

## ANNUAL REPORT FOR THE HAMLET OF ARVIAT

---

**YEAR BEING REPORTED: 2019**

The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence No. **3AM-ARV1016** issued to the **Hamlet of Arviat**.

- i)- iii) tabular summaries of all data generated under the "Monitoring Program"; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are results for Monitoring Stations ARV-1, as well as detailed chemical, physical and biological analysis required at ARV-2a, ARV-4, ARV-5 and ARV-6 (for the months of July to September).

| <b>Month Reported</b> | <b>Quantity of Water Obtained from all sources (m<sup>3</sup>)</b> | <b>Quantity of Sewage Waste Discharged (m<sup>3</sup>)</b> |
|-----------------------|--------------------------------------------------------------------|------------------------------------------------------------|
| <b>January</b>        | 8,773.981                                                          | Same                                                       |
| <b>February</b>       | 8,183.761                                                          | Same                                                       |
| <b>March</b>          | 8,653.599                                                          | Same                                                       |
| <b>April</b>          | 8,388.011                                                          | Same                                                       |
| <b>May</b>            | 8,886.973                                                          | Same                                                       |
| <b>June</b>           | 8,174.513                                                          | Same                                                       |
| <b>July</b>           | 9,095.633                                                          | Same                                                       |
| <b>August</b>         | 9,218.575                                                          | Same                                                       |
| <b>September</b>      | 8,742.782                                                          | Same                                                       |
| <b>October</b>        | 9,026.433                                                          | Same                                                       |
| <b>November</b>       | 8,693.879                                                          | Same                                                       |
| <b>December</b>       | 8,767.896                                                          | Same                                                       |
| <b>ANNUAL TOTAL</b>   | 104,606.04                                                         |                                                            |

Note: No meter exists to measure the sewage discharge volume, therefore water consumption volume is considered as equal volume to the Sewage discharge volume.

## ANNUAL REPORT FOR THE HAMLET OF ARVIAT

---

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
- Vehicles, old sewage tanks, and tires were shredded for disposal by a metals shredder bought by the Hamlet of Arviat.
  - Segregation continues to improve at the Solid Waste Site and Bulky Metals Site. Batteries are collected and being stored in a sea can. The Hamlet is working on getting these sent out on a ship as the sea can that contains them is full.
  - The Solid Waste Site is improving drastically; there are currently minor piles of wood and waste within the fenced area.
  - A new water treatment plant and new water reservoir was constructed and commissioned in November 2019.



## ANNUAL REPORT FOR THE HAMLET OF ARVIAT

---

- v. a list of unauthorized discharges and summary of follow-up action taken;

The following spills were reported to the NT-NU Spill Report Line and are listed on the Hazardous Materials Spills Database for Arviat in 2019:

| Spill         | Occurrence Date | Location Description       | Product Spilled                                     | Quantity         |
|---------------|-----------------|----------------------------|-----------------------------------------------------|------------------|
| spill-2019329 | 20-Aug-19       | Arviat Power Plant         | Petroleum - lubricating oil (lube, hydraulic)       | 400L             |
| spill-2019237 | 07-Jun-19       | 300 7th Avenue, Arviat, NU | Petroleum - fuel oil (jet A, diesel, turbo A, heat) | Unknown Quantity |
| spill-2019182 | 02-May-19       | 400 10th Avenue            | Petroleum - fuel oil (jet A, diesel, turbo A, heat) | 1620L            |

- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

- A new water treatment plant and water reservoir was constructed and commissioned in November 2019.
- Associated Engineering was engaged to complete a hydrological assessment of Wolf Creek to determine the sustainability of continuing its use as the community's water source, and to look at options for accessing the site earlier in the season.
- The GN has engaged Nunami Stantec Limited to complete two feasibility studies; one for an upgraded Wastewater Treatment Lagoon, and the second for an upgraded Solid Waste Management Site. The study is scheduled to be completed in September, 2020.

- vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;

- none

- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and

## **ANNUAL REPORT FOR THE HAMLET OF ARVIAT**

---

- Decanting of the old sewage lagoon was approved by CIRNAC on May 24, 2019. They will decant, desludge, and expand their SWS in future years.
- ix. updates or revisions to the approved Operation and Maintenance Plans.
- New Water Treatment Plant O&M Manual will be submitted once finalized and received.

### **ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:**

- 
- The Hamlet is working with the Water Compliance Working Group to implement the Solid Waste Workplan goals.

### **FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:**

- 
- The 3AM-ARV1016 CIRNAC Inspection took place on July 12<sup>th</sup>, 2019. A copy of the inspection report has not been received to date.

**Appendix A: ARV-4 Effluent Quality Limits – 1 page**

**Appendix B: Weekly Inspections at Monitoring Program Stations – 1 page**

**Appendix C: Certificate of Analysis June 13, 2019– 18 pages**

**Certificate of Analysis July 7, 2019 – 18 pages**

**Certificate of Analysis August 26, 2019 – 18 pages**

**Certificate of Analysis September 20, 2019 – 18 pages**

**Appendix D: Hazardous Materials Spill Database, Arviat 2019 – 1 page**

**Appendix E: Arviat 2019 Sampling Summary – 4 pages**

**ANNUAL REPORT  
FOR THE HAMLET OF ARVIAT**

---

**Appendix A**

**3AM-ARV1016 Arviat Monitoring Program Results 2019****Part D, Item 2; ARV-4 Effluent Quality limits**

| Parameter              | Maximum Concentration<br>of any grab sample | ARV-4     |           |           |           |
|------------------------|---------------------------------------------|-----------|-----------|-----------|-----------|
|                        |                                             | 13-Jun-19 | 07-Jul-19 | 26-Aug-19 | 20-Sep-19 |
| BOD <sub>5</sub>       | 80 mg/L                                     | 22.4      | 65        | 27.1      | 51        |
| Total Suspended Solids | 100 mg/L                                    | 15.9      | 45.8      | 138       | 224       |
| Fecal Coliforms        | 1 x 10 <sup>4</sup> CFU/100mL               | 19900     | >24200    | 5790      | 3870      |
| Oil & Grease           | no visible sheen                            | <5.0      | 11.7      | <5.0      | <5.0      |
| pH                     | between 6 and 9                             | 7.47      | 7.66      | 8.34      | 9.37      |

**Exceeds effluent quality limits**

**ANNUAL REPORT  
FOR THE HAMLET OF ARVIAT**

---

**Appendix B**

Nunavut Water Board Licence No. 3AM-ARV1016

Arviat, NU

Part H, Item 8: Weekly Inspections at Monitoring Program Stations, May to August

ARV 2 - Near Garbage  
ARV 4 - Beyond Lagoon  
ARV 5 - Near Metal Dumps  
ARV 6 - Near Garage

| Week | Starting Date | ARV-2a                |    |        | ARV-4                 |    |        | ARV-5                 |    |        | ARV-6                 |      |        | Checked By |
|------|---------------|-----------------------|----|--------|-----------------------|----|--------|-----------------------|----|--------|-----------------------|------|--------|------------|
|      |               | Water Present (check) |    |        | Water Present (check) |    |        | Water Present (check) |    |        | Water Present (check) |      |        |            |
|      |               | Yes                   | No | Frozen | Yes                   | No | Frozen | Yes                   | No | Frozen | Yes                   | No   | Frozen |            |
| 1    | 29-Apr-19     |                       |    | /      |                       |    | /      |                       |    | /      |                       |      | /      | Laura      |
| 2    | 06-May-19     |                       |    | /      |                       |    | /      |                       |    | /      |                       |      | /      | Laura      |
| 3    | 13-May-19     |                       |    | /      |                       |    | /      |                       |    | /      |                       |      | /      | Laura      |
| 4    | 20-May-19     |                       |    | /      |                       |    | /      |                       |    | /      |                       |      | /      | Laura      |
| 5    | 27-May-19     | /                     |    |        | /                     |    |        | /                     |    |        |                       |      | /      | Laura      |
| 6    | 03-Jun-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        |                       | Snow |        | Laura      |
| 7    | 10-Jun-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        |                       | Snow |        | Laura      |
| 8    | 17-Jun-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        |                       | Snow |        | Laura      |
| 9    | 24-Jun-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 10   | 01-Jul-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 11   | 08-Jul-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 12   | 15-Jul-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 13   | 22-Jul-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 14   | 29-Jul-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 15   | 05-Aug-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 16   | 12-Aug-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 17   | 19-Aug-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |
| 18   | 26-Aug-19     | ✓                     |    |        | ✓                     |    |        | ✓                     |    |        | ✓                     |      |        | Laura      |

lots of water  
lots of water  
lots of water  
lots of water

Monitoring Program Station Locations:

ARV-2a: Effluent discharge from the Discharge Point of the Solid Waste Disposal Facility  
ARV-4: Effluent from the discharge point of the Sewage Disposal Facility (end of wetland)  
ARV-5: Discharge from the Bulky Metal Waste Area  
ARV-6: Discharge from the Hazardous Waste Storage Area

There seems to be  
lots of water in  
August.

\* Fax Sheets Weekly to Connor Faulkner at CGS- Rankin Inlet. Fax: (867) 645-8143



**ANNUAL REPORT  
FOR THE HAMLET OF ARVIAT**

---

**Appendix C**



Hamlet of Arviat  
ATTN: STEVE ENGLAND  
PO Box 150  
Arviat NU X0C 0E0

Date Received: 14-JUN-19  
Report Date: 29-JUN-19 10:06 (MT)  
Version: FINAL

Client Phone: 867-857-2841

## Certificate of Analysis

Lab Work Order #: L2291847  
Project P.O. #: NOT SUBMITTED  
Job Reference:  
C of C Numbers:  
Legal Site Desc:



Hua Wo  
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721  
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

## ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                                                 | Result     | Qualifier* | D.L.      | Units | Extracted | Analyzed  | Batch    |
|---------------------------------------------------------------------------|------------|------------|-----------|-------|-----------|-----------|----------|
| L2291847-1 ARV-2                                                          |            |            |           |       |           |           |          |
| Sampled By: CLIENT on 13-JUN-19 @ 10:00                                   |            |            |           |       |           |           |          |
| Matrix: WATER                                                             |            |            |           |       |           |           |          |
| <b>BTEX plus F1-F4</b>                                                    |            |            |           |       |           |           |          |
| <b>BTX plus F1 by GCMS</b>                                                |            |            |           |       |           |           |          |
| Benzene                                                                   | <0.00050   | RRR        | 0.00050   | mg/L  |           | 19-JUN-19 | R4682726 |
| Toluene                                                                   | <0.0010    | RRR        | 0.0010    | mg/L  |           | 19-JUN-19 | R4682726 |
| Ethyl benzene                                                             | <0.00050   | RRR        | 0.00050   | mg/L  |           | 19-JUN-19 | R4682726 |
| o-Xylene                                                                  | <0.00050   | RRR        | 0.00050   | mg/L  |           | 19-JUN-19 | R4682726 |
| m+p-Xylenes                                                               | <0.00040   | RRR        | 0.00040   | mg/L  |           | 19-JUN-19 | R4682726 |
| F1 (C6-C10)                                                               | <0.10      | RRR        | 0.10      | mg/L  |           | 19-JUN-19 | R4682726 |
| Surrogate: 4-Bromofluorobenzene (SS)                                      | 92.0       |            | 70-130    | %     |           | 19-JUN-19 | R4682726 |
| Note: Note: Sample received with headspace.<br>Results may be biased low. |            |            |           |       |           |           |          |
| <b>CCME PHC F2-F4 in Water</b>                                            |            |            |           |       |           |           |          |
| F2 (C10-C16)                                                              | <0.10      |            | 0.10      | mg/L  | 18-JUN-19 | 21-JUN-19 | R4687788 |
| F3 (C16-C34)                                                              | <0.25      |            | 0.25      | mg/L  | 18-JUN-19 | 21-JUN-19 | R4687788 |
| F4 (C34-C50)                                                              | <0.25      |            | 0.25      | mg/L  | 18-JUN-19 | 21-JUN-19 | R4687788 |
| Surrogate: 2-Bromobenzotrifluoride                                        | 121.5      |            | 60-140    | %     | 18-JUN-19 | 21-JUN-19 | R4687788 |
| <b>CCME Total Hydrocarbons</b>                                            |            |            |           |       |           |           |          |
| F1-BTEX                                                                   | <0.10      |            | 0.10      | mg/L  |           | 29-JUN-19 |          |
| F2-Naphth                                                                 | <0.10      |            | 0.10      | mg/L  |           | 29-JUN-19 |          |
| F3-PAH                                                                    | <0.25      |            | 0.25      | mg/L  |           | 29-JUN-19 |          |
| Total Hydrocarbons (C6-C50)                                               | <0.38      |            | 0.38      | mg/L  |           | 29-JUN-19 |          |
| <b>Sum of Xylene Isomer Concentrations</b>                                |            |            |           |       |           |           |          |
| Xylenes (Total)                                                           | <0.00064   |            | 0.00064   | mg/L  |           | 29-JUN-19 |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>                                   |            |            |           |       |           |           |          |
| 1-Methyl Naphthalene                                                      | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| 2-Methyl Naphthalene                                                      | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Acenaphthene                                                              | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Acenaphthylene                                                            | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Anthracene                                                                | <0.000010  |            | 0.000010  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Acridine                                                                  | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Benzo(a)anthracene                                                        | <0.000010  |            | 0.000010  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Benzo(a)pyrene                                                            | <0.0000050 |            | 0.0000050 | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Benzo(b&j)fluoranthene                                                    | <0.000010  |            | 0.000010  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Benzo(g,h,i)perylene                                                      | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Benzo(k)fluoranthene                                                      | <0.000010  |            | 0.000010  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Chrysene                                                                  | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Dibenzo(a,h)anthracene                                                    | <0.0000050 |            | 0.0000050 | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Fluoranthene                                                              | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Fluorene                                                                  | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Indeno(1,2,3-cd)pyrene                                                    | <0.000010  |            | 0.000010  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Naphthalene                                                               | <0.000050  |            | 0.000050  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Phenanthrene                                                              | <0.000050  |            | 0.000050  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Pyrene                                                                    | <0.000010  |            | 0.000010  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Quinoline                                                                 | <0.000020  |            | 0.000020  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| B(a)P Total Potency Equivalent                                            | <0.000030  |            | 0.000030  | mg/L  | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Acenaphthene d10                                               | 66.3       |            | 60-130    | %     | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Acridine d9                                                    | 60.4       |            | 60-130    | %     | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Chrysene d12                                                   | 62.7       |            | 60-130    | %     | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Naphthalene d8                                                 | 57.7       |            | 50-130    | %     | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Phenanthrene d10                                               | 60.9       |            | 60-130    | %     | 19-JUN-19 | 20-JUN-19 | R4684786 |
| <b>Nunavut WW Group 1</b>                                                 |            |            |           |       |           |           |          |
| <b>Alkalinity, Bicarbonate</b>                                            |            |            |           |       |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                      | Result    | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|------------------------------------------------|-----------|------------|-----------|-----------|-----------|-----------|----------|
| L2291847-1 ARV-2                               |           |            |           |           |           |           |          |
| Sampled By: CLIENT on 13-JUN-19 @ 10:00        |           |            |           |           |           |           |          |
| Matrix: WATER                                  |           |            |           |           |           |           |          |
| <b>Alkalinity, Bicarbonate</b>                 |           |            |           |           |           |           |          |
| Bicarbonate (HCO <sub>3</sub> )                | 160       |            | 1.2       | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Carbonate</b>                   |           |            |           |           |           |           |          |
| Carbonate (CO <sub>3</sub> )                   | <0.60     |            | 0.60      | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Hydroxide</b>                   |           |            |           |           |           |           |          |
| Hydroxide (OH)                                 | <0.34     |            | 0.34      | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Total (as CaCO<sub>3</sub>)</b> |           |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO <sub>3</sub> )      | 132       |            | 1.0       | mg/L      |           | 18-JUN-19 | R4673671 |
| <b>Ammonia by colour</b>                       |           |            |           |           |           |           |          |
| Ammonia, Total (as N)                          | 2.24      |            | 0.10      | mg/L      |           | 19-JUN-19 | R4678331 |
| <b>Biochemical Oxygen Demand (BOD)</b>         |           |            |           |           |           |           |          |
| Biochemical Oxygen Demand                      | 10.4      |            | 2.0       | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Carbonaceous BOD</b>                        |           |            |           |           |           |           |          |
| BOD Carbonaceous                               | 8.2       |            | 2.0       | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Chloride in Water by IC</b>                 |           |            |           |           |           |           |          |
| Chloride (Cl)                                  | 142       |            | 1.0       | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Conductivity</b>                            |           |            |           |           |           |           |          |
| Conductivity                                   | 1030      |            | 1.0       | umhos/cm  |           | 18-JUN-19 | R4673671 |
| <b>Fecal coliforms, 1:10 dilution by QT97</b>  |           |            |           |           |           |           |          |
| Fecal Coliforms                                | 230       | MBHT       | 10        | MPN/100mL |           | 14-JUN-19 | R4671347 |
| <b>Hardness Calculated</b>                     |           |            |           |           |           |           |          |
| Hardness (as CaCO <sub>3</sub> )               | 289       | HTC        | 0.20      | mg/L      |           | 21-JUN-19 |          |
| <b>Mercury Total</b>                           |           |            |           |           |           |           |          |
| Mercury (Hg)-Total                             | 0.0000060 |            | 0.0000050 | mg/L      | 15-JUN-19 | 17-JUN-19 | R4672470 |
| <b>Nitrate in Water by IC</b>                  |           |            |           |           |           |           |          |
| Nitrate (as N)                                 | 0.501     |            | 0.040     | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Nitrate+Nitrite</b>                         |           |            |           |           |           |           |          |
| Nitrate and Nitrite as N                       | 0.534     |            | 0.070     | mg/L      |           | 19-JUN-19 |          |
| <b>Nitrite in Water by IC</b>                  |           |            |           |           |           |           |          |
| Nitrite (as N)                                 | 0.033     |            | 0.020     | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Oil &amp; Grease - Gravimetric</b>          |           |            |           |           |           |           |          |
| Oil and Grease                                 | <5.0      |            | 5.0       | mg/L      |           | 20-JUN-19 | R4677328 |
| <b>Phenol (4AAP)</b>                           |           |            |           |           |           |           |          |
| Phenols (4AAP)                                 | 0.0016    |            | 0.0010    | mg/L      |           | 18-JUN-19 | R4673366 |
| <b>Phosphorus, Total</b>                       |           |            |           |           |           |           |          |
| Phosphorus (P)-Total                           | 0.320     |            | 0.0030    | mg/L      |           | 18-JUN-19 | R4672439 |
| <b>Sulfate in Water by IC</b>                  |           |            |           |           |           |           |          |
| Sulfate (SO <sub>4</sub> )                     | 164       |            | 0.60      | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Total Metals in Water by CRC ICPMS</b>      |           |            |           |           |           |           |          |
| Aluminum (Al)-Total                            | 0.0680    |            | 0.0030    | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Arsenic (As)-Total                             | 0.00223   |            | 0.00010   | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Cadmium (Cd)-Total                             | 0.0000929 |            | 0.0000050 | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Calcium (Ca)-Total                             | 82.4      |            | 0.050     | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Chromium (Cr)-Total                            | 0.00045   |            | 0.00010   | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Cobalt (Co)-Total                              | 0.00098   |            | 0.00010   | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Copper (Cu)-Total                              | 0.0145    |            | 0.00050   | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Iron (Fe)-Total                                | 0.501     |            | 0.010     | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Lead (Pb)-Total                                | 0.000671  |            | 0.000050  | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Magnesium (Mg)-Total                           | 20.3      |            | 0.0050    | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Manganese (Mn)-Total                           | 0.246     |            | 0.00010   | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Nickel (Ni)-Total                              | 0.00384   |            | 0.00050   | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Potassium (K)-Total                            | 15.7      |            | 0.050     | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Sodium (Na)-Total                              | 94.9      |            | 0.050     | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                     | Result    | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------------|-----------|------------|-----------|-----------|-----------|-----------|----------|
| L2291847-2 ARV-4                              |           |            |           |           |           |           |          |
| Sampled By: CLIENT on 13-JUN-19 @ 09:40       |           |            |           |           |           |           |          |
| Matrix: WATER                                 |           |            |           |           |           |           |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>       |           |            |           |           |           |           |          |
| Phenanthrene                                  | <0.000050 |            | 0.000050  | mg/L      | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Pyrene                                        | <0.000010 |            | 0.000010  | mg/L      | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Quinoline                                     | <0.000020 |            | 0.000020  | mg/L      | 19-JUN-19 | 20-JUN-19 | R4684786 |
| B(a)P Total Potency Equivalent                | <0.000030 |            | 0.000030  | mg/L      | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Acenaphthene d10                   | 65.3      |            | 60-130    | %         | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Acridine d9                        | 62.7      |            | 60-130    | %         | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Chrysene d12                       | 63.2      |            | 60-130    | %         | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Naphthalene d8                     | 54.0      |            | 50-130    | %         | 19-JUN-19 | 20-JUN-19 | R4684786 |
| Surrogate: Phenanthrene d10                   | 61.0      |            | 60-130    | %         | 19-JUN-19 | 20-JUN-19 | R4684786 |
| <b>Nunavut WW Group 1</b>                     |           |            |           |           |           |           |          |
| <b>Alkalinity, Bicarbonate</b>                |           |            |           |           |           |           |          |
| Bicarbonate (HCO3)                            | 159       |            | 1.2       | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Carbonate</b>                  |           |            |           |           |           |           |          |
| Carbonate (CO3)                               | <0.60     |            | 0.60      | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Hydroxide</b>                  |           |            |           |           |           |           |          |
| Hydroxide (OH)                                | <0.34     |            | 0.34      | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Total (as CaCO3)</b>           |           |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)                  | 131       |            | 1.0       | mg/L      |           | 18-JUN-19 | R4673671 |
| <b>Ammonia by colour</b>                      |           |            |           |           |           |           |          |
| Ammonia, Total (as N)                         | 19.6      |            | 0.50      | mg/L      |           | 19-JUN-19 | R4678331 |
| <b>Biochemical Oxygen Demand (BOD)</b>        |           |            |           |           |           |           |          |
| Biochemical Oxygen Demand                     | 22.4      |            | 6.0       | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Carbonaceous BOD</b>                       |           |            |           |           |           |           |          |
| BOD Carbonaceous                              | 12.6      |            | 2.0       | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Chloride in Water by IC</b>                |           |            |           |           |           |           |          |
| Chloride (Cl)                                 | 154       |            | 1.0       | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Conductivity</b>                           |           |            |           |           |           |           |          |
| Conductivity                                  | 832       |            | 1.0       | umhos/cm  |           | 18-JUN-19 | R4673671 |
| <b>Fecal coliforms, 1:10 dilution by QT97</b> |           |            |           |           |           |           |          |
| Fecal Coliforms                               | 19900     | MBHT       | 10        | MPN/100mL |           | 14-JUN-19 | R4671347 |
| <b>Hardness Calculated</b>                    |           |            |           |           |           |           |          |
| Hardness (as CaCO3)                           | 98.8      | HTC        | 0.20      | mg/L      |           | 21-JUN-19 |          |
| <b>Mercury Total</b>                          |           |            |           |           |           |           |          |
| Mercury (Hg)-Total                            | 0.0000100 |            | 0.0000050 | mg/L      | 15-JUN-19 | 17-JUN-19 | R4672470 |
| <b>Nitrate in Water by IC</b>                 |           |            |           |           |           |           |          |
| Nitrate (as N)                                | 0.173     |            | 0.040     | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Nitrate+Nitrite</b>                        |           |            |           |           |           |           |          |
| Nitrate and Nitrite as N                      | 0.173     |            | 0.070     | mg/L      |           | 19-JUN-19 |          |
| <b>Nitrite in Water by IC</b>                 |           |            |           |           |           |           |          |
| Nitrite (as N)                                | <0.020    | DLM        | 0.020     | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Oil &amp; Grease - Gravimetric</b>         |           |            |           |           |           |           |          |
| Oil and Grease                                | <5.0      |            | 5.0       | mg/L      |           | 20-JUN-19 | R4677328 |
| <b>Phenol (4AAP)</b>                          |           |            |           |           |           |           |          |
| Phenols (4AAP)                                | 0.0072    |            | 0.0010    | mg/L      |           | 18-JUN-19 | R4673366 |
| <b>Phosphorus, Total</b>                      |           |            |           |           |           |           |          |
| Phosphorus (P)-Total                          | 4.36      |            | 0.030     | mg/L      |           | 18-JUN-19 | R4672439 |
| <b>Sulfate in Water by IC</b>                 |           |            |           |           |           |           |          |
| Sulfate (SO4)                                 | 22.0      |            | 0.60      | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Total Metals in Water by CRC ICPMS</b>     |           |            |           |           |           |           |          |
| Aluminum (Al)-Total                           | 0.113     |            | 0.0030    | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Arsenic (As)-Total                            | 0.00491   |            | 0.00010   | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Cadmium (Cd)-Total                            | 0.000132  |            | 0.0000050 | mg/L      | 20-JUN-19 | 20-JUN-19 | R4680212 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                                                    | Result    | Qualifier* | D.L.     | Units    | Extracted | Analyzed  | Batch    |
|------------------------------------------------------------------------------|-----------|------------|----------|----------|-----------|-----------|----------|
| L2291847-2 ARV-4<br>Sampled By: CLIENT on 13-JUN-19 @ 09:40<br>Matrix: WATER |           |            |          |          |           |           |          |
| <b>Total Metals in Water by CRC ICPMS</b>                                    |           |            |          |          |           |           |          |
| Calcium (Ca)-Total                                                           | 17.2      |            | 0.050    | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Chromium (Cr)-Total                                                          | 0.00070   |            | 0.00010  | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Cobalt (Co)-Total                                                            | 0.00256   |            | 0.00010  | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Copper (Cu)-Total                                                            | 0.0410    |            | 0.00050  | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Iron (Fe)-Total                                                              | 3.55      |            | 0.010    | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Lead (Pb)-Total                                                              | 0.00175   |            | 0.000050 | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Magnesium (Mg)-Total                                                         | 13.5      |            | 0.0050   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Manganese (Mn)-Total                                                         | 0.293     |            | 0.00010  | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Nickel (Ni)-Total                                                            | 0.00617   |            | 0.00050  | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Potassium (K)-Total                                                          | 15.8      |            | 0.050    | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Sodium (Na)-Total                                                            | 97.7      |            | 0.050    | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Zinc (Zn)-Total                                                              | 0.0196    |            | 0.0030   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| <b>Total Organic Carbon by Combustion</b>                                    |           |            |          |          |           |           |          |
| Total Organic Carbon                                                         | 30.9      |            | 0.50     | mg/L     |           | 25-JUN-19 | R4688336 |
| <b>Total Suspended Solids</b>                                                |           |            |          |          |           |           |          |
| Total Suspended Solids                                                       | 15.9      |            | 2.0      | mg/L     |           | 18-JUN-19 | R4673730 |
| <b>pH</b>                                                                    |           |            |          |          |           |           |          |
| pH                                                                           | 7.47      |            | 0.10     | pH units |           | 18-JUN-19 | R4673671 |
| L2291847-3 ARV-5<br>Sampled By: CLIENT on 13-JUN-19 @ 10:15<br>Matrix: WATER |           |            |          |          |           |           |          |
| <b>BTEX plus F1-F4</b>                                                       |           |            |          |          |           |           |          |
| <b>BTX plus F1 by GCMS</b>                                                   |           |            |          |          |           |           |          |
| Benzene                                                                      | <0.00050  | RRR        | 0.00050  | mg/L     |           | 19-JUN-19 | R4682726 |
| Toluene                                                                      | <0.0010   | RRR        | 0.0010   | mg/L     |           | 19-JUN-19 | R4682726 |
| Ethyl benzene                                                                | <0.00050  | RRR        | 0.00050  | mg/L     |           | 19-JUN-19 | R4682726 |
| o-Xylene                                                                     | <0.00050  | RRR        | 0.00050  | mg/L     |           | 19-JUN-19 | R4682726 |
| m+p-Xylenes                                                                  | <0.00040  | RRR        | 0.00040  | mg/L     |           | 19-JUN-19 | R4682726 |
| F1 (C6-C10)                                                                  | <0.10     | RRR        | 0.10     | mg/L     |           | 19-JUN-19 | R4682726 |
| Surrogate: 4-Bromofluorobenzene (SS)                                         | 88.0      |            | 70-130   | %        |           | 19-JUN-19 | R4682726 |
| Note: Note: Sample received with headspace.<br>Results may be biased low.    |           |            |          |          |           |           |          |
| <b>CCME PHC F2-F4 in Water</b>                                               |           |            |          |          |           |           |          |
| F2 (C10-C16)                                                                 | <0.10     |            | 0.10     | mg/L     | 18-JUN-19 | 21-JUN-19 | R4687788 |
| F3 (C16-C34)                                                                 | <0.25     |            | 0.25     | mg/L     | 18-JUN-19 | 21-JUN-19 | R4687788 |
| F4 (C34-C50)                                                                 | <0.25     |            | 0.25     | mg/L     | 18-JUN-19 | 21-JUN-19 | R4687788 |
| Surrogate: 2-Bromobenzotrifluoride                                           | 108.0     |            | 60-140   | %        | 18-JUN-19 | 21-JUN-19 | R4687788 |
| <b>CCME Total Hydrocarbons</b>                                               |           |            |          |          |           |           |          |
| F1-BTEX                                                                      | <0.10     |            | 0.10     | mg/L     |           | 29-JUN-19 |          |
| F2-Naphth                                                                    | <0.10     |            | 0.10     | mg/L     |           | 29-JUN-19 |          |
| F3-PAH                                                                       | <0.25     |            | 0.25     | mg/L     |           | 29-JUN-19 |          |
| Total Hydrocarbons (C6-C50)                                                  | <0.38     |            | 0.38     | mg/L     |           | 29-JUN-19 |          |
| <b>Sum of Xylene Isomer Concentrations</b>                                   |           |            |          |          |           |           |          |
| Xylenes (Total)                                                              | <0.00064  |            | 0.00064  | mg/L     |           | 29-JUN-19 |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>                                      |           |            |          |          |           |           |          |
| 1-Methyl Naphthalene                                                         | <0.000020 |            | 0.000020 | mg/L     | 19-JUN-19 | 25-JUN-19 | R4684786 |
| 2-Methyl Naphthalene                                                         | <0.000020 |            | 0.000020 | mg/L     | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Acenaphthene                                                                 | <0.000020 |            | 0.000020 | mg/L     | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Acenaphthylene                                                               | <0.000020 |            | 0.000020 | mg/L     | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Anthracene                                                                   | <0.000010 |            | 0.000010 | mg/L     | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Acridine                                                                     | <0.000020 |            | 0.000020 | mg/L     | 19-JUN-19 | 25-JUN-19 | R4684786 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                      | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|------------------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2291847-3 ARV-5                               |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 13-JUN-19 @ 10:15        |            |            |           |           |           |           |          |
| Matrix: WATER                                  |            |            |           |           |           |           |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>        |            |            |           |           |           |           |          |
| Benzo(a)anthracene                             | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(a)pyrene                                 | <0.0000050 |            | 0.0000050 | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(b&j)fluoranthene                         | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(g,h,i)perylene                           | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(k)fluoranthene                           | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Chrysene                                       | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Dibenzo(a,h)anthracene                         | <0.0000050 |            | 0.0000050 | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Fluoranthene                                   | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Fluorene                                       | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Indeno(1,2,3-cd)pyrene                         | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Naphthalene                                    | <0.000050  |            | 0.000050  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Phenanthrene                                   | <0.000050  |            | 0.000050  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Pyrene                                         | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Quinoline                                      | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| B(a)P Total Potency Equivalent                 | <0.000030  |            | 0.000030  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Acenaphthene d10                    | 95.5       |            | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Acridine d9                         | 69.7       |            | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Chrysene d12                        | 89.2       |            | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Naphthalene d8                      | 96.4       |            | 50-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Phenanthrene d10                    | 95.9       |            | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| <b>Nunavut WW Group 1</b>                      |            |            |           |           |           |           |          |
| <b>Alkalinity, Bicarbonate</b>                 |            |            |           |           |           |           |          |
| Bicarbonate (HCO <sub>3</sub> )                | 64.7       |            | 1.2       | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Carbonate</b>                   |            |            |           |           |           |           |          |
| Carbonate (CO <sub>3</sub> )                   | <0.60      |            | 0.60      | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Hydroxide</b>                   |            |            |           |           |           |           |          |
| Hydroxide (OH)                                 | <0.34      |            | 0.34      | mg/L      |           | 19-JUN-19 |          |
| <b>Alkalinity, Total (as CaCO<sub>3</sub>)</b> |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO <sub>3</sub> )      | 53.0       |            | 1.0       | mg/L      |           | 18-JUN-19 | R4673671 |
| <b>Ammonia by colour</b>                       |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                          | 0.015      |            | 0.010     | mg/L      |           | 19-JUN-19 | R4678331 |
| <b>Biochemical Oxygen Demand (BOD)</b>         |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand                      | <2.0       |            | 2.0       | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Carbonaceous BOD</b>                        |            |            |           |           |           |           |          |
| BOD Carbonaceous                               | <2.0       |            | 2.0       | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Chloride in Water by IC</b>                 |            |            |           |           |           |           |          |
| Chloride (Cl)                                  | 164        |            | 0.50      | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Conductivity</b>                            |            |            |           |           |           |           |          |
| Conductivity                                   | 679        |            | 1.0       | umhos/cm  |           | 18-JUN-19 | R4673671 |
| <b>Fecal coliforms, 1:10 dilution by QT97</b>  |            |            |           |           |           |           |          |
| Fecal Coliforms                                | 500        | MBHT       | 10        | MPN/100mL |           | 14-JUN-19 | R4671347 |
| <b>Hardness Calculated</b>                     |            |            |           |           |           |           |          |
| Hardness (as CaCO <sub>3</sub> )               | 109        | HTC        | 0.20      | mg/L      |           | 21-JUN-19 |          |
| <b>Mercury Total</b>                           |            |            |           |           |           |           |          |
| Mercury (Hg)-Total                             | <0.0000050 |            | 0.0000050 | mg/L      | 15-JUN-19 | 17-JUN-19 | R4672470 |
| <b>Nitrate in Water by IC</b>                  |            |            |           |           |           |           |          |
| Nitrate (as N)                                 | <0.020     |            | 0.020     | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Nitrate+Nitrite</b>                         |            |            |           |           |           |           |          |
| Nitrate and Nitrite as N                       | <0.070     |            | 0.070     | mg/L      |           | 19-JUN-19 |          |
| <b>Nitrite in Water by IC</b>                  |            |            |           |           |           |           |          |
| Nitrite (as N)                                 | <0.010     |            | 0.010     | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Oil &amp; Grease - Gravimetric</b>          |            |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.



## ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                                                           | Result     | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|-------------------------------------------------------------------------------------|------------|------------|-----------|----------|-----------|-----------|----------|
| L2291847-3 ARV-5<br>Sampled By: CLIENT on 13-JUN-19 @ 10:15<br>Matrix: WATER        |            |            |           |          |           |           |          |
| <b>Oil &amp; Grease - Gravimetric</b>                                               |            |            |           |          |           |           |          |
| Oil and Grease                                                                      | 10.9       |            | 5.0       | mg/L     |           | 20-JUN-19 | R4677328 |
| <b>Phenol (4AAP)</b>                                                                |            |            |           |          |           |           |          |
| Phenols (4AAP)                                                                      | <0.0010    |            | 0.0010    | mg/L     |           | 18-JUN-19 | R4673366 |
| <b>Phosphorus, Total</b>                                                            |            |            |           |          |           |           |          |
| Phosphorus (P)-Total                                                                | 0.0290     |            | 0.0030    | mg/L     |           | 18-JUN-19 | R4672439 |
| <b>Sulfate in Water by IC</b>                                                       |            |            |           |          |           |           |          |
| Sulfate (SO4)                                                                       | 16.7       |            | 0.30      | mg/L     |           | 14-JUN-19 | R4673753 |
| <b>Total Metals in Water by CRC ICPMS</b>                                           |            |            |           |          |           |           |          |
| Aluminum (Al)-Total                                                                 | 0.0254     |            | 0.0030    | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Arsenic (As)-Total                                                                  | 0.00043    |            | 0.00010   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Cadmium (Cd)-Total                                                                  | <0.0000050 |            | 0.0000050 | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Calcium (Ca)-Total                                                                  | 19.4       |            | 0.050     | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Chromium (Cr)-Total                                                                 | 0.00025    |            | 0.00010   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Cobalt (Co)-Total                                                                   | <0.00010   |            | 0.00010   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Copper (Cu)-Total                                                                   | 0.00079    |            | 0.00050   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Iron (Fe)-Total                                                                     | 0.518      |            | 0.010     | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Lead (Pb)-Total                                                                     | 0.000077   |            | 0.000050  | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Magnesium (Mg)-Total                                                                | 14.6       |            | 0.0050    | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Manganese (Mn)-Total                                                                | 0.0158     |            | 0.00010   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Nickel (Ni)-Total                                                                   | 0.00057    |            | 0.00050   | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Potassium (K)-Total                                                                 | 6.78       |            | 0.050     | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Sodium (Na)-Total                                                                   | 92.1       |            | 0.050     | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| Zinc (Zn)-Total                                                                     | 0.0050     |            | 0.0030    | mg/L     | 20-JUN-19 | 20-JUN-19 | R4680212 |
| <b>Total Organic Carbon by Combustion</b>                                           |            |            |           |          |           |           |          |
| Total Organic Carbon                                                                | 8.13       |            | 0.50      | mg/L     |           | 25-JUN-19 | R4688336 |
| <b>Total Suspended Solids</b>                                                       |            |            |           |          |           |           |          |
| Total Suspended Solids                                                              | 3.6        |            | 2.0       | mg/L     |           | 18-JUN-19 | R4673730 |
| <b>pH</b>                                                                           |            |            |           |          |           |           |          |
| pH                                                                                  | 7.63       |            | 0.10      | pH units |           | 18-JUN-19 | R4673671 |
| L2291847-4 LAGOON<br>Sampled By: CLIENT on 13-JUN-19 @ 09:50<br>Matrix: WASTE WATER |            |            |           |          |           |           |          |
| <b>BTEX plus F1-F4</b>                                                              |            |            |           |          |           |           |          |
| <b>BTX plus F1 by GCMS</b>                                                          |            |            |           |          |           |           |          |
| Benzene                                                                             | <0.00050   | RRR        | 0.00050   | mg/L     |           | 19-JUN-19 | R4682726 |
| Toluene                                                                             | 0.0650     | RRR        | 0.0010    | mg/L     |           | 19-JUN-19 | R4682726 |
| Ethyl benzene                                                                       | <0.00050   | RRR        | 0.00050   | mg/L     |           | 19-JUN-19 | R4682726 |
| o-Xylene                                                                            | <0.00050   | RRR        | 0.00050   | mg/L     |           | 19-JUN-19 | R4682726 |
| m+p-Xylenes                                                                         | <0.00040   | RRR        | 0.00040   | mg/L     |           | 19-JUN-19 | R4682726 |
| F1 (C6-C10)                                                                         | 0.16       | RRR        | 0.10      | mg/L     |           | 19-JUN-19 | R4682726 |
| Surrogate: 4-Bromofluorobenzene (SS)                                                | 91.0       |            | 70-130    | %        |           | 19-JUN-19 | R4682726 |
| Note: Note: Sample received with headspace.<br>Results may be biased low.           |            |            |           |          |           |           |          |
| <b>CCME PHC F2-F4 in Water</b>                                                      |            |            |           |          |           |           |          |
| F2 (C10-C16)                                                                        | 2.94       |            | 0.10      | mg/L     | 18-JUN-19 | 21-JUN-19 | R4687788 |
| F3 (C16-C34)                                                                        | 19.7       |            | 0.25      | mg/L     | 18-JUN-19 | 21-JUN-19 | R4687788 |
| F4 (C34-C50)                                                                        | 4.31       |            | 0.25      | mg/L     | 18-JUN-19 | 21-JUN-19 | R4687788 |
| Surrogate: 2-Bromobenzotrifluoride                                                  | 106.5      |            | 60-140    | %        | 18-JUN-19 | 21-JUN-19 | R4687788 |
| <b>CCME Total Hydrocarbons</b>                                                      |            |            |           |          |           |           |          |
| F1-BTEX                                                                             | <0.10      |            | 0.10      | mg/L     |           | 29-JUN-19 |          |
| F2-Naphth                                                                           | 2.94       |            | 0.10      | mg/L     |           | 29-JUN-19 |          |
| F3-PAH                                                                              | 19.7       |            | 0.25      | mg/L     |           | 29-JUN-19 |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                     | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2291847-4 LAGOON                             |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 13-JUN-19 @ 09:50       |            |            |           |           |           |           |          |
| Matrix: WASTE WATER                           |            |            |           |           |           |           |          |
| <b>CCME Total Hydrocarbons</b>                |            |            |           |           |           |           |          |
| Total Hydrocarbons (C6-C50)                   | 27.1       |            | 0.38      | mg/L      |           | 29-JUN-19 |          |
| <b>Sum of Xylene Isomer Concentrations</b>    |            |            |           |           |           |           |          |
| Xylenes (Total)                               | <0.00064   |            | 0.00064   | mg/L      |           | 29-JUN-19 |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>       |            |            |           |           |           |           |          |
| 1-Methyl Naphthalene                          | 0.000035   | EMPC       | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| 2-Methyl Naphthalene                          | 0.000037   |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Acenaphthene                                  | 0.000040   |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Acenaphthylene                                | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Anthracene                                    | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Acridine                                      | <0.00010   | DLM        | 0.00010   | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(a)anthracene                            | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(a)pyrene                                | <0.0000050 |            | 0.0000050 | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(b&j)fluoranthene                        | <0.000010  |            | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(g,h,i)perylene                          | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Benzo(k)fluoranthene                          | <0.000010  | EMPC       | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Chrysene                                      | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Dibenzo(a,h)anthracene                        | <0.0000050 |            | 0.0000050 | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Fluoranthene                                  | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Fluorene                                      | 0.000060   |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Indeno(1,2,3-cd)pyrene                        | <0.000010  | EMPC       | 0.000010  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Naphthalene                                   | 0.000099   |            | 0.000050  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Phenanthrene                                  | 0.000082   |            | 0.000050  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Pyrene                                        | <0.000020  |            | 0.000020  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Quinoline                                     | <0.00020   |            | 0.00020   | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| B(a)P Total Potency Equivalent                | <0.000030  | DLM        | 0.000030  | mg/L      | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Acenaphthene d10                   | 119.0      |            | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Acridine d9                        | 96.7       |            | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Chrysene d12                       | 113.1      |            | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Naphthalene d8                     | 212.5      |            | 50-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| Surrogate: Phenanthrene d10                   | 106.3      | SOL:MI     | 60-130    | %         | 19-JUN-19 | 25-JUN-19 | R4684786 |
| <b>Nunavut WW Group 1</b>                     |            |            |           |           |           |           |          |
| <b>Alkalinity, Bicarbonate</b>                |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                            | 347        |            | 1.2       | mg/L      |           | 17-JUN-19 |          |
| <b>Alkalinity, Carbonate</b>                  |            |            |           |           |           |           |          |
| Carbonate (CO3)                               | <0.60      |            | 0.60      | mg/L      |           | 17-JUN-19 |          |
| <b>Alkalinity, Hydroxide</b>                  |            |            |           |           |           |           |          |
| Hydroxide (OH)                                | <0.34      |            | 0.34      | mg/L      |           | 17-JUN-19 |          |
| <b>Alkalinity, Total (as CaCO3)</b>           |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)                  | 285        |            | 1.0       | mg/L      |           | 14-JUN-19 | R4671351 |
| <b>Ammonia by colour</b>                      |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                         | 76         |            | 10        | mg/L      |           | 19-JUN-19 | R4678331 |
| <b>Biochemical Oxygen Demand (BOD)</b>        |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand                     | 238        |            | 50        | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Carbonaceous BOD</b>                       |            |            |           |           |           |           |          |
| BOD Carbonaceous                              | 220        |            | 50        | mg/L      |           | 15-JUN-19 | R4682354 |
| <b>Chloride in Water by IC</b>                |            |            |           |           |           |           |          |
| Chloride (Cl)                                 | 59.9       |            | 1.0       | mg/L      |           | 14-JUN-19 | R4673753 |
| <b>Conductivity</b>                           |            |            |           |           |           |           |          |
| Conductivity                                  | 852        |            | 1.0       | umhos/cm  |           | 14-JUN-19 | R4671351 |
| <b>Fecal coliforms, 1:10 dilution by QT97</b> |            |            |           |           |           |           |          |
| Fecal Coliforms                               | >24200     |            | 10        | MPN/100mL |           | 14-JUN-19 | R4671333 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                 | Result    | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|-------------------------------------------|-----------|------------|-----------|----------|-----------|-----------|----------|
| L2291847-4 LAGOON                         |           |            |           |          |           |           |          |
| Sampled By: CLIENT on 13-JUN-19 @ 09:50   |           |            |           |          |           |           |          |
| Matrix: WASTE WATER                       |           |            |           |          |           |           |          |
| <b>Hardness Calculated</b>                |           |            |           |          |           |           |          |
| Hardness (as CaCO3)                       | 42.3      | HTC        | 0.20      | mg/L     |           | 25-JUN-19 |          |
| <b>Mercury Total</b>                      |           |            |           |          |           |           |          |
| Mercury (Hg)-Total                        | <0.000010 |            | 0.000010  | mg/L     | 15-JUN-19 | 17-JUN-19 | R4672470 |
| <b>Nitrate in Water by IC</b>             |           |            |           |          |           |           |          |
| Nitrate (as N)                            | <0.040    | DLM        | 0.040     | mg/L     |           | 14-JUN-19 | R4673753 |
| <b>Nitrate+Nitrite</b>                    |           |            |           |          |           |           |          |
| Nitrate and Nitrite as N                  | <0.070    |            | 0.070     | mg/L     |           | 19-JUN-19 |          |
| <b>Nitrite in Water by IC</b>             |           |            |           |          |           |           |          |
| Nitrite (as N)                            | <0.020    | DLM        | 0.020     | mg/L     |           | 14-JUN-19 | R4673753 |
| <b>Oil &amp; Grease - Gravimetric</b>     |           |            |           |          |           |           |          |
| Oil and Grease                            | 31.7      |            | 5.0       | mg/L     |           | 20-JUN-19 | R4677328 |
| <b>Phenol (4AAP)</b>                      |           |            |           |          |           |           |          |
| Phenols (4AAP)                            | 0.465     | DLM        | 0.010     | mg/L     |           | 18-JUN-19 | R4673366 |
| <b>Phosphorus, Total</b>                  |           |            |           |          |           |           |          |
| Phosphorus (P)-Total                      | 8.99      |            | 0.030     | mg/L     |           | 18-JUN-19 | R4672439 |
| <b>Sulfate in Water by IC</b>             |           |            |           |          |           |           |          |
| Sulfate (SO4)                             | 8.27      |            | 0.60      | mg/L     |           | 14-JUN-19 | R4673753 |
| <b>Total Metals in Water by CRC ICPMS</b> |           |            |           |          |           |           |          |
| Aluminum (Al)-Total                       | 0.234     |            | 0.0030    | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Arsenic (As)-Total                        | 0.00069   |            | 0.00010   | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Cadmium (Cd)-Total                        | 0.000218  |            | 0.0000050 | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Calcium (Ca)-Total                        | 8.76      |            | 0.050     | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Chromium (Cr)-Total                       | 0.00102   |            | 0.00010   | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Cobalt (Co)-Total                         | 0.00057   |            | 0.00010   | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Copper (Cu)-Total                         | 0.126     |            | 0.00050   | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Iron (Fe)-Total                           | 0.689     |            | 0.010     | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Lead (Pb)-Total                           | 0.00153   |            | 0.000050  | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Magnesium (Mg)-Total                      | 4.96      |            | 0.0050    | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Manganese (Mn)-Total                      | 0.0536    |            | 0.00010   | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Nickel (Ni)-Total                         | 0.00274   |            | 0.00050   | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Potassium (K)-Total                       | 22.8      |            | 0.050     | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Sodium (Na)-Total                         | 48.9      |            | 0.050     | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| Zinc (Zn)-Total                           | 0.0954    |            | 0.0030    | mg/L     | 24-JUN-19 | 24-JUN-19 | R4683256 |
| <b>Total Organic Carbon by Combustion</b> |           |            |           |          |           |           |          |
| Total Organic Carbon                      | 163       |            | 5.0       | mg/L     |           | 25-JUN-19 | R4688336 |
| <b>Total Suspended Solids</b>             |           |            |           |          |           |           |          |
| Total Suspended Solids                    | 41.6      |            | 6.0       | mg/L     |           | 20-JUN-19 | R4681118 |
| <b>pH</b>                                 |           |            |           |          |           |           |          |
| pH                                        | 7.49      |            | 0.10      | pH units |           | 14-JUN-19 | R4671351 |
|                                           |           |            |           |          |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## Reference Information

### Sample Parameter Qualifier Key:

| Qualifier | Description                                                                                                                                                                                |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DLM       | Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).                                                                                     |
| EMPC      | Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.                                                                     |
| HTC       | Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).                                                               |
| MBHT      | The APHA 30 hour hold time was exceeded for microbiological testing. Samples processed within 48 hours from time of sampling may be valid in some cases (refer to Health Canada guidance). |
| MS-B      | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.                                                                                         |
| RRR       | Refer to Report Remarks for issues regarding this analysis                                                                                                                                 |
| SOL:MI    | Surrogate recovery outside acceptable limits due to matrix interference                                                                                                                    |

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                        | Matrix | Test Description                   | Method Reference**                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------|-------------------------------------|
| ALK-CO3CO3-CALC-WP                                                                                                                                                                                                                                                                                                   | Water  | Alkalinity, Carbonate              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.                                                           |        |                                    |                                     |
| ALK-HCO3HCO3-CALC-WP                                                                                                                                                                                                                                                                                                 | Water  | Alkalinity, Bicarbonate            | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L                                                           |        |                                    |                                     |
| ALK-OHOH-CALC-WP                                                                                                                                                                                                                                                                                                     | Water  | Alkalinity, Hydroxide              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.                                                              |        |                                    |                                     |
| ALK-TITR-WP                                                                                                                                                                                                                                                                                                          | Water  | Alkalinity, Total (as CaCO3)       | APHA 2320B                          |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically. |        |                                    |                                     |
| BOD-CBOD-WP                                                                                                                                                                                                                                                                                                          | Water  | Carbonaceous BOD                   | APHA 5210 B                         |
| Samples are diluted and seeded, have TCMP added to inhibit nitrogenous demands, and then are incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                               |        |                                    |                                     |
| BOD-WP                                                                                                                                                                                                                                                                                                               | Water  | Biochemical Oxygen Demand (BOD)    | APHA 5210 B                         |
| Samples are diluted and seeded and then incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                                                                                    |        |                                    |                                     |
| BTEXS+F1-HSMS-WP                                                                                                                                                                                                                                                                                                     | Water  | BTX plus F1 by GCMS                | EPA 8260C / EPA 5021A               |
| The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.                                                                                |        |                                    |                                     |
| C-TOC-HTC-WP                                                                                                                                                                                                                                                                                                         | Water  | Total Organic Carbon by Combustion | APHA 5310 B-WP                      |
| Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.                                                             |        |                                    |                                     |
| CL-IC-N-WP                                                                                                                                                                                                                                                                                                           | Water  | Chloride in Water by IC            | EPA 300.1 (mod)                     |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                                                                                                                                           |        |                                    |                                     |
| EC-WP                                                                                                                                                                                                                                                                                                                | Water  | Conductivity                       | APHA 2510B                          |
| Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.                                                                                                                           |        |                                    |                                     |
| F1-F4-CALC-WP                                                                                                                                                                                                                                                                                                        | Water  | CCME Total Hydrocarbons            | CCME CWS-PHC, Pub #1310, Dec 2001-L |
| Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.                                                                                                                                                                        |        |                                    |                                     |
| In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.                                                                              |        |                                    |                                     |
| In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.                                                                                                                                                |        |                                    |                                     |

## Reference Information

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Matrix | Test Description                       | Method Reference**       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------|--------------------------|
| <p>In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.</p> <p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.</li> <li>3. Linearity of gasoline response within 15% throughout the calibration range.</li> </ol> <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.</li> <li>3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.</li> <li>4. Linearity of diesel or motor oil response within 15% throughout the calibration range.</li> </ol> |        |                                        |                          |
| F2-F4-FID-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Water  | CCME PHC F2-F4 in Water                | EPA 3511                 |
| <p>Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |                                        |                          |
| FC10-QT97-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Water  | Fecal coliforms, 1:10 dilution by QT97 | APHA 9223B QT97          |
| <p>Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                        |                          |
| HARDNESS-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Water  | Hardness Calculated                    | APHA 2340B               |
| <p>Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO<sub>3</sub> equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |                                        |                          |
| HG-T-CVAA-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Water  | Mercury Total                          | EPA 1631E (mod)          |
| <p>Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                        |                          |
| MET-T-CCMS-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Water  | Total Metals in Water by CRC ICPMS     | EPA 200.2/6020B (mod.)   |
| <p>Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                        |                          |
| <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                        |                          |
| NH3-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Ammonia by colour                      | APHA 4500 NH3 F          |
| <p>Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                        |                          |
| NO2+NO3-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Water  | Nitrate+Nitrite                        | CALCULATION              |
| NO2-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | Nitrite in Water by IC                 | EPA 300.1 (mod)          |
| <p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| NO3-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | Nitrate in Water by IC                 | EPA 300.1 (mod)          |
| <p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| OG-GRAV-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Oil & Grease - Gravimetric             | EPA 1664 (modified)      |
| <p>Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil &amp; Grease is determined from the weight of the residue in the vial.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                        |                          |
| P-T-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Phosphorus, Total                      | APHA 4500 P PHOSPHORUS-L |
| <p>This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                        |                          |
| PAH,PANH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | Polyaromatic Hydrocarbons (PAHs)       | EPA 3511/8270D (mod)     |
| <p>PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                        |                          |
| PH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Water  | pH                                     | APHA 4500H               |
| <p>The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                        |                          |

## Reference Information

### Test Method References:

| ALS Test Code                                                                                                                                                                                            | Matrix | Test Description                    | Method Reference**     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------|------------------------|
| PHENOLS-4AAP-WT                                                                                                                                                                                          | Water  | Phenol (4AAP)                       | EPA 9066               |
| An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically. |        |                                     |                        |
| SO4-IC-N-WP                                                                                                                                                                                              | Water  | Sulfate in Water by IC              | EPA 300.1 (mod)        |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                               |        |                                     |                        |
| SOLIDS-TOTSUS-WP                                                                                                                                                                                         | Water  | Total Suspended Solids              | APHA 2540 D (modified) |
| Total suspended solids in aqueous matrices is determined gravimetrically after drying the residue at 103 – 105°C.                                                                                        |        |                                     |                        |
| XYLENES-SUM-CALC-WP                                                                                                                                                                                      | Water  | Sum of Xylene Isomer Concentrations | CALCULATED RESULT      |
| Total xylenes represents the sum of o-xylene and m&p-xylene.                                                                                                                                             |        |                                     |                        |

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location                            |
|----------------------------|------------------------------------------------|
| WP                         | ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA |
| WT                         | ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA  |

### Chain of Custody Numbers:

### GLOSSARY OF REPORT TERMS

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*

*mg/kg - milligrams per kilogram based on dry weight of sample*

*mg/kg ww - milligrams per kilogram based on wet weight of sample*

*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*

*mg/L - unit of concentration based on volume, parts per million.*

*< - Less than.*

*D.L. - The reporting limit.*

*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*

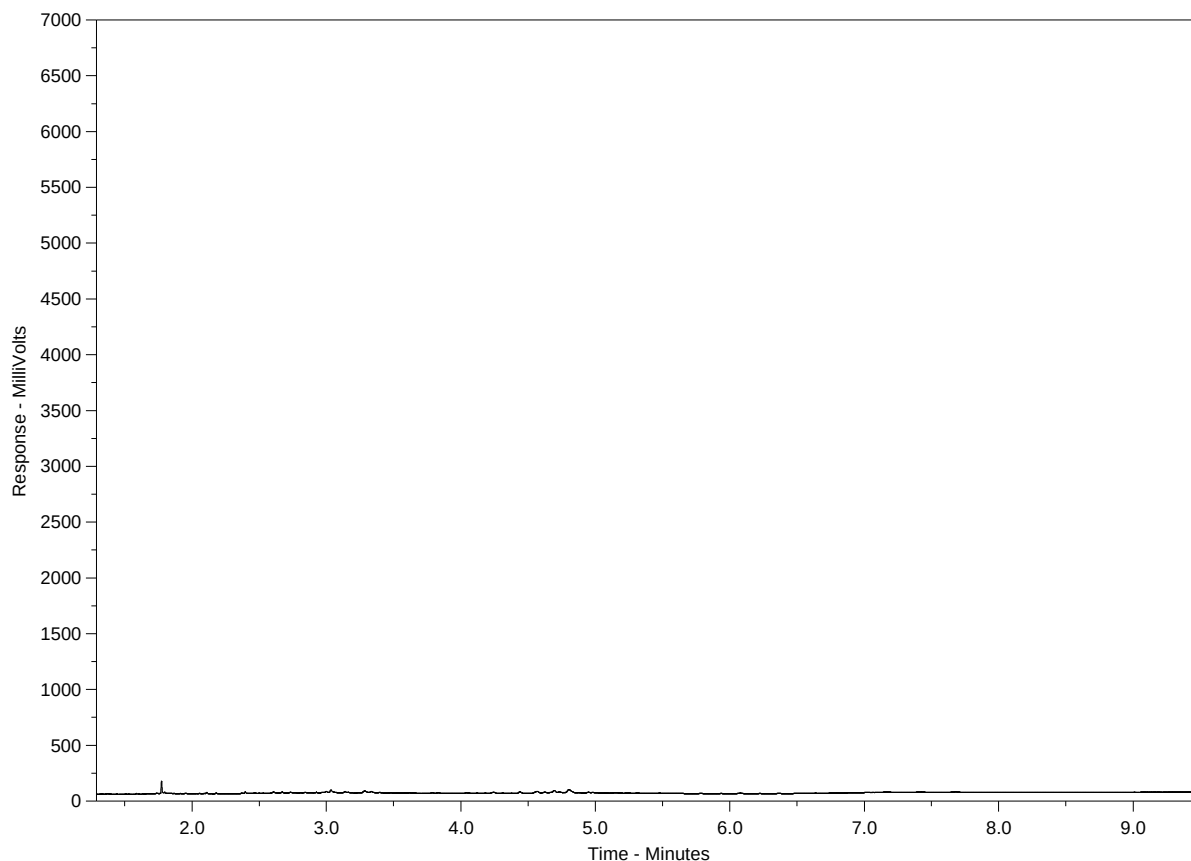
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*

*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2291847-1  
Client Sample ID: ARV-2



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

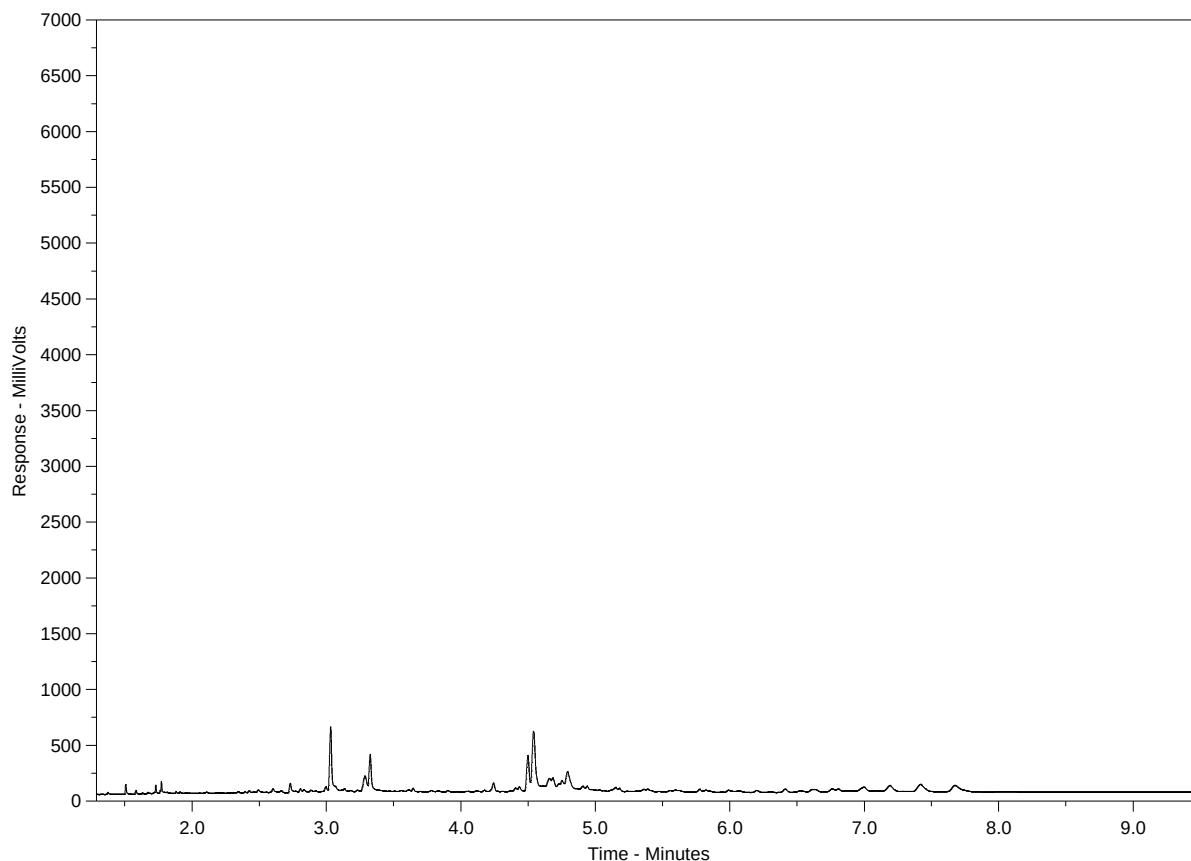
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2291847-2  
Client Sample ID: ARV-4



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | ← F3 →                            |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

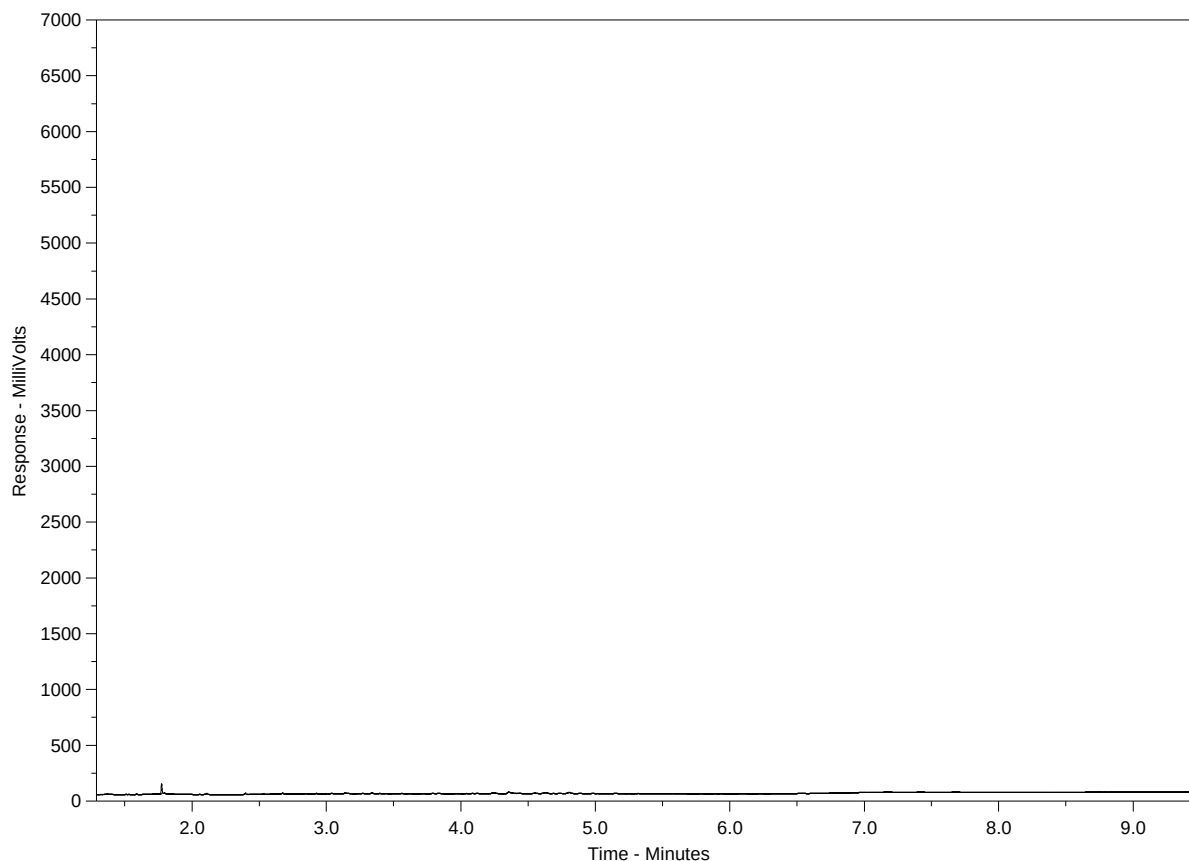
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).



# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2291847-3  
Client Sample ID: ARV-5



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

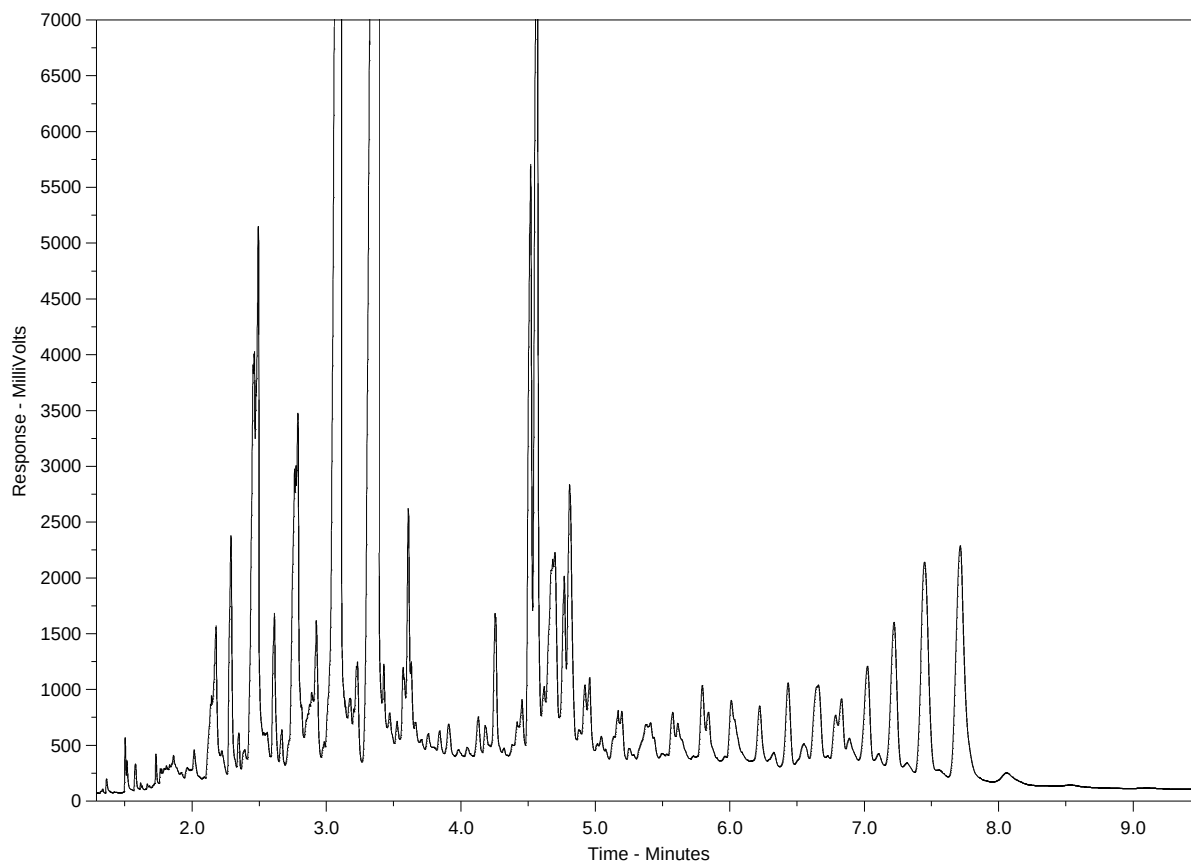
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2291847-4  
Client Sample ID: LAGOON



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | ← F3 →                            |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

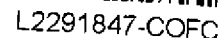
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).



**Canada Toll Free: 1 800 668 9878**

Page 1 of 1



REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form **LEGIBLY**. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY      YELLOW - CLIENT COPY

14-00000-0125e v00 From 04 January 201



Hamlet of Arviat  
ATTN: PAULIE ISSUMATARJUAK/STEVE  
ENGLAND  
PO Box 150  
Arviat NU X0C 0E0

Date Received: 18-JUL-19  
Report Date: 07-AUG-19 13:37 (MT)  
Version: FINAL

Client Phone: 867-857-2841

## Certificate of Analysis

Lab Work Order #: L2312534  
Project P.O. #: NOT SUBMITTED  
Job Reference: HAMLET OF ARVIAT  
C of C Numbers:  
Legal Site Desc:

Comments: NOTE: Frac -4 ARV-6 No 40 ml Mercury vial was received by inorganics lab - unable to analyze.



Hua Wo  
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721  
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-------|-----------|-----------|----------|
| L2312534-1 ARV-2                        |            |            |           |       |           |           |          |
| Sampled By: CLIENT on 17-JUL-19 @ 09:00 |            |            |           |       |           |           |          |
| Matrix: WATER                           |            |            |           |       |           |           |          |
| BTEX plus F1-F4                         |            |            |           |       |           |           |          |
| BTX plus F1 by GCMS                     |            |            |           |       |           |           |          |
| Benzene                                 | <0.00050   |            | 0.00050   | mg/L  |           | 19-JUL-19 | R4729929 |
| Toluene                                 | <0.0010    |            | 0.0010    | mg/L  |           | 19-JUL-19 | R4729929 |
| Ethyl benzene                           | <0.00050   |            | 0.00050   | mg/L  |           | 19-JUL-19 | R4729929 |
| o-Xylene                                | <0.00050   |            | 0.00050   | mg/L  |           | 19-JUL-19 | R4729929 |
| m+p-Xylenes                             | <0.00040   |            | 0.00040   | mg/L  |           | 19-JUL-19 | R4729929 |
| F1 (C6-C10)                             | <0.10      |            | 0.10      | mg/L  |           | 19-JUL-19 | R4729929 |
| Surrogate: 4-Bromofluorobenzene (SS)    | 85.0       |            | 70-130    | %     |           | 19-JUL-19 | R4729929 |
| CCME PHC F2-F4 in Water                 |            |            |           |       |           |           |          |
| F2 (C10-C16)                            | <0.10      |            | 0.10      | mg/L  | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F3 (C16-C34)                            | <0.25      |            | 0.25      | mg/L  | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F4 (C34-C50)                            | <0.25      |            | 0.25      | mg/L  | 19-JUL-19 | 20-JUL-19 | R4699009 |
| Surrogate: 2-Bromobenzotrifluoride      | 122.1      |            | 60-140    | %     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| CCME Total Hydrocarbons                 |            |            |           |       |           |           |          |
| F1-BTEX                                 | <0.10      |            | 0.10      | mg/L  |           | 31-JUL-19 |          |
| F2-Naphth                               | <0.10      |            | 0.10      | mg/L  |           | 31-JUL-19 |          |
| F3-PAH                                  | <0.25      |            | 0.25      | mg/L  |           | 31-JUL-19 |          |
| Total Hydrocarbons (C6-C50)             | <0.38      |            | 0.38      | mg/L  |           | 31-JUL-19 |          |
| Sum of Xylene Isomer Concentrations     |            |            |           |       |           |           |          |
| Xylenes (Total)                         | <0.00064   |            | 0.00064   | mg/L  |           | 31-JUL-19 |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |       |           |           |          |
| 1-Methyl Naphthalene                    | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| 2-Methyl Naphthalene                    | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthene                            | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthylene                          | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Anthracene                              | <0.000010  |            | 0.000010  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acridine                                | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)anthracene                      | <0.000010  |            | 0.000010  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)pyrene                          | <0.0000050 |            | 0.0000050 | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(b&j)fluoranthene                  | <0.000010  |            | 0.000010  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(g,h,i)perylene                    | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L  | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acenaphthene d10             | 79.5       |            | 60-130    | %     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acridine d9                  | 86.0       |            | 60-130    | %     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Chrysene d12                 | 95.0       |            | 60-130    | %     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Naphthalene d8               | 78.6       |            | 50-130    | %     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Phenanthrene d10             | 86.0       |            | 60-130    | %     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Nunavut WW Group 1                      |            |            |           |       |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |       |           |           |          |
| Bicarbonate (HCO3)                      | 537        |            | 1.2       | mg/L  |           | 22-JUL-19 |          |
| Alkalinity, Carbonate                   |            |            |           |       |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

