



**PIN-B CLIFTON POINT LONG TERM MONITORING EVENT
2020 LONG TERM MONITORING REPORT**

Submitted to:



Crown-Indigenous Relations
and Northern Affairs Canada

Relations Couronne-Autochtones
et Affaires du Nord Canada

**Crown-Indigenous Relations and Northern Affairs Canada
Contaminants and Remediation Division**

P.O. Box 2200
Iqaluit, Nunavut X0A 0H0

Prepared by:

BluMetric Environmental Inc.

4916 49th Street, Second Floor
Yellowknife, NT X1A 1P3

Project Number: 200537
March 12, 2021

**PIN-B CLIFTON POINT LONG TERM MONITORING EVENT
2020 LONG TERM MONITORING REPORT**

Submitted to:



**Crown-Indigenous Relations
and Northern Affairs Canada**

**Relations Couronne-Autochtones
et Affaires du Nord Canada**

**Crown-Indigenous Relations and Northern Affairs Canada
Contaminants and Remediation Division
P.O. Box 2200
Iqaluit, Nunavut X0A 0H0**

Prepared by:



BluMetric Environmental Inc.

Physical:

4916 49th Street, Second Floor
Yellowknife, NT X1A 1P3

Project Number: 200537

March 12, 2021

EXECUTIVE SUMMARY

Clifton Point is located on the coast of Amundsen Gulf (Beaufort Sea) in Nunavut. The nearest communities are Paulatuk, NWT, about 220 km to the northwest, and Kugluktuk, Nunavut about 220 km to the southeast. A general location map is shown in Figure 1. The PIN-B Clifton Point site was originally an intermediate Distant Early Warning (DEW) line site implemented by the Department of National Defence (DND). Constructed in 1957, the site was taken out of service in 1963 and custody of the site was assumed by Indigenous and Northern Affairs Canada (INAC; now Crown-Indigenous Affairs and Northern Affairs Canada) in 1965

The objective of this project is to complete tasks for the long-term monitoring of the PIN-B Clifton Point site as described in the *PIN-B Clifton Point Long Term Monitoring Plan*, INAC, revised 2017 (referred to as “the LTM Plan”). BluMetric executed the field program on August 30, 2020.

Visual monitoring shows that the NHWL is in acceptable condition based on severity ratings presented in the AMSRP Volume II (INAC, 2009). The surface of the landfill did not show any evidence of frost action or erosion. There were two shallow depressions that are isolated and do not appear to be deteriorating. Evidence of erosion was documented on side trail to the Main Station off of the access road between the landfill and the active airstrip. This feature is located away from the NHWL and does not impact the performance of the landfill.

During the site visit and as part of the natural environment monitoring, several species of birds were spotted. Other indications of wildlife in the area were seen such as muskox tracks, siksik (ground squirrel) dens and digging from what appears to be a bear. The interview with a resident of Cambridge Bay reported that the area was used for hunting and potentially fishing and that wildlife in the area include polar bears, grizzly bears, siksiks, snow geese, wolverine, muskox, caribou and arctic fox.

One (1) groundwater sample was collected from monitoring well MW3 at the PIN-B site in 2020. There was an attempt to purge MW3 but water did not recharge in the monitoring well during the site visit. In the interest of obtaining more groundwater data, a sample was collected from the purge water and sent to the laboratory for analysis of metals and general chemistry.

Analytical results from monitoring well MW3 have only Federal Interim Groundwater Quality Guidelines (FIGQGs) exceedances for total and dissolved Aluminum, Copper and Zinc. Exceedances of calculated Upper Limits of Acceptability (ULAs) for total Calcium and Magnesium, as well as dissolved Aluminum, Calcium, Magnesium, Nickel and Silicon were noted in monitoring well MW3.



According to the AMSRP, an exceedance of the ULA for two or more successive monitoring events corresponds to a low risk of failure for the NHWL in which case increasing monitoring should occur. Though there were ULA exceedances, the sample is assumed to be purge water and not representative of the chemistry of the aquifer. Analytical results from MW2 in 2017 also exhibited several ULA exceedances but similarly, that sample was also collected from purge water and not representative of the chemistry of the aquifer. No previous exceedances of the ULAs were considered indicative of the condition of the NHWL as they were for samples considered to be purge water and not representative of the aquifer quality. Concentrations of parameters exceeding the FIGQGs and ULAs should continue to be monitored closely in the next sampling event to determine whether increased monitoring is required.

Based on the results of the 2020 long term monitoring event, BluMetric recommends continuing monitoring at the recommended schedule presented in the PIN-B LTM Plan. The site is deemed to be in acceptable condition as there were no observable or geochemical indications of deterioration of the landfill at the PIN-B site in 2020. The next monitoring event is recommended to occur in Year 15 (2025).



TABLE OF CONTENTS

EXECUTIVE SUMMARY	I
1 INTRODUCTION	1
1.1 OBJECTIVE	1
1.2 SCOPE OF WORK.....	1
2 BACKGROUND INFORMATION	2
2.1 PREVIOUS REPORTS AND MONITORING PROGRAMS	3
3 REGULATORY GUIDELINES	3
3.1 GROUNDWATER	3
3.1.1 Baseline Samples	3
3.1.2 Federal Interim Groundwater Quality Guidelines	4
3.2 SOIL	4
3.2.1 Baseline Samples	4
3.2.2 Canadian Environmental Quality Guidelines – CCME.....	5
4 METHODOLOGY	5
4.1 HEALTH AND SAFETY PLAN.....	5
4.2 LANDFILL VISUAL MONITORING.....	6
4.3 NATURAL ENVIRONMENT MONITORING	6
4.4 GROUNDWATER SAMPLE COLLECTION.....	6
4.5 SOIL SAMPLING	8
5 RESULTS	9
5.1 PHOTOGRAPHIC RECORDS.....	9
5.2 LANDFILL VISUAL MONITORING.....	9
5.2.1 Non-Hazardous Waste Landfill.....	9
5.2.2 Surrounding Areas.....	11
5.3 NATURAL ENVIRONMENT MONITORING	12
5.4 ANALYTICAL RESULTS.....	13
5.5 REMOTE PILOTED AIRCRAFT IMAGERY COLLECTION	15
5.6 QA/QC DISCUSSION	15
5.6.1 Duplicate Samples – Relative Percent Difference	15
5.6.2 Field Blank and Trip Blank	15
5.6.3 Analytical QA/QC.....	15
6 CONCLUSION	16
6.1 CLOSURE.....	17
7 REFERENCES	18



LIST OF TABLES IN REPORT

Table 4-1	PIN-B Clifton Point Monitoring Well Location (UTM Zone 11)	6
Table 5-1:	PIN-B Clifton Point Site NHWL Feature Summary.....	9
Table 5-2:	Summary of Exceedances FIGQGs.....	13
Table 5-3:	Summary of Exceedances ULA	14

LIST OF TABLES AT END OF REPORT

Table 1:	Historical Analytical Chemistry Results for PHCs and VOCs in Water
Table 2:	Historical Analytical Chemistry Results for PCBs in Water
Table 3:	Historical Analytical Chemistry Results for Metals and Inorganics (Total) in Water
Table 4:	Historical Analytical Chemistry Results for Metals and Inorganics (Dissolved) in Water
Table 5:	Historical Analytical Chemistry Results for General Chemistry in Water
Table 6:	Analytical Chemistry Results for Metals and Inorganics in Water
Table 7:	Analytical Chemistry Results for General Chemistry in Water

LIST OF FIGURES

Figure 1:	Site Location
Figure 2:	PIN-B Clifton Point Non-Hazardous Waste Landfill

LIST OF APPENDICES

Appendix A:	Monitoring Checklists and Daily Field Report
Appendix B:	Site Photographs
Appendix C:	Groundwater Sampling Logs
Appendix D:	Certificate of Analysis



1 INTRODUCTION

BluMetric Environmental Inc. (BluMetric™) was retained by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) – Nunavut Regional Office to conduct long term monitoring (LTM) activities at the PIN-B Clifton Point Site, Nunavut (herein referred to as “the site”). This project was completed under CIRNAC Standing Offer Number 4600001830 and order number 4500413861. The following report describes the monitoring activities completed for CIRNAC at the site in 2020, Phase 2, Year 10 of the monitoring schedule.

1.1 OBJECTIVE

The objective of this project is to complete tasks for the long-term monitoring of the PIN-B Clifton Point site as described in the *PIN-B Clifton Point Long Term Monitoring Plan*, INAC, revised 2017 (referred to as “the LTM Plan”).

1.2 SCOPE OF WORK

The scope of work for the 2020 long term monitoring activities includes the following:

- Produce and implement a Logistic Plan that complies with all federal, provincial/territorial and municipal health requirements, restrictions and guidance related to COVID-19.
- Produce and implement a Health and Safety Plan including risks and mitigations specific to COVID-19.
- Produce and implement a field sampling plan including Quality Assurance and Quality Control (QAQC) plan.
- Implement a field program including:
 - o Provision of wildlife monitor (with firearm) from nearby community;
 - o Monitoring of general site condition and natural environment;
 - o Visual inspection of the Non-Hazardous Waste Landfill (NHWL) documented by photographic record, visual monitoring checklist and a site map;
 - o Purge and collect groundwater samples from the four (4) monitoring wells;
 - o Collect soil samples if seepage or staining is identified during the visual inspection;
 - o Collect blind duplicates of at least 20% of samples;
 - o Submit samples to a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory for analysis of petroleum hydrocarbon (PHC) fractions F1 and F2, total and dissolved metals, major ions, hardness, total dissolved solids, total suspended solids, pH, conductivity, and polychlorinated biphenyls (PCBS); and
- Submit a draft and final version of the PIN-B Clifton Point 2020 Long Term Monitoring Report to CIRNAC.



2 BACKGROUND INFORMATION

Clifton Point is located on the coast of Amundsen Gulf (Beaufort Sea) in Nunavut. The nearest communities are Paulatuk, NWT, about 220 km to the northwest, and Kugluktuk, Nunavut about 220 km to the southeast. A general location map is shown in Figure 1.

The PIN-B Clifton Point site was originally an intermediate Distant Early Warning (DEW) line site implemented by the Department of National Defence (DND). Constructed in 1957, the site was taken out of service in 1963 and custody of the site was assumed by INAC in 1965.

The site consisted of a module building train, warehouse, garage, a small house for Inuit staff (the “Inuit House”), a petroleum, oil and lubricants (POL) storage facility and a demolished radar tower. In addition to the station facilities, a cargo beaching area was constructed at the beach area. A second POL storage facility was located at the beach, in the vicinity of the cargo beach area. Two airstrips were constructed at the site: the primary airstrip is approximately 1 km long, located south of the beach area, and the second airstrip approximately 300 metres (m) long, located northwest of the main strip. Gravel roads were built linking the airstrip, water supply lake, and beaching area to the station area. A small construction camp was erected during building of site facilities but was demolished once site construction was completed. The former camp of an Inuit family is located approximately 1.5 km southeast of the PIN-B site.

During the 2007 Phase II Environmental Site Assessment, a total of approximately 570 m³ of soils with concentrations of metals, and PCBs, which exceeded the Tier I levels of the Abandoned Military Site Remediation Protocol (AMSRP) (INAC, 2009) were identified at the site. This soil was used as intermediate fill in the Non-Hazardous Waste Landfill (NHWL). An additional 1,210 m³ of soils, was identified in excess of Tier II levels and was shipped off site for disposal. In addition, 80 m³ of Type A (F3-F4) and 1,360 m³ of Type B (F1-F3) hydrocarbon impacted soils were identified. The Type A soil was used as intermediate fill in the NHWL and the Type B soil was treated onsite. A total of 194 m³ of hazardous materials were identified at the site. All hazardous material was shipped off site for disposal. Based on the combined results of the surface debris inventory, barrel assessment and demolition inventory, approximately 2,180 m³ of non-hazardous waste was identified and placed in the constructed NHWL.

Construction of the NHWL was completed and closed in the summer of 2010. The NHWL was designed to contain non-hazardous materials only. It was constructed on native ground, with all organic matter removed, and consists of four perimeter berms constructed of granular material. The non-hazardous waste was placed in the landfill in layers consisting of 0.5 m lifts of waste covered by 0.15 m of granular fill. Once all the waste was placed, a final cover consisting of a minimum of 1.0 m of granular fill was used to cap the NHWL.



2.1 PREVIOUS REPORTS AND MONITORING PROGRAMS

BluMetric Environmental reviewed the following reports prior to the field program:

- *PIN-B Clifton Point, Long Term Monitoring Plan*, INAC, Revised May 2017
- *Long Term Monitoring, 2015, PIN-B, Clifton Point, Nunavut*, Arcadis, January 2016.
- *Long Term Monitoring, 2017, PIN-B, Clifton Point, Nunavut*, Arcadis, January 2018.
- *Evaluation of Phase I Long Term Monitoring, PIN-B Clifton Point and Cape Christian*, March 2016.

The post construction monitoring frequency follows the schedule identified in the AMSRP (2009). The three phases recommended by the protocol are:

- Phase I: years 1, 3 and 5;
- Phase II: years 7, 10, 15 and 25; and
- Phase III: beyond year 25 (if required).

3 REGULATORY GUIDELINES

BluMetric reviewed the PIN-B Clifton Point LTM Plan as well as the AMSRP to identify the applicable guidelines to be used in the LTM program. The following sections describe the regulatory guidelines selected for each type of sample collected at the site.

3.1 GROUNDWATER

3.1.1 Baseline Samples

Due to the absence of groundwater criteria, the analytical data for groundwater should be compared to available baseline data from the site. According to AMSRP, if the analytical results are within the average $\pm$ three standard deviations, the landfill is deemed acceptable and performing as expected. If the analytical results do not meet these criteria, further measures should be recommended ranging from increasing monitoring frequency to developing a new remedial plan. The AMSRP provides the following guidance for the assessment of groundwater analytical data.

An upper limit of acceptability (ULA) was calculated using the average + three (3) standard deviations of all available data. ULAs were only calculated for a limited number of parameters since baseline data is sparse, and concentrations for many parameters are below the detectable limit. Duplicates were omitted from the calculations as to not over-represent results from one



monitoring well in the ULA calculation. ULAs were only calculated for parameters that had three or more data points that had detectable concentrations. Tables 1 to 5 (following the text) summarize the available historical groundwater data and the calculated ULAs (where available).

3.1.2 Federal Interim Groundwater Quality Guidelines

In addition to the ULAs, the analytical results could be compared to the Federal Interim Groundwater Quality Guidelines (FIGQG). Generally, federal contaminated sites are evaluated using the Canadian Environmental Quality Guidelines (CEQG) developed by the Canadian Council of Ministers of the Environment (CCME). There are comprehensive guidelines for various media including surface water and soil, however no CEGQ exists for groundwater. In recognizing the need for a nationally-consistent approach for assessing and managing groundwater, Environment Canada developed the Federal Interim Groundwater Quality Guidelines. These guidelines are intended as an interim measure until CEQGs for groundwater are available.

The FIGQGs follow a tiered framework as follows:

- Tier 1: direct application of generic numerical guidelines, specifically, application of the lowest guideline for any pathway.
- Tier 2: allows for the development of site-specific remediation objectives through the consideration of site-specific conditions, by modifying (within limits) the numerical guidelines based on site-specific conditions and focusing on exposure pathways and receptors that are applicable to the site.
- Tier 3: use of site-specific risk assessment to develop Site-Specific Remediation Objectives.

From the FIGQGs, the guidelines from Table 2, *Generic Guidelines for Residential/Parkland Land Uses, Tier 1 Lowest Guideline for coarse-grained soil* (Table 2, Tier 1) were referenced for this report as they were deemed most representative of current site use and soil conditions. The FIGQGs typically do not apply to total metals, they have been applied to both total and dissolved metals to evaluate potential for transport of contaminants with colloidal materials in groundwater.. As per the FIGQGs for certain metals (aluminum, copper, lead, and nickel) without criteria, *Canadian Water Quality Guidelines for the Protection of Aquatic Life* (CWQG AW) (CCME 1999) are used. Though typically only applied to total metals, due to the absence of applicable guidelines for dissolved metals, these were applied to both.

3.2 SOIL

3.2.1 Baseline Samples

No soil samples were taken in 2016, 2018 or 2020. Should future samples be collected at the site, the results should be compared to baseline data.



3.2.2 Canadian Environmental Quality Guidelines – CCME

Previous monitoring reports reference the following CCME guidelines for soil analytical results:

- (Canadian Soil Quality Guidelines (CSQG) *for the Protection of Environmental and Human Health* (CCME, 1999, with updates) for residential/parkland use, including fact sheets for benzene, toluene, ethylbenzene, and xylene (BTEX), non-potable water, coarse-grained soil.
- Canada-Wide Standard (CWS) for Petroleum Hydrocarbons in Soil (CCME, 2008) – Tier 1 Residential/Parkland, non-potable water, coarse-grained soil.

The rationale for choosing these criteria are that the groundwater at the PIN-B site will not be used for drinking (non-potable) and coarse-grained material is found on site. If seepage or staining occurs and soil samples are taken in future monitoring activities, the above guidelines should be used for comparison.

4 METHODOLOGY

The field program including visual inspection and sampling was carried out on August 30, 2020 by Matthew Kitchen, EIT and Jeff Rosnawski. They were accompanied a wildlife monitor, Jimmy Evalik, a resident of Cambridge Bay, NU who also provided knowledge of the site. The site was accessed by Twin Otter, chartered by Kenn Borek Air. Logistics were carried out as per the Logistics Plan provided previously under a separate cover. The summaries of daily activities and notes can be found in Appendix A.

4.1 HEALTH AND SAFETY PLAN

In preparation for the field program, a Health and Safety Plan (HASP) was produced and submitted to CIRNAC previously under a separate cover. The HASP identifies risks and suspected hazards associated with work on the site. It specifically addresses any known or suspected hazards and provides mitigative measures including protocols for COVID-19. Included in the HASP are emergency contacts and procedures for medical, mechanical, or weather emergencies.

Prior to the start of work, a review of the HASP was completed with all personnel involved in the field program.



4.2 LANDFILL VISUAL MONITORING

A visual inspection of the NHWL was conducted at the PIN-B site during the 2020 long term monitoring event. The visual inspection looked for evidence of:

- erosion, ponding, frost action, settlement, and lateral movement;
- animal burrows, vegetation, vegetation stresses; and
- staining or seepage.

This was documented within the visual monitoring checklist and through site photographs. The results are interpreted as per the AMSRP and a severity rating of acceptable, marginal, significant, and unacceptable is assigned. This rating determines the required action ranging from continuing scheduled monitoring to implementing emergency remedial plans.

4.3 NATURAL ENVIRONMENT MONITORING

Natural environment data was collected during the 2020 long term monitoring event. The specific observations that were noted included:

- wildlife sightings (species, number, gender, juveniles);
- evidence of recent presence of wildlife (droppings, tracks, feathers/fur, carcass remains, etc.);
- wildlife activity (summering/nesting/denning, migratory/passing through); and
- qualitative assessment of relative numbers versus previous years (more, same, less).

Observations, and additional information on land use and wildlife activity was provided by Jimmy Evalik, the wildlife monitor, and a resident of Cambridge Bay.

4.4 GROUNDWATER SAMPLE COLLECTION

The site has four (4) monitoring wells (MW1, MW2, MW3 and MW4). All four well locks were observed to be in poor condition and were cut and replaced during the process of sampling. The replacement locks were a set of ABUS well locks that can be opened with the same key. The new keys were prior to the CIRNAC representative. Coordinates for the monitoring well locations are listed in Table 4-1 below.

Table 4-1 PIN-B Clifton Point Monitoring Well Location (UTM Zone 11)

Monitoring Well	Easting	Northing
MW1	435256.5	7678080.3
MW2	435251.3	7678025.5
MW3	435322.0	7678014.5
MW4	435256.5	7678068.6



Water level and depth were recorded, and an approximate well volume was calculated. A peristaltic pump and dedicated disposable polyethylene tubing were used to purge and sample the wells using a low-flow sampling methodology. Where possible, the monitoring well was purged of three well volumes prior to sampling and water quality parameters including dissolved oxygen (DO), oxidation-reduction potential (ORP), temperature, pH, conductivity, turbidity and total dissolved solids were measured using a Horiba U-52 Multi-Parameter Meter and recorded prior to sampling. The Horiba U-52 Multi-Parameter Meter was checked and/or calibrated prior to sampling. Appendix C presents the groundwater sample collection log including the in-situ water quality parameter results.

Prior to shipping, samples were packed in a laboratory provided cooler and ice packs were to be replaced daily as necessary. The samples were shipped by Canadian North to the ALS Laboratories depot in Yellowknife where they were received and forwarded for analysis. Groundwater samples were submitted to ALS Laboratories, a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory for analysis of:

- Petroleum Hydrocarbons;
- Total and Dissolved Metals;
- Major Ions, Hardness, Total Dissolved Solids, Total Suspended Solids;
- pH, Conductivity; and
- Polychlorinated biphenyls (PCBs).

The QA/QC plan for this program included the following:

- **field duplicates** (20% of program) as per AMSRP to provide a measure of precision/repeatability of the sampling procedure, analytic technique and heterogeneity of the sample.
- **analytical method blanks** give a measure of any contamination that may be introduced during sample handling and processing and can indicate whether results are falsely inflated.
- **analytical control spike** is used to identify analytical interference associated with the sample matrix. Control spikes are evaluated by calculating a percent recovery as follows:

$$Recovery (\%) = \left(\frac{\text{measured concentration}}{\text{certified concentration}} \right) * 100$$

- **analytical duplicates** provide a measure of the precision and repeatability of the analytical method.

For field and analytical duplicates, the precision is measured by the relative percentage difference (RPD) for duplicate samples. RPD is calculated for contaminant concentrations greater than 5



times the reportable detection limit (RDL), concentrations results less than 5 times the RDL become increasingly imprecise. RPD is calculated as follows:

$$RPD (\%) = \left(\frac{Dup_1 - Dup_2}{\text{average of } Dup_1 + Dup_2} \right) * 100$$

The guidance Manual for Environmental Site Characterization in Support of Human Health Risk Assessment, Volume I (CCME, 2016) recommends that RPDs for parameters of field duplicate groundwater samples not exceed 40% and RPDs for laboratory groundwater duplicates not exceed 20%. RPDs for soil sample field duplicates should not exceed 60% and RPDs for laboratory soil duplicates should not exceed 30%.

Unfortunately, due to a logistical issue, the de-ionized water for field blanks and travel blank bottles were not received in time for the site visit. As a result, the following were omitted from the program:

- **travel blanks** to test for background contaminants, contamination from transport and handling or presence of container or preservative contamination.
- **field blanks**, to provide a measure of the sampling procedure and whether cross-contamination or contamination from exposure to air has occurred.

4.5 SOIL SAMPLING

No soil samples were collected at the time of the 2020 long term monitoring event as there was no evidence of seepage or staining. The following outlines the methodology that was prepared for this program if soil sampling was required.

Soil samples were to be collected with a small trowel which would be decontaminated with a laboratory-grade biodegradable cleaner (Alconox®) and rinsed between sampling locations. Soils samples were to be collected to a maximum depth of 30cm and pack into laboratory supplied jars with minimal to no headspace. Samples were to be kept cool and packed on ice for shipment to ALS laboratories.

The parameters to be analysed were Polychlorinated Biphenyls, F1-F4 PPetroleum Hydrocarbons and metals..



5 RESULTS

5.1 PHOTOGRAPHIC RECORDS

A photographic record of the PIN-B site was taken. The complete photographic record (Photos 1-129) has been provided electronically to CIRNAC via a file transfer protocol (FTP) site. The photographs referenced in the text of the document are found in Appendix B.

