



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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BATCH SUMMARY

| | |
|--|--|
| Batch ID: WG78734 | Date: 18-Nov-2021 |
| Analysis Type: Per- and Polyfluoroalkyl Substances (PFAS) | Matrix Type: Leachate |
| BATCH MAKEUP | |
| Contract: 4066 Samples: L35842-1 WHLF-Blank L35842-2 KIWWTP-EFFL-Blank L35842-3 LIWWTP-EFFL - Unfiltered L35842-4 KIWWTP-EFFL - Unfiltered L35842-5 HLWWTP-EFFL - Unfiltered L35842-6 HLWWTP-EFFL-EB L35842-7 KIWWTP-InfL - Unfiltered L35842-8 HLWWTP-INFL - Unfiltered L35842-9 HLWWTP-INFL-EB L35842-10 LIWWTP-INFL - Unfiltered L35842-11 LIWWTP-INFL-EB L35842-12 PVTLF - Unfiltered L35842-13 CMLF-IVA - Unfiltered L35842-14 CMLF-IVB - Unfiltered L35842-15 CMLF-VBE - Unfiltered L35842-16 WHLF-LECH-R1 - Unfiltered L35842-17 WHLF-LECH-R2 - Unfiltered L35842-18 WHLF-LECH-R3 - Unfiltered L35842-19 WHLF-LECH-R4 - Unfiltered | Blank: WG78734-101 Reference or Spike: WG78734-102 Duplicate: |
| Comments: <ol style="list-style-type: none"> 1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples. 4. In the continuing calibration verification (FC1L_483 S:43), the surrogate compound D3-MeFOSAA was observed outside the method control limit. As the target analyte MeFOSAA was observed within method specifications, this is deemed not to have any effect on the data. Additionally, the native analyte NFDHA was observed below method specifications. Data for this analyte may be similarly affected. 5. In the OPR (SGS AXYS ID: WG78734-102) NFDHA was observed below the method control limit and is flagged with an 'N'. Data for this analyte may be similarly affected. 6. Percent recoveries of several 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. 7. However, there were some instances where the percent recovery for a surrogate fell below 10% and was less than 50% of the method lower control limits, but above 1%. Where this was observed, the surrogate was flagged with a 'V' and the native analyte, with the surrogate being its exact labeled analogue, was reported in a 'concentration is estimated' capacity and was flagged with an 'H'. | |

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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 110 | TDP - MLA 111 | TDF - CIC | | | | | |
| Address <u>2385 Waimano Home Rd #100</u> | | | Address <u>737 Bishop St Ste 2340</u> | | | | | | | | | | |
| <u>Pearl City, HI 96782</u> | | | <u>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>diana.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>UNFILTERED</u> | <u>FILTERED</u> | | | | | | | |
| <u>LIWWTB-EFFL</u> | <u>wastewater</u> | <u>9/2/21</u> | <u>0800</u> | <u>4x500mL</u> <u>4x60mL</u> | <u>L35842-3</u> | <u>L35819-1</u> | <u>2</u> | | | | | | |
| <u>PVTLF</u> | <u>leachate</u> | <u>9/30/21</u> | <u>0900</u> | <u>6x125mL</u> <u>6x60mL</u> | <u>-72</u> | <u>-7</u> | <u>2</u> | <u>1</u> | | | | | |
| <u>CMLF-IVA</u> | <u>leachate</u> | <u>10/4/21</u> | <u>0915</u> | <u>4x125mL</u> <u>4x60mL</u> | <u>-13</u> | <u>-8</u> | <u>2</u> | | | | | | |
| <u>CMLF-IVB</u> | <u>leachate</u> | <u>10/4/21</u> | <u>0925</u> | <u>4x125mL</u> <u>4x60mL</u> | <u>-14</u> | <u>-9</u> | <u>2</u> | | | | | | |
| <u>CMLF-VBE</u> | <u>leachate</u> | <u>10/4/21</u> | <u>0955</u> | <u>4x125mL</u> <u>4x60mL</u> | <u>-15</u> | <u>-10</u> | <u>2</u> | <u>1</u> | | | | | |
| <u>WHLF-LECH-R1</u> | <u>leachate</u> | <u>9/15/21</u> | <u>1500</u> | <u>4x125mL</u> <u>4x60mL</u> | <u>-16</u> | <u>-11</u> | <u>2</u> | | | | | | |
| <u>WHLF-LECH-R2</u> | <u>leachate</u> | <u>9/15/21</u> | <u>1400</u> | <u>"</u> | <u>-17</u> | <u>-12</u> | <u>2</u> | | | | | | |
| <u>WHLF-LECH-R3</u> | <u>leachate</u> | <u>9/15/21</u> | <u>1530</u> | <u>"</u> | <u>-18</u> | <u>-13</u> | <u>2</u> | | | | | | |
| <u>WHLF-LECH-R4</u> | <u>leachate</u> | <u>9/15/21</u> | <u>1600</u> | <u>"</u> | <u>-19</u> | <u>-14</u> | <u>2</u> | | | | | | |
| <u>WHLF-Blank</u> | <u>leachate</u> | <u>9/15/21</u> | <u>1330</u> | <u>2x60mL</u> | <u>L35842-1</u> | | <u>1</u> | | | | | | |
| Relinquished by (Signature) <u>Diana Felton</u> | | | Date <u>10/11/21</u> Time <u>0900</u> | | | Received by (Signature) <u>[Signature]</u> | | | Date <u>13-Oct-21</u> Time <u>1205</u> | | | Courier | Waybill No. |
| Relinquished by (Signature) | | | Date | | | Received by (Signature) | | | Date | | | Sample Receipt | |
| Remarks | | | Please do MLA 110 on filtered & unfiltered samples for all except equipment blank. | | | | | | | | | Temp °C | Cooler |
| | | | | | | | | | | | | Custody Seal # | |
| | | | | | | | | | | | | Seal Intact Y/N | |
| | | | | | | | | | | | | Sample Tags | Y/N |

cooler 1



CHAIN OF CUSTODY

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SGS AXYS CLIENT #: 4066

| REPORT TO: Company <u>Hawaii DOH - HEER office</u> Address <u>2385 Waimano Home Rd #100 Pearl City, HI 96782</u> Contact <u>Diana Felton</u> Phone <u>808-586-0963</u> FAX E-mail <u>diana.felton@doh.hawaii.gov</u> | | | INVOICE TO: Company <u>Tetrattech</u> Address <u>737 Bishop St Ste 2340 Honolulu HI 96813</u> Contact <u>Eric Jensen</u> Phone <u>808-225-7084</u> FAX E-mail <u>eric.jensen@tetrattech.com</u> | | | ANALYSIS REQUESTED PFAS - MLA 110 TDP - MLA 111 TDF - CIC | | | | |
|---|------------|---------------|--|--------------------|---------------------------------------|--|-----------------|-------------|--|--|
| 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) | | | | | |
| KIWWTP-INFL | wastewater | 9/29/21 | 730am | 4x500mL 4x60mL | L35842 - 7 | L35819 - 4 | 2 | | | |
| KIWWTP-EFFL | wastewater | 9/29/21 | 715am | 4x500mL 4x60mL | - 4 | - 2 | 2 | | | |
| KIWWTP-EFFL-Blank | wastewater | 9/28/21 | 845am | 2x60mL | - 2 | | 1 | | | |
| HLWWTP-EFFL | wastewater | 9/13/21 | 0615 | 4x500mL 4x60mL | - 5 | - 3 | 2 | | | |
| HLWWTP-INFL | wastewater | 9/13/21 | 0630 | 4x500mL 4x60mL | - 8 | - 5 | 2 | | | |
| HLWWTP-EFFL-EB | wastewater | 9/10/21 | 0835 | 1x60mL | - 6 | | 1 | | | |
| HLWWTP-INFL-EB | wastewater | 9/10/21 | 0900 | 1x60mL | - 3 | | 1 | | | |
| LIWWTP-INFL | wastewater | 9/2/21 | 0730 | 4x500mL 4x60mL | - 10 | - 6 | 2 | | | |
| LIWWTP-INFL-EB | water | 9/1/21 | 0700 | 2x60mL | - 11 | | 1 | | | |
| Relinquished by (Signature) <u>Diana Felton</u> Date <u>10/11/21</u> Time <u>900</u> | | | Received by (Signature) <u>[Signature]</u> Date <u>13-Oct-21</u> Time <u>12:05</u> | | | Courier | | Waybill No. | | |
| Relinquished by (Signature) _____ Date _____ Time _____ | | | Received by (Signature) _____ Date _____ Time _____ | | | Sample Receipt | | | | |
| Remarks For infl & effl samples - please do MLA 110 on 1 filtered sample & 1 unfiltered sample. | | | | | | | Cooler | | | |
| | | | | | | | Temp °C | | | |
| | | | | | | | Custody Seal # | | | |
| | | | | | | | Seal Intact Y/N | | | |
| Sample Tags | | | | | | | Y/N | | | |

Filtered & unfiltered

cooler 2

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

WHLF-Blank

Sample Collection:

15-Sep-2021 13:30

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.:

L35842-1

Matrix: LEACHATE

Sample Size: 0.0609 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:29:03

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 48

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | | 13.1 (Q) | | |
| PFPeA | U | | 6.57 (Q) | | |
| PFHxA | U | | 3.29 (Q) | | |
| PFHpA | U | | 3.29 (Q) | | |
| PFOA | U | | 3.29 (Q) | | |
| PFNA | U | | 3.29 (Q) | | |
| PFDA | U | | 3.29 (Q) | | |
| PFUnA | U | | 3.29 (Q) | | |
| PFDaA | U | | 3.29 (Q) | | |
| PFTTrDA | U | | 3.29 (Q) | | |
| PFTeDA | U | | 3.29 (Q) | | |
| PFBS | U | | 3.29 (Q) | | |
| PFPeS | U | | 3.30 (Q) | | |
| PFHxS | U | | 3.29 (Q) | | |
| PFHpS | U | | 3.29 (Q) | | |
| PFOS | U | | 3.29 (Q) | | |
| PFNS | U | | 3.29 (Q) | | |
| PFDS | U | | 3.29 (Q) | | |
| PFDoS | U | | 3.29 (Q) | | |
| 4:2 FTS | U | | 13.1 (Q) | | |
| 6:2 FTS | U | | 11.8 (Q) | | |
| 8:2 FTS | U | | 13.1 (Q) | | |
| PFOSA | U | | 3.29 (Q) | | |
| N-MeFOSA | U | | 3.78 (Q) | | |
| N-EtFOSA | U | | 8.22 (Q) | | |
| MeFOSAA | U | | 3.29 (Q) | | |
| EtFOSAA | U | | 3.29 (Q) | | |
| N-MeFOSE | U | | 32.9 (Q) | | |
| N-EtFOSE | U | | 24.6 (Q) | | |
| HFPO-DA | U | | 12.5 (Q) | | |
| ADONA | U | | 13.1 (Q) | | |
| 9Cl-PF3ONS | U | | 13.2 (Q) | | |
| 11Cl-PF3OUdS | U | | 13.2 (Q) | | |
| 3:3 FTCA | U | | 13.1 (Q) | | |
| 5:3 FTCA | U | | 82.2 (Q) | | |
| 7:3 FTCA | U | | 82.2 (Q) | | |
| PFEESA | U | | 3.29 (Q) | | |
| PFMPA | U | | 6.57 (Q) | | |
| PFMBA | U | | 3.29 (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: _____ Jordan Berends _____

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SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

WHLF-Blank

Sample Collection:

15-Sep-2021 13:30

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.:

L35842-1

Matrix: LEACHATE

Sample Size: 0.0609 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:29:03

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 48

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 36.1 | 90.3 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 18.3 | 91.4 | | 0.859 |
| 13C5-PFHxA | | 10.0 | 8.90 | 89.0 | 24.9 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.61 | 86.1 | | 0.899 |
| 13C8-PFOA | | 10.0 | 8.47 | 84.7 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.33 | 86.5 | | 0.999 |
| 13C6-PFDA | | 5.00 | 4.55 | 90.9 | | 0.999 |
| 13C7-PFUnA | | 5.00 | 4.44 | 88.7 | | 1.051 |
| 13C2-PFDoA | | 5.00 | 4.14 | 82.7 | | 1.086 |
| 13C2-PFTeDA | | 5.00 | 3.75 | 74.9 | | 1.162 |
| 13C3-PFBS | | 10.0 | 9.55 | 95.2 | 2.71 | 0.801 |
| 13C3-PFHxS | | 10.0 | 9.20 | 91.9 | 2.34 | 1.000 |
| 13C8-PFOS | | 10.1 | 10.3 | 103 | 2.21 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 19.2 | 95.2 | 1.76 | 0.835 |
| 13C2-6:2 FTS | | 20.0 | 19.6 | 98.1 | 2.72 | 1.000 |
| 13C2-8:2 FTS | | 20.0 | 15.4 | 76.6 | 3.45 | 1.270 |
| 13C8-PFOSA | | 10.0 | 8.95 | 89.5 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 6.39 | 63.9 | | 1.344 |
| D5-N-EtFOSA | | 10.0 | 6.06 | 60.6 | | 1.381 |
| D3-MeFOSAA | | 20.0 | 11.6 | 57.9 | | 1.320 |
| D5-EtFOSAA | | 20.0 | 12.6 | 63.0 | | 1.349 |
| d7-NMe-FOSE | | 100 | 67.4 | 67.4 | | 1.327 |
| d9-NEt-FOSE | | 100 | 58.6 | 58.6 | | 1.365 |
| 13C3-HFPO-DA | | 40.0 | 34.3 | 85.8 | 2.98 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

CLIENT SAMPLE NO.

KIWWTP-EFFL-Blank

Sample Collection:

28-Sep-2021 08:45

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.:

L35842-2

Matrix: EFFLUENT FINAL

Sample Size:

0.0643 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:42:01

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 49

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | | 12.4 (Q) | | |
| PFPeA | U | | 6.22 (Q) | | |
| PFHxA | U | | 3.11 (Q) | | |
| PFHpA | U | | 3.11 (Q) | | |
| PFOA | U | | 3.11 (Q) | | |
| PFNA | U | | 3.11 (Q) | | |
| PFDA | U | | 3.11 (Q) | | |
| PFUnA | U | | 3.11 (Q) | | |
| PFDaA | U | | 3.11 (Q) | | |
| PFTTrDA | U | | 3.11 (Q) | | |
| PFTeDA | U | | 3.11 (Q) | | |
| PFBS | U | | 3.11 (Q) | | |
| PFPeS | U | | 3.13 (Q) | | |
| PFHxS | U | | 3.11 (Q) | | |
| PFHpS | U | | 3.11 (Q) | | |
| PFOS | U | | 3.11 (Q) | | |
| PFNS | U | | 3.11 (Q) | | |
| PFDS | U | | 3.11 (Q) | | |
| PFDoS | U | | 3.11 (Q) | | |
| 4:2 FTS | U | | 12.4 (Q) | | |
| 6:2 FTS | U | | 11.2 (Q) | | |
| 8:2 FTS | U | | 12.4 (Q) | | |
| PFOSA | U | | 3.11 (Q) | | |
| N-MeFOSA | U | | 3.58 (Q) | | |
| N-EtFOSA | U | | 7.77 (Q) | | |
| MeFOSAA | U | | 3.11 (Q) | | |
| EtFOSAA | U | | 3.11 (Q) | | |
| N-MeFOSE | U | | 31.1 (Q) | | |
| N-EtFOSE | U | | 23.3 (Q) | | |
| HFPO-DA | U | | 11.8 (Q) | | |
| ADONA | U | | 12.4 (Q) | | |
| 9Cl-PF3ONS | U | | 12.5 (Q) | | |
| 11Cl-PF3OUdS | U | | 12.5 (Q) | | |
| 3:3 FTCA | U | | 12.4 (Q) | | |
| 5:3 FTCA | U | | 77.7 (Q) | | |
| 7:3 FTCA | U | | 77.7 (Q) | | |
| PFEESA | U | | 3.11 (Q) | | |
| PFMPA | U | | 6.22 (Q) | | |
| PFMBA | U | | 3.11 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-2_Form1A_FC1L_483S49_SJ2985211.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
KIWWTP-EFFL-Blank
Sample Collection:
28-Sep-2021 08:45

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.:

L35842-2

Matrix: EFFLUENT FINAL

Sample Size:

0.0643 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:42:01

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 49

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 35.6 | 88.9 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 18.2 | 90.8 | | 0.859 |
| 13C5-PFHxA | | 10.0 | 9.06 | 90.6 | 22.6 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.59 | 85.9 | | 0.898 |
| 13C8-PFOA | | 10.0 | 8.03 | 80.3 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.27 | 85.3 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.77 | 95.3 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.55 | 90.9 | | 1.053 |
| 13C2-PFDoA | | 5.00 | 4.34 | 86.8 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.64 | 72.9 | | 1.164 |
| 13C3-PFBS | | 10.0 | 9.32 | 92.9 | 3.27 | 0.802 |
| 13C3-PFHxS | | 10.0 | 8.69 | 86.7 | 2.32 | 1.001 |
| 13C8-PFOS | | 10.1 | 9.46 | 94.0 | 2.10 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 17.0 | 84.4 | 1.82 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 17.9 | 89.4 | 2.06 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 13.9 | 69.2 | 3.36 | 1.272 |
| 13C8-PFOSA | | 10.0 | 8.65 | 86.5 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 6.56 | 65.6 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 6.47 | 64.7 | | 1.383 |
| D3-MeFOSAA | | 20.0 | 11.7 | 58.7 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 12.7 | 63.7 | | 1.350 |
| d7-NMe-FOSE | | 100 | 69.0 | 69.0 | | 1.329 |
| d9-NEt-FOSE | | 100 | 60.0 | 60.0 | | 1.367 |
| 13C3-HFPO-DA | | 40.0 | 39.2 | 97.9 | 2.99 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
LIWWTP-EFFL - Unfiltered
Sample Collection:
02-Sep-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.:

L35842-3

Matrix: EFFLUENT FINAL

Sample Size: 0.484 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:54:57

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 50

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | J | 2.67 | 1.65 (Q) | | 1.006 |
| PFPeA | | 11.4 | 0.826 (Q) | | 1.001 |
| PFHxA | | 4.78 | 0.413 (Q) | 4.87 | 1.000 |
| PFHpA | J | 1.20 | 0.413 (Q) | 2.27 | 1.002 |
| PFOA | | 2.70 | 0.413 (Q) | 2.10 | |
| PFNA | J | 0.573 | 0.413 (Q) | 2.55 | |
| PFDA | J | 1.28 | 0.413 (Q) | 3.04 | 1.000 |
| PFUnA | U | | 0.413 (Q) | | |
| PFDaA | U | | 0.413 (Q) | | |
| PFTTrDA | U | | 0.413 (Q) | | |
| PFTeDA | U | | 0.413 (Q) | | |
| PFBS | | 1.76 | 0.465 (S) | 2.85 | 1.001 |
| PFPeS | U | | 0.415 (Q) | | |
| PFHxS | J | 0.470 | 0.413 (Q) | 2.18 | |
| PFHpS | U | | 0.413 (Q) | | |
| PFOS | | 3.22 | 0.413 (Q) | 2.44 | |
| 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 | J | 2.77 | 1.49 (Q) | 0.39 | 1.000 |
| 8:2 FTS | U | | 1.65 (Q) | | |
| PFOSA | U | | 0.413 (Q) | | |
| N-MeFOSA | U | | 0.475 (Q) | | |
| N-EtFOSA | U | | 1.03 (Q) | | |
| MeFOSAA | U | | 0.413 (Q) | | |
| EtFOSAA | U | | 0.413 (Q) | | |
| N-MeFOSE | U | | 4.13 (Q) | | |
| N-EtFOSE | U | | 3.09 (Q) | | |
| HFPO-DA | U | | 1.57 (Q) | | |
| ADONA | U | | 1.65 (Q) | | |
| 9Cl-PF3ONS | U | | 1.66 (Q) | | |
| 11Cl-PF3OUdS | U | | 1.65 (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 | | 0.826 (Q) | | |
| PFMBA | U | | 0.413 (Q) | | |

NFDHA

U

0.826 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-3_Form1A_FC1L_483S50_SJ2985212.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
LIWWTP-EFFL - Unfiltered
Sample Collection:
02-Sep-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.:

L35842-3

Matrix: EFFLUENT FINAL

Sample Size:

0.484 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:54:57

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 50

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 35.2 | 87.9 | | 0.995 |
| 13C5-PFPeA | | 20.0 | 17.3 | 86.4 | | 0.858 |
| 13C5-PFHxA | | 10.0 | 8.25 | 82.5 | 22.3 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.50 | 85.0 | | 0.898 |
| 13C8-PFOA | | 10.0 | 8.48 | 84.8 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.48 | 89.5 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.47 | 89.4 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.54 | 90.9 | | 1.053 |
| 13C2-PFDoA | | 5.00 | 4.00 | 80.0 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.06 | 61.3 | | 1.164 |
| 13C3-PFBS | | 10.0 | 8.94 | 89.1 | 2.99 | 0.802 |
| 13C3-PFHxS | | 10.0 | 8.82 | 88.0 | 2.33 | 1.000 |
| 13C8-PFOS | | 10.1 | 10.2 | 101 | 2.12 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 23.9 | 118 | 1.98 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 19.4 | 97.2 | 2.45 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 12.6 | 62.7 | 3.25 | 1.272 |
| 13C8-PFOSA | | 10.0 | 8.87 | 88.7 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 6.28 | 62.8 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 6.31 | 63.1 | | 1.382 |
| D3-MeFOSAA | | 20.0 | 10.3 | 51.7 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 11.0 | 54.8 | | 1.350 |
| d7-NMe-FOSE | | 100 | 68.7 | 68.7 | | 1.329 |
| d9-NEt-FOSE | | 100 | 57.8 | 57.8 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 33.5 | 83.7 | 2.73 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
KIWWTP-EFFL - Unfiltered
Sample Collection:
29-Sep-2021 07:15

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.:

L35842-4

Matrix: EFFLUENT FINAL

Sample Size:

0.513 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:08:02

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 51

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | J | 3.74 | 1.56 (Q) | | 1.006 |
| PFPeA | | 59.8 | 0.780 (Q) | | 1.000 |
| PFHxA | | 49.3 | 0.390 (Q) | 4.48 | 1.000 |
| PFHpA | | 3.14 | 0.390 (Q) | 1.93 | 1.000 |
| PFOA | | 18.6 | 0.390 (Q) | 1.90 | |
| PFNA | J | 0.809 | 0.390 (Q) | 2.99 | |
| PFDA | | 2.01 | 0.390 (Q) | 2.78 | 1.000 |
| PFUnA | U | | 0.390 (Q) | | |
| PFDaA | U | | 0.390 (Q) | | |
| PFTTrDA | U | | 0.390 (Q) | | |
| PFTeDA | U | | 0.390 (Q) | | |
| PFBS | | 5.51 | 0.390 (Q) | 3.27 | 1.000 |
| PFPeS | U | | 0.392 (Q) | | |
| PFHxS | J | 0.664 | 0.390 (Q) | 2.19 | |
| PFHpS | U | | 0.390 (Q) | | |
| PFOS | | 2.46 | 0.390 (Q) | 2.77 | |
| 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 | | 1.41 (Q) | | |
| 8:2 FTS | U | | 1.56 (Q) | | |
| PFOSA | U | | 0.390 (Q) | | |
| N-MeFOSA | U | | 0.449 (Q) | | |
| N-EtFOSA | U | | 0.976 (Q) | | |
| MeFOSAA | U | | 0.390 (Q) | | |
| EtFOSAA | U | | 0.390 (Q) | | |
| N-MeFOSE | U | | 3.90 (Q) | | |
| N-EtFOSE | U | | 2.92 (Q) | | |
| HFPO-DA | U | | 1.48 (Q) | | |
| ADONA | U | | 1.56 (Q) | | |
| 9Cl-PF3ONS | U | | 1.56 (Q) | | |
| 11Cl-PF3OUdS | U | | 1.56 (Q) | | |
| 3:3 FTCA | U | | 1.56 (Q) | | |
| 5:3 FTCA | U | | 9.76 (Q) | | |
| 7:3 FTCA | U | | 9.76 (Q) | | |
| PFEESA | U | | 0.390 (Q) | | |
| PFMPA | U | | 0.780 (Q) | | |
| PFMBA | U | | 0.390 (Q) | | |

NFDHA

U

0.780 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-4_Form1A_FC1L_483S51_SJ2985213.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
KIWWTP-EFFL - Unfiltered
Sample Collection:
29-Sep-2021 07:15

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)

Lab Sample I.D.:

L35842-4

Contract No.: 4066
Matrix: EFFLUENT FINAL

Sample Size: 0.513 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:08:02

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 51

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 40.0 | 4.10 | 10.2 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 13.9 | 69.4 | | 0.858 |
| 13C5-PFHxA | | 10.0 | 7.26 | 72.6 | 26.5 | 1.000 |
| 13C4-PFHpA | | 10.0 | 7.73 | 77.3 | | 0.898 |
| 13C8-PFOA | | 10.0 | 7.44 | 74.4 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.86 | 97.3 | | 0.999 |
| 13C6-PFDA | | 5.00 | 4.50 | 90.0 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.54 | 90.8 | | 1.052 |
| 13C2-PFDoA | | 5.00 | 4.12 | 82.4 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.25 | 65.0 | | 1.164 |
| 13C3-PFBS | | 10.0 | 8.61 | 85.9 | 3.06 | 0.802 |
| 13C3-PFHxS | | 10.0 | 8.66 | 86.4 | 2.45 | 1.000 |
| 13C8-PFOS | | 10.1 | 9.59 | 95.4 | 2.13 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 21.0 | 104 | 2.31 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 17.6 | 87.8 | 2.32 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 11.5 | 57.2 | 3.31 | 1.272 |
| 13C8-PFOSA | | 10.0 | 9.58 | 95.8 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 7.22 | 72.2 | | 1.345 |
| D5-N-EtFOSA | | 10.0 | 6.79 | 67.9 | | 1.382 |
| D3-MeFOSAA | V | 20.0 | 9.97 | 49.8 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 10.9 | 54.6 | | 1.350 |
| d7-NMe-FOSE | | 100 | 66.1 | 66.1 | | 1.329 |
| d9-NEt-FOSE | | 100 | 56.1 | 56.1 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 31.3 | 78.2 | 3.32 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
HLWWTP-EFFL - Unfiltered
Sample Collection:
29-Sep-2021 06:15

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.:

L35842-5

Matrix: EFFLUENT FINAL

Sample Size: 0.460 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:20:59

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 52

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | | 1.74 (Q) | | |
| PFPeA | J | 2.87 | 0.869 (Q) | | 1.001 |
| PFHxA | | 6.43 | 0.434 (Q) | 4.73 | 1.000 |
| PFHpA | U | | 0.434 (Q) | | |
| PFOA | J | 1.31 | 0.434 (Q) | 1.62 | |
| PFNA | U | | 0.434 (Q) | | |
| PFDA | J | 0.844 | 0.434 (Q) | 4.07 | 1.000 |
| PFUnA | U | | 0.434 (Q) | | |
| PFDaA | U | | 0.434 (Q) | | |
| PFTTrDA | U | | 0.434 (Q) | | |
| PFTeDA | U | | 0.434 (Q) | | |
| PFBS | U | | 0.434 (Q) | | |
| PFPeS | U | | 0.437 (Q) | | |
| PFHxS | J | 0.680 | 0.434 (Q) | 1.81 | |
| PFHpS | U | | 0.434 (Q) | | |
| PFOS | | 3.01 | 0.434 (Q) | 2.95 | |
| PFNS | U | | 0.434 (Q) | | |
| PFDS | U | | 0.434 (Q) | | |
| PFDoS | U | | 0.434 (Q) | | |
| 4:2 FTS | U | | 1.74 (Q) | | |
| 6:2 FTS | U | | 1.57 (Q) | | |
| 8:2 FTS | U | | 1.74 (Q) | | |
| PFOSA | U | | 0.434 (Q) | | |
| N-MeFOSA | U | | 0.500 (Q) | | |
| N-EtFOSA | U | | 1.09 (Q) | | |
| MeFOSAA | J | 0.628 | 0.434 (Q) | 2.50 | |
| EtFOSAA | U | | 0.434 (Q) | | |
| N-MeFOSE | U | | 4.34 (Q) | | |
| N-EtFOSE | U | | 3.25 (Q) | | |
| HFPO-DA | U | | 1.65 (Q) | | |
| ADONA | U | | 1.74 (Q) | | |
| 9Cl-PF3ONS | U | | 1.74 (Q) | | |
| 11Cl-PF3OUdS | U | | 1.74 (Q) | | |
| 3:3 FTCA | U | | 1.74 (Q) | | |
| 5:3 FTCA | J | 14.9 | 10.9 (Q) | 1.09 | 1.053 |
| 7:3 FTCA | U | | 10.9 (Q) | | |
| PFEESA | U | | 0.434 (Q) | | |
| PFMPA | U | | 0.869 (Q) | | |
| PFMBA | U | | 0.434 (Q) | | |

NFDHA

U

0.869 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-5_Form1A_FC1L_483S52_SJ2985214.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
HLWWTP-EFFL - Unfiltered
Sample Collection:
29-Sep-2021 06:15

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.:

L35842-5

Matrix: EFFLUENT FINAL

Sample Size:

0.460 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:20:59

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 52

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 40.0 | 14.4 | 36.0 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 14.0 | 70.1 | | 0.858 |
| 13C5-PFHxA | | 10.0 | 6.83 | 68.3 | 27.2 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.55 | 85.5 | | 0.898 |
| 13C8-PFOA | | 10.0 | 8.26 | 82.6 | | 0.999 |
| 13C9-PFNA | | 5.00 | 4.07 | 81.4 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.34 | 86.9 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.21 | 84.1 | | 1.052 |
| 13C2-PFDoA | | 5.00 | 3.53 | 70.6 | | 1.086 |
| 13C2-PFTeDA | V | 5.00 | 2.09 | 41.8 | | 1.163 |
| 13C3-PFBS | | 10.0 | 8.39 | 83.6 | 2.65 | 0.802 |
| 13C3-PFHxS | | 10.0 | 8.79 | 87.7 | 2.64 | 1.000 |
| 13C8-PFOS | | 10.1 | 9.72 | 96.6 | 2.27 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 20.2 | 100 | 1.78 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 19.3 | 96.3 | 2.30 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 13.9 | 69.2 | 3.31 | 1.272 |
| 13C8-PFOSA | | 10.0 | 9.92 | 99.2 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 6.26 | 62.6 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 5.56 | 55.6 | | 1.382 |
| D3-MeFOSAA | | 20.0 | 11.4 | 56.8 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 12.2 | 60.8 | | 1.350 |
| d7-NMe-FOSE | V | 100 | 23.0 | 23.0 | | 1.328 |
| d9-NEt-FOSE | | 100 | 49.9 | 49.9 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 29.0 | 72.6 | 3.43 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

HLWWTP-EFFL-EB

Sample Collection:

10-Sep-2021 08:35

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.:

L35842-6

Matrix: EFFLUENT FINAL

Sample Size:

0.0578 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:34:04

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 53

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | | 13.8 (Q) | | |
| PFPeA | U | | 6.92 (Q) | | |
| PFHxA | U | | 3.46 (Q) | | |
| PFHpA | U | | 3.46 (Q) | | |
| PFOA | U | | 3.46 (Q) | | |
| PFNA | U | | 3.46 (Q) | | |
| PFDA | U | | 3.46 (Q) | | |
| PFUnA | U | | 3.46 (Q) | | |
| PFDaA | U | | 3.46 (Q) | | |
| PFTTrDA | U | | 3.46 (Q) | | |
| PFTeDA | U | | 3.46 (Q) | | |
| PFBS | U | | 3.46 (Q) | | |
| PFPeS | U | | 3.48 (Q) | | |
| PFHxS | U | | 3.46 (Q) | | |
| PFHpS | U | | 3.46 (Q) | | |
| PFOS | U | | 3.46 (Q) | | |
| PFNS | U | | 3.46 (Q) | | |
| PFDS | U | | 3.46 (Q) | | |
| PFDoS | U | | 3.46 (Q) | | |
| 4:2 FTS | U | | 13.8 (Q) | | |
| 6:2 FTS | U | | 12.5 (Q) | | |
| 8:2 FTS | U | | 13.8 (Q) | | |
| PFOSA | U | | 3.46 (Q) | | |
| N-MeFOSA | U | | 3.98 (Q) | | |
| N-EtFOSA | U | | 8.64 (Q) | | |
| MeFOSAA | U | | 3.46 (Q) | | |
| EtFOSAA | U | | 3.46 (Q) | | |
| N-MeFOSE | U | | 34.6 (Q) | | |
| N-EtFOSE | U | | 25.9 (Q) | | |
| HFPO-DA | U | | 13.1 (Q) | | |
| ADONA | U | | 13.8 (Q) | | |
| 9Cl-PF3ONS | U | | 13.9 (Q) | | |
| 11Cl-PF3OUdS | U | | 13.8 (Q) | | |
| 3:3 FTCA | U | | 13.8 (Q) | | |
| 5:3 FTCA | U | | 86.4 (Q) | | |
| 7:3 FTCA | U | | 86.4 (Q) | | |
| PFEESA | U | | 3.46 (Q) | | |
| PFMPA | U | | 6.92 (Q) | | |
| PFMBA | U | | 3.46 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-6_Form1A_FC1L_483S53_SJ2985215.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

HLWWTP-EFFL-EB

Sample Collection:

10-Sep-2021 08:35

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.:

L35842-6

Matrix: EFFLUENT FINAL

Sample Size: 0.0578 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:34:04

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 53

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 35.5 | 88.8 | | 0.995 |
| 13C5-PFPeA | | 20.0 | 15.9 | 79.3 | | 0.857 |
| 13C5-PFHxA | | 10.0 | 7.65 | 76.5 | 21.6 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.20 | 82.0 | | 0.898 |
| 13C8-PFOA | | 10.0 | 8.39 | 83.9 | | 0.999 |
| 13C9-PFNA | | 5.00 | 4.32 | 86.4 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.25 | 84.9 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.65 | 92.9 | | 1.053 |
| 13C2-PFDoA | | 5.00 | 4.19 | 83.7 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.81 | 76.2 | | 1.163 |
| 13C3-PFBS | | 10.0 | 8.12 | 81.0 | 2.88 | 0.801 |
| 13C3-PFHxS | | 10.0 | 9.06 | 90.4 | 2.50 | 1.000 |
| 13C8-PFOS | | 10.1 | 9.69 | 96.3 | 2.14 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 22.3 | 110 | 2.28 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 17.5 | 87.7 | 2.16 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 13.9 | 69.5 | 3.48 | 1.272 |
| 13C8-PFOSA | | 10.0 | 10.3 | 103 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 6.08 | 60.8 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 5.93 | 59.3 | | 1.382 |
| D3-MeFOSAA | | 20.0 | 12.4 | 62.2 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 13.3 | 66.4 | | 1.350 |
| d7-NMe-FOSE | | 100 | 36.3 | 36.3 | | 1.329 |
| d9-NEt-FOSE | | 100 | 59.8 | 59.8 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 29.6 | 74.0 | 2.51 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 KIWWTWP-InfL - Unfiltered
 Sample Collection:
 29-Sep-2021 07:30

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.:

L35842-7

Matrix: INFLUENT

Sample Size:

0.524 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:47:10

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 54

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 H | | 4.48 (S) | | |
| PFPeA | J | 2.12 | 0.763 (Q) | | 1.000 |
| PFHxA | | 3.61 | 0.422 (S) | 3.23 | 1.001 |
| PFHpA | U | | 41.1 (S) | | |
| PFOA | | 2.11 | 0.382 (Q) | 1.97 | |
| PFNA | U | | 0.382 (Q) | | |
| PFDA | J | 0.923 | 0.382 (Q) | 4.00 | 1.000 |
| PFUnA | U | | 0.382 (Q) | | |
| PFDoA | U | | 0.382 (Q) | | |
| PFTTrDA | U | | 0.382 (Q) | | |
| PFTeDA | U | | 0.382 (Q) | | |
| PFBS | R | 2.66 | 0.382 (Q) | 5.78 | 1.000 |
| PFPeS | U | | 0.384 (Q) | | |
| PFHxS | J | 0.719 | 0.382 (Q) | 2.36 | |
| PFHpS | U | | 0.382 (Q) | | |
| PFOS | | 2.72 | 0.382 (Q) | 2.48 | |
| PFNS | U | | 0.382 (Q) | | |
| PFDS | U | | 0.382 (Q) | | |
| PFDoS | U | | 0.382 (Q) | | |
| 4:2 FTS | U | | 1.53 (Q) | | |
| 6:2 FTS | U | | 1.38 (Q) | | |
| 8:2 FTS | U | | 1.53 (Q) | | |
| PFOSA | U | | 0.382 (Q) | | |
| N-MeFOSA | U | | 0.439 (Q) | | |
| N-EtFOSA | U | | 0.954 (Q) | | |
| MeFOSAA | U | | 0.382 (Q) | | |
| EtFOSAA | U | | 0.382 (Q) | | |
| N-MeFOSE | U | | 3.82 (Q) | | |
| N-EtFOSE | U H | | 2.85 (Q) | | |
| HFPO-DA | U | | 1.45 (Q) | | |
| ADONA | U | | 1.53 (Q) | | |
| 9Cl-PF3ONS | U | | 1.53 (Q) | | |
| 11Cl-PF3OUdS | U | | 1.53 (Q) | | |
| 3:3 FTCA | U | | 1.53 (Q) | | |
| 5:3 FTCA | U | | 9.54 (Q) | | |
| 7:3 FTCA | U | | 9.54 (Q) | | |
| PFEEA | U | | 0.382 (Q) | | |
| PFMPA | U | | 0.763 (Q) | | |
| PFMBA | U | | 0.382 (Q) | | |

NFDHA

U

0.763 (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; 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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-7_Form1A_FC1L_483S54_SJ2985216.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
KIWWTP-InfL - Unfiltered
Sample Collection:
29-Sep-2021 07:30

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.:

L35842-7

Matrix: INFLUENT

Sample Size: 0.524 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 23:47:10

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 54

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 40.0 | 2.68 | 6.70 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 16.0 | 79.9 | | 0.857 |
| 13C5-PFHxA | | 10.0 | 7.64 | 76.4 | 26.1 | 0.999 |
| 13C4-PFHpA | V | 10.0 | 1.75 | 17.5 | | 0.897 |
| 13C8-PFOA | | 10.0 | 7.28 | 72.8 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.19 | 83.8 | | 1.001 |
| 13C6-PFDA | | 5.00 | 3.80 | 76.0 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 3.76 | 75.3 | | 1.053 |
| 13C2-PFDoA | V | 5.00 | 1.81 | 36.3 | | 1.088 |
| 13C2-PFTeDA | V | 5.00 | 0.919 | 18.4 | | 1.165 |
| 13C3-PFBS | | 10.0 | 6.33 | 63.1 | 2.79 | 0.803 |
| 13C3-PFHxS | | 10.0 | 8.29 | 82.7 | 2.45 | 1.000 |
| 13C8-PFOS | | 10.1 | 8.41 | 83.6 | 2.02 | 1.000 |
| 13C2-4:2 FTS | V | 20.2 | 8.40 | 41.7 | 1.95 | 0.839 |
| 13C2-6:2 FTS | | 20.0 | 16.9 | 84.6 | 2.19 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 16.0 | 79.6 | 3.25 | 1.271 |
| 13C8-PFOSA | | 10.0 | 9.88 | 98.8 | | 1.170 |
| D3-N-MeFOSA | | 10.0 | 3.83 | 38.3 | | 1.353 |
| D5-N-EtFOSA | | 10.0 | 3.06 | 30.6 | | 1.389 |
| D3-MeFOSAA | V | 20.0 | 6.35 | 31.7 | | 1.321 |
| D5-EtFOSAA | V | 20.0 | 5.73 | 28.6 | | 1.346 |
| d7-NMe-FOSE | | 100 | 30.7 | 30.7 | | 1.336 |
| d9-NEt-FOSE | V | 100 | 3.94 | 3.94 | | 1.374 |
| 13C3-HFPO-DA | | 40.0 | 30.3 | 75.9 | 4.12 | 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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
HLWWTP-INFL - Unfiltered
Sample Collection:
13-Sep-2021 06:15

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.:

L35842-8

Matrix: INFLUENT

Sample Size: 0.442 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:00:07

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 55

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | | 1.81 (Q) | | |
| PFPeA | J | 1.56 | 0.904 (Q) | | 1.001 |
| PFHxA | | 3.05 | 0.452 (Q) | 5.76 | 1.000 |
| PFHpA | U | | 0.452 (Q) | | |
| PFOA | J | 0.813 | 0.452 (Q) | 1.57 | |
| PFNA | U | | 0.452 (Q) | | |
| PFDA | U | | 0.452 (Q) | | |
| PFUnA | U | | 0.452 (Q) | | |
| PFDoA | U | | 0.452 (Q) | | |
| PFTTrDA | U | | 0.452 (Q) | | |
| PFTeDA | U | | 0.452 (Q) | | |
| PFBS | U | | 0.727 (S) | | |
| PFPeS | U | | 0.544 (S) | | |
| PFHxS | J | 1.04 | 0.452 (Q) | 2.82 | |
| PFHpS | U | | 0.452 (Q) | | |
| PFOS | | 2.92 | 0.452 (Q) | 2.27 | |
| PFNS | U | | 0.452 (Q) | | |
| PFDS | U | | 0.452 (Q) | | |
| PFDoS | U | | 0.452 (Q) | | |
| 4:2 FTS | U | | 1.81 (Q) | | |
| 6:2 FTS | U | | 1.63 (Q) | | |
| 8:2 FTS | U | | 1.81 (Q) | | |
| PFOSA | U | | 0.452 (Q) | | |
| N-MeFOSA | U | | 0.520 (Q) | | |
| N-EtFOSA | U | | 1.13 (Q) | | |
| MeFOSAA | U | | 0.452 (Q) | | |
| EtFOSAA | U | | 0.452 (Q) | | |
| N-MeFOSE | U | | 4.52 (Q) | | |
| N-EtFOSE | U H | | 3.38 (Q) | | |
| HFPO-DA | U | | 1.72 (Q) | | |
| ADONA | U | | 1.81 (Q) | | |
| 9Cl-PF3ONS | U | | 1.81 (Q) | | |
| 11Cl-PF3OUdS | U | | 1.81 (Q) | | |
| 3:3 FTCA | U | | 1.81 (Q) | | |
| 5:3 FTCA | J | 18.7 | 11.3 (Q) | 1.09 | 1.053 |
| 7:3 FTCA | U | | 11.3 (Q) | | |
| PFEESA | U | | 0.452 (Q) | | |
| PFMPA | U | | 0.904 (Q) | | |
| PFMBA | U | | 0.452 (Q) | | |

NFDHA

U

0.904 (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; 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: _____ Jordan Berends _____

For Axs Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-8_Form1A_FC1L_483S55_SJ2985217.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
HLWWTP-INFL - Unfiltered
Sample Collection:
13-Sep-2021 06:15

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.:

L35842-8

Matrix: INFLUENT

Sample Size: 0.442 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:00:07

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 55

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 40.0 | 5.56 | 13.9 | | 0.994 |
| 13C5-PFPeA | | 20.0 | 14.9 | 74.6 | | 0.857 |
| 13C5-PFHxA | | 10.0 | 9.02 | 90.2 | 21.3 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.18 | 81.8 | | 0.899 |
| 13C8-PFOA | | 10.0 | 8.59 | 85.9 | | 1.001 |
| 13C9-PFNA | | 5.00 | 4.32 | 86.4 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.49 | 89.7 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.10 | 82.0 | | 1.054 |
| 13C2-PFDoA | | 5.00 | 3.06 | 61.2 | | 1.088 |
| 13C2-PFTeDA | V | 5.00 | 2.35 | 47.0 | | 1.165 |
| 13C3-PFBS | | 10.0 | 8.24 | 82.2 | 2.80 | 0.802 |
| 13C3-PFHxS | | 10.0 | 9.50 | 94.9 | 2.50 | 1.000 |
| 13C8-PFOS | | 10.1 | 9.60 | 95.4 | 2.14 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 14.5 | 72.1 | 1.69 | 0.838 |
| 13C2-6:2 FTS | | 20.0 | 18.1 | 90.3 | 1.98 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 11.3 | 56.3 | 3.33 | 1.270 |
| 13C8-PFOSA | | 10.0 | 11.1 | 111 | | 1.172 |
| D3-N-MeFOSA | | 10.0 | 4.35 | 43.5 | | 1.353 |
| D5-N-EtFOSA | | 10.0 | 4.24 | 42.4 | | 1.389 |
| D3-MeFOSAA | V | 20.0 | 3.86 | 19.3 | | 1.318 |
| D5-EtFOSAA | V | 20.0 | 3.72 | 18.6 | | 1.346 |
| d7-NMe-FOSE | | 100 | 39.8 | 39.8 | | 1.336 |
| d9-NEt-FOSE | V | 100 | 5.71 | 5.71 | | 1.373 |
| 13C3-HFPO-DA | | 40.0 | 35.0 | 87.5 | 2.78 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

CLIENT SAMPLE NO.

HLWWTP-INFL-EB

Sample Collection:

10-Sep-2021 09:00

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)

Lab Sample I.D.:

L35842-9

Contract No.: 4066

Sample Size:

0.0484 L

Matrix: INFLUENT

Initial Calibration Date:

22-Feb-2021

Sample Receipt Date: 13-Oct-2021

Instrument ID:

LCMS/MS

Extraction Date: 12-Nov-2021

Column ID:

C18

Analysis Date: 13-Nov-2021 Time: 00:13:04

Sample Data Filename:

FC1L_483 S: 56

Extract Volume (uL): 4000

Blank Data Filename:

FC1L_483 S: 47

Injection Volume (uL): 2

Cal. Ver. Data Filename:

FC1L_483 S: 43

Dilution Factor: N/A

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 | | 16.5 (Q) | | |
| PFPeA | U | | 8.27 (Q) | | |
| PFHxA | U | | 4.14 (Q) | | |
| PFHpA | U | | 4.14 (Q) | | |
| PFOA | U | | 4.14 (Q) | | |
| PFNA | U | | 4.14 (Q) | | |
| PFDA | U | | 4.14 (Q) | | |
| PFUnA | U | | 4.14 (Q) | | |
| PFDaA | U | | 4.14 (Q) | | |
| PFTTrDA | U | | 4.14 (Q) | | |
| PFTeDA | U | | 4.14 (Q) | | |
| PFBS | U | | 4.14 (Q) | | |
| PFPeS | U | | 4.16 (Q) | | |
| PFHxS | U | | 4.14 (Q) | | |
| PFHpS | U | | 4.14 (Q) | | |
| PFOS | U | | 4.14 (Q) | | |
| PFNS | U | | 4.14 (Q) | | |
| PFDS | U | | 4.14 (Q) | | |
| PFDoS | U | | 4.14 (Q) | | |
| 4:2 FTS | U | | 16.5 (Q) | | |
| 6:2 FTS | U | | 14.9 (Q) | | |
| 8:2 FTS | U | | 16.5 (Q) | | |
| PFOSA | U | | 4.14 (Q) | | |
| N-MeFOSA | U | | 4.76 (Q) | | |
| N-EtFOSA | U | | 10.3 (Q) | | |
| MeFOSAA | U | | 4.14 (Q) | | |
| EtFOSAA | U | | 4.14 (Q) | | |
| N-MeFOSE | U | | 41.4 (Q) | | |
| N-EtFOSE | U | | 30.9 (Q) | | |
| HFPO-DA | U | | 15.7 (Q) | | |
| ADONA | U | | 16.5 (Q) | | |
| 9Cl-PF3ONS | U | | 16.6 (Q) | | |
| 11Cl-PF3OUdS | U | | 16.6 (Q) | | |
| 3:3 FTCA | U | | 16.5 (Q) | | |
| 5:3 FTCA | U | | 103 (Q) | | |
| 7:3 FTCA | U | | 103 (Q) | | |
| PFEESA | U | | 4.14 (Q) | | |
| PFMPA | U | | 8.27 (Q) | | |
| PFMBA | U | | 4.14 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-9_Form1A_FC1L_483S56_SJ2985218.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

HLWWTP-INFL-EB

Sample Collection:

10-Sep-2021 09:00

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.:

L35842-9

Matrix: INFLUENT

Sample Size: 0.0484 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:13:04

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 56

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 33.3 | 83.3 | | 0.995 |
| 13C5-PFPeA | | 20.0 | 18.2 | 91.0 | | 0.857 |
| 13C5-PFHxA | | 10.0 | 8.77 | 87.7 | 23.9 | 1.000 |
| 13C4-PFHpA | | 10.0 | 7.68 | 76.8 | | 0.898 |
| 13C8-PFOA | | 10.0 | 6.78 | 67.8 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.51 | 90.3 | | 1.001 |
| 13C6-PFDA | | 5.00 | 4.41 | 88.1 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.42 | 88.5 | | 1.053 |
| 13C2-PFDoA | | 5.00 | 3.99 | 79.8 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.18 | 63.6 | | 1.163 |
| 13C3-PFBS | | 10.0 | 7.19 | 71.7 | 2.20 | 0.800 |
| 13C3-PFHxS | | 10.0 | 8.75 | 87.3 | 2.39 | 0.999 |
| 13C8-PFOS | | 10.1 | 9.59 | 95.3 | 2.10 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 18.2 | 90.1 | 1.84 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 18.7 | 93.7 | 2.04 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 14.6 | 73.0 | 3.18 | 1.272 |
| 13C8-PFOSA | | 10.0 | 12.9 | 129 | | 1.163 |
| D3-N-MeFOSA | | 10.0 | 6.98 | 69.8 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 6.88 | 68.8 | | 1.382 |
| D3-MeFOSAA | | 20.0 | 12.2 | 61.1 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 14.4 | 72.2 | | 1.350 |
| d7-NMe-FOSE | | 100 | 83.0 | 83.0 | | 1.329 |
| d9-NEt-FOSE | | 100 | 78.3 | 78.3 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 31.5 | 78.7 | 2.16 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
LIWWTP-INFL - Unfiltered
Sample Collection:
02-Sep-2021 07:30

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.:

L35842-10

Matrix: INFLUENT

Sample Size: 0.450 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:26:10

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 57

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | J | 2.76 | 2.48 (Q) | | 1.000 |
| PFPeA | J | 1.85 | 1.24 (Q) | | 1.002 |
| PFHxA | | 3.32 | 0.621 (Q) | 3.67 | 0.999 |
| PFHpA | U | | 0.621 (Q) | | |
| PFOA | J | 1.19 | 0.621 (Q) | 1.95 | |
| PFNA | U | | 0.621 (Q) | | |
| PFDA | J | 1.01 | 0.621 (Q) | 3.02 | 1.001 |
| PFUnA | U | | 0.621 (Q) | | |
| PFDaA | J | 0.777 | 0.621 (Q) | 7.29 | 1.000 |
| PFTTrDA | U | | 0.621 (Q) | | |
| PFTeDA | U | | 0.644 (S) | | |
| PFBS | U | | 0.808 (S) | | |
| PFPeS | U | | 0.720 (S) | | |
| PFHxS | U | | 0.621 (Q) | | |
| PFHpS | U | | 0.621 (Q) | | |
| PFOS | | 3.42 | 0.621 (Q) | 3.51 | |
| PFNS | U | | 0.621 (Q) | | |
| PFDS | U | | 0.621 (Q) | | |
| PFDoS | U | | 0.621 (Q) | | |
| 4:2 FTS | U | | 2.48 (Q) | | |
| 6:2 FTS | J | 2.38 | 2.24 (Q) | 0.43 | 0.999 |
| 8:2 FTS | U | | 2.48 (Q) | | |
| PFOSA | U | | 0.621 (Q) | | |
| N-MeFOSA | U | | 0.714 (Q) | | |
| N-EtFOSA | U | | 1.55 (Q) | | |
| MeFOSAA | U | | 0.621 (Q) | | |
| EtFOSAA | U | | 1.03 (S) | | |
| N-MeFOSE | U | | 6.21 (Q) | | |
| N-EtFOSE | U H | | 4.64 (Q) | | |
| HFPO-DA | U | | 2.36 (Q) | | |
| ADONA | U | | 2.48 (Q) | | |
| 9Cl-PF3ONS | U | | 2.49 (Q) | | |
| 11Cl-PF3OUdS | U | | 2.49 (Q) | | |
| 3:3 FTCA | U | | 2.48 (Q) | | |
| 5:3 FTCA | J | 29.4 | 15.5 (Q) | 1.12 | 1.053 |
| 7:3 FTCA | U | | 15.5 (Q) | | |
| PFEESA | U | | 0.621 (Q) | | |
| PFMPA | U | | 1.24 (Q) | | |
| PFMBA | U | | 0.621 (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; 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: _____ Jordan Berends _____

For Axs Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-10_Form1A_FC1L_483S57_SJ2985219.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
LIWWTP-INFL - Unfiltered
Sample Collection:
02-Sep-2021 07:30

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.:

L35842-10

Matrix: INFLUENT

Sample Size: 0.450 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:26:10

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 57

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 23.3 | 58.2 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 14.9 | 74.4 | | 0.857 |
| 13C5-PFHxA | | 10.0 | 7.56 | 75.6 | 21.9 | 1.000 |
| 13C4-PFHpA | | 10.0 | 7.19 | 71.9 | | 0.899 |
| 13C8-PFOA | | 10.0 | 6.24 | 62.4 | | 1.000 |
| 13C9-PFNA | | 5.00 | 3.39 | 67.8 | | 1.000 |
| 13C6-PFDA | | 5.00 | 3.30 | 66.1 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 2.98 | 59.6 | | 1.053 |
| 13C2-PFDoA | V | 5.00 | 2.06 | 41.3 | | 1.088 |
| 13C2-PFTeDA | V | 5.00 | 0.969 | 19.4 | | 1.165 |
| 13C3-PFBS | | 10.0 | 6.55 | 65.3 | 2.87 | 0.802 |
| 13C3-PFHxS | | 10.0 | 6.56 | 65.5 | 2.43 | 0.999 |
| 13C8-PFOS | | 10.1 | 6.88 | 68.3 | 2.15 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 15.1 | 74.7 | 1.82 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 15.4 | 76.8 | 2.23 | 1.001 |
| 13C2-8:2 FTS | V | 20.0 | 7.54 | 37.6 | 3.14 | 1.269 |
| 13C8-PFOSA | | 10.0 | 7.96 | 79.6 | | 1.167 |
| D3-N-MeFOSA | V | 10.0 | 2.66 | 26.6 | | 1.350 |
| D5-N-EtFOSA | | 10.0 | 2.27 | 22.7 | | 1.386 |
| D3-MeFOSAA | V | 20.0 | 3.67 | 18.4 | | 1.319 |
| D5-EtFOSAA | V | 20.0 | 3.39 | 16.9 | | 1.346 |
| d7-NMe-FOSE | V | 100 | 28.6 | 28.6 | | 1.333 |
| d9-NEt-FOSE | V | 100 | 8.15 | 8.15 | | 1.371 |
| 13C3-HFPO-DA | | 40.0 | 30.4 | 75.9 | 2.75 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

