

SGS

AXYS

2045 Mills Road West

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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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# BATCH SUMMARY

<b>Batch ID:</b>	WG88608	<b>Date:</b>	01-Mar-2024
<b>Analysis Type:</b>	Per- and Polyfluoroalkyl Substances (PFAS)	<b>Matrix Type:</b>	Aqueous
<b>BATCH MAKEUP</b>			
<b>Contract:</b>	4066	<b>Blank:</b>	WG88608-101
<b>Samples:</b>			
L40347-2	SIWWTP-EFFL-EB		
L40347-5	SIWWTP-EFFL		
L40347-8	SIWWTP-INFL-EB		
L40347-11	SIWWTP-INFL		
		<b>Reference or Spike:</b>	WG88608-102 WG88608-103
		<b>Duplicate:</b>	
<b>Comments:</b> <ol style="list-style-type: none"> <li>1. Data are considered final.</li> <li>2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data.</li> <li>3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.</li> <li>4. In the continuing calibration verification (filenames: FC4G_042 S:15, S:31, FC4G_051 S:32) some surrogates are observed above the upper method control limit. As the result for the associated targets are observed within method specifications data is not considered impacted.</li> <li>5. The percent recovery of native 3:3 FTCA in the OPR and LLOPR (AXYS ID: WG88608-102, -103) was observed to be lower than method specifications and has been flagged with 'N'. Sample data may be similarly affected.</li> <li>6. Percent recoveries of a few surrogates in the client samples were observed to be outside the method limits and these surrogates have been flagged with a 'V' on the report forms. As the isotope dilution method of quantification produces data that are recovery corrected, the slight variance from the method acceptance criteria is deemed not to affect the quantification of these analytes. Percent surrogate recoveries are used as a general method performance indicator only.</li> </ol>			

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February 2017

## 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	Hawaii DOH-HEER Office		Company	TetraTech		MLA-110	MLA-111	MLA-119												
Address	2385 Waimano Home Rd #100 Pearl City, HI 96782		Address	737 Bishop St Ste 2340 Honolulu, HI 96813																
Contact	Roger Brewer		Contact	Eric Jensen																
Phone	888-586-4249		Phone	808-225-7084																
FAX			FAX																	
E-mail	roger.brewer@doh.hawaii.gov		E-mail	eric.jensen@tetratech.com																
Project Name/Number:			Sampler's Name:																	
Signature:																				
Client Sample Identification	Matrix	Sampling Date	Sampling Time	Container Type/No.	SGS AXYS Lab Sample ID (Lab use only)															
SIWWTP-EFFL	H <sub>2</sub> O	9/15/23	7:39am	2 500ml 3. 125ml 2 600ml	L 40347-5	X	X	X												
SIWWTP-INFL	"	9/15/23	7:24am	"	- 11	X	X	X												
SIWWTP-EFFL-EB	"	9/14/23	8:25am	"	- 2	X	X	X												
SIWWTP-INFL-EB	"	9/14/23	8:10am	"	- 8	X	X	X												
Relinquished by (Signature)		Date	Time	Received by (Signature)		Courier		Waybill No.												
Roger B		10/5/23	9:00 am	AJS																
				Date 06-01-2023 Time 09:20																
Relinquished by (Signature)		Date	Time	Received by (Signature)		Sample Receipt														
Remarks						<table border="1"> <tr> <td colspan="2">Cooler</td> </tr> <tr> <td>Temp °C</td> <td></td> </tr> <tr> <td>Custody Seal #</td> <td></td> </tr> <tr> <td>Seal Intact Y / N</td> <td></td> </tr> <tr> <td>Sample Tags</td> <td>Y / N</td> </tr> </table>					Cooler		Temp °C		Custody Seal #		Seal Intact Y / N		Sample Tags	Y / N
Cooler																				
Temp °C																				
Custody Seal #																				
Seal Intact Y / N																				
Sample Tags	Y / N																			
*Filter water samples prior to analysis (0.45 um)																				

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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-2

Matrix: AQUEOUS

Sample Size: 0.513 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 02:46:05

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 23

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 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 <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	RATIO	RRT
PFBA	U		1.56 (Q)		
PFPeA	U		0.779 (Q)		
PFHxA	U		0.390 (Q)		
PFHpA	U		0.390 (Q)		
PFOA	U		0.390 (Q)		
PFNA	U		0.390 (Q)		
PFDA	U		0.390 (Q)		
PFUnA	U		0.390 (Q)		
PFDaA	U		0.312 (Q)		
PFTTrDA	U		0.390 (Q)		
PFTeDA	U		0.390 (Q)		
PFBS	R J	0.657	0.390 (Q)	32.1	0.997
PFPeS	U		0.392 (Q)		
PFHxS	U		0.390 (Q)		
PFHpS	U		0.390 (Q)		
PFOS	U		0.390 (Q)		
PFNS	U		0.390 (Q)		
PFDS	U		0.390 (Q)		
PFDoS	U		0.390 (Q)		
4:2 FTS	U		1.56 (Q)		
6:2 FTS	U		1.40 (Q)		
8:2 FTS	U		1.33 (Q)		
PFOSA	U		0.390 (Q)		
N-MeFOSA	U		0.390 (Q)		
N-EtFOSA	U		1.09 (Q)		
MeFOSAA	U		0.390 (Q)		
EtFOSAA	U		0.390 (Q)		
N-MeFOSE	U		3.90 (Q)		
N-EtFOSE	U		3.90 (Q)		
HFPO-DA	U		1.56 (Q)		
ADONA	U		1.56 (Q)		
9CI-PF3ONS	U		1.56 (Q)		
11CI-PF3OUdS	U		1.56 (Q)		
3:3 FTCA	U		1.56 (Q)		
5:3 FTCA	U		9.74 (Q)		
7:3 FTCA	U		9.74 (Q)		
PFEESA	U		0.390 (Q)		
PFMPA	U		0.779 (Q)		
PFMBA	U		0.390 (Q)		
NFDHA	U		0.779 (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; 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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: FC2-Form1A.xsl; Created: 01-Mar-2024 12:07:24; Application: XMLTransformer-1.18.48;  
Report Filename: PFC\_FC\_LC\_PFAS\_L40347-2\_Form1A\_FC4G\_042S23\_SJ3384013.html; Workgroup: WG88608; Design ID: 3989 ]

Form 2  
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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-2

Matrix: AQUEOUS

Sample Size: 0.513 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 02:46:05

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 23

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 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.

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>2</sup>	RATIO	RRT
13C4-PFBA		40.0	31.6	79.0		1.000
13C5-PFPeA		20.0	23.9	120		0.873
13C5-PFHxA		10.0	8.54	85.4	14.8	1.000
13C4-PFHpA		10.0	8.07	80.7		0.895
13C8-PFOA		10.0	9.39	93.9		0.999
13C9-PFNA		5.00	4.33	86.7		1.000
13C6-PFDA		5.00	4.38	87.6		1.000
13C7-PFUnA		5.00	4.18	83.7		1.047
13C2-PFDoA		5.00	4.09	81.8		1.081
13C2-PFTeDA		5.00	3.01	60.2		1.158
13C3-PFBS		10.0	8.45	84.3	2.64	0.802
13C3-PFHxS		10.0	8.94	89.3	2.25	1.000
13C8-PFOS		10.1	9.27	92.1	2.04	1.000
13C2-4:2 FTS		20.2	13.2	65.5	1.75	0.840
13C2-6:2 FTS		20.0	16.4	81.9	1.84	1.002
13C2-8:2 FTS		20.0	12.7	63.2	3.13	1.258
13C8-PFOSA		10.0	11.5	115		1.160
D3-N-MeFOSA		10.0	8.33	83.3		1.342
D5-N-EtFOSA		10.0	8.18	81.8		1.381
D3-MeFOSAA		20.0	19.2	96.0		1.302
D5-EtFOSAA		20.0	10.2	51.1		1.327
d7-NMe-FOSE		100	96.3	95.9		1.323
d9-NEt-FOSE		100	81.0	80.9		1.363
13C3-HFPO-DA		40.0	39.9	99.8	2.39	1.028

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

## SGS AXYS METHOD MLA-110 Rev 02

## Form 1A

## CLIENT SAMPLE NO.

SIWWTP-EFFL

Sample Collection:

15-Sep-2023 07:39

## 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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-5

Matrix: EFFLUENT FINAL

Sample Size:

0.500 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date:

19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID:

LC MS/MS

Analysis Date: 03-Feb-2024 Time: 04:02:53

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC4G\_042 S: 29

Injection Volume (uL): 2

Blank Data Filename:

FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC4G\_042 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 <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	RATIO	RRT
PFBA	J	3.06	1.60 (Q)		1.003
PFPeA		4.95	0.801 (Q)		1.001
PFHxA	X				
PFHpA		2.22	0.400 (Q)	2.13	1.000
PFOA		4.57	0.400 (Q)	2.06	
PFNA	J	0.834	0.400 (Q)	2.72	
PFDA	R J	0.560	0.400 (Q)	4.29	1.001
PFUnA	U		0.400 (Q)		
PFDaA	U		0.320 (Q)		
PFTTrDA	U		0.400 (Q)		
PFTeDA	U		0.400 (Q)		
PFBS	R	5.32	0.400 (Q)	7.34	0.997
PFPeS	J	0.823	0.402 (Q)	1.12	0.888
PFHxS		5.52	0.400 (Q)	2.59	
PFHpS	U		0.400 (Q)		
PFOS	R	11.0	0.400 (Q)	3.56	
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	R J	3.36	1.44 (Q)	0.41	1.001
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)		
9CI-PF3ONS	U		1.61 (Q)		
11CI-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		0.801 (Q)		
PFMBA	U		0.400 (Q)		
NFDHA	U		0.801 (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; J = concentration less than limit of quantification; X = result reported separately.