Note that the photographs referenced in PIN-B Clifton Point Site NHWL Feature Summary Table 5-1 reference photograph numbers from the complete photo record. Photo viewpoints (which reference the complete photo record) have also been depicted on Figure 2 PIN-B Non-Hazardous Waste Landfill Plan.

5.2 LANDFILL VISUAL MONITORING

5.2.1 Non-Hazardous Waste Landfill

The visual monitoring checklist was completed to document the inspection of the NHWL. See Appendix A for the visual monitoring checklist and notes collected on site. Table 5-1 summarizes the features that appeared in the previous long term monitoring reports and updates the status of each feature. Photo viewpoints have also been depicted on Figure 2 PIN-B Clifton Point Non-Hazardous Waste Landfill Plan.

Table 5-1: PIN-B Clifton Point Site NHWL Feature Summary

Feature Letter	Feature Type	Location	Extent	Description/Change Comments	Photos ¹
A	Animal Burrow	N corner of NHWL	<1%	Animal burrow observed in 2018, no longer present. Potentially collapsed.	12, 13, 17
B	Drainage Pathway	On southwest side of NHWL, draining in a SW direction towards MW2	<1%	Drainage pathway, no significant changes from 2018. Drainage pathway was well vegetated.	72, 91, 92
C	Drainage Pathway	On southeast side NHWL, draining in a SE to SW direction towards MW3	<1%	Drainage pathway, no significant changes from 2018. Drainage pathway was well vegetated.	28, 93



Feature Letter	Feature Type	Location	Extent	Description/Change Comments	Photos ¹
D	Settlement	On surface of NHWL at southeast edge	<1%	Small shallow depression approximately 2 m in length on the cap near the south east edge. Appears to be the result of grading. No change from previous 2017 report.	33, 34
E	Settlement	On slope of north corner of NHWL (northeast berm)	<1%	Small shallow depression approximately 1 m in length on the slope on the northern corner. No change from previous 2017 report.	12
F	Animal Burrow	On slope of north corner of landfill	<1%	Animal burrow observed in 2018, no longer present. Potentially collapsed.	12, 13, 17
G	Settlement	On surface of southeast corner of NHWL	<1%	Minor shallow depression on surface of landfill, appears to be result of grading. No change from previous 2017 report.	37, 38
H	Settlement	On surface of NHWL near northwest edge.	<1%	Small shallow circular depression approximately 1 m in diameter on the cap near the south west edge.	83, 84
I	Settlement	On surface of NHWL along southwest edge	<1%	Minor shallow depression approximately 2 m long on surface of landfill, appears to be result of grading. No change from previous 2017 report.	85, 86, 87
J ²	Settlement	On the northeast edge	<1%	Shallow depression on the cap near the north east edge, approximately 1 m long.	19

¹Photograph numbers listed in this table reference photograph numbers from the complete photo record.

²New feature identified during 2020 visual monitoring



There were a total of six (6) noted features that were categorized as settlement, four (4) of these appear to be the result of grading. The depressions have a very straight edge that appear to be made from equipment and not due to any movement in the landfill. These were observed in previous reports and do not appear to have any significant change since the 2017 long term monitoring report (Photos 5 through 7). A small 1 m depression that appears to be from settling was noted on the northeast berm near the north corner and appears to be relatively unchanged since 2017 (Photo 8). A new feature that was added to the features summary was a small circular settlement measuring approximately 1 m in diameter found on the northeast edge (Figure 9). The feature is isolated and does not appear to have any impact on the landfill at this point.

Two animal burrows that were noted on the north corner of the NHWL in 2017 were not present during the 2020 monitoring event. It is likely that the burrows were abandoned and collapsed as there was no evidence found (Photo 10).

Drainage pathways that were noted on the southwest and southeast sides of the NHWL were noted to be well vegetated and do not appear to have any change (Photos 11 and 12).

There was no evidence of wildlife impacting the landfill. As mentioned in previous reports, re-vegetation will likely take a significant amount of time to occur due to the short growing season and coarse material use in the construction. Small grasses were found on the landfill but coverage was noted to be less than 10%.

No staining or seepage was observed on or around the NHWL. The monitoring wells were noted to be in generally good condition. The settlements on the surface and side of the landfill are isolated and have not been observed to be deteriorating since 2017. As a result, the visual monitoring shows that the NHWL is in acceptable condition based on severity ratings presented in the AMSRP Volume II (INAC, 2009).

5.2.2 Surrounding Areas

In previous long term monitoring reports, Arcadis had provided a general inspection of the condition of sites surrounding the main station area. Figure 1 depicts the areas of the Main Station Area, Beach Area, Station Dump Area, Construction Camp Area. Though not part of the 2020 long term monitoring plan scope, BluMetric made some observations during the site visit at the Beach Area, Construction Camp Area, Access Road as well as the Main Station Area where the NHWL is located. The Station Dump area was not inspected in the 2020 site visit. The information has been provided to CIRNAC as supplementary information as per previous reports.



Main Station Area

The NHWL is located in the main station area. Facilities that existed on site prior to remediation are described in Section 2. All that remains from these facilities are concrete pads (Photo 13). The area appeared to be in good condition at the time of the site visit.

Beach Area

The Beach Area (Figure 1) is located to the north of the NHWL and was the location of three distinct dump areas (Areas 2, 3, and 4), as well as the main 1 km long airstrip. As noted in 2017 a small erosion channel attributed to a natural drainage pathway was observed on the south side of the airstrip. The erosion channel did not have any significant negative impact to the re-graded area. No Impacts from this erosion channel to the airstrip were observed in 2020.

Construction Camp Area

The Construction Camp Area is located north of the NHWL and between the Beach Area and the NHWL as depicted in Figure 1. This camp was operated during the construction of the Station. The Construction Camp Area consisted of the camp, associated tents and buildings, two small dump areas and a barrel stockpile and washing area. In the 2017 report, some areas of poor grading were noted. The area appeared to be in generally good condition at the time of the site visit (Photo 14).

Access Road

The access road to the Main Station area and NHWL from the airstrip (Beach Area), appeared to be in good condition. A small washout was noticed on the side trail to the Main Station Area (Photo 15). At this time, it does not impact access to the site, but should be monitored in future events. Several animal burrows and tracks were observed along the access road (Photos 16 through 20).

5.3 NATURAL ENVIRONMENT MONITORING

Site observations and an interview with a local resident were conducted to document the status of the natural environment. The observations and interview were noted in the natural environment monitoring checklist in Appendix A.

Wildlife sightings during the site visit included several species of bird including tundra swans, snow geese and passerines. Evidence of wildlife at the PIN-B NHWL and surrounding areas include siksik (ground squirrels) dens (Photo 17 and 18), muskox tracks (Photo 19) and digging from what appears to be bear (Photo 20). Evidence of revegetation was noted, as already mentioned in Section 5.2. Photos 21 and 22 show the vegetative growth on the sides and cap of the landfill. Photo 23 provides some context of the vegetation of the surrounding area.



The interview with Jimmy Evalik revealed that wildlife expected to be in the area include polar bears, grizzly bears, siksiks, snow geese, wolverine, muskox, caribou and arctic fox. He noted that the region is used for hunting and perhaps fishing.

5.4 ANALYTICAL RESULTS

One (1) groundwater sample was collected from monitoring well MW3 at the PIN-B site in 2020. The sample was stored on ice and sent to ALS Laboratories in Yellowknife for analysis. Monitoring wells MW1, MW2, and MW4 were found to be dry. It should be noted that monitoring well MW3 was not dry but groundwater did not recharge in the well during the site visit. In the interest of collecting more groundwater quality data, a sample was collected from the purge water to analyse for the proposed full suite of parameters. Appendix C presents the groundwater sample collection log including the in-situ water quality parameter results. Certificate of analysis can be found in Appendix D. Note that the sample appears as MW103 on the certificate of analysis but the well location was later corroborated with photos, coordinates and the site plan and determined to be MW3.

As mentioned in Section 3.1, the AMSRP suggests that analytical results be compared to the results of previous data, and if the groundwater concentrations are within the range of the average +/- three standard deviations, the landfill is performing acceptably. Tables 1 through 5 provide the calculated ULAs where applicable. In addition to the ULAs, the groundwater analytical results were compared to the FIGQGs.

Tables 6 and 7 (following the text) summarizes the groundwater analytical results for 2020. Table 5-2 below summarizes the exceedances of FIGQGs during the 2020 long term monitoring event. It should be noted that the FIGQGs have been updated in the historical metals table (Tables 3 and 4 following the text) using all available data up until the 2017 long term monitoring event which has resulted in some additional historical exceedances.

Table 5-2 Summary of Exceedances FIGQGs

Sample ID	FIGQG Exceedances	FIGQG
MW103 (MW3)¹	Total Aluminum (0.192 mg/L)	0.1 mg/L
	Dissolved Aluminum (0.244 mg/L)	0.1 mg/L
	Total Copper (0.00861 mg/L)	0.004 mg/L
	Dissolved Copper (0.00759 mg/L)	0.004 mg/L
	Total Zinc (0.0529 mg/L)	0.01 mg/L
	Dissolved Zinc (0.0453 mg/L)	0.01 mg/L

¹Sample from monitoring well collected from purge water.

Table 5-3 summarizes exceedances of calculated ULAs.



Table 5-3: Summary of Exceedances ULA

Sample ID	ULA Exceedances	ULA
MW103 (MW3)¹	Dissolved Aluminum (0.244 mg/L)	0.034 mg/L
	Dissolved Barium (0.0826 mg/L)	0.075
	Total Calcium (69.3 mg/L)	67.6 mg/L
	Dissolved Calcium (77.9 mg/L)	52.4 mg/L
	Total Magnesium (61.4 mg/L)	34.3 mg/L
	Dissolved Magnesium (62.2 mg/L)	36.01 mg/L
	Dissolved Nickel (0.00392 mg/L)	0.0038 mg/L
	Dissolved Silicon (2.17 mg/L)	1.64 mg/L
	Hardness (as CaCO ₃) (451mg/L)	262 mg/L
	Total Suspended Solids (33mg/L)	25mg/L

¹Sample from monitoring well collected from purge water.

Analytical results from monitoring well MW3 have only FIGQGs exceedances for total and dissolved Aluminum and Copper as well as dissolved Zinc. Exceedances in calculated ULAs are total Calcium and Magnesium, as well as dissolved Aluminum, Barium, Calcium, Magnesium, Nickel and Silicon.

According to the AMSRP, an exceedance of the ULA for two or more successive monitoring events corresponds to a low risk of failure for the NHWL in which case increasing monitoring should occur. No increasing trend in chemistry results was observed when compared to historical monitoring data. Though there were ULA exceedances, the sample is assumed to be purge water. Analytical results from MW2 in 2017 (Table 3 following the text) also exhibited several ULA exceedances but similarly, that sample was also collected from purge water and not representative of the chemistry of the aquifer. Sampling purge water does not follow the typical groundwater sampling procedure and it should be noted that these analytical results may not be representative of the groundwater near the PIN-B site NHWL. Elevated metals concentrations are likely skewed by purge water and as a result should not be considered in the geochemical assessment of the landfill evaluation. The low flow sampling parameters monitored during sampling such as Conductivity, Turbidity and Total Dissolved Solids (TDS) may be compared to the results of future sampling rounds to evaluate the degree of stagnation of the purge water sampling in 2020. These parameters are presented in Appendix C. Though there were exceedances of the ULAs in previous LTM events, none were considered indicative of the condition of the NHWL due to the limited data set and the sampling of purge water. Concentrations of parameters exceeding the FIGQGs and ULAs should continue to be monitored closely in the next sampling event to determine whether increased monitoring is required.

No soil samples were collected as no staining or seepage points were observed on site. No surface water samples were collected as there has been no history of the landfill being in marginal condition and no evidence of impact on surrounding surface water bodies.



5.5 REMOTE PILOTED AIRCRAFT IMAGERY COLLECTION

A remote piloted aircraft (RPA) was used to collect high resolution aerial imagery and video of the site including the landfill and surrounding areas. The video footage was submitted electronically to CIRNAC. The aerial imagery was used to update Figures 1 and 2, showing the site location map and NHWL site.

5.6 QA/QC DISCUSSION

5.6.1 Duplicate Samples – Relative Percent Difference

There was insufficient water in MW3 to collect a duplicate sample, so a relative percent difference could not be calculated.

5.6.2 Field Blank and Trip Blank

A field blank and trip blank were planned to be collected at the PIN-B site. Unfortunately due to shipping and logistical issues, the field staff experienced a shortage of de-ionized water and trip blanks were not received. As a result no trip blanks or field blanks were analysed.

5.6.3 Analytical QA/QC

Analytical QA/QC was completed by ALS laboratories by way of analytical method blanks, analytical control spikes and analytical duplicates. The complete analytical quality control report can be found as part of the certificate of analyses in Appendix D. Hold times for TSS, TDS, Nitrate, Nitrite, PHCs, PCBs and pH were exceeded. This was in part due to the logistical challenges of shipping from the site to ALS in Yellowknife and subsequent shipping to the southern laboratories for analysis. As stated in ALS laboratories guidance document Hold Times: General Information of Exceedances (2017), hold times are established and intended as best-practice to protect the integrity of the test samples and minimize the potential for significant changes to samples prior to analysis (ALS, 2017). If exceeded, it is common practice to apply professional judgment to assess whether the results may still be useable and fit-for-purpose. It was expected that the hold time for pH would exceed, and as a standard procedure, field measurements were collected to represent conditions at the time of sampling (Appendix A). Based on recommendations from ALS, test results with hold time exceedances less than 50% of the recommended hold time may be considered valid and defensible, with the caveat that the measurement uncertainty associated with those tests may be higher than usual. This would be applicable for the PHC and PCB analyses which were 7% and 22% over their respective recommended hold times.



For significant hold time exceedances such as the samples analysed for TDS, TSS, Nitrate and Nitrite, the environmental fate and stability characteristics of the specific sample should be considered prior to determining whether the test results are fit-for-purpose. ALS recommends that the consistency with historical or expected results or with available test results from related or similar samples be considered. Results for TDS and TSS were within the range or below historical levels. Concentrations of Nitrate were higher, while concentrations of Nitrite were lower than historical levels. This could potentially indicate that there was some nitrification occurring. Concentrations of Nitrate and Nitrite were not above applicable criteria and were in line with historical data\.. Therefore these hold time exceedances are not considered to significantly impact the outcomes of this monitoring event.

Logistical challenges are expected working in remote locations, and some hold time exceedances were anticipated. Reduced flight frequency during the summer of 2020 increased the potential for hold time exceedances during sampling shipping. For future monitoring programs, implementing methods to expedite sample delivery would help to reduce the uncertainty related to the results.

6 CONCLUSION

The observations made during the 2020 long term monitoring event support that the PIN-B site NHWL is performing as expected. Visual monitoring shows that the NHWL is in acceptable condition based on severity ratings presented in the AMSRP Volume II (INAC, 2009). The surface of the landfills did not show any evidence of frost action or erosion. There were two shallow depressions that are isolated and do not appear to be deteriorating. Evidence of erosion was documented on side trail to the Main Station off of the access road between the landfill and the active airstrip. This feature is located away from the NHWL and does not impact the performance of the facility. Though not part of the project scope, this feature was noted to consider for future access to site.

During the site visit and as part of the natural environment monitoring, several species of birds were spotted. Other indications of wildlife in the area were seen such as muskox tracks, siksik (ground squirrels) dens and digging from what appears to be a bear. The interview with a resident of Cambridge Bay reported that the area was used for hunting and potentially fishing and that wildlife in the area include polar bears, grizzly bears, siksiks, snow geese, wolverine, muskox, caribou and arctic fox.

One (1) groundwater sample was collected from monitoring well MW3 at the PIN-B site in 2020. There was an attempt to purge MW3 but water did not recharge in the monitoring well during the site visit. In the interest of obtaining more groundwater data, a sample was collected from the purge water and sent to the laboratory for analysis for metals and general chemistry.



Analytical results from monitoring well MW3 have only FIGQGs exceedances for total and dissolved Aluminum and Copper as well as dissolved Zinc. Exceedances of calculated ULAs for total Calcium and Magnesium, as well as dissolved Aluminum, Barium, Calcium, Magnesium, Nickel and Silicon were noted in monitoring well MW3.

Based on the results of the 2020 long term monitoring event, BluMetric recommends continuing monitoring at the recommended schedule presented in the PIN-B LTM Plan. The site is deemed to be in acceptable condition as there were no observable or geochemical indications of deterioration of the landfill at the PIN-B site in 2020. The next monitoring event is recommended to occur in Year 15 (2025).

6.1 CLOSURE

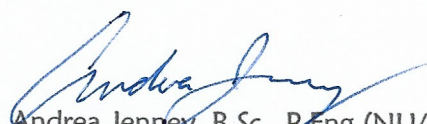
The conclusions presented in this report are based upon the analysis of historical information made available to BluMetric Environmental Inc. Any additional information received after the date of delivery of this report will be analysed and submitted in a timely manner in the form of an addendum or a memorandum.

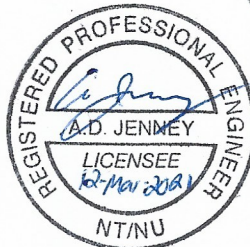
BluMetric Environmental Inc. makes no warranty as to the accuracy or completeness of the information provided by others, or of conclusions and recommendations predicated on the accuracy of that information.

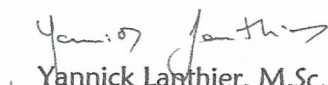
This report has been prepared for CIRNAC. Any use a third party makes of this report, any reliance on the report, or decisions based upon the report, are the responsibility of those third parties unless authorization is received from BluMetric Environmental Inc. in writing.

Respectfully Submitted,
BluMetric Environmental Inc.


Karen Phong, B.Eng., EIT (ON)
Engineering Intern


Andrea Jenney, B.Sc., P.Eng (NU/NT)
Senior Engineer




Yannick Lanthier, M.Sc. (ON)
Geomatics Manager



7 REFERENCES

- ALS Laboratories. November 14, 2017. "Hold Times: General Information & Interpretation of Exceedances."
- Arcadis. 2018. "Evaluation of Phase I Long Term Monitoring." *PIN-B Clifton Point*.
- Arcadis. 2016. "Long Term Monitoring, 2015, PIN-B Clifton Point."
- Arcadis. 2018. "Long Term Monitoring, 2017, PIN-B Clifton Point."
- Canadian Council Ministers of the Environment. 2008. "Canada-Wide Standard (CWS) for Petroleum Hydrocarbon in Soil, Tier 1 Residential/Parkland, non-potable water, coarse-grained soil."
- Canadian Council Ministers of the Environment. 1999. "Canadian Water Quality Guidelines for the Protection of Aquatic Life."
- Canadian Council Ministers of the Environment. 1999. "CSQGs for the Protection of Environment and Human Health for residential/parkland use, non-potable coarse-grained soil."
- Environment Canada. Updated 2016. "Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites." *Federal Contaminated Sites Action Plan (FCSAP)*.
- Indigenous and Northern Affairs Canada (INAC). March 2009. "Abandoned Military Site Remediation Protocol (AMSRP)."
- Indigenous and Northern Affairs Canada (INAC). 2016. "PIN-B Clifton Point Long Term Monitoring Plan."



TABLES



CIRNAC - PIN B Clifton Point LTM 2020 - 200537 Table 1: Historical Analytical Chemistry Results for PHCs in Water				GW	GW	GW	GW	GW	GW	Average	Standard Deviation	ULA	
				MW3 (2013)	MW1 (2015)	MW3 (2015)	MW3 (2015) - D	MW3 (2017)	MW3 (2017) - D				
Parameter	Units	RDL	Criteria 1	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B				
			FCSAP-T1-Coarse-RP	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis				Arcadis
				22-Aug-13	24-Jul-15	24-Jul-15	24-Jul-15	3-Aug-17	3-Aug-17				
General Chemistry													
F1 (C6-C10)	mg/L	<0.1	0.81	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Calculated			
F1-BTEX	mg/L	<0.1	0.81	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Calculated			
F2 (C10-C16)	mg/L	<0.1	1.3	<0.1	<0.1	<0.1	<0.1	<0.00010	<0.00010	Not Calculated			
F3 (C16-C34)	mg/L	<0.2	-	<0.2	-	-	-	<0.00010	<0.00010	Not Calculated			
F4 (C34-C50)	mg/L	<0.2	-	<0.2	-	-	-	<0.00020	<0.00020	Not Calculated			
Benzene	mg/L	<0.00040	0.14	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	Not Calculated			
Ethylbenzene	mg/L	<0.00040	11	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	Not Calculated			
Toluene	mg/L	<0.00040	0.083	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	Not Calculated			
ortho-Xylene	mg/L	<0.00040	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	Not Calculated			
meta- & para-Xylene	mg/L	<0.00080	-	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	Not Calculated			
Xylene Total	mg/L	<0.00080	3.9	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	Not Calculated			

Notes:

Underline	indicates detection limit exceeds criteria
Grey	indicates detected concentration exceeds criteria 1

Criteria 1 - FCSAP Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Residential/Parkland Land Use (FIGQG), 2016

RDL - Refers to laboratory detection limit which may vary between sample locations and event

ULA - Upper Limits of Acceptability, calculated using the average + three (3) standard deviations of all available data & only calculated for parameters that had three or more data points that had detectable concentrations.

CIRNAC - PIN B Clifton Point LTM 2020 - 200537				GW	GW	GW	GW	GW	GW	Average	Standard Deviation	ULA	
Table 2: Historical Analytical Chemistry Results for PCBs in Water				MW3 (2013)	MW1 (2015)	MW3 (2015)	MW3 (2015) - D	MW3 (2017)	MW3 (2017) - D				
Parameter	Units	RDL	Criteria 1	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B				
			FCSAP-T1-Coarse-RP	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis				Arcadis
				22-Aug-13	24-Jul-15	24-Jul-15	24-Jul-15	3-Aug-17	3-Aug-17				
General Chemistry													
Aroclor 1016	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1221	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1232	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1242	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1248	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1254	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1260	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1262	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			
Aroclor 1268	ug/L	0.00005	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Calculated			

Notes:

<u>Underline</u>	indicates detection limit exceeds criteria
Grey	indicates detected concentration exceeds criteria 1

Criteria 1 - FCSAP Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Residential/Parkland Land Use (FIGQG), 2016

RDL - Refers to laboratory detection limit which may vary between sample locations and event

ULA - Upper Limits of Acceptability, calculated using the average + three (3) standard deviations of all available data & only calculated for parameters that had three or more data points that had detectable concentrations.