LIWWTP-INFL-EB

Sample Collection:

01-Sep-2021 07:00

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.:

L35842-11

Matrix: INFLUENT

Sample Size: 0.0592 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:39:15

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 58

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | | 13.5 (Q) | | |
| PFPeA | U | | 6.76 (Q) | | |
| PFHxA | U | | 3.38 (Q) | | |
| PFHpA | U | | 3.38 (Q) | | |
| PFOA | U | | 3.38 (Q) | | |
| PFNA | U | | 3.38 (Q) | | |
| PFDA | U | | 3.38 (Q) | | |
| PFUnA | U | | 3.38 (Q) | | |
| PFDoA | U | | 3.38 (Q) | | |
| PFTTrDA | U | | 3.38 (Q) | | |
| PFTeDA | U | | 3.38 (Q) | | |
| PFBS | U | | 3.38 (Q) | | |
| PFPeS | U | | 3.40 (Q) | | |
| PFHxS | U | | 3.38 (Q) | | |
| PFHpS | U | | 3.38 (Q) | | |
| PFOS | U | | 3.38 (Q) | | |
| PFNS | U | | 3.38 (Q) | | |
| PFDS | U | | 3.38 (Q) | | |
| PFDoS | U | | 3.38 (Q) | | |
| 4:2 FTS | U | | 13.5 (Q) | | |
| 6:2 FTS | U | | 12.2 (Q) | | |
| 8:2 FTS | U | | 13.5 (Q) | | |
| PFOSA | U | | 3.38 (Q) | | |
| N-MeFOSA | U | | 3.89 (Q) | | |
| N-EtFOSA | U | | 8.45 (Q) | | |
| MeFOSAA | U | | 3.38 (Q) | | |
| EtFOSAA | U | | 3.38 (Q) | | |
| N-MeFOSE | U | | 33.8 (Q) | | |
| N-EtFOSE | U | | 25.3 (Q) | | |
| HFPO-DA | U | | 12.8 (Q) | | |
| ADONA | U | | 13.5 (Q) | | |
| 9Cl-PF3ONS | U | | 13.5 (Q) | | |
| 11Cl-PF3OUdS | U | | 13.5 (Q) | | |
| 3:3 FTCA | U | | 13.5 (Q) | | |
| 5:3 FTCA | U | | 84.5 (Q) | | |
| 7:3 FTCA | U | | 84.5 (Q) | | |
| PFEESA | U | | 3.38 (Q) | | |
| PFMPA | U | | 6.76 (Q) | | |
| PFMBA | U | | 3.38 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFA'S_L35842-11_Form1A_FC1L_483S58_SJ2985220.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.

LIWWTP-INFL-EB

Sample Collection:

01-Sep-2021 07:00

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.:

L35842-11

Matrix: INFLUENT

Sample Size:

0.0592 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:39:15

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 58

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 34.9 | 87.2 | | 0.995 |
| 13C5-PFPeA | | 20.0 | 20.0 | 100 | | 0.858 |
| 13C5-PFHxA | | 10.0 | 9.90 | 99.0 | 20.5 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.75 | 87.5 | | 0.899 |
| 13C8-PFOA | | 10.0 | 8.60 | 86.0 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.21 | 84.1 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.63 | 92.6 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.46 | 89.1 | | 1.052 |
| 13C2-PFDoA | | 5.00 | 4.08 | 81.6 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.73 | 74.5 | | 1.163 |
| 13C3-PFBS | | 10.0 | 8.53 | 85.0 | 2.86 | 0.801 |
| 13C3-PFHxS | | 10.0 | 8.08 | 80.6 | 2.18 | 0.998 |
| 13C8-PFOS | | 10.1 | 9.42 | 93.6 | 2.13 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 22.2 | 110 | 1.97 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 19.0 | 94.9 | 2.30 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 14.5 | 72.6 | 3.24 | 1.272 |
| 13C8-PFOSA | | 10.0 | 9.92 | 99.2 | | 1.163 |
| D3-N-MeFOSA | | 10.0 | 5.98 | 59.8 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 5.82 | 58.2 | | 1.382 |
| D3-MeFOSAA | | 20.0 | 12.3 | 61.6 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 13.7 | 68.4 | | 1.350 |
| d7-NMe-FOSE | | 100 | 62.9 | 62.9 | | 1.329 |
| d9-NEt-FOSE | | 100 | 57.1 | 57.1 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 38.5 | 96.3 | 2.94 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

PVTLF - Unfiltered

Sample Collection:

30-Sep-2021 09:00

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.:

L35842-12

Matrix: LEACHATE

Sample Size: 0.0608 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:52:20

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 59

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | | 7860 | 66.1 (Q) | | 1.006 |
| PFPeA | | 9910 | 83.4 (S) | | 0.999 |
| PFHxA | | 24900 | 16.5 (Q) | 4.37 | 1.000 |
| PFHpA | | 3800 | 16.5 (Q) | 2.08 | 1.000 |
| PFOA | | 2680 | 16.5 (Q) | 1.83 | |
| PFNA | | 172 | 16.5 (Q) | 3.13 | |
| PFDA | | 75.4 | 16.5 (Q) | 4.10 | 1.000 |
| PFUnA | U | | 16.5 (Q) | | |
| PFDaA | U | | 16.5 (Q) | | |
| PFTTrDA | U | | 16.5 (Q) | | |
| PFTeDA | U | | 16.5 (Q) | | |
| PFBS | | 20600 | 16.5 (Q) | 2.83 | 1.000 |
| PFPeS | | 14700 | 16.6 (Q) | 2.36 | 0.890 |
| PFHxS | | 50000 | 16.5 (Q) | 2.34 | |
| PFHpS | | 531 | 16.5 (Q) | 1.99 | 0.916 |
| PFOS | | 11600 | 16.5 (Q) | 2.95 | |
| PFNS | U | | 16.5 (Q) | | |
| PFDS | U | | 16.5 (Q) | | |
| PFDoS | U | | 16.5 (Q) | | |
| 4:2 FTS | J | 165 | 66.1 (Q) | 0.53 | 1.000 |
| 6:2 FTS | | 281 | 59.6 (Q) | 0.37 | 1.000 |
| 8:2 FTS | U | | 66.1 (Q) | | |
| PFOSA | U | | 16.5 (Q) | | |
| N-MeFOSA | U | | 19.0 (Q) | | |
| N-EtFOSA | U | | 41.3 (Q) | | |
| MeFOSAA | U | | 16.5 (Q) | | |
| EtFOSAA | U | | 16.5 (Q) | | |
| N-MeFOSE | U | | 165 (Q) | | |
| N-EtFOSE | U | | 124 (Q) | | |
| HFPO-DA | U | | 62.8 (Q) | | |
| ADONA | U | | 66.1 (Q) | | |
| 9Cl-PF3ONS | U | | 66.3 (Q) | | |
| 11Cl-PF3OUdS | U | | 66.2 (Q) | | |
| 3:3 FTCA | U | | 66.1 (Q) | | |
| 5:3 FTCA | U | | 413 (Q) | | |
| 7:3 FTCA | U | | 413 (Q) | | |
| PFEESA | U | | 16.5 (Q) | | |
| PFMPA | U | | 33.1 (Q) | | |
| PFMBA | U | | 16.5 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-12_Form1A_FC1L_483S59_SJ2985221.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.

PVTLF - Unfiltered

Sample Collection:

30-Sep-2021 09:00

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.:

L35842-12

Matrix: LEACHATE

Sample Size: 0.0608 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 00:52:20

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 59

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 200 | 183 | 91.6 | | 1.000 |
| 13C5-PFPeA | | 100 | 94.8 | 94.8 | | 0.857 |
| 13C5-PFHxA | | 50.0 | 43.0 | 85.9 | 24.6 | 1.000 |
| 13C4-PFHpA | | 50.0 | 41.2 | 82.4 | | 0.898 |
| 13C8-PFOA | | 50.0 | 44.9 | 89.8 | | 0.999 |
| 13C9-PFNA | | 25.0 | 21.4 | 85.5 | | 1.000 |
| 13C6-PFDA | | 25.0 | 22.5 | 89.9 | | 1.000 |
| 13C7-PFUnA | | 25.0 | 23.7 | 94.6 | | 1.053 |
| 13C2-PFDoA | | 25.0 | 21.8 | 87.3 | | 1.087 |
| 13C2-PFTeDA | | 25.0 | 21.1 | 84.3 | | 1.163 |
| 13C3-PFBS | | 50.2 | 43.1 | 86.0 | 2.57 | 0.803 |
| 13C3-PFHxS | | 50.1 | 45.2 | 90.2 | 2.29 | 1.003 |
| 13C8-PFOS | | 50.3 | 48.6 | 96.6 | 2.11 | 1.000 |
| 13C2-4:2 FTS | | 101 | 83.9 | 83.2 | 2.02 | 0.837 |
| 13C2-6:2 FTS | | 100 | 85.0 | 85.0 | 2.22 | 1.001 |
| 13C2-8:2 FTS | | 100 | 67.8 | 67.7 | 3.24 | 1.272 |
| 13C8-PFOSA | | 50.0 | 47.4 | 94.9 | | 1.163 |
| D3-N-MeFOSA | | 50.0 | 35.9 | 71.7 | | 1.346 |
| D5-N-EtFOSA | | 50.0 | 35.7 | 71.4 | | 1.382 |
| D3-MeFOSAA | | 100 | 51.2 | 51.2 | | 1.322 |
| D5-EtFOSAA | | 100 | 60.5 | 60.5 | | 1.350 |
| d7-NMe-FOSE | | 500 | 405 | 81.0 | | 1.329 |
| d9-NEt-FOSE | | 500 | 368 | 73.6 | | 1.366 |
| 13C3-HFPO-DA | | 200 | 151 | 75.6 | 2.11 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

CLIENT SAMPLE NO.
CMLF-IVA - Unfiltered
Sample Collection:
04-Oct-2021 09:15

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.:

L35842-13

Matrix: LEACHATE

Sample Size:

0.0607 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:05:26

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 60

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | | 3620 | 13.2 (Q) | | 1.006 |
| PFPeA | | 4010 | 16.3 (S) | | 1.000 |
| PFHxA | | 8350 | 17.6 (S) | 6.09 | 1.000 |
| PFHpA | | 1600 | 3.29 (Q) | 2.04 | 1.000 |
| PFOA | | 4690 | 3.29 (Q) | 1.92 | |
| PFNA | | 287 | 3.29 (Q) | 2.88 | |
| PFDA | | 198 | 3.29 (Q) | 3.03 | 1.000 |
| PFUnA | J | 4.05 | 3.29 (Q) | 4.26 | 1.000 |
| PFDaA | U | | 3.29 (Q) | | |
| PFTTrDA | U | | 3.29 (Q) | | |
| PFTeDA | U | | 3.29 (Q) | | |
| PFBS | | 2540 | 6.24 (S) | 2.81 | 1.000 |
| PFPeS | | 98.9 | 5.58 (S) | 2.02 | 0.888 |
| PFHxS | | 732 | 3.29 (Q) | 2.34 | |
| PFHpS | | 34.9 | 3.29 (Q) | 2.40 | 0.916 |
| PFOS | | 1550 | 3.29 (Q) | 2.97 | |
| PFNS | U | | 3.29 (Q) | | |
| PFDS | U | | 3.29 (Q) | | |
| PFDoS | U | | 3.29 (Q) | | |
| 4:2 FTS | U | | 13.2 (Q) | | |
| 6:2 FTS | | 341 | 11.9 (Q) | 0.44 | 1.000 |
| 8:2 FTS | J | 32.2 | 13.2 (Q) | 0.39 | 1.001 |
| PFOSA | J | 7.72 | 3.29 (Q) | | |
| N-MeFOSA | U | | 3.79 (Q) | | |
| N-EtFOSA | U | | 8.24 (Q) | | |
| MeFOSAA | | 112 | 3.29 (Q) | 1.80 | |
| EtFOSAA | J | 8.13 | 3.29 (Q) | 1.26 | |
| N-MeFOSE | U | | 32.9 (Q) | | |
| N-EtFOSE | U | | 24.6 (Q) | | |
| HFPO-DA | U | | 12.5 (Q) | | |
| ADONA | U | | 13.2 (Q) | | |
| 9Cl-PF3ONS | U | | 13.2 (Q) | | |
| 11Cl-PF3OUdS | U | | 13.2 (Q) | | |
| 3:3 FTCA | | 1500 | 15.3 (S) | 1.90 | 0.814 |
| 5:3 FTCA | | 79800 | 82.4 (Q) | 1.30 | 1.056 |
| 7:3 FTCA | | 16800 | 82.4 (Q) | 0.69 | 1.353 |
| PFEESA | U | | 3.29 (Q) | | |
| PFMPA | U | | 6.59 (Q) | | |
| PFMBA | J | 3.88 | 3.29 (Q) | | 1.071 |

- (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFA_S_L35842-13_Form1A_FC1L_483S60_SJ2985222.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.
CMLF-IVA - Unfiltered
Sample Collection:
04-Oct-2021 09:15

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.:

L35842-13

Matrix: LEACHATE

Sample Size:

0.0607 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:05:26

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 60

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 40.0 | 13.2 | 33.0 | | 0.994 |
| 13C5-PFPeA | | 20.0 | 17.2 | 85.9 | | 0.854 |
| 13C5-PFHxA | | 10.0 | 9.90 | 99.0 | 23.1 | 1.000 |
| 13C4-PFHpA | | 10.0 | 7.65 | 76.5 | | 0.897 |
| 13C8-PFOA | | 10.0 | 8.49 | 84.9 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.22 | 84.5 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.56 | 91.1 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.44 | 88.8 | | 1.053 |
| 13C2-PFDoA | | 5.00 | 4.04 | 80.8 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.00 | 60.0 | | 1.163 |
| 13C3-PFBS | | 10.0 | 7.56 | 75.4 | 3.07 | 0.800 |
| 13C3-PFHxS | | 10.0 | 9.37 | 93.6 | 2.26 | 1.000 |
| 13C8-PFOS | | 10.1 | 9.41 | 93.5 | 2.21 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 14.5 | 72.1 | 1.92 | 0.836 |
| 13C2-6:2 FTS | | 20.0 | 18.5 | 92.4 | 2.03 | 1.001 |
| 13C2-8:2 FTS | V | 20.0 | 9.08 | 45.3 | 3.33 | 1.273 |
| 13C8-PFOSA | | 10.0 | 8.92 | 89.2 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 6.62 | 66.2 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 6.13 | 61.3 | | 1.382 |
| D3-MeFOSAA | V | 20.0 | 7.42 | 37.1 | | 1.324 |
| D5-EtFOSAA | V | 20.0 | 8.51 | 42.5 | | 1.352 |
| d7-NMe-FOSE | | 100 | 68.1 | 68.1 | | 1.329 |
| d9-NEt-FOSE | | 100 | 58.7 | 58.7 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 39.8 | 99.5 | 2.58 | 1.033 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
CMLF-IVB - Unfiltered
Sample Collection:
04-Oct-2021 09:25

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.:

L35842-14

Matrix: LEACHATE

Sample Size:

0.0631 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:18:31

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 61

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | | 4300 | 12.7 (Q) | | 1.006 |
| PFPeA | | 3170 | 14.1 (S) | | 1.000 |
| PFHxA | | 7530 | 20.8 (S) | 3.94 | 1.000 |
| PFHpA | | 1240 | 3.17 (Q) | 1.95 | 1.000 |
| PFOA | | 2220 | 3.17 (Q) | 1.74 | |
| PFNA | | 346 | 3.17 (Q) | 2.87 | |
| PFDA | | 110 | 3.17 (Q) | 2.91 | 1.000 |
| PFUnA | J | 5.89 | 3.17 (Q) | 3.62 | 1.000 |
| PFDaA | U | | 3.17 (Q) | | |
| PFTTrDA | U | | 3.17 (Q) | | |
| PFTeDA | U | | 3.17 (Q) | | |
| PFBS | | 3410 | 5.60 (S) | 2.60 | 1.000 |
| PFPeS | | 57.7 | 6.59 (S) | 2.30 | 0.888 |
| PFHxS | | 682 | 29.2 (S) | 2.28 | |
| PFHpS | J | 7.75 | 3.17 (Q) | 2.30 | 0.917 |
| PFOS | | 274 | 3.17 (Q) | 2.91 | |
| PFNS | U | | 3.17 (Q) | | |
| PFDS | U | | 3.17 (Q) | | |
| PFDoS | U | | 3.17 (Q) | | |
| 4:2 FTS | U | | 12.7 (Q) | | |
| 6:2 FTS | | 341 | 11.4 (Q) | 0.43 | 0.999 |
| 8:2 FTS | J | 16.2 | 12.7 (Q) | 0.35 | 0.999 |
| PFOSA | J | 5.78 | 3.17 (Q) | | |
| N-MeFOSA | U | | 3.64 (Q) | | |
| N-EtFOSA | U | | 7.92 (Q) | | |
| MeFOSAA | | 84.2 | 3.17 (Q) | 1.86 | |
| EtFOSAA | J | 10.1 | 3.17 (Q) | 0.93 | |
| N-MeFOSE | U | | 31.7 (Q) | | |
| N-EtFOSE | U | | 23.7 (Q) | | |
| HFPO-DA | U | | 12.0 (Q) | | |
| ADONA | U | | 12.7 (Q) | | |
| 9Cl-PF3ONS | U | | 12.7 (Q) | | |
| 11Cl-PF3OUdS | U | | 12.7 (Q) | | |
| 3:3 FTCA | | 637 | 16.6 (S) | 1.77 | 0.811 |
| 5:3 FTCA | | 148000 | 79.2 (Q) | 1.14 | 1.056 |
| 7:3 FTCA | | 16900 | 79.2 (Q) | 0.72 | 1.353 |
| PFEESA | U | | 3.17 (Q) | | |
| PFMPA | U | | 6.34 (Q) | | |
| PFMBA | U | | 3.17 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-14_Form1A_FC1L_483S61_SJ2985223.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
CMLF-IVB - Unfiltered
Sample Collection:
04-Oct-2021 09:25

