000
13C6-PFDA			5.00	4.84	96.8	0.999
13C7-PFUnA			5.00	4.78	95.6	1.040
13C2-PFDoA			5.00	4.48	89.6	1.071
13C2-PFTeDA			5.00	4.01	80.3	1.157
13C3-PFBS		2.67	10.0	9.90	98.8	0.791
13C3-PFHxS		2.38	10.0	10.0	99.9	1.000
13C8-PFOS		2.19	10.1	9.69	96.3	0.999
13C2-4:2 FTS		1.80	20.2	25.0	124	0.833
13C2-6:2 FTS		1.95	20.0	18.8	94.0	1.002
13C2-8:2 FTS		3.63	20.0	19.1	95.4	1.269
13C8-PFOSA			10.0	9.33	93.3	1.135
D3-N-MeFOSA			10.0	7.30	73.0	1.312
D5-N-EtFOSA			10.0	7.23	72.3	1.347
D3-MeFOSAA			20.0	17.2	86.1	1.306
D5-EtFOSAA			20.0	17.5	87.3	1.327
d7-NMe-FOSE			100	95.5	95.2	1.296
d9-NEt-FOSE			100	83.5	83.4	1.332
13C3-HFPO-DA		2.85	40.0	37.4	93.6	1.030

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

SGS AXYS METHOD MLA-110 Rev 02

Form 3A

INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 11-Apr-2022

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A
CS1 Data Filename: FC2L_156 S: 13
CS2 Data Filename: FC2L_156 S: 14
CS3 Data Filename: FC2L_156 S: 15
CS4 Data Filename: FC2L_156 S: 16
CS5 Data Filename: FC2L_156 S: 17
CS6 Data Filename: FC2L_156 S: 18
CS7 Data Filename: FC2L_156 S: 19
CS8 Data Filename: FC2L_156 S: 20

RELATIVE RESPONSE (RR)