Table 3: Historical Analytical Chemistry Results for Metals and Inorganics (Total) in Water				GW	GW	GW	GW	GW	GW	GW	Average	Standard Deviation	ULA
				MW3 (2013)	MW1 (2015)	MW3 (2015)	MW3 (2015) - D	MW2 (2017)	MW3 (2017)	MW3 (2017) - D			
				Criteria 1	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B			
Parameter	Units	RDL	FCSAP-T1-Coarse-RP	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis				
				22-Aug-13	24-Jul-15	24-Jul-15	24-Jul-15	3-Aug-17	3-Aug-17	3-Aug-17			
Total Metals													
Aluminum (Al)-Total	mg/L	0.003	0.1	0.0261	0.32	0.15	0.14	8.3	0.076	0.027	1.77	3.65	12.72
Antimony (Sb)-Total	mg/L	0.0001	2	0.00008	<0.00060	<0.00060	<0.00060	0.0013	<0.00060	<0.00060	Not Calculated		
Arsenic (As)-Total	mg/L	0.0001	0.005	0.00019	0.00051	0.00028	0.0003	0.0067	0.00031	0.00029	0.00	0.00	0.01
Barium (Ba)-Total	mg/L	0.0001	0.5	0.0627	0.053	0.053	0.052	0.15	0.04	0.04	0.07	0.04	0.21
Beryllium (Be)-Total	mg/L	0.0001	0.0053	<0.00001	<0.001	<0.001	<0.001	0.0021	<0.001	<0.001	Not Calculated		
Bismuth (Bi)-Total	mg/L	0.00005	-	<0.000005	<.005	<0.005	<0.005	-			Not Calculated		
Boron (B)-Total	mg/L	0.01	1.5	<0.05	0.023	<0.020	<0.020	0.079	<0.020	<0.020	Not Calculated		
Cadmium (Cd)-Total	mg/L	0.000005	0.00009	0.000009	0.000024	0.000029	<0.000020	0.00024	<0.000020	<0.000020	Not Calculated		
Calcium (Ca)-Total	mg/L	0.05	-	37.7	36	36	36	54	27	27	38.14	9.81	67.57
Cesium (Cs)-Total	mg/L	0.00001	-								Not Calculated		
Chromium (Cr)-Total	mg/L	0.0001	0.0089	0.00011	<0.001	<0.001	<0.001	0.032	<0.001	<0.001	Not Calculated		
Cobalt (Co)-Total	mg/L	0.0001	-	0.000045	<0.00030	<0.00030	<0.00030	0.006	<0.00030	<0.00030	Not Calculated		
Copper (Cu)-Total	mg/L	0.0005	hardness depend.	0.00426	0.0097	0.0033	0.0035	0.28	0.0036	0.0037	0.06	0.12	0.43
Iron (Fe)-Total	mg/L	0.01	0.3	0.0138	0.33	0.15	0.15	11	<0.060	<0.060	2.87	5.42	19.13
Lead (Pb)-Total	mg/L	0.00005	hardness depend.	0.00005	0.00044	0.00038	0.0004	0.022	0.0002	<0.0002	0.00	0.01	0.03
Lithium (Li)-Total	mg/L	0.001	-	0.00173	<0.020	<0.020	<0.020	0.024	<0.020	<0.020	Not Calculated		
Magnesium (Mg)-Total	mg/L	0.005	-	24.8	14	18	18	25	19	19	20.16	4.71	34.30
Manganese (Mn)-Total	mg/L	0.0001	-	0.00474	0.0074	0.0083	0.0082	0.39	<0.004	<0.004	0.10	0.19	0.68
Mercury (Hg)-Total	mg/L	0.000005	0.000026								Not Calculated		
Molybdenum (Mo)-Total	mg/L	0.00005	0.073	0.0014	0.00054	0.00035	0.0003	0.029	0.00047	0.00043	0.01	0.01	0.04
Nickel (Ni)-Total	mg/L	0.0005	hardness depend.	0.00158	0.0022	0.0027	0.0025	0.056	0.0011	0.0013	0.01	0.02	0.09
Phosphorus (P)-Total	mg/L	0.05	-					-	1.1	1.1	Not Calculated		
Potassium (K)-Total	mg/L	0.05	-	2.11	1.3	0.86	0.85	29	1.1	1.1	6.87	12.38	44.01
Rubidium (Rb)-Total	mg/L	0.0002	-								Not Calculated		
Selenium (Se)-Total	mg/L	0.00005	0.001	0.00044	<0.00020	<0.00020	<0.00020	0.00086	<0.00020	0.0002	Not Calculated		
Silicon (Si)-Total	mg/L	0.1	-	1.2	1.7	1.3	1.2	21	1	1.1	5.24	8.81	31.68
Silver (Ag)-Total	mg/L	0.00001	0.00025	<0.000005	<0.00010	<0.00010	<0.00010	0.0025	<0.00010	<0.00010	Not Calculated		
Sodium (Na)-Total	mg/L	0.05	-	40.2	9.4	18	18	140	15	15	44.52	54.64	208.45
Strontium (Sr)-Total	mg/L	0.0002	-	0.0695	0.053	0.09	0.09	0.33	0.041	0.041	0.12	0.12	0.48
Sulfur (S)-Total	mg/L	0.5	-	16.5	2.2	3.3	3.4	25	2.5	2.5	9.90	10.36	40.97
Tellurium (Te)-Total	mg/L	0.0002	-								Not Calculated		
Thallium (Tl)-Total	mg/L	0.00001	0.0008	0.000009	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	Not Calculated		
Thorium (Th)-Total	mg/L	0.0001	-								Not Calculated		
Tin (Sn)-Total	mg/L	0.0001	-	<0.0002	<0.001	<0.001	<0.001	0.0036	<0.001	<0.001	Not Calculated		
Titanium (Ti)-Total	mg/L	0.0003	0.1	<0.0005	0.0089	0.0031	0.0026	0.082	<0.001	<0.001	0.03	0.04	0.16
Tungsten (W)-Total	mg/L	0.0001	-				0				Not Calculated		
Uranium (U)-Total	mg/L	0.00001	0.015	0.0014	0.00062	0.00038	0.0004	0.013	0.00066	0.00059	0.00	0.01	0.02
Vanadium (V)-Total	mg/L	0.0005	-	0.00021	<0.001	<0.001	<0.001	0.015	<0.001	<0.001	Not Calculated		
Zinc (Zn)-Total	mg/L	0.003	0.01	0.0164	0.029	0.68	0.67	0.2	0.063	0.068	0.20	0.28	1.04
Zirconium (Zr)-Total	mg/L	0.0002	-	0.00026	0.0055	<0.003	<0.003	-	-	-	Not Calculated		

Notes:

Underline	indicates detection limit exceeds criteria
Grey	indicates detected concentration exceeds criteria 1

Criteria 1 - FCSAP Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Residential/Parkland Land Use (FIGQG), 2016. Except for Al, Cu, Pd, and Zn where Canadian Water Quality Guideline for the Protection of Aquatic Life (FW) (1999) was applied.

RDL - Refers to laboratory detection limit which may vary between sample locations and event

ULA - Upper Limits of Acceptability, calculated using the average + three (3) standard deviations of all available data & only calculated for parameters that had three or more data points that had detectable concentrations.

Parameter	Units	CWQG AW (1999) Variable Criteria - Calculated					
		MW3 (2013)	MW1 (2015)	MW3 (2015)	MW3 (2015) - D	MW3 (2017)	MW3 (2017) - D
Aluminum (Al)	mg/L	0.1	0.1	0.1	0.1	0.1	0.1
Copper (Cu)	mg/L	0.0040	0.0032	0.0035	0.0035	0.0032	0.0032
Lead (Pb)	mg/L	0.0070	0.0049	0.0058	0.0058	0.0049	0.0049
Nickel (Ni)	mg/L	0.1500	0.1230	0.1370	0.1370	0.1230	0.1230



Table 4: Historical Analytical Chemistry Results for Metals and Inorganics (Dissolved) in Water				GW	GW	GW	GW	GW	GW	Average	Standard Deviation	ULA
				MW3 (2013)	MW1 (2015)	MW3 (2015)	MW3 (2015) - D	MW3 (2017)	MW3 (2017) - D			
				Criteria 1	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B			
				FCSAP-TI-Coarse-RP	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis			
Parameter	Units	RDL		22-Aug-13	24-Jul-15	24-Jul-15	24-Jul-15	3-Aug-17	3-Aug-17			
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	0.001	0.1	0.0224	0.0072	0.0069	0.0044	0.0065	0.0065	0.01	0.01	0.034
Antimony (Sb)-Dissolved	mg/L	0.0001	2	0.000085	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	Not Calculated		
Arsenic (As)-Dissolved	mg/L	0.0001	0.005	0.000225	0.00038	<0.00020	<0.00020	<0.00020	<0.00020	Not Calculated		
Barium (Ba)-Dissolved	mg/L	0.0001	0.5	0.0605	0.045	0.048	0.048	0.039	0.039	0.05	0.01	0.075
Beryllium (Be)-Dissolved	mg/L	0.0001	0.0053	<0.000010	<0.001	<0.001	<0.001	<0.001	<0.001	Not Calculated		
Bismuth (Bi)-Dissolved	mg/L	0.00005	-	<0.0000050	<0.0005	<0.005	<0.0005			Not Calculated		
Boron (B)-Dissolved	mg/L	0.01	1.5	<0.050	0.024	<0.020	<0.020	<0.020	<0.020	Not Calculated		
Cadmium (Cd)-Dissolved	mg/L	0.000005	0.00009	0.000013	<0.00002	0.000021	0.00002	<0.00002	<0.00002	Not Calculated		
Calcium (Ca)-Dissolved	mg/L	0.05	-	40	36	36	36	26	26	34.50	5.97	52.42
Cesium (Cs)-Dissolved	mg/L	0.00001	-	-	-	-	-	-	-	Not Calculated		
Chromium (Cr)-Dissolved	mg/L	0.0001	0.0089	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	Not Calculated		
Cobalt (Co)-Dissolved	mg/L	0.0001	-	0.00011	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	Not Calculated		
Copper (Cu)-Dissolved	mg/L	0.0002	hardness depend.	0.00468	0.0056	0.0024	0.0022	0.0029	0.0027	0.00	0.00	0.008
Iron (Fe)-Dissolved	mg/L	0.01	0.3	0.0034	<0.060	<0.060	<0.060	<0.060	<0.060	Not Calculated		
Lead (Pb)-Dissolved	mg/L	0.00005	hardness depend.	0.000025	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	Not Calculated		
Lithium (Li)-Dissolved	mg/L	0.001	-	0.0016	<0.02	<0.02	<0.02	<0.02	<0.02	Not Calculated		
Magnesium (Mg)-Dissolved	mg/L	0.005	-	26.7	13	18	18	18	18	18.93	5.69	36.01
Manganese (Mn)-Dissolved	mg/L	0.0001	-	0.00461	<0.004	<0.004	<0.004	<0.004	<0.004	Not Calculated		
Mercury (Hg)-Dissolved	mg/L	0.000005	0.000026	-	-	-	-	-	-	Not Calculated		
Molybdenum (Mo)-Dissolved	mg/L	0.00005	0.073	0.0015	0.00042	0.00021	0.00023	0.00041	0.00036	0.00	0.00	0.0024
Nickel (Ni)-Dissolved	mg/L	0.0005	hardness depend.	0.00188	0.0022	0.00061	0.00064	0.0006	0.00056	0.00	0.00	0.0038
Phosphorus (P)-Dissolved	mg/L	0.05	-	-	-	-	-	<0.0001	<0.0001	Not Calculated		
Potassium (K)-Dissolved	mg/L	0.05	-	2.24	1.2	0.76	0.78	1	1.1	1.30	0.65	3.26
Rubidium (Rb)-Dissolved	mg/L	0.0002	-	-	-	-	-	-	-	Not Calculated		
Selenium (Se)-Dissolved	mg/L	0.00005	0.001	0.000482	<0.00020	<0.00020	<0.00020	0.00023	<0.00020	Not Calculated		
Silicon (Si)-Dissolved	mg/L	0.05	-	1.3	0.94	0.79	0.79	0.95	0.95	1.00	0.22	1.64
Silver (Ag)-Dissolved	mg/L	0.00001	0.00025	<0.000005	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	Not Calculated		
Sodium (Na)-Dissolved	mg/L	0.05	-	43.2	8.8	17	17	16	16	21.25	15.08	66.50
Strontium (Sr)-Dissolved	mg/L	0.0002	-	0.069	0.048	0.082	0.082	0.041	0.041	0.06	0.02	0.12
Sulfur (S)-Dissolved	mg/L	0.5	-	17.3	2.1	3.4	3.3	2.5	2.4	6.33	7.34	28.34
Tellurium (Te)-Dissolved	mg/L	0.0002	-	-	-	-	-	-	-	Not Calculated		
Thallium (Tl)-Dissolved	mg/L	0.00001	0.0008	0.00001	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	Not Calculated		
Thorium (Th)-Dissolved	mg/L	0.0001	-	-	-	-	-	-	-	Not Calculated		
Tin (Sn)-Dissolved	mg/L	0.0001	-	<0.00020	<0.001	<0.001	<0.001	<0.001	<0.001	Not Calculated		
Titanium (Ti)-Dissolved	mg/L	0.0003	0.1	<0.00050	<0.001	<0.001	<0.001	<0.001	<0.001	Not Calculated		
Tungsten (W)-Dissolved	mg/L	0.0001	-	-	-	-	-	-	-	Not Calculated		
Uranium (U)-Dissolved	mg/L	0.00001	0.015	0.0015	0.0001	0.00027	0.00026	0.00054	0.00051	0.00	0.00	0.002
Vanadium (V)-Dissolved	mg/L	0.0005	-	0.00034	<0.001	<0.001	<0.001	<0.001	<0.001	Not Calculated		
Zinc (Zn)-Dissolved	mg/L	0.001	0.01	0.0188	0.031	0.47	0.47	0.05	0.048	0.14	0.22	0.80
Zirconium (Zr)-Dissolved	mg/L	0.0002	-	0.00033	<0.0003	<0.0003	<0.0003	-	-	Not Calculated		

Notes:

Underline	indicates detection limit exceeds criteria
Grey	indicates detected concentration exceeds criteria 1

Criteria 1 - FCSAP Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Residential/Parkland Land Use (FIGQG), 2016. Except for Al, Cu, Pd, and Zn where Canadian Water Quality Guideline for the Protection of Aquatic Life (FW) (1999) was applied.

RDL - Refers to laboratory detection limit which may vary between sample locations and event

ULA - Upper Limits of Acceptability, calculated using the average + three (3) standard deviations of all available data & only calculated for parameters that had three or more data points that had detectable concentrations.



Parameter	Units	CWQG AW (1999) Variable Criteria - Calculated					
		MW3 (2013)	MW1 (2015)	MW3 (2015)	MW3 (2015) - D	MW3 (2017)	MW3 (2017) - D
Aluminum (Al)	mg/L	0.1	0.1	0.1	0.1	0.1	0.1
Copper (Cu)	mg/L	0.0040	0.0032	0.0035	0.0035	0.0032	0.0032
Lead (Pb)	mg/L	0.0070	0.0049	0.0058	0.0058	0.0049	0.0049
Nickel (Ni)	mg/L	0.1500	0.1230	0.1370	0.1370	0.1230	0.1230

CIRNAC - PIN B Clifton Point LTM 2020 - 200537				GW	GW	GW	GW	GW	GW	Average	Standard Deviation	ULA	
Table 5: Historical Analytical Chemistry Results for General Chemistry in Water				MW3 (2013)	MW1 (2015)	MW3 (2015)	MW3 (2015) - D	MW3 (2017)	MW3 (2017) - D				
Parameter	Units	RDL	Criteria 1	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B	PIN-B				
			FCSAP-T1-Coarse-RP	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis	Arcadis				Arcadis
				22-Aug-13	24-Jul-15	24-Jul-15	24-Jul-15	3-Aug-17	3-Aug-17				
General Chemistry													
Conductivity	uS/cm	2	-	630.00	320	390	390	330	330	418	145.00	852.50	
Hardness (as CaCO3)	mg/L	0.5	-	210.0	140	160	160	140	140	163	33.04	261.62	
pH	pH	0.1	6.5-9	8.01	8.00	7.93	7.96	8.11	8.13	Not Calculated			
Total Suspended Solids	mg/L	3	-	2.9	1.3	13	13	<1.0	<1.0	6	6.34	24.76	
Total Dissolved Solids	mg/L	13	-	410	190	220	270	200	190	255	104.08	567.25	
Bromide (Br)	mg/L	0.05	-	-	-	-	-	-	-	Not Calculated			
Chloride (Cl)	mg/L	0.5	120	71	10	33	33	24	24	35	26.11	112.83	
Fluoride (F)	mg/L	0.02	0.12	0.077	-	-	<0.050	—	—	Not Calculated			
Nitrate (as N)	mg/L	0.005	13	36.0	7.3	8.2	36	23	22	19	13.64	59.54	
Nitrite (as N)	mg/L	0.001	0.06	0.016	<0.010	0.011	0.011	<0.010	<0.010	Not Calculated			
Sulfate (SO4)	mg/L	0.3	100	47.0	6.3	11	11	7.1	6.9	18	19.54	76.47	

Notes:

Underline	indicates detection limit exceeds criteria
Grey	indicates detected concentration exceeds criteria 1

Criteria 1 - FCSAP Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Residential/Parkland Land Use (FIGQG), 2016

RDL - Refers to laboratory detection limit which may vary between sample locations and event

ULA - Upper Limits of Acceptability, calculated using the average + three (3) standard deviations of all available data & only calculated for parameters that had three or more data points that had detectable concentrations.

CIRNAC - PIN B Clifton Point LTM 2020 - 200537 Table 6: Analytical Chemistry Results for Total and Dissolved Metals in Water						GW (purge)	GW (purge)
						MW3	MW3
Parameter	Units	RDL	Criteria 1	Criteria 2	Criteria 3	PIN-B	PIN-B
			FCSAP-T1-Coarse-RP	Total Metals ULA	Dissolved Metals ULA	BluMetric	BluMetric
						30-Aug-20	30-Aug-20
Total Metals						TOTAL	DISSOLVED
Aluminum (Al)	mg/L	0.003	0.1	12.72	0.034	0.192	0.244
Antimony (Sb)	mg/L	0.0001	2	-	-	0.00052	0.00044
Arsenic (As)	mg/L	0.0001	0.005	0.01	-	0.00058	0.00056
Barium (Ba)	mg/L	0.0001	0.5	0.21	0.075	0.078	0.0826
Beryllium (Be)	mg/L	0.0001	0.0053	-	-	<0.00010	<0.00010
Bismuth (Bi)	mg/L	0.00005	-	-	-	<0.000050	<0.000050
Boron (B)	mg/L	0.01	1.5	-	-	0.028	0.03
Cadmium (Cd)	mg/L	0.000005	0.00009	-	-	0.0000621	0.0000597
Calcium (Ca)	mg/L	0.05	-	67.6	52.4	69.3	77.9
Cesium (Cs)	mg/L	0.00001	-	-	-	0.000038	0.000011
Chromium (Cr)	mg/L	0.0001	0.0089	-	-	0.0127	0.0024
Cobalt (Co)	mg/L	0.0001	-	-	-	0.00045	0.00032
Copper (Cu)	mg/L	0.0005	0.004	0.43	0.0084	0.00861	0.00759
Iron (Fe)	mg/L	0.01	0.3	19.13	-	0.262	0.214
Lead (Pb)	mg/L	0.00005	0.007	0.03	-	0.000649	0.00115
Lithium (Li)	mg/L	0.001	-	-	-	0.002	0.002
Magnesium (Mg)	mg/L	0.005	-	34.30	36.01	61.4	62.2
Manganese (Mn)	mg/L	0.0001	-	0.68	-	0.0203	0.0227
Mercury (Hg)	mg/L	0.000005	0.000026	-	-	<0.0000050	<0.0000050
Molybdenum (Mo)	mg/L	0.00005	0.073	0.04	0.002	0.000591	0.000311
Nickel (Ni)	mg/L	0.0005	0.15	0.09	0.0038	0.00911	0.00392
Phosphorus (P)	mg/L	0.05	-	-	-	<0.050	<0.050
Potassium (K)	mg/L	0.05	-	44.01	3.26	1.75	1.61
Rubidium (Rb)	mg/L	0.0002	-	-	-	0.00091	0.00074
Selenium (Se)	mg/L	0.00005	0.001	-	-	0.000114	0.000142
Silicon (Si)	mg/L	0.1	-	31.68	1.64	2.11	2.17
Silver (Ag)	mg/L	0.00001	0.00025	-	-	0.000017	<0.000010
Sodium (Na)	mg/L	0.05	-	208.45	66.50	25.8	27.7
Strontium (Sr)	mg/L	0.0002	-	0.48	0.12	0.105	0.114
Sulfur (S)	mg/L	0.5	-	40.97	28.34	7.61	7.38
Tellurium (Te)	mg/L	0.0002	-	-	-	<0.00020	<0.00020
Thallium (Tl)	mg/L	0.00001	0.0008	-	-	<0.000010	<0.000010
Thorium (Th)	mg/L	0.0001	-	-	-	<0.00010	0.00011
Tin (Sn)	mg/L	0.0001	-	-	-	<0.00010	<0.00010
Titanium (Ti)	mg/L	0.0003	0.1	0.16	-	0.00559	0.00436
Tungsten (W)	mg/L	0.0001	-	-	-	0.00011	<0.00010
Uranium (U)	mg/L	0.00001	0.015	0.02	0.002	0.00156	0.0016
Vanadium (V)	mg/L	0.0005	-	-	-	0.00071	0.00052
Zinc (Zn)	mg/L	0.003	0.01	1.04	0.80	0.0529	0.0453
Zirconium (Zr)	mg/L	0.0002	-	-	-	0.00091	0.00109

Notes:

Underline	indicates detection limit exceeds criteria
Grey	indicates detected concentration exceeds criteria 1
Red	indicates detected concentration exceeds criteria 2 (applies only to Total Metals)
Bold	indicates detected concentration exceeds criteria 3 (applies only to Dissolved Metals)

Criteria 1 - FCSAP Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Residential/Parkland Land Use (FIGQG), 2016. Except for Al, Cu, Pd, and Zn where Canadian Water Quality Guideline for the Protection of Aquatic Life (FW) (1999) was applied.

Criteria 2 - Calculated ULAs for Total Metals

Criteria 3 - Calculated ULAs for Dissolved Metals

RDL - Refers to laboratory detection limit which may vary between sample locations and event

ULA - Upper Limits of Acceptability, calculated using the average + three (3) standard deviations of all available data & only calculated for parameters that had three or more data points that had detectable concentrations.

Parameter	Units	CWQG AW (1999) Variable Criteria - Calculated	
		MW3 (Total)	MW (Dissolved)
Aluminum (Al)	mg/L	0.1	0.1
Copper (Cu)	mg/L	0.004	0.004
Lead (Pb)	mg/L	0.007	0.007
Nickel (Ni)	mg/L	0.15	0.15

CIRNAC - PIN B Clifton Point LTM 2020 - 200537					GW (purge)
Table 7: Analytical Chemistry Results for General Chemistry in Water					MW3
Parameter	Units	RDL	Criteria 1	Criteria 2	PIN-B
			FCSAP-T1-Coarse-RP	ULA	BluMetric
					30-Aug-20
General Chemistry					
Conductivity	uS/cm	2	-	853	771
Hardness (as CaCO3)	mg/L	0.5	-	262	451
pH	pH	0.1	6.5-9	-	8.21
Total Suspended Solids	mg/L	3	-	25	33.3
Total Dissolved Solids	mg/L	13	-	567	440
Bromide (Br)	mg/L	0.05	-	-	<0.25
Chloride (Cl)	mg/L	0.5	120	113	20.4
Fluoride (F)	mg/L	0.02	0.12	-	<0.10
Nitrate (as N)	mg/L	0.005	13	60	5.5
Nitrite (as N)	mg/L	0.001	0.06	-	<0.0050
Sulfate (SO4)	mg/L	0.3	100	76	18.6

Notes:

<u>Underline</u>	indicates detection limit exceeds criteria
Grey	indicates detected concentration exceeds criteria 1
Red	indicates detected concentration exceeds criteria 2

Criteria 1 - FCSAP Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites (FIGQG), 2016

Criteria 2 - Calculated ULAs

RDL - Refers to laboratory detection limit which may vary between sample locations and event

ULA - Upper Limits of Acceptability, calculated using the average + three (3) standard deviations of all available data & only calculated for parameters that had three or more data points that had detectable concentrations.