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: FC2-Form1A.xsl; Created: 01-Mar-2024 12:07:24; Application: XMLTransformer-1.18.48;  
Report Filename: PFC\_FC\_LC\_PFAS\_L40347-5\_Form1A\_FC4G\_042S29\_SJ3384019.html; Workgroup: WG88608; Design ID: 3989 ]



Form 2  
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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-5

Matrix: EFFLUENT FINAL

Sample Size: 0.500 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 04:02:53

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 29

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 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.

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>2</sup>	RATIO	RRT
13C4-PFBA		40.0	11.8	29.6		1.000
13C5-PFPeA		20.0	22.9	115		0.872
13C5-PFHxA		10.0	8.17	81.7	15.8	0.999
13C4-PFHpA		10.0	8.31	83.1		0.897
13C8-PFOA		10.0	9.25	92.5		0.999
13C9-PFNA		5.00	4.57	91.4		1.000
13C6-PFDA		5.00	4.00	80.0		0.999
13C7-PFUnA		5.00	3.80	76.0		1.047
13C2-PFDoA		5.00	3.91	78.2		1.081
13C2-PFTeDA		5.00	2.77	55.4		1.158
13C3-PFBS		10.0	8.08	80.7	2.60	0.803
13C3-PFHxS		10.0	8.76	87.5	2.34	1.000
13C8-PFOS		10.1	8.80	87.4	2.08	1.000
13C2-4:2 FTS		20.2	21.9	109	1.71	0.840
13C2-6:2 FTS		20.0	16.3	81.5	1.77	1.001
13C2-8:2 FTS	V	20.0	9.49	47.3	2.92	1.255
13C8-PFOSA		10.0	9.84	98.4		1.161
D3-N-MeFOSA		10.0	7.95	79.5		1.343
D5-N-EtFOSA		10.0	7.17	71.7		1.382
D3-MeFOSAA		20.0	17.7	88.7		1.298
D5-EtFOSAA		20.0	21.2	106		1.323
d7-NMe-FOSE		100	112	112		1.324
d9-NEt-FOSE		100	137	137		1.364
13C3-HFPO-DA		40.0	35.9	89.6	2.55	1.028

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

CLIENT SAMPLE NO.  
SIWWTP-EFFL  
Sample Collection:  
15-Sep-2023 07:39

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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-5 i

Matrix: EFFLUENT FINAL

Sample Size: 0.500 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 12-Feb-2024 Time: 15:56:54

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_051 S: 40

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_051 S: 32

Concentration Units: ng/L

This page is part of a total report that contains information necessary for accreditation compliance.  
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COMPOUND	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	RATIO	RRT
PFBA	X				
PFPeA	X				
PFHxA		5.03	0.400 (Q)	3.83	1.000
PFHpA	X				
PFOA	X				
PFNA	X				
PFDA	X				
PFUnA	X				
PFDaA	X				
PFTTrDA	X				
PFTeDA	X				
PFBS	X				
PFPeS	X				
PFHxS	X				
PFHpS	X				
PFOS	X				
PFNS	X				
PFDS	X				
PFDoS	X				
4:2 FTS	X				
6:2 FTS	X				
8:2 FTS	X				
PFOSA	X				
N-MeFOSA	X				
N-EtFOSA	X				
MeFOSAA	X				
EtFOSAA	X				
N-MeFOSE	X				
N-EtFOSE	X				
HFPO-DA	X				
ADONA	X				
9CI-PF3ONS	X				
11CI-PF3OUdS	X				
3:3 FTCA	X				
5:3 FTCA	X				
7:3 FTCA	X				
PFEESA	X				
PFMPA	X				
PFMBA	X				
NFDHA	X				

- (1) Where applicable, custom lab flags have been used on this report; X = result reported separately.  
(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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Report Filename: PFC\_FC\_LC\_PFAS\_L40347-5\_Form1A\_FC4G\_051S40\_SJ3392883.html; Workgroup: WG88608; Design ID: 3989 ]

Form 2  
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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-5 i

Matrix: EFFLUENT FINAL

Sample Size:

0.500 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date:

19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID:

LC MS/MS

Analysis Date: 12-Feb-2024 Time: 15:56:54

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC4G\_051 S: 40

Injection Volume (uL): 2

Blank Data Filename:

FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC4G\_051 S: 32

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.

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>2</sup>	RATIO	RRT
13C4-PFBA	X					
13C5-PFPeA	X					
13C5-PFHxA		10.0	8.50	85.0	17.6	1.000
13C4-PFHpA	X					
13C8-PFOA	X					
13C9-PFNA	X					
13C6-PFDA	X					
13C7-PFUnA	X					
13C2-PFDoA	X					
13C2-PFTeDA	X					
13C3-PFBS	X					
13C3-PFHxS	X					
13C8-PFOS	X					
13C2-4:2 FTS	X					
13C2-6:2 FTS	X					
13C2-8:2 FTS	X					
13C8-PFOSA	X					
D3-N-MeFOSA	X					
D5-N-EtFOSA	X					
D3-MeFOSAA	X					
D5-EtFOSAA	X					
d7-NMe-FOSE	X					
d9-NEt-FOSE	X					
13C3-HFPO-DA	X					

(1) Where applicable, custom lab flags have been used on this report; X = result reported separately.  
(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-8

Matrix: AQUEOUS

Sample Size: 0.501 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 03:24:33

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 26

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 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 <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	RATIO	RRT
PFBA	U		1.60 (Q)		
PFPeA	U		0.798 (Q)		
PFHxA	U		0.399 (Q)		
PFHpA	U		0.399 (Q)		
PFOA	U		0.399 (Q)		
PFNA	U		0.399 (Q)		
PFDA	U		0.399 (Q)		
PFUnA	U		0.399 (Q)		
PFDaA	U		0.319 (Q)		
PFTTrDA	U		0.399 (Q)		
PFTeDA	U		0.399 (Q)		
PFBS	U		0.399 (Q)		
PFPeS	U		0.401 (Q)		
PFHxS	U		0.399 (Q)		
PFHpS	U		0.399 (Q)		
PFOS	U		0.399 (Q)		
PFNS	U		0.399 (Q)		
PFDS	U		0.399 (Q)		
PFDoS	U		0.399 (Q)		
4:2 FTS	U		1.60 (Q)		
6:2 FTS		60.1	1.44 (Q)	0.49	1.000
8:2 FTS	U		1.36 (Q)		
PFOSA	U		0.399 (Q)		
N-MeFOSA	U		0.399 (Q)		
N-EtFOSA	U		1.12 (Q)		
MeFOSAA	U		0.399 (Q)		
EtFOSAA	U		0.399 (Q)		
N-MeFOSE	U		3.99 (Q)		
N-EtFOSE	U		3.99 (Q)		
HFPO-DA	U		1.60 (Q)		
ADONA	U		1.60 (Q)		
9CI-PF3ONS	U		1.60 (Q)		
11CI-PF3OUdS	U		1.60 (Q)		
3:3 FTCA	U		1.60 (Q)		
5:3 FTCA	U		9.97 (Q)		
7:3 FTCA	U		9.97 (Q)		
PFEESA	U		0.399 (Q)		
PFMPA	U		0.798 (Q)		
PFMBA	U		0.399 (Q)		
NFDHA	U		0.798 (Q)		

- (1) Where applicable, custom lab flags have been used on this report; U = not detected at RL.  
(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

For Alys Internal Use Only [ XSL Template: FC2-Form1A.xsl; Created: 01-Mar-2024 12:07:24; Application: XMLTransformer-1.18.48;  
Report Filename: PFC\_FC\_LC\_PFAS\_L40347-8\_Form1A\_FC4G\_042S26\_SJ3384016.html; Workgroup: WG88608; Design ID: 3989 ]

Form 2  
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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-8

Matrix: AQUEOUS

Sample Size: 0.501 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 03:24:33

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 26

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 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.

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>2</sup>	RATIO	RRT
13C4-PFBA		40.0	30.1	75.3		1.000
13C5-PFPeA		20.0	21.2	106		0.872
13C5-PFHxA		10.0	7.88	78.8	14.8	1.000
13C4-PFHpA		10.0	7.70	77.0		0.897
13C8-PFOA		10.0	8.85	88.5		1.000
13C9-PFNA		5.00	4.70	94.0		1.001
13C6-PFDA		5.00	4.23	84.6		1.000
13C7-PFUnA		5.00	4.17	83.4		1.046
13C2-PFDoA		5.00	3.96	79.2		1.080
13C2-PFTeDA		5.00	3.40	68.0		1.158
13C3-PFBS		10.0	7.88	78.7	2.58	0.802
13C3-PFHxS		10.0	8.71	87.0	2.28	1.000
13C8-PFOS		10.1	9.41	93.5	2.00	1.000
13C2-4:2 FTS		20.2	13.9	68.7	1.75	0.840
13C2-6:2 FTS		20.0	16.4	82.0	1.75	1.001
13C2-8:2 FTS		20.0	13.7	68.5	3.23	1.258
13C8-PFOSA		10.0	11.0	110		1.160
D3-N-MeFOSA		10.0	7.78	77.8		1.342
D5-N-EtFOSA		10.0	7.61	76.1		1.380
D3-MeFOSAA		20.0	17.9	89.5		1.301
D5-EtFOSAA		20.0	11.2	56.2		1.327
d7-NMe-FOSE		100	102	102		1.322
d9-NEt-FOSE		100	115	115		1.362
13C3-HFPO-DA		40.0	38.0	94.9	2.43	1.028

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

CLIENT SAMPLE NO.