| Sample Details/Parameters               | Result    | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|-----------|------------|-----------|-----------|-----------|-----------|----------|
| L2312534-1 ARV-2                        |           |            |           |           |           |           |          |
| Sampled By: CLIENT on 17-JUL-19 @ 09:00 |           |            |           |           |           |           |          |
| Matrix: WATER                           |           |            |           |           |           |           |          |
| Alkalinity, Carbonate                   |           |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60     |            | 0.60      | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Hydroxide                   |           |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34     |            | 0.34      | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Total (as CaCO3)            |           |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 440       |            | 1.0       | mg/L      |           | 19-JUL-19 | R4719748 |
| Ammonia by colour                       |           |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 4.72      |            | 0.10      | mg/L      |           | 22-JUL-19 | R4721003 |
| Biochemical Oxygen Demand (BOD)         |           |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | 31.5      |            | 6.0       | mg/L      |           | 19-JUL-19 | R4727945 |
| Carbonaceous BOD                        |           |            |           |           |           |           |          |
| BOD Carbonaceous                        | 16.6      |            | 6.0       | mg/L      |           | 19-JUL-19 | R4727945 |
| Chloride in Water by IC                 |           |            |           |           |           |           |          |
| Chloride (Cl)                           | 49        |            | 10        | mg/L      |           | 19-JUL-19 | R4722635 |
| Conductivity                            |           |            |           |           |           |           |          |
| Conductivity                            | 2930      |            | 1.0       | umhos/cm  |           | 19-JUL-19 | R4719748 |
| Fecal coliforms, 1:10 dilution by QT97  |           |            |           |           |           |           |          |
| Fecal Coliforms                         | 60        | MBHT       | 10        | MPN/100mL |           | 18-JUL-19 | R4715857 |
| Hardness Calculated                     |           |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 841       | HTC        | 0.20      | mg/L      |           | 29-JUL-19 |          |
| Mercury Total                           |           |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | 0.0000190 |            | 0.0000050 | mg/L      | 30-JUL-19 | 30-JUL-19 | R4731130 |
| Nitrate in Water by IC                  |           |            |           |           |           |           |          |
| Nitrate (as N)                          | <0.40     | DLM        | 0.40      | mg/L      |           | 19-JUL-19 | R4722635 |
| Nitrate+Nitrite                         |           |            |           |           |           |           |          |
| Nitrate and Nitrite as N                | <0.45     |            | 0.45      | mg/L      |           | 24-JUL-19 |          |
| Nitrite in Water by IC                  |           |            |           |           |           |           |          |
| Nitrite (as N)                          | <0.20     | DLM        | 0.20      | mg/L      |           | 19-JUL-19 | R4722635 |
| Oil & Grease - Gravimetric              |           |            |           |           |           |           |          |
| Oil and Grease                          | <5.0      |            | 5.0       | mg/L      |           | 23-JUL-19 | R4720809 |
| Phenol (4AAP)                           |           |            |           |           |           |           |          |
| Phenols (4AAP)                          | 0.0056    |            | 0.0010    | mg/L      |           | 19-JUL-19 | R4719699 |
| Phosphorus, Total                       |           |            |           |           |           |           |          |
| Phosphorus (P)-Total                    | 0.411     |            | 0.0030    | mg/L      |           | 22-JUL-19 | R4720390 |
| Sulfate in Water by IC                  |           |            |           |           |           |           |          |
| Sulfate (SO4)                           | 81.5      |            | 6.0       | mg/L      |           | 19-JUL-19 | R4722635 |
| Total Metals in Water by CRC ICPMS      |           |            |           |           |           |           |          |
| Aluminum (Al)-Total                     | 0.0228    |            | 0.0030    | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Arsenic (As)-Total                      | 0.00490   |            | 0.00010   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cadmium (Cd)-Total                      | 0.000179  |            | 0.0000050 | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Calcium (Ca)-Total                      | 232       |            | 0.050     | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Chromium (Cr)-Total                     | 0.00142   |            | 0.00010   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cobalt (Co)-Total                       | 0.00183   |            | 0.00010   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Copper (Cu)-Total                       | 0.0269    |            | 0.00050   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Iron (Fe)-Total                         | 1.29      |            | 0.010     | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Lead (Pb)-Total                         | 0.00329   |            | 0.000050  | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Magnesium (Mg)-Total                    | 63.7      |            | 0.0050    | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Manganese (Mn)-Total                    | 0.794     |            | 0.00010   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Nickel (Ni)-Total                       | 0.00854   |            | 0.00050   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Potassium (K)-Total                     | 53.8      |            | 0.050     | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Sodium (Na)-Total                       | 284       |            | 0.050     | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Zinc (Zn)-Total                         | 0.109     |            | 0.0030    | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Total Organic Carbon by Combustion      |           |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters               |       | Result     | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|-----------------------------------------|-------|------------|------------|-----------|----------|-----------|-----------|----------|
| L2312534-1                              | ARV-2 |            |            |           |          |           |           |          |
| Sampled By: CLIENT on 17-JUL-19 @ 09:00 |       |            |            |           |          |           |           |          |
| Matrix: WATER                           |       |            |            |           |          |           |           |          |
| Total Organic Carbon by Combustion      |       |            |            |           |          |           |           |          |
| Total Organic Carbon                    |       | 48.1       |            | 0.50      | mg/L     |           | 22-JUL-19 | R4720568 |
| Total Suspended Solids                  |       |            |            |           |          |           |           |          |
| Total Suspended Solids                  |       | 25.1       |            | 2.0       | mg/L     |           | 24-JUL-19 | R4724375 |
| pH                                      |       |            |            |           |          |           |           |          |
| pH                                      |       | 8.09       |            | 0.10      | pH units |           | 19-JUL-19 | R4719748 |
| L2312534-2                              | ARV-4 |            |            |           |          |           |           |          |
| Sampled By: CLIENT on 17-JUL-19 @ 08:44 |       |            |            |           |          |           |           |          |
| Matrix: WATER                           |       |            |            |           |          |           |           |          |
| BTEX plus F1-F4                         |       |            |            |           |          |           |           |          |
| BTX plus F1 by GCMS                     |       |            |            |           |          |           |           |          |
| Benzene                                 |       | <0.00050   |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| Toluene                                 |       | 0.0173     |            | 0.0010    | mg/L     |           | 19-JUL-19 | R4729929 |
| Ethyl benzene                           |       | <0.00050   |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| o-Xylene                                |       | <0.00050   |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| m+p-Xylenes                             |       | <0.00040   |            | 0.00040   | mg/L     |           | 19-JUL-19 | R4729929 |
| F1 (C6-C10)                             |       | <0.10      |            | 0.10      | mg/L     |           | 19-JUL-19 | R4729929 |
| Surrogate: 4-Bromofluorobenzene (SS)    |       | 87.0       |            | 70-130    | %        |           | 19-JUL-19 | R4729929 |
| CCME PHC F2-F4 in Water                 |       |            |            |           |          |           |           |          |
| F2 (C10-C16)                            |       | 0.61       |            | 0.10      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F3 (C16-C34)                            |       | 6.46       |            | 0.25      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F4 (C34-C50)                            |       | 1.62       |            | 0.25      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| Surrogate: 2-Bromobenzotrifluoride      |       | 126.6      |            | 60-140    | %        | 19-JUL-19 | 20-JUL-19 | R4699009 |
| CCME Total Hydrocarbons                 |       |            |            |           |          |           |           |          |
| F1-BTEX                                 |       | <0.10      |            | 0.10      | mg/L     |           | 31-JUL-19 |          |
| F2-Naphth                               |       | 0.61       |            | 0.10      | mg/L     |           | 31-JUL-19 |          |
| F3-PAH                                  |       | 6.46       |            | 0.25      | mg/L     |           | 31-JUL-19 |          |
| Total Hydrocarbons (C6-C50)             |       | 8.69       |            | 0.38      | mg/L     |           | 31-JUL-19 |          |
| Sum of Xylene Isomer Concentrations     |       |            |            |           |          |           |           |          |
| Xylenes (Total)                         |       | <0.00064   |            | 0.00064   | mg/L     |           | 31-JUL-19 |          |
| Polyaromatic Hydrocarbons (PAHs)        |       |            |            |           |          |           |           |          |
| 1-Methyl Naphthalene                    |       | <0.000020  |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| 2-Methyl Naphthalene                    |       | <0.000020  |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthene                            |       | <0.000020  |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthylene                          |       | <0.000020  |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Anthracene                              |       | <0.000010  |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acridine                                |       | 0.000091   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)anthracene                      |       | <0.000010  |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)pyrene                          |       | <0.0000050 |            | 0.0000050 | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(b&j)fluoranthene                  |       | <0.000010  |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(g,h,i)perylene                    |       | <0.000020  |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(k)fluoranthene                    |       | <0.000010  |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Chrysene                                |       | <0.000020  |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Dibenzo(a,h)anthracene                  |       | <0.0000050 |            | 0.0000050 | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluoranthene                            |       | <0.000020  |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluorene                                |       | 0.000033   | EMPC       | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Indeno(1,2,3-cd)pyrene                  |       | <0.000010  |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Naphthalene                             |       | <0.000050  |            | 0.000050  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Phenanthrene                            |       | <0.000050  |            | 0.000050  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Pyrene                                  |       | <0.000010  |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Quinoline                               |       | 0.000072   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                     | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2312534-2    ARV-4                           |            |            |           |           |           |           |          |
| Sampled By:    CLIENT on 17-JUL-19 @ 08:44    |            |            |           |           |           |           |          |
| Matrix:        WATER                          |            |            |           |           |           |           |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>       |            |            |           |           |           |           |          |
| B(a)P Total Potency Equivalent                | <0.000030  |            | 0.000030  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acenaphthene d10                   | 101.6      |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acridine d9                        | 101.5      |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Chrysene d12                       | 116.8      |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Naphthalene d8                     | 110.4      |            | 50-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Phenanthrene d10                   | 101.7      |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| <b>Nunavut WW Group 1</b>                     |            |            |           |           |           |           |          |
| <b>Alkalinity, Bicarbonate</b>                |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                            | 340        |            | 1.2       | mg/L      |           | 22-JUL-19 |          |
| <b>Alkalinity, Carbonate</b>                  |            |            |           |           |           |           |          |
| Carbonate (CO3)                               | <0.60      |            | 0.60      | mg/L      |           | 22-JUL-19 |          |
| <b>Alkalinity, Hydroxide</b>                  |            |            |           |           |           |           |          |
| Hydroxide (OH)                                | <0.34      |            | 0.34      | mg/L      |           | 22-JUL-19 |          |
| <b>Alkalinity, Total (as CaCO3)</b>           |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)                  | 279        |            | 1.0       | mg/L      |           | 19-JUL-19 | R4719748 |
| <b>Ammonia by colour</b>                      |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                         | 65.9       |            | 2.0       | mg/L      |           | 23-JUL-19 | R4723915 |
| <b>Biochemical Oxygen Demand (BOD)</b>        |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand                     | 65         |            | 20        | mg/L      |           | 19-JUL-19 | R4727945 |
| <b>Carbonaceous BOD</b>                       |            |            |           |           |           |           |          |
| BOD Carbonaceous                              | 58         |            | 20        | mg/L      |           | 19-JUL-19 | R4727945 |
| <b>Chloride in Water by IC</b>                |            |            |           |           |           |           |          |
| Chloride (Cl)                                 | 73.8       |            | 0.50      | mg/L      |           | 19-JUL-19 | R4722635 |
| <b>Conductivity</b>                           |            |            |           |           |           |           |          |
| Conductivity                                  | 856        |            | 1.0       | umhos/cm  |           | 19-JUL-19 | R4719748 |
| <b>Fecal coliforms, 1:10 dilution by QT97</b> |            |            |           |           |           |           |          |
| Fecal Coliforms                               | >24200     | MBHT       | 10        | MPN/100mL |           | 18-JUL-19 | R4715857 |
| <b>Hardness Calculated</b>                    |            |            |           |           |           |           |          |
| Hardness (as CaCO3)                           | 58.0       | HTC        | 0.20      | mg/L      |           | 29-JUL-19 |          |
| <b>Mercury Total</b>                          |            |            |           |           |           |           |          |
| Mercury (Hg)-Total                            | <0.0000050 |            | 0.0000050 | mg/L      | 23-JUL-19 | 23-JUL-19 | R4723870 |
| <b>Nitrate in Water by IC</b>                 |            |            |           |           |           |           |          |
| Nitrate (as N)                                | <0.020     |            | 0.020     | mg/L      |           | 19-JUL-19 | R4722635 |
| <b>Nitrate+Nitrite</b>                        |            |            |           |           |           |           |          |
| Nitrate and Nitrite as N                      | <0.070     |            | 0.070     | mg/L      |           | 24-JUL-19 |          |
| <b>Nitrite in Water by IC</b>                 |            |            |           |           |           |           |          |
| Nitrite (as N)                                | <0.010     |            | 0.010     | mg/L      |           | 19-JUL-19 | R4722635 |
| <b>Oil &amp; Grease - Gravimetric</b>         |            |            |           |           |           |           |          |
| Oil and Grease                                | 11.7       |            | 5.0       | mg/L      |           | 23-JUL-19 | R4720809 |
| <b>Phenol (4AAP)</b>                          |            |            |           |           |           |           |          |
| Phenols (4AAP)                                | 0.197      | DLM        | 0.010     | mg/L      |           | 22-JUL-19 | R4719897 |
| <b>Phosphorus, Total</b>                      |            |            |           |           |           |           |          |
| Phosphorus (P)-Total                          | 9.46       |            | 0.030     | mg/L      |           | 22-JUL-19 | R4720390 |
| <b>Sulfate in Water by IC</b>                 |            |            |           |           |           |           |          |
| Sulfate (SO4)                                 | 3.54       |            | 0.30      | mg/L      |           | 19-JUL-19 | R4722635 |
| <b>Total Metals in Water by CRC ICPMS</b>     |            |            |           |           |           |           |          |
| Aluminum (Al)-Total                           | 0.148      |            | 0.0030    | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Arsenic (As)-Total                            | 0.00420    |            | 0.00010   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cadmium (Cd)-Total                            | 0.0000898  |            | 0.0000050 | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Calcium (Ca)-Total                            | 13.6       |            | 0.050     | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Chromium (Cr)-Total                           | 0.00108    |            | 0.00010   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cobalt (Co)-Total                             | 0.00172    |            | 0.00010   | mg/L      | 26-JUL-19 | 26-JUL-19 | R4728936 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.



# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                  |       | Result                      | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|--------------------------------------------|-------|-----------------------------|------------|-----------|----------|-----------|-----------|----------|
| L2312534-2                                 | ARV-4 |                             |            |           |          |           |           |          |
| Sampled By:                                |       | CLIENT on 17-JUL-19 @ 08:44 |            |           |          |           |           |          |
| Matrix:                                    |       | WATER                       |            |           |          |           |           |          |
| <b>Total Metals in Water by CRC ICPMS</b>  |       |                             |            |           |          |           |           |          |
| Copper (Cu)-Total                          |       | 0.0753                      |            | 0.00050   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Iron (Fe)-Total                            |       | 2.61                        |            | 0.010     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Lead (Pb)-Total                            |       | 0.00213                     |            | 0.000050  | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Magnesium (Mg)-Total                       |       | 5.84                        |            | 0.0050    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Manganese (Mn)-Total                       |       | 0.206                       |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Nickel (Ni)-Total                          |       | 0.00622                     |            | 0.00050   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Potassium (K)-Total                        |       | 22.6                        |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Sodium (Na)-Total                          |       | 55.6                        |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Zinc (Zn)-Total                            |       | 0.0681                      |            | 0.0030    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| <b>Total Organic Carbon by Combustion</b>  |       |                             |            |           |          |           |           |          |
| Total Organic Carbon                       |       | 88.7                        |            | 5.0       | mg/L     |           | 23-JUL-19 | R4722928 |
| <b>Total Suspended Solids</b>              |       |                             |            |           |          |           |           |          |
| Total Suspended Solids                     |       | 45.8                        |            | 3.0       | mg/L     |           | 24-JUL-19 | R4724375 |
| pH                                         |       |                             |            |           |          |           |           |          |
| pH                                         |       | 7.66                        |            | 0.10      | pH units |           | 19-JUL-19 | R4719748 |
| L2312534-3                                 | ARV-5 |                             |            |           |          |           |           |          |
| Sampled By:                                |       | CLIENT on 17-JUL-19 @ 09:14 |            |           |          |           |           |          |
| Matrix:                                    |       | WATER                       |            |           |          |           |           |          |
| <b>BTEX plus F1-F4</b>                     |       |                             |            |           |          |           |           |          |
| <b>BTX plus F1 by GCMS</b>                 |       |                             |            |           |          |           |           |          |
| Benzene                                    |       | <0.00050                    |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| Toluene                                    |       | <0.0010                     |            | 0.0010    | mg/L     |           | 19-JUL-19 | R4729929 |
| Ethyl benzene                              |       | <0.00050                    |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| o-Xylene                                   |       | <0.00050                    |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| m+p-Xylenes                                |       | <0.00040                    |            | 0.00040   | mg/L     |           | 19-JUL-19 | R4729929 |
| F1 (C6-C10)                                |       | <0.10                       |            | 0.10      | mg/L     |           | 19-JUL-19 | R4729929 |
| Surrogate: 4-Bromofluorobenzene (SS)       |       | 89.0                        |            | 70-130    | %        |           | 19-JUL-19 | R4729929 |
| <b>CCME PHC F2-F4 in Water</b>             |       |                             |            |           |          |           |           |          |
| F2 (C10-C16)                               |       | <0.10                       |            | 0.10      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F3 (C16-C34)                               |       | <0.25                       |            | 0.25      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F4 (C34-C50)                               |       | <0.25                       |            | 0.25      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| Surrogate: 2-Bromobenzo(trifluoro)ide      |       | 120.5                       |            | 60-140    | %        | 19-JUL-19 | 20-JUL-19 | R4699009 |
| <b>CCME Total Hydrocarbons</b>             |       |                             |            |           |          |           |           |          |
| F1-BTEX                                    |       | <0.10                       |            | 0.10      | mg/L     |           | 31-JUL-19 |          |
| F2-Naphth                                  |       | <0.10                       |            | 0.10      | mg/L     |           | 31-JUL-19 |          |
| F3-PAH                                     |       | <0.25                       |            | 0.25      | mg/L     |           | 31-JUL-19 |          |
| Total Hydrocarbons (C6-C50)                |       | <0.38                       |            | 0.38      | mg/L     |           | 31-JUL-19 |          |
| <b>Sum of Xylene Isomer Concentrations</b> |       |                             |            |           |          |           |           |          |
| Xylenes (Total)                            |       | <0.00064                    |            | 0.00064   | mg/L     |           | 31-JUL-19 |          |
|                                            |       |                             |            |           |          |           |           |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>    |       |                             |            |           |          |           |           |          |
| 1-Methyl Naphthalene                       |       | <0.000020                   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| 2-Methyl Naphthalene                       |       | <0.000020                   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthene                               |       | <0.000020                   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthylene                             |       | <0.000020                   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Anthracene                                 |       | <0.000010                   |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acridine                                   |       | <0.000020                   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)anthracene                         |       | <0.000010                   |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)pyrene                             |       | <0.0000050                  |            | 0.0000050 | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(b&j)fluoranthene                     |       | <0.000010                   |            | 0.000010  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(g,h,i)perylene                       |       | <0.000020                   |            | 0.000020  | mg/L     | 19-JUL-19 | 23-JUL-19 | R4727407 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2312534-3 ARV-5                        |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 17-JUL-19 @ 09:14 |            |            |           |           |           |           |          |
| Matrix: WATER                           |            |            |           |           |           |           |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |           |           |           |          |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acenaphthene d10             | 82.9       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acridine d9                  | 88.2       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Chrysene d12                 | 97.5       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Naphthalene d8               | 79.9       |            | 50-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Phenanthrene d10             | 86.3       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Nunavut WW Group 1                      |            |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 92.2       |            | 1.2       | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Carbonate                   |            |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60      |            | 0.60      | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Hydroxide                   |            |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34      |            | 0.34      | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Total (as CaCO3)            |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 75.6       |            | 1.0       | mg/L      |           | 19-JUL-19 | R4719748 |
| Ammonia by colour                       |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 0.057      |            | 0.010     | mg/L      |           | 22-JUL-19 | R4721003 |
| Biochemical Oxygen Demand (BOD)         |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | <2.0       |            | 2.0       | mg/L      |           | 19-JUL-19 | R4727945 |
| Carbonaceous BOD                        |            |            |           |           |           |           |          |
| BOD Carbonaceous                        | <2.0       |            | 2.0       | mg/L      |           | 19-JUL-19 | R4727945 |
| Chloride in Water by IC                 |            |            |           |           |           |           |          |
| Chloride (Cl)                           | 200        |            | 0.50      | mg/L      |           | 19-JUL-19 | R4722635 |
| Conductivity                            |            |            |           |           |           |           |          |
| Conductivity                            | 834        |            | 1.0       | umhos/cm  |           | 19-JUL-19 | R4719748 |
| Fecal coliforms, 1:10 dilution by QT97  |            |            |           |           |           |           |          |
| Fecal Coliforms                         | <10        | MBHT       | 10        | MPN/100mL |           | 18-JUL-19 | R4715857 |
| Hardness Calculated                     |            |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 133        | HTC        | 0.20      | mg/L      |           | 29-JUL-19 |          |
| Mercury Total                           |            |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | <0.0000050 |            | 0.0000050 | mg/L      | 30-JUL-19 | 30-JUL-19 | R4731130 |
| Nitrate in Water by IC                  |            |            |           |           |           |           |          |
| Nitrate (as N)                          | <0.020     |            | 0.020     | mg/L      |           | 19-JUL-19 | R4722635 |
| Nitrate+Nitrite                         |            |            |           |           |           |           |          |
| Nitrate and Nitrite as N                | <0.070     |            | 0.070     | mg/L      |           | 24-JUL-19 |          |
| Nitrite in Water by IC                  |            |            |           |           |           |           |          |
| Nitrite (as N)                          | <0.010     |            | 0.010     | mg/L      |           | 19-JUL-19 | R4722635 |
| Oil & Grease - Gravimetric              |            |            |           |           |           |           |          |
| Oil and Grease                          | <5.0       |            | 5.0       | mg/L      |           | 23-JUL-19 | R4720809 |
| Phenol (4AAP)                           |            |            |           |           |           |           |          |
| Phenols (4AAP)                          | <0.0010    |            | 0.0010    | mg/L      |           | 22-JUL-19 | R4719897 |
| Phosphorus, Total                       |            |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                                                    | Result     | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|------------------------------------------------------------------------------|------------|------------|-----------|----------|-----------|-----------|----------|
| L2312534-3 ARV-5<br>Sampled By: CLIENT on 17-JUL-19 @ 09:14<br>Matrix: WATER |            |            |           |          |           |           |          |
| Phosphorus, Total<br>Phosphorus (P)-Total                                    | 0.0353     |            | 0.0030    | mg/L     |           | 22-JUL-19 | R4720390 |
| Sulfate in Water by IC<br>Sulfate (SO4)                                      | 10.9       |            | 0.30      | mg/L     |           | 19-JUL-19 | R4722635 |
| Total Metals in Water by CRC ICPMS                                           |            |            |           |          |           |           |          |
| Aluminum (Al)-Total                                                          | 0.0260     |            | 0.0030    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Arsenic (As)-Total                                                           | 0.00062    |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cadmium (Cd)-Total                                                           | 0.0000093  |            | 0.0000050 | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Calcium (Ca)-Total                                                           | 24.5       |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Chromium (Cr)-Total                                                          | 0.00030    |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cobalt (Co)-Total                                                            | 0.00015    |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Copper (Cu)-Total                                                            | 0.00074    |            | 0.00050   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Iron (Fe)-Total                                                              | 1.14       |            | 0.010     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Lead (Pb)-Total                                                              | 0.000057   |            | 0.000050  | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Magnesium (Mg)-Total                                                         | 17.5       |            | 0.0050    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Manganese (Mn)-Total                                                         | 0.0662     |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Nickel (Ni)-Total                                                            | 0.00052    |            | 0.00050   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Potassium (K)-Total                                                          | 6.48       |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Sodium (Na)-Total                                                            | 106        |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Zinc (Zn)-Total                                                              | 0.0079     |            | 0.0030    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Total Organic Carbon by Combustion<br>Total Organic Carbon                   | 10.4       |            | 0.50      | mg/L     |           | 22-JUL-19 | R4720568 |
| Total Suspended Solids<br>Total Suspended Solids                             | 6.7        |            | 2.0       | mg/L     |           | 24-JUL-19 | R4724375 |
| pH<br>pH                                                                     | 7.80       |            | 0.10      | pH units |           | 19-JUL-19 | R4719748 |
| L2312534-4 ARV-6<br>Sampled By: CLIENT on 17-JUL-19 @ 09:27<br>Matrix: WATER |            |            |           |          |           |           |          |
| BTEX plus F1-F4                                                              |            |            |           |          |           |           |          |
| BTX plus F1 by GCMS                                                          |            |            |           |          |           |           |          |
| Benzene                                                                      | <0.00050   |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| Toluene                                                                      | 0.0011     |            | 0.0010    | mg/L     |           | 19-JUL-19 | R4729929 |
| Ethyl benzene                                                                | <0.00050   |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| o-Xylene                                                                     | <0.00050   |            | 0.00050   | mg/L     |           | 19-JUL-19 | R4729929 |
| m+p-Xylenes                                                                  | <0.00040   |            | 0.00040   | mg/L     |           | 19-JUL-19 | R4729929 |
| F1 (C6-C10)                                                                  | <0.10      |            | 0.10      | mg/L     |           | 19-JUL-19 | R4729929 |
| Surrogate: 4-Bromofluorobenzene (SS)                                         | 82.0       |            | 70-130    | %        |           | 19-JUL-19 | R4729929 |
| CCME PHC F2-F4 in Water                                                      |            |            |           |          |           |           |          |
| F2 (C10-C16)                                                                 | 0.12       |            | 0.10      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F3 (C16-C34)                                                                 | <0.25      |            | 0.25      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| F4 (C34-C50)                                                                 | <0.25      |            | 0.25      | mg/L     | 19-JUL-19 | 20-JUL-19 | R4699009 |
| Surrogate: 2-Bromobenzotrifluoride                                           | 113.3      |            | 60-140    | %        | 19-JUL-19 | 20-JUL-19 | R4699009 |
| CCME Total Hydrocarbons                                                      |            |            |           |          |           |           |          |
| F1-BTEX                                                                      | <0.10      |            | 0.10      | mg/L     |           | 31-JUL-19 |          |
| F2-Naphth                                                                    | 0.12       |            | 0.10      | mg/L     |           | 31-JUL-19 |          |
| F3-PAH                                                                       | <0.25      |            | 0.25      | mg/L     |           | 31-JUL-19 |          |
| Total Hydrocarbons (C6-C50)                                                  | <0.38      |            | 0.38      | mg/L     |           | 31-JUL-19 |          |
| Sum of Xylene Isomer Concentrations<br>Xylenes (Total)                       | <0.00064   |            | 0.00064   | mg/L     |           | 31-JUL-19 |          |
| Miscellaneous Parameters                                                     |            |            |           |          |           |           |          |
| Mercury (Hg)-Total                                                           | <0.0000050 |            | 0.0000050 | mg/L     | 01-AUG-19 | 07-AUG-19 | R4742665 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2312534-4 ARV-6                        |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 17-JUL-19 @ 09:27 |            |            |           |           |           |           |          |
| Matrix: WATER                           |            |            |           |           |           |           |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |           |           |           |          |
| 1-Methyl Naphthalene                    | 0.000028   |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| 2-Methyl Naphthalene                    | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthene                            | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acenaphthylene                          | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Anthracene                              | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Acridine                                | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)anthracene                      | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(a)pyrene                          | <0.0000050 |            | 0.0000050 | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(b&j)fluoranthene                  | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(g,h,i)perylene                    | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L      | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acenaphthene d10             | 81.0       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Acridine d9                  | 91.4       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Chrysene d12                 | 95.9       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Naphthalene d8               | 82.9       |            | 50-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Surrogate: Phenanthrene d10             | 87.5       |            | 60-130    | %         | 19-JUL-19 | 23-JUL-19 | R4727407 |
| Nunavut WW Group 1                      |            |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 127        |            | 1.2       | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Carbonate                   |            |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60      |            | 0.60      | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Hydroxide                   |            |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34      |            | 0.34      | mg/L      |           | 22-JUL-19 |          |
| Alkalinity, Total (as CaCO3)            |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 104        |            | 1.0       | mg/L      |           | 19-JUL-19 | R4719748 |
| Ammonia by colour                       |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 0.100      |            | 0.010     | mg/L      |           | 22-JUL-19 | R4721003 |
| Biochemical Oxygen Demand (BOD)         |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | <6.0       |            | 6.0       | mg/L      |           | 19-JUL-19 | R4727945 |
| Carbonaceous BOD                        |            |            |           |           |           |           |          |
| BOD Carbonaceous                        | <6.0       |            | 6.0       | mg/L      |           | 19-JUL-19 | R4727945 |
| Chloride in Water by IC                 |            |            |           |           |           |           |          |
| Chloride (Cl)                           | 130        |            | 0.50      | mg/L      |           | 19-JUL-19 | R4722635 |
| Conductivity                            |            |            |           |           |           |           |          |
| Conductivity                            | 630        |            | 1.0       | umhos/cm  |           | 19-JUL-19 | R4719748 |
| Fecal coliforms, 1:10 dilution by QT97  |            |            |           |           |           |           |          |
| Fecal Coliforms                         | <10        | MBHT       | 10        | MPN/100mL |           | 18-JUL-19 | R4715857 |
| Hardness Calculated                     |            |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 164        | HTC        | 0.20      | mg/L      |           | 30-JUL-19 |          |
| Nitrate in Water by IC                  |            |            |           |           |           |           |          |
| Nitrate (as N)                          | <0.020     |            | 0.020     | mg/L      |           | 19-JUL-19 | R4722635 |
| Nitrate+Nitrite                         |            |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

| Sample Details/Parameters                  | Result    | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|--------------------------------------------|-----------|------------|-----------|----------|-----------|-----------|----------|
| L2312534-4    ARV-6                        |           |            |           |          |           |           |          |
| Sampled By:    CLIENT on 17-JUL-19 @ 09:27 |           |            |           |          |           |           |          |
| Matrix:        WATER                       |           |            |           |          |           |           |          |
| <b>Nitrate+Nitrite</b>                     |           |            |           |          |           |           |          |
| Nitrate and Nitrite as N                   | <0.070    |            | 0.070     | mg/L     |           | 24-JUL-19 |          |
| <b>Nitrite in Water by IC</b>              |           |            |           |          |           |           |          |
| Nitrite (as N)                             | <0.010    |            | 0.010     | mg/L     |           | 19-JUL-19 | R4722635 |
| <b>Oil &amp; Grease - Gravimetric</b>      |           |            |           |          |           |           |          |
| Oil and Grease                             | <5.0      |            | 5.0       | mg/L     |           | 23-JUL-19 | R4720809 |
| <b>Phenol (4AAP)</b>                       |           |            |           |          |           |           |          |
| Phenols (4AAP)                             | 0.0034    |            | 0.0010    | mg/L     |           | 19-JUL-19 | R4719699 |
| <b>Phosphorus, Total</b>                   |           |            |           |          |           |           |          |
| Phosphorus (P)-Total                       | 0.0560    |            | 0.0030    | mg/L     |           | 22-JUL-19 | R4720390 |
| <b>Sulfate in Water by IC</b>              |           |            |           |          |           |           |          |
| Sulfate (SO4)                              | 2.68      |            | 0.30      | mg/L     |           | 19-JUL-19 | R4722635 |
| <b>Total Metals in Water by CRC ICPMS</b>  |           |            |           |          |           |           |          |
| Aluminum (Al)-Total                        | 0.0339    |            | 0.0030    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Arsenic (As)-Total                         | 0.00100   |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cadmium (Cd)-Total                         | 0.0000712 |            | 0.0000050 | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Calcium (Ca)-Total                         | 44.8      |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Chromium (Cr)-Total                        | 0.00044   |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Cobalt (Co)-Total                          | 0.00212   |            | 0.00010   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Copper (Cu)-Total                          | 0.00087   |            | 0.00050   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Iron (Fe)-Total                            | 11.1      |            | 0.010     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Lead (Pb)-Total                            | 0.000082  |            | 0.000050  | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Magnesium (Mg)-Total                       | 12.7      |            | 0.0050    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Manganese (Mn)-Total                       | 2.27      |            | 0.010     | mg/L     | 26-JUL-19 | 29-JUL-19 | R4730604 |
| Nickel (Ni)-Total                          | 0.00141   |            | 0.00050   | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Potassium (K)-Total                        | 6.41      |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Sodium (Na)-Total                          | 43.0      |            | 0.050     | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| Zinc (Zn)-Total                            | 0.0183    |            | 0.0030    | mg/L     | 26-JUL-19 | 26-JUL-19 | R4728936 |
| <b>Total Organic Carbon by Combustion</b>  |           |            |           |          |           |           |          |
| Total Organic Carbon                       | 11.0      |            | 0.50      | mg/L     |           | 22-JUL-19 | R4720568 |
| <b>Total Suspended Solids</b>              |           |            |           |          |           |           |          |
| Total Suspended Solids                     | 30.7      |            | 2.0       | mg/L     |           | 24-JUL-19 | R4724375 |
| <b>pH</b>                                  |           |            |           |          |           |           |          |
| pH                                         | 7.63      |            | 0.10      | pH units |           | 19-JUL-19 | R4719748 |
|                                            |           |            |           |          |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## Reference Information

### Sample Parameter Qualifier Key:

| Qualifier | Description                                                                                                                                                                                |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DLM       | Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).                                                                                     |
| EMPC      | Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.                                                                     |
| HTC       | Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).                                                               |
| MBHT      | The APHA 30 hour hold time was exceeded for microbiological testing. Samples processed within 48 hours from time of sampling may be valid in some cases (refer to Health Canada guidance). |
| MS-B      | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.                                                                                         |

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                        | Matrix | Test Description                   | Method Reference**                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------|-------------------------------------|
| ALK-CO3CO3-CALC-WP                                                                                                                                                                                                                                                                                                   | Water  | Alkalinity, Carbonate              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.                                                           |        |                                    |                                     |
| ALK-HCO3HCO3-CALC-WP                                                                                                                                                                                                                                                                                                 | Water  | Alkalinity, Bicarbonate            | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L                                                           |        |                                    |                                     |
| ALK-OHOH-CALC-WP                                                                                                                                                                                                                                                                                                     | Water  | Alkalinity, Hydroxide              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.                                                              |        |                                    |                                     |
| ALK-TITR-WP                                                                                                                                                                                                                                                                                                          | Water  | Alkalinity, Total (as CaCO3)       | APHA 2320B                          |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically. |        |                                    |                                     |
| BOD-CBOD-WP                                                                                                                                                                                                                                                                                                          | Water  | Carbonaceous BOD                   | APHA 5210 B                         |
| Samples are diluted and seeded, have TCMP added to inhibit nitrogenous demands, and then are incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                               |        |                                    |                                     |
| BOD-WP                                                                                                                                                                                                                                                                                                               | Water  | Biochemical Oxygen Demand (BOD)    | APHA 5210 B                         |
| Samples are diluted and seeded and then incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                                                                                    |        |                                    |                                     |
| BTEXS+F1-HSMS-WP                                                                                                                                                                                                                                                                                                     | Water  | BTX plus F1 by GCMS                | EPA 8260C / EPA 5021A               |
| The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.                                                                                |        |                                    |                                     |
| C-TOC-HTC-WP                                                                                                                                                                                                                                                                                                         | Water  | Total Organic Carbon by Combustion | APHA 5310 B-WP                      |
| Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.                                                             |        |                                    |                                     |
| CL-IC-N-WP                                                                                                                                                                                                                                                                                                           | Water  | Chloride in Water by IC            | EPA 300.1 (mod)                     |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                                                                                                                                           |        |                                    |                                     |
| EC-WP                                                                                                                                                                                                                                                                                                                | Water  | Conductivity                       | APHA 2510B                          |
| Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.                                                                                                                           |        |                                    |                                     |
| F1-F4-CALC-WP                                                                                                                                                                                                                                                                                                        | Water  | CCME Total Hydrocarbons            | CCME CWS-PHC, Pub #1310, Dec 2001-L |
| Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.                                                                                                                                                                        |        |                                    |                                     |
| In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.                                                                              |        |                                    |                                     |
| In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.                                                                                                                                                |        |                                    |                                     |
| In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene,                                   |        |                                    |                                     |

## Reference Information

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Matrix | Test Description                       | Method Reference**       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------|--------------------------|
| Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                        |                          |
| Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                        |                          |
| 1. All extraction and analysis holding times were met.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.                                                                                                                                                                                                                                                                                                                                                                                                   |        |                                        |                          |
| 3. Linearity of gasoline response within 15% throughout the calibration range.                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                        |                          |
| Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                        |                          |
| 1. All extraction and analysis holding times were met.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.                                                                                                                                                                                                                                                                                                                                                                                                                   |        |                                        |                          |
| 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.                                                                                                                                                                                                                                                                                                                                                                                      |        |                                        |                          |
| 4. Linearity of diesel or motor oil response within 15% throughout the calibration range.                                                                                                                                                                                                                                                                                                                                                                                                                          |        |                                        |                          |
| F2-F4-FID-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Water  | CCME PHC F2-F4 in Water                | EPA 3511                 |
| Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.                                                                                                                                                                                                                                                                      |        |                                        |                          |
| FC10-QT97-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Water  | Fecal coliforms, 1:10 dilution by QT97 | APHA 9223B QT97          |
| Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table. |        |                                        |                          |
| HARDNESS-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | Hardness Calculated                    | APHA 2340B               |
| Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.                                                                                                                                                                                                                                                       |        |                                        |                          |
| HG-T-CVAA-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Water  | Mercury Total                          | EPA 1631E (mod)          |
| Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.                                                                                                                                                                                                                                                                                                                                                                                |        |                                        |                          |
| MET-T-CCMS-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Water  | Total Metals in Water by CRC ICPMS     | EPA 200.2/6020B (mod.)   |
| Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.                                                                                                                                                                                                                                                                                                                                                                                                                          |        |                                        |                          |
| Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                        |                          |
| NH3-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Water  | Ammonia by colour                      | APHA 4500 NH3 F          |
| Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| NO2+NO3-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Nitrate+Nitrite                        | CALCULATION              |
| NO2-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Water  | Nitrite in Water by IC                 | EPA 300.1 (mod)          |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                        |                          |
| NO3-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Water  | Nitrate in Water by IC                 | EPA 300.1 (mod)          |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                        |                          |
| OG-GRAV-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Water  | Oil & Grease - Gravimetric             | EPA 1664 (modified)      |
| Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.                                                                                                                                                                                                                                                                                           |        |                                        |                          |
| P-T-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Water  | Phosphorus, Total                      | APHA 4500 P PHOSPHORUS-L |
| This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| PAH,PANH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Water  | Polyaromatic Hydrocarbons (PAHs)       | EPA 3511/8270D (mod)     |
| PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.                                                                                                                                                                                                                                                          |        |                                        |                          |
| PH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Water  | pH                                     | APHA 4500H               |
| The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.                                                                                                                                                                                                                                                                                                                                          |        |                                        |                          |
| PHENOLS-4AAP-WT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Phenol (4AAP)                          | EPA 9066                 |

## Reference Information

### Test Method References:

| ALS Test Code                                                                                                                                                                                            | Matrix | Test Description                    | Method Reference**     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------|------------------------|
| An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically. |        |                                     |                        |
| SO4-IC-N-WP                                                                                                                                                                                              | Water  | Sulfate in Water by IC              | EPA 300.1 (mod)        |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                               |        |                                     |                        |
| SOLIDS-TOTSUS-WP                                                                                                                                                                                         | Water  | Total Suspended Solids              | APHA 2540 D (modified) |
| Total suspended solids in aqueous matrices is determined gravimetrically after drying the residue at 103 105°C.                                                                                          |        |                                     |                        |
| XYLENES-SUM-CALC-WP                                                                                                                                                                                      | Water  | Sum of Xylene Isomer Concentrations | CALCULATED RESULT      |
| Total xylenes represents the sum of o-xylene and m&p-xylene.                                                                                                                                             |        |                                     |                        |