FIGURES





LEGEND

Site Location

Kugluktuk

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK

REFERENCES

PROPRIETARY INFORMATION MAY NOT BE REPRODUCED OR DIVULGED WITHOUT PRIOR WRITTEN CONSENT OF BLUMETRIC ENVIRONMENTAL INC. DO NOT SCALE DRAWING.

THIS DRAWING MAY HAVE BEEN REDUCED. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS.

CLIENT

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

PROJECT

**Long-Term Monitoring 2020
PIN-B, Clifton Point, Nunavut**

TITLE

Site Location

4916 49th Street,
PO Box 11086
Yellowknife, NT, X1A 1P3
TEL: (867) 873-3500
FAX: (867) 873-3499
Email: info@blumetric.ca
Web: <http://www.blumetric.ca>

PROJECT # 200537		DATE February 12, 2021	
DRAWN KH	CHECKED KP	FIG NO. 01	REV 0

APPENDIX A

Monitoring Checklists and Daily Field Report



Daily Activities

Date:	Sunday August 30, 2020				
Project Name:	2020 Long Term Monitoring				
BluMetric Project #	200537				
Client:	CIRNAC				
BluMetric Personnel on site:	Matt Kitchen Jeff Rosnawski				
Client personnel on site:	None				
Site Visited:	PIN-B				
Start time (on site):	11:53 AM				
End time (off site):	1:53 PM				
Weather conditions:	5 C, Overcast/Foggy turning to partly cloudy				
Project Activities completed today:	Visual inspection of NHWL – completed. Wildlife Monitor Interview – completed. No Staining Observed. Drone video of site – completed. The groundwater monitoring program was completed. - One sample was taken but only metals and general chemistry was collected due to lack of water and no recharge. - Three samples were dry/frozen.				
Health and Safety:	Topic was hydration				
Visitors and Third Party Enquiries:	n/a				
Wildlife Sightings	n/a				
Project activities planned for tomorrow:	Ship samples Ship back equipment				
Labour Hour Tracking					
Name	Position	From	To	Hours	Notes
Jimmy Evalik	Wildlife Monitor	9:00	16:30	7.5	
Equipment Tracking					
Name	Model	From	To	Hours	Notes

Sample Summary

Samples Collected	Total # Samples	Analysis								
		Metals	PHCs	VOCs	PAHs	PFAS	PCBs	Lead Paint	Asbestos	Other
Soil										
Sediment										
Surface Water										
Groundwater	1	1								
Vegetation										
Grain Size										
Building Material										
Other										

Other Notes/Comments	
Prepared by (print):	Matt Kitchen
Reviewed by (print):	Yannick Lanthier
Signature:	

NATURAL ENVIRONMENT CHECKLIST

Date:		30/Aug/20	
Site:		PIN-B	
Note	Response	Extent	Description
	Y/N	Provide information as applicable (i.e. length/width/depth/type)	Features of note, photographic reference with scale, point of view and direction.
Wildlife Sightings	Y	- Tundra Swans - Snow Geese - Passerines Sp?	
Evidence of Wildlife	Y	- Sik sik den - Muskox Track - Sign of bear attempting to dig out sik sik	Photos 1, 2, 128, and 129
Wildlife Activity	Y	- Denning - Wildlife passing through - Hunting - Foraging	From interview
Relative Number	Y	- 1 Grizzly bear - 2 Muskox - 2 Tundra swan - ~50 snow geense - 14 passerine sp?	From Interview
Evidence of Revegetation	Y	- No sign of stress in vegetation	Photo 13 and 17

Wildlife Monitor Notes

- Potential Wildlife:
 - o Polar bear. Grizzly bear, sik sik, geese, wolverine, muskox, caribou, fox
- Region used for hunting, and maybe fishing.

VISUAL MONITORING CHECKLIST

Date:		30/Aug/20	
Landfill Location:		PIN-B	
Note	Response	Extent	Description
	Y/N	Provide information as applicable (i.e. length/width/depth/type)	Features of note, photographic reference with scale, point of view and direction.
Evidence of Settlement	Y	On cap on eastern side.	Photos 65-71, 74-78, 83, and 87.
Evidence of Erosion	Y	Washout on access road	Photo 127.
Evidence of Frost Action	N		
Animal Burrows	Y	Sik Sik/ fox borrows, and predator digging	Photos 33, 97, 98, 126, 128 and 129
Vegetation Present	Y	Small Grasses and plants <10% covering.	Photos 20-27, 36-43, 52-59, 64-71, 73, 88, 91-93 and 96.
Vegetation Stresses	N	Not observed	
Staining Present	N	Not observed	
Seepage Points	N	Not observed	
Exposed Debris	N	Not observed	
Condition of Instruments	Y	Generally in good condition	
Other Features			

APPENDIX B

Site Photographs





Photo 1: Northwest Side of NHWL, Viewpoint 2



Photo 2: Southwest Side of NHWL, Viewpoint 93



Photo 3: Southeast Side of NHWL, Viewpoint 10



Photo 4: Northeast Side of NHWL, Viewpoint 16



Photo 5: Small Depression on Surface near the Southeast edge, Viewpoint 33



Photo 6: Depression on Surface along Southwest Edge, Viewpoint 87



Photo 7: Settlement near the Northwest Edge, Viewpoint 83



Photo 8: Settlement on the North Corner on Northeast Berm, Viewpoint 11



Photo 9: Small Depression on surface of NHWL at Southeast Edge, Viewpoint 19



Photo 10: North Corner of NHWL, Absence of Animal Burrow, Viewpoint 12



Photo 11: Drainage Pathway on Southwest Side of NHWL, Viewpoint 72



Photo 12: Drainage Pathway on Southeast Side of NHWL, Viewpoint 93



Photo 13 : Concrete Pad at Main Station Area, Viewpoint 110



Photo 14: Former Construction Camp Area, Viewpoint 117



Photo 15 : Washout on Access Road to Main Station Area, Viewpoint 127



Photo 16: Siksik Burrow, Viewpoint 100



Photo 17: Siksik Burrow, Viewpoint 97



Photo 18: Siksik Burrow, Viewpoint 100



Photo 19: Animal Tracks on Access Road, Viewpoint 119



Photo 20: Evidence of Digging at Siksik Den, Viewpoint 128



Photo 21: Revegetation of Site Surrounding Landfill, Viewpoint 13



Photo 22: Vegetation on Cap of NHWL, Viewpoint 20



Photo 22: Vegetation Surrounding Site Area, Viewpoint 36

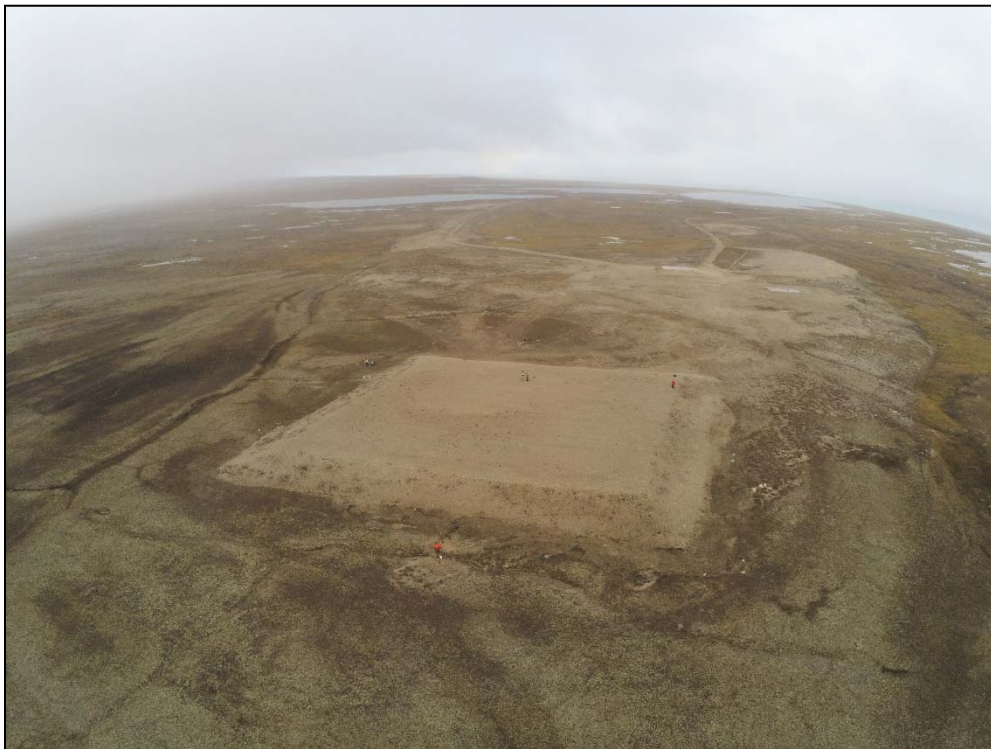


Photo 23: Oblique photography of NHWL from remotely piloted aircraft
(Looking northwest)



Photo 24: Oblique photograph of NHWL from remotely piloted aircraft
(Looking southeast)



Photo 25: Top view photograph of NHWL from remotely piloted aircraft

APPENDIX C

Groundwater Sampling Logs



Water Sampling Log

Page ____ of ____

Project Number: 200537 Date: 2020-Aug-30 Samplers Names: Jeff Rosanowski
 Location: PIN-B Start 11:20 End 13:00 Sample Type: GW

Well ID	Depth to Bottom	Water Level Depth	Well Volume	Comments	DO	ORP	Temp	pH	Cond	Turbidity	TDS
eg. MW-19-01	mbtp	mbtp	Litres = H(m)x2.03	Colour, sheen, odour, etc	mg/L		C		ms/cm	NTU	g/L
MW 1	1.87	Dry	0	Not sampled, dry.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW 2	1.89	Dry	0	Not sampled, dry.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW 3	1.55	1.49	0.12	Sampled total metals, dissolved metal, general chemistry, insignificant water to purge.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW 4	2.05	Dry	0	Not sampled, dry.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: N/A = Not applicable

APPENDIX D

Certificate of Analysis





BluMetric Environmental Inc. (Ottawa)
ATTN: Karen Phong
4916 49 St
Yellowknife NT X1A 1P3

Date Received: 03-SEP-20
Report Date: 17-SEP-20 15:09 (MT)
Version: FINAL

Client Phone: 647-207-7765

Certificate of Analysis

Lab Work Order #: L2498615
Project P.O. #: NOT SUBMITTED
Job Reference: 200537
C of C Numbers:
Legal Site Desc:

Emily Smith
Account Manager

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

ADDRESS: 190 Colonnade Road, Unit 7, Ottawa, ON K2E 7J5 Canada | Phone: +1 613 225 8279 | Fax: +1 613 225 2801
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
L2498615-1 MWLF-3								
Sampled By: CLIENT on 27-AUG-20 @ 12:00								
Matrix: WATER								
Physical Tests								
Conductivity		175		2.0	uS/cm		12-SEP-20	R5223184
Hardness (as CaCO3)		92.7		0.50	mg/L		14-SEP-20	
pH		6.22		0.10	pH		12-SEP-20	R5223184
Total Suspended Solids		<3.0		3.0	mg/L		11-SEP-20	R5222647
Total Dissolved Solids		154		13	mg/L		11-SEP-20	R5223182
Anions and Nutrients								
Bromide (Br)		0.112		0.050	mg/L		14-SEP-20	R5224181
Chloride (Cl)		0.60		0.50	mg/L		14-SEP-20	R5224181
Fluoride (F)		0.090		0.020	mg/L		14-SEP-20	R5224181
Nitrate (as N)		0.0342		0.0050	mg/L		14-SEP-20	R5224181
Nitrite (as N)		<0.0010		0.0010	mg/L		14-SEP-20	R5224181
Sulfate (SO4)		1.58		0.30	mg/L		14-SEP-20	R5224181
Total Metals								
Aluminum (Al)-Total		0.365		0.0030	mg/L		14-SEP-20	R5223324
Antimony (Sb)-Total		<0.00010		0.00010	mg/L		14-SEP-20	R5223324
Arsenic (As)-Total		0.00062		0.00010	mg/L		14-SEP-20	R5223324
Barium (Ba)-Total		0.118		0.00010	mg/L		14-SEP-20	R5223324
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		14-SEP-20	R5223324
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		14-SEP-20	R5223324
Boron (B)-Total		0.020		0.010	mg/L		14-SEP-20	R5223324
Cadmium (Cd)-Total		0.0000761		0.0000050	mg/L		14-SEP-20	R5223324
Calcium (Ca)-Total		22.2		0.050	mg/L		14-SEP-20	R5223324
Cesium (Cs)-Total		0.000011		0.000010	mg/L		14-SEP-20	R5223324
Chromium (Cr)-Total		0.00197		0.00010	mg/L		14-SEP-20	R5223324
Cobalt (Co)-Total		0.00685		0.00010	mg/L		14-SEP-20	R5223324
Copper (Cu)-Total		0.0282		0.00050	mg/L		14-SEP-20	R5223324
Iron (Fe)-Total		0.144		0.010	mg/L		14-SEP-20	R5223324
Lead (Pb)-Total		0.000103		0.000050	mg/L		14-SEP-20	R5223324
Lithium (Li)-Total		0.0028		0.0010	mg/L		14-SEP-20	R5223324
Magnesium (Mg)-Total		7.73		0.0050	mg/L		14-SEP-20	R5223324
Manganese (Mn)-Total		0.838		0.00010	mg/L		14-SEP-20	R5223324
Mercury (Hg)-Total		0.0000131		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.000272		0.000050	mg/L		14-SEP-20	R5223324
Nickel (Ni)-Total		0.0269		0.00050	mg/L		14-SEP-20	R5223324
Phosphorus (P)-Total		<0.050		0.050	mg/L		14-SEP-20	R5223324
Potassium (K)-Total		4.34		0.050	mg/L		14-SEP-20	R5223324
Rubidium (Rb)-Total		0.00349		0.00020	mg/L		14-SEP-20	R5223324
Selenium (Se)-Total		0.000198		0.000050	mg/L		14-SEP-20	R5223324
Silicon (Si)-Total		6.73		0.10	mg/L		14-SEP-20	R5223324
Silver (Ag)-Total		0.000049		0.000010	mg/L		14-SEP-20	R5223324
Sodium (Na)-Total		2.27		0.050	mg/L		14-SEP-20	R5223324

* 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
L2498615-1	MWLF-3							
Sampled By: CLIENT on 27-AUG-20 @ 12:00								
Matrix: WATER								
Total Metals								
Strontium (Sr)-Total		0.215		0.00020	mg/L		14-SEP-20	R5223324
Sulfur (S)-Total		<0.50		0.50	mg/L		14-SEP-20	R5223324
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		14-SEP-20	R5223324
Thallium (Tl)-Total		0.000012		0.000010	mg/L		14-SEP-20	R5223324
Thorium (Th)-Total		0.00043		0.00010	mg/L		14-SEP-20	R5223324
Tin (Sn)-Total		<0.00010		0.00010	mg/L		14-SEP-20	R5223324
Titanium (Ti)-Total		0.00438		0.00030	mg/L		14-SEP-20	R5223324
Tungsten (W)-Total		<0.00010		0.00010	mg/L		14-SEP-20	R5223324
Uranium (U)-Total		0.00146		0.000010	mg/L		14-SEP-20	R5223324
Vanadium (V)-Total		0.00083		0.00050	mg/L		14-SEP-20	R5223324
Zinc (Zn)-Total		0.0036		0.0030	mg/L		14-SEP-20	R5223324
Zirconium (Zr)-Total		0.00239		0.00020	mg/L		14-SEP-20	R5223324
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					11-SEP-20	R5222500
Aluminum (Al)-Dissolved		0.405		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Antimony (Sb)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Arsenic (As)-Dissolved		0.00072		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Barium (Ba)-Dissolved		0.120		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Boron (B)-Dissolved		0.018		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cadmium (Cd)-Dissolved		0.0000773		0.0000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Calcium (Ca)-Dissolved		22.8		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Cesium (Cs)-Dissolved		0.000010		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Chromium (Cr)-Dissolved		0.00197		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cobalt (Co)-Dissolved		0.00680		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Copper (Cu)-Dissolved		0.0316		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Iron (Fe)-Dissolved		0.133		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Lead (Pb)-Dissolved		0.000103		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Lithium (Li)-Dissolved		0.0031		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Magnesium (Mg)-Dissolved		8.69		0.0050	mg/L	11-SEP-20	11-SEP-20	R5223444
Manganese (Mn)-Dissolved		0.902		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Mercury (Hg)-Dissolved		0.0000149		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.000271		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Nickel (Ni)-Dissolved		0.0295		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Potassium (K)-Dissolved		4.73		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Rubidium (Rb)-Dissolved		0.00424		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Selenium (Se)-Dissolved		0.000202		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silicon (Si)-Dissolved		6.96		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444

* 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
L2498615-1 MWLF-3								
Sampled By: CLIENT on 27-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Silver (Ag)-Dissolved		0.000047		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Sodium (Na)-Dissolved		2.59		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Strontium (Sr)-Dissolved		0.235		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Sulfur (S)-Dissolved		0.61		0.50	mg/L	11-SEP-20	11-SEP-20	R5223444
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Thallium (Tl)-Dissolved		0.000015		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Thorium (Th)-Dissolved		0.00054		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Tin (Sn)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Titanium (Ti)-Dissolved		0.00512		0.00030	mg/L	11-SEP-20	11-SEP-20	R5223444
Tungsten (W)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Uranium (U)-Dissolved		0.00176		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Vanadium (V)-Dissolved		0.00072		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Zinc (Zn)-Dissolved		0.0034		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Zirconium (Zr)-Dissolved		0.00260		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Volatile Organic Compounds								
Benzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Ethylbenzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Methyl t-butyl ether (MTBE)		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Styrene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Toluene		<0.00045		0.00045	mg/L	10-SEP-20	11-SEP-20	R5203993
ortho-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
meta- & para-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Xylenes		<0.00075		0.00075	mg/L		11-SEP-20	
F1 (C6-C10)		<0.10		0.10	mg/L	10-SEP-20	11-SEP-20	R5204137
Surrogate: 4-Bromofluorobenzene (SS)		85.5		70-130	%		11-SEP-20	R5203993
Surrogate: 1,4-Difluorobenzene (SS)		108.9		70-130	%		11-SEP-20	R5203993
Hydrocarbons								
F1-BTEX		<0.10		0.10	mg/L		11-SEP-20	
F2 (C10-C16)		<0.30		0.30	mg/L	11-SEP-20	11-SEP-20	R5200147
F3 (C16-C34)		<0.30		0.30	mg/L	11-SEP-20	11-SEP-20	R5200147
F4 (C34-C50)		<0.30		0.30	mg/L	11-SEP-20	11-SEP-20	R5200147
Surrogate: 2-Bromobenzotrifluoride, F2-F4		79.7		60-140	%	11-SEP-20	11-SEP-20	R5200147
Surrogate: 3,4-Dichlorotoluene (SS)		94.9		70-130	%		11-SEP-20	R5204137
Polychlorinated Biphenyls								
Aroclor 1242		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1248		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1254		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1260		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Decachlorobiphenyl		60.3		50-150	%	15-SEP-20	15-SEP-20	R5224193
Total PCBs		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Tetrachloro-m-xylene		88.6		50-150	%	15-SEP-20	15-SEP-20	R5224193
MWLF-3-D								

* 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
L2498615-2 MWLF-3-D								
Sampled By: CLIENT on 27-AUG-20 @ 12:00								
Matrix: WATER								
Physical Tests								
Conductivity		183		2.0	uS/cm		12-SEP-20	R5223184
Hardness (as CaCO3)		86.4		0.50	mg/L		16-SEP-20	
pH		6.20		0.10	pH		12-SEP-20	R5223184
Total Suspended Solids		<3.0		3.0	mg/L		11-SEP-20	R5222647
Total Dissolved Solids		156		13	mg/L		11-SEP-20	R5223182
Anions and Nutrients								
Bromide (Br)		0.111		0.050	mg/L		14-SEP-20	R5224181
Chloride (Cl)		0.60		0.50	mg/L		14-SEP-20	R5224181
Fluoride (F)		0.088		0.020	mg/L		14-SEP-20	R5224181
Nitrate (as N)		0.0318		0.0050	mg/L		14-SEP-20	R5224181
Nitrite (as N)		<0.0010		0.0010	mg/L		14-SEP-20	R5224181
Sulfate (SO4)		1.60		0.30	mg/L		14-SEP-20	R5224181
Total Metals								
Aluminum (Al)-Total		0.335		0.0030	mg/L		16-SEP-20	R5224805
Antimony (Sb)-Total		<0.00010		0.00010	mg/L		16-SEP-20	R5224805
Arsenic (As)-Total		0.00058		0.00010	mg/L		16-SEP-20	R5224805
Barium (Ba)-Total		0.113		0.00010	mg/L		16-SEP-20	R5224805
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		16-SEP-20	R5224805
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		16-SEP-20	R5224805
Boron (B)-Total		0.019		0.010	mg/L		16-SEP-20	R5224805
Cadmium (Cd)-Total		0.0000715		0.0000050	mg/L		16-SEP-20	R5224805
Calcium (Ca)-Total		23.1		0.050	mg/L		16-SEP-20	R5224805
Cesium (Cs)-Total		<0.000010		0.000010	mg/L		16-SEP-20	R5224805
Chromium (Cr)-Total		0.00189		0.00010	mg/L		16-SEP-20	R5224805
Cobalt (Co)-Total		0.00626		0.00010	mg/L		16-SEP-20	R5224805
Copper (Cu)-Total		0.0279		0.00050	mg/L		16-SEP-20	R5224805
Iron (Fe)-Total		0.132		0.010	mg/L		16-SEP-20	R5224805
Lead (Pb)-Total		0.000084		0.000050	mg/L		16-SEP-20	R5224805
Lithium (Li)-Total		0.0033		0.0010	mg/L		16-SEP-20	R5224805
Magnesium (Mg)-Total		7.73		0.0050	mg/L		16-SEP-20	R5224805
Manganese (Mn)-Total		0.798		0.00010	mg/L		16-SEP-20	R5224805
Mercury (Hg)-Total		0.0000143		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.000266		0.000050	mg/L		16-SEP-20	R5224805
Nickel (Ni)-Total		0.0266		0.00050	mg/L		16-SEP-20	R5224805
Phosphorus (P)-Total		<0.050		0.050	mg/L		16-SEP-20	R5224805
Potassium (K)-Total		4.38		0.050	mg/L		16-SEP-20	R5224805
Rubidium (Rb)-Total		0.00371		0.00020	mg/L		16-SEP-20	R5224805
Selenium (Se)-Total		0.000206		0.000050	mg/L		16-SEP-20	R5224805
Silicon (Si)-Total		6.70		0.10	mg/L		16-SEP-20	R5224805
Silver (Ag)-Total		0.000053		0.000010	mg/L		16-SEP-20	R5224805
Sodium (Na)-Total		2.21		0.050	mg/L		16-SEP-20	R5224805