SIWWTP-INFL

Sample Collection:

15-Sep-2023 07:24

## 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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-11

Matrix: INFLUENT

Sample Size: 0.484 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 05:06:58

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 34

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 S: 31

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 <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	RATIO	RRT
PFBA	J	3.37	1.65 (Q)		1.000
PFPeA		5.19	0.827 (Q)		1.001
PFHxA		4.97	0.413 (Q)	3.02	1.000
PFHpA		2.94	0.413 (Q)	2.93	1.000
PFOA		4.08	0.413 (Q)	2.21	
PFNA	J	0.804	0.413 (Q)	2.76	
PFDA	U		0.413 (Q)		
PFUnA	U		0.413 (Q)		
PFDaA	U		0.331 (Q)		
PFTTrDA	U		0.413 (Q)		
PFTeDA	U		0.413 (Q)		
PFBS	R	3.15	0.413 (Q)	5.06	0.999
PFPeS	R J	0.433	0.415 (Q)	0.28	0.887
PFHxS		3.25	0.413 (Q)	2.44	
PFHpS	U		0.413 (Q)		
PFOS		9.43	0.413 (Q)	3.32	
PFNS	U		0.413 (Q)		
PFDS	U		0.413 (Q)		
PFDoS	U		0.413 (Q)		
4:2 FTS	U		1.65 (Q)		
6:2 FTS	U		1.49 (Q)		
8:2 FTS	U		1.41 (Q)		
PFOSA	U		0.413 (Q)		
N-MeFOSA	U		0.413 (Q)		
N-EtFOSA	U		1.16 (Q)		
MeFOSAA	U		0.413 (Q)		
EtFOSAA	U		0.413 (Q)		
N-MeFOSE	U		4.13 (Q)		
N-EtFOSE	U		4.13 (Q)		
HFPO-DA	U		1.65 (Q)		
ADONA	U		1.65 (Q)		
9CI-PF3ONS	U		1.66 (Q)		
11CI-PF3OUdS	U		1.66 (Q)		
3:3 FTCA	U		1.65 (Q)		
5:3 FTCA	U		10.3 (Q)		
7:3 FTCA	U		10.3 (Q)		
PFEESA	U		0.413 (Q)		
PFMPA	U		0.827 (Q)		
PFMBA	U		0.413 (Q)		
NFDHA	U		0.827 (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; 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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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Report Filename: PFC\_FC\_LC\_PFAS\_L40347-11\_Form1A\_FC4G\_042S34\_SJ3384026.html; Workgroup: WG88608; Design ID: 3989 ]

Form 2  
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

Contract No.: 4066

Project No.

SAND ISLAND WWTP

Lab Sample I.D.:

L40347-11

Matrix: INFLUENT

Sample Size: 0.484 L

Sample Receipt Date: 06-Oct-2023

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 05:06:58

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 34

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 S: 31

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.

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>2</sup>	RATIO	RRT
13C4-PFBA		40.0	10.1	25.3		1.000
13C5-PFPeA		20.0	22.2	111		0.872
13C5-PFHxA		10.0	8.25	82.5	15.9	1.000
13C4-PFHpA		10.0	7.98	79.8		0.898
13C8-PFOA		10.0	9.19	91.9		1.000
13C9-PFNA		5.00	4.57	91.5		1.001
13C6-PFDA		5.00	4.09	81.9		1.000
13C7-PFUnA		5.00	3.98	79.6		1.047
13C2-PFDoA		5.00	3.72	74.3		1.081
13C2-PFTeDA		5.00	1.82	36.4		1.159
13C3-PFBS		10.0	7.86	78.5	2.56	0.803
13C3-PFHxS		10.0	8.56	85.5	2.23	0.999
13C8-PFOS		10.1	9.04	89.9	2.09	1.000
13C2-4:2 FTS		20.2	19.5	96.9	1.64	0.841
13C2-6:2 FTS		20.0	17.0	84.8	1.94	1.002
13C2-8:2 FTS	V	20.0	8.87	44.2	2.94	1.257
13C8-PFOSA		10.0	9.46	94.6		1.161
D3-N-MeFOSA		10.0	7.41	74.1		1.343
D5-N-EtFOSA		10.0	7.16	71.6		1.381
D3-MeFOSAA		20.0	17.9	89.6		1.300
D5-EtFOSAA		20.0	20.6	103		1.326
d7-NMe-FOSE		100	101	101		1.323
d9-NEt-FOSE		100	123	123		1.364
13C3-HFPO-DA		40.0	35.0	87.5	2.39	1.029

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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

Contract No.: 4066

Project No.

N/A

Lab Sample I.D.:

WG88608-101

Matrix: AQUEOUS

Sample Size: 0.500 L

Sample Receipt Date: N/A

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 02:20:27

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 21

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 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 <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	RATIO	RRT
PFBA	U		1.60 (Q)		
PFPeA	U		0.800 (Q)		
PFHxA	U		0.400 (Q)		
PFHpA	U		0.400 (Q)		
PFOA	U		0.400 (Q)		
PFNA	U		0.400 (Q)		
PFDA	U		0.400 (Q)		
PFUnA	U		0.400 (Q)		
PFDaA	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)		
9CI-PF3ONS	U		1.60 (Q)		
11CI-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.  
(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

For Alys Internal Use Only [ XSL Template: FC2-Form1A.xsl; Created: 01-Mar-2024 12:07:24; Application: XMLTransformer-1.18.48;  
Report Filename: PFC\_FC\_LC\_PFAS\_WG88608-101\_Form1A\_FC4G\_042S21\_SJ3384010.html; Workgroup: WG88608; Design ID: 3989 ]

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

Contract No.: 4066

Project No.

N/A

Lab Sample I.D.:

WG88608-101

Matrix: AQUEOUS

Sample Size: 0.500 L

Sample Receipt Date: N/A

Initial Calibration Date: 19-Feb-2023

Extraction Date: 01-Feb-2024

Instrument ID: LC MS/MS

Analysis Date: 03-Feb-2024 Time: 02:20:27

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC4G\_042 S: 21

Injection Volume (uL): 2

Blank Data Filename: FC4G\_042 S: 21

Dilution Factor: N/A

Cal. Ver. Data Filename: FC4G\_042 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.

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>2</sup>	RATIO	RRT
13C4-PFBA	V	40.0	2.72	6.79		1.000
13C5-PFPeA	V	20.0	6.06	30.3		0.872
13C5-PFHxA		10.0	6.34	63.4	15.6	1.000
13C4-PFHpA		10.0	7.83	78.3		0.896
13C8-PFOA		10.0	9.49	94.9		1.000
13C9-PFNA		5.00	4.69	93.8		1.000
13C6-PFDA		5.00	4.11	82.2		1.000
13C7-PFUnA		5.00	4.32	86.3		1.045
13C2-PFDoA		5.00	4.01	80.1		1.079
13C2-PFTeDA		5.00	3.49	69.9		1.157
13C3-PFBS		10.0	8.09	80.8	2.54	0.801
13C3-PFHxS		10.0	8.89	88.7	2.32	1.001
13C8-PFOS		10.1	9.63	95.7	2.02	1.000
13C2-4:2 FTS	V	20.2	6.63	32.9	1.86	0.839
13C2-6:2 FTS		20.0	17.2	86.3	1.95	1.002
13C2-8:2 FTS		20.0	15.9	79.1	3.62	1.259
13C8-PFOSA		10.0	12.5	125		1.160
D3-N-MeFOSA		10.0	11.0	110		1.340
D5-N-EtFOSA		10.0	10.5	105		1.379
D3-MeFOSAA		20.0	13.0	64.9		1.303
D5-EtFOSAA		20.0	14.3	71.3		1.328
d7-NMe-FOSE		100	106	106		1.321
d9-NEt-FOSE		100	118	118		1.362
13C3-HFPO-DA		40.0	30.9	77.2	2.39	1.028

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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.:	WG88608-102
Matrix:	AQUEOUS	Initial Calibration Date:	19-Feb-2023
Extraction Date:	01-Feb-2024	Instrument ID:	LC MS/MS
Analysis Date:	03-Feb-2024 Time: 01:54:41	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC4G_042 S: 19
Injection Volume (uL):	2	Blank Data Filename:	FC4G_042 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC4G_042 S: 15

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

COMPOUND	LAB FLAG <sup>1</sup>	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
PFBA			20.0	18.7	93.3	1.007
PFPeA			10.0	9.87	98.7	1.000
PFHxA		4.33	5.00	5.10	102	1.000
PFHpA		2.05	5.00	5.24	105	1.000
PFOA		2.11	5.00	5.51	110	
PFNA		2.82	5.00	5.59	112	
PFDA		2.43	5.00	4.54	90.8	1.000
PFUnA		3.83	5.00	5.24	105	1.000
PFDoA		6.98	4.06	4.46	110	1.000
PFTTrDA		2.86	5.00	5.06	101	0.963
PFTeDA		2.24	5.00	4.84	96.8	1.001
PFBS		2.43	5.00	4.90	98.0	1.000
PFPeS		2.17	5.00	4.81	96.1	0.885
PFHxS		2.31	5.00	4.59	91.8	
PFHpS		2.11	5.00	5.62	112	0.927
PFOS		2.55	5.00	4.81	96.2	
PFNS		2.24	5.00	4.27	85.4	1.043
PFDS		2.31	5.00	5.09	102	1.077
PFDoS		2.28	5.00	4.21	84.2	
4:2 FTS		0.46	20.0	20.4	102	1.000
6:2 FTS		0.49	18.0	22.5	126	1.000
8:2 FTS		0.52	16.9	16.9	99.9	1.000
PFOSA			5.00	5.35	107	
N-MeFOSA		0.58	5.00	5.27	105	
N-EtFOSA		0.60	14.0	15.0	107	
MeFOSAA		2.06	5.00	5.69	114	
EtFOSAA		1.18	5.00	5.19	104	
N-MeFOSE			50.0	47.9	95.9	
N-EtFOSE			50.0	40.5	81.1	
HFPO-DA		2.42	20.0	21.2	106	1.001
ADONA		1.28	20.0	21.0	105	1.099
9CI-PF3ONS		3.21	20.0	21.6	108	0.970
11CI-PF3OUdS		3.23	20.0	21.7	109	1.036
3:3 FTCA	N	1.63	20.0	4.77	23.9	
5:3 FTCA		1.25	125	135	108	1.049