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.:

L35842-14

Matrix: LEACHATE

Sample Size:

0.0631 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:18:31

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 61

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 40.0 | 7.09 | 17.7 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 13.0 | 64.9 | | 0.854 |
| 13C5-PFHxA | | 10.0 | 7.15 | 71.5 | 29.9 | 1.000 |
| 13C4-PFHpA | | 10.0 | 6.88 | 68.8 | | 0.897 |
| 13C8-PFOA | | 10.0 | 8.06 | 80.6 | | 0.999 |
| 13C9-PFNA | | 5.00 | 4.42 | 88.4 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.34 | 86.7 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.23 | 84.7 | | 1.052 |
| 13C2-PFDoA | | 5.00 | 3.85 | 77.1 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.05 | 60.9 | | 1.163 |
| 13C3-PFBS | | 10.0 | 6.41 | 63.9 | 2.26 | 0.801 |
| 13C3-PFHxS | | 10.0 | 8.51 | 84.9 | 2.21 | 1.001 |
| 13C8-PFOS | | 10.1 | 10.0 | 99.4 | 2.11 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 14.0 | 69.4 | 2.09 | 0.835 |
| 13C2-6:2 FTS | | 20.0 | 19.8 | 98.8 | 2.19 | 1.003 |
| 13C2-8:2 FTS | V | 20.0 | 9.60 | 47.9 | 3.35 | 1.273 |
| 13C8-PFOSA | | 10.0 | 9.32 | 93.2 | | 1.163 |
| D3-N-MeFOSA | | 10.0 | 6.59 | 65.9 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 6.38 | 63.8 | | 1.382 |
| D3-MeFOSAA | V | 20.0 | 7.18 | 35.9 | | 1.324 |
| D5-EtFOSAA | V | 20.0 | 9.22 | 46.1 | | 1.352 |
| d7-NMe-FOSE | | 100 | 76.8 | 76.8 | | 1.329 |
| d9-NEt-FOSE | | 100 | 77.5 | 77.5 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 33.8 | 84.5 | 2.71 | 1.033 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
CMLF-VBE - Unfiltered
Sample Collection:
04-Oct-2021 09:55

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.:

L35842-15

Matrix: LEACHATE

Sample Size:

0.0643 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:31:36

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 62

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | | 5460 | 12.4 (Q) | | 1.006 |
| PFPeA | | 17500 | 28.0 (S) | | 1.001 |
| PFHxA | | 15800 | 3.92 (S) | 4.54 | 1.001 |
| PFHpA | | 5250 | 3.11 (Q) | 2.73 | 1.000 |
| PFOA | | 11800 | 3.11 (Q) | 2.03 | |
| PFNA | | 243 | 3.11 (Q) | 2.86 | |
| PFDA | | 580 | 3.11 (Q) | 2.95 | 1.000 |
| PFUnA | | 17.1 | 3.11 (Q) | 4.27 | 1.000 |
| PFDoA | | 54.7 | 3.11 (Q) | 7.43 | 0.999 |
| PFTTrDA | U | | 3.11 (Q) | | |
| PFTeDA | U | | 3.11 (Q) | | |
| PFBS | | 30.5 | 3.11 (Q) | 2.45 | 1.001 |
| PFPeS | U | | 3.13 (Q) | | |
| PFHxS | J | 7.87 | 3.11 (Q) | 2.14 | |
| PFHpS | U | | 3.11 (Q) | | |
| PFOS | | 13.0 | 3.11 (Q) | 2.78 | |
| PFNS | U | | 3.11 (Q) | | |
| PFDS | U | | 3.11 (Q) | | |
| PFDoS | U | | 3.11 (Q) | | |
| 4:2 FTS | U | | 12.4 (Q) | | |
| 6:2 FTS | J | 20.3 | 11.2 (Q) | 0.44 | 1.000 |
| 8:2 FTS | U | | 12.4 (Q) | | |
| PFOSA | U | | 3.11 (Q) | | |
| N-MeFOSA | U | | 3.58 (Q) | | |
| N-EtFOSA | U | | 7.77 (Q) | | |
| MeFOSAA | U | | 3.11 (Q) | | |
| EtFOSAA | U | | 3.11 (Q) | | |
| N-MeFOSE | U | | 31.1 (Q) | | |
| N-EtFOSE | U | | 23.3 (Q) | | |
| HFPO-DA | U | | 11.8 (Q) | | |
| ADONA | U | | 12.4 (Q) | | |
| 9Cl-PF3ONS | U | | 12.5 (Q) | | |
| 11Cl-PF3OUdS | U | | 12.5 (Q) | | |
| 3:3 FTCA | | 365 | 12.4 (Q) | 1.83 | 0.827 |
| 5:3 FTCA | | 1710 | 77.7 (Q) | 1.06 | 1.054 |
| 7:3 FTCA | J | 161 | 77.7 (Q) | 0.64 | 1.352 |
| PFEESA | U | | 3.11 (Q) | | |
| PFMPA | U | | 6.22 (Q) | | |
| PFMBA | U | | 3.11 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-15_Form1A_FC1L_483S62_SJ2985224.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
CMLF-VBE - Unfiltered
Sample Collection:
04-Oct-2021 09:55

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.: L35842-15

Matrix: LEACHATE

Sample Size: 0.0643 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:31:36

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 62

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | | 40.0 | 32.9 | 82.2 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 16.7 | 83.5 | | 0.857 |
| 13C5-PFHxA | | 10.0 | 8.38 | 83.8 | 23.8 | 0.999 |
| 13C4-PFHpA | | 10.0 | 8.50 | 85.0 | | 0.898 |
| 13C8-PFOA | | 10.0 | 7.40 | 74.0 | | 0.999 |
| 13C9-PFNA | | 5.00 | 4.00 | 80.0 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.24 | 84.7 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.17 | 83.4 | | 1.053 |
| 13C2-PFDoA | | 5.00 | 3.91 | 78.2 | | 1.087 |
| 13C2-PFTeDA | | 5.00 | 3.16 | 63.1 | | 1.163 |
| 13C3-PFBS | | 10.0 | 9.21 | 91.8 | 3.14 | 0.801 |
| 13C3-PFHxS | | 10.0 | 8.31 | 83.0 | 2.24 | 1.000 |
| 13C8-PFOS | | 10.1 | 9.59 | 95.3 | 2.20 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 26.5 | 132 | 1.76 | 0.837 |
| 13C2-6:2 FTS | | 20.0 | 19.7 | 98.3 | 2.10 | 1.000 |
| 13C2-8:2 FTS | | 20.0 | 14.5 | 72.3 | 3.21 | 1.272 |
| 13C8-PFOSA | | 10.0 | 8.64 | 86.4 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 6.78 | 67.8 | | 1.346 |
| D5-N-EtFOSA | | 10.0 | 6.42 | 64.2 | | 1.382 |
| D3-MeFOSAA | | 20.0 | 12.1 | 60.7 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 13.0 | 64.9 | | 1.350 |
| d7-NMe-FOSE | | 100 | 68.0 | 68.0 | | 1.329 |
| d9-NEt-FOSE | | 100 | 60.7 | 60.7 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 47.3 | 118 | 2.67 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 WHLF-LECH-R1 - Unfiltered
 Sample Collection:
 15-Sep-2021 15:00

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.:

L35842-16

Matrix: LEACHATE

Sample Size:

0.0594 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:44:41

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 63

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | 7110 | 26.8 (Q) | | 1.006 |
| PFPeA | | 10200 | 23.3 (S) | | 1.000 |
| PFHxA | | 11600 | 35.1 (S) | 3.99 | 1.001 |
| PFHpA | | 6710 | 6.71 (Q) | 1.88 | 1.000 |
| PFOA | | 11800 | 6.71 (Q) | 1.72 | |
| PFNA | | 795 | 6.71 (Q) | 2.97 | |
| PFDA | | 418 | 6.71 (Q) | 3.04 | 1.000 |
| PFUnA | | 33.5 | 6.71 (Q) | 4.46 | 1.000 |
| PFDoA | J | 10.1 | 6.71 (Q) | 7.07 | 1.000 |
| PFTTrDA | U | | 6.71 (Q) | | |
| PFTeDA | U | | 6.71 (Q) | | |
| PFBS | | 1330 | 6.71 (Q) | 2.31 | 1.000 |
| PFPeS | | 293 | 6.74 (Q) | 1.99 | 0.889 |
| PFHxS | | 1120 | 6.71 (Q) | 2.39 | |
| PFHpS | | 108 | 6.71 (Q) | 2.11 | 0.916 |
| PFOS | | 4470 | 6.71 (Q) | 3.14 | |
| PFNS | U | | 6.71 (Q) | | |
| PFDS | U | | 6.71 (Q) | | |
| PFDoS | U | | 6.71 (Q) | | |
| 4:2 FTS | J | 29.3 | 26.8 (Q) | 0.30 | 0.998 |
| 6:2 FTS | | 1160 | 24.2 (Q) | 0.41 | 1.000 |
| 8:2 FTS | | 1250 | 26.8 (Q) | 0.53 | 1.000 |
| PFOSA | | 71.5 | 6.71 (Q) | | |
| N-MeFOSA | U | | 7.71 (Q) | | |
| N-EtFOSA | U | | 16.8 (Q) | | |
| MeFOSAA | | 118 | 6.71 (Q) | 2.11 | |
| EtFOSAA | | 960 | 6.71 (Q) | 1.17 | |
| N-MeFOSE | U | | 67.1 (Q) | | |
| N-EtFOSE | U | | 50.2 (Q) | | |
| HFPO-DA | U | | 25.5 (Q) | | |
| ADONA | U | | 26.8 (Q) | | |
| 9Cl-PF3ONS | U | | 26.9 (Q) | | |
| 11Cl-PF3OUds | U | | 26.9 (Q) | | |
| 3:3 FTCA | J | 94.1 | 26.8 (Q) | 1.01 | 0.820 |
| 5:3 FTCA | | 11800 | 168 (Q) | 1.33 | 1.054 |
| 7:3 FTCA | J | 371 | 168 (Q) | 0.71 | 1.351 |
| PFEESA | U | | 6.71 (Q) | | |
| PFMPA | U | | 13.4 (Q) | | |
| PFMBA | U | | 6.71 (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; 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: _____ Jordan Berends _____

For Axs Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-16_Form1A_FC1L_483S63_SJ2985225.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 WHLF-LECH-R1 - Unfiltered
 Sample Collection:
 15-Sep-2021 15:00

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.: L35842-16

Matrix: LEACHATE

Sample Size: 0.0594 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:44:41

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 63

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 80.0 | 5.53 | 6.91 | | 0.994 |
| 13C5-PFPeA | | 40.0 | 24.6 | 61.6 | | 0.858 |
| 13C5-PFHxA | | 20.0 | 15.8 | 78.9 | 21.0 | 1.000 |
| 13C4-PFHpA | | 20.0 | 16.1 | 80.7 | | 0.900 |
| 13C8-PFOA | | 20.0 | 16.1 | 80.3 | | 0.999 |
| 13C9-PFNA | | 10.0 | 8.64 | 86.4 | | 0.998 |
| 13C6-PFDA | | 10.0 | 8.69 | 86.9 | | 1.000 |
| 13C7-PFUnA | | 10.0 | 8.94 | 89.4 | | 1.053 |
| 13C2-PFDoA | | 10.0 | 7.69 | 76.9 | | 1.087 |
| 13C2-PFTeDA | | 10.0 | 5.35 | 53.5 | | 1.164 |
| 13C3-PFBS | | 20.1 | 13.8 | 68.9 | 2.95 | 0.803 |
| 13C3-PFHxS | | 20.0 | 14.6 | 73.0 | 2.19 | 1.001 |
| 13C8-PFOS | | 20.1 | 18.3 | 90.9 | 2.13 | 1.000 |
| 13C2-4:2 FTS | | 40.3 | 43.6 | 108 | 1.89 | 0.838 |
| 13C2-6:2 FTS | | 40.0 | 35.2 | 88.1 | 1.83 | 1.001 |
| 13C2-8:2 FTS | | 40.1 | 24.9 | 62.0 | 2.98 | 1.273 |
| 13C8-PFOSA | | 20.0 | 18.8 | 94.2 | | 1.164 |
| D3-N-MeFOSA | | 20.0 | 14.8 | 73.8 | | 1.346 |
| D5-N-EtFOSA | | 20.0 | 14.2 | 71.1 | | 1.382 |
| D3-MeFOSAA | V | 40.0 | 19.5 | 48.7 | | 1.324 |
| D5-EtFOSAA | | 40.0 | 22.5 | 56.3 | | 1.352 |
| d7-NMe-FOSE | | 200 | 131 | 65.5 | | 1.329 |
| d9-NEt-FOSE | | 200 | 114 | 57.2 | | 1.366 |
| 13C3-HFPO-DA | | 80.0 | 71.2 | 89.0 | 2.52 | 1.033 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 WHLF-LECH-R2 - Unfiltered
 Sample Collection:
 15-Sep-2021 14:00

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.:

L35842-17

Matrix: LEACHATE

Sample Size:

0.0601 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:57:46

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 64

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | | 3390 | 13.3 (Q) | | 1.006 |
| PFPeA | | 5000 | 24.4 (S) | | 1.000 |
| PFHxA | | 6880 | 6.72 (S) | 4.90 | 1.000 |
| PFHpA | | 3150 | 3.33 (Q) | 1.98 | 1.000 |
| PFOA | | 4450 | 3.33 (Q) | 1.93 | |
| PFNA | | 280 | 3.33 (Q) | 2.85 | |
| PFDA | | 122 | 3.33 (Q) | 3.19 | 1.000 |
| PFUnA | | 15.8 | 3.33 (Q) | 4.47 | 1.000 |
| PFDaA | J | 9.04 | 3.33 (Q) | 8.67 | 1.000 |
| PFTTrDA | U | | 3.33 (Q) | | |
| PFTeDA | U | | 3.33 (Q) | | |
| PFBS | | 759 | 3.33 (Q) | 2.45 | 1.000 |
| PFPeS | | 126 | 3.34 (Q) | 1.95 | 0.888 |
| PFHxS | | 638 | 3.33 (Q) | 2.45 | |
| PFHpS | | 27.9 | 3.33 (Q) | 1.98 | 0.916 |
| PFOS | | 999 | 3.33 (Q) | 3.00 | |
| PFNS | U | | 3.33 (Q) | | |
| PFDS | U | | 3.33 (Q) | | |
| PFDoS | U | | 3.33 (Q) | | |
| 4:2 FTS | J | 26.6 | 13.3 (Q) | 0.34 | 1.000 |
| 6:2 FTS | | 979 | 12.0 (Q) | 0.42 | 1.000 |
| 8:2 FTS | | 1080 | 13.3 (Q) | 0.51 | 1.000 |
| PFOSA | | 31.4 | 3.33 (Q) | | |
| N-MeFOSA | U | | 3.83 (Q) | | |
| N-EtFOSA | U | | 8.32 (Q) | | |
| MeFOSAA | | 460 | 3.33 (Q) | 2.00 | |
| EtFOSAA | | 897 | 3.33 (Q) | 1.16 | |
| N-MeFOSE | U | | 33.3 (Q) | | |
| N-EtFOSE | U | | 24.9 (Q) | | |
| HFPO-DA | U | | 12.6 (Q) | | |
| ADONA | U | | 13.3 (Q) | | |
| 9Cl-PF3ONS | U | | 13.3 (Q) | | |
| 11Cl-PF3OUdS | U | | 13.3 (Q) | | |
| 3:3 FTCA | | 216 | 13.3 (Q) | 1.79 | 0.817 |
| 5:3 FTCA | | 20400 | 83.2 (Q) | 1.29 | 1.056 |
| 7:3 FTCA | | 926 | 83.2 (Q) | 0.67 | 1.353 |
| PFEESA | U | | 3.33 (Q) | | |
| PFMPA | U | | 6.65 (Q) | | |
| PFMBA | U | | 3.33 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-17_Form1A_FC1L_483S64_SJ2985226.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 WHLF-LECH-R2 - Unfiltered
 Sample Collection:
 15-Sep-2021 14:00

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.:

L35842-17

Matrix: LEACHATE

Sample Size: 0.0601 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 01:57:46

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 64

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 40.0 | 4.25 | 10.6 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 14.6 | 73.2 | | 0.857 |
| 13C5-PFHxA | | 10.0 | 9.42 | 94.2 | 22.8 | 1.000 |
| 13C4-PFHpA | | 10.0 | 7.65 | 76.5 | | 0.897 |
| 13C8-PFOA | | 10.0 | 7.48 | 74.8 | | 0.999 |
| 13C9-PFNA | | 5.00 | 4.62 | 92.3 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.34 | 86.9 | | 1.000 |
| 13C7-PFUnA | | 5.00 | 4.18 | 83.7 | | 1.053 |
| 13C2-PFDoA | | 5.00 | 3.20 | 64.1 | | 1.087 |
| 13C2-PFTeDA | V | 5.00 | 1.86 | 37.3 | | 1.164 |
| 13C3-PFBS | | 10.0 | 8.86 | 88.3 | 3.37 | 0.801 |
| 13C3-PFHxS | | 10.0 | 9.21 | 92.0 | 2.32 | 1.000 |
| 13C8-PFOS | | 10.1 | 9.70 | 96.4 | 2.23 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 15.7 | 77.9 | 1.91 | 0.835 |
| 13C2-6:2 FTS | | 20.0 | 18.9 | 94.7 | 1.86 | 1.001 |
| 13C2-8:2 FTS | | 20.0 | 10.1 | 50.6 | 2.98 | 1.272 |
| 13C8-PFOSA | | 10.0 | 9.52 | 95.2 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 7.11 | 71.1 | | 1.345 |
| D5-N-EtFOSA | | 10.0 | 6.40 | 64.0 | | 1.382 |
| D3-MeFOSAA | V | 20.0 | 7.55 | 37.7 | | 1.322 |
| D5-EtFOSAA | V | 20.0 | 8.66 | 43.3 | | 1.350 |
| d7-NMe-FOSE | | 100 | 62.8 | 62.8 | | 1.328 |
| d9-NEt-FOSE | | 100 | 51.3 | 51.3 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 45.5 | 114 | 2.88 | 1.033 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 WHLF-LECH-R3 - Unfiltered
 Sample Collection:
 15-Sep-2021 15:30