* 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
L2498615-2	MWLF-3-D							
Sampled By:	CLIENT on 27-AUG-20 @ 12:00							
Matrix:	WATER							
Total Metals								
Strontium (Sr)-Total		0.222		0.00020	mg/L		16-SEP-20	R5224805
Sulfur (S)-Total		1.06		0.50	mg/L		16-SEP-20	R5224805
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		16-SEP-20	R5224805
Thallium (Tl)-Total		0.000016		0.000010	mg/L		16-SEP-20	R5224805
Thorium (Th)-Total		0.00043		0.00010	mg/L		16-SEP-20	R5224805
Tin (Sn)-Total		<0.00010		0.00010	mg/L		16-SEP-20	R5224805
Titanium (Ti)-Total		0.00434		0.00030	mg/L		16-SEP-20	R5224805
Tungsten (W)-Total		<0.00010		0.00010	mg/L		16-SEP-20	R5224805
Uranium (U)-Total		0.00153		0.000010	mg/L		16-SEP-20	R5224805
Vanadium (V)-Total		0.00080		0.00050	mg/L		16-SEP-20	R5224805
Zinc (Zn)-Total		<0.0030		0.0030	mg/L		16-SEP-20	R5224805
Zirconium (Zr)-Total		0.00267		0.00020	mg/L		16-SEP-20	R5224805
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					15-SEP-20	R5224256
Aluminum (Al)-Dissolved		0.341		0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Antimony (Sb)-Dissolved		<0.00010		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Arsenic (As)-Dissolved		0.00064		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Barium (Ba)-Dissolved		0.104		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Boron (B)-Dissolved		0.018		0.010	mg/L	15-SEP-20	16-SEP-20	R5224908
Cadmium (Cd)-Dissolved		0.0000721		0.0000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Calcium (Ca)-Dissolved		22.8		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Cesium (Cs)-Dissolved		<0.000010		0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Chromium (Cr)-Dissolved		0.00187		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Cobalt (Co)-Dissolved		0.00645		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Copper (Cu)-Dissolved		0.0289		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Iron (Fe)-Dissolved		0.135		0.010	mg/L	15-SEP-20	16-SEP-20	R5224908
Lead (Pb)-Dissolved		0.000097		0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Lithium (Li)-Dissolved		0.0029		0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Magnesium (Mg)-Dissolved		7.18		0.0050	mg/L	15-SEP-20	16-SEP-20	R5224908
Manganese (Mn)-Dissolved		0.785		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Mercury (Hg)-Dissolved		0.0000144		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.000271		0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Nickel (Ni)-Dissolved		0.0275		0.00050	mg/L	15-SEP-20	16-SEP-20	R5224908
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Potassium (K)-Dissolved		4.30		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Rubidium (Rb)-Dissolved		0.00355		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Selenium (Se)-Dissolved		0.000223		0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Silicon (Si)-Dissolved		6.67		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908

* 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
L2498615-2 MWLF-3-D								
Sampled By: CLIENT on 27-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Silver (Ag)-Dissolved		0.000044		0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Sodium (Na)-Dissolved		2.43		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Strontium (Sr)-Dissolved		0.198		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Sulfur (S)-Dissolved		0.72		0.50	mg/L	15-SEP-20	16-SEP-20	R5224908
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Thallium (Tl)-Dissolved		0.000020		0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Thorium (Th)-Dissolved		0.00041		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Tin (Sn)-Dissolved		<0.00010		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Titanium (Ti)-Dissolved		0.00430		0.00030	mg/L	15-SEP-20	16-SEP-20	R5224908
Tungsten (W)-Dissolved		<0.00010		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Uranium (U)-Dissolved		0.00150		0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Vanadium (V)-Dissolved		0.00063		0.00050	mg/L	15-SEP-20	16-SEP-20	R5224908
Zinc (Zn)-Dissolved		0.0028		0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Zirconium (Zr)-Dissolved		0.00243		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Volatile Organic Compounds								
Benzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Ethylbenzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Methyl t-butyl ether (MTBE)		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Styrene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Toluene		<0.00045		0.00045	mg/L	10-SEP-20	11-SEP-20	R5203993
ortho-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
meta- & para-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Xylenes		<0.00075		0.00075	mg/L		11-SEP-20	
F1 (C6-C10)		<0.10		0.10	mg/L	10-SEP-20	11-SEP-20	R5204137
Surrogate: 4-Bromofluorobenzene (SS)		90.1		70-130	%		11-SEP-20	R5203993
Surrogate: 1,4-Difluorobenzene (SS)		113.4		70-130	%		11-SEP-20	R5203993
Hydrocarbons								
F1-BTEX		<0.10		0.10	mg/L		11-SEP-20	
F2 (C10-C16)		<0.30		0.30	mg/L	11-SEP-20	11-SEP-20	R5200147
F3 (C16-C34)		<0.30		0.30	mg/L	11-SEP-20	11-SEP-20	R5200147
F4 (C34-C50)		<0.30		0.30	mg/L	11-SEP-20	11-SEP-20	R5200147
Surrogate: 2-Bromobenzotrifluoride, F2-F4		81.7		60-140	%	11-SEP-20	11-SEP-20	R5200147
Surrogate: 3,4-Dichlorotoluene (SS)		89.9		70-130	%		11-SEP-20	R5204137
Polychlorinated Biphenyls								
Aroclor 1242		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1248		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1254		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1260		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Decachlorobiphenyl		56.2		50-150	%	15-SEP-20	15-SEP-20	R5224193
Total PCBs		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Tetrachloro-m-xylene		90.1		50-150	%	15-SEP-20	15-SEP-20	R5224193
MWLF-1								

* 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
L2498615-3 MWLF-1								
Sampled By: CLIENT on 27-AUG-20 @ 12:00								
Matrix: WATER								
Physical Tests								
Hardness (as CaCO3)		12.0		0.50	mg/L		15-SEP-20	
Total Metals								
Aluminum (Al)-Total		0.171		0.0030	mg/L		15-SEP-20	R5224180
Antimony (Sb)-Total		0.00019		0.00010	mg/L		15-SEP-20	R5224180
Arsenic (As)-Total		0.00015		0.00010	mg/L		15-SEP-20	R5224180
Barium (Ba)-Total		0.0614		0.00010	mg/L		15-SEP-20	R5224180
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		15-SEP-20	R5224180
Boron (B)-Total		0.014		0.010	mg/L		15-SEP-20	R5224180
Cadmium (Cd)-Total		0.000350		0.0000050	mg/L		15-SEP-20	R5224180
Calcium (Ca)-Total		2.89		0.050	mg/L		15-SEP-20	R5224180
Cesium (Cs)-Total		0.000010		0.000010	mg/L		15-SEP-20	R5224180
Chromium (Cr)-Total		0.00174		0.00010	mg/L		15-SEP-20	R5224180
Cobalt (Co)-Total		0.00278		0.00010	mg/L		15-SEP-20	R5224180
Copper (Cu)-Total		0.0195		0.00050	mg/L		15-SEP-20	R5224180
Iron (Fe)-Total		0.088		0.010	mg/L		15-SEP-20	R5224180
Lead (Pb)-Total		0.000364		0.000050	mg/L		15-SEP-20	R5224180
Lithium (Li)-Total		<0.0010		0.0010	mg/L		15-SEP-20	R5224180
Magnesium (Mg)-Total		1.04		0.0050	mg/L		15-SEP-20	R5224180
Manganese (Mn)-Total		0.0437		0.00010	mg/L		15-SEP-20	R5224180
Mercury (Hg)-Total		0.0000050		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.000182		0.000050	mg/L		15-SEP-20	R5224180
Nickel (Ni)-Total		0.101		0.00050	mg/L		15-SEP-20	R5224180
Phosphorus (P)-Total		<0.050		0.050	mg/L		15-SEP-20	R5224180
Potassium (K)-Total		0.855		0.050	mg/L		15-SEP-20	R5224180
Rubidium (Rb)-Total		0.00299		0.00020	mg/L		15-SEP-20	R5224180
Selenium (Se)-Total		<0.000050		0.000050	mg/L		15-SEP-20	R5224180
Silicon (Si)-Total		3.18		0.10	mg/L		15-SEP-20	R5224180
Silver (Ag)-Total		0.000019		0.000010	mg/L		15-SEP-20	R5224180
Sodium (Na)-Total		5.37		0.050	mg/L		15-SEP-20	R5224180
Strontium (Sr)-Total		0.0301		0.00020	mg/L		15-SEP-20	R5224180
Sulfur (S)-Total		1.88		0.50	mg/L		15-SEP-20	R5224180
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		15-SEP-20	R5224180
Thallium (Tl)-Total		0.000013		0.000010	mg/L		15-SEP-20	R5224180
Thorium (Th)-Total		0.00012		0.00010	mg/L		15-SEP-20	R5224180
Tin (Sn)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Titanium (Ti)-Total		0.00180		0.00030	mg/L		15-SEP-20	R5224180
Tungsten (W)-Total		0.00021		0.00010	mg/L		15-SEP-20	R5224180
Uranium (U)-Total		0.000129		0.000010	mg/L		15-SEP-20	R5224180
Vanadium (V)-Total		<0.00050		0.00050	mg/L		15-SEP-20	R5224180
Zinc (Zn)-Total		0.0498		0.0030	mg/L		15-SEP-20	R5224180

* 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
L2498615-3 MWLF-1								
Sampled By: CLIENT on 27-AUG-20 @ 12:00								
Matrix: WATER								
Total Metals								
Zirconium (Zr)-Total		0.00035		0.00020	mg/L		15-SEP-20	R5224180
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					11-SEP-20	R5222500
Aluminum (Al)-Dissolved		0.179		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Antimony (Sb)-Dissolved		0.00021		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Arsenic (As)-Dissolved		0.00019		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Barium (Ba)-Dissolved		0.0602		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Boron (B)-Dissolved		0.014		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cadmium (Cd)-Dissolved		0.000361		0.0000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Calcium (Ca)-Dissolved		2.99		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Cesium (Cs)-Dissolved		<0.000010		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Chromium (Cr)-Dissolved		0.00174		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cobalt (Co)-Dissolved		0.00299		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Copper (Cu)-Dissolved		0.0213		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Iron (Fe)-Dissolved		0.083		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Lead (Pb)-Dissolved		0.000418		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Lithium (Li)-Dissolved		<0.0010		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Magnesium (Mg)-Dissolved		1.09		0.0050	mg/L	11-SEP-20	11-SEP-20	R5223444
Manganese (Mn)-Dissolved		0.0475		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Mercury (Hg)-Dissolved		<0.0000050		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.000189		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Nickel (Ni)-Dissolved		0.107		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Potassium (K)-Dissolved		0.961		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Rubidium (Rb)-Dissolved		0.00351		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Selenium (Se)-Dissolved		<0.000050		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silicon (Si)-Dissolved		3.23		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silver (Ag)-Dissolved		0.000022		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Sodium (Na)-Dissolved		6.11		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Strontium (Sr)-Dissolved		0.0356		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Sulfur (S)-Dissolved		1.82		0.50	mg/L	11-SEP-20	11-SEP-20	R5223444
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Thallium (Tl)-Dissolved		0.000013		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Thorium (Th)-Dissolved		0.00017		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Tin (Sn)-Dissolved		0.00011		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Titanium (Ti)-Dissolved		0.00247	DTMF	0.00030	mg/L	11-SEP-20	11-SEP-20	R5223444
Tungsten (W)-Dissolved		0.00024		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Uranium (U)-Dissolved		0.000137		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444

* 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
L2498615-3 MWLF-1 Sampled By: CLIENT on 27-AUG-20 @ 12:00 Matrix: WATER Dissolved Metals Vanadium (V)-Dissolved Zinc (Zn)-Dissolved Zirconium (Zr)-Dissolved Polychlorinated Biphenyls Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260 Surrogate: Decachlorobiphenyl Total PCBs Surrogate: Tetrachloro-m-xylene								
		<0.00050		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
		0.0588		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
		0.00035		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
		74.3		50-150	%	15-SEP-20	15-SEP-20	R5224193
		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
		91.4		50-150	%	15-SEP-20	15-SEP-20	R5224193
L2498615-4 MW01 Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER Physical Tests Conductivity Hardness (as CaCO3) pH Total Suspended Solids Total Dissolved Solids Anions and Nutrients Bromide (Br) Chloride (Cl) Fluoride (F) Nitrate (as N) Nitrite (as N) Sulfate (SO4) Total Metals Aluminum (Al)-Total Antimony (Sb)-Total Arsenic (As)-Total Barium (Ba)-Total Beryllium (Be)-Total Bismuth (Bi)-Total Boron (B)-Total Cadmium (Cd)-Total Calcium (Ca)-Total Cesium (Cs)-Total Chromium (Cr)-Total Cobalt (Co)-Total Copper (Cu)-Total Iron (Fe)-Total								
		2830		2.0	uS/cm		12-SEP-20	R5223184
		408		0.50	mg/L		16-SEP-20	
		8.10		0.10	pH		12-SEP-20	R5223184
		6.9		3.0	mg/L		11-SEP-20	R5222647
		1980		20	mg/L		11-SEP-20	R5223182
		<1.0	DLDS	1.0	mg/L		14-SEP-20	R5224181
		119		10	mg/L		14-SEP-20	R5224181
		0.86		0.40	mg/L		14-SEP-20	R5224181
		0.44		0.10	mg/L		14-SEP-20	R5224181
		<0.020	DLDS	0.020	mg/L		14-SEP-20	R5224181
		1020		6.0	mg/L		14-SEP-20	R5224181
		0.155		0.0030	mg/L		16-SEP-20	R5224942
		0.00106		0.00010	mg/L		16-SEP-20	R5224942
		0.00202		0.00010	mg/L		16-SEP-20	R5224942
		0.0130		0.00010	mg/L		16-SEP-20	R5224942
		<0.00010		0.00010	mg/L		16-SEP-20	R5224942
		0.000299		0.000050	mg/L		16-SEP-20	R5224942
		0.060		0.010	mg/L		16-SEP-20	R5224942
		0.000126		0.0000050	mg/L		16-SEP-20	R5224942
		58.6		0.050	mg/L		16-SEP-20	R5224942
		0.000061		0.000010	mg/L		16-SEP-20	R5224942
		0.00221		0.00010	mg/L		16-SEP-20	R5224942
		0.00039		0.00010	mg/L		16-SEP-20	R5224942
		0.0107		0.00050	mg/L		16-SEP-20	R5224942
		0.117		0.010	mg/L		16-SEP-20	R5224942

* 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
L2498615-4 MW01								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Total Metals								
Lead (Pb)-Total		0.000357		0.000050	mg/L		16-SEP-20	R5224942
Lithium (Li)-Total		0.107		0.0010	mg/L		16-SEP-20	R5224942
Magnesium (Mg)-Total		53.9		0.0050	mg/L		16-SEP-20	R5224942
Manganese (Mn)-Total		0.0872		0.00010	mg/L		16-SEP-20	R5224942
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.0451		0.000050	mg/L		16-SEP-20	R5224942
Nickel (Ni)-Total		0.0159		0.00050	mg/L		16-SEP-20	R5224942
Phosphorus (P)-Total		<0.050		0.050	mg/L		16-SEP-20	R5224942
Potassium (K)-Total		20.6		0.050	mg/L		16-SEP-20	R5224942
Rubidium (Rb)-Total		0.00502		0.00020	mg/L		16-SEP-20	R5224942
Selenium (Se)-Total		0.00156		0.000050	mg/L		16-SEP-20	R5224942
Silicon (Si)-Total		4.84		0.10	mg/L		16-SEP-20	R5224942
Silver (Ag)-Total		<0.000010		0.000010	mg/L		16-SEP-20	R5224942
Sodium (Na)-Total		511		0.050	mg/L		16-SEP-20	R5224942
Strontium (Sr)-Total		0.494		0.00020	mg/L		16-SEP-20	R5224942
Sulfur (S)-Total		350		0.50	mg/L		16-SEP-20	R5224942
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		16-SEP-20	R5224942
Thallium (Tl)-Total		0.000068		0.000010	mg/L		16-SEP-20	R5224942
Thorium (Th)-Total		0.00010		0.00010	mg/L		16-SEP-20	R5224942
Tin (Sn)-Total		0.00019		0.00010	mg/L		16-SEP-20	R5224942
Titanium (Ti)-Total		0.00609		0.00030	mg/L		16-SEP-20	R5224942
Tungsten (W)-Total		0.00188		0.00010	mg/L		16-SEP-20	R5224942
Uranium (U)-Total		0.214		0.000010	mg/L		16-SEP-20	R5224942
Vanadium (V)-Total		0.00082		0.00050	mg/L		16-SEP-20	R5224942
Zinc (Zn)-Total		0.0062		0.0030	mg/L		16-SEP-20	R5224942
Zirconium (Zr)-Total		0.00047		0.00020	mg/L		16-SEP-20	R5224942
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					15-SEP-20	R5224256
Aluminum (Al)-Dissolved		0.0903		0.0020	mg/L	15-SEP-20	16-SEP-20	R5224908
Antimony (Sb)-Dissolved		0.00124		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Arsenic (As)-Dissolved		0.00158		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Barium (Ba)-Dissolved		0.0119		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Beryllium (Be)-Dissolved		<0.00020	DLA	0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Bismuth (Bi)-Dissolved		0.00031		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Boron (B)-Dissolved		0.068		0.020	mg/L	15-SEP-20	16-SEP-20	R5224908
Cadmium (Cd)-Dissolved		<0.000075	DLM	0.000075	mg/L	15-SEP-20	16-SEP-20	R5224908
Calcium (Ca)-Dissolved		70.3		0.10	mg/L	15-SEP-20	16-SEP-20	R5224908
Cesium (Cs)-Dissolved		0.000061		0.000020	mg/L	15-SEP-20	16-SEP-20	R5224908
Chromium (Cr)-Dissolved		0.00103		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Cobalt (Co)-Dissolved		0.00041		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908

* 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
L2498615-4 MW01								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Copper (Cu)-Dissolved		0.0168	DTC	0.00040	mg/L	15-SEP-20	16-SEP-20	R5224908
Iron (Fe)-Dissolved		0.097		0.020	mg/L	15-SEP-20	16-SEP-20	R5224908
Lead (Pb)-Dissolved		0.00066	DTC	0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Lithium (Li)-Dissolved		0.108		0.0020	mg/L	15-SEP-20	16-SEP-20	R5224908
Magnesium (Mg)-Dissolved		56.4		0.010	mg/L	15-SEP-20	16-SEP-20	R5224908
Manganese (Mn)-Dissolved		0.0537		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Mercury (Hg)-Dissolved		<0.0000050		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.0485		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Nickel (Ni)-Dissolved		0.0203		0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Phosphorus (P)-Dissolved		<0.10	DLA	0.10	mg/L	15-SEP-20	16-SEP-20	R5224908
Potassium (K)-Dissolved		20.2		0.10	mg/L	15-SEP-20	16-SEP-20	R5224908
Rubidium (Rb)-Dissolved		0.00582		0.00040	mg/L	15-SEP-20	16-SEP-20	R5224908
Selenium (Se)-Dissolved		0.00183		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Silicon (Si)-Dissolved		4.78		0.10	mg/L	15-SEP-20	16-SEP-20	R5224908
Silver (Ag)-Dissolved		<0.000020	DLA	0.000020	mg/L	15-SEP-20	16-SEP-20	R5224908
Sodium (Na)-Dissolved		625		0.10	mg/L	15-SEP-20	16-SEP-20	R5224908
Strontium (Sr)-Dissolved		0.574		0.00040	mg/L	15-SEP-20	16-SEP-20	R5224908
Sulfur (S)-Dissolved		428		1.0	mg/L	15-SEP-20	16-SEP-20	R5224908
Tellurium (Te)-Dissolved		<0.00040	DLA	0.00040	mg/L	15-SEP-20	16-SEP-20	R5224908
Thallium (Tl)-Dissolved		0.000056		0.000020	mg/L	15-SEP-20	16-SEP-20	R5224908
Thorium (Th)-Dissolved		<0.00020	DLA	0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Tin (Sn)-Dissolved		<0.00020	DLA	0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Titanium (Ti)-Dissolved		0.00464		0.00060	mg/L	15-SEP-20	16-SEP-20	R5224908
Tungsten (W)-Dissolved		0.00509	DTC	0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Uranium (U)-Dissolved		0.186		0.000020	mg/L	15-SEP-20	16-SEP-20	R5224908
Vanadium (V)-Dissolved		<0.0010	DLA	0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Zinc (Zn)-Dissolved		0.0035		0.0020	mg/L	15-SEP-20	16-SEP-20	R5224908
Zirconium (Zr)-Dissolved		<0.00040	DLA	0.00040	mg/L	15-SEP-20	16-SEP-20	R5224908
Volatile Organic Compounds								
Benzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Ethylbenzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Methyl t-butyl ether (MTBE)		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Styrene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Toluene		<0.00045		0.00045	mg/L	10-SEP-20	11-SEP-20	R5203993
ortho-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
meta- & para-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Xylenes		<0.00075		0.00075	mg/L		11-SEP-20	
F1 (C6-C10)		<0.10		0.10	mg/L	10-SEP-20	11-SEP-20	R5204137
Surrogate: 4-Bromofluorobenzene (SS)		81.7		70-130	%		11-SEP-20	R5203993
Surrogate: 1,4-Difluorobenzene (SS)		113.0		70-130	%		11-SEP-20	R5203993
Hydrocarbons								

* 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
L2498615-4 MW01 Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER								
Hydrocarbons								
F1-BTEX		<0.10		0.10	mg/L		11-SEP-20	
F2 (C10-C16)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F3 (C16-C34)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F4 (C34-C50)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
Surrogate: 2-Bromobenzotrifluoride, F2-F4		78.6		60-140	%	11-SEP-20	15-SEP-20	R5200147
Surrogate: 3,4-Dichlorotoluene (SS)		79.6		70-130	%		11-SEP-20	R5204137
Polychlorinated Biphenyls								
Aroclor 1242		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1248		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1254		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1260		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Decachlorobiphenyl		85.6		50-150	%	15-SEP-20	15-SEP-20	R5224193
Total PCBs		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Tetrachloro-m-xylene		88.5		50-150	%	15-SEP-20	15-SEP-20	R5224193
L2498615-5 MW02 Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER								
Physical Tests								
Conductivity		1110		2.0	uS/cm		12-SEP-20	R5223184
Hardness (as CaCO3)		523		0.50	mg/L		15-SEP-20	
pH		7.59		0.10	pH		12-SEP-20	R5223184
Total Suspended Solids		<3.0		3.0	mg/L		11-SEP-20	R5222647
Total Dissolved Solids		743		20	mg/L		11-SEP-20	R5223182
Anions and Nutrients								
Bromide (Br)		<0.25	DLDS	0.25	mg/L		14-SEP-20	R5224181
Chloride (Cl)		52.5		2.5	mg/L		14-SEP-20	R5224181
Fluoride (F)		0.72		0.10	mg/L		14-SEP-20	R5224181
Nitrate (as N)		1.31		0.025	mg/L		14-SEP-20	R5224181
Nitrite (as N)		<0.0050	DLDS	0.0050	mg/L		14-SEP-20	R5224181
Sulfate (SO4)		248		1.5	mg/L		14-SEP-20	R5224181
Total Metals								
Aluminum (Al)-Total		0.0183		0.0030	mg/L		15-SEP-20	R5224180
Antimony (Sb)-Total		0.00031		0.00010	mg/L		15-SEP-20	R5224180
Arsenic (As)-Total		0.00041		0.00010	mg/L		15-SEP-20	R5224180
Barium (Ba)-Total		0.0263		0.00010	mg/L		15-SEP-20	R5224180
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		15-SEP-20	R5224180
Boron (B)-Total		0.036		0.010	mg/L		15-SEP-20	R5224180
Cadmium (Cd)-Total		0.0000284		0.0000050	mg/L		15-SEP-20	R5224180
Calcium (Ca)-Total		83.0		0.050	mg/L		15-SEP-20	R5224180
Cesium (Cs)-Total		<0.000010		0.000010	mg/L		15-SEP-20	R5224180
Chromium (Cr)-Total		0.00035		0.00010	mg/L		15-SEP-20	R5224180