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location                            |
|----------------------------|------------------------------------------------|
| WP                         | ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA |
| WT                         | ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA  |

### Chain of Custody Numbers:

### GLOSSARY OF REPORT TERMS

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*

*mg/kg - milligrams per kilogram based on dry weight of sample*

*mg/kg wwt - milligrams per kilogram based on wet weight of sample*

*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*

*mg/L - unit of concentration based on volume, parts per million.*

*< - Less than.*

*D.L. - The reporting limit.*

*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*

*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*

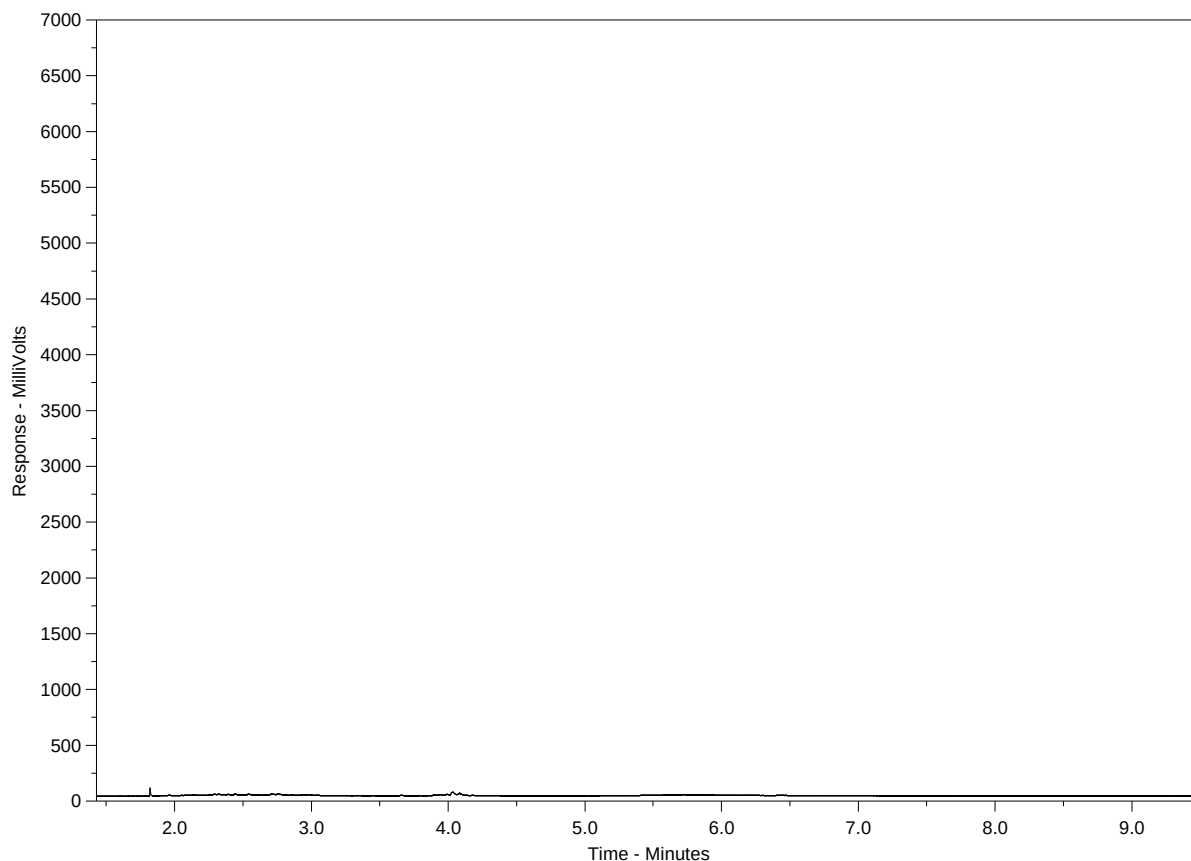
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*



# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2312534-1  
Client Sample ID: ARV-2



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

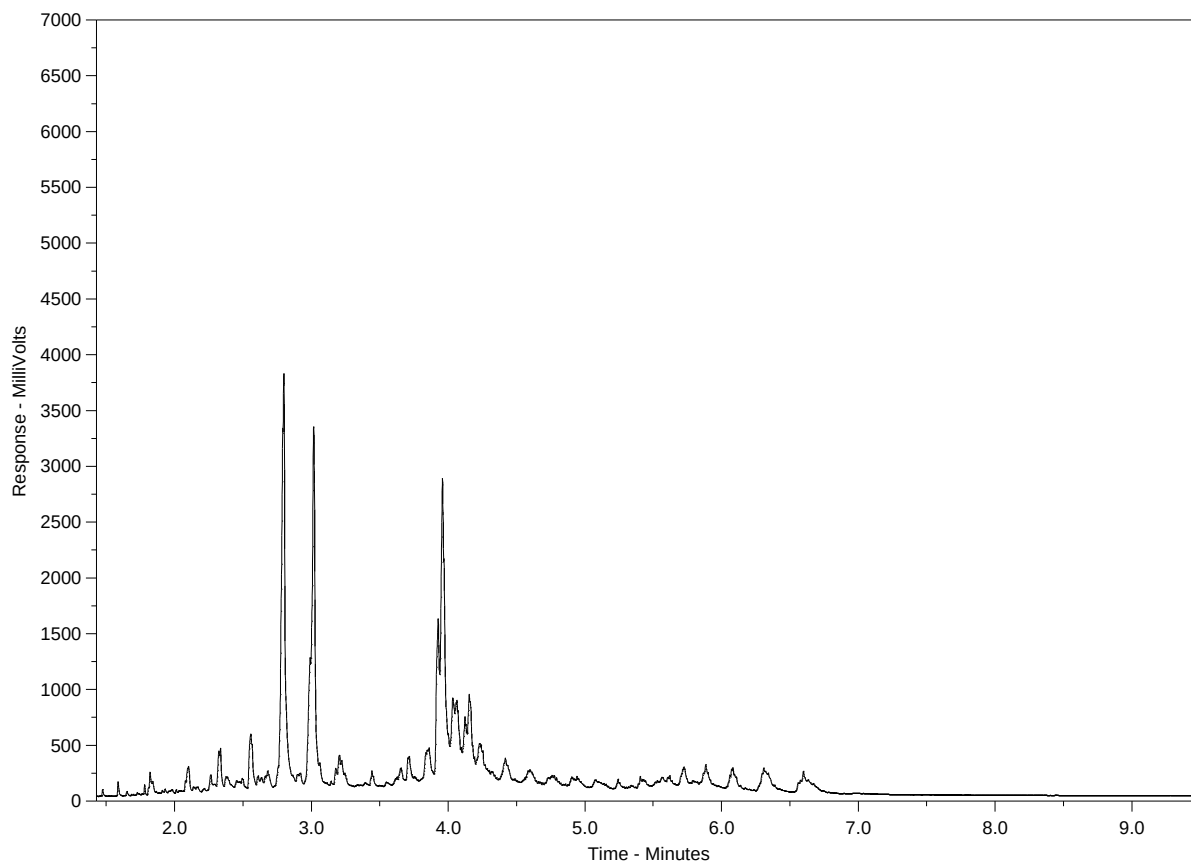
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2312534-2  
Client Sample ID: ARV-4



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

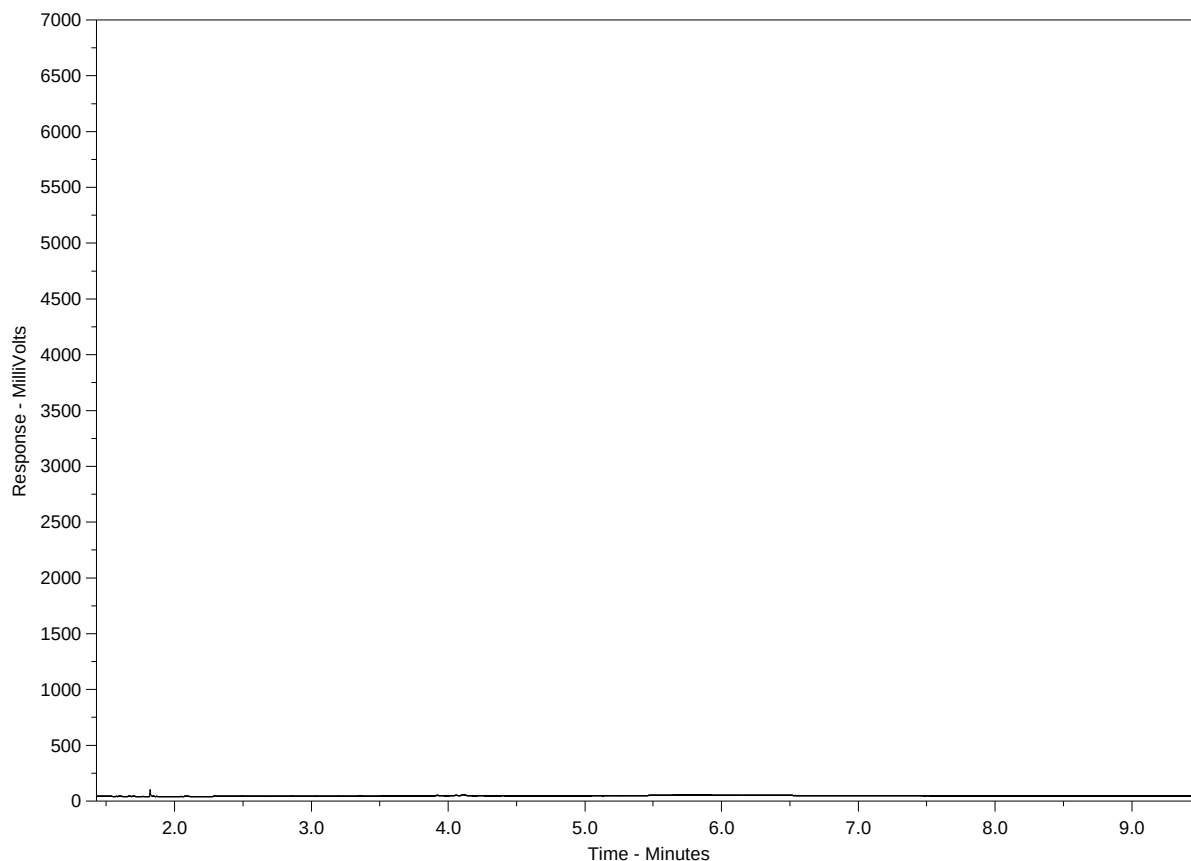
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2312534-3  
Client Sample ID: ARV-5



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | ← F3 →                            |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

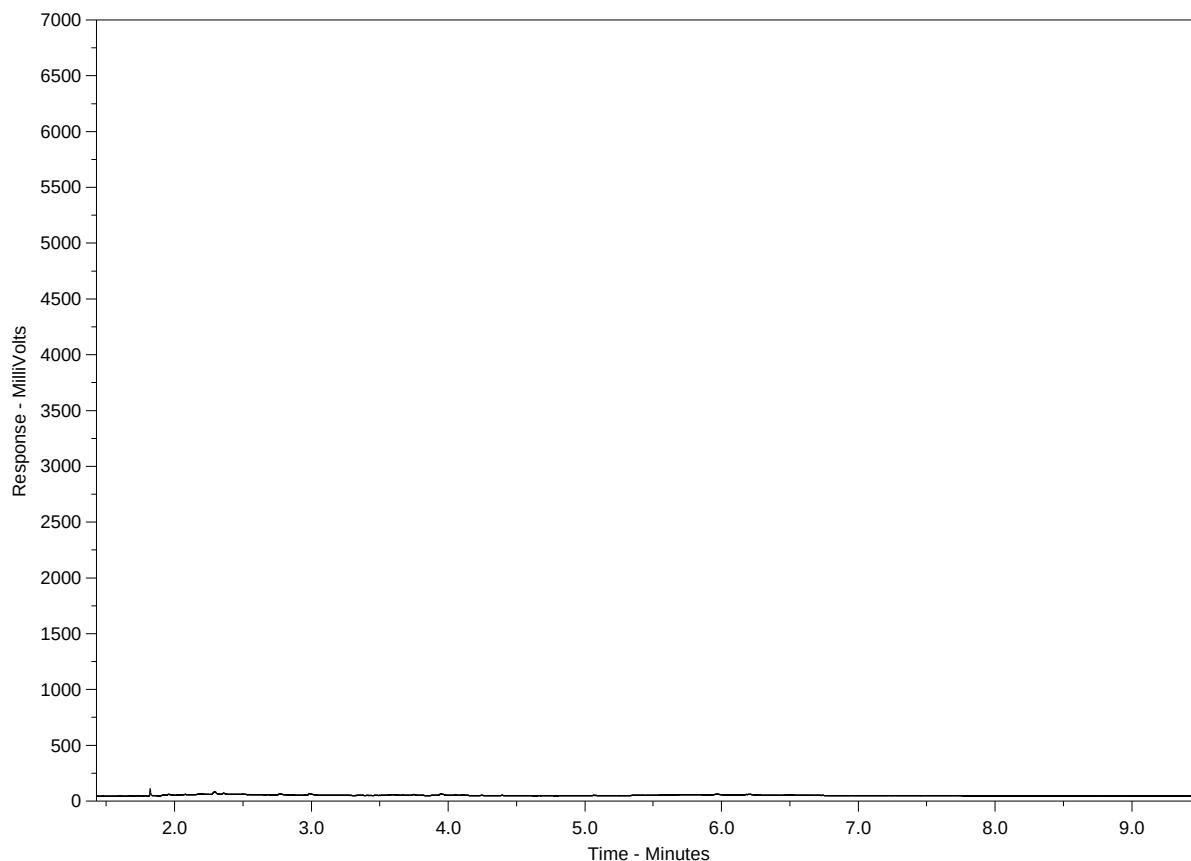
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2312534-4  
Client Sample ID: ARV-6



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).





Hamlet of Arviat  
ATTN: STEVE ENGLAND  
PO Box 150  
Arviat NU X0C 0E0

Date Received: 29-AUG-19  
Report Date: 16-SEP-19 13:52 (MT)  
Version: FINAL

Client Phone: 867-857-2841

## Certificate of Analysis

Lab Work Order #: L2338359  
Project P.O. #: NOT SUBMITTED  
Job Reference: HAMLET OF ARVIAT  
C of C Numbers:  
Legal Site Desc:

Craig Riddell, B.Sc.Ag  
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721  
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                                            | Result     | Qualifier* | D.L.      | Units | Extracted | Analyzed  | Batch    |
|----------------------------------------------------------------------|------------|------------|-----------|-------|-----------|-----------|----------|
| L2338359-1 ARV-2                                                     |            |            |           |       |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:35                              |            |            |           |       |           |           |          |
| Matrix: WATER                                                        |            |            |           |       |           |           |          |
| BTEX plus F1-F4                                                      |            |            |           |       |           |           |          |
| BTX plus F1 by GCMS                                                  |            |            |           |       |           |           |          |
| Benzene                                                              | <0.00050   | RRR        | 0.00050   | mg/L  |           | 04-SEP-19 | R4794128 |
| Toluene                                                              | <0.0010    | RRR        | 0.0010    | mg/L  |           | 04-SEP-19 | R4794128 |
| Ethyl benzene                                                        | <0.00050   | RRR        | 0.00050   | mg/L  |           | 04-SEP-19 | R4794128 |
| o-Xylene                                                             | <0.00050   | RRR        | 0.00050   | mg/L  |           | 04-SEP-19 | R4794128 |
| m+p-Xylenes                                                          | 0.00068    | RRR        | 0.00040   | mg/L  |           | 04-SEP-19 | R4794128 |
| F1 (C6-C10)                                                          | <0.10      | RRR        | 0.10      | mg/L  |           | 04-SEP-19 | R4794128 |
| Surrogate: 4-Bromofluorobenzene (SS)                                 | 87.0       |            | 70-130    | %     |           | 04-SEP-19 | R4794128 |
| Note: Sample submitted with headspace.<br>Results may be biased low. |            |            |           |       |           |           |          |
| CCME PHC F2-F4 in Water                                              |            |            |           |       |           |           |          |
| F2 (C10-C16)                                                         | 0.16       |            | 0.10      | mg/L  | 30-AUG-19 | 30-AUG-19 | R4778053 |
| F3 (C16-C34)                                                         | <0.25      |            | 0.25      | mg/L  | 30-AUG-19 | 30-AUG-19 | R4778053 |
| F4 (C34-C50)                                                         | <0.25      |            | 0.25      | mg/L  | 30-AUG-19 | 30-AUG-19 | R4778053 |
| Surrogate: 2-Bromobenzotrifluoride                                   | 91.5       |            | 60-140    | %     | 30-AUG-19 | 30-AUG-19 | R4778053 |
| CCME Total Hydrocarbons                                              |            |            |           |       |           |           |          |
| F1-BTEX                                                              | <0.10      |            | 0.10      | mg/L  |           | 11-SEP-19 |          |
| F2-Naphth                                                            | 0.16       |            | 0.10      | mg/L  |           | 11-SEP-19 |          |
| F3-PAH                                                               | <0.25      |            | 0.25      | mg/L  |           | 11-SEP-19 |          |
| Total Hydrocarbons (C6-C50)                                          | <0.38      |            | 0.38      | mg/L  |           | 11-SEP-19 |          |
| Sum of Xylene Isomer Concentrations                                  |            |            |           |       |           |           |          |
| Xylenes (Total)                                                      | 0.00068    |            | 0.00064   | mg/L  |           | 11-SEP-19 |          |
| Polyaromatic Hydrocarbons (PAHs)                                     |            |            |           |       |           |           |          |
| 1-Methyl Naphthalene                                                 | 0.000040   |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| 2-Methyl Naphthalene                                                 | 0.000047   |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthene                                                         | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthylene                                                       | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Anthracene                                                           | <0.000010  |            | 0.000010  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acridine                                                             | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(a)anthracene                                                   | <0.000010  |            | 0.000010  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(a)pyrene                                                       | <0.0000050 |            | 0.0000050 | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(b&j)fluoranthene                                               | <0.000010  |            | 0.000010  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(g,h,i)perylene                                                 | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(k)fluoranthene                                                 | <0.000010  |            | 0.000010  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Chrysene                                                             | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Dibenzo(a,h)anthracene                                               | <0.0000050 |            | 0.0000050 | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluoranthene                                                         | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluorene                                                             | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Indeno(1,2,3-cd)pyrene                                               | <0.000010  |            | 0.000010  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Naphthalene                                                          | 0.000057   | EMPC       | 0.000050  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Phenanthrene                                                         | <0.000050  |            | 0.000050  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Pyrene                                                               | <0.000010  |            | 0.000010  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Quinoline                                                            | <0.000020  |            | 0.000020  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| B(a)P Total Potency Equivalent                                       | <0.000030  |            | 0.000030  | mg/L  | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acenaphthene d10                                          | 90.4       |            | 60-130    | %     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acridine d9                                               | 105.2      |            | 60-130    | %     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Chrysene d12                                              | 98.8       |            | 60-130    | %     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Naphthalene d8                                            | 99.3       |            | 50-130    | %     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Phenanthrene d10                                          | 105.2      |            | 60-130    | %     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Nunavut WW Group 1                                                   |            |            |           |       |           |           |          |
| Alkalinity, Bicarbonate                                              |            |            |           |       |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

| Sample Details/Parameters               | Result    | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|-----------|------------|-----------|-----------|-----------|-----------|----------|
| L2338359-1 ARV-2                        |           |            |           |           |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:35 |           |            |           |           |           |           |          |
| Matrix: WATER                           |           |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |           |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 699       |            | 1.2       | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Carbonate                   |           |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60     |            | 0.60      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Hydroxide                   |           |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34     |            | 0.34      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Total (as CaCO3)            |           |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 573       |            | 1.0       | mg/L      |           | 30-AUG-19 | R4780896 |
| Ammonia by colour                       |           |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 0.484     |            | 0.010     | mg/L      |           | 05-SEP-19 | R4786151 |
| Biochemical Oxygen Demand (BOD)         |           |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | 13.6      |            | 6.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Carbonaceous BOD                        |           |            |           |           |           |           |          |
| BOD Carbonaceous                        | 9.6       |            | 2.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Chloride in Water by IC                 |           |            |           |           |           |           |          |
| Chloride (Cl)                           | 317       |            | 0.50      | mg/L      |           | 29-AUG-19 | R4777992 |
| Conductivity                            |           |            |           |           |           |           |          |
| Conductivity                            | 2910      |            | 1.0       | umhos/cm  |           | 30-AUG-19 | R4780896 |
| Fecal coliforms, 1:10 dilution by QT97  |           |            |           |           |           |           |          |
| Fecal Coliforms                         | 360       | PEHR       | 10        | MPN/100mL |           | 29-AUG-19 | R4778251 |
| Hardness Calculated                     |           |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 1030      | HTC        | 0.20      | mg/L      |           | 16-SEP-19 |          |
| Mercury Total                           |           |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | 0.0000150 |            | 0.0000050 | mg/L      | 29-AUG-19 | 09-SEP-19 | R4792194 |
| Nitrate in Water by IC                  |           |            |           |           |           |           |          |
| Nitrate (as N)                          | <0.020    |            | 0.020     | mg/L      |           | 29-AUG-19 | R4777992 |
| Nitrate+Nitrite                         |           |            |           |           |           |           |          |
| Nitrate and Nitrite as N                | <0.070    |            | 0.070     | mg/L      |           | 04-SEP-19 |          |
| Nitrite in Water by IC                  |           |            |           |           |           |           |          |
| Nitrite (as N)                          | <0.010    |            | 0.010     | mg/L      |           | 29-AUG-19 | R4777992 |
| Oil & Grease - Gravimetric              |           |            |           |           |           |           |          |
| Oil and Grease                          | <5.0      |            | 5.0       | mg/L      |           | 05-SEP-19 | R4783734 |
| Phenol (4AAP)                           |           |            |           |           |           |           |          |
| Phenols (4AAP)                          | 0.0367    |            | 0.0010    | mg/L      |           | 03-SEP-19 | R4782475 |
| Phosphorus, Total                       |           |            |           |           |           |           |          |
| Phosphorus (P)-Total                    | 0.587     |            | 0.0030    | mg/L      |           | 03-SEP-19 | R4781470 |
| Sulfate in Water by IC                  |           |            |           |           |           |           |          |
| Sulfate (SO4)                           | 669       |            | 0.30      | mg/L      |           | 29-AUG-19 | R4777992 |
| Total Metals in Water by CRC ICPMS      |           |            |           |           |           |           |          |
| Aluminum (Al)-Total                     | 0.0193    |            | 0.0030    | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Arsenic (As)-Total                      | 0.00473   |            | 0.00010   | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Cadmium (Cd)-Total                      | 0.000223  |            | 0.0000050 | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Calcium (Ca)-Total                      | 312       |            | 0.050     | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Chromium (Cr)-Total                     | 0.00096   |            | 0.00010   | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Cobalt (Co)-Total                       | 0.00138   |            | 0.00010   | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Copper (Cu)-Total                       | 0.171     |            | 0.00050   | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Iron (Fe)-Total                         | 1.75      |            | 0.010     | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Lead (Pb)-Total                         | 0.00510   |            | 0.000050  | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Magnesium (Mg)-Total                    | 60.1      |            | 0.0050    | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Manganese (Mn)-Total                    | 1.29      |            | 0.0010    | mg/L      | 05-SEP-19 | 13-SEP-19 | R4808849 |
| Nickel (Ni)-Total                       | 0.0102    |            | 0.00050   | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Potassium (K)-Total                     | 57.9      |            | 0.050     | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Sodium (Na)-Total                       | 238       |            | 0.050     | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.



# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                                            |       | Result    | Qualifier* | D.L.     | Units    | Extracted | Analyzed  | Batch    |
|----------------------------------------------------------------------|-------|-----------|------------|----------|----------|-----------|-----------|----------|
| L2338359-1                                                           | ARV-2 |           |            |          |          |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:35                              |       |           |            |          |          |           |           |          |
| Matrix: WATER                                                        |       |           |            |          |          |           |           |          |
| Total Metals in Water by CRC ICPMS                                   |       |           |            |          |          |           |           |          |
| Zinc (Zn)-Total                                                      |       | 0.184     |            | 0.0030   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Total Organic Carbon by Combustion                                   |       |           |            |          |          |           |           |          |
| Total Organic Carbon                                                 |       | 43.9      |            | 0.50     | mg/L     |           | 06-SEP-19 | R4788854 |
| Total Suspended Solids                                               |       |           |            |          |          |           |           |          |
| Total Suspended Solids                                               |       | 11.9      |            | 2.0      | mg/L     |           | 30-AUG-19 | R4781190 |
| pH                                                                   |       |           |            |          |          |           |           |          |
| pH                                                                   |       | 8.04      |            | 0.10     | pH units |           | 30-AUG-19 | R4780896 |
| L2338359-2                                                           | ARV-4 |           |            |          |          |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:15                              |       |           |            |          |          |           |           |          |
| Matrix: WATER                                                        |       |           |            |          |          |           |           |          |
| BTEX plus F1-F4                                                      |       |           |            |          |          |           |           |          |
| BTX plus F1 by GCMS                                                  |       |           |            |          |          |           |           |          |
| Benzene                                                              |       | <0.00050  | RRR        | 0.00050  | mg/L     |           | 04-SEP-19 | R4794128 |
| Toluene                                                              |       | <0.0010   | RRR        | 0.0010   | mg/L     |           | 04-SEP-19 | R4794128 |
| Ethyl benzene                                                        |       | <0.00050  | RRR        | 0.00050  | mg/L     |           | 04-SEP-19 | R4794128 |
| o-Xylene                                                             |       | <0.00050  | RRR        | 0.00050  | mg/L     |           | 04-SEP-19 | R4794128 |
| m+p-Xylenes                                                          |       | <0.00040  | RRR        | 0.00040  | mg/L     |           | 04-SEP-19 | R4794128 |
| F1 (C6-C10)                                                          |       | <0.10     | RRR        | 0.10     | mg/L     |           | 04-SEP-19 | R4794128 |
| Surrogate: 4-Bromofluorobenzene (SS)                                 |       | 85.0      |            | 70-130   | %        |           | 04-SEP-19 | R4794128 |
| Note: Sample submitted with headspace.<br>Results may be biased low. |       |           |            |          |          |           |           |          |
| CCME PHC F2-F4 in Water                                              |       |           |            |          |          |           |           |          |
| F2 (C10-C16)                                                         |       | <0.10     |            | 0.10     | mg/L     | 30-AUG-19 | 30-AUG-19 | R4778053 |
| F3 (C16-C34)                                                         |       | 0.95      |            | 0.25     | mg/L     | 30-AUG-19 | 30-AUG-19 | R4778053 |
| F4 (C34-C50)                                                         |       | 0.28      |            | 0.25     | mg/L     | 30-AUG-19 | 30-AUG-19 | R4778053 |
| Surrogate: 2-Bromobenzotrifluoride                                   |       | 98.2      |            | 60-140   | %        | 30-AUG-19 | 30-AUG-19 | R4778053 |
| CCME Total Hydrocarbons                                              |       |           |            |          |          |           |           |          |
| F1-BTEX                                                              |       | <0.10     |            | 0.10     | mg/L     |           | 11-SEP-19 |          |
| F2-Naphth                                                            |       | <0.10     |            | 0.10     | mg/L     |           | 11-SEP-19 |          |
| F3-PAH                                                               |       | 0.95      |            | 0.25     | mg/L     |           | 11-SEP-19 |          |
| Total Hydrocarbons (C6-C50)                                          |       | 1.23      |            | 0.38     | mg/L     |           | 11-SEP-19 |          |
| Sum of Xylene Isomer Concentrations                                  |       |           |            |          |          |           |           |          |
| Xylenes (Total)                                                      |       | <0.00064  |            | 0.00064  | mg/L     |           | 11-SEP-19 |          |
| Polyaromatic Hydrocarbons (PAHs)                                     |       |           |            |          |          |           |           |          |
| 1-Methyl Naphthalene                                                 |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| 2-Methyl Naphthalene                                                 |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthene                                                         |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthylene                                                       |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Anthracene                                                           |       | <0.000020 | DLM        | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acridine                                                             |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(a)anthracene                                                   |       | <0.000020 | DLM        | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(a)pyrene                                                       |       | <0.000010 | DLM        | 0.000010 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(b&j)fluoranthene                                               |       | <0.000020 | DLM        | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(g,h,i)perylene                                                 |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(k)fluoranthene                                                 |       | <0.000020 | DLM        | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Chrysene                                                             |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Dibenzo(a,h)anthracene                                               |       | <0.000010 | DLM        | 0.000010 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluoranthene                                                         |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluorene                                                             |       | <0.000040 | DLM        | 0.000040 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Indeno(1,2,3-cd)pyrene                                               |       | <0.000020 | DLM        | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Naphthalene                                                          |       | <0.00010  | DLM        | 0.00010  | mg/L     | 31-AUG-19 | 06-SEP-19 | R        |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters               | Result    | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|-----------|------------|-----------|-----------|-----------|-----------|----------|
| L2338359-2 ARV-4                        |           |            |           |           |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:15 |           |            |           |           |           |           |          |
| Matrix: WATER                           |           |            |           |           |           |           |          |
| Polyaromatic Hydrocarbons (PAHs)        |           |            |           |           |           |           |          |
| Phenanthrene                            | <0.00010  | DLM        | 0.00010   | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Pyrene                                  | <0.000020 | DLM        | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Quinoline                               | <0.00010  | DLM        | 0.00010   | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| B(a)P Total Potency Equivalent          | <0.000030 |            | 0.000030  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acenaphthene d10             | 66.7      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acridine d9                  | 69.9      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Chrysene d12                 | 78.4      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Naphthalene d8               | 67.2      |            | 50-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Phenanthrene d10             | 75.4      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Nunavut WW Group 1                      |           |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |           |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 208       |            | 1.2       | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Carbonate                   |           |            |           |           |           |           |          |
| Carbonate (CO3)                         | 2.76      |            | 0.60      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Hydroxide                   |           |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34     |            | 0.34      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Total (as CaCO3)            |           |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 175       |            | 1.0       | mg/L      |           | 30-AUG-19 | R4780896 |
| Ammonia by colour                       |           |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 28.0      |            | 1.0       | mg/L      |           | 09-SEP-19 | R4795431 |
| Biochemical Oxygen Demand (BOD)         |           |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | 27.1      |            | 6.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Carbonaceous BOD                        |           |            |           |           |           |           |          |
| BOD Carbonaceous                        | 18.2      |            | 6.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Chloride in Water by IC                 |           |            |           |           |           |           |          |
| Chloride (Cl)                           | 84.9      |            | 0.50      | mg/L      |           | 29-AUG-19 | R4777992 |
| Conductivity                            |           |            |           |           |           |           |          |
| Conductivity                            | 647       |            | 1.0       | umhos/cm  |           | 30-AUG-19 | R4780896 |
| Fecal coliforms, 1:10 dilution by QT97  |           |            |           |           |           |           |          |
| Fecal Coliforms                         | 5790      | PEHR       | 10        | MPN/100mL |           | 29-AUG-19 | R4778251 |
| Hardness Calculated                     |           |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 54.6      | HTC        | 0.20      | mg/L      |           | 06-SEP-19 |          |
| Mercury Total                           |           |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | 0.0000050 |            | 0.0000050 | mg/L      | 29-AUG-19 | 09-SEP-19 | R4792194 |
| Nitrate in Water by IC                  |           |            |           |           |           |           |          |
| Nitrate (as N)                          | 0.372     |            | 0.020     | mg/L      |           | 29-AUG-19 | R4777992 |
| Nitrate+Nitrite                         |           |            |           |           |           |           |          |
| Nitrate and Nitrite as N                | 0.548     |            | 0.070     | mg/L      |           | 04-SEP-19 |          |
| Nitrite in Water by IC                  |           |            |           |           |           |           |          |
| Nitrite (as N)                          | 0.176     |            | 0.010     | mg/L      |           | 29-AUG-19 | R4777992 |
| Oil & Grease - Gravimetric              |           |            |           |           |           |           |          |
| Oil and Grease                          | <5.0      |            | 5.0       | mg/L      |           | 05-SEP-19 | R4783734 |
| Phenol (4AAP)                           |           |            |           |           |           |           |          |
| Phenols (4AAP)                          | <0.010    | DLM        | 0.010     | mg/L      |           | 30-AUG-19 | R4781839 |
| Phosphorus, Total                       |           |            |           |           |           |           |          |
| Phosphorus (P)-Total                    | 6.18      |            | 0.030     | mg/L      |           | 03-SEP-19 | R4781470 |
| Sulfate in Water by IC                  |           |            |           |           |           |           |          |
| Sulfate (SO4)                           | 10.2      |            | 0.30      | mg/L      |           | 29-AUG-19 | R4777992 |
| Total Metals in Water by CRC ICPMS      |           |            |           |           |           |           |          |
| Aluminum (Al)-Total                     | 0.119     |            | 0.0030    | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Arsenic (As)-Total                      | 0.00585   |            | 0.00010   | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Cadmium (Cd)-Total                      | 0.0000653 |            | 0.0000050 | mg/L      | 05-SEP-19 | 05-SEP-19 | R4784989 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                  |       | Result    | Qualifier* | D.L.     | Units    | Extracted | Analyzed  | Batch    |
|--------------------------------------------|-------|-----------|------------|----------|----------|-----------|-----------|----------|
| L2338359-2                                 | ARV-4 |           |            |          |          |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:15    |       |           |            |          |          |           |           |          |
| Matrix: WATER                              |       |           |            |          |          |           |           |          |
| <b>Total Metals in Water by CRC ICPMS</b>  |       |           |            |          |          |           |           |          |
| Calcium (Ca)-Total                         |       | 10.8      |            | 0.050    | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Chromium (Cr)-Total                        |       | 0.00111   |            | 0.00010  | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Cobalt (Co)-Total                          |       | 0.00123   |            | 0.00010  | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Copper (Cu)-Total                          |       | 0.0368    |            | 0.00050  | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Iron (Fe)-Total                            |       | 2.09      |            | 0.010    | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Lead (Pb)-Total                            |       | 0.00163   |            | 0.000050 | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Magnesium (Mg)-Total                       |       | 6.73      |            | 0.0050   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Manganese (Mn)-Total                       |       | 0.182     |            | 0.00010  | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Nickel (Ni)-Total                          |       | 0.00557   |            | 0.00050  | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Potassium (K)-Total                        |       | 18.6      |            | 0.050    | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Sodium (Na)-Total                          |       | 67.6      |            | 0.050    | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Zinc (Zn)-Total                            |       | 0.0233    |            | 0.0030   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| <b>Total Organic Carbon by Combustion</b>  |       |           |            |          |          |           |           |          |
| Total Organic Carbon                       |       | 59.8      |            | 2.5      | mg/L     |           | 06-SEP-19 | R4788854 |
| <b>Total Suspended Solids</b>              |       |           |            |          |          |           |           |          |
| Total Suspended Solids                     |       | 138       |            | 2.7      | mg/L     |           | 30-AUG-19 | R4781190 |
| <b>pH</b>                                  |       |           |            |          |          |           |           |          |
| pH                                         |       | 8.34      |            | 0.10     | pH units |           | 30-AUG-19 | R4780896 |
| L2338359-3                                 | ARV-5 |           |            |          |          |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:00    |       |           |            |          |          |           |           |          |
| Matrix: WATER                              |       |           |            |          |          |           |           |          |
| <b>BTEX plus F1-F4</b>                     |       |           |            |          |          |           |           |          |
| <b>BTX plus F1 by GCMS</b>                 |       |           |            |          |          |           |           |          |
| Benzene                                    |       | <0.00050  |            | 0.00050  | mg/L     |           | 04-SEP-19 | R4794128 |
| Toluene                                    |       | <0.0010   |            | 0.0010   | mg/L     |           | 04-SEP-19 | R4794128 |
| Ethyl benzene                              |       | <0.00050  |            | 0.00050  | mg/L     |           | 04-SEP-19 | R4794128 |
| o-Xylene                                   |       | <0.00050  |            | 0.00050  | mg/L     |           | 04-SEP-19 | R4794128 |
| m+p-Xylenes                                |       | <0.00040  |            | 0.00040  | mg/L     |           | 04-SEP-19 | R4794128 |
| F1 (C6-C10)                                |       | <0.10     |            | 0.10     | mg/L     |           | 04-SEP-19 | R4794128 |
| Surrogate: 4-Bromofluorobenzene (SS)       |       | 87.0      |            | 70-130   | %        |           | 04-SEP-19 | R4794128 |
| <b>CCME PHC F2-F4 in Water</b>             |       |           |            |          |          |           |           |          |
| F2 (C10-C16)                               |       | <0.10     |            | 0.10     | mg/L     | 30-AUG-19 | 30-AUG-19 | R4778053 |
| F3 (C16-C34)                               |       | <0.25     |            | 0.25     | mg/L     | 30-AUG-19 | 30-AUG-19 | R4778053 |
| F4 (C34-C50)                               |       | <0.25     |            | 0.25     | mg/L     | 30-AUG-19 | 30-AUG-19 | R4778053 |
| Surrogate: 2-Bromobenzotrifluoride         |       | 95.2      |            | 60-140   | %        | 30-AUG-19 | 30-AUG-19 | R4778053 |
| <b>CCME Total Hydrocarbons</b>             |       |           |            |          |          |           |           |          |
| F1-BTEX                                    |       | <0.10     |            | 0.10     | mg/L     |           | 11-SEP-19 |          |
| F2-Naphth                                  |       | <0.10     |            | 0.10     | mg/L     |           | 11-SEP-19 |          |
| F3-PAH                                     |       | <0.25     |            | 0.25     | mg/L     |           | 11-SEP-19 |          |
| Total Hydrocarbons (C6-C50)                |       | <0.38     |            | 0.38     | mg/L     |           | 11-SEP-19 |          |
| <b>Sum of Xylene Isomer Concentrations</b> |       |           |            |          |          |           |           |          |
| Xylenes (Total)                            |       | <0.00064  |            | 0.00064  | mg/L     |           | 11-SEP-19 |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>    |       |           |            |          |          |           |           |          |
| 1-Methyl Naphthalene                       |       | <0.000020 |            | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| 2-Methyl Naphthalene                       |       | <0.000020 |            | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthene                               |       | <0.000020 |            | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthylene                             |       | <0.000020 |            | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Anthracene                                 |       | <0.000010 |            | 0.000010 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acridine                                   |       | <0.000020 |            | 0.000020 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(a)anthracene                         |       | <0.000010 |            | 0.000010 | mg/L     | 31-AUG-19 | 06-SEP-19 | R4789969 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2338359-3 ARV-5                        |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 09:00 |            |            |           |           |           |           |          |
| Matrix: WATER                           |            |            |           |           |           |           |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |           |           |           |          |
| Benzo(a)pyrene                          | <0.0000050 |            | 0.0000050 | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(b&j)fluoranthene                  | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(g,h,i)perylene                    | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acenaphthene d10             | 94.8       |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acridine d9                  | 100.7      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Chrysene d12                 | 105.8      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Naphthalene d8               | 95.5       |            | 50-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Phenanthrene d10             | 104.2      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Nunavut WW Group 1                      |            |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 78.2       |            | 1.2       | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Carbonate                   |            |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60      |            | 0.60      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Hydroxide                   |            |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34      |            | 0.34      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Total (as CaCO3)            |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 64.1       |            | 1.0       | mg/L      |           | 30-AUG-19 | R4780896 |
| Ammonia by colour                       |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 0.014      |            | 0.010     | mg/L      |           | 05-SEP-19 | R4786151 |
| Biochemical Oxygen Demand (BOD)         |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | <2.0       |            | 2.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Carbonaceous BOD                        |            |            |           |           |           |           |          |
| BOD Carbonaceous                        | <2.0       |            | 2.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Chloride in Water by IC                 |            |            |           |           |           |           |          |
| Chloride (Cl)                           | 173        |            | 0.50      | mg/L      |           | 29-AUG-19 | R4777992 |
| Conductivity                            |            |            |           |           |           |           |          |
| Conductivity                            | 699        |            | 1.0       | umhos/cm  |           | 30-AUG-19 | R4780896 |
| Fecal coliforms, 1:10 dilution by QT97  |            |            |           |           |           |           |          |
| Fecal Coliforms                         | 30         | PEHR       | 10        | MPN/100mL |           | 29-AUG-19 | R4778251 |
| Hardness Calculated                     |            |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 112        | HTC        | 0.20      | mg/L      |           | 06-SEP-19 |          |
| Mercury Total                           |            |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | <0.0000050 |            | 0.0000050 | mg/L      | 29-AUG-19 | 09-SEP-19 | R4792194 |
| Nitrate in Water by IC                  |            |            |           |           |           |           |          |
| Nitrate (as N)                          | <0.020     |            | 0.020     | mg/L      |           | 29-AUG-19 | R4777992 |
| Nitrate+Nitrite                         |            |            |           |           |           |           |          |
| Nitrate and Nitrite as N                | <0.070     |            | 0.070     | mg/L      |           | 04-SEP-19 |          |
| Nitrite in Water by IC                  |            |            |           |           |           |           |          |
| Nitrite (as N)                          | <0.010     |            | 0.010     | mg/L      |           | 29-AUG-19 | R4777992 |
| Oil & Grease - Gravimetric              |            |            |           |           |           |           |          |
| Oil and Grease                          | <5.0       |            | 5.0       | mg/L      |           | 05-SEP-19 | R4783734 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                                                    | Result    | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|------------------------------------------------------------------------------|-----------|------------|-----------|----------|-----------|-----------|----------|
| L2338359-3 ARV-5<br>Sampled By: CLIENT on 26-AUG-19 @ 09:00<br>Matrix: WATER |           |            |           |          |           |           |          |
| Phenol (4AAP)<br>Phenols (4AAP)                                              | <0.0010   |            | 0.0010    | mg/L     |           | 30-AUG-19 | R4781839 |
| Phosphorus, Total<br>Phosphorus (P)-Total                                    | 0.0179    |            | 0.0030    | mg/L     |           | 03-SEP-19 | R4781470 |
| Sulfate in Water by IC<br>Sulfate (SO4)                                      | 12.3      |            | 0.30      | mg/L     |           | 29-AUG-19 | R4777992 |
| Total Metals in Water by CRC ICPMS                                           |           |            |           |          |           |           |          |
| Aluminum (Al)-Total                                                          | 0.0126    |            | 0.0030    | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Arsenic (As)-Total                                                           | 0.00038   |            | 0.00010   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Cadmium (Cd)-Total                                                           | 0.0000075 |            | 0.0000050 | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Calcium (Ca)-Total                                                           | 22.2      |            | 0.050     | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Chromium (Cr)-Total                                                          | 0.00026   |            | 0.00010   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Cobalt (Co)-Total                                                            | <0.00010  |            | 0.00010   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Copper (Cu)-Total                                                            | 0.00089   |            | 0.00050   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Iron (Fe)-Total                                                              | 0.464     |            | 0.010     | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Lead (Pb)-Total                                                              | 0.000057  |            | 0.000050  | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Magnesium (Mg)-Total                                                         | 13.7      |            | 0.0050    | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Manganese (Mn)-Total                                                         | 0.0274    |            | 0.00010   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Nickel (Ni)-Total                                                            | 0.00056   |            | 0.00050   | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Potassium (K)-Total                                                          | 5.77      |            | 0.050     | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Sodium (Na)-Total                                                            | 92.8      |            | 0.050     | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Zinc (Zn)-Total                                                              | 0.0045    |            | 0.0030    | mg/L     | 05-SEP-19 | 05-SEP-19 | R4784989 |
| Total Organic Carbon by Combustion<br>Total Organic Carbon                   | 8.04      |            | 0.50      | mg/L     |           | 06-SEP-19 | R4788854 |
| Total Suspended Solids<br>Total Suspended Solids                             | <2.0      |            | 2.0       | mg/L     |           | 30-AUG-19 | R4781190 |
| pH<br>pH                                                                     | 7.79      |            | 0.10      | pH units |           | 30-AUG-19 | R4780896 |
| L2338359-4 ARV-6<br>Sampled By: CLIENT on 26-AUG-19 @ 08:40<br>Matrix: WATER |           |            |           |          |           |           |          |
| BTEX plus F1-F4                                                              |           |            |           |          |           |           |          |
| BTX plus F1 by GCMS                                                          |           |            |           |          |           |           |          |
| Benzene                                                                      | <0.00050  |            | 0.00050   | mg/L     |           | 04-SEP-19 | R4794128 |
| Toluene                                                                      | 0.0019    |            | 0.0010    | mg/L     |           | 04-SEP-19 | R4794128 |
| Ethyl benzene                                                                | <0.00050  |            | 0.00050   | mg/L     |           | 04-SEP-19 | R4794128 |
| o-Xylene                                                                     | <0.00050  |            | 0.00050   | mg/L     |           | 04-SEP-19 | R4794128 |
| m+p-Xylenes                                                                  | <0.00040  |            | 0.00040   | mg/L     |           | 04-SEP-19 | R4794128 |
| F1 (C6-C10)                                                                  | <0.10     |            | 0.10      | mg/L     |           | 04-SEP-19 | R4794128 |
| Surrogate: 4-Bromofluorobenzene (SS)                                         | 88.0      |            | 70-130    | %        |           | 04-SEP-19 | R4794128 |
| CCME PHC F2-F4 in Water                                                      |           |            |           |          |           |           |          |
| F2 (C10-C16)                                                                 | <0.10     |            | 0.10      | mg/L     | 30-AUG-19 | 05-SEP-19 | R4778053 |
| F3 (C16-C34)                                                                 | <0.25     |            | 0.25      | mg/L     | 30-AUG-19 | 05-SEP-19 | R4778053 |
| F4 (C34-C50)                                                                 | <0.25     |            | 0.25      | mg/L     | 30-AUG-19 | 05-SEP-19 | R4778053 |
| Surrogate: 2-Bromobenzotrifluoride                                           | 96.9      |            | 60-140    | %        | 30-AUG-19 | 05-SEP-19 | R4778053 |
| CCME Total Hydrocarbons                                                      |           |            |           |          |           |           |          |
| F1-BTEX                                                                      | <0.10     |            | 0.10      | mg/L     |           | 11-SEP-19 |          |
| F2-Naphth                                                                    | <0.10     |            | 0.10      | mg/L     |           | 11-SEP-19 |          |
| F3-PAH                                                                       | <0.25     |            | 0.25      | mg/L     |           | 11-SEP-19 |          |
| Total Hydrocarbons (C6-C50)                                                  | <0.38     |            | 0.38      | mg/L     |           | 11-SEP-19 |          |
| Sum of Xylene Isomer Concentrations<br>Xylenes (Total)                       | <0.00064  |            | 0.00064   | mg/L     |           | 11-SEP-19 |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2338359-4 ARV-6                        |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 26-AUG-19 @ 08:40 |            |            |           |           |           |           |          |
| Matrix: WATER                           |            |            |           |           |           |           |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |           |           |           |          |
| 1-Methyl Naphthalene                    | 0.000036   |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| 2-Methyl Naphthalene                    | 0.000030   |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthene                            | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acenaphthylene                          | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Anthracene                              | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Acridine                                | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(a)anthracene                      | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(a)pyrene                          | <0.0000050 |            | 0.0000050 | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(b&j)fluoranthene                  | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(g,h,i)perylene                    | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L      | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acenaphthene d10             | 98.6       |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Acridine d9                  | 106.5      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Chrysene d12                 | 116.4      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Naphthalene d8               | 103.7      |            | 50-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Surrogate: Phenanthrene d10             | 110.6      |            | 60-130    | %         | 31-AUG-19 | 06-SEP-19 | R4789969 |
| Nunavut WW Group 1                      |            |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 102        |            | 1.2       | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Carbonate                   |            |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60      |            | 0.60      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Hydroxide                   |            |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34      |            | 0.34      | mg/L      |           | 03-SEP-19 |          |
| Alkalinity, Total (as CaCO3)            |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 83.2       |            | 1.0       | mg/L      |           | 30-AUG-19 | R4780896 |
| Ammonia by colour                       |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 0.117      |            | 0.010     | mg/L      |           | 05-SEP-19 | R4786151 |
| Biochemical Oxygen Demand (BOD)         |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | <2.0       |            | 2.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Carbonaceous BOD                        |            |            |           |           |           |           |          |
| BOD Carbonaceous                        | <2.0       |            | 2.0       | mg/L      |           | 29-AUG-19 | R4782960 |
| Chloride in Water by IC                 |            |            |           |           |           |           |          |
| Chloride (Cl)                           | 163        |            | 0.50      | mg/L      |           | 29-AUG-19 | R4777992 |
| Conductivity                            |            |            |           |           |           |           |          |
| Conductivity                            | 677        |            | 1.0       | umhos/cm  |           | 30-AUG-19 | R4780896 |
| Fecal coliforms, 1:10 dilution by QT97  |            |            |           |           |           |           |          |
| Fecal Coliforms                         | 10         | PEHR       | 10        | MPN/100mL |           | 29-AUG-19 | R4778251 |
| Hardness Calculated                     |            |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 156        | HTC        | 0.20      | mg/L      |           | 11-SEP-19 |          |
| Mercury Total                           |            |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | <0.0000050 |            | 0.0000050 | mg/L      | 29-AUG-19 | 09-SEP-19 | R4792194 |
| Nitrate in Water by IC                  |            |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                 |                             | Result | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|-------------------------------------------|-----------------------------|--------|------------|-----------|----------|-----------|-----------|----------|
| L2338359-4                                | ARV-6                       |        |            |           |          |           |           |          |
| Sampled By:                               | CLIENT on 26-AUG-19 @ 08:40 |        |            |           |          |           |           |          |
| Matrix:                                   | WATER                       |        |            |           |          |           |           |          |
| <b>Nitrate in Water by IC</b>             |                             |        |            |           |          |           |           |          |
| Nitrate (as N)                            | <0.020                      |        |            | 0.020     | mg/L     |           | 29-AUG-19 | R4777992 |
| <b>Nitrate+Nitrite</b>                    |                             |        |            |           |          |           |           |          |
| Nitrate and Nitrite as N                  | <0.070                      |        |            | 0.070     | mg/L     |           | 04-SEP-19 |          |
| <b>Nitrite in Water by IC</b>             |                             |        |            |           |          |           |           |          |
| Nitrite (as N)                            | <0.010                      |        |            | 0.010     | mg/L     |           | 29-AUG-19 | R4777992 |
| <b>Oil &amp; Grease - Gravimetric</b>     |                             |        |            |           |          |           |           |          |
| Oil and Grease                            | <5.0                        |        |            | 5.0       | mg/L     |           | 09-SEP-19 | R4791490 |
| <b>Phenol (4AAP)</b>                      |                             |        |            |           |          |           |           |          |
| Phenols (4AAP)                            | <0.0010                     |        |            | 0.0010    | mg/L     |           | 30-AUG-19 | R4781839 |
| <b>Phosphorus, Total</b>                  |                             |        |            |           |          |           |           |          |
| Phosphorus (P)-Total                      | 0.0412                      |        |            | 0.0030    | mg/L     |           | 03-SEP-19 | R4781470 |
| <b>Sulfate in Water by IC</b>             |                             |        |            |           |          |           |           |          |
| Sulfate (SO4)                             | 0.51                        |        |            | 0.30      | mg/L     |           | 29-AUG-19 | R4777992 |
| <b>Total Metals in Water by CRC ICPMS</b> |                             |        |            |           |          |           |           |          |
| Aluminum (Al)-Total                       | 0.201                       |        |            | 0.0030    | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Arsenic (As)-Total                        | 0.00085                     |        |            | 0.00010   | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Cadmium (Cd)-Total                        | 0.0000252                   |        |            | 0.0000050 | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Calcium (Ca)-Total                        | 40.5                        |        |            | 0.050     | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Chromium (Cr)-Total                       | 0.00103                     |        |            | 0.00010   | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Cobalt (Co)-Total                         | 0.00143                     |        |            | 0.00010   | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Copper (Cu)-Total                         | 0.00108                     |        |            | 0.00050   | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Iron (Fe)-Total                           | 13.2                        |        |            | 0.010     | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Lead (Pb)-Total                           | 0.000344                    |        |            | 0.000050  | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Magnesium (Mg)-Total                      | 13.3                        |        |            | 0.0050    | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Manganese (Mn)-Total                      | 1.49                        |        |            | 0.010     | mg/L     | 06-SEP-19 | 10-SEP-19 | R4795793 |
| Nickel (Ni)-Total                         | 0.00151                     |        |            | 0.00050   | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Potassium (K)-Total                       | 6.27                        |        |            | 0.050     | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Sodium (Na)-Total                         | 67.7                        |        |            | 0.050     | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| Zinc (Zn)-Total                           | 0.0160                      |        |            | 0.0030    | mg/L     | 06-SEP-19 | 06-SEP-19 | R4788490 |
| <b>Total Organic Carbon by Combustion</b> |                             |        |            |           |          |           |           |          |
| Total Organic Carbon                      | 8.31                        |        |            | 0.50      | mg/L     |           | 06-SEP-19 | R4788854 |
| <b>Total Suspended Solids</b>             |                             |        |            |           |          |           |           |          |
| Total Suspended Solids                    | 45.1                        |        |            | 2.0       | mg/L     |           | 30-AUG-19 | R4781190 |
| <b>pH</b>                                 |                             |        |            |           |          |           |           |          |
| pH                                        | 7.28                        |        |            | 0.10      | pH units |           | 30-AUG-19 | R4780896 |
|                                           |                             |        |            |           |          |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## Reference Information

### Sample Parameter Qualifier Key:

| Qualifier | Description                                                                                                                  |
|-----------|------------------------------------------------------------------------------------------------------------------------------|
| DLM       | Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).                       |
| DUP-H     | Duplicate results outside ALS DQO, due to sample heterogeneity.                                                              |
| EMPC      | Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.       |
| HTC       | Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable). |
| MS-B      | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.                           |
| PEHR      | Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.                                  |
| RRR       | Refer to Report Remarks for issues regarding this analysis                                                                   |

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                        | Matrix | Test Description                   | Method Reference**                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------|-------------------------------------|
| ALK-CO3CO3-CALC-WP                                                                                                                                                                                                                                                                                                   | Water  | Alkalinity, Carbonate              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.                                                           |        |                                    |                                     |
| ALK-HCO3HCO3-CALC-WP                                                                                                                                                                                                                                                                                                 | Water  | Alkalinity, Bicarbonate            | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L                                                           |        |                                    |                                     |
| ALK-OHOH-CALC-WP                                                                                                                                                                                                                                                                                                     | Water  | Alkalinity, Hydroxide              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.                                                              |        |                                    |                                     |
| ALK-TITR-WP                                                                                                                                                                                                                                                                                                          | Water  | Alkalinity, Total (as CaCO3)       | APHA 2320B                          |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically. |        |                                    |                                     |
| BOD-CBOD-WP                                                                                                                                                                                                                                                                                                          | Water  | Carbonaceous BOD                   | APHA 5210 B                         |
| Samples are diluted and seeded, have TCMP added to inhibit nitrogenous demands, and then are incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                               |        |                                    |                                     |
| BOD-WP                                                                                                                                                                                                                                                                                                               | Water  | Biochemical Oxygen Demand (BOD)    | APHA 5210 B                         |
| Samples are diluted and seeded and then incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                                                                                    |        |                                    |                                     |
| BTEXS+F1-HSMS-WP                                                                                                                                                                                                                                                                                                     | Water  | BTX plus F1 by GCMS                | EPA 8260C / EPA 5021A               |
| The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.                                                                                |        |                                    |                                     |
| C-TOC-HTC-WP                                                                                                                                                                                                                                                                                                         | Water  | Total Organic Carbon by Combustion | APHA 5310 B-WP                      |
| Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.                                                             |        |                                    |                                     |
| CL-IC-N-WP                                                                                                                                                                                                                                                                                                           | Water  | Chloride in Water by IC            | EPA 300.1 (mod)                     |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                                                                                                                                           |        |                                    |                                     |
| EC-WP                                                                                                                                                                                                                                                                                                                | Water  | Conductivity                       | APHA 2510B                          |
| Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.                                                                                                                           |        |                                    |                                     |
| F1-F4-CALC-WP                                                                                                                                                                                                                                                                                                        | Water  | CCME Total Hydrocarbons            | CCME CWS-PHC, Pub #1310, Dec 2001-L |
| Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.                                                                                                                                                                        |        |                                    |                                     |
| In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.                                                                              |        |                                    |                                     |
| In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.                                                                                                                                                |        |                                    |                                     |



## Reference Information

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Matrix | Test Description                       | Method Reference**       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------|--------------------------|
| <p>In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.</p> <p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.</li> <li>3. Linearity of gasoline response within 15% throughout the calibration range.</li> </ol> <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.</li> <li>3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.</li> <li>4. Linearity of diesel or motor oil response within 15% throughout the calibration range.</li> </ol> |        |                                        |                          |
| F2-F4-FID-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Water  | CCME PHC F2-F4 in Water                | EPA 3511                 |
| <p>Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |                                        |                          |
| FC10-QT97-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Water  | Fecal coliforms, 1:10 dilution by QT97 | APHA 9223B QT97          |
| <p>Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                        |                          |
| HARDNESS-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Water  | Hardness Calculated                    | APHA 2340B               |
| <p>Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO<sub>3</sub> equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |                                        |                          |
| HG-T-CVAA-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Water  | Mercury Total                          | EPA 1631E (mod)          |
| <p>Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                        |                          |
| MET-T-CCMS-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Water  | Total Metals in Water by CRC ICPMS     | EPA 200.2/6020B (mod.)   |
| <p>Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                        |                          |
| <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                        |                          |
| NH3-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Ammonia by colour                      | APHA 4500 NH3 F          |
| <p>Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                        |                          |
| NO2+NO3-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Water  | Nitrate+Nitrite                        | CALCULATION              |
| NO2-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | Nitrite in Water by IC                 | EPA 300.1 (mod)          |
| <p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| NO3-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | Nitrate in Water by IC                 | EPA 300.1 (mod)          |
| <p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |                                        |                          |
| OG-GRAV-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Oil & Grease - Gravimetric             | EPA 1664 (modified)      |
| <p>Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil &amp; Grease is determined from the weight of the residue in the vial.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                        |                          |
| P-T-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Water  | Phosphorus, Total                      | APHA 4500 P PHOSPHORUS-L |
| <p>This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                        |                          |
| PAH,PANH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | Polyaromatic Hydrocarbons (PAHs)       | EPA 3511/8270D (mod)     |
| <p>PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                        |                          |
| PH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Water  | pH                                     | APHA 4500H               |
| <p>The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                        |                          |

## Reference Information

### Test Method References:

| ALS Test Code                                                                                                                                                                                            | Matrix | Test Description                    | Method Reference**     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------------------------|------------------------|
| PHENOLS-4AAP-WT                                                                                                                                                                                          | Water  | Phenol (4AAP)                       | EPA 9066               |
| An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically. |        |                                     |                        |
| SO4-IC-N-WP                                                                                                                                                                                              | Water  | Sulfate in Water by IC              | EPA 300.1 (mod)        |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                               |        |                                     |                        |
| SOLIDS-TOTSUS-WP                                                                                                                                                                                         | Water  | Total Suspended Solids              | APHA 2540 D (modified) |
| Total suspended solids in aqueous matrices is determined gravimetrically after drying the residue at 103 105°C.                                                                                          |        |                                     |                        |
| XYLENES-SUM-CALC-WP                                                                                                                                                                                      | Water  | Sum of Xylene Isomer Concentrations | CALCULATED RESULT      |
| Total xylenes represents the sum of o-xylene and m&p-xylene.                                                                                                                                             |        |                                     |                        |

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location                            |
|----------------------------|------------------------------------------------|
| WP                         | ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA |
| WT                         | ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA  |

### Chain of Custody Numbers:

### GLOSSARY OF REPORT TERMS

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*

*mg/kg - milligrams per kilogram based on dry weight of sample*

*mg/kg wwt - milligrams per kilogram based on wet weight of sample*

*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*

*mg/L - unit of concentration based on volume, parts per million.*

*< - Less than.*

*D.L. - The reporting limit.*

*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*

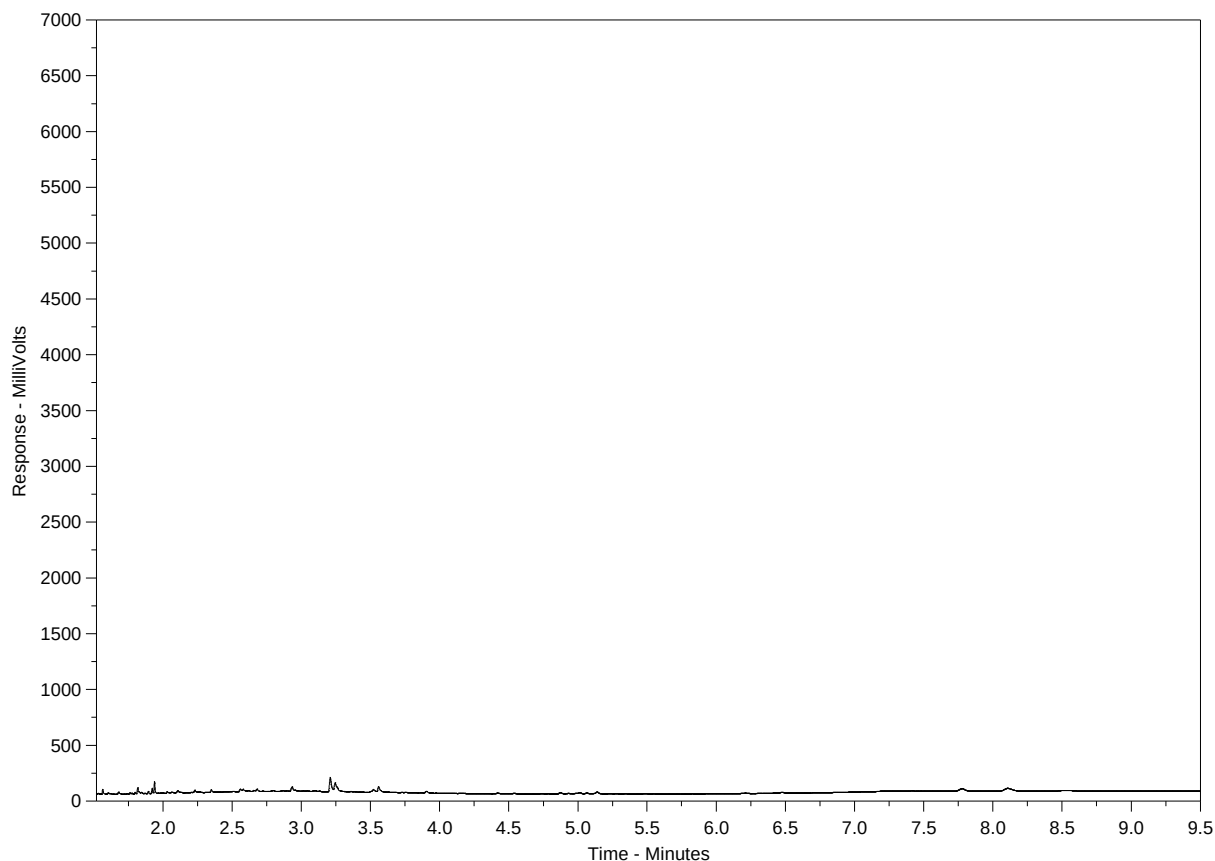
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*

*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2338359-1  
Client Sample ID: ARV-2



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

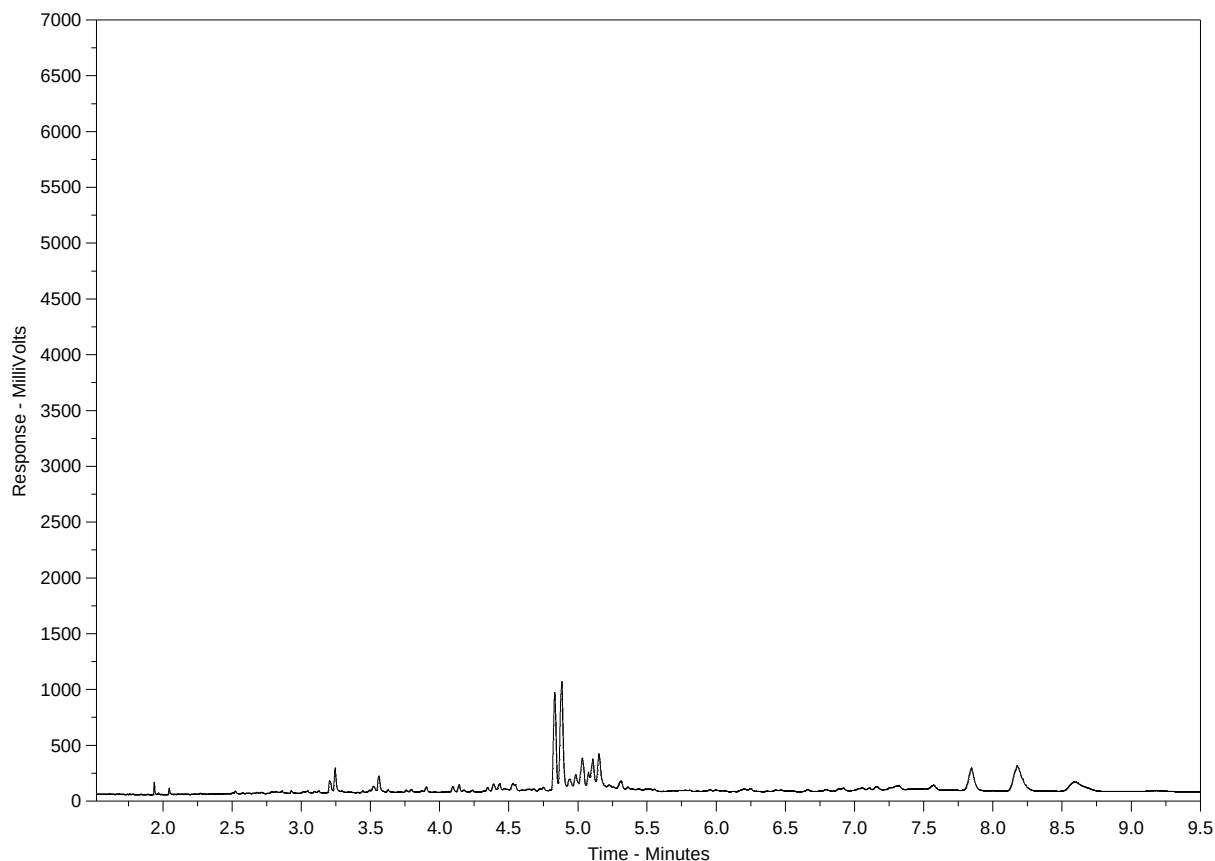
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2338359-2  
Client Sample ID: ARV-4



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

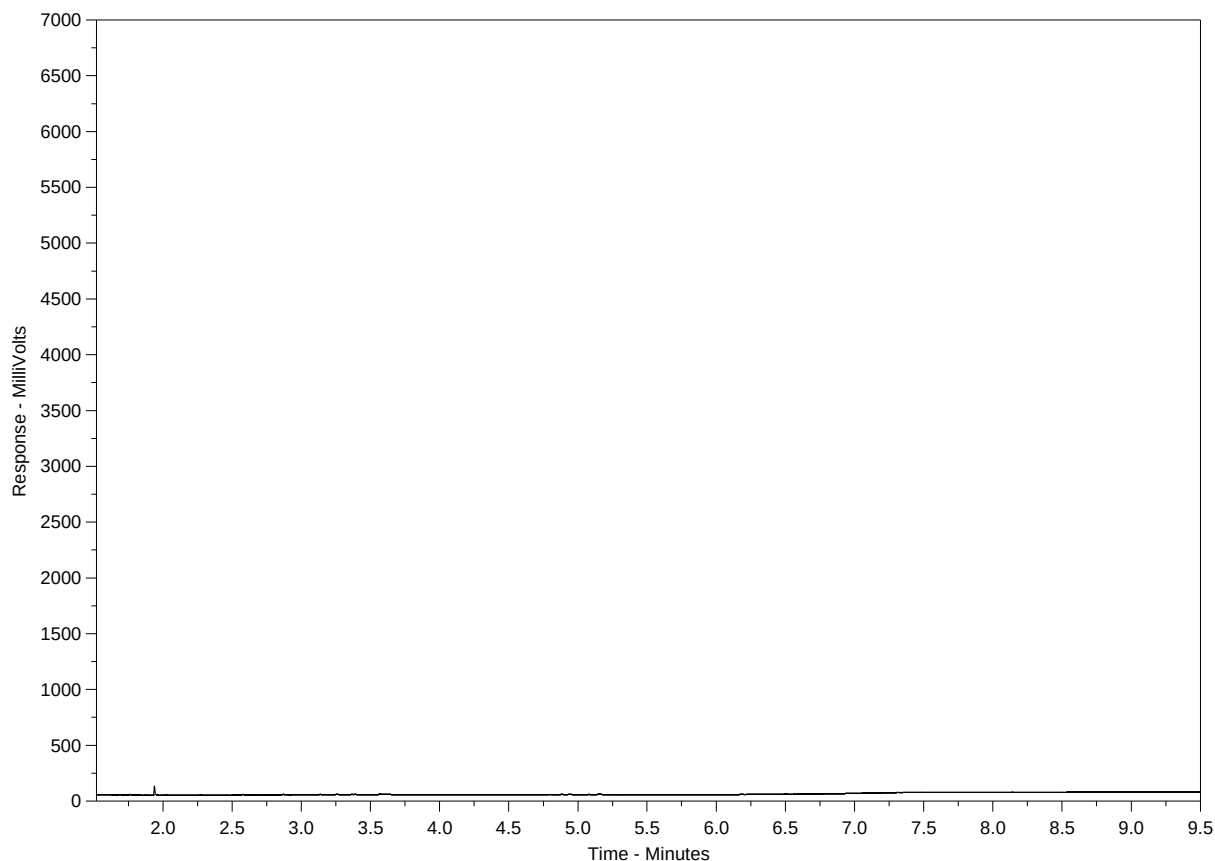
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2338359-3  
Client Sample ID: ARV-5



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

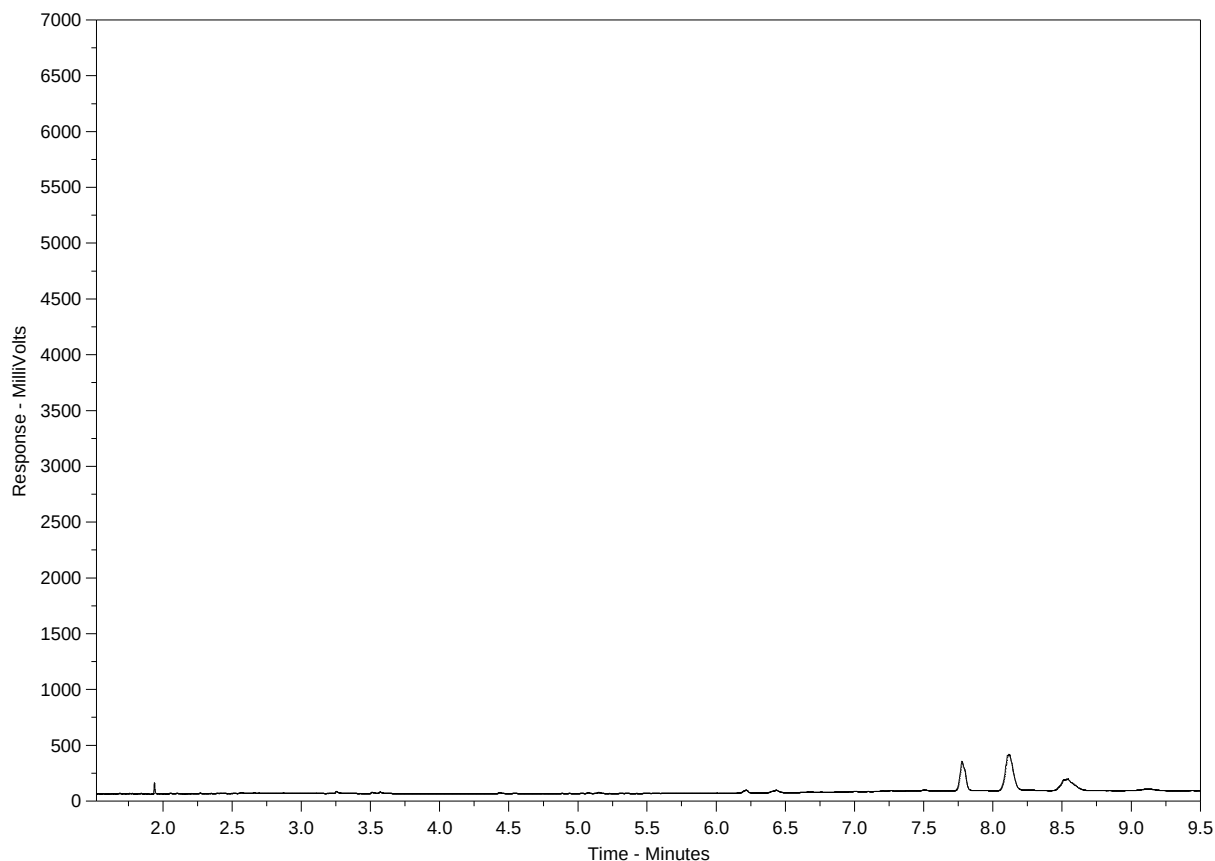
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2338359-4  
Client Sample ID: ARV-6



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).