COMPOUND	LAB FLAG <sup>1</sup>	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
7:3 FTCA		0.73	125	162	129	1.344
PFEESA		10.4	5.00	6.77	135	1.036
PFMPA			10.0	5.33	53.3	
PFMBA			5.00	6.27	125	1.060
NFDHA			10.0	11.3	113	

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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: 01-Mar-2024 12:07:24; Application: XMLTransformer-1.18.48;  
Report Filename: PFC\_FC\_LC\_PFAS\_WG88608-102\_Form8A\_SJ3384007.html; Workgroup: WG88608; Design ID: 3989 ]

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.:	WG88608-102
Matrix:	AQUEOUS	Initial Calibration Date:	19-Feb-2023
Extraction Date:	01-Feb-2024	Instrument ID:	LC MS/MS
Analysis Date:	03-Feb-2024 Time: 01:54:41	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC4G_042 S: 19
Injection Volume (uL):	2	Blank Data Filename:	FC4G_042 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC4G_042 S: 15

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

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
13C4-PFBA			40.0	4.59	11.5	0.997
13C5-PFPeA			20.0	9.49	47.4	0.874
13C5-PFHxA		15.2	10.0	8.32	83.2	1.000
13C4-PFHpA			10.0	7.82	78.2	0.896
13C8-PFOA			10.0	9.37	93.7	1.000
13C9-PFNA			5.00	4.51	90.2	1.000
13C6-PFDA			5.00	4.51	90.2	1.000
13C7-PFUnA			5.00	4.50	90.0	1.046
13C2-PFDoA			5.00	4.45	88.9	1.079
13C2-PFTeDA			5.00	3.76	75.3	1.157
13C3-PFBS		2.57	10.0	8.44	84.3	0.801
13C3-PFHxS		2.21	10.0	9.22	92.1	1.001
13C8-PFOS		2.08	10.1	10.1	100	1.000
13C2-4:2 FTS		1.61	20.2	10.7	53.3	0.839
13C2-6:2 FTS		1.84	20.0	18.1	90.7	1.001
13C2-8:2 FTS		3.03	20.0	16.9	84.2	1.258
13C8-PFOSA			10.0	12.7	127	1.160
D3-N-MeFOSA			10.0	10.6	106	1.342
D5-N-EtFOSA			10.0	10.0	100	1.381
D3-MeFOSAA			20.0	14.2	70.9	1.302
D5-EtFOSAA			20.0	14.7	73.4	1.327
d7-NMe-FOSE			100	108	107	1.322
d9-NEt-FOSE			100	129	129	1.363
13C3-HFPO-DA		2.50	40.0	40.9	102	1.029

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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.:	WG88608-103
Matrix:	AQUEOUS	Initial Calibration Date:	19-Feb-2023
Extraction Date:	01-Feb-2024	Instrument ID:	LC MS/MS
Analysis Date:	03-Feb-2024 Time: 01:41:52	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC4G_042 S: 18
Injection Volume (uL):	2	Blank Data Filename:	FC4G_042 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC4G_042 S: 15

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

COMPOUND	LAB FLAG <sup>1</sup>	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
PFBA			6.40	5.66	88.4	1.003
PFPeA			3.20	2.86	89.5	1.001
PFHxA		5.04	1.60	1.68	105	1.000
PFHpA		2.06	1.60	1.55	97.0	1.000
PFOA		2.14	1.60	1.67	104	
PFNA		2.60	1.60	1.49	93.3	
PFDA		2.38	1.60	1.45	90.7	1.000
PFUnA		4.15	1.60	1.59	99.5	1.000
PFDoA		6.42	1.30	1.27	97.7	0.999
PFTTrDA		2.70	1.60	1.56	97.7	0.962
PFTeDA		2.44	1.60	1.57	98.2	1.000
PFBS		2.39	1.60	1.46	91.3	1.000
PFPeS		2.14	1.60	1.37	85.9	0.886
PFHxS		2.20	1.60	1.41	88.0	
PFHpS		2.18	1.60	1.75	109	0.927
PFOS		2.23	1.60	1.49	93.1	
PFNS		2.16	1.60	1.32	82.7	1.043
PFDS		2.22	1.60	1.51	94.5	1.077
PFDoS		2.16	1.60	1.24	77.4	
4:2 FTS		0.45	6.40	6.34	99.1	1.000
6:2 FTS		0.48	5.75	7.93	138	1.002
8:2 FTS		0.52	5.42	4.98	91.9	1.000
PFOSA			1.60	1.63	102	
N-MeFOSA		0.57	1.60	1.63	102	
N-EtFOSA		0.56	4.48	4.26	95.0	
MeFOSAA		1.86	1.60	1.42	89.0	
EtFOSAA		1.97	1.60	1.45	90.6	
N-MeFOSE			16.0	14.1	87.9	
N-EtFOSE			16.0	12.3	76.7	
HFPO-DA		2.27	6.40	6.60	103	1.000
ADONA		1.30	6.40	6.28	98.1	1.099
9CI-PF3ONS		3.37	6.40	6.51	102	0.969
11CI-PF3OUdS		3.19	6.40	6.59	103	1.035
3:3 FTCA	N	0.67	6.40	1.95	30.4	
5:3 FTCA		1.20	40.0	43.1	108	1.048

COMPOUND	LAB FLAG <sup>1</sup>	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
7:3 FTCA		0.75	40.0	48.8	122	1.343
PFEESA		10.7	1.60	1.97	123	1.036
PFMPA			3.20	1.77	55.3	
PFMBA			1.60	1.78	111	1.061
NFDHA			3.20	3.38	106	

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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.

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.:	WG88608-103
Matrix:	AQUEOUS	Initial Calibration Date:	19-Feb-2023
Extraction Date:	01-Feb-2024	Instrument ID:	LC MS/MS
Analysis Date:	03-Feb-2024 Time: 01:41:52	Column ID:	C18
Extract Volume (uL):	4000	OPR Data Filename:	FC4G_042 S: 18
Injection Volume (uL):	2	Blank Data Filename:	FC4G_042 S: 21
Dilution Factor:	N/A	Cal. Ver. Data Filename:	FC4G_042 S: 15

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

LABELLED COMPOUND	LAB FLAG <sup>1</sup>	RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	% RECOVERY	RRT
13C4-PFBA			40.0	9.73	24.3	0.997
13C5-PFPeA			20.0	15.4	76.9	0.873
13C5-PFHxA		16.9	10.0	8.30	83.0	1.000
13C4-PFHpA			10.0	8.38	83.8	0.895
13C8-PFOA			10.0	9.67	96.7	1.000
13C9-PFNA			5.00	4.81	96.2	1.000
13C6-PFDA			5.00	4.43	88.6	1.000
13C7-PFUnA			5.00	4.56	91.2	1.046
13C2-PFDoA			5.00	4.32	86.5	1.080
13C2-PFTeDA			5.00	3.68	73.6	1.158
13C3-PFBS		2.48	10.0	8.28	82.6	0.801
13C3-PFHxS		2.31	10.0	9.03	90.2	1.000
13C8-PFOS		2.00	10.1	9.97	99.1	1.000
13C2-4:2 FTS		1.59	20.2	12.5	62.0	0.839
13C2-6:2 FTS		1.85	20.0	17.7	88.6	1.001
13C2-8:2 FTS		3.19	20.0	16.1	80.5	1.259
13C8-PFOSA			10.0	12.9	129	1.160
D3-N-MeFOSA			10.0	9.95	99.5	1.341
D5-N-EtFOSA			10.0	9.61	96.1	1.380
D3-MeFOSAA			20.0	13.9	69.7	1.302
D5-EtFOSAA			20.0	14.1	70.3	1.327
d7-NMe-FOSE			100	112	112	1.322
d9-NEt-FOSE			100	123	123	1.362
13C3-HFPO-DA		2.31	40.0	39.7	99.3	1.028

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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: 19-Feb-2023