* 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
L2498615-5	MW02							
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Total Metals								
Cobalt (Co)-Total		0.00027		0.00010	mg/L		15-SEP-20	R5224180
Copper (Cu)-Total		0.0103		0.00050	mg/L		15-SEP-20	R5224180
Iron (Fe)-Total		0.014		0.010	mg/L		15-SEP-20	R5224180
Lead (Pb)-Total		0.000337		0.000050	mg/L		15-SEP-20	R5224180
Lithium (Li)-Total		0.0352		0.0010	mg/L		15-SEP-20	R5224180
Magnesium (Mg)-Total		71.4		0.0050	mg/L		15-SEP-20	R5224180
Manganese (Mn)-Total		0.117		0.00010	mg/L		15-SEP-20	R5224180
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.00698		0.000050	mg/L		15-SEP-20	R5224180
Nickel (Ni)-Total		0.00449		0.00050	mg/L		15-SEP-20	R5224180
Phosphorus (P)-Total		<0.050		0.050	mg/L		15-SEP-20	R5224180
Potassium (K)-Total		9.14		0.050	mg/L		15-SEP-20	R5224180
Rubidium (Rb)-Total		0.00136		0.00020	mg/L		15-SEP-20	R5224180
Selenium (Se)-Total		0.000216		0.000050	mg/L		15-SEP-20	R5224180
Silicon (Si)-Total		3.71		0.10	mg/L		15-SEP-20	R5224180
Silver (Ag)-Total		<0.000010		0.000010	mg/L		15-SEP-20	R5224180
Sodium (Na)-Total		66.6		0.050	mg/L		15-SEP-20	R5224180
Strontium (Sr)-Total		0.328		0.00020	mg/L		15-SEP-20	R5224180
Sulfur (S)-Total		92.4		0.50	mg/L		15-SEP-20	R5224180
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		15-SEP-20	R5224180
Thallium (Tl)-Total		0.000013		0.000010	mg/L		15-SEP-20	R5224180
Thorium (Th)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Tin (Sn)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Titanium (Ti)-Total		0.00067		0.00030	mg/L		15-SEP-20	R5224180
Tungsten (W)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Uranium (U)-Total		0.0959		0.000010	mg/L		15-SEP-20	R5224180
Vanadium (V)-Total		<0.00050		0.00050	mg/L		15-SEP-20	R5224180
Zinc (Zn)-Total		<0.0030		0.0030	mg/L		15-SEP-20	R5224180
Zirconium (Zr)-Total		0.00061		0.00020	mg/L		15-SEP-20	R5224180
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					11-SEP-20	R5222500
Aluminum (Al)-Dissolved		0.0238		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Antimony (Sb)-Dissolved		0.00034		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Arsenic (As)-Dissolved		0.00045		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Barium (Ba)-Dissolved		0.0257		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Boron (B)-Dissolved		0.033		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cadmium (Cd)-Dissolved		0.0000268		0.0000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Calcium (Ca)-Dissolved		85.5		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444

* 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
L2498615-5	MW02							
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Cesium (Cs)-Dissolved		0.000012		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Chromium (Cr)-Dissolved		0.00035		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cobalt (Co)-Dissolved		0.00026		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Copper (Cu)-Dissolved		0.0107		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Iron (Fe)-Dissolved		0.017		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Lead (Pb)-Dissolved		0.000329		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Lithium (Li)-Dissolved		0.0379		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Magnesium (Mg)-Dissolved		75.1		0.0050	mg/L	11-SEP-20	11-SEP-20	R5223444
Manganese (Mn)-Dissolved		0.117		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Mercury (Hg)-Dissolved		<0.0000050		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.00637		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Nickel (Ni)-Dissolved		0.00460		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Potassium (K)-Dissolved		10.2		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Rubidium (Rb)-Dissolved		0.00160		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Selenium (Se)-Dissolved		0.000197		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silicon (Si)-Dissolved		3.74		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silver (Ag)-Dissolved		<0.000010		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Sodium (Na)-Dissolved		77.3		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Strontium (Sr)-Dissolved		0.356		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Sulfur (S)-Dissolved		88.7		0.50	mg/L	11-SEP-20	11-SEP-20	R5223444
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Thallium (Tl)-Dissolved		0.000011		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Tin (Sn)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Titanium (Ti)-Dissolved		0.00106		0.00030	mg/L	11-SEP-20	11-SEP-20	R5223444
Tungsten (W)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Uranium (U)-Dissolved		0.103		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Vanadium (V)-Dissolved		<0.00050		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Zinc (Zn)-Dissolved		0.0039		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Zirconium (Zr)-Dissolved		0.00059		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Volatile Organic Compounds								
Benzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Ethylbenzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Methyl t-butyl ether (MTBE)		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Styrene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Toluene		<0.00045		0.00045	mg/L	10-SEP-20	11-SEP-20	R5203993
ortho-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
meta- & para-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Xylenes		<0.00075		0.00075	mg/L		11-SEP-20	
F1 (C6-C10)		<0.10		0.10	mg/L	10-SEP-20	11-SEP-20	R5204137

* 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
L2498615-5 MW02								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Volatile Organic Compounds								
Surrogate: 4-Bromofluorobenzene (SS)		84.0		70-130	%		11-SEP-20	R5203993
Surrogate: 1,4-Difluorobenzene (SS)		114.5		70-130	%		11-SEP-20	R5203993
Hydrocarbons								
F1-BTEX		<0.10		0.10	mg/L		11-SEP-20	
F2 (C10-C16)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F3 (C16-C34)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F4 (C34-C50)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
Surrogate: 2-Bromobenzotrifluoride, F2-F4		82.6		60-140	%	11-SEP-20	15-SEP-20	R5200147
Surrogate: 3,4-Dichlorotoluene (SS)		83.6		70-130	%		11-SEP-20	R5204137
Polychlorinated Biphenyls								
Aroclor 1242		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1248		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1254		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1260		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Decachlorobiphenyl		74.8		50-150	%	15-SEP-20	15-SEP-20	R5224193
Total PCBs		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Tetrachloro-m-xylene		86.3		50-150	%	15-SEP-20	15-SEP-20	R5224193
L2498615-6 MW02-D								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Physical Tests								
Conductivity		1110		2.0	uS/cm		12-SEP-20	R5223184
Hardness (as CaCO3)		520		0.50	mg/L		15-SEP-20	
pH		7.59		0.10	pH		12-SEP-20	R5223184
Total Suspended Solids		<3.0		3.0	mg/L		11-SEP-20	R5222647
Total Dissolved Solids		758		20	mg/L		11-SEP-20	R5223182
Anions and Nutrients								
Bromide (Br)		<0.25	DLDS	0.25	mg/L		14-SEP-20	R5224181
Chloride (Cl)		52.1		2.5	mg/L		14-SEP-20	R5224181
Fluoride (F)		0.69		0.10	mg/L		14-SEP-20	R5224181
Nitrate (as N)		1.33		0.025	mg/L		14-SEP-20	R5224181
Nitrite (as N)		<0.0050	DLDS	0.0050	mg/L		14-SEP-20	R5224181
Sulfate (SO4)		245		1.5	mg/L		14-SEP-20	R5224181
Total Metals								
Aluminum (Al)-Total		0.0222		0.0030	mg/L		15-SEP-20	R5224180
Antimony (Sb)-Total		0.00031		0.00010	mg/L		15-SEP-20	R5224180
Arsenic (As)-Total		0.00041		0.00010	mg/L		15-SEP-20	R5224180
Barium (Ba)-Total		0.0264		0.00010	mg/L		15-SEP-20	R5224180
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		15-SEP-20	R5224180
Boron (B)-Total		0.036		0.010	mg/L		15-SEP-20	R5224180
Cadmium (Cd)-Total		0.0000288		0.0000050	mg/L		15-SEP-20	R5224180

* 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
L2498615-6 MW02-D								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Total Metals								
Calcium (Ca)-Total		82.1		0.050	mg/L		15-SEP-20	R5224180
Cesium (Cs)-Total		<0.000010		0.000010	mg/L		15-SEP-20	R5224180
Chromium (Cr)-Total		0.00033		0.00010	mg/L		15-SEP-20	R5224180
Cobalt (Co)-Total		0.00027		0.00010	mg/L		15-SEP-20	R5224180
Copper (Cu)-Total		0.0100		0.00050	mg/L		15-SEP-20	R5224180
Iron (Fe)-Total		0.015		0.010	mg/L		15-SEP-20	R5224180
Lead (Pb)-Total		0.000293		0.000050	mg/L		15-SEP-20	R5224180
Lithium (Li)-Total		0.0353		0.0010	mg/L		15-SEP-20	R5224180
Magnesium (Mg)-Total		71.8		0.0050	mg/L		15-SEP-20	R5224180
Manganese (Mn)-Total		0.115		0.00010	mg/L		15-SEP-20	R5224180
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.00694		0.000050	mg/L		15-SEP-20	R5224180
Nickel (Ni)-Total		0.00463		0.00050	mg/L		15-SEP-20	R5224180
Phosphorus (P)-Total		<0.050		0.050	mg/L		15-SEP-20	R5224180
Potassium (K)-Total		9.50		0.050	mg/L		15-SEP-20	R5224180
Rubidium (Rb)-Total		0.00134		0.00020	mg/L		15-SEP-20	R5224180
Selenium (Se)-Total		0.000218		0.000050	mg/L		15-SEP-20	R5224180
Silicon (Si)-Total		3.80		0.10	mg/L		15-SEP-20	R5224180
Silver (Ag)-Total		<0.000010		0.000010	mg/L		15-SEP-20	R5224180
Sodium (Na)-Total		68.1		0.050	mg/L		15-SEP-20	R5224180
Strontium (Sr)-Total		0.321		0.00020	mg/L		15-SEP-20	R5224180
Sulfur (S)-Total		93.7		0.50	mg/L		15-SEP-20	R5224180
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		15-SEP-20	R5224180
Thallium (Tl)-Total		0.000011		0.000010	mg/L		15-SEP-20	R5224180
Thorium (Th)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Tin (Sn)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Titanium (Ti)-Total		0.00067		0.00030	mg/L		15-SEP-20	R5224180
Tungsten (W)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Uranium (U)-Total		0.0955		0.000010	mg/L		15-SEP-20	R5224180
Vanadium (V)-Total		<0.00050		0.00050	mg/L		15-SEP-20	R5224180
Zinc (Zn)-Total		<0.0030		0.0030	mg/L		15-SEP-20	R5224180
Zirconium (Zr)-Total		0.00095		0.00020	mg/L		15-SEP-20	R5224180
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					11-SEP-20	R5222500
Aluminum (Al)-Dissolved		0.0248		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Antimony (Sb)-Dissolved		0.00031		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Arsenic (As)-Dissolved		0.00046		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Barium (Ba)-Dissolved		0.0256		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444

* 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
L2498615-6 MW02-D								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Boron (B)-Dissolved		0.035		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cadmium (Cd)-Dissolved		0.0000345		0.0000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Calcium (Ca)-Dissolved		86.1		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Cesium (Cs)-Dissolved		0.000011		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Chromium (Cr)-Dissolved		0.00038		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cobalt (Co)-Dissolved		0.00026		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Copper (Cu)-Dissolved		0.0104		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Iron (Fe)-Dissolved		0.015		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Lead (Pb)-Dissolved		0.000285		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Lithium (Li)-Dissolved		0.0391		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Magnesium (Mg)-Dissolved		74.0		0.0050	mg/L	11-SEP-20	11-SEP-20	R5223444
Manganese (Mn)-Dissolved		0.117		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Mercury (Hg)-Dissolved		<0.0000050		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.00637		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Nickel (Ni)-Dissolved		0.00465		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Potassium (K)-Dissolved		9.94		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Rubidium (Rb)-Dissolved		0.00150		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Selenium (Se)-Dissolved		0.000230		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silicon (Si)-Dissolved		3.65		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silver (Ag)-Dissolved		<0.000010		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Sodium (Na)-Dissolved		74.4		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Strontium (Sr)-Dissolved		0.351		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Sulfur (S)-Dissolved		90.5		0.50	mg/L	11-SEP-20	11-SEP-20	R5223444
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Thallium (Tl)-Dissolved		0.000012		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Tin (Sn)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Titanium (Ti)-Dissolved		0.00089		0.00030	mg/L	11-SEP-20	11-SEP-20	R5223444
Tungsten (W)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Uranium (U)-Dissolved		0.106		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Vanadium (V)-Dissolved		<0.00050		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Zinc (Zn)-Dissolved		0.0031		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Zirconium (Zr)-Dissolved		0.00057		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Volatile Organic Compounds								
Benzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Ethylbenzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Methyl t-butyl ether (MTBE)		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Styrene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Toluene		<0.00045		0.00045	mg/L	10-SEP-20	11-SEP-20	R5203993
ortho-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993

* 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
L2498615-6 MW02-D Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER								
Volatile Organic Compounds								
meta- & para-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Xylenes		<0.00075		0.00075	mg/L		11-SEP-20	
F1 (C6-C10)		<0.10		0.10	mg/L	10-SEP-20	11-SEP-20	R5204137
Surrogate: 4-Bromofluorobenzene (SS)		85.8		70-130	%		11-SEP-20	R5203993
Surrogate: 1,4-Difluorobenzene (SS)		113.7		70-130	%		11-SEP-20	R5203993
Hydrocarbons								
F1-BTEX		<0.10		0.10	mg/L		11-SEP-20	
F2 (C10-C16)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F3 (C16-C34)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F4 (C34-C50)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
Surrogate: 2-Bromobenzotrifluoride, F2-F4		82.5		60-140	%	11-SEP-20	15-SEP-20	R5200147
Surrogate: 3,4-Dichlorotoluene (SS)		92.4		70-130	%		11-SEP-20	R5204137
Polychlorinated Biphenyls								
Aroclor 1242		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1248		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1254		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1260		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Decachlorobiphenyl		74.1		50-150	%	15-SEP-20	15-SEP-20	R5224193
Total PCBs		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Tetrachloro-m-xylene		90.0		50-150	%	15-SEP-20	15-SEP-20	R5224193
L2498615-7 MW03 Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER								
Physical Tests								
Conductivity		1930		2.0	uS/cm		12-SEP-20	R5223184
Hardness (as CaCO3)		608		0.50	mg/L		15-SEP-20	
pH		7.83		0.10	pH		12-SEP-20	R5223184
Total Suspended Solids		13.1		3.0	mg/L		11-SEP-20	R5222647
Total Dissolved Solids		1230		20	mg/L		11-SEP-20	R5223182
Anions and Nutrients								
Bromide (Br)		0.75		0.50	mg/L		14-SEP-20	R5224181
Chloride (Cl)		200		5.0	mg/L		14-SEP-20	R5224181
Fluoride (F)		0.79		0.20	mg/L		14-SEP-20	R5224181
Nitrate (as N)		0.221		0.050	mg/L		14-SEP-20	R5224181
Nitrite (as N)		<0.010	DLDS	0.010	mg/L		14-SEP-20	R5224181
Sulfate (SO4)		422		3.0	mg/L		14-SEP-20	R5224181
Total Metals								
Aluminum (Al)-Total		0.187		0.0030	mg/L		15-SEP-20	R5224180
Antimony (Sb)-Total		0.00026		0.00010	mg/L		15-SEP-20	R5224180
Arsenic (As)-Total		0.00094		0.00010	mg/L		15-SEP-20	R5224180
Barium (Ba)-Total		0.0288		0.00010	mg/L		15-SEP-20	R5224180
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180

* 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
L2498615-7 MW03								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Total Metals								
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		15-SEP-20	R5224180
Boron (B)-Total		0.071		0.010	mg/L		15-SEP-20	R5224180
Cadmium (Cd)-Total		0.000151		0.0000050	mg/L		15-SEP-20	R5224180
Calcium (Ca)-Total		90.9		0.050	mg/L		15-SEP-20	R5224180
Cesium (Cs)-Total		0.000023		0.000010	mg/L		15-SEP-20	R5224180
Chromium (Cr)-Total		0.00163		0.00010	mg/L		15-SEP-20	R5224180
Cobalt (Co)-Total		0.00030		0.00010	mg/L		15-SEP-20	R5224180
Copper (Cu)-Total		0.0112		0.00050	mg/L		15-SEP-20	R5224180
Iron (Fe)-Total		0.123		0.010	mg/L		15-SEP-20	R5224180
Lead (Pb)-Total		0.000366		0.000050	mg/L		15-SEP-20	R5224180
Lithium (Li)-Total		0.0830		0.0010	mg/L		15-SEP-20	R5224180
Magnesium (Mg)-Total		86.0		0.0050	mg/L		15-SEP-20	R5224180
Manganese (Mn)-Total		0.0840		0.00010	mg/L		15-SEP-20	R5224180
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.0222		0.000050	mg/L		15-SEP-20	R5224180
Nickel (Ni)-Total		0.00461		0.00050	mg/L		15-SEP-20	R5224180
Phosphorus (P)-Total		<0.050		0.050	mg/L		15-SEP-20	R5224180
Potassium (K)-Total		30.6		0.050	mg/L		15-SEP-20	R5224180
Rubidium (Rb)-Total		0.00344		0.00020	mg/L		15-SEP-20	R5224180
Selenium (Se)-Total		0.000210		0.000050	mg/L		15-SEP-20	R5224180
Silicon (Si)-Total		3.51		0.10	mg/L		15-SEP-20	R5224180
Silver (Ag)-Total		<0.000010		0.000010	mg/L		15-SEP-20	R5224180
Sodium (Na)-Total		205		0.050	mg/L		15-SEP-20	R5224180
Strontium (Sr)-Total		0.536		0.00020	mg/L		15-SEP-20	R5224180
Sulfur (S)-Total		161		0.50	mg/L		15-SEP-20	R5224180
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		15-SEP-20	R5224180
Thallium (Tl)-Total		0.000081		0.000010	mg/L		15-SEP-20	R5224180
Thorium (Th)-Total		0.00012		0.00010	mg/L		15-SEP-20	R5224180
Tin (Sn)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Titanium (Ti)-Total		<0.0054	DLM	0.0054	mg/L		15-SEP-20	R5224180
Tungsten (W)-Total		0.00035		0.00010	mg/L		15-SEP-20	R5224180
Uranium (U)-Total		0.0756		0.000010	mg/L		15-SEP-20	R5224180
Vanadium (V)-Total		0.00097		0.00050	mg/L		15-SEP-20	R5224180
Zinc (Zn)-Total		0.0085		0.0030	mg/L		15-SEP-20	R5224180
Zirconium (Zr)-Total		0.00061		0.00020	mg/L		15-SEP-20	R5224180
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					11-SEP-20	R5222500
Aluminum (Al)-Dissolved		0.176		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Antimony (Sb)-Dissolved		0.00028		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Arsenic (As)-Dissolved		0.00091		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444

* 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
L2498615-7 MW03								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Barium (Ba)-Dissolved		0.0268		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Boron (B)-Dissolved		0.071		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cadmium (Cd)-Dissolved		0.000153		0.0000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Calcium (Ca)-Dissolved		94.0		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Cesium (Cs)-Dissolved		0.000027		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Chromium (Cr)-Dissolved		0.00123		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Cobalt (Co)-Dissolved		0.00024		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Copper (Cu)-Dissolved		0.0118		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Iron (Fe)-Dissolved		0.113		0.010	mg/L	11-SEP-20	11-SEP-20	R5223444
Lead (Pb)-Dissolved		0.000493		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Lithium (Li)-Dissolved		0.0858		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Magnesium (Mg)-Dissolved		90.6		0.0050	mg/L	11-SEP-20	11-SEP-20	R5223444
Manganese (Mn)-Dissolved		0.0866		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Mercury (Hg)-Dissolved		<0.0000050		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.0220		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Nickel (Ni)-Dissolved		0.00491		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Potassium (K)-Dissolved		33.8		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Rubidium (Rb)-Dissolved		0.00384		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Selenium (Se)-Dissolved		0.000219		0.000050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silicon (Si)-Dissolved		3.50		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Silver (Ag)-Dissolved		0.000010		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Sodium (Na)-Dissolved		222		0.050	mg/L	11-SEP-20	11-SEP-20	R5223444
Strontium (Sr)-Dissolved		0.622		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Sulfur (S)-Dissolved		157		0.50	mg/L	11-SEP-20	11-SEP-20	R5223444
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Thallium (Tl)-Dissolved		0.000094		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Thorium (Th)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Tin (Sn)-Dissolved		<0.00010		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Titanium (Ti)-Dissolved		0.00586		0.00030	mg/L	11-SEP-20	11-SEP-20	R5223444
Tungsten (W)-Dissolved		0.00039		0.00010	mg/L	11-SEP-20	11-SEP-20	R5223444
Uranium (U)-Dissolved		0.0865		0.000010	mg/L	11-SEP-20	11-SEP-20	R5223444
Vanadium (V)-Dissolved		0.00087		0.00050	mg/L	11-SEP-20	11-SEP-20	R5223444
Zinc (Zn)-Dissolved		0.0103		0.0010	mg/L	11-SEP-20	11-SEP-20	R5223444
Zirconium (Zr)-Dissolved		0.00056		0.00020	mg/L	11-SEP-20	11-SEP-20	R5223444
Volatile Organic Compounds								
Benzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Ethylbenzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Methyl t-butyl ether (MTBE)		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993

* 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
L2498615-7 MW03 Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER								
Volatile Organic Compounds								
Styrene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Toluene		<0.00045		0.00045	mg/L	10-SEP-20	11-SEP-20	R5203993
ortho-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
meta- & para-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Xylenes		<0.00075		0.00075	mg/L		11-SEP-20	
F1 (C6-C10)		<0.10		0.10	mg/L	10-SEP-20	11-SEP-20	R5204137
Surrogate: 4-Bromofluorobenzene (SS)		83.6		70-130	%		11-SEP-20	R5203993
Surrogate: 1,4-Difluorobenzene (SS)		113.9		70-130	%		11-SEP-20	R5203993
Hydrocarbons								
F1-BTEX		<0.10		0.10	mg/L		11-SEP-20	
F2 (C10-C16)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F3 (C16-C34)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F4 (C34-C50)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
Surrogate: 2-Bromobenzotrifluoride, F2-F4		79.1		60-140	%	11-SEP-20	15-SEP-20	R5200147
Surrogate: 3,4-Dichlorotoluene (SS)		86.0		70-130	%		11-SEP-20	R5204137
Polychlorinated Biphenyls								
Aroclor 1242		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1248		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1254		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1260		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Decachlorobiphenyl		86.8		50-150	%	15-SEP-20	15-SEP-20	R5224193
Total PCBs		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Tetrachloro-m-xylene		92.3		50-150	%	15-SEP-20	15-SEP-20	R5224193
L2498615-8 MW04 Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER								
Physical Tests								
Conductivity		1170		2.0	uS/cm		12-SEP-20	R5223184
Hardness (as CaCO3)		243		0.50	mg/L		16-SEP-20	
pH		7.87		0.10	pH		12-SEP-20	R5223184
Total Suspended Solids		16.5		3.0	mg/L		11-SEP-20	R5222647
Total Dissolved Solids		719		20	mg/L		11-SEP-20	R5223182
Anions and Nutrients								
Bromide (Br)		0.30		0.25	mg/L		14-SEP-20	R5224181
Chloride (Cl)		90.9		2.5	mg/L		14-SEP-20	R5224181
Fluoride (F)		0.50		0.10	mg/L		14-SEP-20	R5224181
Nitrate (as N)		0.455		0.025	mg/L		14-SEP-20	R5224181
Nitrite (as N)		<0.0050	DLDS	0.0050	mg/L		14-SEP-20	R5224181
Sulfate (SO4)		275		1.5	mg/L		14-SEP-20	R5224181
Total Metals								
Aluminum (Al)-Total		1.73		0.0030	mg/L		16-SEP-20	R5224805
Antimony (Sb)-Total		0.00040		0.00010	mg/L		16-SEP-20	R5224805