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)

Lab Sample I.D.:

L35842-18

Contract No.: 4066

Matrix: LEACHATE

Sample Size: 0.0612 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 02:10:52

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 65

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | | 3790 | 26.1 (Q) | | 1.000 |
| PFPeA | | 6010 | 20.0 (S) | | 1.002 |
| PFHxA | | 22800 | 8.93 (S) | 5.38 | 1.000 |
| PFHpA | | 2690 | 6.53 (Q) | 1.95 | 1.000 |
| PFOA | | 6330 | 6.53 (Q) | 1.94 | |
| PFNA | | 218 | 6.53 (Q) | 2.93 | |
| PFDA | | 171 | 6.53 (Q) | 2.75 | 1.000 |
| PFUnA | J | 11.0 | 6.53 (Q) | 4.60 | 0.999 |
| PFDaA | U | | 6.53 (Q) | | |
| PFTTrDA | U | | 6.53 (Q) | | |
| PFTeDA | U | | 6.53 (Q) | | |
| PFBS | | 3570 | 6.53 (Q) | 2.84 | 1.000 |
| PFPeS | J | 18.9 | 6.56 (Q) | 2.03 | 0.888 |
| PFHxS | | 88.2 | 6.53 (Q) | 2.36 | |
| PFHpS | U | | 6.53 (Q) | | |
| PFOS | | 84.3 | 6.53 (Q) | 3.32 | |
| PFNS | U | | 6.53 (Q) | | |
| PFDS | U | | 6.53 (Q) | | |
| PFDoS | U | | 6.53 (Q) | | |
| 4:2 FTS | U | | 26.1 (Q) | | |
| 6:2 FTS | | 203 | 23.5 (Q) | 0.42 | 1.000 |
| 8:2 FTS | U | | 26.1 (Q) | | |
| PFOSA | U | | 6.53 (Q) | | |
| N-MeFOSA | U | | 7.51 (Q) | | |
| N-EtFOSA | U | | 16.3 (Q) | | |
| MeFOSAA | J | 15.0 | 6.53 (Q) | 2.49 | |
| EtFOSAA | | 60.5 | 6.53 (Q) | 1.19 | |
| N-MeFOSE | U | | 65.3 (Q) | | |
| N-EtFOSE | U | | 48.8 (Q) | | |
| HFPO-DA | U | | 24.8 (Q) | | |
| ADONA | U | | 26.1 (Q) | | |
| 9Cl-PF3ONS | U | | 26.2 (Q) | | |
| 11Cl-PF3OUdS | U | | 26.1 (Q) | | |
| 3:3 FTCA | | 457 | 26.1 (Q) | 1.52 | 0.819 |
| 5:3 FTCA | | 36400 | 163 (Q) | 1.22 | 1.053 |
| 7:3 FTCA | | 3230 | 163 (Q) | 0.69 | 1.351 |
| PFEESA | U | | 6.53 (Q) | | |
| PFMPA | U | | 13.1 (Q) | | |
| PFMBA | U | | 6.53 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFAS_L35842-18_Form1A_FC1L_483S65_SJ2985227.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 WHLF-LECH-R3 - Unfiltered
 Sample Collection:
 15-Sep-2021 15:30

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.:

L35842-18

Matrix: LEACHATE

Sample Size: 0.0612 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 02:10:52

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 65

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 80.0 | 12.0 | 15.0 | | 1.000 |
| 13C5-PFPeA | | 40.0 | 30.9 | 77.2 | | 0.855 |
| 13C5-PFHxA | | 20.0 | 16.6 | 82.8 | 20.6 | 1.000 |
| 13C4-PFHpA | | 20.0 | 16.8 | 84.1 | | 0.897 |
| 13C8-PFOA | | 20.0 | 16.1 | 80.3 | | 1.000 |
| 13C9-PFNA | | 10.0 | 8.32 | 83.2 | | 1.002 |
| 13C6-PFDA | | 10.0 | 8.77 | 87.7 | | 1.000 |
| 13C7-PFUnA | | 10.0 | 8.87 | 88.7 | | 1.053 |
| 13C2-PFDoA | | 10.0 | 7.45 | 74.5 | | 1.087 |
| 13C2-PFTeDA | | 10.0 | 5.76 | 57.6 | | 1.163 |
| 13C3-PFBS | | 20.1 | 17.1 | 85.2 | 2.70 | 0.801 |
| 13C3-PFHxS | | 20.0 | 18.3 | 91.6 | 2.40 | 1.000 |
| 13C8-PFOS | | 20.1 | 19.5 | 96.9 | 2.15 | 1.000 |
| 13C2-4:2 FTS | | 40.3 | 55.8 | 138 | 2.21 | 0.835 |
| 13C2-6:2 FTS | | 40.0 | 37.2 | 93.0 | 2.06 | 1.001 |
| 13C2-8:2 FTS | | 40.1 | 25.6 | 63.8 | 3.23 | 1.272 |
| 13C8-PFOSA | | 20.0 | 18.8 | 93.9 | | 1.164 |
| D3-N-MeFOSA | | 20.0 | 14.4 | 71.8 | | 1.346 |
| D5-N-EtFOSA | | 20.0 | 13.7 | 68.7 | | 1.382 |
| D3-MeFOSAA | | 40.0 | 22.0 | 55.0 | | 1.322 |
| D5-EtFOSAA | | 40.0 | 24.3 | 60.8 | | 1.350 |
| d7-NMe-FOSE | | 200 | 132 | 66.0 | | 1.328 |
| d9-NEt-FOSE | | 200 | 113 | 56.6 | | 1.366 |
| 13C3-HFPO-DA | | 80.0 | 84.6 | 106 | 3.32 | 1.032 |

(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: _____ Jordan Berends _____

SGS AXYS METHOD MLA-110 Rev 02

Form 1A

PERFLUORINATED ORGANICS ANALYSIS REPORT

CLIENT SAMPLE NO.
 WHLF-LECH-R4 - Unfiltered
 Sample Collection:
 15-Sep-2021 16:00

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.:

L35842-19

Matrix: LEACHATE

Sample Size:

0.0595 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 13-Nov-2021 Time: 02:23:58

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 66

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | | 7420 | 66.7 (Q) | | 1.006 |
| PFPeA | | 12800 | 33.3 (Q) | | 1.001 |
| PFHxA | | 51900 | 16.7 (Q) | 3.98 | 1.000 |
| PFHpA | | 2830 | 16.7 (Q) | 1.96 | 1.002 |
| PFOA | | 11100 | 16.7 (Q) | 1.86 | |
| PFNA | | 302 | 16.7 (Q) | 2.65 | |
| PFDA | | 459 | 16.7 (Q) | 2.93 | 1.000 |
| PFUnA | J | 24.1 | 16.7 (Q) | 4.12 | 1.000 |
| PFDaA | U | | 16.7 (Q) | | |
| PFTTrDA | U | | 16.7 (Q) | | |
| PFTeDA | U | | 16.7 (Q) | | |
| PFBS | | 4960 | 16.7 (Q) | 2.82 | 1.000 |
| PFPeS | J | 22.0 | 16.8 (Q) | 2.28 | 0.889 |
| PFHxS | | 87.2 | 16.7 (Q) | 2.09 | |
| PFHpS | U | | 16.7 (Q) | | |
| PFOS | | 201 | 16.7 (Q) | 2.74 | |
| PFNS | U | | 16.7 (Q) | | |
| PFDS | U | | 16.7 (Q) | | |
| PFDoS | U | | 16.7 (Q) | | |
| 4:2 FTS | U | | 66.7 (Q) | | |
| 6:2 FTS | J | 222 | 60.1 (Q) | 0.41 | 1.000 |
| 8:2 FTS | U | | 66.7 (Q) | | |
| PFOSA | U | | 16.7 (Q) | | |
| N-MeFOSA | U | | 19.2 (Q) | | |
| N-EtFOSA | U | | 41.7 (Q) | | |
| MeFOSAA | J | 61.4 | 16.7 (Q) | 2.59 | |
| EtFOSAA | U | | 16.7 (Q) | | |
| N-MeFOSE | U | | 167 (Q) | | |
| N-EtFOSE | U | | 125 (Q) | | |
| HFPO-DA | U | | 63.4 (Q) | | |
| ADONA | U | | 66.7 (Q) | | |
| 9Cl-PF3ONS | U | | 66.9 (Q) | | |
| 11Cl-PF3OUdS | U | | 66.8 (Q) | | |
| 3:3 FTCA | | 1180 | 66.7 (Q) | 1.64 | 0.817 |
| 5:3 FTCA | | 78300 | 417 (Q) | 1.26 | 1.053 |
| 7:3 FTCA | | 2210 | 417 (Q) | 0.69 | 1.351 |
| PFEESA | U | | 16.7 (Q) | | |
| PFMPA | U | | 33.3 (Q) | | |
| PFMBA | U | | 16.7 (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: _____ Jordan Berends _____

For Axy's Internal Use Only [XSL Template: FC2-Form1A.xsl; Created: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFC_FC_LC_PFA_S_L35842-19_Form1A_FC1L_483S66_SJ2985228.html; Workgroup: WG78734; Design ID: 3989]

SGS AXYS METHOD MLA-110 Rev 02

Form 2

CLIENT SAMPLE NO.
 WHLF-LECH-R4 - Unfiltered
 Sample Collection:
 15-Sep-2021 16:00

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.:

L35842-19

Matrix: LEACHATE

Sample Size: 0.0595 L

Sample Receipt Date: 13-Oct-2021

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 13-Nov-2021 Time: 02:23:58

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 66

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 ¹ | SPIKE CONC. | CONC. FOUND | R(%) ² | RATIO | RRT |
|-------------------|-----------------------|-------------|-------------|-------------------|-------|-------|
| 13C4-PFBA | V | 200 | 44.8 | 22.4 | | 1.000 |
| 13C5-PFPeA | | 100 | 95.8 | 95.8 | | 0.856 |
| 13C5-PFHxA | | 50.0 | 48.7 | 97.4 | 25.1 | 1.000 |
| 13C4-PFHpA | | 50.0 | 43.3 | 86.5 | | 0.897 |
| 13C8-PFOA | | 50.0 | 45.2 | 90.5 | | 1.000 |
| 13C9-PFNA | | 25.0 | 22.2 | 88.9 | | 1.000 |
| 13C6-PFDA | | 25.0 | 24.3 | 97.4 | | 1.000 |
| 13C7-PFUnA | | 25.0 | 23.4 | 93.5 | | 1.053 |
| 13C2-PFDoA | | 25.0 | 20.7 | 83.0 | | 1.087 |
| 13C2-PFTeDA | | 25.0 | 14.4 | 57.6 | | 1.164 |
| 13C3-PFBS | | 50.2 | 45.1 | 89.9 | 2.79 | 0.801 |
| 13C3-PFHxS | | 50.1 | 46.2 | 92.2 | 2.45 | 0.999 |
| 13C8-PFOS | | 50.3 | 48.6 | 96.5 | 2.08 | 1.000 |
| 13C2-4:2 FTS | | 101 | 131 | 130 | 2.28 | 0.837 |
| 13C2-6:2 FTS | | 100 | 101 | 101 | 2.28 | 1.001 |
| 13C2-8:2 FTS | | 100 | 77.4 | 77.3 | 3.59 | 1.272 |
| 13C8-PFOSA | | 50.0 | 46.9 | 93.8 | | 1.164 |
| D3-N-MeFOSA | | 50.0 | 37.1 | 74.3 | | 1.346 |
| D5-N-EtFOSA | | 50.0 | 35.6 | 71.2 | | 1.382 |
| D3-MeFOSAA | | 100 | 63.5 | 63.5 | | 1.322 |
| D5-EtFOSAA | | 100 | 67.1 | 67.1 | | 1.350 |
| d7-NMe-FOSE | | 500 | 344 | 68.8 | | 1.329 |
| d9-NEt-FOSE | | 500 | 296 | 59.2 | | 1.366 |
| 13C3-HFPO-DA | | 200 | 268 | 134 | 3.32 | 1.033 |

(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: _____ Jordan Berends _____

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.:

WG78734-101

Matrix: AQUEOUS

Sample Size:

0.500 L

Sample Receipt Date: N/A

Initial Calibration Date:

22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID:

LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:15:58

Column ID:

C18

Extract Volume (uL): 4000

Sample Data Filename:

FC1L_483 S: 47

Injection Volume (uL): 2

Blank Data Filename:

FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename:

FC1L_483 S: 43

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 | 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 | | 0.400 (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 | | 1.60 (Q) | | |
| PFOSA | U | | 0.400 (Q) | | |
| N-MeFOSA | U | | 0.460 (Q) | | |
| N-EtFOSA | U | | 1.00 (Q) | | |
| MeFOSAA | U | | 0.400 (Q) | | |
| EtFOSAA | U | | 0.400 (Q) | | |
| N-MeFOSE | U | | 4.00 (Q) | | |
| N-EtFOSE | U | | 2.99 (Q) | | |
| HFPO-DA | U | | 1.52 (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: _____Jordan Berends_____

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Report Filename: PFC_FC_LC_PFAS_WG78734-101_Form1A_FC1L_483S47_SJ2985208.html; Workgroup: WG78734; 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

Contract No.: 4066

Project No. N/A

Lab Sample I.D.: WG78734-101

Matrix: AQUEOUS

Sample Size: 0.500 L

Sample Receipt Date: N/A

Initial Calibration Date: 22-Feb-2021

Extraction Date: 12-Nov-2021

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021 Time: 22:15:58

Column ID: C18

Extract Volume (uL): 4000

Sample Data Filename: FC1L_483 S: 47

Injection Volume (uL): 2

Blank Data Filename: FC1L_483 S: 47

Dilution Factor: N/A

Cal. Ver. Data Filename: FC1L_483 S: 43

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 | 36.8 | 92.1 | | 1.000 |
| 13C5-PFPeA | | 20.0 | 16.4 | 81.9 | | 0.859 |
| 13C5-PFHxA | | 10.0 | 8.39 | 83.9 | 24.2 | 1.000 |
| 13C4-PFHpA | | 10.0 | 8.09 | 80.9 | | 0.899 |
| 13C8-PFOA | | 10.0 | 8.43 | 84.3 | | 1.000 |
| 13C9-PFNA | | 5.00 | 4.49 | 89.8 | | 1.000 |
| 13C6-PFDA | | 5.00 | 4.71 | 94.3 | | 0.999 |
| 13C7-PFUnA | | 5.00 | 4.80 | 96.0 | | 1.051 |
| 13C2-PFDoA | | 5.00 | 4.61 | 92.2 | | 1.086 |
| 13C2-PFTeDA | | 5.00 | 3.91 | 78.3 | | 1.162 |
| 13C3-PFBS | | 10.0 | 7.83 | 78.1 | 2.69 | 0.801 |
| 13C3-PFHxS | | 10.0 | 8.29 | 82.8 | 2.35 | 1.000 |
| 13C8-PFOS | | 10.1 | 10.2 | 102 | 2.23 | 1.000 |
| 13C2-4:2 FTS | | 20.2 | 19.8 | 98.0 | 1.78 | 0.838 |
| 13C2-6:2 FTS | | 20.0 | 18.4 | 91.9 | 2.13 | 1.003 |
| 13C2-8:2 FTS | | 20.0 | 15.4 | 77.0 | 3.44 | 1.272 |
| 13C8-PFOA | | 10.0 | 9.21 | 92.1 | | 1.164 |
| D3-N-MeFOSA | | 10.0 | 5.48 | 54.8 | | 1.344 |
| D5-N-EtFOSA | | 10.0 | 5.39 | 53.9 | | 1.381 |
| D3-MeFOSAA | | 20.0 | 13.1 | 65.3 | | 1.322 |
| D5-EtFOSAA | | 20.0 | 13.2 | 66.1 | | 1.350 |
| d7-NMe-FOSE | | 100 | 67.9 | 67.9 | | 1.328 |
| d9-NEt-FOSE | | 100 | 59.4 | 59.4 | | 1.366 |
| 13C3-HFPO-DA | | 40.0 | 34.5 | 86.1 | 2.84 | 1.033 |

(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: _____ Jordan Berends _____

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.: | WG78734-102 |
| Matrix: | AQUEOUS | Initial Calibration Date: | 22-Feb-2021 |
| Extraction Date: | 12-Nov-2021 | Instrument ID: | LCMS/MS |
| Analysis Date: | 12-Nov-2021 Time: 21:49:47 | Column ID: | C18 |
| Extract Volume (uL): | 4000 | OPR Data Filename: | FC1L_483 S: 45 |
| Injection Volume (uL): | 2 | Blank Data Filename: | FC1L_483 S: 47 |
| Dilution Factor: | N/A | Cal. Ver. Data Filename: | FC1L_483 S: 43 |