COMPOUND	LAB FLAG ¹	RELATIVE RESPONSE (RR)								MEAN RR	CV (%RSD) ²	
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7			CS8
PFBA			0.96	0.90	0.89	0.82	0.87	0.85	0.83	0.84	0.87	4.96
PFPeA			1.29	1.13	1.19	1.16	1.16	1.09	1.08	1.15	1.16	5.67
PFHxA			1.19	1.15	1.02	1.01	0.91	0.91	0.98	1.02	1.03	9.88
PFHpA			1.40	1.35	1.31	1.08	1.22	1.04	1.14	1.13	1.21	11.0
PFOA			1.66	1.29	1.29	1.18	1.32	1.25	1.17	1.26	1.30	11.7
PFNA			1.11	1.04	1.12	0.96	1.01	0.96	0.97	0.99	1.02	6.35
PFDA			0.83	0.80	0.88	0.73	0.79	0.74	0.75	0.73	0.78	6.80
PFUnA			0.78	0.76	0.73	0.69	0.71	0.71	0.69		0.72	4.94
PFDoA			1.27	1.12	1.08	1.00	1.01	0.98	1.01	1.02	1.06	9.13
PFTrDA			0.83	0.87	0.88	0.82	0.82	0.77	0.79	0.73	0.81	6.11
PFTeDA			0.91	0.78	0.85	0.76	0.80	0.76	0.78	0.72	0.80	7.64
PFBS			1.36	1.07	1.19	1.10	1.08	1.14	1.05	1.10	1.14	8.93
PFPeS			1.04	1.14	1.07	1.02	1.05	1.06	1.02	0.97	1.05	4.62
PFHxS			1.35	1.25	1.30	1.24	1.31	1.27	1.29	1.28	1.29	2.78
PFHpS			1.09	1.04	1.01	1.04	1.11	1.03	0.98	1.02	1.04	3.83
PFOS			1.24	1.03	1.13	1.11	1.17	1.21	1.09	1.09	1.13	6.15
PFNS			1.08	1.02	1.10	1.06	1.12	1.08	1.00	1.07	1.07	3.91
PFDS			0.93	0.88	0.96	0.95	1.01	0.96	0.89	0.96	0.94	4.21
PFDoS			0.82	0.72	0.78	0.79	0.87	0.80	0.75	0.82	0.79	5.78
4:2 FTS			0.49	0.46	0.49	0.49	0.46	0.45	0.42	0.40	0.46	7.07
6:2 FTS			0.54	0.49	0.48	0.47	0.50	0.46	0.48	0.42	0.48	7.21
8:2 FTS			0.36	0.36	0.32	0.32	0.34	0.34	0.32	0.27	0.33	8.80
PFOSA			1.03	0.91	0.92	0.89	0.89	0.88	0.89	0.88	0.91	5.60
N-MeFOSA			1.13	1.02	1.01	0.93	1.03	0.91	0.95	0.95	0.99	7.46
N-EtFOSA			1.15	1.13	1.15	1.09	1.15	1.14	1.11	1.17	1.14	2.40
MeFOSAA			0.82	0.71	0.84	0.87	0.92	0.86	0.89		0.84	7.89
EtFOSAA			0.76	0.63	0.71	0.80	0.79	0.77	0.77		0.75	7.93
N-MeFOSE			0.84	0.79	0.78	0.76	0.75	0.79	0.76	0.80	0.78	3.72
N-EtFOSE			1.01	1.08	1.03	1.07	1.02	1.02	1.04	0.99	1.03	2.85
HFPO-DA			1.07	0.99	0.91	1.01	0.98	0.90	0.87	0.83	0.95	8.43
ADONA			8.90	8.53	8.10	7.54	7.52	7.36	7.45	7.68	7.89	7.19
9CI-PF3ONS			2.49	2.20	2.29	2.15	2.09	1.99	1.92	1.84	2.12	9.93
11CI-PF3OUdS			1.17	1.07	1.09	1.04	1.04	0.98	0.98	1.01	1.05	5.98
3:3 FTCA			0.09	0.08	0.08	0.08	0.09	0.08	0.08	0.11	0.09	9.41
5:3 FTCA			0.16	0.15	0.15	0.14	0.15	0.15	0.15	0.16	0.15	3.52
7:3 FTCA			0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.10	0.09	5.44
PFEESA			2.77	2.72	2.65	2.48	2.58	2.46	2.61	2.70	2.62	4.24
PFMPA			1.85	1.70	1.81	1.81	1.76	1.74	1.76	2.04	1.81	5.86

RELATIVE RESPONSE (RR)

COMPOUND	LAB FLAG ¹	RELATIVE RESPONSE (RR)								MEAN RR	CV (%RSD) ²	
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7			CS8
PFMBA			2.45	2.11	2.34	2.30	2.30	2.15	2.18	2.56	2.30	6.70
NFDHA			0.009	0.01	0.02	0.02	0.01	0.01			0.01	19.5

- (1) Where applicable, custom lab flags have been used on this report.
- (2) For contract CV specifications, see SGS AXYS METHOD MLA-110 Rev 02

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

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SGS AXYS METHOD MLA-110 Rev 02

Form 3B

INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 11-Apr-2022

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A
CS1 Data Filename: FC2L_156 S: 13
CS2 Data Filename: FC2L_156 S: 14
CS3 Data Filename: FC2L_156 S: 15
CS4 Data Filename: FC2L_156 S: 16
CS5 Data Filename: FC2L_156 S: 17
CS6 Data Filename: FC2L_156 S: 18
CS7 Data Filename: FC2L_156 S: 19
CS8 Data Filename: FC2L_156 S: 20