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A

CS1 Data Filename: FC3G\_006 S: 16

CS2 Data Filename: FC3G\_006 S: 17

CS3 Data Filename: FC3G\_006 S: 18

CS4 Data Filename: FC3G\_006 S: 19

CS5 Data Filename: FC3G\_006 S: 20

CS6 Data Filename: FC3G\_006 S: 21

CS7 Data Filename: FC3G\_006 S: 22

CS8 Data Filename: FC3G\_006 S: 23

COMPOUND	LAB FLAG <sup>1</sup>	RELATIVE RESPONSE (RR)								MEAN RR	CV (%RSD) <sup>2</sup>	
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7			CS8
PFBA			1.14	0.93	0.92	0.86	0.90	0.86	0.86	0.86	0.92	10.4
PFPeA			1.21	1.06	1.02	0.98	1.03	0.98	0.98	0.97	1.03	7.90
PFHxA			1.30	1.13	1.04	0.94	0.98	0.95	0.94	0.97	1.03	12.1
PFFHpA			1.38	1.18	1.11	1.16	1.20	1.11	1.14	1.13	1.18	7.43
PFOA			1.47	1.28	1.26	1.18	1.22	1.19	1.18	1.18	1.24	7.98
PFNA			1.21	1.05	1.00	1.01	1.05	1.04	1.02	1.02	1.05	6.47
PFDA			0.96	0.82	0.85	0.76	0.82	0.80	0.77	0.80	0.82	7.62
PFUnA			0.83	0.74	0.74	0.68	0.74	0.73	0.71	0.74	0.74	5.90
PFDoA			1.25	1.14	1.07	1.00	1.08	1.05	1.04	1.01	1.08	7.41
PFTTrDA			1.02	0.84	0.84	0.82	0.86	0.81	0.81	0.73	0.84	9.87
PFTeDA			0.94	0.83	0.82	0.74	0.79	0.78	0.76	0.71	0.80	8.77
PFBS			1.07	1.05	1.00	1.01	1.02	1.00	1.01	1.02	1.02	2.48
PFPeS			1.01	0.98	1.01	0.99	1.03	1.04	1.03	0.98	1.01	2.30
PFHxS			1.38	1.39	1.37	1.26	1.35	1.32	1.34	1.32	1.34	3.07
PFFHpS			1.01	0.98	1.09	0.97	1.02	1.02	1.00	0.99	1.01	3.72
PFOS			1.43	1.15	1.09	1.05	1.15	1.23	1.10	1.13	1.17	10.1
PFNS			1.17	1.19	1.19	1.10	1.16	1.15	1.14	1.11	1.15	2.93
PFDS			1.01	1.05	1.02	1.01	1.05	1.03	1.00	1.02	1.02	1.76
PFDoS			0.90	0.86	0.83	0.79	0.85	0.84	0.83	0.85	0.84	3.59
4:2 FTS			0.48	0.47	0.56	0.55	0.53	0.52	0.51	0.46	0.51	7.33
6:2 FTS			0.52	0.53	0.48	0.51	0.49	0.51	0.49	0.45	0.50	5.07
8:2 FTS			0.31	0.33	0.33	0.31	0.34	0.33	0.31	0.27	0.32	7.19
PFOSA			0.98	0.97	0.97	0.92	0.96	0.93	0.93	0.95	0.95	2.35
N-MeFOSA			0.97	0.97	1.03	0.93	0.96	0.96	0.98	0.90	0.96	4.03
N-EtFOSA			1.25	1.19	1.23	1.10	1.22	1.19	1.18	1.18	1.19	3.74
MeFOSAA			0.66	0.79	0.88	0.83	0.83	0.83	0.86	0.84	0.82	8.30
EtFOSAA			0.76	0.64	0.68	0.69	0.70	0.67	0.72	0.68	0.69	5.01
N-MeFOSE			0.81	0.78	0.78	0.74	0.78	0.77	0.75	0.74	0.77	3.09
N-EtFOSE			1.12	1.10	1.09	1.07	1.13	1.09	1.08	1.06	1.09	2.17
HFPO-DA			0.96	0.94	0.93	0.90	0.96	0.94	0.91	0.88	0.93	3.20
ADONA			8.26	7.79	7.49	7.42	7.83	7.38	7.65	7.14	7.62	4.53
9CI-PF3ONS			2.17	2.08	1.99	1.97	2.10	1.94	1.94	1.80	2.00	5.72
11CI-PF3OUdS			1.32	1.28	1.20	1.20	1.29	1.20	1.24	1.17	1.24	4.39
3:3 FTCA			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.05	7.14
5:3 FTCA			0.22	0.18	0.19	0.17	0.18	0.17	0.17	0.18	0.18	9.21
7:3 FTCA			0.11	0.10	0.10	0.09	0.10	0.09	0.09	0.10	0.10	6.93
PFEESA			2.74	2.73	2.70	2.57	2.71	2.64	2.64	2.80	2.69	2.67
PFMPA			1.40	1.34	1.34	1.26	1.37	1.31	1.35	1.46	1.36	4.34

COMPOUND	LAB FLAG <sup>1</sup>	RELATIVE RESPONSE (RR)								MEAN RR	CV (%RSD) <sup>2</sup>	
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7			CS8
PFMBA			1.84	1.70	1.72	1.71	1.82	1.75	1.78	1.93	1.78	4.41
NFDHA			0.05	0.05	0.06	0.05	0.06	0.04	0.05	0.04	0.05	15.8

(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: \_\_\_\_\_Kristina Coleman\_\_\_\_\_

## 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: 19-Feb-2023

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A

CS1 Data Filename: FC3G\_006 S: 16

CS2 Data Filename: FC3G\_006 S: 17

CS3 Data Filename: FC3G\_006 S: 18

CS4 Data Filename: FC3G\_006 S: 19

CS5 Data Filename: FC3G\_006 S: 20

CS6 Data Filename: FC3G\_006 S: 21

CS7 Data Filename: FC3G\_006 S: 22

CS8 Data Filename: FC3G\_006 S: 23

Labeled Compound	Lab Flag <sup>1</sup>	Relative Response (RR)								Mean RR	CV (%RSD) <sup>2</sup>	
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7			CS8
13C4-PFBA			1.15	1.18	1.14	1.13	1.15	1.16	1.16	1.14	1.15	1.43
13C5-PFPeA			0.87	0.90	0.88	0.86	0.83	0.87	0.86	0.81	0.86	3.20
13C5-PFHxA			0.70	0.75	0.73	0.72	0.73	0.74	0.74	0.72	0.73	2.04
13C4-PFHpA			3.23	3.36	3.29	3.30	3.12	3.45	3.17	3.25	3.27	3.24
13C8-PFOA			3.52	3.75	3.58	3.76	3.61	3.80	3.62	3.76	3.67	2.82
13C9-PFNA			1.05	1.09	1.09	1.05	1.07	1.06	1.07	1.09	1.07	1.63
13C6-PFDA			0.97	1.07	1.00	1.01	0.97	1.02	1.04	0.98	1.01	3.74
13C7-PFUnA			1.09	1.21	1.11	1.13	1.12	1.07	1.03	0.77	1.07	12.3
13C2-PFDoA			0.87	1.00	0.93	0.94	0.93	0.95	0.96	0.98	0.94	4.10
13C2-PFTeDA			0.76	0.85	0.77	0.79	0.81	0.81	0.83	0.88	0.81	5.10
13C3-PFBS			1.33	1.32	1.30	1.27	1.34	1.30	1.29	1.15	1.29	4.67
13C3-PFHxS			1.07	1.14	1.07	1.05	1.09	1.07	1.05	1.08	1.08	2.55
13C8-PFOS			0.91	0.94	0.91	0.92	0.91	0.91	0.96	0.90	0.92	2.11
13C2-4:2 FTS			1.12	1.07	1.02	0.98	1.05	1.01	1.00	1.00	1.03	4.27
13C2-6:2 FTS			0.92	0.96	0.95	0.90	0.97	0.93	0.98	1.01	0.95	3.79
13C2-8:2 FTS			1.37	1.43	1.33	1.38	1.41	1.37	1.41	1.46	1.40	2.80
13C8-PFOA			1.76	1.80	1.79	1.71	1.71	1.74	1.84	1.82	1.77	2.87
D3-N-MeFOSA			0.25	0.26	0.24	0.24	0.25	0.24	0.25	0.28	0.25	4.94
D5-N-EtFOSA			0.23	0.24	0.23	0.23	0.22	0.22	0.23	0.23	0.23	3.19
D3-MeFOSAA			0.62	0.67	0.65	0.64	0.71	0.74	0.76	0.88	0.71	12.2
D5-EtFOSAA			0.52	0.59	0.54	0.54	0.58	0.61	0.63	0.75	0.59	12.4
d7-NMe-FOSE			1.88	2.01	1.94	1.89	1.90	1.88	1.99	1.96	1.93	2.67
d9-NEt-FOSE			1.49	1.62	1.55	1.51	1.51	1.51	1.60	1.58	1.55	3.09
13C3-HFPO-DA			0.28	0.31	0.31	0.30	0.29	0.31	0.29	0.27	0.29	5.27

(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: \_\_\_\_\_Kristina Coleman\_\_\_\_\_

## 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: 19-Feb-2023

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A

CS1 Data Filename: FC3G\_006 S: 16

CS2 Data Filename: FC3G\_006 S: 17

CS3 Data Filename: FC3G\_006 S: 18

CS4 Data Filename: FC3G\_006 S: 19

CS5 Data Filename: FC3G\_006 S: 20

CS6 Data Filename: FC3G\_006 S: 21

CS7 Data Filename: FC3G\_006 S: 22

CS8 Data Filename: FC3G\_006 S: 23

COMPOUND	LAB FLAG <sup>1</sup>	RATIOS								
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
PFBA										
PFPeA										
PFHxA			5.63	5.90	5.29	4.81	5.06	4.89	4.87	5.02
PFHpA			2.04	2.02	2.06	2.01	2.00	1.95	2.00	2.00
PFOA			1.90	1.98	1.92	1.86	1.89	1.91	1.95	1.86
PFNA			3.21	2.58	2.42	2.64	2.78	2.71	2.66	2.67
PFDA			2.73	2.60	2.75	2.69	2.64	2.75	2.67	2.68
PFUnA			3.76	3.56	3.89	3.64	3.81	3.83	3.70	3.79
PFDaA			6.48	6.53	6.28	6.40	6.42	6.55	6.31	6.34
PFTTrDA			2.95	2.60	2.69	2.75	2.74	2.74	2.69	2.66
PFTeDA			3.00	2.18	2.31	2.19	2.29	2.29	2.28	2.31
PFBS			2.39	2.39	2.41	2.57	2.52	2.49	2.48	2.48
PFPeS			1.97	2.00	2.02	2.15	2.03	2.11	2.10	2.12
PFHxS			1.78	2.06	2.22	2.05	2.26	2.22	2.19	2.22
PFHpS			2.22	2.01	2.15	2.11	2.05	2.07	2.04	2.03
PFOS			2.03	2.34	2.37	2.33	2.57	2.48	2.38	2.49
PFNS			2.06	2.21	2.14	2.21	2.20	2.19	2.18	2.17
PFDS			2.14	2.11	2.26	2.27	2.23	2.22	2.21	2.23
PFDoS			2.14	2.14	2.07	2.12	2.12	2.17	2.16	2.14
4:2 FTS			0.43	0.42	0.49	0.52	0.49	0.48	0.48	0.50
6:2 FTS			0.48	0.51	0.48	0.50	0.46	0.47	0.48	0.49
8:2 FTS			0.49	0.50	0.51	0.50	0.53	0.51	0.51	0.50
PFOSA										
N-MeFOSA			0.64	0.57	0.59	0.56	0.57	0.58	0.58	0.58
N-EtFOSA			0.61	0.57	0.58	0.56	0.57	0.57	0.58	0.57
MeFOSAA			1.25	1.51	1.92	1.84	1.84	1.96	1.98	2.00
EtFOSAA			0.96	1.23	1.29	1.33	1.26	1.22	1.30	1.28
N-MeFOSE										
N-EtFOSE										
HFPO-DA			2.55	2.55	2.69	2.48	2.51	2.66	2.45	2.59
ADONA			1.16	1.17	1.16	1.18	1.15	1.18	1.17	1.18
9CI-PF3ONS			3.41	3.45	3.19	3.06	3.18	3.13	3.06	3.13
11CI-PF3OUdS			3.16	3.35	3.24	3.09	3.13	3.17	3.20	3.18
3:3 FTCA			1.08	1.07	1.14	1.13	1.16	1.16	1.19	1.18
5:3 FTCA			1.42	1.32	1.35	1.21	1.24	1.20	1.21	1.22