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 | 20.1 | 101 | 1.006 |
| PFPeA | | | 10.0 | 9.87 | 98.7 | 1.001 |
| PFHxA | | 4.87 | 5.00 | 5.29 | 106 | 0.999 |
| PFHpA | | 2.10 | 5.00 | 4.76 | 95.2 | 1.000 |
| PFOA | | 1.96 | 5.00 | 5.03 | 101 | |
| PFNA | | 2.69 | 5.00 | 5.27 | 105 | |
| PFDA | | 2.83 | 5.00 | 4.83 | 96.6 | 1.001 |
| PFUnA | | 4.71 | 5.00 | 5.33 | 107 | 1.000 |
| PFDoA | | 7.29 | 5.00 | 5.04 | 101 | 1.000 |
| PFTTrDA | | 3.15 | 5.00 | 5.05 | 101 | 0.963 |
| PFTeDA | | 2.50 | 5.00 | 5.16 | 103 | 1.000 |
| PFBS | | 2.52 | 5.00 | 4.55 | 91.1 | 1.001 |
| PFPeS | | 2.38 | 5.01 | 5.28 | 105 | 0.890 |
| PFHxS | | 2.34 | 5.00 | 4.68 | 93.7 | |
| PFHpS | | 2.04 | 5.01 | 4.75 | 94.7 | 0.916 |
| PFOS | | 2.46 | 5.00 | 4.53 | 90.6 | |
| PFNS | | 2.25 | 5.01 | 4.40 | 87.8 | 1.049 |
| PFDS | | 2.12 | 5.00 | 4.41 | 88.2 | 1.083 |
| PFDoS | | 2.22 | 5.01 | 3.56 | 71.1 | 1.168 |
| 4:2 FTS | | 0.37 | 20.0 | 18.8 | 93.8 | 1.000 |
| 6:2 FTS | | 0.44 | 18.0 | 17.5 | 97.3 | 0.999 |
| 8:2 FTS | | 0.50 | 20.0 | 19.9 | 99.5 | 1.000 |
| PFOSA | | | 5.00 | 5.14 | 103 | |
| N-MeFOSA | | 0.55 | 5.75 | 5.48 | 95.3 | |
| N-EtFOSA | | 0.52 | 12.5 | 12.0 | 96.3 | |
| MeFOSAA | | 1.80 | 5.00 | 4.72 | 94.4 | |
| EtFOSAA | | 1.30 | 5.00 | 4.86 | 97.3 | |
| N-MeFOSE | | | 50.0 | 52.4 | 105 | |
| N-EtFOSE | | | 37.5 | 42.8 | 114 | |
| HFPO-DA | | 2.58 | 19.0 | 16.7 | 87.8 | 1.001 |
| ADONA | | 1.13 | 20.1 | 19.4 | 96.6 | 1.096 |
| 9CI-PF3ONS | | 3.35 | 20.0 | 18.2 | 90.8 | 0.966 |
| 11CI-PF3OUdS | | 3.24 | 20.0 | 16.3 | 81.3 | 1.032 |
| 3:3 FTCA | | 1.93 | 20.0 | 19.0 | 95.1 | 0.830 |
| 5:3 FTCA | | 1.27 | 125 | 129 | 104 | 1.053 |

| COMPOUND | LAB FLAG ¹ | RATIO | SPIKE CONC. (ng/mL) | CONC. FOUND (ng/mL) | % RECOVERY | RRT |
|----------|-----------------------|-------|------------------------|------------------------|------------|-------|
| 7:3 FTCA | | 0.72 | 125 | 125 | 100 | 1.350 |
| PFEESA | | 9.62 | 5.00 | 5.17 | 103 | 1.033 |
| PFMPA | | | 10.0 | 10.1 | 101 | 0.590 |
| PFMBA | | | 5.00 | 4.66 | 93.2 | 1.068 |
| NFDHA | N | 0.77 | 10.0 | 4.90 | 49.0 | 0.987 |

(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: _____Jordan Berends_____

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.: | WG78734-102 |
| Matrix: | AQUEOUS | Initial Calibration Date: | 22-Feb-2021 |
| Extraction Date: | 12-Nov-2021 | Instrument ID: | LCMS/MS |
| Analysis Date: | 12-Nov-2021 Time: 21:49:47 | Column ID: | C18 |
| Extract Volume (uL): | 4000 | OPR Data Filename: | FC1L_483 S: 45 |
| Injection Volume (uL): | 2 | Blank Data Filename: | FC1L_483 S: 47 |
| Dilution Factor: | N/A | Cal. Ver. Data Filename: | FC1L_483 S: 43 |

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 | 36.5 | 91.3 | 1.000 |
| 13C5-PFPeA | | | 20.0 | 18.3 | 91.4 | 0.858 |
| 13C5-PFHxA | | 23.7 | 10.0 | 8.96 | 89.6 | 1.000 |
| 13C4-PFHpA | | | 10.0 | 9.00 | 90.0 | 0.899 |
| 13C8-PFOA | | | 10.0 | 8.21 | 82.1 | 1.000 |
| 13C9-PFNA | | | 5.00 | 4.08 | 81.6 | 1.002 |
| 13C6-PFDA | | | 5.00 | 4.76 | 95.2 | 0.999 |
| 13C7-PFUnA | | | 5.00 | 4.56 | 91.2 | 1.051 |
| 13C2-PFDoA | | | 5.00 | 4.29 | 85.9 | 1.086 |
| 13C2-PFTeDA | | | 5.00 | 3.20 | 63.9 | 1.162 |
| 13C3-PFBS | | 3.22 | 10.0 | 8.85 | 88.2 | 0.801 |
| 13C3-PFHxS | | 2.41 | 10.0 | 8.91 | 89.0 | 1.000 |
| 13C8-PFOS | | 2.18 | 10.1 | 10.2 | 102 | 1.000 |
| 13C2-4:2 FTS | | 1.74 | 20.2 | 18.6 | 92.4 | 0.837 |
| 13C2-6:2 FTS | | 2.13 | 20.0 | 19.4 | 97.1 | 1.001 |
| 13C2-8:2 FTS | | 3.32 | 20.0 | 15.5 | 77.5 | 1.270 |
| 13C8-PFOSA | | | 10.0 | 9.12 | 91.2 | 1.164 |
| D3-N-MeFOSA | | | 10.0 | 5.23 | 52.3 | 1.345 |
| D5-N-EtFOSA | | | 10.0 | 4.74 | 47.4 | 1.381 |
| D3-MeFOSAA | | | 20.0 | 13.2 | 66.1 | 1.320 |
| D5-EtFOSAA | | | 20.0 | 12.9 | 64.4 | 1.349 |
| d7-NMe-FOSE | | | 100 | 55.7 | 55.7 | 1.328 |
| d9-NEt-FOSE | | | 100 | 49.8 | 49.8 | 1.366 |
| 13C3-HFPO-DA | | 2.92 | 40.0 | 42.6 | 106 | 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: _____ Jordan Berends _____

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: 22-Feb-2021

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: FC1L_080 S: 16

CS1 Data Filename: FC1L_080 S: 17

CS2 Data Filename: FC1L_080 S: 18

CS3 Data Filename: FC1L_080 S: 19

CS4 Data Filename: FC1L_080 S: 20

CS5 Data Filename: FC1L_080 S: 21

CS6 Data Filename: FC1L_080 S: 22

CS7 Data Filename: FC1L_080 S: 23

CS8 Data Filename: FC1L_080 S: 24

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 | | 1.06 | 1.05 | 1.05 | 1.00 | 1.01 | 0.98 | 0.99 | 0.96 | 0.94 | 1.00 | 4.20 |
| PFPeA | | 1.37 | 1.29 | 1.24 | 1.19 | 1.21 | 1.17 | 1.20 | 1.15 | 1.12 | 1.21 | 6.24 |
| PFHxA | | 1.16 | 1.28 | 1.12 | 1.05 | 1.03 | 0.97 | 1.04 | 0.97 | 0.94 | 1.06 | 10.2 |
| PFHpA | | 1.19 | 1.14 | 1.09 | 1.14 | 1.10 | 1.11 | 1.08 | 1.05 | 0.96 | 1.10 | 5.97 |
| PFOA | | 1.57 | 1.71 | 1.56 | 1.40 | 1.43 | 1.41 | 1.37 | 1.39 | 1.32 | 1.46 | 8.45 |
| PFNA | | 0.99 | 1.13 | 1.10 | 1.01 | 0.99 | 1.02 | 1.06 | 0.97 | 0.99 | 1.03 | 5.34 |
| PFDA | | 0.89 | 0.87 | 0.91 | 0.82 | 0.83 | 0.83 | 0.84 | 0.83 | 0.72 | 0.84 | 6.35 |
| PFUnA | | 0.76 | 0.78 | 0.88 | 0.69 | 0.76 | 0.74 | 0.75 | 0.75 | | 0.76 | 7.31 |
| PFDaA | | 1.02 | 1.34 | 1.15 | 1.05 | 1.09 | 1.04 | 1.08 | 0.99 | 0.86 | 1.07 | 12.1 |
| PFTrDA | | 0.97 | 0.93 | 0.92 | 0.86 | 0.83 | 0.81 | 0.82 | 0.61 | | 0.84 | 13.1 |
| PFTeDA | | 0.86 | 0.77 | 0.79 | 0.73 | 0.76 | 0.72 | 0.72 | 0.62 | | 0.74 | 9.15 |
| PFBS | | 1.24 | 1.18 | 1.13 | 1.14 | 1.21 | 1.14 | 1.16 | 1.11 | 1.10 | 1.16 | 4.01 |
| PFPeS | | 0.96 | 1.07 | 1.12 | 1.04 | 1.03 | 1.02 | 1.01 | 0.88 | 0.77 | 0.99 | 10.8 |
| PFHxS | | 1.26 | 1.23 | 1.21 | 1.20 | 1.14 | 1.15 | 1.15 | 1.08 | 1.14 | 1.17 | 4.74 |
| PFHpS | | 1.11 | 1.07 | 1.14 | 1.10 | 1.09 | 1.12 | 1.05 | 1.05 | 1.10 | 1.09 | 2.81 |
| PFOS | | 1.25 | 1.39 | 1.30 | 1.17 | 1.28 | 1.24 | 1.20 | 1.16 | 1.26 | 1.25 | 5.50 |
| PFNS | | 1.31 | 1.22 | 1.18 | 1.17 | 1.25 | 1.18 | 1.18 | 1.10 | 1.10 | 1.19 | 5.56 |
| PFDS | | 1.10 | 1.23 | 1.17 | 1.14 | 1.16 | 1.16 | 1.12 | 1.04 | 1.08 | 1.13 | 5.03 |
| PFDoS | | 0.95 | 0.93 | 0.96 | 0.88 | 0.93 | 0.93 | 0.90 | 0.91 | 1.00 | 0.93 | 3.65 |
| 4:2 FTS | | 0.43 | 0.50 | 0.50 | 0.51 | 0.52 | 0.47 | 0.45 | 0.42 | | 0.48 | 8.19 |
| 6:2 FTS | | 0.63 | 0.54 | 0.58 | 0.50 | 0.52 | 0.49 | 0.47 | 0.40 | | 0.52 | 13.6 |
| 8:2 FTS | | 0.30 | 0.27 | 0.26 | 0.27 | 0.25 | 0.28 | 0.27 | 0.23 | | 0.27 | 7.98 |
| PFOSA | | 1.04 | 1.05 | 1.02 | 0.99 | 0.98 | 0.99 | 0.97 | 0.94 | | 1.00 | 3.72 |
| N-MeFOSA | | 1.09 | 1.26 | 1.14 | 1.11 | 1.12 | 1.09 | 1.10 | 0.98 | | 1.11 | 6.86 |
| N-EtFOSA | | 1.20 | 1.27 | 1.24 | 1.19 | 1.18 | 1.19 | 1.23 | 1.15 | 1.16 | 1.20 | 3.34 |
| MeFOSAA | | 0.86 | 0.81 | 0.86 | 0.84 | 0.91 | 0.89 | 0.86 | 0.81 | 0.81 | 0.85 | 4.20 |
| EtFOSAA | | 0.78 | 0.63 | 0.92 | 0.72 | 0.73 | 0.74 | 0.78 | 0.68 | | 0.75 | 11.3 |
| N-MeFOSE | | 1.14 | 1.16 | 1.16 | 1.11 | 1.12 | 1.10 | 1.09 | 1.03 | 0.98 | 1.10 | 5.47 |
| N-EtFOSE | | 1.25 | 1.25 | 1.27 | 1.21 | 1.21 | 1.18 | 1.20 | 1.10 | 1.04 | 1.19 | 6.47 |
| HFPO-DA | | 1.16 | 1.24 | 1.13 | 1.10 | 1.08 | 1.02 | 1.05 | 0.96 | | 1.09 | 7.93 |
| ADONA | | 7.27 | 7.33 | 6.94 | 6.75 | 7.00 | 6.76 | 7.15 | 6.93 | | 7.02 | 3.07 |
| 9CI-PF3ONS | | 2.07 | 2.11 | 2.07 | 2.00 | 1.93 | 1.86 | 1.98 | 1.90 | | 1.99 | 4.46 |
| 11CI-PF3OUdS | | 1.05 | 1.11 | 1.06 | 1.04 | 1.02 | 1.06 | 1.12 | 1.14 | | 1.07 | 3.83 |
| 3:3 FTCA | | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.10 | | 0.08 | 9.63 |
| 5:3 FTCA | | 0.19 | 0.18 | 0.17 | 0.17 | 0.16 | 0.16 | 0.17 | 0.17 | | 0.17 | 6.49 |
| 7:3 FTCA | | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.09 | 0.10 | 0.11 | | 0.10 | 4.46 |
| PFEESA | | 3.72 | 3.25 | 3.11 | 3.23 | 3.09 | 2.95 | 3.20 | 2.99 | 2.87 | 3.16 | 7.86 |
| PFMPA | | 1.78 | 1.77 | 1.75 | 1.69 | 1.72 | 1.72 | 1.78 | 1.94 | 2.27 | 1.82 | 10.1 |

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 | | 2.48 | 2.43 | 2.35 | 2.30 | 2.32 | 2.33 | 2.26 | 2.60 | 2.81 | 2.43 | 7.22 |
| NFDHA | | 0.05 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.04 | | | 0.04 | 17.6 |

(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 _____

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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: 22-Feb-2021

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: FC1L_080 S: 16

CS1 Data Filename: FC1L_080 S: 17

CS2 Data Filename: FC1L_080 S: 18

CS3 Data Filename: FC1L_080 S: 19

CS4 Data Filename: FC1L_080 S: 20

CS5 Data Filename: FC1L_080 S: 21

CS6 Data Filename: FC1L_080 S: 22

CS7 Data Filename: FC1L_080 S: 23

CS8 Data Filename: FC1L_080 S: 24

RELATIVE RESPONSE (RR)

| 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 | 1.16 | 1.14 | 1.16 | 1.13 | 1.13 | 1.13 | 1.13 | 1.11 | 1.14 | 1.73 |
| 13C5-PFPeA | | 0.83 | 0.85 | 0.85 | 0.88 | 0.87 | 0.84 | 0.81 | 0.79 | 0.69 | 0.82 | 7.00 |
| 13C5-PFHxA | | 0.67 | 0.69 | 0.72 | 0.70 | 0.74 | 0.73 | 0.68 | 0.70 | 0.66 | 0.70 | 3.78 |
| 13C4-PFHpA | | 3.63 | 3.49 | 3.60 | 3.42 | 3.44 | 3.25 | 3.33 | 2.97 | 2.73 | 3.32 | 8.93 |
| 13C8-PFOA | | 3.82 | 3.60 | 3.79 | 3.80 | 3.79 | 3.66 | 3.71 | 3.61 | 3.76 | 3.73 | 2.31 |
| 13C9-PFNA | | 1.16 | 1.15 | 1.14 | 1.17 | 1.16 | 1.13 | 1.10 | 1.17 | 1.15 | 1.15 | 2.03 |
| 13C6-PFDA | | 1.13 | 1.06 | 0.97 | 1.06 | 0.99 | 0.99 | 0.92 | 1.02 | 0.90 | 1.01 | 7.22 |
| 13C7-PFUnA | | 1.23 | 1.22 | 1.07 | 1.22 | 1.08 | 1.08 | 0.99 | 0.84 | | 1.09 | 12.2 |
| 13C2-PFDoA | | 1.04 | 0.95 | 0.90 | 0.92 | 0.94 | 0.93 | 0.89 | 0.98 | 0.91 | 0.94 | 5.00 |
| 13C2-PFTeDA | | 0.86 | 0.85 | 0.81 | 0.83 | 0.80 | 0.77 | 0.74 | 0.94 | 1.11 | 0.86 | 13.0 |
| 13C3-PFBS | | 1.33 | 1.36 | 1.31 | 1.41 | 1.25 | 1.29 | 1.31 | 1.00 | 0.99 | 1.25 | 12.1 |
| 13C3-PFHxS | | 1.20 | 1.16 | 1.10 | 1.15 | 1.12 | 1.15 | 1.17 | 1.16 | 1.05 | 1.14 | 3.86 |
| 13C8-PFOS | | 0.96 | 0.91 | 0.93 | 0.94 | 0.92 | 0.87 | 0.93 | 0.94 | 0.90 | 0.92 | 3.08 |
| 13C2-4:2 FTS | | 1.25 | 1.08 | 1.11 | 1.04 | 1.05 | 1.03 | 1.06 | 1.14 | 1.47 | 1.14 | 12.5 |
| 13C2-6:2 FTS | | 0.98 | 0.88 | 0.86 | 0.84 | 0.90 | 0.84 | 0.91 | 1.06 | | 0.91 | 8.52 |
| 13C2-8:2 FTS | | 1.50 | 1.37 | 1.48 | 1.38 | 1.53 | 1.32 | 1.40 | 1.52 | | 1.44 | 5.42 |
| 13C8-PFOA | | 1.84 | 1.83 | 1.86 | 1.78 | 1.80 | 1.74 | 1.82 | 2.08 | | 1.84 | 5.54 |
| D3-N-MeFOA | | 0.29 | 0.28 | 0.28 | 0.27 | 0.28 | 0.27 | 0.27 | 0.32 | | 0.28 | 6.63 |
| D5-N-EtFOA | | 0.28 | 0.28 | 0.28 | 0.27 | 0.28 | 0.26 | 0.27 | 0.30 | 0.33 | 0.28 | 6.96 |
| D3-MeFOA | | 0.96 | 0.84 | 0.87 | 0.86 | 0.91 | 0.83 | 0.97 | 1.12 | 1.21 | 0.95 | 13.9 |
| D5-EtFOA | | 0.82 | 0.76 | 0.72 | 0.74 | 0.77 | 0.70 | 0.77 | 1.00 | | 0.78 | 12.0 |
| d7-NMe-FOSE | | 1.93 | 1.87 | 1.80 | 1.81 | 1.86 | 1.76 | 1.81 | 1.95 | 2.09 | 1.88 | 5.39 |
| d9-NEt-FOSE | | 2.46 | 2.39 | 2.35 | 2.36 | 2.44 | 2.27 | 2.30 | 2.52 | 2.79 | 2.43 | 6.37 |
| 13C3-HFPO-DA | | 0.33 | 0.33 | 0.34 | 0.34 | 0.36 | 0.33 | 0.31 | 0.27 | | 0.33 | 8.42 |