L2338359-COFC

COC Number: 17-747860

Page 1 of 1

| <b>Report To</b><br>Contact and company name below will appear on the final report                |                                                                            | <b>Report Format / Distribution</b>                                                                                               |               | <b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------|----------------------------------------------------------------------------|-------------------|-------------|----------|------------|----------|-----------------|-------|---------------|---------------|--|--|-----------------|-----------|--------------|---------------|---------------|---------------|-------------------|-------------|----------|------------|----------|-------|---------------|---------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Company: <b>Hamlet of Arviat</b>                                                                  |                                                                            | Select Report Format: <input type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EOD (DIGITAL)          |               | Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Contact: <b>Steve England</b>                                                                     |                                                                            | Quality Control (QC) Report with Report: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO                      |               | 4 day [P4-20%] <input type="checkbox"/> 1 Business day [E - 100%] <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Phone: <b>867-857-2841</b>                                                                        |                                                                            | <input type="checkbox"/> Compare Results to Criteria on Report - provide details if not checked                                   |               | 3 day [P3-25%] <input type="checkbox"/> Same Day Weekend or Statutory holiday [E2 - 200%] <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Company address below will appear on the final report                                             |                                                                            | Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX                    |               | 2 day [P2-50%] <input type="checkbox"/> (Laboratory opening fees may apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Street:                                                                                           |                                                                            | Email 1 or Fax: <b>arnist@arviat.ca</b>                                                                                           |               | Date and Time Required for all E&P TATs: dd-mm-yy hh:mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| City/Province: <b>ARVIAT, AB</b>                                                                  |                                                                            | Email 2: <b>scott@arviat.ca</b>                                                                                                   |               | For tests that cannot be performed according to the service level selected, you will be contacted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Postal Code: <b>X0C 0E0</b>                                                                       |                                                                            | Email 3:                                                                                                                          |               | <b>Analysis Request:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |                                                                            | <b>Invoice Distribution</b>                                                                                                       |               | <table border="1"> <thead> <tr> <th rowspan="2">NUMBER OF CONTAINERS</th> <th colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</th> <th rowspan="2">SAMPLES ON HOLD</th> </tr> <tr> <th>Nutrients</th> <th>Oil &amp; Grease</th> <th>PAH/EPH/F2-PY</th> <th>PAH/EPH/F2-FY</th> <th>Sulfuric Acid</th> <th>Hydrochloric Acid</th> <th>Nitric Acid</th> <th>Bacteria</th> <th>BTEX/VOCx3</th> <th>Rockline</th> <th>B.O.C</th> <th>EPH/EPH/HG/PH</th> <th>EP2-FY, PH/HS</th> </tr> </thead> <tbody> <tr> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table> |   | NUMBER OF CONTAINERS | Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below |                   |             |          |            |          |                 |       |               |               |  |  | SAMPLES ON HOLD | Nutrients | Oil & Grease | PAH/EPH/F2-PY | PAH/EPH/F2-FY | Sulfuric Acid | Hydrochloric Acid | Nitric Acid | Bacteria | BTEX/VOCx3 | Rockline | B.O.C | EPH/EPH/HG/PH | EP2-FY, PH/HS | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| NUMBER OF CONTAINERS                                                                              | Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below |                                                                                                                                   |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          | SAMPLES ON HOLD |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|                                                                                                   | Nutrients                                                                  | Oil & Grease                                                                                                                      | PAH/EPH/F2-PY |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   | PAH/EPH/F2-FY        | Sulfuric Acid                                                              | Hydrochloric Acid | Nitric Acid | Bacteria | BTEX/VOCx3 | Rockline |                 | B.O.C | EPH/EPH/HG/PH | EP2-FY, PH/HS |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ✓                                                                                                 | ✓                                                                          | ✓                                                                                                                                 | ✓             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   | ✓                    | ✓                                                                          | ✓                 | ✓           | ✓        | ✓          | ✓        | ✓               | ✓     | ✓             |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ✓                                                                                                 | ✓                                                                          | ✓                                                                                                                                 | ✓             | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ✓ | ✓                    | ✓                                                                          | ✓                 | ✓           | ✓        | ✓          | ✓        | ✓               |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ✓                                                                                                 | ✓                                                                          | ✓                                                                                                                                 | ✓             | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ✓ | ✓                    | ✓                                                                          | ✓                 | ✓           | ✓        | ✓          | ✓        | ✓               |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ✓                                                                                                 | ✓                                                                          | ✓                                                                                                                                 | ✓             | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ✓ | ✓                    | ✓                                                                          | ✓                 | ✓           | ✓        | ✓          | ✓        | ✓               |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO   |                                                                            | Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Company:                                                                                          |                                                                            | Email 1 or Fax:                                                                                                                   |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Contact:                                                                                          |                                                                            | Email 2:                                                                                                                          |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| <b>Project Information</b>                                                                        |                                                                            | <b>Oil and Gas Required Fields (client use)</b>                                                                                   |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ALS Account # / Quote #:                                                                          |                                                                            | Requestioner:                                                                                                                     |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Job #/AFE:                                                                                        |                                                                            | Location:                                                                                                                         |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| LSD:                                                                                              |                                                                            | Time to report (hh:mm)                                                                                                            |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ALS Lab Work Order # (lab use only):                                                              |                                                                            | Sample Type                                                                                                                       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ALS Sample # (lab use only):                                                                      |                                                                            | Date (dd-mm-yy)                                                                                                                   |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| (This description will appear on the report)                                                      |                                                                            | (dd-mm-yy)                                                                                                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ARV-2                                                                                             |                                                                            | 2019-08-29                                                                                                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ARV-4                                                                                             |                                                                            | 2019-08-29                                                                                                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ARV-5                                                                                             |                                                                            | 2019-08-29                                                                                                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ARV-6                                                                                             |                                                                            | 2019-08-29                                                                                                                        |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Drinking Water (DW) Samples (client use)                                                          |                                                                            | Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)            |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Are samples taken from a Regulated DW System?                                                     |                                                                            | SAMPLE CONDITION AS RECEIVED (lab use only)                                                                                       |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Are samples for human consumption?                                                                |                                                                            | SIF Observations                                                                                                                  |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| SHIPMENT RELEASE (client use)                                                                     |                                                                            | INITIAL SHIPMENT RECEPTION (lab use only)                                                                                         |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Released by: <b>Arviat</b>                                                                        |                                                                            | Date: <b>Aug 29 2019</b>                                                                                                          |               | Time: <b>13:00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Received by: <b>Arviat</b>                                                                        |                                                                            | Date: <b>Aug 29 2019</b>                                                                                                          |               | Time: <b>13:00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |                      |                                                                            |                   |             |          |            |          |                 |       |               |               |  |  |                 |           |              |               |               |               |                   |             |          |            |          |       |               |               |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |



Hamlet of Arviat  
ATTN: STEVE ENGLAND  
PO Box 150  
Arviat NU X0C 0E0

Date Received: 21-SEP-19  
Report Date: 08-OCT-19 14:34 (MT)  
Version: FINAL

Client Phone: 867-857-2841

## Certificate of Analysis

Lab Work Order #: L2351932  
Project P.O. #: NOT SUBMITTED  
Job Reference: HAMLET OF ARVIAT  
C of C Numbers:  
Legal Site Desc:



Hua Wo  
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721  
ALS CANADA LTD Part of the ALS Group An ALS Limited Company



ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-------|-----------|-----------|----------|
| L2351932-1 ARV-2                        |            |            |           |       |           |           |          |
| Sampled By: CLIENT on 20-SEP-19 @ 08:46 |            |            |           |       |           |           |          |
| Matrix: WATER                           |            |            |           |       |           |           |          |
| BTEX plus F1-F4                         |            |            |           |       |           |           |          |
| BTX plus F1 by GCMS                     |            |            |           |       |           |           |          |
| Benzene                                 | <0.00050   | VOCHS      | 0.00050   | mg/L  |           | 23-SEP-19 | R4834946 |
| Toluene                                 | <0.0010    | VOCHS      | 0.0010    | mg/L  |           | 23-SEP-19 | R4834946 |
| Ethyl benzene                           | <0.00050   | VOCHS      | 0.00050   | mg/L  |           | 23-SEP-19 | R4834946 |
| o-Xylene                                | <0.00050   | VOCHS      | 0.00050   | mg/L  |           | 23-SEP-19 | R4834946 |
| m+p-Xylenes                             | <0.00040   | VOCHS      | 0.00040   | mg/L  |           | 23-SEP-19 | R4834946 |
| F1 (C6-C10)                             | <0.10      | VOCHS      | 0.10      | mg/L  |           | 23-SEP-19 | R4834946 |
| Surrogate: 4-Bromofluorobenzene (SS)    | 96.2       |            | 70-130    | %     |           | 23-SEP-19 | R4834946 |
| CCME PHC F2-F4 in Water                 |            |            |           |       |           |           |          |
| F2 (C10-C16)                            | 0.14       |            | 0.10      | mg/L  | 26-SEP-19 | 26-SEP-19 | R4849537 |
| F3 (C16-C34)                            | <0.25      |            | 0.25      | mg/L  | 26-SEP-19 | 26-SEP-19 | R4849537 |
| F4 (C34-C50)                            | <0.25      |            | 0.25      | mg/L  | 26-SEP-19 | 26-SEP-19 | R4849537 |
| Surrogate: 2-Bromobenzotrifluoride      | 106.1      |            | 60-140    | %     | 26-SEP-19 | 26-SEP-19 | R4849537 |
| CCME Total Hydrocarbons                 |            |            |           |       |           |           |          |
| F1-BTEX                                 | <0.10      |            | 0.10      | mg/L  |           | 02-OCT-19 |          |
| F2-Naphth                               | 0.14       |            | 0.10      | mg/L  |           | 02-OCT-19 |          |
| F3-PAH                                  | <0.25      |            | 0.25      | mg/L  |           | 02-OCT-19 |          |
| Total Hydrocarbons (C6-C50)             | <0.38      |            | 0.38      | mg/L  |           | 02-OCT-19 |          |
| Sum of Xylene Isomer Concentrations     |            |            |           |       |           |           |          |
| Xylenes (Total)                         | <0.00064   |            | 0.00064   | mg/L  |           | 24-SEP-19 |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |       |           |           |          |
| 1-Methyl Naphthalene                    | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| 2-Methyl Naphthalene                    | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthene                            | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthylene                          | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Anthracene                              | <0.000010  |            | 0.000010  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acridine                                | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)anthracene                      | <0.000010  |            | 0.000010  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)pyrene                          | <0.0000050 |            | 0.0000050 | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(b&j)fluoranthene                  | <0.000010  |            | 0.000010  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(g,h,i)perylene                    | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L  | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acenaphthene d10             | 101.6      |            | 60-130    | %     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acridine d9                  | 112.1      |            | 60-130    | %     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Chrysene d12                 | 108.2      |            | 60-130    | %     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Naphthalene d8               | 99.0       |            | 50-130    | %     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Phenanthrene d10             | 112.6      |            | 60-130    | %     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Nunavut WW Group 1                      |            |            |           |       |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |       |           |           |          |
| Bicarbonate (HCO3)                      | 786        |            | 1.2       | mg/L  |           | 25-SEP-19 |          |
| Alkalinity, Carbonate                   |            |            |           |       |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters               | Result    | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|-----------|------------|-----------|-----------|-----------|-----------|----------|
| L2351932-1 ARV-2                        |           |            |           |           |           |           |          |
| Sampled By: CLIENT on 20-SEP-19 @ 08:46 |           |            |           |           |           |           |          |
| Matrix: WATER                           |           |            |           |           |           |           |          |
| Alkalinity, Carbonate                   |           |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60     |            | 0.60      | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Hydroxide                   |           |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34     |            | 0.34      | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Total (as CaCO3)            |           |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 645       |            | 1.0       | mg/L      |           | 24-SEP-19 | R4838730 |
| Ammonia by colour                       |           |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 13.1      |            | 2.0       | mg/L      |           | 27-SEP-19 | R4849141 |
| Biochemical Oxygen Demand (BOD)         |           |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | 9.0       |            | 2.0       | mg/L      |           | 23-SEP-19 | R4850297 |
| Carbonaceous BOD                        |           |            |           |           |           |           |          |
| BOD Carbonaceous                        | <6        |            | 6.0       | mg/L      |           | 23-SEP-19 | R4850297 |
| Chloride in Water by IC                 |           |            |           |           |           |           |          |
| Chloride (Cl)                           | 415       |            | 10        | mg/L      |           | 21-SEP-19 | R4841049 |
| Conductivity                            |           |            |           |           |           |           |          |
| Conductivity                            | 3110      |            | 1.0       | umhos/cm  |           | 24-SEP-19 | R4838730 |
| Fecal coliforms, 1:10 dilution by QT97  |           |            |           |           |           |           |          |
| Fecal Coliforms                         | 60        |            | 10        | MPN/100mL |           | 21-SEP-19 | R4832848 |
| Hardness Calculated                     |           |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 1310      | HTC        | 0.20      | mg/L      |           | 08-OCT-19 |          |
| Mercury Total                           |           |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | 0.0000090 |            | 0.0000050 | mg/L      | 27-SEP-19 | 01-OCT-19 | R4855168 |
| Nitrate in Water by IC                  |           |            |           |           |           |           |          |
| Nitrate (as N)                          | <0.40     | DLM        | 0.40      | mg/L      |           | 21-SEP-19 | R4841049 |
| Nitrate+Nitrite                         |           |            |           |           |           |           |          |
| Nitrate and Nitrite as N                | <0.45     |            | 0.45      | mg/L      |           | 26-SEP-19 |          |
| Nitrite in Water by IC                  |           |            |           |           |           |           |          |
| Nitrite (as N)                          | <0.20     | DLM        | 0.20      | mg/L      |           | 21-SEP-19 | R4841049 |
| Oil & Grease - Gravimetric              |           |            |           |           |           |           |          |
| Oil and Grease                          | <5.0      |            | 5.0       | mg/L      |           | 30-SEP-19 | R4850733 |
| Phenol (4AAP)                           |           |            |           |           |           |           |          |
| Phenols (4AAP)                          | 0.0029    |            | 0.0010    | mg/L      |           | 24-SEP-19 | R4836271 |
| Phosphorus, Total                       |           |            |           |           |           |           |          |
| Phosphorus (P)-Total                    | 0.538     |            | 0.0030    | mg/L      |           | 25-SEP-19 | R4839654 |
| Sulfate in Water by IC                  |           |            |           |           |           |           |          |
| Sulfate (SO4)                           | 803       |            | 6.0       | mg/L      |           | 21-SEP-19 | R4841049 |
| Total Metals in Water by CRC ICPMS      |           |            |           |           |           |           |          |
| Aluminum (Al)-Total                     | 0.0125    |            | 0.0030    | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Arsenic (As)-Total                      | 0.00750   |            | 0.00010   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Cadmium (Cd)-Total                      | 0.0000530 |            | 0.0000050 | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Calcium (Ca)-Total                      | 396       |            | 0.050     | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Chromium (Cr)-Total                     | 0.00093   |            | 0.00010   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Cobalt (Co)-Total                       | 0.00104   |            | 0.00010   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Copper (Cu)-Total                       | 0.0118    |            | 0.00050   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Iron (Fe)-Total                         | 1.05      |            | 0.010     | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Lead (Pb)-Total                         | 0.00161   |            | 0.000050  | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Magnesium (Mg)-Total                    | 78.5      |            | 0.0050    | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Manganese (Mn)-Total                    | 1.44      |            | 0.0010    | mg/L      | 26-SEP-19 | 04-OCT-19 | R4861414 |
| Nickel (Ni)-Total                       | 0.00923   |            | 0.00050   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Potassium (K)-Total                     | 72.7      |            | 0.050     | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Sodium (Na)-Total                       | 305       |            | 0.050     | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Zinc (Zn)-Total                         | 0.0330    |            | 0.0030    | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Total Organic Carbon by Combustion      |           |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters               |       | Result     | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|-----------------------------------------|-------|------------|------------|-----------|----------|-----------|-----------|----------|
| L2351932-1                              | ARV-2 |            |            |           |          |           |           |          |
| Sampled By: CLIENT on 20-SEP-19 @ 08:46 |       |            |            |           |          |           |           |          |
| Matrix: WATER                           |       |            |            |           |          |           |           |          |
| Total Organic Carbon by Combustion      |       |            |            |           |          |           |           |          |
| Total Organic Carbon                    |       | 42.4       |            | 0.50      | mg/L     |           | 26-SEP-19 | R4849225 |
| Total Suspended Solids                  |       |            |            |           |          |           |           |          |
| Total Suspended Solids                  |       | 16.3       |            | 2.0       | mg/L     |           | 27-SEP-19 | R4849648 |
| pH                                      |       |            |            |           |          |           |           |          |
| pH                                      |       | 7.96       |            | 0.10      | pH units |           | 24-SEP-19 | R4838730 |
| L2351932-2                              | ARV-4 |            |            |           |          |           |           |          |
| Sampled By: CLIENT on 20-SEP-19 @ 08:26 |       |            |            |           |          |           |           |          |
| Matrix: WATER                           |       |            |            |           |          |           |           |          |
| BTEX plus F1-F4                         |       |            |            |           |          |           |           |          |
| BTX plus F1 by GCMS                     |       |            |            |           |          |           |           |          |
| Benzene                                 |       | <0.00050   | VOCHS      | 0.00050   | mg/L     |           | 24-SEP-19 | R4834946 |
| Toluene                                 |       | 0.0050     | VOCHS      | 0.0010    | mg/L     |           | 24-SEP-19 | R4834946 |
| Ethyl benzene                           |       | <0.00050   | VOCHS      | 0.00050   | mg/L     |           | 24-SEP-19 | R4834946 |
| o-Xylene                                |       | <0.00050   | VOCHS      | 0.00050   | mg/L     |           | 24-SEP-19 | R4834946 |
| m+p-Xylenes                             |       | <0.00040   | VOCHS      | 0.00040   | mg/L     |           | 24-SEP-19 | R4834946 |
| F1 (C6-C10)                             |       | <0.10      | VOCHS      | 0.10      | mg/L     |           | 24-SEP-19 | R4834946 |
| Surrogate: 4-Bromofluorobenzene (SS)    |       | 94.0       |            | 70-130    | %        |           | 24-SEP-19 | R4834946 |
| CCME PHC F2-F4 in Water                 |       |            |            |           |          |           |           |          |
| F2 (C10-C16)                            |       | <0.10      |            | 0.10      | mg/L     | 26-SEP-19 | 26-SEP-19 | R4849537 |
| F3 (C16-C34)                            |       | 1.54       |            | 0.25      | mg/L     | 26-SEP-19 | 26-SEP-19 | R4849537 |
| F4 (C34-C50)                            |       | 0.49       |            | 0.25      | mg/L     | 26-SEP-19 | 26-SEP-19 | R4849537 |
| Surrogate: 2-Bromobenzotrifluoride      |       | 105.5      |            | 60-140    | %        | 26-SEP-19 | 26-SEP-19 | R4849537 |
| CCME Total Hydrocarbons                 |       |            |            |           |          |           |           |          |
| F1-BTEX                                 |       | <0.10      |            | 0.10      | mg/L     |           | 02-OCT-19 |          |
| F2-Naphth                               |       | <0.10      |            | 0.10      | mg/L     |           | 02-OCT-19 |          |
| F3-PAH                                  |       | 1.54       |            | 0.25      | mg/L     |           | 02-OCT-19 |          |
| Total Hydrocarbons (C6-C50)             |       | 2.03       |            | 0.38      | mg/L     |           | 02-OCT-19 |          |
| Sum of Xylene Isomer Concentrations     |       |            |            |           |          |           |           |          |
| Xylenes (Total)                         |       | <0.00064   |            | 0.00064   | mg/L     |           | 24-SEP-19 |          |
| Polyaromatic Hydrocarbons (PAHs)        |       |            |            |           |          |           |           |          |
| 1-Methyl Naphthalene                    |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| 2-Methyl Naphthalene                    |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthene                            |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthylene                          |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Anthracene                              |       | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acridine                                |       | 0.000041   |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)anthracene                      |       | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)pyrene                          |       | <0.0000050 |            | 0.0000050 | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(b&j)fluoranthene                  |       | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(g,h,i)perylene                    |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(k)fluoranthene                    |       | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Chrysene                                |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Dibenzo(a,h)anthracene                  |       | <0.0000050 |            | 0.0000050 | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluoranthene                            |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluorene                                |       | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Indeno(1,2,3-cd)pyrene                  |       | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Naphthalene                             |       | <0.000050  |            | 0.000050  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Phenanthrene                            |       | <0.000050  |            | 0.000050  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Pyrene                                  |       | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Quinoline                               |       | 0.000031   |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                     | Result    | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------------|-----------|------------|-----------|-----------|-----------|-----------|----------|
| L2351932-2    ARV-4                           |           |            |           |           |           |           |          |
| Sampled By:    CLIENT on 20-SEP-19 @ 08:26    |           |            |           |           |           |           |          |
| Matrix:        WATER                          |           |            |           |           |           |           |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>       |           |            |           |           |           |           |          |
| B(a)P Total Potency Equivalent                | <0.000030 |            | 0.000030  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acenaphthene d10                   | 104.4     |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acridine d9                        | 112.2     |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Chrysene d12                       | 116.7     |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Naphthalene d8                     | 93.5      |            | 50-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Phenanthrene d10                   | 118.9     |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| <b>Nunavut WW Group 1</b>                     |           |            |           |           |           |           |          |
| <b>Alkalinity, Bicarbonate</b>                |           |            |           |           |           |           |          |
| Bicarbonate (HCO3)                            | 86.6      |            | 1.2       | mg/L      |           | 25-SEP-19 |          |
| <b>Alkalinity, Carbonate</b>                  |           |            |           |           |           |           |          |
| Carbonate (CO3)                               | 24.0      |            | 0.60      | mg/L      |           | 25-SEP-19 |          |
| <b>Alkalinity, Hydroxide</b>                  |           |            |           |           |           |           |          |
| Hydroxide (OH)                                | <0.34     |            | 0.34      | mg/L      |           | 25-SEP-19 |          |
| <b>Alkalinity, Total (as CaCO3)</b>           |           |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)                  | 111       |            | 1.0       | mg/L      |           | 24-SEP-19 | R4838730 |
| <b>Ammonia by colour</b>                      |           |            |           |           |           |           |          |
| Ammonia, Total (as N)                         | 5.95      |            | 0.20      | mg/L      |           | 28-SEP-19 | R4850813 |
| <b>Biochemical Oxygen Demand (BOD)</b>        |           |            |           |           |           |           |          |
| Biochemical Oxygen Demand                     | 51        |            | 20        | mg/L      |           | 23-SEP-19 | R4850297 |
| <b>Carbonaceous BOD</b>                       |           |            |           |           |           |           |          |
| BOD Carbonaceous                              | 25.4      |            | 6.0       | mg/L      |           | 23-SEP-19 | R4850297 |
| <b>Chloride in Water by IC</b>                |           |            |           |           |           |           |          |
| Chloride (Cl)                                 | 87.8      |            | 0.50      | mg/L      |           | 21-SEP-19 | R4841049 |
| <b>Conductivity</b>                           |           |            |           |           |           |           |          |
| Conductivity                                  | 477       |            | 1.0       | umhos/cm  |           | 24-SEP-19 | R4838730 |
| <b>Fecal coliforms, 1:10 dilution by QT97</b> |           |            |           |           |           |           |          |
| Fecal Coliforms                               | 3870      |            | 10        | MPN/100mL |           | 21-SEP-19 | R4832848 |
| <b>Hardness Calculated</b>                    |           |            |           |           |           |           |          |
| Hardness (as CaCO3)                           | 61.2      | HTC        | 0.20      | mg/L      |           | 30-SEP-19 |          |
| <b>Mercury Total</b>                          |           |            |           |           |           |           |          |
| Mercury (Hg)-Total                            | 0.0000050 |            | 0.0000050 | mg/L      | 27-SEP-19 | 01-OCT-19 | R4855168 |
| <b>Nitrate in Water by IC</b>                 |           |            |           |           |           |           |          |
| Nitrate (as N)                                | 0.455     |            | 0.020     | mg/L      |           | 21-SEP-19 | R4841049 |
| <b>Nitrate+Nitrite</b>                        |           |            |           |           |           |           |          |
| Nitrate and Nitrite as N                      | 0.833     |            | 0.070     | mg/L      |           | 26-SEP-19 |          |
| <b>Nitrite in Water by IC</b>                 |           |            |           |           |           |           |          |
| Nitrite (as N)                                | 0.378     |            | 0.010     | mg/L      |           | 21-SEP-19 | R4841049 |
| <b>Oil &amp; Grease - Gravimetric</b>         |           |            |           |           |           |           |          |
| Oil and Grease                                | <5.0      |            | 5.0       | mg/L      |           | 30-SEP-19 | R4850733 |
| <b>Phenol (4AAP)</b>                          |           |            |           |           |           |           |          |
| Phenols (4AAP)                                | 0.0065    | DLM        | 0.0050    | mg/L      |           | 24-SEP-19 | R4836271 |
| <b>Phosphorus, Total</b>                      |           |            |           |           |           |           |          |
| Phosphorus (P)-Total                          | 6.64      |            | 0.060     | mg/L      |           | 25-SEP-19 | R4839654 |
| <b>Sulfate in Water by IC</b>                 |           |            |           |           |           |           |          |
| Sulfate (SO4)                                 | 8.94      |            | 0.30      | mg/L      |           | 21-SEP-19 | R4841049 |
| <b>Total Metals in Water by CRC ICPMS</b>     |           |            |           |           |           |           |          |
| Aluminum (Al)-Total                           | 0.191     |            | 0.0030    | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Arsenic (As)-Total                            | 0.00672   |            | 0.00010   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Cadmium (Cd)-Total                            | 0.0000711 |            | 0.0000050 | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Calcium (Ca)-Total                            | 11.9      |            | 0.050     | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Chromium (Cr)-Total                           | 0.00142   |            | 0.00010   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Cobalt (Co)-Total                             | 0.00144   |            | 0.00010   | mg/L      | 26-SEP-19 | 26-SEP-19 | R4850120 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters                   |  | Result     | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|---------------------------------------------|--|------------|------------|-----------|----------|-----------|-----------|----------|
| L2351932-2     ARV-4                        |  |            |            |           |          |           |           |          |
| Sampled By:     CLIENT on 20-SEP-19 @ 08:26 |  |            |            |           |          |           |           |          |
| Matrix:             WATER                   |  |            |            |           |          |           |           |          |
| <b>Total Metals in Water by CRC ICPMS</b>   |  |            |            |           |          |           |           |          |
| Copper (Cu)-Total                           |  | 0.0337     |            | 0.00050   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Iron (Fe)-Total                             |  | 2.48       |            | 0.010     | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Lead (Pb)-Total                             |  | 0.00133    |            | 0.000050  | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Magnesium (Mg)-Total                        |  | 7.65       |            | 0.0050    | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Manganese (Mn)-Total                        |  | 0.179      |            | 0.00010   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Nickel (Ni)-Total                           |  | 0.00580    |            | 0.00050   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Potassium (K)-Total                         |  | 22.5       |            | 0.050     | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Sodium (Na)-Total                           |  | 74.1       |            | 0.050     | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Zinc (Zn)-Total                             |  | 0.0271     |            | 0.0030    | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| <b>Total Organic Carbon by Combustion</b>   |  |            |            |           |          |           |           |          |
| Total Organic Carbon                        |  | 112        |            | 2.5       | mg/L     |           | 26-SEP-19 | R4849225 |
| <b>Total Suspended Solids</b>               |  |            |            |           |          |           |           |          |
| Total Suspended Solids                      |  | 224        |            | 30        | mg/L     |           | 27-SEP-19 | R4849648 |
| <b>pH</b>                                   |  |            |            |           |          |           |           |          |
| pH                                          |  | 9.37       |            | 0.10      | pH units |           | 24-SEP-19 | R4838730 |
| L2351932-3     ARV-5                        |  |            |            |           |          |           |           |          |
| Sampled By:     CLIENT on 20-SEP-19 @ 09:26 |  |            |            |           |          |           |           |          |
| Matrix:             WATER                   |  |            |            |           |          |           |           |          |
| <b>BTEX plus F1-F4</b>                      |  |            |            |           |          |           |           |          |
| <b>BTX   plus F1 by GCMS</b>                |  |            |            |           |          |           |           |          |
| Benzene                                     |  | <0.00050   |            | 0.00050   | mg/L     |           | 23-SEP-19 | R4834946 |
| Toluene                                     |  | <0.0010    |            | 0.0010    | mg/L     |           | 23-SEP-19 | R4834946 |
| Ethyl benzene                               |  | <0.00050   |            | 0.00050   | mg/L     |           | 23-SEP-19 | R4834946 |
| o-Xylene                                    |  | <0.00050   |            | 0.00050   | mg/L     |           | 23-SEP-19 | R4834946 |
| m+p-Xylenes                                 |  | <0.00040   |            | 0.00040   | mg/L     |           | 23-SEP-19 | R4834946 |
| F1 (C6-C10)                                 |  | <0.10      |            | 0.10      | mg/L     |           | 23-SEP-19 | R4834946 |
| Surrogate: 4-Bromofluorobenzene (SS)        |  | 97.8       |            | 70-130    | %        |           | 23-SEP-19 | R4834946 |
| <b>CCME PHC F2-F4 in Water</b>              |  |            |            |           |          |           |           |          |
| F2 (C10-C16)                                |  | <0.10      |            | 0.10      | mg/L     | 26-SEP-19 | 26-SEP-19 | R4849537 |
| F3 (C16-C34)                                |  | <0.25      |            | 0.25      | mg/L     | 26-SEP-19 | 26-SEP-19 | R4849537 |
| F4 (C34-C50)                                |  | <0.25      |            | 0.25      | mg/L     | 26-SEP-19 | 26-SEP-19 | R4849537 |
| Surrogate: 2-Bromobenzotrifluoride          |  | 108.6      |            | 60-140    | %        | 26-SEP-19 | 26-SEP-19 | R4849537 |
| <b>CCME Total Hydrocarbons</b>              |  |            |            |           |          |           |           |          |
| F1-BTEX                                     |  | <0.10      |            | 0.10      | mg/L     |           | 02-OCT-19 |          |
| F2-Naphth                                   |  | <0.10      |            | 0.10      | mg/L     |           | 02-OCT-19 |          |
| F3-PAH                                      |  | <0.25      |            | 0.25      | mg/L     |           | 02-OCT-19 |          |
| Total Hydrocarbons (C6-C50)                 |  | <0.38      |            | 0.38      | mg/L     |           | 02-OCT-19 |          |
| <b>Sum of Xylene Isomer Concentrations</b>  |  |            |            |           |          |           |           |          |
| Xylenes (Total)                             |  | <0.00064   |            | 0.00064   | mg/L     |           | 24-SEP-19 |          |
| <b>Polyaromatic Hydrocarbons (PAHs)</b>     |  |            |            |           |          |           |           |          |
| 1-Methyl Naphthalene                        |  | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| 2-Methyl Naphthalene                        |  | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthene                                |  | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthylene                              |  | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Anthracene                                  |  | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acridine                                    |  | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)anthracene                          |  | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)pyrene                              |  | <0.0000050 |            | 0.0000050 | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(b&j)fluoranthene                      |  | <0.000010  |            | 0.000010  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(g,h,i)perylene                        |  | <0.000020  |            | 0.000020  | mg/L     | 27-SEP-19 | 30-SEP-19 | R4851249 |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2351932-3 ARV-5                        |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 20-SEP-19 @ 09:26 |            |            |           |           |           |           |          |
| Matrix: WATER                           |            |            |           |           |           |           |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |           |           |           |          |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acenaphthene d10             | 100.7      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acridine d9                  | 101.1      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Chrysene d12                 | 114.4      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Naphthalene d8               | 101.4      |            | 50-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Phenanthrene d10             | 107.8      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Nunavut WW Group 1                      |            |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 76.0       |            | 1.2       | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Carbonate                   |            |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60      |            | 0.60      | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Hydroxide                   |            |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34      |            | 0.34      | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Total (as CaCO3)            |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 62.3       |            | 1.0       | mg/L      |           | 24-SEP-19 | R4838730 |
| Ammonia by colour                       |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 0.018      |            | 0.010     | mg/L      |           | 27-SEP-19 | R4849141 |
| Biochemical Oxygen Demand (BOD)         |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | <2.0       |            | 2.0       | mg/L      |           | 23-SEP-19 | R4850297 |
| Carbonaceous BOD                        |            |            |           |           |           |           |          |
| BOD Carbonaceous                        | <6.0       |            | 6.0       | mg/L      |           | 23-SEP-19 | R4850297 |
| Chloride in Water by IC                 |            |            |           |           |           |           |          |
| Chloride (Cl)                           | 176        |            | 0.50      | mg/L      |           | 21-SEP-19 | R4841049 |
| Conductivity                            |            |            |           |           |           |           |          |
| Conductivity                            | 676        |            | 1.0       | umhos/cm  |           | 24-SEP-19 | R4838730 |
| Fecal coliforms, 1:10 dilution by QT97  |            |            |           |           |           |           |          |
| Fecal Coliforms                         | <10        |            | 10        | MPN/100mL |           | 21-SEP-19 | R4832848 |
| Hardness Calculated                     |            |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 109        | HTC        | 0.20      | mg/L      |           | 30-SEP-19 |          |
| Mercury Total                           |            |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | <0.0000050 |            | 0.0000050 | mg/L      | 27-SEP-19 | 01-OCT-19 | R4855168 |
| Nitrate in Water by IC                  |            |            |           |           |           |           |          |
| Nitrate (as N)                          | <0.020     |            | 0.020     | mg/L      |           | 21-SEP-19 | R4841049 |
| Nitrate+Nitrite                         |            |            |           |           |           |           |          |
| Nitrate and Nitrite as N                | <0.070     |            | 0.070     | mg/L      |           | 26-SEP-19 |          |
| Nitrite in Water by IC                  |            |            |           |           |           |           |          |
| Nitrite (as N)                          | <0.010     |            | 0.010     | mg/L      |           | 21-SEP-19 | R4841049 |
| Oil & Grease - Gravimetric              |            |            |           |           |           |           |          |
| Oil and Grease                          | <5.0       |            | 5.0       | mg/L      |           | 30-SEP-19 | R4850733 |
| Phenol (4AAP)                           |            |            |           |           |           |           |          |
| Phenols (4AAP)                          | <0.0010    |            | 0.0010    | mg/L      |           | 24-SEP-19 | R4836271 |
| Phosphorus, Total                       |            |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

[illegible]

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

| Sample Details/Parameters               | Result     | Qualifier* | D.L.      | Units     | Extracted | Analyzed  | Batch    |
|-----------------------------------------|------------|------------|-----------|-----------|-----------|-----------|----------|
| L2351932-4 ARV-6                        |            |            |           |           |           |           |          |
| Sampled By: CLIENT on 20-SEP-19 @ 09:32 |            |            |           |           |           |           |          |
| Matrix: WATER                           |            |            |           |           |           |           |          |
| Polyaromatic Hydrocarbons (PAHs)        |            |            |           |           |           |           |          |
| 1-Methyl Naphthalene                    | 0.000026   |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| 2-Methyl Naphthalene                    | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthene                            | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acenaphthylene                          | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Anthracene                              | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Acridine                                | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)anthracene                      | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(a)pyrene                          | <0.0000050 |            | 0.0000050 | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(b&j)fluoranthene                  | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(g,h,i)perylene                    | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Benzo(k)fluoranthene                    | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Chrysene                                | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Dibenzo(a,h)anthracene                  | <0.0000050 |            | 0.0000050 | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluoranthene                            | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Fluorene                                | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Indeno(1,2,3-cd)pyrene                  | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Naphthalene                             | <0.000050  |            | 0.000050  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Phenanthrene                            | <0.000050  |            | 0.000050  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Pyrene                                  | <0.000010  |            | 0.000010  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Quinoline                               | <0.000020  |            | 0.000020  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| B(a)P Total Potency Equivalent          | <0.000030  |            | 0.000030  | mg/L      | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acenaphthene d10             | 107.8      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Acridine d9                  | 112.8      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Chrysene d12                 | 108.8      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Naphthalene d8               | 109.8      |            | 50-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Surrogate: Phenanthrene d10             | 118.0      |            | 60-130    | %         | 27-SEP-19 | 30-SEP-19 | R4851249 |
| Nunavut WW Group 1                      |            |            |           |           |           |           |          |
| Alkalinity, Bicarbonate                 |            |            |           |           |           |           |          |
| Bicarbonate (HCO3)                      | 115        |            | 1.2       | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Carbonate                   |            |            |           |           |           |           |          |
| Carbonate (CO3)                         | <0.60      |            | 0.60      | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Hydroxide                   |            |            |           |           |           |           |          |
| Hydroxide (OH)                          | <0.34      |            | 0.34      | mg/L      |           | 25-SEP-19 |          |
| Alkalinity, Total (as CaCO3)            |            |            |           |           |           |           |          |
| Alkalinity, Total (as CaCO3)            | 94.4       |            | 1.0       | mg/L      |           | 24-SEP-19 | R4838730 |
| Ammonia by colour                       |            |            |           |           |           |           |          |
| Ammonia, Total (as N)                   | 0.145      |            | 0.010     | mg/L      |           | 27-SEP-19 | R4850813 |
| Biochemical Oxygen Demand (BOD)         |            |            |           |           |           |           |          |
| Biochemical Oxygen Demand               | <6.0       |            | 6.0       | mg/L      |           | 23-SEP-19 | R4850297 |
| Carbonaceous BOD                        |            |            |           |           |           |           |          |
| BOD Carbonaceous                        | <6.0       |            | 6.0       | mg/L      |           | 23-SEP-19 | R4850297 |
| Chloride in Water by IC                 |            |            |           |           |           |           |          |
| Chloride (Cl)                           | 184        |            | 0.50      | mg/L      |           | 21-SEP-19 | R4841049 |
| Conductivity                            |            |            |           |           |           |           |          |
| Conductivity                            | 721        |            | 1.0       | umhos/cm  |           | 24-SEP-19 | R4838730 |
| Fecal coliforms, 1:10 dilution by QT97  |            |            |           |           |           |           |          |
| Fecal Coliforms                         | <10        |            | 10        | MPN/100mL |           | 21-SEP-19 | R4832848 |
| Hardness Calculated                     |            |            |           |           |           |           |          |
| Hardness (as CaCO3)                     | 180        | HTC        | 0.20      | mg/L      |           | 08-OCT-19 |          |
| Mercury Total                           |            |            |           |           |           |           |          |
| Mercury (Hg)-Total                      | <0.0000050 |            | 0.0000050 | mg/L      | 27-SEP-19 | 01-OCT-19 | R4855168 |
| Nitrate in Water by IC                  |            |            |           |           |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.



| Sample Details/Parameters                 |                             | Result | Qualifier* | D.L.      | Units    | Extracted | Analyzed  | Batch    |
|-------------------------------------------|-----------------------------|--------|------------|-----------|----------|-----------|-----------|----------|
| L2351932-4                                | ARV-6                       |        |            |           |          |           |           |          |
| Sampled By:                               | CLIENT on 20-SEP-19 @ 09:32 |        |            |           |          |           |           |          |
| Matrix:                                   | WATER                       |        |            |           |          |           |           |          |
| <b>Nitrate in Water by IC</b>             |                             |        |            |           |          |           |           |          |
| Nitrate (as N)                            | <0.020                      |        |            | 0.020     | mg/L     |           | 21-SEP-19 | R4841049 |
| <b>Nitrate+Nitrite</b>                    |                             |        |            |           |          |           |           |          |
| Nitrate and Nitrite as N                  | <0.070                      |        |            | 0.070     | mg/L     |           | 26-SEP-19 |          |
| <b>Nitrite in Water by IC</b>             |                             |        |            |           |          |           |           |          |
| Nitrite (as N)                            | <0.010                      |        |            | 0.010     | mg/L     |           | 21-SEP-19 | R4841049 |
| <b>Oil &amp; Grease - Gravimetric</b>     |                             |        |            |           |          |           |           |          |
| Oil and Grease                            | <5.0                        |        |            | 5.0       | mg/L     |           | 30-SEP-19 | R4850733 |
| <b>Phenol (4AAP)</b>                      |                             |        |            |           |          |           |           |          |
| Phenols (4AAP)                            | <0.0010                     |        |            | 0.0010    | mg/L     |           | 24-SEP-19 | R4836271 |
| <b>Phosphorus, Total</b>                  |                             |        |            |           |          |           |           |          |
| Phosphorus (P)-Total                      | 0.102                       |        |            | 0.0030    | mg/L     |           | 25-SEP-19 | R4839654 |
| <b>Sulfate in Water by IC</b>             |                             |        |            |           |          |           |           |          |
| Sulfate (SO4)                             | <0.30                       |        |            | 0.30      | mg/L     |           | 21-SEP-19 | R4841049 |
| <b>Total Metals in Water by CRC ICPMS</b> |                             |        |            |           |          |           |           |          |
| Aluminum (Al)-Total                       | 0.0806                      |        |            | 0.0030    | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Arsenic (As)-Total                        | 0.00085                     |        |            | 0.00010   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Cadmium (Cd)-Total                        | 0.0000055                   |        |            | 0.0000050 | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Calcium (Ca)-Total                        | 48.8                        |        |            | 0.050     | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Chromium (Cr)-Total                       | 0.00117                     |        |            | 0.00010   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Cobalt (Co)-Total                         | 0.00111                     |        |            | 0.00010   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Copper (Cu)-Total                         | <0.00050                    |        |            | 0.00050   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Iron (Fe)-Total                           | 18.7                        |        |            | 0.010     | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Lead (Pb)-Total                           | 0.000126                    |        |            | 0.000050  | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Magnesium (Mg)-Total                      | 14.1                        |        |            | 0.0050    | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Manganese (Mn)-Total                      | 1.80                        |        |            | 0.0010    | mg/L     | 26-SEP-19 | 04-OCT-19 | R4861414 |
| Nickel (Ni)-Total                         | 0.00108                     |        |            | 0.00050   | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Potassium (K)-Total                       | 6.84                        |        |            | 0.050     | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Sodium (Na)-Total                         | 83.2                        |        |            | 0.050     | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| Zinc (Zn)-Total                           | 0.0049                      |        |            | 0.0030    | mg/L     | 26-SEP-19 | 26-SEP-19 | R4850120 |
| <b>Total Organic Carbon by Combustion</b> |                             |        |            |           |          |           |           |          |
| Total Organic Carbon                      | 9.59                        |        |            | 0.50      | mg/L     |           | 26-SEP-19 | R4849225 |
| <b>Total Suspended Solids</b>             |                             |        |            |           |          |           |           |          |
| Total Suspended Solids                    | 43.9                        |        |            | 2.0       | mg/L     |           | 27-SEP-19 | R4849648 |
| <b>pH</b>                                 |                             |        |            |           |          |           |           |          |
| pH                                        | 7.16                        |        |            | 0.10      | pH units |           | 24-SEP-19 | R4838730 |
|                                           |                             |        |            |           |          |           |           |          |

\* Refer to Referenced Information for Qualifiers (if any) and Methodology.