* 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
L2498615-8 MW04								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Total Metals								
Arsenic (As)-Total		0.00073		0.00010	mg/L		16-SEP-20	R5224805
Barium (Ba)-Total		0.0421		0.00010	mg/L		16-SEP-20	R5224805
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		16-SEP-20	R5224805
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		16-SEP-20	R5224805
Boron (B)-Total		0.084		0.010	mg/L		16-SEP-20	R5224805
Cadmium (Cd)-Total		0.0000549		0.0000050	mg/L		16-SEP-20	R5224805
Calcium (Ca)-Total		52.6		0.050	mg/L		16-SEP-20	R5224805
Cesium (Cs)-Total		0.000118		0.000010	mg/L		16-SEP-20	R5224805
Chromium (Cr)-Total		0.00216		0.00010	mg/L		16-SEP-20	R5224805
Cobalt (Co)-Total		0.00034		0.00010	mg/L		16-SEP-20	R5224805
Copper (Cu)-Total		0.00819		0.00050	mg/L		16-SEP-20	R5224805
Iron (Fe)-Total		0.853		0.010	mg/L		16-SEP-20	R5224805
Lead (Pb)-Total		0.000424		0.000050	mg/L		16-SEP-20	R5224805
Lithium (Li)-Total		0.0141		0.0010	mg/L		16-SEP-20	R5224805
Magnesium (Mg)-Total		33.6		0.0050	mg/L		16-SEP-20	R5224805
Manganese (Mn)-Total		0.0205		0.00010	mg/L		16-SEP-20	R5224805
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.0162		0.000050	mg/L		16-SEP-20	R5224805
Nickel (Ni)-Total		0.00353		0.00050	mg/L		16-SEP-20	R5224805
Phosphorus (P)-Total		<0.050		0.050	mg/L		16-SEP-20	R5224805
Potassium (K)-Total		20.2		0.050	mg/L		16-SEP-20	R5224805
Rubidium (Rb)-Total		0.00550		0.00020	mg/L		16-SEP-20	R5224805
Selenium (Se)-Total		0.000145		0.000050	mg/L		16-SEP-20	R5224805
Silicon (Si)-Total		5.68		0.10	mg/L		16-SEP-20	R5224805
Silver (Ag)-Total		0.000011		0.000010	mg/L		16-SEP-20	R5224805
Sodium (Na)-Total		168		0.050	mg/L		16-SEP-20	R5224805
Strontium (Sr)-Total		0.265		0.00020	mg/L		16-SEP-20	R5224805
Sulfur (S)-Total		106		0.50	mg/L		16-SEP-20	R5224805
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		16-SEP-20	R5224805
Thallium (Tl)-Total		0.000061		0.000010	mg/L		16-SEP-20	R5224805
Thorium (Th)-Total		0.00060		0.00010	mg/L		16-SEP-20	R5224805
Tin (Sn)-Total		0.00011		0.00010	mg/L		16-SEP-20	R5224805
Titanium (Ti)-Total		0.0524		0.00030	mg/L		16-SEP-20	R5224805
Tungsten (W)-Total		0.00071		0.00010	mg/L		16-SEP-20	R5224805
Uranium (U)-Total		0.0155		0.000010	mg/L		16-SEP-20	R5224805
Vanadium (V)-Total		0.00237		0.00050	mg/L		16-SEP-20	R5224805
Zinc (Zn)-Total		0.0071		0.0030	mg/L		16-SEP-20	R5224805
Zirconium (Zr)-Total		0.00177		0.00020	mg/L		16-SEP-20	R5224805
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					15-SEP-20	R5224256

* 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
L2498615-8 MW04								
Sampled By: CLIENT on 28-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Aluminum (Al)-Dissolved		2.46	DTC	0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Antimony (Sb)-Dissolved		0.00037		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Arsenic (As)-Dissolved		0.00075		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Barium (Ba)-Dissolved		0.0398		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Boron (B)-Dissolved		0.078		0.010	mg/L	15-SEP-20	16-SEP-20	R5224908
Cadmium (Cd)-Dissolved		0.0000706		0.0000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Calcium (Ca)-Dissolved		49.2		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Cesium (Cs)-Dissolved		0.000186	DTC	0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Chromium (Cr)-Dissolved		0.00324	DTC	0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Cobalt (Co)-Dissolved		0.00057	DTC	0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Copper (Cu)-Dissolved		0.00983		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Iron (Fe)-Dissolved		1.48	DTC	0.010	mg/L	15-SEP-20	16-SEP-20	R5224908
Lead (Pb)-Dissolved		0.000630	DTC	0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Lithium (Li)-Dissolved		0.0147		0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Magnesium (Mg)-Dissolved		29.1		0.0050	mg/L	15-SEP-20	16-SEP-20	R5224908
Manganese (Mn)-Dissolved		0.0313	DTC	0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Mercury (Hg)-Dissolved		<0.0000050		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.0157		0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Nickel (Ni)-Dissolved		0.00519	DTC	0.00050	mg/L	15-SEP-20	16-SEP-20	R5224908
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Potassium (K)-Dissolved		19.0		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Rubidium (Rb)-Dissolved		0.00708		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Selenium (Se)-Dissolved		0.000120		0.000050	mg/L	15-SEP-20	16-SEP-20	R5224908
Silicon (Si)-Dissolved		5.95		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Silver (Ag)-Dissolved		<0.000010		0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Sodium (Na)-Dissolved		160		0.050	mg/L	15-SEP-20	16-SEP-20	R5224908
Strontium (Sr)-Dissolved		0.238		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Sulfur (S)-Dissolved		97.7		0.50	mg/L	15-SEP-20	16-SEP-20	R5224908
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Thallium (Tl)-Dissolved		0.000071		0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Thorium (Th)-Dissolved		0.00066		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Tin (Sn)-Dissolved		0.00010		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Titanium (Ti)-Dissolved		0.0864	DTC	0.00030	mg/L	15-SEP-20	16-SEP-20	R5224908
Tungsten (W)-Dissolved		0.00068		0.00010	mg/L	15-SEP-20	16-SEP-20	R5224908
Uranium (U)-Dissolved		0.0141		0.000010	mg/L	15-SEP-20	16-SEP-20	R5224908
Vanadium (V)-Dissolved		0.00310		0.00050	mg/L	15-SEP-20	16-SEP-20	R5224908
Zinc (Zn)-Dissolved		0.0095		0.0010	mg/L	15-SEP-20	16-SEP-20	R5224908
Zirconium (Zr)-Dissolved		0.00181		0.00020	mg/L	15-SEP-20	16-SEP-20	R5224908
Volatile Organic Compounds								

* 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
L2498615-8 MW04 Sampled By: CLIENT on 28-AUG-20 @ 12:00 Matrix: WATER								
Volatile Organic Compounds								
Benzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Ethylbenzene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Methyl t-butyl ether (MTBE)		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Styrene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Toluene		<0.00045		0.00045	mg/L	10-SEP-20	11-SEP-20	R5203993
ortho-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
meta- & para-Xylene		<0.00050		0.00050	mg/L	10-SEP-20	11-SEP-20	R5203993
Xylenes		<0.00075		0.00075	mg/L		11-SEP-20	
F1 (C6-C10)		<0.10		0.10	mg/L	10-SEP-20	11-SEP-20	R5204137
Surrogate: 4-Bromofluorobenzene (SS)		85.3		70-130	%		11-SEP-20	R5203993
Surrogate: 1,4-Difluorobenzene (SS)		114.2		70-130	%		11-SEP-20	R5203993
Hydrocarbons								
F1-BTEX		<0.10		0.10	mg/L		11-SEP-20	
F2 (C10-C16)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F3 (C16-C34)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
F4 (C34-C50)		<0.30		0.30	mg/L	11-SEP-20	15-SEP-20	R5200147
Surrogate: 2-Bromobenzotrifluoride, F2-F4		79.0		60-140	%	11-SEP-20	15-SEP-20	R5200147
Surrogate: 3,4-Dichlorotoluene (SS)		84.7		70-130	%		11-SEP-20	R5204137
Polychlorinated Biphenyls								
Aroclor 1242		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1248		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1254		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Aroclor 1260		<0.000020		0.000020	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Decachlorobiphenyl		82.8		50-150	%	15-SEP-20	15-SEP-20	R5224193
Total PCBs		<0.000040		0.000040	mg/L	15-SEP-20	15-SEP-20	R5224193
Surrogate: Tetrachloro-m-xylene		94.1		50-150	%	15-SEP-20	15-SEP-20	R5224193
L2498615-9 MW103 Sampled By: CLIENT on 30-AUG-20 @ 12:00 Matrix: WATER								
Physical Tests								
Conductivity		771		2.0	uS/cm		12-SEP-20	R5223184
Hardness (as CaCO3)		451		0.50	mg/L		15-SEP-20	
pH		8.21		0.10	pH		12-SEP-20	R5223184
Total Suspended Solids		33.3		3.0	mg/L		11-SEP-20	R5222647
Total Dissolved Solids		440		20	mg/L		11-SEP-20	R5223182
Anions and Nutrients								
Bromide (Br)		<0.25	DLDS	0.25	mg/L		14-SEP-20	R5224181
Chloride (Cl)		20.4		2.5	mg/L		14-SEP-20	R5224181
Fluoride (F)		<0.10	DLDS	0.10	mg/L		14-SEP-20	R5224181
Nitrate (as N)		5.50		0.025	mg/L		14-SEP-20	R5224181
Nitrite (as N)		<0.0050	DLDS	0.0050	mg/L		14-SEP-20	R5224181
Sulfate (SO4)		18.6		1.5	mg/L		14-SEP-20	R5224181

* 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
L2498615-9 MW103								
Sampled By: CLIENT on 30-AUG-20 @ 12:00								
Matrix: WATER								
Anions and Nutrients								
Total Metals								
Aluminum (Al)-Total		0.192		0.0030	mg/L		15-SEP-20	R5224180
Antimony (Sb)-Total		0.00052		0.00010	mg/L		15-SEP-20	R5224180
Arsenic (As)-Total		0.00058		0.00010	mg/L		15-SEP-20	R5224180
Barium (Ba)-Total		0.0780		0.00010	mg/L		15-SEP-20	R5224180
Beryllium (Be)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Bismuth (Bi)-Total		<0.000050		0.000050	mg/L		15-SEP-20	R5224180
Boron (B)-Total		0.028		0.010	mg/L		15-SEP-20	R5224180
Cadmium (Cd)-Total		0.0000621		0.0000050	mg/L		15-SEP-20	R5224180
Calcium (Ca)-Total		69.3		0.050	mg/L		15-SEP-20	R5224180
Cesium (Cs)-Total		0.000038		0.000010	mg/L		15-SEP-20	R5224180
Chromium (Cr)-Total		0.0127		0.00010	mg/L		15-SEP-20	R5224180
Cobalt (Co)-Total		0.00045		0.00010	mg/L		15-SEP-20	R5224180
Copper (Cu)-Total		0.00861		0.00050	mg/L		15-SEP-20	R5224180
Iron (Fe)-Total		0.262		0.010	mg/L		15-SEP-20	R5224180
Lead (Pb)-Total		0.000649		0.000050	mg/L		15-SEP-20	R5224180
Lithium (Li)-Total		0.0020		0.0010	mg/L		15-SEP-20	R5224180
Magnesium (Mg)-Total		61.4		0.0050	mg/L		15-SEP-20	R5224180
Manganese (Mn)-Total		0.0203		0.00010	mg/L		15-SEP-20	R5224180
Mercury (Hg)-Total		<0.0000050		0.0000050	mg/L		15-SEP-20	R5223601
Molybdenum (Mo)-Total		0.000591		0.000050	mg/L		15-SEP-20	R5224180
Nickel (Ni)-Total		0.00911		0.00050	mg/L		15-SEP-20	R5224180
Phosphorus (P)-Total		<0.050		0.050	mg/L		15-SEP-20	R5224180
Potassium (K)-Total		1.75		0.050	mg/L		15-SEP-20	R5224180
Rubidium (Rb)-Total		0.00091		0.00020	mg/L		15-SEP-20	R5224180
Selenium (Se)-Total		0.000114		0.000050	mg/L		15-SEP-20	R5224180
Silicon (Si)-Total		2.11		0.10	mg/L		15-SEP-20	R5224180
Silver (Ag)-Total		0.000017		0.000010	mg/L		15-SEP-20	R5224180
Sodium (Na)-Total		25.8		0.050	mg/L		15-SEP-20	R5224180
Strontium (Sr)-Total		0.105		0.00020	mg/L		15-SEP-20	R5224180
Sulfur (S)-Total		7.61		0.50	mg/L		15-SEP-20	R5224180
Tellurium (Te)-Total		<0.00020		0.00020	mg/L		15-SEP-20	R5224180
Thallium (Tl)-Total		<0.000010		0.000010	mg/L		15-SEP-20	R5224180
Thorium (Th)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Tin (Sn)-Total		<0.00010		0.00010	mg/L		15-SEP-20	R5224180
Titanium (Ti)-Total		0.00559		0.00030	mg/L		15-SEP-20	R5224180
Tungsten (W)-Total		0.00011		0.00010	mg/L		15-SEP-20	R5224180
Uranium (U)-Total		0.00156		0.000010	mg/L		15-SEP-20	R5224180
Vanadium (V)-Total		0.00071		0.00050	mg/L		15-SEP-20	R5224180
Zinc (Zn)-Total		0.0529		0.0030	mg/L		15-SEP-20	R5224180
Zirconium (Zr)-Total		0.00091		0.00020	mg/L		15-SEP-20	R5224180

* 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
L2498615-9 MW103								
Sampled By: CLIENT on 30-AUG-20 @ 12:00								
Matrix: WATER								
Dissolved Metals								
Dissolved Mercury Filtration Location		FIELD					15-SEP-20	R5223539
Dissolved Metals Filtration Location		FIELD					14-SEP-20	R5223376
Aluminum (Al)-Dissolved		0.244		0.0010	mg/L	14-SEP-20	14-SEP-20	R5223442
Antimony (Sb)-Dissolved		0.00044		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Arsenic (As)-Dissolved		0.00056		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Barium (Ba)-Dissolved		0.0826		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Beryllium (Be)-Dissolved		<0.00010		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Bismuth (Bi)-Dissolved		<0.000050		0.000050	mg/L	14-SEP-20	14-SEP-20	R5223442
Boron (B)-Dissolved		0.030		0.010	mg/L	14-SEP-20	14-SEP-20	R5223442
Cadmium (Cd)-Dissolved		0.0000597		0.0000050	mg/L	14-SEP-20	14-SEP-20	R5223442
Calcium (Ca)-Dissolved		77.9		0.050	mg/L	14-SEP-20	14-SEP-20	R5223442
Cesium (Cs)-Dissolved		0.000011		0.000010	mg/L	14-SEP-20	14-SEP-20	R5223442
Chromium (Cr)-Dissolved		0.00240		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Cobalt (Co)-Dissolved		0.00032		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Copper (Cu)-Dissolved		0.00759		0.00020	mg/L	14-SEP-20	14-SEP-20	R5223442
Iron (Fe)-Dissolved		0.214		0.010	mg/L	14-SEP-20	14-SEP-20	R5223442
Lead (Pb)-Dissolved		0.00115	DTMF	0.000050	mg/L	14-SEP-20	14-SEP-20	R5223442
Lithium (Li)-Dissolved		0.0020		0.0010	mg/L	14-SEP-20	14-SEP-20	R5223442
Magnesium (Mg)-Dissolved		62.2		0.0050	mg/L	14-SEP-20	14-SEP-20	R5223442
Manganese (Mn)-Dissolved		0.0227		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Mercury (Hg)-Dissolved		<0.0000050		0.0000050	mg/L	15-SEP-20	15-SEP-20	R5223601
Molybdenum (Mo)-Dissolved		0.000311		0.000050	mg/L	14-SEP-20	14-SEP-20	R5223442
Nickel (Ni)-Dissolved		0.00392		0.00050	mg/L	14-SEP-20	14-SEP-20	R5223442
Phosphorus (P)-Dissolved		<0.050		0.050	mg/L	14-SEP-20	14-SEP-20	R5223442
Potassium (K)-Dissolved		1.61		0.050	mg/L	14-SEP-20	14-SEP-20	R5223442
Rubidium (Rb)-Dissolved		0.00074		0.00020	mg/L	14-SEP-20	14-SEP-20	R5223442
Selenium (Se)-Dissolved		0.000142		0.000050	mg/L	14-SEP-20	14-SEP-20	R5223442
Silicon (Si)-Dissolved		2.17		0.050	mg/L	14-SEP-20	14-SEP-20	R5223442
Silver (Ag)-Dissolved		<0.000010		0.000010	mg/L	14-SEP-20	14-SEP-20	R5223442
Sodium (Na)-Dissolved		27.7		0.050	mg/L	14-SEP-20	14-SEP-20	R5223442
Strontium (Sr)-Dissolved		0.114		0.00020	mg/L	14-SEP-20	14-SEP-20	R5223442
Sulfur (S)-Dissolved		7.38		0.50	mg/L	14-SEP-20	14-SEP-20	R5223442
Tellurium (Te)-Dissolved		<0.00020		0.00020	mg/L	14-SEP-20	14-SEP-20	R5223442
Thallium (Tl)-Dissolved		<0.000010		0.000010	mg/L	14-SEP-20	14-SEP-20	R5223442
Thorium (Th)-Dissolved		0.00011		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Tin (Sn)-Dissolved		<0.00010		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Titanium (Ti)-Dissolved		0.00436		0.00030	mg/L	14-SEP-20	14-SEP-20	R5223442
Tungsten (W)-Dissolved		<0.00010		0.00010	mg/L	14-SEP-20	14-SEP-20	R5223442
Uranium (U)-Dissolved		0.00160		0.000010	mg/L	14-SEP-20	14-SEP-20	R5223442
Vanadium (V)-Dissolved		0.00052		0.00050	mg/L	14-SEP-20	14-SEP-20	R5223442
Zinc (Zn)-Dissolved		0.0453		0.0010	mg/L	14-SEP-20	14-SEP-20	R5223442

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

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Aluminum (Al)-Dissolved	B	L2498615-2, -4, -8
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2498615-9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2498615-9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2498615-9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2498615-9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2498615-9
Matrix Spike	Arsenic (As)-Total	MS-B	L2498615-1
Matrix Spike	Barium (Ba)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Calcium (Ca)-Total	MS-B	L2498615-1
Matrix Spike	Calcium (Ca)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Calcium (Ca)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Cobalt (Co)-Total	MS-B	L2498615-1
Matrix Spike	Cobalt (Co)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Lithium (Li)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Lithium (Li)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2498615-1
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Manganese (Mn)-Total	MS-B	L2498615-1
Matrix Spike	Manganese (Mn)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Nickel (Ni)-Total	MS-B	L2498615-1
Matrix Spike	Nickel (Ni)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Nickel (Ni)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Potassium (K)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Potassium (K)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Rubidium (Rb)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Total	MS-B	L2498615-1
Matrix Spike	Sodium (Na)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Sodium (Na)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Strontium (Sr)-Total	MS-B	L2498615-1
Matrix Spike	Strontium (Sr)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Sulfur (S)-Total	MS-B	L2498615-1
Matrix Spike	Sulfur (S)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Sulfur (S)-Total	MS-B	L2498615-2, -4, -8
Matrix Spike	Uranium (U)-Total	MS-B	L2498615-3, -5, -6, -7, -9
Matrix Spike	Uranium (U)-Total	MS-B	L2498615-2, -4, -8

Qualifiers for Sample Submission Listed:

Qualifier	Description
WSMD	Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

Sample Parameter Qualifier key listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DLA	Detection Limit adjusted for required dilution
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
DTMF	Dissolved concentration exceeds total for field-filtered metals sample. Metallic contaminants may have been introduced to dissolved sample during field filtration.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BR-L-IC-N-VA	Water	Bromide in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CL-IC-N-VA	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
EC-SCREEN-VA	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.			
F-IC-N-VA	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
F1-BTX-CALC-VA	Water	F1-Total BTX	CCME CWS PHC TIER 1 (2001)
This analysis is based on the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2000." For F1 (C6-C10), the sample undergoes a purge and trap extraction prior to analysis by GC/FID. The F1-BTEX result is calculated as follows:			
F1-BTEX: F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).			
F1-HSFID-VA	Water	CCME F1 By Headspace with GCFID	EPA 5021A/CCME CWS PHC (Pub# 1310)
This analysis is based on the "Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method, Canadian Council of Ministers of the Environment, December 2000." For F1 (C6-C10), the sample undergoes a headspace purge prior to analysis by GC/FID.			
F1 (C6-C10): Sum of all hydrocarbons that elute between nC6 and nC10.			
F2-F4-ME-FID-VA	Water	CCME F2-F4 Hydrocarbons in Water	CCME CWS-PHC, Pub #1310, Dec 2001
F2-F4 is extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, Dec 2001.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-D-CVAA-VA	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.			
HG-T-CVAA-VA	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.			
MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (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.			
NO2-L-IC-N-VA	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-L-IC-N-VA	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
PCB-WT	Water	Polychlorinated Biphenyls	EPA 8082

Reference Information

PCBs are extracted from an aqueous sample at neutral pH with aliquots of dichloromethane using a modified separatory funnel technique. The extracts are analyzed by GC/MSD.

PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H pH Value
-----------	-------	-------------------------	----------------------

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

SO4-IC-N-VA	Water	Sulfate in Water by IC	EPA 300.1 (mod)
-------------	-------	------------------------	-----------------

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-VA	Water	Total Dissolved Solids by Gravimetric	APHA 2540 C - GRAVIMETRIC
--------	-------	---------------------------------------	---------------------------

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

TSS-VA	Water	Total Suspended Solids by Gravimetric	APHA 2540 D - GRAVIMETRIC
--------	-------	---------------------------------------	---------------------------

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.

VH-SURR-FID-VA	Water	VH Surrogates for Waters	BC Env. Lab Manual (VH in Solids)
----------------	-------	--------------------------	-----------------------------------

VOC7-HSMS-VA	Water	BTEX/MTBE/Styrene by Headspace GCMS	EPA 5021A/8260C
--------------	-------	-------------------------------------	-----------------

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

VOC7/VOC-SURR-MS-VA	Water	VOC7 and/or VOC Surrogates for Waters	EPA 5035A/5021A/8260C
---------------------	-------	---------------------------------------	-----------------------

XYLENES-CALC-VA	Water	Sum of Xylene Isomer Concentrations	CALCULATION
-----------------	-------	-------------------------------------	-------------

Calculation of Total Xylenes

Total Xylenes is the sum of the concentrations of the ortho, meta, and para Xylene isomers. Results below detection limit (DL) are treated as zero. The DL for Total Xylenes is set to a value no less than the square root of the sum of the squares of the DLs of the individual Xylenes.

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, 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 weight of sample
- 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.