(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 _____

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: 22-Feb-2021

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: FC1L_080 S: 16

CS1 Data Filename: FC1L_080 S: 17

CS2 Data Filename: FC1L_080 S: 18

CS3 Data Filename: FC1L_080 S: 19

CS4 Data Filename: FC1L_080 S: 20

CS5 Data Filename: FC1L_080 S: 21

CS6 Data Filename: FC1L_080 S: 22

CS7 Data Filename: FC1L_080 S: 23

CS8 Data Filename: FC1L_080 S: 24

| COMPOUND | LAB FLAG ¹ | RATIOS | | | | | | | | |
|--------------|--------------------------|--------|------|------|------|------|------|------|------|------|
| | | CS0 | CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
| PFBA | | | | | | | | | | |
| PFPeA | | | | | | | | | | |
| PFHxA | | 4.58 | 5.38 | 6.09 | 4.84 | 4.81 | 4.94 | 4.81 | 4.64 | 4.80 |
| PFHpA | | 2.19 | 2.08 | 2.00 | 2.16 | 2.04 | 1.97 | 2.06 | 2.06 | 2.02 |
| PFOA | | 1.85 | 2.15 | 2.04 | 1.95 | 2.03 | 2.00 | 1.96 | 2.06 | 2.02 |
| PFNA | | 2.97 | 2.96 | 2.87 | 2.85 | 2.95 | 2.94 | 2.87 | 2.87 | 2.86 |
| PFDA | | 3.23 | 3.02 | 3.02 | 3.06 | 3.07 | 3.16 | 2.96 | 3.21 | 3.03 |
| PFUnA | | 4.29 | 4.50 | 4.89 | 4.31 | 4.74 | 4.28 | 4.73 | 4.49 | |
| PFDoA | | 5.72 | 8.83 | 6.70 | 7.41 | 7.85 | 7.83 | 7.95 | 7.48 | 7.67 |
| PFTTrDA | | 3.32 | 3.58 | 2.95 | 3.08 | 3.04 | 3.14 | 3.22 | 3.02 | |
| PFTeDA | | 2.75 | 2.65 | 2.75 | 2.82 | 2.80 | 2.68 | 2.71 | 2.70 | |
| PFBS | | 2.27 | 2.65 | 2.32 | 2.59 | 2.71 | 2.59 | 2.67 | 2.60 | 2.59 |
| PFPeS | | 1.83 | 2.06 | 2.39 | 2.25 | 2.35 | 2.31 | 2.27 | 2.26 | 2.33 |
| PFHxS | | 2.64 | 2.36 | 2.44 | 2.39 | 2.28 | 2.34 | 2.44 | 2.32 | 2.38 |
| PFHpS | | 2.08 | 1.90 | 2.00 | 2.12 | 2.08 | 2.20 | 2.08 | 2.10 | 2.08 |
| PFOS | | 2.29 | 2.51 | 2.55 | 2.58 | 2.67 | 2.70 | 2.60 | 2.59 | 2.66 |
| PFNS | | 2.07 | 2.08 | 2.27 | 2.36 | 2.41 | 2.26 | 2.32 | 2.18 | 2.30 |
| PFDS | | 2.08 | 2.80 | 2.21 | 2.35 | 2.38 | 2.17 | 2.36 | 2.18 | 2.30 |
| PFDoS | | 2.31 | 2.11 | 2.33 | 2.23 | 2.18 | 2.26 | 2.25 | 2.27 | 2.28 |
| 4:2 FTS | | 0.38 | 0.41 | 0.44 | 0.43 | 0.45 | 0.46 | 0.43 | 0.45 | |
| 6:2 FTS | | 0.51 | 0.43 | 0.47 | 0.44 | 0.43 | 0.47 | 0.45 | 0.44 | |
| 8:2 FTS | | 0.58 | 0.48 | 0.55 | 0.57 | 0.53 | 0.57 | 0.54 | 0.54 | |
| PFOSA | | | | | | | | | | |
| N-MeFOSA | | 0.52 | 0.55 | 0.50 | 0.54 | 0.53 | 0.53 | 0.53 | 0.53 | |
| N-EtFOSA | | 0.52 | 0.56 | 0.54 | 0.53 | 0.53 | 0.53 | 0.53 | 0.53 | 0.54 |
| MeFOSAA | | 1.88 | 2.07 | 2.11 | 1.85 | 1.98 | 2.02 | 1.98 | 1.94 | 1.94 |
| EtFOSAA | | 1.85 | 1.56 | 1.58 | 1.09 | 1.16 | 1.10 | 1.15 | 1.10 | |
| N-MeFOSE | | | | | | | | | | |
| N-EtFOSE | | | | | | | | | | |
| HFPO-DA | | 2.58 | 3.07 | 2.82 | 2.87 | 2.67 | 2.50 | 2.63 | 2.75 | |
| ADONA | | 1.15 | 1.12 | 1.08 | 1.08 | 1.20 | 1.11 | 1.13 | 1.06 | |
| 9CI-PF3ONS | | 3.24 | 3.13 | 3.02 | 3.20 | 3.02 | 3.04 | 3.13 | 3.07 | |
| 11CI-PF3OUdS | | 2.63 | 3.01 | 3.14 | 3.13 | 3.06 | 3.19 | 3.14 | 3.05 | |
| 3:3 FTCA | | 1.69 | 1.51 | 1.64 | 1.78 | 1.89 | 1.91 | 1.92 | 1.96 | |
| 5:3 FTCA | | 0.85 | 1.08 | 1.14 | 1.21 | 1.22 | 1.24 | 1.26 | 1.31 | |

| COMPOUND | LAB FLAG ¹ | RATIOS | | | | | | | | |
|----------|--------------------------|--------|------|------|------|------|------|------|------|------|
| | | CS0 | CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
| 7:3 FTCA | | 0.69 | 0.69 | 0.70 | 0.71 | 0.69 | 0.68 | 0.71 | 0.68 | |
| PFEESA | | 8.11 | 7.52 | 8.32 | 9.28 | 8.69 | 8.99 | 9.71 | 9.18 | 9.28 |
| PFMPA | | | | | | | | | | |
| PFMBA | | | | | | | | | | |
| NFDHA | | 0.83 | 1.08 | 1.12 | 0.95 | 1.69 | 1.32 | 1.19 | | |

(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: 22-Nov-2021 13:06:24; Application: XMLTransformer-1.18.29; Report Filename: PFOA_FC_LC_22-Feb-2021_FC1L_Form3C_GS94986.html; Workgroup: WG78734; 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: 22-Feb-2021

Instrument ID: LC MS/MS

LC Column ID: C18

CS0 Data Filename: FC1L_080 S: 16

CS1 Data Filename: FC1L_080 S: 17

CS2 Data Filename: FC1L_080 S: 18

CS3 Data Filename: FC1L_080 S: 19

CS4 Data Filename: FC1L_080 S: 20

CS5 Data Filename: FC1L_080 S: 21

CS6 Data Filename: FC1L_080 S: 22

CS7 Data Filename: FC1L_080 S: 23

CS8 Data Filename: FC1L_080 S: 24

| LABELED COMPOUND | LAB FLAG ¹ | RATIOS | | | | | | | | |
|------------------|--------------------------|--------|------|------|------|------|------|------|------|------|
| | | CS0 | CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 | CS8 |
| 13C4-PFBA | | | | | | | | | | |
| 13C5-PFPeA | | | | | | | | | | |
| 13C5-PFHxA | | 24.2 | 23.3 | 27.8 | 23.3 | 25.6 | 26.9 | 25.6 | 24.5 | 26.7 |
| 13C4-PFHpA | | | | | | | | | | |
| 13C8-PFOA | | | | | | | | | | |
| 13C9-PFNA | | | | | | | | | | |
| 13C6-PFDA | | | | | | | | | | |
| 13C7-PFUnA | | | | | | | | | | |
| 13C2-PFDoA | | | | | | | | | | |
| 13C2-PFTeDA | | | | | | | | | | |
| 13C3-PFBS | | 2.57 | 2.71 | 2.73 | 2.73 | 2.72 | 2.72 | 2.79 | 2.69 | 2.85 |
| 13C3-PFHxS | | 2.40 | 2.29 | 2.34 | 2.38 | 2.29 | 2.40 | 2.49 | 2.36 | 2.28 |
| 13C8-PFOS | | 2.08 | 2.05 | 2.09 | 2.33 | 2.09 | 2.15 | 2.22 | 2.37 | 2.14 |
| 13C2-4:2 FTS | | 1.84 | 1.90 | 1.74 | 1.62 | 1.51 | 1.55 | 1.25 | 0.54 | 0.24 |
| 13C2-6:2 FTS | | 1.93 | 2.03 | 1.87 | 1.87 | 1.80 | 1.74 | 1.44 | 0.71 | |
| 13C2-8:2 FTS | | 3.89 | 3.55 | 3.84 | 3.75 | 3.20 | 3.03 | 2.50 | 1.10 | |
| 13C8-PFOSA | | | | | | | | | | |
| D3-N-MeFOSA | | | | | | | | | | |
| D5-N-EtFOSA | | | | | | | | | | |
| D3-MeFOSAA | | | | | | | | | | |
| D5-EtFOSAA | | | | | | | | | | |
| d7-NMe-FOSE | | | | | | | | | | |
| d9-NEt-FOSE | | | | | | | | | | |
| 13C3-HFPO-DA | | 2.67 | 2.74 | 2.54 | 2.64 | 2.57 | 2.89 | 2.76 | 2.91 | |

(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: 22-Feb-2021

VER Data Filename: FC1L_483 S: 43

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021

LC Column ID: C18

Analysis Time: 21:23:36

| COMPOUND | LAB FLAG ¹ | RRT | QUANT TRANSITION | RATIO | EXPECTED CONC. (ng) | CONC. FOUND (ng) | RECOVERY (%) |
|--------------|-----------------------|-------|------------------|-------|---------------------|------------------|--------------|
| PFBA | | 1.005 | 213 > 169 | | 20.0 | 19.2 | 96.0 |
| PFPeA | | 1.000 | 263 > 219 | | 10.0 | 9.54 | 95.4 |
| PFHxA | | 0.999 | 313 > 269 | 5.12 | 5.00 | 5.19 | 104 |
| PFHpA | | 1.000 | 363 > 319 | 2.11 | 5.00 | 5.30 | 106 |
| PFOA | | 1.000 | 413 > 369 | 1.78 | 5.00 | 4.62 | 92.3 |
| PFNA | | 1.000 | 463 > 419 | 2.84 | 5.00 | 5.05 | 101 |
| PFDA | | 1.000 | 513 > 469 | 2.84 | 5.00 | 4.51 | 90.2 |
| PFUnA | | 1.000 | 563 > 519 | 4.64 | 5.00 | 5.28 | 106 |
| PFDoA | | 1.000 | 613 > 569 | 7.78 | 5.00 | 5.08 | 102 |
| PFTTrDA | | 0.963 | 663 > 619 | 3.00 | 5.00 | 5.10 | 102 |
| PFTTeDA | | 1.000 | 713 > 669 | 2.45 | 5.00 | 4.79 | 95.7 |
| PFBS | | 1.001 | 299 > 80 | 3.13 | 5.00 | 4.91 | 98.1 |
| PFPeS | | 0.890 | 349 > 80 | 2.20 | 5.01 | 4.66 | 92.9 |
| PFHxS | | 1.001 | 399 > 80 | 2.27 | 5.00 | 4.66 | 93.1 |
| PFHpS | | 0.916 | 449 > 80 | 2.07 | 5.01 | 4.95 | 98.8 |
| PFOS | | 1.000 | 499 > 80 | 2.53 | 5.00 | 4.79 | 95.8 |
| PFNS | | 1.049 | 549 > 80 | 2.24 | 5.01 | 4.64 | 92.5 |
| PFDS | | 1.082 | 599 > 80 | 2.40 | 5.00 | 5.01 | 100 |
| PFDoS | | 1.168 | 699 > 80 | 2.15 | 5.01 | 4.61 | 92.1 |
| 4:2 FTS | | 1.000 | 327 > 307 | 0.39 | 20.0 | 16.6 | 83.1 |
| 6:2 FTS | | 1.000 | 427 > 407 | 0.45 | 18.0 | 17.1 | 95.3 |
| 8:2 FTS | | 1.000 | 527 > 507 | 0.47 | 20.0 | 18.3 | 91.5 |
| PFOSA | | 1.001 | 498 > 78 | | 5.00 | 4.84 | 96.8 |
| N-MeFOSA | | 1.000 | 512 > 219 | 0.54 | 5.75 | 5.99 | 104 |
| N-EtFOSA | | 1.001 | 526 > 219 | 0.51 | 12.5 | 12.5 | 99.6 |
| MeFOSAA | | 1.001 | 570 > 419 | 1.91 | 5.00 | 4.87 | 97.3 |
| EtFOSAA | | 1.001 | 584 > 419 | 1.10 | 5.00 | 4.76 | 95.2 |
| N-MeFOSE | | 1.002 | 616 > 59 | | 50.0 | 50.5 | 101 |
| N-EtFOSE | | 1.002 | 630 > 59 | | 37.5 | 38.9 | 104 |
| HFPO-DA | | 1.001 | 285 > 169 | 2.54 | 19.0 | 19.3 | 102 |
| ADONA | | 1.096 | 377 > 251 | 0.98 | 20.0 | 21.4 | 107 |
| 9CI-PF3ONS | | 0.965 | 531 > 351 | 3.12 | 20.0 | 21.8 | 109 |
| 11CI-PF3OUdS | | 1.032 | 631 > 451 | 3.06 | 20.0 | 21.3 | 106 |
| 3:3 FTCA | | 0.829 | 241 > 177 | 1.73 | 20.0 | 16.6 | 82.9 |
| 5:3 FTCA | | 1.052 | 341 > 237 | 1.27 | 125 | 120 | 96.0 |
| 7:3 FTCA | | 1.350 | 441 > 317 | 0.68 | 125 | 117 | 93.7 |
| PFEESA | | 1.033 | 315 > 135 | 8.74 | 5.00 | 4.77 | 95.4 |
| PFMPA | | 0.592 | 229 > 85 | | 10.0 | 9.67 | 96.7 |
| PFMBA | | 1.068 | 279 > 85 | | 5.00 | 4.99 | 99.7 |
| NFDHA | | 0.987 | 295 > 201 | 0.87 | 10.0 | 6.93 | 69.3 |

(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: _____ Jordan Berends _____

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: 22-Feb-2021

VER Data Filename: FC1L_483 S: 43

Instrument ID: LCMS/MS

Analysis Date: 12-Nov-2021

LC Column ID: C18

Analysis Time: 21:23:36

| LABELLED COMPOUND | LAB FLAG ¹ | RRT | QUANT TRANSITION | RATIO | EXPECTED CONC. (ng) | CONC. FOUND (ng) | RECOVERY (%) |
|-------------------|-----------------------|-------|------------------|-------|---------------------|------------------|--------------|
| 13C4-PFBA | | 1.000 | 217 > 172 | | 40.0 | 41.1 | 103 |
| 13C5-PFPeA | | 0.860 | 268 > 223 | | 20.0 | 19.6 | 97.8 |
| 13C5-PFHxA | | 1.001 | 318 > 273 | 23.7 | 10.0 | 9.69 | 96.9 |
| 13C4-PFHpA | | 0.898 | 367 > 322 | | 10.0 | 10.3 | 103 |
| 13C8-PFOA | | 0.999 | 421 > 376 | | 10.0 | 10.0 | 100 |
| 13C9-PFNA | | 0.999 | 472 > 427 | | 5.00 | 5.84 | 117 |
| 13C6-PFDA | | 0.999 | 519 > 474 | | 5.00 | 5.24 | 105 |
| 13C7-PFUnA | | 1.051 | 570 > 525 | | 5.00 | 5.09 | 102 |
| 13C2-PFDoA | | 1.086 | 615 > 570 | | 5.00 | 4.97 | 99.3 |
| 13C2-PFTeDA | | 1.162 | 715 > 670 | | 5.00 | 4.59 | 91.8 |
| 13C3-PFBS | | 0.801 | 302 > 80 | 2.78 | 10.0 | 10.2 | 102 |
| 13C3-PFHxS | | 1.000 | 402 > 80 | 2.45 | 10.0 | 10.5 | 105 |
| 13C8-PFOS | | 1.000 | 507 > 80 | 2.15 | 10.1 | 10.7 | 106 |
| 13C2-4:2 FTS | | 0.837 | 329 > 81 | 1.64 | 20.2 | 20.3 | 101 |
| 13C2-6:2 FTS | | 1.001 | 429 > 81 | 2.08 | 20.0 | 19.4 | 97.2 |
| 13C2-8:2 FTS | | 1.270 | 529 > 81 | 3.70 | 20.0 | 15.9 | 79.4 |
| 13C8-PFOSA | | 1.163 | 506 > 78 | | 10.0 | 9.94 | 99.4 |
| D3-N-MeFOSA | | 1.344 | 515 > 219 | | 10.0 | 8.30 | 83.0 |
| D5-N-EtFOSA | | 1.381 | 531 > 219 | | 10.0 | 7.61 | 76.1 |
| D3-MeFOSAA | | 1.320 | 573 > 419 | | 22.5 | 15.3 | 67.9 |
| D5-EtFOSAA | | 1.349 | 589 > 419 | | 20.0 | 14.0 | 70.2 |
| d7-NMe-FOSE | | 1.327 | 623 > 59 | | 100 | 80.3 | 80.3 |
| d9-NEt-FOSE | | 1.365 | 639 > 59 | | 100 | 75.4 | 75.4 |
| 13C3-HFPO-DA | | 1.032 | 287 > 169 | 2.57 | 40.0 | 37.9 | 94.8 |

(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: _____ Jordan Berends _____

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 60

| Compound Class | Compound | Accredited Method ID | SGS AXYS Method ID | 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 ** | AFFF | ANAB ISO 17025 |
|----------------|--|----------------------|--------------------|------|------------|-------------|----------------|------|---------------|-------------|-----------|---------------|----------------|--------------|--------------|---------------|-------------|----------------|------|-------------|---------------|----------------|--------------|------|------|------------|-------------|----------------|---------------|-------------|-----------|---------------|----------------|--------------|------------------|--------------|-----------------|-------------|------|----------------|
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ANAB DoD ANSI National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.3 Standard)



CALA Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2017 Standard)



CALA
Testing
Accreditation No. A2637