COMPOUND	LAB FLAG <sup>1</sup>	RATIOS								
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
7:3 FTCA			0.81	0.77	0.81	0.76	0.79	0.76	0.78	0.77
PFEESA			8.87	9.36	9.77	10.1	10.3	10.1	10.4	10.5
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: \_\_\_\_\_Kristina Coleman\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: FC2-Form3C.xsl; Created: 01-Mar-2024 12:07:24; Application: XMLTransformer-1.18.48; Report Filename: PFOA\_FC\_LC\_19-Feb-2023\_FC3G\_\_Form3C\_GS107461.html; Workgroup: WG88608; Design ID: 3989 ]



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: 19-Feb-2023

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: N/A  
CS1 Data Filename: FC3G\_006 S: 16  
CS2 Data Filename: FC3G\_006 S: 17  
CS3 Data Filename: FC3G\_006 S: 18  
CS4 Data Filename: FC3G\_006 S: 19  
CS5 Data Filename: FC3G\_006 S: 20  
CS6 Data Filename: FC3G\_006 S: 21  
CS7 Data Filename: FC3G\_006 S: 22  
CS8 Data Filename: FC3G\_006 S: 23

LABELED COMPOUND	LAB FLAG <sup>1</sup>	RATIOS								
		CS0	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8
13C4-PFBA										
13C5-PFPeA										
13C5-PFHxA			20.2	21.2	22.4	21.8	24.1	19.9	23.9	21.1
13C4-PFHpA										
13C8-PFOA										
13C9-PFNA										
13C6-PFDA										
13C7-PFUnA										
13C2-PFDoA										
13C2-PFTeDA										
13C3-PFBS			2.56	2.45	2.51	2.44	2.54	2.53	2.48	2.47
13C3-PFHxS			2.22	2.29	2.28	2.25	2.22	2.24	2.19	2.24
13C8-PFOS			2.09	2.04	1.95	2.04	2.08	2.07	2.11	2.03
13C2-4:2 FTS			1.91	1.74	1.67	1.58	1.57	1.48	1.14	0.55
13C2-6:2 FTS			1.88	1.97	1.95	1.75	1.85	1.57	1.33	0.65
13C2-8:2 FTS			3.33	3.33	3.15	3.12	3.07	2.71	2.34	1.15
13C8-PFOSA										
D3-N-MeFOSA										
D5-N-EtFOSA										
D3-MeFOSAA										
D5-EtFOSAA										
d7-NMe-FOSE										
d9-NEt-FOSE										
13C3-HFPO-DA			2.38	2.43	2.52	2.53	2.46	2.51	2.47	2.55

(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: \_\_\_\_\_Kristina Coleman\_\_\_\_\_

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:

19-Feb-2023

VER Data Filename:

FC4G\_042 S: 15

Instrument ID:

LC MS/MS

Analysis Date:

03-Feb-2024

LC Column ID:

C18

Analysis Time:

01:03:31

COMPOUND	LAB FLAG <sup>1</sup>	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
PFBA		1.003	213 > 169		20.0	19.5	97.3
PFPeA		1.001	263 > 219		10.0	9.54	95.4
PFHxA		1.000	313 > 269	4.52	5.00	5.27	105
PfHpA		1.000	363 > 319	2.04	5.00	5.15	103
PFOA		1.000	413 > 369	2.22	5.00	5.66	113
PFNA		1.000	463 > 419	2.70	5.00	5.31	106
PFDA		1.000	513 > 469	2.52	5.00	4.42	88.4
PFUnA		1.000	563 > 519	3.74	5.00	4.97	99.3
PFDaA		0.999	613 > 569	6.88	4.06	4.57	113
PFTTrDA		0.962	663 > 619	2.82	5.00	5.27	105
PFTeDA		1.000	713 > 669	2.35	5.00	4.91	98.1
PFBS		1.000	299 > 80	2.33	5.00	4.86	97.1
PFPeS		0.884	349 > 80	2.17	5.00	4.97	99.4
PFHxS		1.001	399 > 80	2.17	5.00	4.62	92.4
PFHpS		0.927	449 > 80	2.11	5.00	5.65	113
PFOS		1.000	499 > 80	2.38	5.00	4.56	91.2
PFNS		1.043	549 > 80	2.20	5.00	4.27	85.4
PFDS		1.077	599 > 80	2.29	5.00	5.14	103
PFDoS			699 > 80	2.31	5.00	5.56	111
4:2 FTS		0.999	327 > 307	0.51	20.0	22.5	112
6:2 FTS		1.000	427 > 407	0.48	18.0	20.1	112
8:2 FTS		1.000	527 > 507	0.51	17.0	19.0	112
PFOSA		1.000	498 > 78		5.00	5.58	112
N-MeFOSA		1.000	512 > 219	0.58	5.00	5.28	106
N-EtFOSA		1.001	526 > 219	0.55	14.0	13.8	98.4
MeFOSAA		1.001	570 > 419	1.91	5.00	5.24	105
EtFOSAA		1.001	584 > 419	1.09	5.00	4.43	88.6
N-MeFOSE		1.002	616 > 59		50.0	54.7	109
N-EtFOSE		1.002	630 > 59		50.0	49.4	98.7
HFPO-DA		1.000	285 > 169	2.50	20.0	22.6	113
ADONA		1.099	377 > 251	1.29	20.0	22.4	112
9CI-PF3ONS		0.969	531 > 351	3.17	20.0	22.3	111
11CI-PF3OUdS		1.036	631 > 451	3.22	20.0	26.0	130
3:3 FTCA			241 > 177	1.24	20.0	21.4	107
5:3 FTCA		1.049	341 > 237	1.27	125	139	112
7:3 FTCA		1.346	441 > 317	0.75	125	154	123
PFEESA		1.036	315 > 135	11.1	5.00	5.99	120
PFMPA			229 > 85		10.0	9.86	98.6
PFMBA		1.061	279 > 85		5.00	4.91	98.2
NFDHA			295 > 201		10.0	8.80	88.0

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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:	19-Feb-2023	VER Data Filename:	FC4G_042 S: 15
Instrument ID:	LC MS/MS	Analysis Date:	03-Feb-2024
LC Column ID:	C18	Analysis Time:	01:03:31

LABELED COMPOUND	LAB FLAG <sup>1</sup>	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
13C4-PFBA		1.000	217 > 172		40.0	32.9	82.3
13C5-PFPeA		0.874	268 > 223		20.0	24.8	124
13C5-PFHxA		1.000	318 > 273	15.1	10.0	8.84	88.4
13C4-PFHpA		0.895	367 > 322		10.0	8.72	87.2
13C8-PFOA		1.000	421 > 376		10.0	10.2	102
13C9-PFNA		1.000	472 > 427		5.00	5.14	103
13C6-PFDA		1.000	519 > 474		5.00	4.97	99.5
13C7-PFUnA		1.046	570 > 525		5.00	4.82	96.3
13C2-PFDoA		1.080	615 > 570		5.00	4.88	97.6
13C2-PFTeDA		1.158	715 > 670		5.00	5.54	111
13C3-PFBS		0.801	302 > 80	2.51	10.0	9.00	89.8
13C3-PFHxS		1.000	402 > 80	2.22	10.0	9.71	97.0
13C8-PFOS		1.000	507 > 80	2.08	10.1	11.5	114
13C2-4:2 FTS		0.840	329 > 81	1.68	20.2	14.8	73.6
13C2-6:2 FTS		1.002	429 > 81	1.84	20.0	21.0	105
13C2-8:2 FTS		1.259	529 > 81	3.11	20.0	16.4	81.7
13C8-PFOSA		1.162	506 > 78		10.0	13.1	131
D3-N-MeFOSA		1.342	515 > 219		10.0	11.8	118
D5-N-EtFOSA		1.380	531 > 219		10.0	11.9	119
D3-MeFOSAA		1.303	573 > 419		20.0	15.4	76.8
D5-EtFOSAA		1.328	589 > 419		20.0	17.2	86.2
d7-NMe-FOSE		1.322	623 > 59		100	131	130
d9-NEt-FOSE		1.363	639 > 59		100	142	142
13C3-HFPO-DA		1.028	287 > 169	2.37	40.0	40.1	100

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: FC2-Form4B.xsl; Created: 01-Mar-2024 12:07:24; Application: XMLTransformer-1.18.48; Report Filename: PFOA\_FC\_LC\_FC4G\_042S15\_\_Form4B\_SJ3384002.html; Workgroup: WG88608; Design ID: 3989 ]

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:

19-Feb-2023

VER Data Filename:

FC4G\_042 S: 31

Instrument ID:

LC MS/MS

Analysis Date:

03-Feb-2024

LC Column ID:

C18

Analysis Time:

04:28:31

COMPOUND	LAB FLAG <sup>1</sup>	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
PFBA		1.003	213 > 169		20.0	19.2	96.1
PFPeA		1.001	263 > 219		10.0	9.76	97.6
PFHxA		1.000	313 > 269	4.52	5.00	5.28	106
PFFHpA		1.000	363 > 319	2.04	5.00	5.10	102
PFOA		1.001	413 > 369	2.14	5.00	5.57	111
PFNA		1.001	463 > 419	2.70	5.00	5.23	105
PFDA		1.000	513 > 469	2.56	5.00	4.56	91.1
PFOUnA		1.000	563 > 519	3.61	5.00	5.07	101
PFDaA		0.999	613 > 569	6.98	4.06	4.35	107
PFTTrDA		0.963	663 > 619	2.89	5.00	5.29	106
PFTTeDA		1.001	713 > 669	2.31	5.00	4.84	96.9
PFBS		1.000	299 > 80	2.44	5.00	4.58	91.6
PFPeS		0.887	349 > 80	2.14	5.00	5.02	100
PFHxS		1.000	399 > 80	2.25	5.00	4.73	94.6
PFFHpS		0.927	449 > 80	2.11	5.00	5.76	115
PFOS		1.000	499 > 80	2.57	5.00	4.95	99.1
PFNS		1.043	549 > 80	2.17	5.00	4.32	86.4
PFDS		1.077	599 > 80	2.32	5.00	5.22	104
PFDaS			699 > 80	2.29	5.00	5.65	113
4:2 FTS		1.000	327 > 307	0.50	20.0	21.4	107
6:2 FTS		0.999	427 > 407	0.50	18.0	20.4	114
8:2 FTS		1.000	527 > 507	0.51	17.0	17.7	104
PFOSA		1.000	498 > 78		5.00	5.53	111
N-MeFOSA		1.000	512 > 219	0.62	5.00	4.77	95.4
N-EtFOSA		1.001	526 > 219	0.62	14.0	10.3	73.3
MeFOSAA		1.000	570 > 419	2.31	5.00	5.47	109
EtFOSAA		1.001	584 > 419	1.22	5.00	5.34	107
N-MeFOSE		1.002	616 > 59		50.0	54.1	108
N-EtFOSE		1.002	630 > 59		50.0	49.1	98.3
HFPO-DA		1.000	285 > 169	2.36	20.0	21.7	108
ADONA		1.098	377 > 251	1.31	20.0	22.5	113
9CI-PF3ONS		0.969	531 > 351	3.23	20.0	22.0	110
11CI-PF3OUdS		1.035	631 > 451	3.17	20.0	25.3	126
3:3 FTCA			241 > 177	1.10	20.0	21.4	107
5:3 FTCA		1.050	341 > 237	1.26	125	143	115
7:3 FTCA		1.343	441 > 317	0.75	125	160	128
PFEESA		1.036	315 > 135	11.0	5.00	5.89	118
PFMPA			229 > 85		10.0	9.78	97.8
PFMBA		1.062	279 > 85		5.00	5.08	102
NFDHA			295 > 201		10.0	8.88	88.8

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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:	19-Feb-2023	VER Data Filename:	FC4G_042 S: 31
Instrument ID:	LC MS/MS	Analysis Date:	03-Feb-2024
LC Column ID:	C18	Analysis Time:	04:28:31

LABELED COMPOUND	LAB FLAG <sup>1</sup>	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
13C4-PFBA		1.000	217 > 172		40.0	32.9	82.1
13C5-PFPeA		0.873	268 > 223		20.0	24.7	123
13C5-PFHxA		1.000	318 > 273	14.5	10.0	8.99	89.9
13C4-PFHpA		0.897	367 > 322		10.0	9.24	92.4
13C8-PFOA		0.999	421 > 376		10.0	10.7	107
13C9-PFNA		1.000	472 > 427		5.00	5.33	107
13C6-PFDA		1.000	519 > 474		5.00	5.20	104
13C7-PFUnA		1.046	570 > 525		5.00	4.91	98.3
13C2-PFDoA		1.080	615 > 570		5.00	5.23	105
13C2-PFTeDA		1.156	715 > 670		5.00	5.56	111
13C3-PFBS		0.803	302 > 80	2.62	10.0	9.24	92.2
13C3-PFHxS		1.000	402 > 80	2.28	10.0	9.89	98.7
13C8-PFOS		1.000	507 > 80	2.03	10.1	11.2	111
13C2-4:2 FTS		0.841	329 > 81	1.58	20.2	15.9	78.8
13C2-6:2 FTS		1.002	429 > 81	1.88	20.0	21.6	108
13C2-8:2 FTS		1.258	529 > 81	3.14	20.0	18.0	89.7
13C8-PFOSA		1.159	506 > 78		10.0	13.2	132
D3-N-MeFOSA		1.340	515 > 219		10.0	11.9	119
D5-N-EtFOSA		1.379	531 > 219		10.0	11.9	119
D3-MeFOSAA		1.302	573 > 419		20.0	16.8	84.1
D5-EtFOSAA		1.327	589 > 419		20.0	17.2	86.2
d7-NMe-FOSE		1.321	623 > 59		100	138	138
d9-NEt-FOSE		1.362	639 > 59		100	147	147
13C3-HFPO-DA		1.029	287 > 169	2.49	40.0	41.2	103

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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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:

19-Feb-2023

VER Data Filename:

FC4G\_051 S: 32

Instrument ID:

LC MS/MS

Analysis Date:

12-Feb-2024

LC Column ID:

C18

Analysis Time:

14:14:14

COMPOUND	LAB FLAG <sup>1</sup>	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
PFBA		1.003	213 > 169		20.0	19.4	96.8
PFPeA		1.000	263 > 219		10.0	9.88	98.8
PFHxA		1.000	313 > 269	4.38	5.00	5.10	102
PFHpA		1.000	363 > 319	1.94	5.00	4.81	96.2
PFOA		1.000	413 > 369	2.11	5.00	5.56	111
PFNA		1.000	463 > 419	2.66	5.00	5.25	105
PFDA		1.000	513 > 469	2.56	5.00	4.66	93.2
PFUnA		1.000	563 > 519	3.68	5.00	5.03	101
PFDaA		1.000	613 > 569	6.75	4.06	4.39	108
PFTTrDA		0.963	663 > 619	2.86	5.00	5.24	105
PFTeDA		1.000	713 > 669	2.22	5.00	4.79	95.7
PFBS		1.000	299 > 80	2.40	5.00	4.71	94.2
PFPeS		0.886	349 > 80	2.08	5.00	5.04	101
PFHxS		1.001	399 > 80	2.24	5.00	4.84	96.8
PFHpS		0.927	449 > 80	2.09	5.00	5.63	113
PFOS		1.000	499 > 80	2.56	5.00	4.95	99.0
PFNS		1.043	549 > 80	2.18	5.00	4.43	88.6
PFDS		1.077	599 > 80	2.27	5.00	5.24	105
PFDoS			699 > 80	2.19	5.00	5.41	108
4:2 FTS		1.000	327 > 307	0.48	20.0	20.7	103
6:2 FTS		1.000	427 > 407	0.50	18.0	19.8	110
8:2 FTS		1.000	527 > 507	0.52	17.0	15.2	89.9
PFOSA		1.000	498 > 78		5.00	5.52	110
N-MeFOSA		1.000	512 > 219	0.60	5.00	5.48	110
N-EtFOSA		1.001	526 > 219	0.58	14.0	13.6	97.4
MeFOSAA		1.001	570 > 419	1.89	5.00	5.20	104
EtFOSAA		1.001	584 > 419	1.19	5.00	5.24	105
N-MeFOSE		1.002	616 > 59		50.0	53.1	106
N-EtFOSE		1.002	630 > 59		50.0	47.8	95.6
HFPO-DA		1.000	285 > 169	2.51	20.0	22.3	112
ADONA		1.099	377 > 251	1.26	20.0	21.5	108
9CI-PF3ONS		0.970	531 > 351	3.07	20.0	21.0	105
11CI-PF3OUdS		1.036	631 > 451	3.24	20.0	23.9	119
3:3 FTCA			241 > 177	1.18	20.0	20.7	103
5:3 FTCA		1.048	341 > 237	1.22	125	135	108
7:3 FTCA		1.338	441 > 317	0.74	125	145	116
PFEESA		1.036	315 > 135	10.3	5.00	5.38	108
PFMPA			229 > 85		10.0	10.1	101
PFMBA		1.062	279 > 85		5.00	4.94	98.7
NFDHA			295 > 201		10.0	10.9	109

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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:	19-Feb-2023	VER Data Filename:	FC4G_051 S: 32
Instrument ID:	LC MS/MS	Analysis Date:	12-Feb-2024
LC Column ID:	C18	Analysis Time:	14:14:14

LABELED COMPOUND	LAB FLAG <sup>1</sup>	RRT	QUANT TRANSITION	RATIO	EXPECTED CONC. (ng)	CONC. FOUND (ng)	RECOVERY (%)
13C4-PFBA		0.997	217 > 172		40.0	34.1	85.3
13C5-PFPeA		0.873	268 > 223		20.0	24.8	124
13C5-PFHxA		1.000	318 > 273	16.0	10.0	9.29	92.9
13C4-PFHpA		0.897	367 > 322		10.0	9.16	91.6
13C8-PFOA		1.000	421 > 376		10.0	10.1	101
13C9-PFNA		1.000	472 > 427		5.00	5.02	100
13C6-PFDA		1.000	519 > 474		5.00	4.98	99.5
13C7-PFUnA		1.046	570 > 525		5.00	4.87	97.4
13C2-PFDoA		1.079	615 > 570		5.00	4.83	96.5
13C2-PFTeDA		1.157	715 > 670		5.00	5.55	111
13C3-PFBS		0.802	302 > 80	2.49	10.0	9.38	93.6
13C3-PFHxS		1.000	402 > 80	2.22	10.0	9.94	99.2
13C8-PFOS		1.000	507 > 80	2.07	10.1	11.1	110
13C2-4:2 FTS		0.840	329 > 81	1.60	20.2	16.9	83.8
13C2-6:2 FTS		1.002	429 > 81	1.92	20.0	20.9	105
13C2-8:2 FTS		1.258	529 > 81	3.81	20.0	22.1	110
13C8-PFOSA		1.158	506 > 78		10.0	11.6	116
D3-N-MeFOSA		1.341	515 > 219		10.0	11.7	117
D5-N-EtFOSA		1.380	531 > 219		10.0	11.9	119
D3-MeFOSAA		1.301	573 > 419		20.0	21.2	106
D5-EtFOSAA		1.326	589 > 419		20.0	21.8	109
d7-NMe-FOSE		1.322	623 > 59		100	128	128
d9-NEt-FOSE		1.363	639 > 59		100	137	137
13C3-HFPO-DA		1.028	287 > 169	2.44	40.0	41.0	103