Labeled Compound	LAB FLAG ¹	RELATIVE RESPONSE (RR)								MEAN RR	CV (%RSD) ²	
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7			CS8
13C4-PFBA			1.17	1.22	1.16	1.16	1.19	1.16	1.19	1.18	1.18	1.72
13C5-PFPeA			0.81	0.83	0.77	0.71	0.76	0.93	0.75	0.69	0.78	9.57
13C5-PFHxA			0.75	0.69	0.72	0.67	0.70	0.83	0.69	0.70	0.72	6.89
13C4-PFHpA			3.43	3.37	3.08	3.71	3.41	3.43	3.46	3.41	3.41	4.92
13C8-PFOA			3.89	3.66	3.70	3.96	3.51	3.63	3.91	3.59	3.73	4.49
13C9-PFNA			1.05	1.07	1.03	1.05	1.11	1.07	1.05	1.09	1.06	2.43
13C6-PFDA			1.02	1.07	0.96	1.03	1.03	1.03	1.01	0.99	1.02	3.28
13C7-PFUnA			1.11	1.16	1.11	1.08	1.09	1.08	1.01		1.09	3.95
13C2-PFDoA			0.83	0.88	0.83	0.84	0.85	0.90	0.87	0.88	0.86	3.09
13C2-PFTeDA			0.73	0.75	0.68	0.66	0.69	0.71	0.68	0.73	0.70	4.58
13C3-PFBS			1.31	1.41	1.31	1.34	1.44	1.34	1.41	1.17	1.34	6.49
13C3-PFHxS			1.14	1.13	1.07	1.13	1.13	1.09	1.11	1.13	1.12	2.28
13C8-PFOS			0.98	1.01	1.00	0.93	0.92	0.96	1.01	1.00	0.98	3.84
13C2-4:2 FTS			1.09	1.14	1.07	0.97	1.00	0.98	0.95	0.88	1.01	8.29
13C2-6:2 FTS			1.01	1.00	1.01	0.93	0.91	0.93	0.93	0.97	0.96	4.25
13C2-8:2 FTS			1.42	1.45	1.37	1.27	1.24	1.22	1.29	1.27	1.32	6.52
13C8-PFOA			1.77	1.85	1.90	1.77	1.85	1.83	1.86	2.12	1.87	5.96
D3-N-MeFOSA			0.21	0.23	0.23	0.21	0.22	0.23	0.23	0.26	0.23	6.84
D5-N-EtFOSA			0.21	0.22	0.23	0.21	0.21	0.21	0.22	0.22	0.22	3.03
D3-MeFOSAA			0.68	0.74	0.74	0.65	0.69	0.72	0.78		0.71	6.19
D5-EtFOSAA			0.58	0.62	0.63	0.53	0.58	0.61	0.67		0.60	7.41
d7-NMe-FOSE			1.83	1.96	2.06	1.89	2.03	1.94	1.93	1.97	1.95	3.81
d9-NEt-FOSE			1.63	1.65	1.66	1.53	1.65	1.60	1.58	1.70	1.63	3.29
13C3-HFPO-DA			0.29	0.28	0.28	0.27	0.29	0.36	0.29	0.25	0.29	10.6

(1) Where applicable, custom lab flags have been used on this report.

(2) For contract CV specifications, see SGS AXYS METHOD MLA-110 Rev 02.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Henry Huang _____

SGS AXYS METHOD MLA-110 Rev 02

Form 3C
LC MS/MS INITIAL CALIBRATION RATIOS

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 11-Apr-2022

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A
 CS1 Data Filename: FC2L_156 S: 13
 CS2 Data Filename: FC2L_156 S: 14
 CS3 Data Filename: FC2L_156 S: 15
 CS4 Data Filename: FC2L_156 S: 16
 CS5 Data Filename: FC2L_156 S: 17
 CS6 Data Filename: FC2L_156 S: 18
 CS7 Data Filename: FC2L_156 S: 19
 CS8 Data Filename: FC2L_156 S: 20