## Reference Information

### Sample Parameter Qualifier Key:

| Qualifier | Description                                                                                                                  |
|-----------|------------------------------------------------------------------------------------------------------------------------------|
| DLM       | Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).                       |
| HTC       | Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable). |
| MS-B      | Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.                           |
| VOCHS     | VOC analysis was conducted for a water sample that contained > 5% headspace. Results may be biased low.                      |

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                                                                                  | Matrix | Test Description                   | Method Reference**                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------|-------------------------------------|
| ALK-CO3CO3-CALC-WP                                                                                                                                                                                                                                                                                                                                                             | Water  | Alkalinity, Carbonate              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.                                                                                                                     |        |                                    |                                     |
| ALK-HCO3HCO3-CALC-WP                                                                                                                                                                                                                                                                                                                                                           | Water  | Alkalinity, Bicarbonate            | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L                                                                                                                     |        |                                    |                                     |
| ALK-OHOH-CALC-WP                                                                                                                                                                                                                                                                                                                                                               | Water  | Alkalinity, Hydroxide              | CALCULATION                         |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.                                                                                                                        |        |                                    |                                     |
| ALK-TITR-WP                                                                                                                                                                                                                                                                                                                                                                    | Water  | Alkalinity, Total (as CaCO3)       | APHA 2320B                          |
| The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.                                                           |        |                                    |                                     |
| BOD-CBOD-WP                                                                                                                                                                                                                                                                                                                                                                    | Water  | Carbonaceous BOD                   | APHA 5210 B                         |
| Samples are diluted and seeded, have TCMP added to inhibit nitrogenous demands, and then are incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                                                                                         |        |                                    |                                     |
| BOD-WP                                                                                                                                                                                                                                                                                                                                                                         | Water  | Biochemical Oxygen Demand (BOD)    | APHA 5210 B                         |
| Samples are diluted and seeded and then incubated in airtight bottles at 20°C for 5 days. Dissolved oxygen is measured initially and after incubation, and results are computed from the difference between initial and final DO.                                                                                                                                              |        |                                    |                                     |
| BTEXS+F1-HSMS-WP                                                                                                                                                                                                                                                                                                                                                               | Water  | BTX plus F1 by GCMS                | EPA 8260C / EPA 5021A               |
| The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.                                                                                                                                          |        |                                    |                                     |
| C-TOC-HTC-WP                                                                                                                                                                                                                                                                                                                                                                   | Water  | Total Organic Carbon by Combustion | APHA 5310 B-WP                      |
| Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.                                                                                                                       |        |                                    |                                     |
| CL-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                     | Water  | Chloride in Water by IC            | EPA 300.1 (mod)                     |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                                                                                                                                                                                                                                                                                     |        |                                    |                                     |
| EC-WP                                                                                                                                                                                                                                                                                                                                                                          | Water  | Conductivity                       | APHA 2510B                          |
| Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.                                                                                                                                                                                     |        |                                    |                                     |
| F1-F4-CALC-WP                                                                                                                                                                                                                                                                                                                                                                  | Water  | CCME Total Hydrocarbons            | CCME CWS-PHC, Pub #1310, Dec 2001-L |
| Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.                                                                                                                                                                                                                                  |        |                                    |                                     |
| In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.                                                                                                                                        |        |                                    |                                     |
| In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.                                                                                                                                                                                                          |        |                                    |                                     |
| In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3. |        |                                    |                                     |

## Reference Information

### Test Method References:

| ALS Test Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Matrix | Test Description                       | Method Reference**       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------|--------------------------|
| <p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.</li> <li>3. Linearity of gasoline response within 15% throughout the calibration range.</li> </ol> <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> <li>1. All extraction and analysis holding times were met.</li> <li>2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.</li> <li>3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.</li> <li>4. Linearity of diesel or motor oil response within 15% throughout the calibration range.</li> </ol> |        |                                        |                          |
| F2-F4-FID-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Water  | CCME PHC F2-F4 in Water                | EPA 3511                 |
| <p>Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                        |                          |
| FC10-QT97-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Water  | Fecal coliforms, 1:10 dilution by QT97 | APHA 9223B QT97          |
| <p>Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                        |                          |
| HARDNESS-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Water  | Hardness Calculated                    | APHA 2340B               |
| <p>Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO<sub>3</sub> equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                        |                          |
| HG-T-CVAA-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Water  | Mercury Total                          | EPA 1631E (mod)          |
| <p>Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                        |                          |
| MET-T-CCMS-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Water  | Total Metals in Water by CRC ICPMS     | EPA 200.2/6020B (mod.)   |
| <p>Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                        |                          |
| <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                        |                          |
| NH3-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Water  | Ammonia by colour                      | APHA 4500 NH3 F          |
| <p>Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                        |                          |
| NO2+NO3-CALC-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Water  | Nitrate+Nitrite                        | CALCULATION              |
| NO2-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Water  | Nitrite in Water by IC                 | EPA 300.1 (mod)          |
| <p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |                                        |                          |
| NO3-IC-N-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Water  | Nitrate in Water by IC                 | EPA 300.1 (mod)          |
| <p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |                                        |                          |
| OG-GRAV-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Water  | Oil & Grease - Gravimetric             | EPA 1664 (modified)      |
| <p>Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil &amp; Grease is determined from the weight of the residue in the vial.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                        |                          |
| P-T-COL-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Water  | Phosphorus, Total                      | APHA 4500 P PHOSPHORUS-L |
| <p>This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                        |                          |
| PAH,PANH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Water  | Polyaromatic Hydrocarbons (PAHs)       | EPA 3511/8270D (mod)     |
| <p>PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                        |                          |
| PH-WP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Water  | pH                                     | APHA 4500H               |
| <p>The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                        |                          |
| PHENOLS-4AAP-WT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Water  | Phenol (4AAP)                          | EPA 9066                 |
| <p>An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                        |                          |

## Reference Information

## Test Method References:

| ALS Test Code                                                                                                   | Matrix | Test Description                    | Method Reference**     |
|-----------------------------------------------------------------------------------------------------------------|--------|-------------------------------------|------------------------|
| SO4-IC-N-WP                                                                                                     | Water  | Sulfate in Water by IC              | EPA 300.1 (mod)        |
| Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.                      |        |                                     |                        |
| SOLIDS-TOTSUS-WP                                                                                                | Water  | Total Suspended Solids              | APHA 2540 D (modified) |
| Total suspended solids in aqueous matrices is determined gravimetrically after drying the residue at 103 105°C. |        |                                     |                        |
| XYLENES-SUM-CALC-WP                                                                                             | Water  | Sum of Xylene Isomer Concentrations | CALCULATED RESULT      |
| Total xylenes represents the sum of o-xylene and m&p-xylene.                                                    |        |                                     |                        |

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

| Laboratory Definition Code | Laboratory Location                            |
|----------------------------|------------------------------------------------|
| WP                         | ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA |
| WT                         | ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA  |

## Chain of Custody Numbers:

## GLOSSARY OF REPORT TERMS

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*

*mg/kg - milligrams per kilogram based on dry weight of sample*

*mg/kg ww - milligrams per kilogram based on wet weight of sample*

*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*

*mg/L - unit of concentration based on volume, parts per million.*

*< - Less than.*

*D.L. - The reporting limit.*

*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*

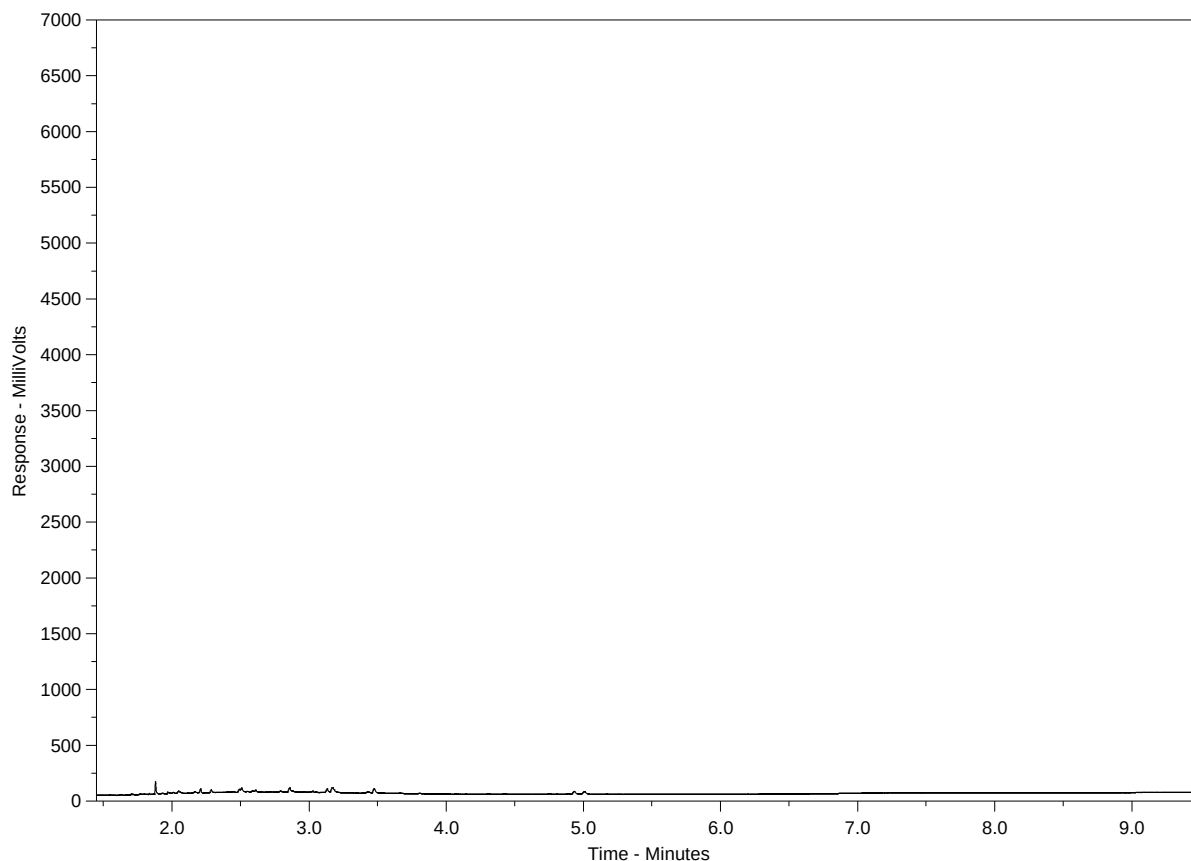
*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*

*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2351932-1  
Client Sample ID: ARV-2



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

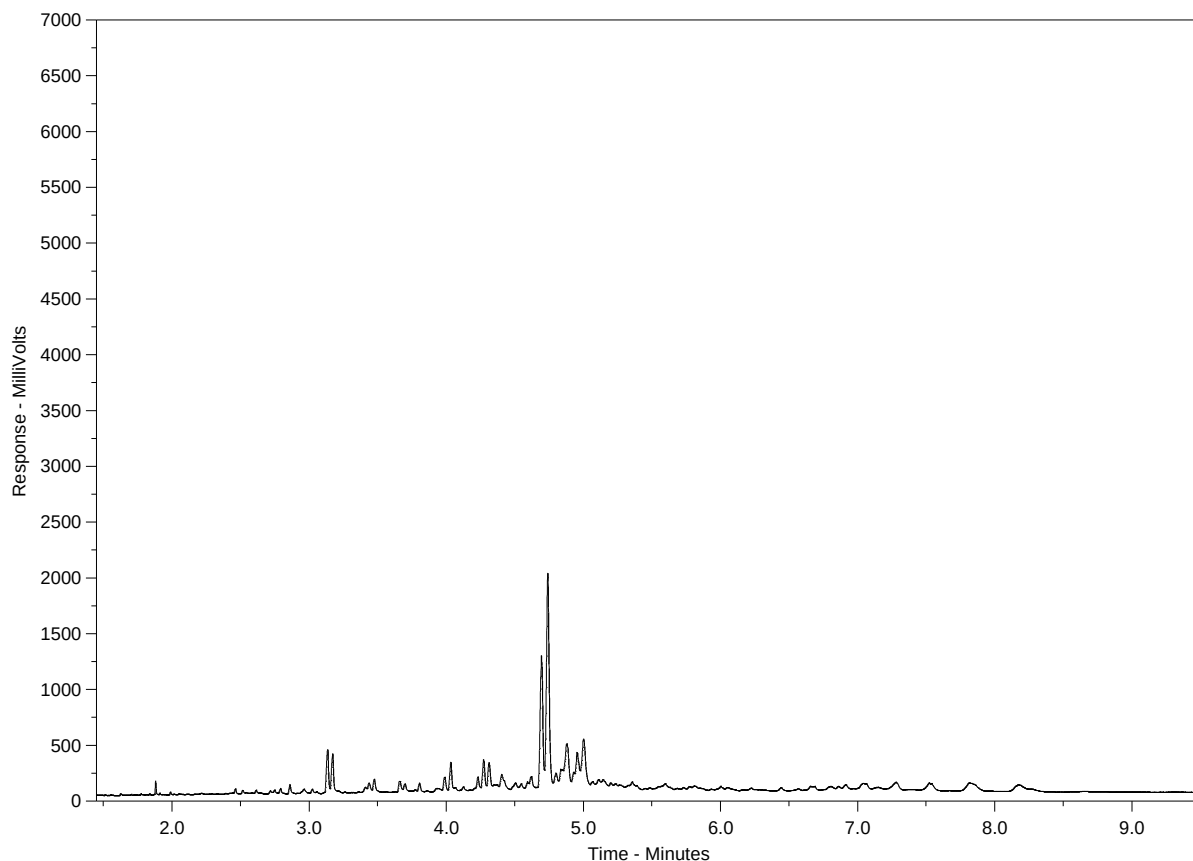
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2351932-2  
Client Sample ID: ARV-4



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

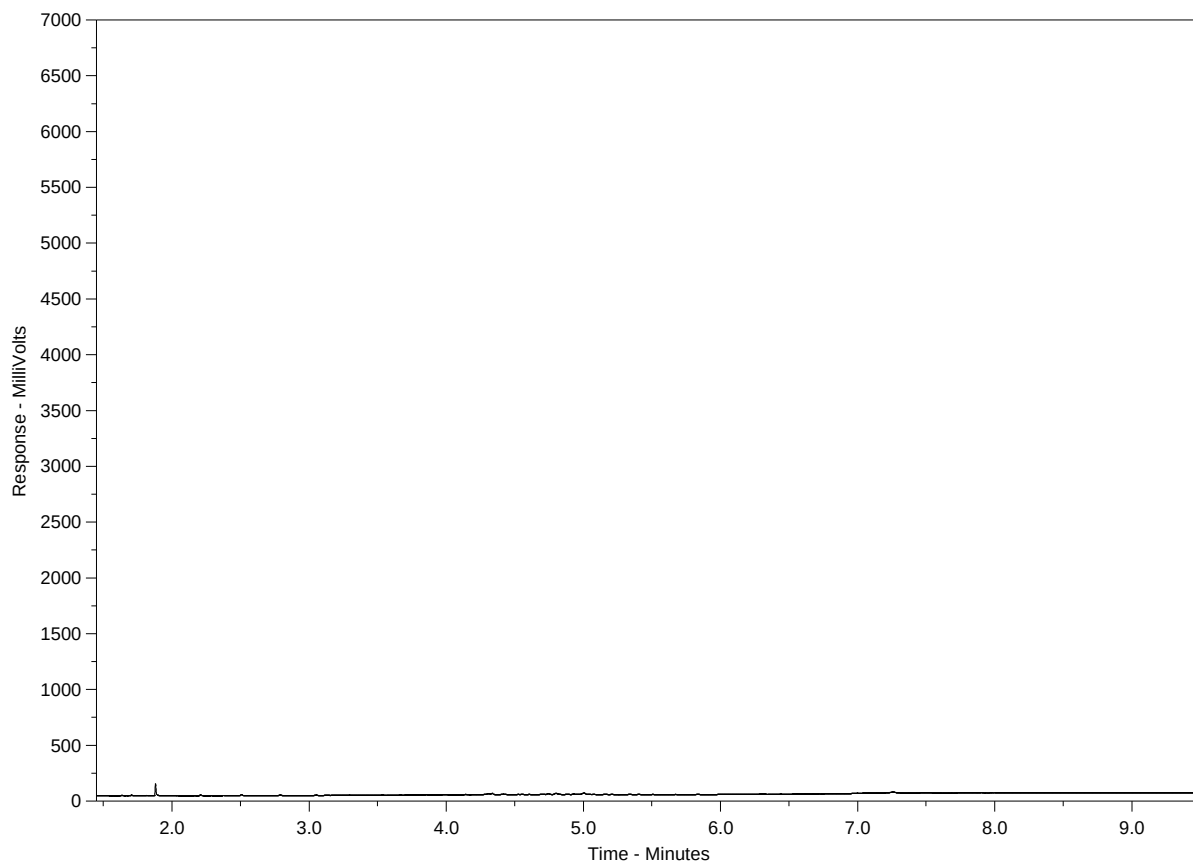
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2351932-3  
Client Sample ID: ARV-5



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | F3                                |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

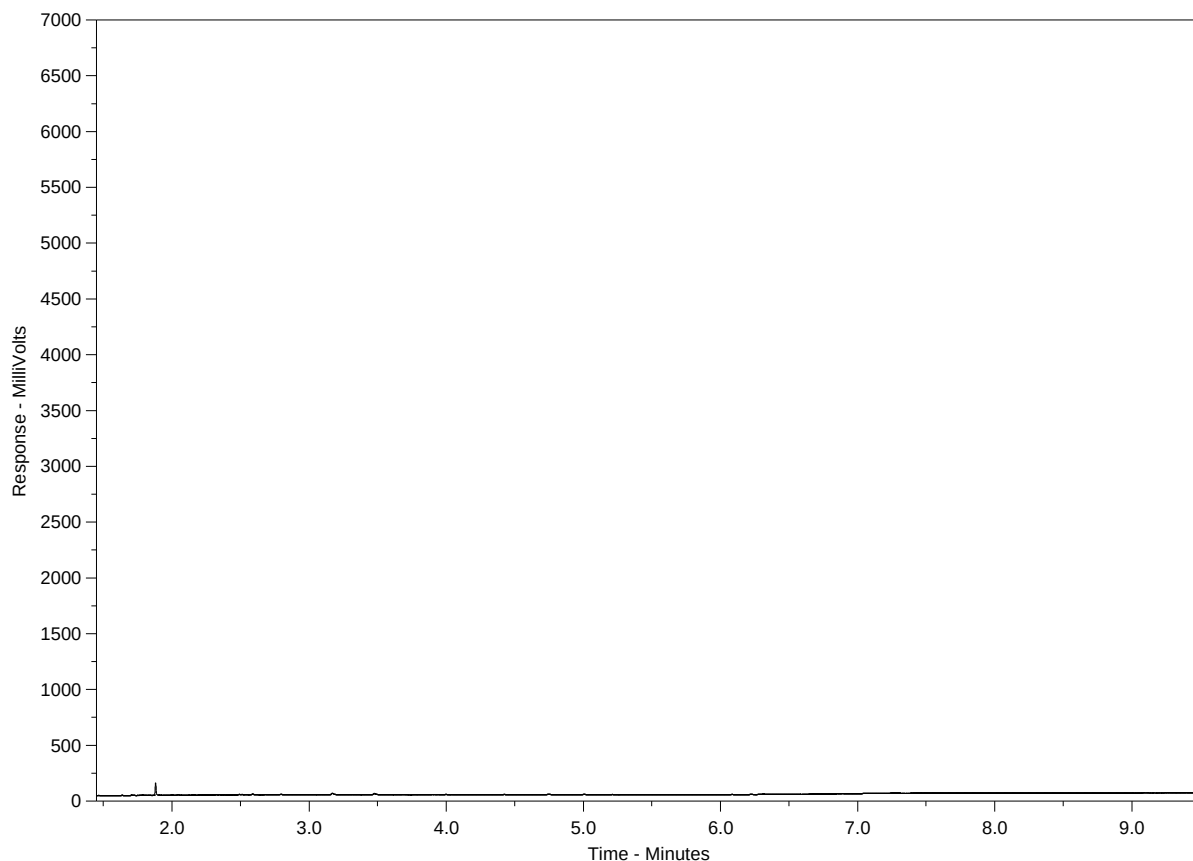
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).

# CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2351932-4  
Client Sample ID: ARV-6



|                       |       |                                   |       |        |        |
|-----------------------|-------|-----------------------------------|-------|--------|--------|
| ← F2 →                |       | ← F3 →                            |       | ← F4 → |        |
| nC10                  | nC16  |                                   | nC34  |        | nC50   |
| 174°C                 | 287°C |                                   | 481°C |        | 575°C  |
| 346°F                 | 549°F |                                   | 898°F |        | 1067°F |
| ← Gasoline →          |       | ← Motor Oils/ Lube Oils/ Grease → |       |        |        |
| ← Diesel/ Jet Fuels → |       |                                   |       |        |        |

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at [www.alsglobal.com](http://www.alsglobal.com).





# Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2351932-COFC

COC Number: 17 - 747862

Page 1 of 1

| Report To                                                |                                                                                       | Report Format / L                                                                                                      |                                                                                                               | Contact your AM to confirm all E&P TATs (surcharges may apply)                                                                                     |       |
|----------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Company:                                                 | Humbly of ARVIAT                                                                      | Select Report Format:                                                                                                  | <input type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL) | TAT if received by 3 pm - business days - no surcharges apply                                                                                      |       |
| Contact:                                                 | Steve Englebert                                                                       | Quality Control (QC) Report with Report                                                                                | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO                                           | 1 Business day [E - 100%]                                                                                                                          |       |
| Phone:                                                   | 867-857-7841                                                                          | <input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked                  |                                                                                                               | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]                                                              |       |
| Company address below will appear on the final report    |                                                                                       | Select Distribution:                                                                                                   | <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX                     |                                                                                                                                                    |       |
| Street:                                                  |                                                                                       | Email 1 or Fax                                                                                                         | Sao@arvial.ca                                                                                                 | Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm                                                                                           |       |
| City/Province:                                           | ARVIAT NUNAVUT                                                                        | Email 2                                                                                                                | Scollins@gov.nu.ca                                                                                            | For tests that can not be performed according to the service level selected, you will be contacted.                                                |       |
| Postal Code:                                             | X0C-0E0                                                                               | Email 3                                                                                                                |                                                                                                               | Analysis Request                                                                                                                                   |       |
| Invoice To                                               | Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | Invoice Distribution                                                                                                   |                                                                                                               | Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below                                                                         |       |
| Copy of Invoice with Report                              | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO                   | Select Invoice Distribution:                                                                                           | <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX                     |                                                                                                                                                    |       |
| Company:                                                 |                                                                                       | Email 1 or Fax                                                                                                         |                                                                                                               |                                                                                                                                                    |       |
| Contact:                                                 |                                                                                       | Email 2                                                                                                                |                                                                                                               |                                                                                                                                                    |       |
| Project Information                                      |                                                                                       | Oil and Gas Required Fields (client use)                                                                               |                                                                                                               |                                                                                                                                                    |       |
| ALS Account # / Quote #:                                 |                                                                                       | AFE/Cost Center:                                                                                                       | PO#                                                                                                           |                                                                                                                                                    |       |
| Job #:                                                   |                                                                                       | Major/Minor Code:                                                                                                      | Routing Code:                                                                                                 |                                                                                                                                                    |       |
| PO / AFE:                                                |                                                                                       | Requisitioner:                                                                                                         |                                                                                                               |                                                                                                                                                    |       |
| LSD:                                                     |                                                                                       | Location:                                                                                                              |                                                                                                               |                                                                                                                                                    |       |
| ALS Lab Work Order # (lab use only):                     |                                                                                       | ALS Contact:                                                                                                           | Sampler:                                                                                                      |                                                                                                                                                    |       |
| ALS Sample # (lab use only)                              | Sample Identification and/or Coordinates (This description will appear on the report) | Date (dd-mmm-yy)                                                                                                       | Time (hh:mm)                                                                                                  | Sample Type                                                                                                                                        |       |
|                                                          | ARV-2                                                                                 | 09-20-19                                                                                                               | 8:46am                                                                                                        |                                                                                                                                                    |       |
|                                                          | ARV-4                                                                                 | 09-20-19                                                                                                               | 8:26am                                                                                                        |                                                                                                                                                    |       |
|                                                          | ARV-5                                                                                 | 09-20-19                                                                                                               | 9:15am                                                                                                        |                                                                                                                                                    |       |
|                                                          | ARV-6                                                                                 | 09-20-19                                                                                                               | 9:32am                                                                                                        |                                                                                                                                                    |       |
| Drinking Water (DW) Samples (client use)                 |                                                                                       | Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only) |                                                                                                               | SAMPLE CONDITION AS RECEIVED (lab use only)                                                                                                        |       |
| Are samples taken from a Regulated DW System?            |                                                                                       |                                                                                                                        |                                                                                                               | Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>                                          |       |
| <input type="checkbox"/> YES <input type="checkbox"/> NO |                                                                                       |                                                                                                                        |                                                                                                               | Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> |       |
| Are samples for human consumption/ use?                  |                                                                                       |                                                                                                                        |                                                                                                               | Cooling Initiated <input type="checkbox"/>                                                                                                         |       |
| <input type="checkbox"/> YES <input type="checkbox"/> NO |                                                                                       |                                                                                                                        |                                                                                                               | INITIAL COOLER TEMPERATURES °C: 4.9°C                                                                                                              |       |
| SHIPMENT RELEASE (client use)                            |                                                                                       | INITIAL SHIPMENT RECEPTION (lab use only)                                                                              |                                                                                                               | FINAL SHIPMENT RECEPTION (lab use only)                                                                                                            |       |
| Released by:                                             | Date:                                                                                 | Received by:                                                                                                           | Date:                                                                                                         | Received by:                                                                                                                                       | Date: |
| Carla                                                    | Sept 20/19                                                                            | MM                                                                                                                     | 21-Sep-19                                                                                                     |                                                                                                                                                    |       |

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2018 FROMT

**ANNUAL REPORT  
FOR THE HAMLET OF ARVIAT**

---

**Appendix D**

# Spills

|                |    |                            |              |       |
|----------------|----|----------------------------|--------------|-------|
| Occurance Date |    |                            | Spill Region |       |
| Start date     |    |                            | - Any -      |       |
| Jan            | 1  | 2019                       |              |       |
| End date       |    |                            |              |       |
| Dec            | 31 | 2019                       |              |       |
| Spill Location |    | Spill Location Description |              |       |
| --Arviat       |    |                            |              |       |
| Report Number  |    | Items per page             |              |       |
|                |    | 10                         |              |       |
|                |    | Go                         |              | Reset |



| Spill         | Occurance Date  | Spill Region | Location                   | Location Description       | Product Spilled                                     | Quantity         | Measurement | Spill Cause | Lead Agency                |
|---------------|-----------------|--------------|----------------------------|----------------------------|-----------------------------------------------------|------------------|-------------|-------------|----------------------------|
| spill-2019329 | August 20, 2019 | Keewatin     | Arviat, Community, Nunavut | Arviat Power Plant         | Petroleum - lubricating oil (lube, hydraulic)       | 400.00           | Litres      | Breakage    | GN - Government of Nunavut |
| spill-2019237 | June 7, 2019    |              | Arviat, Community, Nunavut | 300 7th Avenue, Arviat, NU | Petroleum - fuel oil (jet A, diesel, turbo A, heat) | Unknown Quantity |             |             | GN - Government of Nunavut |
| spill-2019182 | May 2, 2019     | Keewatin     | Arviat, Community, Nunavut | 400 10th Avenue            | Petroleum - fuel oil (jet A, diesel, turbo A, heat) | 1620.00          | Litres      | Tank Leak   | GN - Government of Nunavut |

**ANNUAL REPORT  
FOR THE HAMLET OF ARVIAT**

---

**Appendix E**

| Arviat<br>ARV-2a                |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
|---------------------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|----------|-----------|
|                                 |           |          | 2014      |           |           | 2015      |           |           |           | 2016      |           |           |           | 2017      |           |           |           | 2019      |           |           |           | Statistics |          |           |
| Parameter                       | Unit      | DL       | 15-Jul-14 | 01-Aug-14 | 12-Sep-14 | 15-Jun-15 | 21-Jul-15 | 18-Aug-15 | 16-Sep-15 | 22-Jun-16 | 12-Jul-16 | 25-Aug-16 | 16-Sep-16 | 19-Jun-17 | 12-Jul-17 | 10-Aug-17 | 19-Sep-17 | 13-Jun-19 | 17-Jul-19 | 26-Aug-19 | 20-Sep-19 | Min        | Max      | Average   |
| Alkalinity                      |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Bicarbonate (HCO3)              | mg/L      | 1.2      | 800       | /         | 628       | /         | 934       | 722       | 634       | 490       | 429       | 537       | 704       | 243       | 356       | 366       | 776       | 160       | 537       | 699       | 786       | 160        | 934      | 560.29    |
| Carbonate (CO3)                 | mg/L      | 0.60     | 12        | /         | 12        | /         | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.6        | 12       | 1.69      |
| Hydroxide (OH)                  | mg/L      | 0.34     | 6.8       | /         | 6.8       | /         | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34       | 6.8      | 0.96      |
| Total (as CaCO3)                | mg/L      | 1.0      | 656       | /         | 515       | /         | 766       | 592       | 520       | 401       | 352       | 440       | 577       | 199       | 292       | 300       | 636       | 132       | 440       | 573       | 645       | 132        | 766      | 459.33    |
| Ammonia by Colour               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Total (as N)                    | mg/L      | 0.010    | 12.0      | 12.1      | 5.6       | 0.119     | 14.0      | 8.6       | 5.6       | 9.2       | 6.16      | 5.0       | 15.2      | 0.90      | 2.85      | 2.75      | 9.00      | 2.24      | 4.72      | 0.484     | 13.10     | 0.12       | 15.2     | 6.77      |
| Biochemical Oxygen Demand (BOD) |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Biochemical Oxygen Demand       | mg/L      | 20       | 37.4      | 37.2      | 41.2      | 2.2       | 79        | 34.1      | 17.8      | 20.3      | 31.8      | 28.1      | 18.1      | 51        | 35.2      | 38        | 23.8      | 10.4      | 31.5      | 13.6      | 9         | 2.2        | 79.0     | 28.80     |
| Carbonaceous BOD                |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| BOD Carbonaceous                | mg/L      | 20       | 34.1      | /         | 20.0      | /         | 40        | 14.6      | 9.9       | 17.5      | 21.4      | 25.9      | 15.7      | 46        | 21.2      | 29.5      | 17.1      | 8.2       | 16.6      | 9.6       | 6         | 6.0        | 46.0     | 21.69     |
| Chloride in Water by IC         |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Chloride (Cl)                   | mg/L      | 10       | 291       | /         | 301       | /         | 409       | 380       | 408       | 414       | 450       | 399       | 371       | 422       | 836       | 869       | 430       | 142       | 49        | 317       | 415       | 49         | 869      | 445.14    |
| Conductivity                    |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Conductivity                    | umhos/cm  | 1.0      | 2530      | 2990      | 2330      | 272       | 3340      | 2910      | 2720      | 2460      | 2670      | 2790      | 2760      | 1920      | 3310      | 3500      | 2410      | 1030      | 2930      | 2910      | 3110      | 272        | 3820     | 2709.65   |
| Fecal Coliforms                 |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Fecal Coliforms                 | MPN/100mL | 3        | 24000     | 150       | 23        | 4         | 36        | 15        | 9         | 110       | 23        | 3         | 9         | 50        | 10        | 130       | 20        | 230       | 60        | 360       | 60        | 3          | 24000    | 1133.13   |
| Hardness Calculated             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Hardness (as CaCO3)             | mg/L      | 0.30     | 997       | /         | 954       | /         | 1160      | 1000      | 831       | 726       | 791       | 994       | 1040      | 520       | 839       | 1010      | 1130      | 289       | 841       | 1030      | 1310      | 289        | 1310     | 922.38    |
| Mercury Total                   |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Mercury (Hg)                    | mg/L      | 0.000200 | 0.000027  | 0.00020   | 0.00020   | 0.000020  | 0.00020   | 0.00020   | 0.00020   | 0.000029  | 0.000020  | 0.000020  | 0.000020  | 0.0000122 | 0.0000050 | 0.0000050 | 0.0000057 | 0.0000060 | 0.0000190 | 0.0000150 | 0.0000090 | 0.000005   | 0.0002   | 0.0000558 |
| Nitrate in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Nitrate (as N)                  | mg/L      | 0.020    | 0.25      | /         | 0.31      | 0.267     | 0.40      | 0.10      | 0.381     | 0.20      | 0.40      | 0.40      | 0.40      | 0.25      | 0.40      | 0.40      | 0.20      | 0.50      | 0.40      | 0.020     | 0.40      | 0.020      | 0.501    | 0.317     |
| Nitrate + Nitrite               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Nitrate and Nitrite as N        | mg/L      | 0.070    | 0.35      | 0.35      | 0.35      | 0.267     | 0.45      | 0.11      | 0.479     | 0.22      | 0.45      | 0.45      | 0.45      | 0.25      | 0.45      | 0.45      | 0.22      | 0.53      | 0.45      | 0.07      | 0.45      | 0.07       | 0.534    | 0.36      |
| Nitrite in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Nitrite (as N)                  | mg/L      | 0.010    | 0.25      | /         | 0.25      | 0.010     | 0.20      | 0.050     | 0.098     | 0.10      | 0.20      | 0.20      | 0.20      | 0.10      | 0.27      | 0.20      | 0.10      | 0.03      | 0.20      | 0.01      | 0.20      | 0.01       | 0.27     | 0.15      |
| Oil & Grease - Gravimetric      |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Oil and Grease                  | mg/L      | 2.00     | /         | 5.7       | 2.0       | 2.0       | 4.5       | 2.0       | 2.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 11.0      | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 2          | 11       | 4.74      |
| Phenol                          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Phenols                         | mg/L      | 0.0010   | 0.0055    | 0.0106    | 0.010     | 0.0010    | 0.0295    | 0.0049    | 0.0061    | 0.0083    | 0.0043    | 0.0074    | 0.0063    | 0.0041    | 0.0021    | 0.0016    | 0.0042    | 0.0016    | 0.0056    | 0.0367    | 0.0029    | 0.001      | 0.0367   | 0.0073    |
| Phosphorus, Total               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Phosphorus (P)                  | mg/L      | 0.10     | 2.21      | /         | 0.700     | 0.10      | 1.65      | 0.907     | 0.756     | 1.09      | 0.704     | 0.746     | 1.06      | 0.71      | 0.665     | 0.694     | 1.01      | 0.32      | 0.411     | 0.587     | 0.538     | 0.100      | 2.210    | 0.780     |
| Sulfate in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Sulfate (SO4)                   | mg/L      | 0.30     | 419       | 466       | 490       | 50.1      | 469       | 539       | 466       | 297       | 445       | 501       | 515       | 322       | 431       | 565       | 536       | 164       | 81.5      | 669       | 803       | 50.1       | 803      | 450.33    |
| Total Metals by ICP-MS          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |
| Aluminium (Al)                  | mg/L      | 0.0050   | 0.305     | /         | 0.050     | 0.0689    | 0.0934    | 0.0195    | 0.0105    | 0.0353    | 0.0425    | 0.0216    | 0.0264    | 0.0252    | 0.0283    | 0.0203    | 0.0147    | 0.068     | 0.0228    | 0.0193    | 0.0125    | 0.0088     | 0.3050   | 0.0443    |
| Arsenic (As)                    | mg/L      | 0.00020  | 0.00743   | 0.00651   | 0.0061    | 0.00038   | 0.00631   | 0.00766   | 0.00843   | 0.00396   | 0.00459   | 0.00596   | 0.00584   | 0.00403   | 0.00541   | 0.00753   | 0.00853   | 0.00223   | 0.00490   | 0.00473   | 0.00750   | 0.00038    | 0.00853  | 0.00566   |
| Cadmium (Cd)                    | mg/L      | 0.000010 | 0.000336  | 0.000074  | 0.00010   | 0.000010  | 0.000199  | 0.000068  | 0.000023  | 0.000258  | 0.000082  | 0.000061  | 0.000077  | 0.000154  | 0.0000342 | 0.0000104 | 0.0000912 | 0.0000929 | 0.000179  | 0.000223  | 0.0000530 | 0.000010   | 0.000606 | 0.000121  |
| Calcium (Ca)                    | mg/L      | 0.10     | 323       | 356       | 298       | 36.1      | 353       | 307       | 245       | 217       | 217       | 297       | 325       | 133       | 181       | 238       | 343       | 82.4      | 232       | 312       | 396       | 36.1       | 396      | 257.41    |
| Chromium (Cr)                   | mg/L      | 0.0010   | 0.0045    | 0.0022    | 0.010     | 0.0010    | 0.0027    | 0.0014    | 0.0010    | 0.0015    | 0.0018    | 0.0010    | 0.0010    | 0.0010    | 0.00096   | 0.00093   | 0.00127   | 0.00045   | 0.00142   | 0.00096   | 0.00093   | 0.00045    | 0.01000  | 0.00180   |
| Cobalt (Co)                     | mg/L      | 0.00020  | 0.00396   | /         | 0.0020    | 0.00047   | 0.00167   | 0.00136   | 0.00094   | 0.00202   | 0.00128   | 0.00096   | 0.00087   | 0.00173   | 0.00110   | 0.00095   | 0.00098   | 0.00098   | 0.00183   | 0.00138   | 0.00104   | 0.00047    | 0.00396  | 0.00144   |
| Copper (Cu)                     | mg/L      | 0.00020  |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |           |