(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: \_\_\_\_\_Aaron Kyle\_\_\_\_\_

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Accreditation Scope

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-103 Rev. 70

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Tissue and Tissue Flora	Urine	Water	Water, Non-Potable	AFF
				CAIA Alaska DEC ANAB bDd ** ANAB ISO 17025 CAIA California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE	Alaska DEC ANAB bDd ** ANAB ISO 17025 CAIA California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE	CAIA Alaska DEC ANAB bDd ** ANAB ISO 17025 CAIA California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE	CAIA Alaska DEC ANAB bDd ** ANAB ISO 17025 CAIA California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE	Alaska DEC ANAB bDd ** ANAB ISO 17025 CAIA California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE	Alaska DEC ANAB bDd ** ANAB ISO 17025 CAIA California WB Florida DOH Maine DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE
PCB congeners	PCB 105/127	SGS AXYS MLA-210	MLA-210						
PCB congeners		SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners		EPA 8270E	MLA-007						
PCB congeners	PCB 106 2,3,3',4,5-Pentachlorobiphenyl	SGS AXYS MLA-007	MLA-007						
PCB congeners		EPA 1668	MLA-010						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y					
PCB congeners		SGS AXYS MLA-210	MLA-210						
PCB congeners	PCB 107 2,3,3',4',5-Pentachlorobiphenyl	SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners		EPA 1668	MLA-010						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y					
PCB congeners	PCB 107/109	SGS AXYS MLA-210	MLA-210						
PCB congeners		SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners		EPA 8270E	MLA-007						
PCB congeners	PCB 108 2,3,3',4,5-Pentachlorobiphenyl	SGS AXYS MLA-007	MLA-007						
PCB congeners		EPA 1668	MLA-010						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y					
PCB congeners		SGS AXYS MLA-210	MLA-210						
PCB congeners	PCB 109 2,3,3',4,6-Pentachlorobiphenyl	SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners		EPA 1668	MLA-010						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y					
PCB congeners	PCB 11 3,3'-Dichlorobiphenyl	SGS AXYS MLA-210	MLA-210						
PCB congeners		SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners		EPA 1668	MLA-010						
PCB congeners	PCB 110 2,3,3',4',6-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010						
PCB congeners		SGS AXYS MLA-210	MLA-210						
PCB congeners		SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners	PCB 111 2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y					
PCB congeners		SGS AXYS MLA-210	MLA-210						
PCB congeners		SGS AXYS MLA-908	MLA-908						
PCB congeners	PCB 112 2,3,3',5,6-Pentachlorobiphenyl	EPA 1628	MLA-908						
PCB congeners		EPA 1668	MLA-010						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y					
PCB congeners		SGS AXYS MLA-210	MLA-210						
PCB congeners	PCB 113 2,3,3',5',6-Pentachlorobiphenyl	SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners		EPA 1668	MLA-010						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y					
PCB congeners	PCB 114 2,3,4,4',5-Pentachlorobiphenyl	SGS AXYS MLA-210	MLA-210						
PCB congeners		SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						
PCB congeners		EPA 1668	MLA-010						
PCB congeners	PCB 115 2,3,4,4',6-Pentachlorobiphenyl	SGS AXYS MLA-010	MLA-010	Y					
PCB congeners		SGS AXYS MLA-210	MLA-210						
PCB congeners		SGS AXYS MLA-908	MLA-908						
PCB congeners		EPA 1628	MLA-908						













































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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Solids										Tissue and Tissue Flora										Urine	Water	Water, Non-Potable										AFF			
				ALA	Alaska DEC	ANAB D+D **	ANAB ISO 17025	ALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB D+D **	ANAB ISO 17025	ALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ALA	ALA	Alaska DEC	ANAB D+D **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP		Virginia DGS	Washington DE *	ANAB D+D **
PPCP	Lincomycin	SGS AXYS MLA-075	MLA-075																																				
PPCP	Lomefloxacin	SGS AXYS MLA-075	MLA-075																																				
PPCP	Meprobamate	SGS AXYS MLA-075	MLA-075																																				
PPCP	Metformin	SGS AXYS MLA-075	MLA-075																																				
PPCP	Methylprednisolone	SGS AXYS MLA-075	MLA-075																																				
PPCP	Metoprolol	SGS AXYS MLA-075	MLA-075																																				
PPCP	Miconazole	SGS AXYS MLA-075	MLA-075																																				
PPCP	Minocycline	SGS AXYS MLA-075	MLA-075																																				
PPCP	Naproxen	SGS AXYS MLA-075	MLA-075																																				
PPCP	Norflouxetine	SGS AXYS MLA-075	MLA-075																																				
PPCP	Norgestimate	SGS AXYS MLA-075	MLA-075																																				
PPCP	Norverapamil	SGS AXYS MLA-075	MLA-075																																				
PPCP	Ofloxacin	SGS AXYS MLA-075	MLA-075																																				
PPCP	Ormetoprim	SGS AXYS MLA-075	MLA-075																																				
PPCP	Oxacillin	SGS AXYS MLA-075	MLA-075																																				
PPCP	Oxolinic acid	SGS AXYS MLA-075	MLA-075																																				
PPCP	Oxycodone	SGS AXYS MLA-075	MLA-075																																				
PPCP	Oxytetracycline (OTC)	SGS AXYS MLA-075	MLA-075																																				
PPCP	Paroxetine	SGS AXYS MLA-075	MLA-075																																				
PPCP	Penicillin G	SGS AXYS MLA-075	MLA-075</																																				

Accreditation Scope

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-103 Rev. 70

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum													Tissue and Tissue Flora	Urine	Water	Water, Non-Potable	AFFF
				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					
PPCP		SGS AXYS MLA-075	MLA-075				Y										ANAB DoD **				
PPCP	Trenbolone	SGS AXYS MLA-075	MLA-075				Y										ANAB ISO 17025				
PPCP	Trenbolone acetate	SGS AXYS MLA-075	MLA-075				Y										CALA				
PPCP	Triamterene	SGS AXYS MLA-075	MLA-075				Y										Florida DOH				
PPCP	Triclocarban	EPA 1694	MLA-075							Y										Y	
PPCP		SGS AXYS MLA-075	MLA-075					Y													
PPCP	Triclosan	EPA 1694	MLA-075							Y										Y	
PPCP		SGS AXYS MLA-075	MLA-075					Y													
PPCP	Trimethoprim	EPA 1694	MLA-075							Y										Y	
PPCP		SGS AXYS MLA-075	MLA-075					Y													
PPCP	Tylosin	EPA 1694	MLA-075							Y										Y	
PPCP		SGS AXYS MLA-075	MLA-075					Y													
PPCP	Valsartan	SGS AXYS MLA-075	MLA-075					Y													
PPCP	Verapamil	SGS AXYS MLA-075	MLA-075					Y													
PPCP	Virginiamycin	EPA 1694	MLA-075							Y										Y	
PPCP		SGS AXYS MLA-075	MLA-075					Y													
PPCP	Warfarin	EPA 1694	MLA-075							Y										Y	
PPCP		SGS AXYS MLA-075	MLA-075					Y			Y										
TOP	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorobutanoate (PFBA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorodecanoate (PFDA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorononanoate (PFNA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorooctanoate (PFOA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluorotridecanoate (PFTriDA)	SGS AXYS MLA-111	MLA-111					Y												Y	
TOP	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-111	MLA-111					Y												Y	
Note *	Analysis of pesticides and PCBs in non-potable water samples by SGS AXYS method MLA-007, with the exception of NPDES or State permitted discharges and Stormwater applications, may fall within the scope of Washington State Department of Ecology solids matrix accreditation, subject to approval of the Ecology Project Manager.																				
Note **	PFAS by LC-MS/MS compliant with US DoD QSM 5.3 table B-15 and US DoD QSM 5.4 table B-24																				

Legend	
Y	Accreditation scope
AFFF	Aqueous film forming foam
BFR	Brominated flame retardants (non-PBDPE)
BPA and mPE	Bisphenol A and mono-Phthalate Esters
OC Pesticides	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PBDPE	Polybrominated diphenylethers
PCB	Polychlorinated Biphenyls
PCDDF	Polychlorinated dibenzodioxins/furans
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceutical and Personal Care Products
TOP	Total Oxidizable Precursors
California WB	California Water Boards, Lab ID 2911
Florida DOH	Florida Department of Health, Lab ID E871007, (NELAC Standard)
Pennsylvania DEP	Pennsylvania Department of Environmental Protection
Minnesota DOH	Minnesota Department of Health, Lab ID 232-999-430, (NELAC Standard)
New Jersey DEP	New Jersey Department of Environmental Protection, Lab ID CANA005, (NELAC Standard)
New York DOH	New York Department of Health, Lab ID 11674, (NELAC Standard)
Washington DE	Washington Department of Ecology, Lab ID C404
Virginia DGS	Virginia Department of General Services, Division of Consolidated Laboratory Services, Lab ID 460224, (NELAC Standard)
Alaska DEC	Alaska Department of Environmental Conservation, Contaminated Sites Laboratory Approval 17-014
Maine DOH	Maine Center for Disease Control and Prevention, Department of Health and Human Services, Lab ID CN00003

Accreditation Scope

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-103 Rev. 70

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids	Tissue and Tissue Flora	Urine	Water	Water, Non-Potable	AFFF
				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)