COMPOUND	LAB FLAG ¹	RATIOS								
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
PFBA										
PFPeA										
PFHxA		6.05	5.62	5.38	4.93	5.14	4.62	4.97	5.19	
PFHpA		2.24	2.26	2.05	2.06	2.21	1.95	2.14	2.25	
PFOA		2.39	1.95	2.09	2.00	2.03	2.05	2.03	2.04	
PFNA		2.89	3.21	3.16	2.93	2.89	2.94	2.93	2.99	
PFDA		3.61	3.72	3.10	3.53	3.18	3.05	3.12	3.05	
PFUnA		5.71	4.82	4.60	4.64	4.55	4.77	4.55		
PFDoA		8.19	6.94	6.46	7.87	7.04	7.62	7.04	7.62	
PFTTrDA		2.95	3.32	3.13	3.20	3.19	3.12	3.16	3.20	
PFTeDA		3.16	2.93	2.95	2.73	2.72	2.78	2.74	2.84	
PFBS		3.08	2.79	2.44	2.54	2.66	2.72	2.63	2.51	
PFPeS		2.01	2.61	2.37	2.21	2.42	2.41	2.30	2.21	
PFHxS		1.86	2.17	2.12	2.30	2.41	2.33	2.39	2.38	
PFHpS		2.02	2.25	1.90	2.02	2.09	2.06	2.04	2.06	
PFOS		2.51	2.22	2.65	2.59	2.65	2.61	2.70	2.55	
PFNS		2.34	2.00	2.26	2.22	2.23	2.31	2.19	2.30	
PFDS		2.12	2.15	2.29	2.24	2.26	2.35	2.25	2.30	
PFDoS		2.30	2.13	2.19	2.18	2.37	2.35	2.25	2.26	
4:2 FTS		0.43	0.39	0.39	0.43	0.41	0.43	0.40	0.47	
6:2 FTS		0.52	0.45	0.46	0.45	0.45	0.43	0.44	0.42	
8:2 FTS		0.57	0.63	0.53	0.53	0.56	0.57	0.55	0.56	
PFOSA										
N-MeFOSA		0.60	0.59	0.51	0.50	0.56	0.49	0.53	0.53	
N-EtFOSA		0.53	0.51	0.53	0.51	0.52	0.51	0.52	0.50	
MeFOSAA		1.26	1.06	1.62	2.05	2.04	1.91	1.99		
EtFOSAA		1.36	1.10	1.18	1.13	1.22	1.22	1.22		
N-MeFOSE										
N-EtFOSE										
HFPO-DA		2.80	3.58	2.64	2.76	2.92	2.90	2.73	2.65	
ADONA		1.17	1.18	1.15	1.11	1.45	1.15	1.17	1.12	
9CI-PF3ONS		3.35	3.07	3.27	3.23	3.24	3.07	3.19	3.17	
11CI-PF3OUdS		3.35	2.93	3.19	3.21	3.12	3.19	3.19	3.18	
3:3 FTCA		1.85	1.84	1.93	1.95	1.99	1.98	1.98	2.02	
5:3 FTCA		1.34	1.26	1.37	1.26	1.27	1.27	1.25	1.27	

COMPOUND	LAB FLAG ¹	RATIOS								
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
7:3 FTCA			0.66	0.67	0.67	0.68	0.67	0.68	0.67	0.68
PFEESA			10.2	8.67	10.3	9.17	9.58	8.96	9.22	9.41
PFMPA										
PFMBA										
NFDHA										

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

For Axys Internal Use Only [XSL Template: FC2-Form3C.xsl; Created: 23-Aug-2022 07:05:48; Application: XMLTransformer-1.18.38; Report Filename: PFOA_FC_LC_11-Apr-2022_FC2L__Form3C_GS98639.html; Workgroup: WG82066; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 3D
LC MS/MS INITIAL CALIBRATION RATIOS

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 11-Apr-2022

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A
 CS1 Data Filename: FC2L_156 S: 13
 CS2 Data Filename: FC2L_156 S: 14
 CS3 Data Filename: FC2L_156 S: 15
 CS4 Data Filename: FC2L_156 S: 16
 CS5 Data Filename: FC2L_156 S: 17
 CS6 Data Filename: FC2L_156 S: 18
 CS7 Data Filename: FC2L_156 S: 19
 CS8 Data Filename: FC2L_156 S: 20