| Arviat<br>ARV-4                 |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
|---------------------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|
|                                 |           |          | 2014      |           |           | 2015      |           |           |           | 2016      |           |           |           | 2017      |           |           |           | 2019      |           |           |           | Statistics |           |           |
| Parameter                       | Unit      | DL       | 15-Jul-14 | 03-Aug-14 | 12-Sep-14 | 15-Jun-15 | 21-Jul-15 | 18-Aug-15 | 16-Sep-15 | 22-Jun-16 | 12-Jul-16 | 25-Aug-16 | 16-Sep-16 | 19-Jun-17 | 12-Jul-17 | 10-Aug-17 | 19-Sep-17 | 13-Jun-19 | 17-Jul-19 | 26-Aug-19 | 20-Sep-19 | Min        | Max       | Average   |
| Alkalinity                      |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Bicarbonate (HCO3)              | mg/L      | 1.2      | 332       | /         | 82        | /         | 205       | 202       | 227       | 203       | 238       | 206       | 192       | 224       | 354       | 168       | 236       | 159       | 340       | 208       | 86.6      | 82         | 354       | 217       |
| Carbonate (CO3)                 | mg/L      | 0.60     | 12        | /         | 12        | /         | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 13.2      | 0.6       | 0.60      | 0.60      | 2.76      | 24.00     | 0.60       | 24.00     | 3.50      |
| Hydroxide (OH)                  | mg/L      | 0.34     | 6.80      | /         | 6.80      | /         | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34       | 6.80      | 0.97      |
| Total (as CaCO3)                | mg/L      | 1.0      | 272       | /         | 67        | /         | 168       | 166       | 186       | 167       | 195       | 169       | 157       | 183       | 290       | 159       | 194       | 131       | 279       | 175       | 111       | 67.00      | 290.00    | 181.43    |
| Ammonia by Colour               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Total (as N)                    | mg/L      | 0.20     | 39.9      | 9.4       | 12.5      | 37.8      | 13.6      | 14.8      | 15.6      | 17.0      | 25.2      | 17.0      | 16.7      | 19.1      | 27.9      | 8.68      | 19.40     | 19.6      | 65.9      | 28.0      | 5.95      | 5.95       | 65.90     | 22.07     |
| Biochemical Oxygen Demand (BOD) |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Biochemical Oxygen Demand       | mg/L      | 20       | 28.4      | 50.1      | 69.1      | 67        | 30.2      | 112       | 7.7       | 15.4      | 34.6      | 6.0       | 6.3       | 27.2      | 215       | 50        | 5.6       | 22.4      | 65        | 27.1      | 51        | 5.60       | 215.00    | 43.11     |
| Carbonaceous BOD                |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| BOD Carbonaceous                | mg/L      | 20       | 17.0      | /         | 40.2      | /         | 16.1      | 77        | 2.0       | 14.0      | 20.6      | 2.4       | 3.5       | 21.9      | 154       | 43        | 2.2       | 12.6      | 58        | 18.2      | 25.4      | 2.00       | 154.00    | 28.09     |
| Chloride in Water by IC         |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Chloride (Cl)                   | mg/L      | 10       | 83.5      | /         | 183       | /         | 161       | 233       | 300       | 188       | 291       | 381       | 318       | 146       | 167       | 146       | 517       | 154       | 73.8      | 84.9      | 87.8      | 73.80      | 517.00    | 225.95    |
| Conductivity                    |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Conductivity                    | umhos/cm  | 1.0      | 868       | 570       | 750       | 809       | 903       | 1100      | 1350      | 968       | 1370      | 1640      | 1360      | 817       | 1090      | 761       | 1830      | 832       | 856       | 647       | 477       | 477.00     | 1880.00   | 1067.39   |
| Fecal Coliforms                 |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Fecal Coliforms                 | MPN/100mL | 3        | 9300      | 4         | 640       | 24000     | 930       | 300       | 150       | 93        | 430       | 93        | 240       | 990       | 2050      | 230       | 190       | 19900     | 24200     | 5790      | 3870      | 4.00       | 24200.00  | 5610.00   |
| Hardness Calculated             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Hardness (as CaCO3)             | mg/L      | 0.30     | 88.2      | /         | 81.2      | /         | 114       | 158       | 187       | 124       | 174       | 204       | 142       | 87.6      | 117       | 93.7      | 254       | 98.8      | 58.0      | 54.6      | 61.2      | 54.60      | 254.00    | 133.10    |
| Mercury Total                   |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Mercury (Hg)                    | mg/L      | 0.00020  | 0.000020  | 0.0002    | 0.00020   | 0.00020   | 0.00040   | 0.00020   | 0.00020   | 0.000020  | 0.00020   | 0.000020  | 0.000020  | 0.0000052 | 0.0000050 | 0.000050  | 0.000005  | 0.0000100 | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050  | 0.0004000 | 0.0000790 |
| Nitrate in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Nitrate (as N)                  | mg/L      | 0.020    | 0.502     | /         | 0.563     | 0.049     | 0.040     | 0.378     | 0.569     | 0.10      | 0.10      | 0.41      | 0.48      | 0.494     | 0.040     | 0.020     | 1.940     | 0.17      | 0.020     | 0.372     | 0.455     | 0.020      | 1.940     | 0.348     |
| Nitrate + Nitrite               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Nitrate and Nitrite as N        | mg/L      | 0.070    | 0.868     | 1.44      | 0.859     | 0.070     | 0.070     | 0.416     | 0.594     | 0.11      | 0.11      | 0.47      | 0.48      | 0.540     | 0.070     | 0.182     | 2.15      | 0.173     | 0.070     | 0.548     | 0.833     | 0.070      | 2.150     | 0.484     |
| Nitrite in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Nitrite (as N)                  | mg/L      | 0.010    | 0.367     | /         | 0.296     | 0.015     | 0.020     | 0.037     | 0.025     | 0.050     | 0.050     | 0.061     | 0.050     | 0.047     | 0.020     | 0.182     | 0.21      | 0.020     | 0.010     | 0.18      | 0.378     | 0.010      | 0.378     | 0.106     |
| Oil & Grease - Gravimetric      |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Oil and Grease                  | mg/L      | 2.0      | 0.0350    | 2.0       | 2.0       | 2.0       | 2.0       | 18.5      | 2.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.5       | 5.0       | 11.7      | 5.0       | 5.0       | 0.04       | 18.50     | 5.06      |
| Phenol                          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Phenols                         | mg/L      | 0.0010   | 0.0350    | 0.0050    | 0.0010    | 0.0018    | 0.0054    | 0.0031    | 0.0040    | 0.0015    | 0.0018    | 0.0052    | 0.0045    | 0.0040    | 0.022     | 0.010     | 0.003     | 0.0072    | 0.197     | 0.010     | 0.0065    | 0.001      | 0.197     | 0.015     |
| Phosphorus, Total               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Phosphorus (P)                  | mg/L      | 0.10     | 9.55      | /         | 6.00      | 5.63      | 6.60      | 3.32      | 4.81      | 5.15      | 4.60      | 4.12      | 2.18      | 3.91      | 6.88      | 8.65      | 0.92      | 4.36      | 9.46      | 6.18      | 6.64      | 0.92       | 22.40     | 6.64      |
| Sulfate in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Sulfate (SO4)                   | mg/L      | 6.0      | 5.15      | 2.18      | 4.98      | 8.97      | 5.60      | 10.40     | 27.2      | 7.2       | 14.6      | 21.6      | 26.7      | 8.78      | 3.87      | 18.6      | 66        | 22        | 3.54      | 10.2      | 8.94      | 2.18       | 66.00     | 15.79     |
| Total Metals by ICP-MS          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Aluminium (Al)                  | mg/L      | 0.0050   | 0.169     | /         | 0.211     | 0.0934    | 0.128     | 1.18      | 0.255     | 0.0818    | 0.138     | 0.0436    | 0.0375    | 0.104     | 1.26      | 0.344     | 0.0259    | 0.113     | 0.148     | 0.119     | 0.191     | 0.026      | 1.260     | 0.229     |
| Arsenic (As)                    | mg/L      | 0.00020  | 0.00627   | 0.00844   | 0.00789   | 0.00433   | 0.00523   | 0.00870   | 0.00725   | 0.00647   | 0.00665   | 0.00443   | 0.00364   | 0.00590   | 0.0101    | 0.0110    | 0.0034    | 0.00491   | 0.0042    | 0.00585   | 0.00672   | 0.00335    | 0.01100   | 0.00646   |
| Cadmium (Cd)                    | mg/L      | 0.000010 | 0.000070  | 0.000079  | 0.000088  | 0.000147  | 0.000048  | 0.000214  | 0.000073  | 0.000027  | 0.000059  | 0.000010  | 0.000014  | 0.000052  | 0.000266  | 0.0000669 | 0.0000191 | 0.000132  | 0.0000898 | 0.0000653 | 0.0000711 | 0.0000092  | 0.0006100 | 0.0000989 |
| Calcium (Ca)                    | mg/L      | 0.10     | 20.7      | 17        | 16.6      | 18.5      | 20.8      | 27.9      | 36.6      | 23.1      | 31.5      | 36.0      | 23.9      | 15.8      | 22.1      | 18.3      | 44.1      | 17.2      | 13.6      | 10.8      | 11.9      | 10.80      | 44.10     | 23.45     |
| Chromium (Cr)                   | mg/L      | 0.0010   | 0.0013    | /         | 0.0013    | 0.0011    | 0.0010    | 0.0037    | 0.0013    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0047    | 0.00165   | 0.00038   | 0.00070   | 0.00108   | 0.00111   | 0.00142   | 0.00038    | 0.00470   | 0.00149   |
| Cobalt (Co)                     | mg/L      | 0.00020  | 0.00234   | /         | 0.00204   | 0.00323   | 0.00231   | 0.00423   | 0.00230   | 0.00286   | 0.00286   | 0.00255   | 0.00118   | 0.00256   | 0.0047    |           |           |           |           |           |           |            |           |           |



| Arviat<br>ARV-5                 |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
|---------------------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|
|                                 |           |          | 2014      |           |           | 2015      |           |           |           | 2016      |           |           |           | 2017      |           |           |           | 2019      |           |           |           | Statistics |           |           |
| Parameter                       | Unit      | DL       | 15-Jul-14 | 01-Aug-14 | 12-Sep-14 | 15-Jun-15 | 21-Jul-15 | 18-Aug-15 | 16-Sep-15 | 22-Jun-16 | 12-Jul-16 | 25-Aug-16 | 16-Sep-16 | 19-Jun-17 | 12-Jul-17 | 10-Aug-17 | 19-Sep-17 | 13-Jun-19 | 17-Jul-19 | 26-Aug-19 | 20-Sep-19 | Min        | Max       | Average   |
| Alkalinity                      |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Bicarbonate (HCO3)              | mg/L      | 1.2      | 50        | /         | 93        | /         | 93.9      | 133       | 87.0      | 38.4      | 73.2      | 107       | 78.2      | 78.7      | 135       | 135       | 42.5      | 64.7      | 92.2      | 78.2      | 76        | 38.4       | 135.0     | 85.1      |
| Carbonate (CO3)                 | mg/L      | 0.60     | 12.00     | /         | 12.00     | /         | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60       | 12.00     | 1.69      |
| Hydroxide (OH)                  | mg/L      | 0.34     | 6.80      | /         | 6.80      | /         | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34       | 6.80      | 0.96      |
| Total (as CaCO3)                | mg/L      | 1.0      | 41        | /         | 76        | /         | 77.0      | 109       | 71.3      | 31.5      | 60.0      | 87.7      | 64.1      | 64.5      | 110       | 110       | 34.8      | 53.0      | 75.6      | 64.1      | 62.3      | 31.50      | 110.00    | 69.64     |
| Ammonia by Colour               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Total (as N)                    | mg/L      | 0.20     | 0.085     | 0.01      | 0.01      | 0.015     | 0.021     | 0.037     | 0.020     | 0.01      | 0.029     | 0.013     | 0.054     | 0.020     | 0.025     | 0.025     | 0.010     | 0.015     | 0.057     | 0.014     | 0.02      | 0.010      | 0.085     | 0.025     |
| Biochemical Oxygen Demand (BOD) |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Biochemical Oxygen Demand       | mg/L      | 6.0      | 6.0       | 6.0       | 6.0       | 2.0       | 2.0       | 2.0       | 2.0       | 2.3       | 3.1       | 2.0       | 3.0       | 2.0       | 2.0       | 2.3       | 2         | 2.0       | 2         | 2         | 2         | 2.00       | 6.00      | 2.65      |
| Carbonaceous BOD                |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| BOD Carbonaceous                | mg/L      | 6.0      | 6.0       | /         | 6.0       | /         | 2.0       | 2.0       | 2.0       | 2.0       | 3.0       | 2.0       | 2.0       | 2.0       | 2.0       | 2.0       | 2.0       | 2.0       | 2         | 2         | 6         | 2.00       | 6.00      | 2.62      |
| Chloride in Water by IC         |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Chloride (Cl)                   | mg/L      | 10       | 513       | /         | 311       | /         | 901       | 517       | 361       | 94.5      | 846       | 290       | 185       | 746       | 1300      | 868       | 277       | 164       | 200       | 173       | 176       | 94.50      | 1300.00   | 434.55    |
| Conductivity                    |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Conductivity                    | umhos/cm  | 1.0      | 1730      | 2700      | 1100      | 305       | 2990      | 1920      | 1280      | 386       | 2670      | 1130      | 735       | 2200      | 3890      | 2790      | 1010      | 679       | 834       | 699       | 676       | 305        | 3890      | 1484      |
| Fecal Coliforms                 |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Fecal Coliforms                 | MPN/100mL | 3        | 9         | 43        | 3         | 4         | 4         | 7500      | 4         | 3         | 3         | 15        | 43        | 10        | 10        | 60        | 10        | 500       | 10        | 30        | 10        | 3.00       | 7500.00   | 363.52    |
| Hardness Calculated             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Hardness (as CaCO3)             | mg/L      | 0.30     | 373       | /         | 162       | /         | 466       | 273.00    | 214       | 64.3      | 399       | 185       | 120       | 390       | 744       | 412       | 204       | 109       | 133       | 112       | 109       | 64         | 744       | 244       |
| Mercury Total                   |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Mercury (Hg)                    | mg/L      | 0.00020  | 0.000020  | 0.00020   | 0.000024  | 0.000020  | 0.000020  | 0.00020   | 0.00020   | 0.000020  | 0.000020  | 0.000020  | 0.000020  | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050  | 0.0002000 | 0.0000358 |
| Nitrate in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Nitrate (as N)                  | mg/L      | 0.020    | 0.25      | /         | 0.050     | 0.020     | 0.40      | 0.10      | 0.020     | 0.020     | 0.40      | 0.040     | 0.020     | 0.20      | 0.40      | 0.20      | 0.04      | 0.020     | 0.020     | 0.020     | 0.020     | 0.020      | 0.400     | 0.114     |
| Nitrate + Nitrite               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Nitrate and Nitrite as N        | mg/L      | 0.070    | 0.35      | 0.35      | 0.071     | 0.070     | 0.45      | 0.11      | 0.070     | 0.070     | 0.45      | 0.070     | 0.070     | 0.22      | 0.45      | 0.22      | 0.07      | 0.070     | 0.070     | 0.070     | 0.070     | 0.070      | 0.450     | 0.162     |
| Nitrite in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Nitrite (as N)                  | mg/L      | 0.010    | 0.25      | /         | 0.050     | 0.010     | 0.20      | 0.050     | 0.010     | 0.010     | 0.20      | 0.020     | 0.010     | 0.10      | 0.20      | 0.10      | 0.02      | 0.010     | 0.010     | 0.010     | 0.010     | 0.010      | 0.250     | 0.064     |
| Oil & Grease - Gravimetric      |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Oil and Grease                  | mg/L      | 5.0      | /         | 2.0       | 2.0       | 2.0       | 2.0       | 2.0       | 2.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 5.0       | 10.9      | 5.0       | 5.0       | 5.0       | 2.0        | 10.9      | 4.5       |
| Phenol                          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Phenols                         | mg/L      | 0.0010   | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0138    | 0.0027    | 0.0013    | 0.001     | 0.0038    | 0.0033    | 0.0014    | 0.0033    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010     | 0.0138    | 0.0020    |
| Phosphorus, Total               |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Phosphorus (P)                  | mg/L      | 0.010    | 0.028     | /         | 0.050     | 0.10      | 0.044     | 0.043     | 0.034     | 0.06      | 0.170     | 0.045     | 0.137     | 0.0038    | 0.043     | 0.135     | 0.013     | 0.0290    | 0.0353    | 0.0179    | 0.0190    | 0.0038     | 0.1700    | 0.0498    |
| Sulfate in Water by IC          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Sulfate (SO4)                   | mg/L      | 6.0      | 30.5      | 16        | 8.42      | 7.18      | 53.0      | 10.0      | 7.13      | 7.51      | 30.4      | 4.90      | 11.8      | 14.4      | 119       | 39.7      | 80.1      | 16.7      | 10.9      | 12.3      | 12.1      | 2.80       | 119.00    | 22.81     |
| Total Metals by ICP-MS          |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |           |           |
| Aluminium (Al)                  | mg/L      | 0.0050   | 0.282     | /         | 0.0319    | 0.0124    | 0.0779    | 0.0536    | 0.0471    | 0.352     | 0.463     | 0.326     | 0.0237    | 0.0576    | 0.0220    | 0.0744    | 0.0096    | 0.0254    | 0.026     | 0.0126    | 0.0196    | 0.009      | 0.463     | 0.091     |
| Arsenic (As)                    | mg/L      | 0.00020  | 0.00051   | 0.00087   | 0.00047   | 0.00020   | 0.00050   | 0.00076   | 0.00057   | 0.00051   | 0.00085   | 0.00062   | 0.00036   | 0.00068   | 0.00050   | 0.00090   | 0.00029   | 0.00043   | 0.00062   | 0.00038   | 0.00040   | 0.00020    | 0.00090   | 0.00056   |
| Cadmium (Cd)                    | mg/L      | 0.000010 | 0.000074  | 0.000010  | 0.000010  | 0.000010  | 0.000010  | 0.000010  | 0.000010  | 0.000010  | 0.000016  | 0.000010  | 0.000010  | 0.000010  | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000050 | 0.0000093 | 0.0000075 | 0.0000050 | 0.0000050  | 0.0000740 | 0.0000109 |
| Calcium (Ca)                    | mg/L      | 0.10     | 78        | 53.4      | 28.9      | 8.98      | 47.2      | 37.7      | 39.5      | 11.7      | 47.0      | 35.0      | 22.5      | 40.6      | 79.9      | 55.1      | 40.6      | 19.4      | 24.5      | 22.2      | 19.8      | 8.98       | 79.90     | 35.61     |
| Chromium (Cr)                   | mg/L      | 0.0010   | 0.0016    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0010    | 0.0014    | 0.0010    | 0.0010    | 0.0010    | 0.00022   | 0.00047   | 0.00014   | 0.00025   | 0.00030   | 0.00026   | 0.00018   | 0.00014    | 0.00160   | 0.00068   |
| Cobalt (Co)                     | mg/L      | 0.00020  | 0.00021   | /         | 0.00020   | 0.00020   | 0.00020   | 0.00033   | 0.00020   | 0.00040   | 0.00057   | 0.00035   | 0.00020   | 0.00030   | 0.00021   | 0.00023   | 0.0001    | 0.00010   | 0.00015   | 0.00010   | 0.00010   | 0.00010    | 0.00057   |           |

| Arviat<br>ARV-6                    |           |          | 2014      |           |           | 2015      |           |           |           | 2016      |           |           |           | 2017      |           |           |           | 2019      |           |           |           | Statistics |          |          |
|------------------------------------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|----------|----------|
| Parameter                          | Unit      | DL       | 15-Jul-14 | 01-Aug-14 | 12-Sep-14 | 15-Jun-15 | 21-Jul-15 | 18-Aug-15 | 16-Sep-15 | 22-Jun-16 | 12-Jul-16 | 25-Aug-16 | 16-Sep-16 | 19-Jun-17 | 12-Jul-17 | 10-Aug-17 | 19-Sep-17 | 13-Jun-19 | 17-Jul-19 | 26-Aug-19 | 20-Sep-19 | Min        | Max      | Average  |
| Alkalinity                         |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Bicarbonate (HCO3)                 | mg/L      | 1.2      | 90        | /         | 126       | /         | 138       | 128       | 118       | 31.0      | 112       | 118       | 97.7      | 76.9      | 94.6      | /         | /         | /         | 127       | 102       | 115       | 31.00      | 138.00   | 104.68   |
| Carbonate (CO3)                    | mg/L      | 0.60     | 12        | /         | 12        | /         | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | 0.60      | /         | /         | /         | 0.60      | 0.60      | 0.60      | 0.60       | 12.00    | 1.87     |
| Hydroxide (OH)                     | mg/L      | 0.34     | 6.8       | /         | 6.8       | /         | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | 0.34      | /         | /         | /         | 0.34      | 0.34      | 0.34      | 0.34       | 6.80     | 1.06     |
| Total (as CaCO3)                   | mg/L      | 1.0      | 74        | /         | 103       | /         | 113       | 105       | 96.8      | 25.4      | 91.5      | 97.0      | 80.1      | 63.0      | 77.5      | /         | /         | /         | 104       | 83.2      | 94.4      | 25.40      | 113.00   | 85.75    |
| Ammonia by Colour                  |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Total (as N)                       | mg/L      | 0.20     | 0.010     | 0.289     | 0.075     | /         | 0.256     | 0.330     | 0.435     | 0.010     | 0.452     | 0.138     | 0.83      | 0.070     | 0.251     | /         | /         | /         | 0.100     | 0.117     | 0.145     | 0.01       | 0.83     | 0.23     |
| Biochemical Oxygen Demand (BOD)    |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Biochemical Oxygen Demand          | mg/L      | 6.0      | 6.0       | 29.3      | 6.0       | 70.1      | 6.3       | 8.0       | 6.0       | 3.1       | 7.3       | 5.1       | 5.1       | 8.2       | 2.1       | /         | /         | /         | 6.0       | 2         | 6         | 2.00       | 70.10    | 9.91     |
| Carbonaceous BOD                   |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| BOD Carbonaceous                   | mg/L      | 6.0      | 6.0       | /         | 6.0       | /         | 5.9       | 3.1       | 2.0       | 2.3       | 4.7       | 2.0       | 2.2       | 6.6       | 2.0       | /         | /         | /         | 6.0       | 2         | 6         | 2.00       | 7.30     | 4.12     |
| Chloride in Water by IC            |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Chloride (Cl)                      | mg/L      | 10       | 149       | /         | 155       | /         | 45.1      | 99.8      | 176       | 112       | 159       | 267       | 215       | 66.9      | 196       | /         | /         | /         | 130       | 163       | 184       | 45.10      | 267.00   | 166.88   |
| Conductivity                       |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Conductivity                       | umhos/cm  | 1.0      | 655       | 749       | 669       | 198       | 691       | 693       | 712       | 427       | 685       | 1070      | 834       | 333       | 737       | /         | /         | /         | 630       | 677       | 721       | 198.00     | 1070.00  | 698.90   |
| Fecal Coliforms                    |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Fecal Coliforms                    | MPN/100mL | 3        | 3         | 23        | 3         | 4         | 3         | 3         | 430       | 3         | 3         | 3         | 3         | 10        | 10        | /         | /         | /         | 10        | 10        | 10        | 3.00       | 430.00   | 29.05    |
| Hardness Calculated                |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Hardness (as CaCO3)                | mg/L      | 0.30     | 167       | /         | 149       | /         | 205       | 152       | 172       | 139       | 205       | 253       | 221       | 99.6      | 209       | /         | /         | /         | 164       | 156       | 180       | 99.60      | 319.00   | 194.03   |
| Mercury Total                      |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Mercury (Hg)                       | mg/L      | 0.00020  | 0.000020  | 0.00020   | 0.000020  | 0.00020   | 0.00020   | 0.00020   | 0.00040   | 0.000020  | 0.00020   | 0.000020  | 0.000020  | 0.0000050 | 0.0000050 | /         | /         | /         | /         | 0.0000050 | 0.0000050 | 0.000005   | 0.00040  | 0.00008  |
| Nitrate in Water by IC             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Nitrate (as N)                     | mg/L      | 0.40     | 0.050     | /         | 0.050     | 0.030     | 0.020     | 0.020     | 0.020     | 0.020     | 0.020     | 0.159     | 0.040     | 0.020     | 0.020     | /         | /         | /         | 0.020     | 0.020     | 0.020     | 0.020      | 0.159    | 0.034    |
| Nitrate + Nitrite                  |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Nitrate and Nitrite as N           | mg/L      | 0.45     | 0.071     | 0.071     | 0.071     | 0.070     | 0.070     | 0.070     | 0.070     | 0.070     | 0.070     | 0.159     | 0.070     | 0.070     | 0.070     | /         | /         | /         | 0.070     | 0.070     | 0.070     | 0.070      | 0.159    | 0.075    |
| Nitrite in Water by IC             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Nitrite (as N)                     | mg/L      | 0.20     | 0.050     | /         | 0.050     | 0.010     | 0.010     | 0.010     | 0.010     | 0.010     | 0.010     | 0.020     | 0.020     | 0.010     | 0.010     | /         | /         | /         | 0.010     | 0.010     | 0.010     | 0.010      | 0.050    | 0.016    |
| Oil & Grease - Gravimetric         |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Oil and Grease                     | mg/L      | 5.0      | /         | 2.0       | 2.0       | 2.0       | 2.0       | 2.0       | 4.4       | 5.0       | 33.0      | 5.0       | 5.0       | 5.0       | 5.0       | /         | /         | /         | 5.0       | 5.0       | 5.0       | 2.00       | 33.00    | 5.73     |
| Phenol                             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Phenols                            | mg/L      | 0.0010   | 0.0010    | 0.0193    | 0.0013    | 0.0028    | 0.0102    | 0.0055    | 0.0027    | 0.0031    | 0.0036    | 0.0037    | 0.0030    | 0.0141    | 0.0018    | /         | /         | /         | 0.0034    | 0.0010    | 0.0010    | 0.0010     | 0.019    | 0.005    |
| Phosphorus, Total                  |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Phosphorus (P)                     | mg/L      | 0.010    | 0.069     | /         | 0.059     | 0.10      | 0.407     | 0.063     | 0.433     | 0.122     | 0.119     | 0.305     | 0.043     | 0.065     | 0.082     | /         | /         | /         | 0.0560    | 0.0412    | 0.102     | 0.028      | 0.433    | 0.137    |
| Sulfate in Water by IC             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Sulfate (SO4)                      | mg/L      | 6.0      | 8.83      | 0.50      | 0.50      | 1.75      | 2.64      | 0.30      | 1.11      | 0.46      | 0.30      | 3.22      | 0.60      | 0.30      | 0.81      | /         | /         | /         | 2.68      | 0.51      | 0.30      | 0.30       | 8.83     | 1.43     |
| Total Metals by ICP-MS             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Aluminium (Al)                     | mg/L      | 0.0050   | 0.237     | /         | 0.0369    | 0.680     | 1.36      | 0.0310    | 0.627     | 0.120     | 0.995     | 1.69      | 0.0246    | 0.0867    | 0.245     | /         | /         | /         | 0.0339    | 0.201     | 0.0806    | 0.020      | 1.690    | 0.357    |
| Arsenic (As)                       | mg/L      | 0.00020  | 0.00052   | 0.00584   | 0.00081   | 0.00036   | 0.00319   | 0.00082   | 0.00137   | 0.00052   | 0.00156   | 0.00127   | 0.00101   | 0.00065   | 0.00102   | /         | /         | /         | 0.00100   | 0.00085   | 0.00085   | 0.00036    | 0.00680  | 0.00163  |
| Cadmium (Cd)                       | mg/L      | 0.000010 | 0.000019  | 0.000032  | 0.000010  | 0.000047  | 0.000020  | 0.000010  | 0.000017  | 0.000032  | 0.000089  | 0.000091  | 0.000010  | 0.000010  | 0.0000054 | /         | /         | /         | 0.0000712 | 0.0000252 | 0.0000055 | 0.000005   | 0.000091 | 0.000028 |
| Calcium (Ca)                       | mg/L      | 0.10     | 43.9      | 44.9      | 37.6      | 17.4      | 52.6      | 39.6      | 47.0      | 45.8      | 58.2      | 74.2      | 64.5      | 28.7      | 56.9      | /         | /         | /         | 44.8      | 40.5      | 48.8      | 17.40      | 101.00   | 52.28    |
| Chromium (Cr)                      | mg/L      | 0.0010   | 0.317     | 0.0098    | 0.0010    | 0.0010    | 0.0048    | 0.0011    | 0.0035    | 0.0010    | 0.0032    | 0.0036    | 0.0010    | 0.0010    | 0.00130   | /         | /         | /         | 0.00044   | 0.00103   | 0.00117   | 0.00024    | 0.31700  | 0.01772  |
| Cobalt (Co)                        | mg/L      | 0.00020  | 0.00149   | /         | 0.00165   | 0.00141   | 0.00480   | 0.00238   | 0.00265   | 0.00194   | 0.00384   | 0.00361   | 0.00092   | 0.00209   | 0.00201   | /         | /         | /         | 0.00212   | 0.00143   | 0.00111   | 0.0009     | 0.0048   | 0.0022   |
| Copper (Cu)                        | mg/L      | 0.00020  | 0.00098   | 0.00561   | 0.00086   | 0.00266   | 0.00318   | 0.00033   | 0.00230   | 0.00114   | 0.00601   | 0.00403   | 0.00028   | 0.00073   | 0.00142   | /         | /         | /         | 0.00087   | 0.00108   | 0.00050   | 0.0003     | 0.0060   | 0.0018   |
| Iron (Fe)                          | mg/L      | 0.010    | 7.52      | 147       | 19.0      | 2.81      | 129       | 31.2      | 54.1      | 6.73      | 59.7      | 17.7      | 24.0      | 15.5      | 24.7      | /         | /         | /         | 11.1      | 13.2      | 18.7      | 2.81       | 147.00   | 32.20    |
| Lead (Pb)                          | mg/L      | 0.000090 | 0.000407  | 0.00172   | 0.000115  | 0.00101   | 0.00131   | 0.000090  | 0.000875  | 0.000220  | 0.00153   | 0.00198   | 0.000090  | 0.000197  | 0.000352  | /         | /         | /         | 0.000082  | 0.000344  | 0.000126  | 0.000082   | 0.001980 | 0.000569 |
| Magnesium (Mg)                     | mg/L      | 0.010    | 14.0      | 15.7      | 13.5      | 4.13      | 17.8      | 13.0      | 13.3      | 6.08      | 14.6      | 16.4      | 14.5      | 6.76      | 16.1      | /         | /         | /         | 12.7      | 13.3      | 14.1      | 4.13       | 17.80    | 13.60    |
| Manganese (Mn)                     | mg/L      | 0.00030  | 2.14      | /         | 1.91      | 1.07      | 3.89      | 2.64      | 2.49      | 1.14      | 2.85      | 2.48      | 2.02      | 2.32      | 2.78      | /         | /         | /         | 2.27      | 1.49      | 1.8       | 1.07       | 3.91     | 2.24     |
| Nickel (Ni)                        | mg/L      | 0.0020   | 0.0020    | 0.0043    | 0.0020    | 0.0020    | 0.0034    | 0.0020    | 0.0030    | 0.0020    | 0.0026    | 0.0039    | 0.0020    | 0.0020    | 0.00126   | /         | /         | /         | 0.00141   | 0.00151   | 0.00108   | 0.00062    | 0.00430  | 0.00223  |
| Potassium (K)                      | mg/L      | 0.020    | 6.91      | 7.3       | 5.52      | 3.23      | 6.88      | 4.62      | 5.80      | 3.72      | 6.67      | 8.30      | 6.34      | 3.99      | 5.36      | /         | /         | /         | 6.41      | 6.27      | 6.84      | 3.23       | 9.58     | 6.19     |
| Sodium (Na)                        | mg/L      | 0.030    | 68.7      | 79.9      | 64.7      | 10.0      | 70.3      | 66.7      | 71.1      | 10.4      | 66.4      | 71.1      | 54.2      | 23.8      | 82.7      | /         | /         | /         | 43.0      | 67.7      | 83.2      | 10.00      | 85.70    | 59.13    |
| Zinc (Zn)                          | mg/L      | 0.0020   | 0.0656    | 0.302     | 0.0227    | 0.0523    | 0.0251    | 0.0020    | 0.0251    | 0.0391    | 0.0335    | 0.0433    | 0.0031    | 0.0050    | 0.0075    | /         | /         | /         | 0.0183    | 0.016     | 0.0049    | 0.0020     | 0.30     | 0.037    |
| Total Organic Carbon by Combustion |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Total Organic Carbon               | mg/L      | 0.50     | /         | /         | 1.0       | /         | 28.2      | 14.3      | 25.7      | 8.54      | 16.0      | 11.0      | 8.61      | 14.6      | 11.2      | /         | /         | /         | 11.0      | 8.31      | 9.59      | 1.00       | 28.20    | 12.79    |
| Total Suspended Solids             |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| Total Suspended Solids             | mg/L      | 13       | 34.0      | 268       | 102       | 18.0      | 105       | 61.0      | 1500      | 23.0      | 144       | 228       | 58        | 36        | 41.0      | /         | /         | /         | 30.7      | 45.1      | 43.9      | 18.00      | 1500.00  | 147.94   |
| pH                                 |           |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |
| pH                                 | pH Units  | 0.10     | 7.21      | 6.82      | 7.07      | 7.67      | 7.05      | 7.05      | 6.98      | 6.56      | 6.45      | 6.87      | 6.61      | 6.95      | 6.64      | /         | /         | /         | 7.63      | 7.28      | 7.16      | 6.45       | 7.67     | 6.95     |
| Benzene                            | mg/L      | 0.00050  | 0.00050   | /         | /         | /         | 0.00050   | 0.00050   | 0.00050   | 0.00050   | 0.00050   | 0.00050   | /         | 0.00050   | 0.00050   | /         | /         | /         | 0.00050   | 0.00050   | 0.00050   | 0.0005     | 0.0005   | 0.0005   |
| Toluene                            | mg/L      | 0.0010   | 0.0010    | /         | /         | /         | 0.0042    | 0.0021    | 0.0010    | 0.0030    | 0.0023    | 0.0010    | /         | 0.0035    | 0.0010    | /         | /         | /         | 0.0011    | 0.0019    | 0.0033    | 0.0010     | 0.0042   | 0.0019   |
| Ethyl Benzene                      | mg/L      | 0.00050  | 0.00050   | /         | /         | /         | 0.00051   | 0.00050   | 0.00050   | 0.00240   | 0.00077   | 0.00050   | /         | 0.00050   | 0.00050   | /         | /         | /         | 0.00050   | 0.00050   | 0.00050   | 0.0005     | 0.0024   | 0.0006   |
| o-Xylene                           | mg/L      | 0.00050  | 0.00050   | /         | /         | /         | 0.00095   | 0.00050   | 0.00050   | 0.00614   | 0.00216   | 0.00098   | /         | 0.00050   | 0.00050   | /         | /         | /         | 0.00050   | 0.00050   | 0.00050   | 0.001      | 0.006    | 0.0010   |
| F1 (C6-C10)                        | mg/L      | 0.10     | 0.10      | /         | /         | /         | 0.10      | 0.10      | 0.10      | 0.10      | 0.10      | 0.10      | /         | 0.10      | 0.10      | /         | /         | /         | 0.10      | 0.10      | 0.10      | 0.10       | 0.10     | 0.10     |
| F2 (C10-C16)                       | mg/L      | 0.25     | 0.50      | /         | /         |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |            |          |          |