LABELED COMPOUND	LAB FLAG ¹	RATIOS								
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
13C4-PFBA										
13C5-PFPeA										
13C5-PFHxA			23.5	22.8	24.1	22.5	21.7	23.4	22.9	20.9
13C4-PFHpA										
13C8-PFOA										
13C9-PFNA										
13C6-PFDA										
13C7-PFUnA										
13C2-PFDoA										
13C2-PFTeDA										
13C3-PFBS			2.60	2.66	2.57	2.65	2.86	2.73	2.68	2.60
13C3-PFHxS			2.44	2.39	2.30	2.29	2.38	2.34	2.31	2.37
13C8-PFOS			2.24	2.20	2.08	2.04	2.04	2.05	2.24	2.13
13C2-4:2 FTS			1.77	2.31	1.80	1.75	1.98	1.52	1.28	0.55
13C2-6:2 FTS			2.16	2.02	2.04	1.98	1.94	1.80	1.47	0.68
13C2-8:2 FTS			3.21	3.44	3.27	3.14	2.90	2.62	2.29	1.11
13C8-PFOA										
D3-N-MeFOSA										
D5-N-EtFOSA										
D3-MeFOSAA										
D5-EtFOSAA										
d7-NMe-FOSE										
d9-NEt-FOSE										
13C3-HFPO-DA			3.09	2.78	2.85	2.66	2.76	2.92	3.09	2.95

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Henry Huang_____

SGS AXYS METHOD MLA-110 Rev 02

Form 4A

LC MS/MS CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 11-Apr-2022

VER Data Filename: FC2L_336 S: 15

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022

LC Column ID: C18

Analysis Time: 21:07:25

COMPOUND	LAB FLAG ¹	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
PFBA		1.006	213 > 169		20.0	19.0	95.2
PFPeA		1.001	263 > 219		10.0	9.03	90.3
PFHxA		1.000	313 > 269	4.48	5.00	4.54	90.8
PFHpA		1.000	363 > 319	2.08	5.00	4.75	95.1
PFOA		1.000	413 > 369	2.09	5.00	4.95	99.0
PFNA		1.001	463 > 419	2.94	5.00	4.82	96.4
PFDA		1.000	513 > 469	2.82	5.00	4.46	89.3
PFUnA		1.000	563 > 519	4.66	5.00	4.74	94.7
PFDoA		1.000	613 > 569	7.44	4.06	4.19	103
PFTTrDA		0.958	663 > 619	3.24	5.00	5.00	100
PFTeDA		1.000	713 > 669	2.56	5.00	4.50	90.0
PFBS		1.000	299 > 80	2.49	5.00	4.65	93.0
PFPeS		0.874	349 > 80	2.08	5.00	4.93	98.6
PFHxS		1.000	399 > 80	2.34	5.00	4.77	95.4
PFHpS		0.936	449 > 80	2.03	5.00	4.81	96.2
PFOS		1.001	499 > 80	2.60	5.00	4.48	89.7
PFNS		1.038	549 > 80	2.23	5.00	4.58	91.7
PFDS		1.072	599 > 80	2.18	5.00	4.71	94.1
PFDoS		1.168	699 > 80	2.24	5.00	4.68	93.6
4:2 FTS		1.000	327 > 307	0.46	20.0	21.1	106
6:2 FTS		1.000	427 > 407	0.42	18.0	16.4	91.2
8:2 FTS		0.999	527 > 507	0.56	17.0	16.8	99.1
PFOSA		1.000	498 > 78		5.00	4.88	97.6
N-MeFOSA		0.999	512 > 219	0.59	5.00	5.24	105
N-EtFOSA		1.000	526 > 219	0.50	14.0	12.8	91.2
MeFOSAA		1.000	570 > 419	2.10	5.00	4.94	98.7
EtFOSAA		1.001	584 > 419	1.28	5.00	5.12	102
N-MeFOSE		1.002	616 > 59		50.0	47.5	95.1
N-EtFOSE		1.002	630 > 59		50.0	49.5	98.9
HFPO-DA		1.000	285 > 169	2.88	20.0	20.1	101
ADONA		1.101	377 > 251	1.15	20.0	17.9	89.4
9CI-PF3ONS		0.970	531 > 351	3.25	20.0	17.1	85.3
11CI-PF3OUdS		1.039	631 > 451	3.09	20.0	16.9	84.6
3:3 FTCA		0.877	241 > 177	1.87	20.0	16.3	81.3
5:3 FTCA		1.049	341 > 237	1.27	125	123	98.5
7:3 FTCA		1.364	441 > 317	0.67	125	111	88.5
PFEESA		1.036	315 > 135	9.73	5.00	4.85	97.1
PFMPA		0.673	229 > 85		10.0	8.63	86.3
PFMBA		1.057	279 > 85		5.00	4.36	87.2
NFDHA		0.989	295 > 201		10.0	15.0	150

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

SGS AXYS METHOD MLA-110 Rev 02

Form 4B

LC MS/MS CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 11-Apr-2022

VER Data Filename: FC2L_336 S: 15

Instrument ID: LCMS/MS

Analysis Date: 10-Aug-2022

LC Column ID: C18

Analysis Time: 21:07:25

LABELED COMPOUND	LAB FLAG ¹	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
13C4-PFBA		0.997	217 > 172		40.0	38.3	95.9
13C5-PFPeA		0.876	268 > 223		20.0	22.1	111
13C5-PFHxA		1.000	318 > 273	24.2	10.0	9.35	93.5
13C4-PFHpA		0.885	367 > 322		10.0	10.1	101
13C8-PFOA		1.000	421 > 376		10.0	9.86	98.6
13C9-PFNA		1.000	472 > 427		5.00	4.88	97.6
13C6-PFDA		0.999	519 > 474		5.00	4.96	99.3
13C7-PFUnA		1.040	570 > 525		5.00	4.86	97.2
13C2-PFDoA		1.071	615 > 570		5.00	4.77	95.3
13C2-PFTeDA		1.158	715 > 670		5.00	4.89	97.8
13C3-PFBS		0.788	302 > 80	2.63	10.0	10.4	104
13C3-PFHxS		1.000	402 > 80	2.28	10.0	9.87	98.5
13C8-PFOS		1.000	507 > 80	2.21	10.1	10.3	102
13C2-4:2 FTS		0.832	329 > 81	1.78	20.2	21.0	104
13C2-6:2 FTS		1.002	429 > 81	1.96	20.0	19.3	96.4
13C2-8:2 FTS		1.268	529 > 81	3.15	20.0	19.0	94.6
13C8-PFOA		1.136	506 > 78		10.0	9.82	98.2
D3-N-MeFOA		1.315	515 > 219		10.0	9.40	94.0
D5-N-EtFOA		1.348	531 > 219		10.0	9.22	92.2
D3-MeFOA		1.305	573 > 419		20.0	18.4	92.2
D5-EtFOA		1.327	589 > 419		20.0	19.2	95.8
d7-NMe-FOSE		1.297	623 > 59		100	110	110
d9-NEt-FOSE		1.333	639 > 59		100	102	102
13C3-HFPO-DA		1.030	287 > 169	2.84	40.0	40.9	102

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____ Andrew Porat _____

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 65

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum Solids
				CALA Alaska DEC ANAB DoD ** ANAB ISO 17025 CALA California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE ANAB DoD ** ANAB ISO 17025 CALA Florida DOH Minnesota DOH New Jersey DEP Virginia DGS CALA CALA Alaska DEC ANAB DoD ** ANAB ISO 17025 California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Pennsylvania DEP Virginia DGS Washington DE ** ANAB DoD ** ANAB ISO 17025
ANAB DoD	ANSI National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.3 and 5.4 Standard)	 		
CALA	Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2017 Standard)	 		
				Tissue and Tissue Flora Urine Water Water, Non-Portable