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 2 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HSFID-VA		Water						
Batch	R5204137							
WG3402276-3	DUP	L2498294-1						
F1 (C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	11-SEP-20
WG3402276-2	LCS							
F1 (C6-C10)			110.0		%		70-130	11-SEP-20
WG3402276-1	MB							
F1 (C6-C10)			<0.10		mg/L		0.1	11-SEP-20
F2-F4-ME-FID-VA		Water						
Batch	R5200147							
WG3402364-2	LCS							
F2 (C10-C16)			119.0		%		70-130	11-SEP-20
F3 (C16-C34)			110.0		%		70-130	11-SEP-20
F4 (C34-C50)			113.4		%		70-130	11-SEP-20
WG3402364-1	MB							
F2 (C10-C16)			<0.30		mg/L		0.3	11-SEP-20
F3 (C16-C34)			<0.30		mg/L		0.3	11-SEP-20
F4 (C34-C50)			<0.30		mg/L		0.3	11-SEP-20
Surrogate: 2-Bromobenzotrifluoride, F2-F4			69.6		%		60-140	11-SEP-20
HG-D-CVAA-VA		Water						
Batch	R5223601							
WG3404401-3	DUP	L2498615-7						
Mercury (Hg)-Dissolved		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	15-SEP-20
WG3404401-2	LCS							
Mercury (Hg)-Dissolved			96.8		%		80-120	15-SEP-20
WG3404401-1	MB							
Mercury (Hg)-Dissolved			<0.0000050		mg/L		0.000005	15-SEP-20
WG3404401-4	MS	L2500670-3						
Mercury (Hg)-Dissolved			95.9		%		70-130	15-SEP-20
HG-T-CVAA-VA		Water						
Batch	R5223601							
WG3404490-3	DUP	L2498423-1						
Mercury (Hg)-Total		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	15-SEP-20
WG3404490-2	LCS							
Mercury (Hg)-Total			96.8		%		80-120	15-SEP-20
WG3404490-1	MB							
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	15-SEP-20
WG3404490-4	MS	L2496996-1						
Mercury (Hg)-Total			96.3		%		70-130	15-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 3 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223442							
WG3404183-3	DUP	L2498942-1						
Aluminum (Al)-Dissolved		0.0234	0.0242		mg/L	3.7	20	14-SEP-20
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Arsenic (As)-Dissolved		0.00054	0.00053		mg/L	1.8	20	14-SEP-20
Barium (Ba)-Dissolved		0.00740	0.00767		mg/L	3.6	20	14-SEP-20
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	14-SEP-20
Boron (B)-Dissolved		0.065	0.071		mg/L	8.6	20	14-SEP-20
Cadmium (Cd)-Dissolved		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	14-SEP-20
Calcium (Ca)-Dissolved		44.5	47.2		mg/L	5.8	20	14-SEP-20
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	14-SEP-20
Chromium (Cr)-Dissolved		0.00024	0.00024		mg/L	2.4	20	14-SEP-20
Cobalt (Co)-Dissolved		0.00013	0.00012		mg/L	7.0	20	14-SEP-20
Copper (Cu)-Dissolved		0.00671	0.00670		mg/L	0.2	20	14-SEP-20
Iron (Fe)-Dissolved		0.085	0.086		mg/L	1.7	20	14-SEP-20
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	14-SEP-20
Lithium (Li)-Dissolved		0.0029	0.0031		mg/L	5.8	20	14-SEP-20
Magnesium (Mg)-Dissolved		11.6	11.9		mg/L	3.1	20	14-SEP-20
Manganese (Mn)-Dissolved		0.00626	0.00597		mg/L	4.6	20	14-SEP-20
Molybdenum (Mo)-Dissolved		0.000876	0.000933		mg/L	6.3	20	14-SEP-20
Nickel (Ni)-Dissolved		0.00112	0.00105		mg/L	6.5	20	14-SEP-20
Phosphorus (P)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	14-SEP-20
Potassium (K)-Dissolved		1.84	1.87		mg/L	1.3	20	14-SEP-20
Rubidium (Rb)-Dissolved		0.00084	0.00085		mg/L	1.4	20	14-SEP-20
Selenium (Se)-Dissolved		0.000364	0.000387		mg/L	6.3	20	14-SEP-20
Silicon (Si)-Dissolved		3.73	3.88		mg/L	3.8	20	14-SEP-20
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	14-SEP-20
Sodium (Na)-Dissolved		32.5	33.4		mg/L	2.7	20	14-SEP-20
Strontium (Sr)-Dissolved		0.0684	0.0743		mg/L	8.3	20	14-SEP-20
Sulfur (S)-Dissolved		19.0	20.0		mg/L	5.5	20	14-SEP-20
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	14-SEP-20
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	14-SEP-20
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Tin (Sn)-Dissolved		<0.00010	<0.00010		mg/L			14-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 4 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223442							
WG3404183-3 DUP		L2498942-1						
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Titanium (Ti)-Dissolved		0.00052	0.00048		mg/L	7.4	20	14-SEP-20
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Uranium (U)-Dissolved		0.000225	0.000222		mg/L	1.1	20	14-SEP-20
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	14-SEP-20
Zinc (Zn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	14-SEP-20
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	14-SEP-20
WG3404183-2 LCS								
Aluminum (Al)-Dissolved			102.0		%		80-120	14-SEP-20
Antimony (Sb)-Dissolved			99.8		%		80-120	14-SEP-20
Arsenic (As)-Dissolved			96.6		%		80-120	14-SEP-20
Barium (Ba)-Dissolved			100.6		%		80-120	14-SEP-20
Beryllium (Be)-Dissolved			103.4		%		80-120	14-SEP-20
Bismuth (Bi)-Dissolved			109.7		%		80-120	14-SEP-20
Boron (B)-Dissolved			105.9		%		80-120	14-SEP-20
Cadmium (Cd)-Dissolved			100.3		%		80-120	14-SEP-20
Calcium (Ca)-Dissolved			101.7		%		80-120	14-SEP-20
Cesium (Cs)-Dissolved			96.9		%		80-120	14-SEP-20
Chromium (Cr)-Dissolved			95.9		%		80-120	14-SEP-20
Cobalt (Co)-Dissolved			98.2		%		80-120	14-SEP-20
Copper (Cu)-Dissolved			95.5		%		80-120	14-SEP-20
Iron (Fe)-Dissolved			87.8		%		80-120	14-SEP-20
Lead (Pb)-Dissolved			99.5		%		80-120	14-SEP-20
Lithium (Li)-Dissolved			102.2		%		80-120	14-SEP-20
Magnesium (Mg)-Dissolved			111.9		%		80-120	14-SEP-20
Manganese (Mn)-Dissolved			95.4		%		80-120	14-SEP-20
Molybdenum (Mo)-Dissolved			99.2		%		80-120	14-SEP-20
Nickel (Ni)-Dissolved			100.5		%		80-120	14-SEP-20
Phosphorus (P)-Dissolved			106.8		%		70-130	14-SEP-20
Potassium (K)-Dissolved			98.1		%		80-120	14-SEP-20
Rubidium (Rb)-Dissolved			101.6		%		80-120	14-SEP-20
Selenium (Se)-Dissolved			101.6		%		80-120	14-SEP-20
Silicon (Si)-Dissolved			103.3		%		60-140	14-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 5 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223442							
WG3404183-2		LCS						
Silver (Ag)-Dissolved			102.7		%		80-120	14-SEP-20
Sodium (Na)-Dissolved			111.6		%		80-120	14-SEP-20
Strontium (Sr)-Dissolved			104.8		%		80-120	14-SEP-20
Sulfur (S)-Dissolved			99.1		%		80-120	14-SEP-20
Tellurium (Te)-Dissolved			105.8		%		80-120	14-SEP-20
Thallium (Tl)-Dissolved			101.9		%		80-120	14-SEP-20
Thorium (Th)-Dissolved			94.3		%		80-120	14-SEP-20
Tin (Sn)-Dissolved			99.2		%		80-120	14-SEP-20
Titanium (Ti)-Dissolved			92.4		%		80-120	14-SEP-20
Tungsten (W)-Dissolved			101.2		%		80-120	14-SEP-20
Uranium (U)-Dissolved			102.4		%		80-120	14-SEP-20
Vanadium (V)-Dissolved			99.5		%		80-120	14-SEP-20
Zinc (Zn)-Dissolved			93.0		%		80-120	14-SEP-20
Zirconium (Zr)-Dissolved			99.2		%		80-120	14-SEP-20
WG3404183-1		MB						
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	14-SEP-20
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	14-SEP-20
Boron (B)-Dissolved			<0.010		mg/L		0.01	14-SEP-20
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	14-SEP-20
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	14-SEP-20
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	14-SEP-20
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	14-SEP-20
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	14-SEP-20
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	14-SEP-20
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	14-SEP-20
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	14-SEP-20
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	14-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 6 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223442							
WG3404183-1 MB								
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	14-SEP-20
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	14-SEP-20
Potassium (K)-Dissolved			<0.050		mg/L		0.05	14-SEP-20
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	14-SEP-20
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	14-SEP-20
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	14-SEP-20
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	14-SEP-20
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	14-SEP-20
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	14-SEP-20
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	14-SEP-20
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	14-SEP-20
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	14-SEP-20
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	14-SEP-20
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	14-SEP-20
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	14-SEP-20
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	14-SEP-20
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	14-SEP-20
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	14-SEP-20
WG3404183-4 MS		L2498942-2						
Aluminum (Al)-Dissolved			97.9		%		70-130	14-SEP-20
Antimony (Sb)-Dissolved			103.4		%		70-130	14-SEP-20
Arsenic (As)-Dissolved			97.0		%		70-130	14-SEP-20
Barium (Ba)-Dissolved			92.4		%		70-130	14-SEP-20
Beryllium (Be)-Dissolved			102.7		%		70-130	14-SEP-20
Bismuth (Bi)-Dissolved			89.0		%		70-130	14-SEP-20
Boron (B)-Dissolved			97.6		%		70-130	14-SEP-20
Cadmium (Cd)-Dissolved			99.1		%		70-130	14-SEP-20
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	14-SEP-20
Cesium (Cs)-Dissolved			96.8		%		70-130	14-SEP-20
Chromium (Cr)-Dissolved			95.6		%		70-130	14-SEP-20
Cobalt (Co)-Dissolved			96.4		%		70-130	14-SEP-20
Copper (Cu)-Dissolved			91.3		%		70-130	14-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 7 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223442							
WG3404183-4 MS		L2498942-2						
Iron (Fe)-Dissolved			94.8		%		70-130	14-SEP-20
Lead (Pb)-Dissolved			91.0		%		70-130	14-SEP-20
Lithium (Li)-Dissolved			108.5		%		70-130	14-SEP-20
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	14-SEP-20
Manganese (Mn)-Dissolved			N/A	MS-B	%		-	14-SEP-20
Molybdenum (Mo)-Dissolved			100.8		%		70-130	14-SEP-20
Nickel (Ni)-Dissolved			95.9		%		70-130	14-SEP-20
Phosphorus (P)-Dissolved			107.6		%		70-130	14-SEP-20
Potassium (K)-Dissolved			107.4		%		70-130	14-SEP-20
Rubidium (Rb)-Dissolved			101.6		%		70-130	14-SEP-20
Selenium (Se)-Dissolved			107.5		%		70-130	14-SEP-20
Silicon (Si)-Dissolved			93.7		%		70-130	14-SEP-20
Silver (Ag)-Dissolved			98.8		%		70-130	14-SEP-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	14-SEP-20
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	14-SEP-20
Sulfur (S)-Dissolved			103.9		%		70-130	14-SEP-20
Tellurium (Te)-Dissolved			102.5		%		70-130	14-SEP-20
Thallium (Tl)-Dissolved			89.1		%		70-130	14-SEP-20
Thorium (Th)-Dissolved			92.9		%		70-130	14-SEP-20
Tin (Sn)-Dissolved			99.5		%		70-130	14-SEP-20
Titanium (Ti)-Dissolved			94.7		%		70-130	14-SEP-20
Tungsten (W)-Dissolved			97.4		%		70-130	14-SEP-20
Uranium (U)-Dissolved			97.0		%		70-130	14-SEP-20
Vanadium (V)-Dissolved			97.6		%		70-130	14-SEP-20
Zinc (Zn)-Dissolved			90.7		%		70-130	14-SEP-20
Zirconium (Zr)-Dissolved			111.6		%		70-130	14-SEP-20
Batch	R5223444							
WG3403109-3 DUP		L2498615-1						
Aluminum (Al)-Dissolved		0.405	0.427		mg/L	5.4	20	11-SEP-20
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-SEP-20
Arsenic (As)-Dissolved		0.00072	0.00069		mg/L	4.4	20	11-SEP-20
Barium (Ba)-Dissolved		0.120	0.121		mg/L	0.3	20	11-SEP-20
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 8 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223444							
WG3403109-3	DUP	L2498615-1						
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-SEP-20
Boron (B)-Dissolved		0.018	0.017		mg/L	3.4	20	11-SEP-20
Cadmium (Cd)-Dissolved		0.0000773	0.0000758		mg/L	1.9	20	11-SEP-20
Calcium (Ca)-Dissolved		22.8	22.9		mg/L	0.5	20	11-SEP-20
Cesium (Cs)-Dissolved		0.000010	0.000011		mg/L	5.7	20	11-SEP-20
Chromium (Cr)-Dissolved		0.00197	0.00206		mg/L	4.1	20	11-SEP-20
Cobalt (Co)-Dissolved		0.00680	0.00690		mg/L	1.4	20	11-SEP-20
Copper (Cu)-Dissolved		0.0316	0.0325		mg/L	2.9	20	11-SEP-20
Iron (Fe)-Dissolved		0.133	0.151		mg/L	13	20	11-SEP-20
Lead (Pb)-Dissolved		0.000103	0.000096		mg/L	6.8	20	11-SEP-20
Lithium (Li)-Dissolved		0.0031	0.0030		mg/L	0.7	20	11-SEP-20
Magnesium (Mg)-Dissolved		8.69	9.16		mg/L	5.3	20	11-SEP-20
Manganese (Mn)-Dissolved		0.902	0.900		mg/L	0.2	20	11-SEP-20
Molybdenum (Mo)-Dissolved		0.000271	0.000267		mg/L	1.8	20	11-SEP-20
Nickel (Ni)-Dissolved		0.0295	0.0299		mg/L	1.4	20	11-SEP-20
Phosphorus (P)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	11-SEP-20
Potassium (K)-Dissolved		4.73	4.83		mg/L	2.1	20	11-SEP-20
Rubidium (Rb)-Dissolved		0.00424	0.00414		mg/L	2.4	20	11-SEP-20
Selenium (Se)-Dissolved		0.000202	0.000214		mg/L	5.6	20	11-SEP-20
Silicon (Si)-Dissolved		6.96	7.23		mg/L	3.7	20	11-SEP-20
Silver (Ag)-Dissolved		0.000047	0.000053		mg/L	12	20	11-SEP-20
Sodium (Na)-Dissolved		2.59	2.67		mg/L	3.2	20	11-SEP-20
Strontium (Sr)-Dissolved		0.235	0.240		mg/L	2.1	20	11-SEP-20
Sulfur (S)-Dissolved		0.61	0.65		mg/L	6.8	20	11-SEP-20
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-SEP-20
Thallium (Tl)-Dissolved		0.000015	0.000014		mg/L	9.2	20	11-SEP-20
Thorium (Th)-Dissolved		0.00054	0.00056		mg/L	3.0	20	11-SEP-20
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-SEP-20
Titanium (Ti)-Dissolved		0.00512	0.00617		mg/L	19	20	11-SEP-20
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-SEP-20
Uranium (U)-Dissolved		0.00176	0.00173		mg/L	1.5	20	11-SEP-20
Vanadium (V)-Dissolved		0.00072	0.00077		mg/L	6.8	20	11-SEP-20
Zinc (Zn)-Dissolved		0.0034	0.0031		mg/L			11-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 9 of 35

Client:

BluMetric Environmental Inc. (Ottawa)

4916 49 St

Yellowknife NT X1A 1P3

Contact:

Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223444							
WG3403109-3	DUP	L2498615-1						
Zinc (Zn)-Dissolved		0.0034	0.0031		mg/L	7.7	20	11-SEP-20
Zirconium (Zr)-Dissolved		0.00260	0.00270		mg/L	4.0	20	11-SEP-20
WG3403109-2	LCS							
Aluminum (Al)-Dissolved			100.9		%		80-120	11-SEP-20
Antimony (Sb)-Dissolved			100.6		%		80-120	11-SEP-20
Arsenic (As)-Dissolved			106.2		%		80-120	11-SEP-20
Barium (Ba)-Dissolved			100.6		%		80-120	11-SEP-20
Beryllium (Be)-Dissolved			105.3		%		80-120	11-SEP-20
Bismuth (Bi)-Dissolved			116.1		%		80-120	11-SEP-20
Boron (B)-Dissolved			99.1		%		80-120	11-SEP-20
Cadmium (Cd)-Dissolved			103.9		%		80-120	11-SEP-20
Calcium (Ca)-Dissolved			101.5		%		80-120	11-SEP-20
Cesium (Cs)-Dissolved			100.2		%		80-120	11-SEP-20
Chromium (Cr)-Dissolved			104.1		%		80-120	11-SEP-20
Cobalt (Co)-Dissolved			105.8		%		80-120	11-SEP-20
Copper (Cu)-Dissolved			104.8		%		80-120	11-SEP-20
Iron (Fe)-Dissolved			98.8		%		80-120	11-SEP-20
Lead (Pb)-Dissolved			105.1		%		80-120	11-SEP-20
Lithium (Li)-Dissolved			106.7		%		80-120	11-SEP-20
Magnesium (Mg)-Dissolved			106.5		%		80-120	11-SEP-20
Manganese (Mn)-Dissolved			119.8		%		80-120	11-SEP-20
Molybdenum (Mo)-Dissolved			98.9		%		80-120	11-SEP-20
Nickel (Ni)-Dissolved			104.7		%		80-120	11-SEP-20
Phosphorus (P)-Dissolved			112.9		%		70-130	11-SEP-20
Potassium (K)-Dissolved			106.0		%		80-120	11-SEP-20
Rubidium (Rb)-Dissolved			112.2		%		80-120	11-SEP-20
Selenium (Se)-Dissolved			103.1		%		80-120	11-SEP-20
Silicon (Si)-Dissolved			107.7		%		60-140	11-SEP-20
Silver (Ag)-Dissolved			101.1		%		80-120	11-SEP-20
Sodium (Na)-Dissolved			114.5		%		80-120	11-SEP-20
Strontium (Sr)-Dissolved			109.5		%		80-120	11-SEP-20
Sulfur (S)-Dissolved			101.0		%		80-120	11-SEP-20
Tellurium (Te)-Dissolved			100.9		%		80-120	11-SEP-20
Thallium (Tl)-Dissolved			105.9		%		80-120	11-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 10 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223444							
WG3403109-2	LCS							
Thorium (Th)-Dissolved			102.6		%		80-120	11-SEP-20
Tin (Sn)-Dissolved			100.3		%		80-120	11-SEP-20
Titanium (Ti)-Dissolved			104.0		%		80-120	11-SEP-20
Tungsten (W)-Dissolved			108.3		%		80-120	11-SEP-20
Uranium (U)-Dissolved			114.2		%		80-120	11-SEP-20
Vanadium (V)-Dissolved			102.5		%		80-120	11-SEP-20
Zinc (Zn)-Dissolved			106.9		%		80-120	11-SEP-20
Zirconium (Zr)-Dissolved			103.1		%		80-120	11-SEP-20
WG3403109-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	11-SEP-20
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	11-SEP-20
Boron (B)-Dissolved			<0.010		mg/L		0.01	11-SEP-20
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	11-SEP-20
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	11-SEP-20
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	11-SEP-20
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	11-SEP-20
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	11-SEP-20
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	11-SEP-20
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	11-SEP-20
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	11-SEP-20
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	11-SEP-20
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	11-SEP-20
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	11-SEP-20
Potassium (K)-Dissolved			<0.050		mg/L		0.05	11-SEP-20
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	11-SEP-20
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	11-SEP-20
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	11-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 11 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5223444							
WG3403109-1 MB								
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	11-SEP-20
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	11-SEP-20
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	11-SEP-20
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	11-SEP-20
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	11-SEP-20
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	11-SEP-20
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	11-SEP-20
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	11-SEP-20
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	11-SEP-20
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	11-SEP-20
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	11-SEP-20
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	11-SEP-20
Batch	R5224908							
WG3405191-3 DUP		L2498615-2						
Aluminum (Al)-Dissolved		0.341	0.348		mg/L	1.9	20	16-SEP-20
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-SEP-20
Arsenic (As)-Dissolved		0.00064	0.00061		mg/L	5.1	20	16-SEP-20
Barium (Ba)-Dissolved		0.104	0.107		mg/L	3.2	20	16-SEP-20
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-SEP-20
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	16-SEP-20
Boron (B)-Dissolved		0.018	0.018		mg/L	2.5	20	16-SEP-20
Cadmium (Cd)-Dissolved		0.0000721	0.0000799		mg/L	10	20	16-SEP-20
Calcium (Ca)-Dissolved		22.8	22.3		mg/L	2.1	20	16-SEP-20
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	16-SEP-20
Chromium (Cr)-Dissolved		0.00187	0.00181		mg/L	3.6	20	16-SEP-20
Cobalt (Co)-Dissolved		0.00645	0.00639		mg/L	1.0	20	16-SEP-20
Copper (Cu)-Dissolved		0.0289	0.0290		mg/L	0.3	20	16-SEP-20
Iron (Fe)-Dissolved		0.135	0.136		mg/L	0.1	20	16-SEP-20
Lead (Pb)-Dissolved		0.000097	0.000094		mg/L	3.2	20	16-SEP-20
Lithium (Li)-Dissolved		0.0029	0.0029		mg/L	0.9	20	16-SEP-20
Magnesium (Mg)-Dissolved		7.18	7.38		mg/L	2.8	20	16-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 12 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5224908							
WG3405191-3	DUP	L2498615-2						
Manganese (Mn)-Dissolved		0.785	0.810		mg/L	3.1	20	16-SEP-20
Molybdenum (Mo)-Dissolved		0.000271	0.000271		mg/L	0.3	20	16-SEP-20
Nickel (Ni)-Dissolved		0.0275	0.0271		mg/L	1.4	20	16-SEP-20
Phosphorus (P)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	16-SEP-20
Potassium (K)-Dissolved		4.30	4.27		mg/L	0.7	20	16-SEP-20
Rubidium (Rb)-Dissolved		0.00355	0.00354		mg/L	0.4	20	16-SEP-20
Selenium (Se)-Dissolved		0.000223	0.000216		mg/L	2.9	20	16-SEP-20
Silicon (Si)-Dissolved		6.67	6.75		mg/L	1.2	20	16-SEP-20
Silver (Ag)-Dissolved		0.000044	0.000052		mg/L	15	20	16-SEP-20
Sodium (Na)-Dissolved		2.43	2.46		mg/L	1.4	20	16-SEP-20
Strontium (Sr)-Dissolved		0.198	0.211		mg/L	6.1	20	16-SEP-20
Sulfur (S)-Dissolved		0.72	0.81		mg/L	12	20	16-SEP-20
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	16-SEP-20
Thallium (Tl)-Dissolved		0.000020	0.000015	J	mg/L	0.000005	0.00002	16-SEP-20
Thorium (Th)-Dissolved		0.00041	0.00042		mg/L	0.9	20	16-SEP-20
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-SEP-20
Titanium (Ti)-Dissolved		0.00430	0.00405		mg/L	5.9	20	16-SEP-20
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-SEP-20
Uranium (U)-Dissolved		0.00150	0.00154		mg/L	2.6	20	16-SEP-20
Vanadium (V)-Dissolved		0.00063	0.00065		mg/L	2.5	20	16-SEP-20
Zinc (Zn)-Dissolved		0.0028	0.0029		mg/L	3.2	20	16-SEP-20
Zirconium (Zr)-Dissolved		0.00243	0.00247		mg/L	1.7	20	16-SEP-20
WG3405191-2	LCS							
Aluminum (Al)-Dissolved			95.2		%		80-120	16-SEP-20
Antimony (Sb)-Dissolved			107.1		%		80-120	16-SEP-20
Arsenic (As)-Dissolved			96.7		%		80-120	16-SEP-20
Barium (Ba)-Dissolved			96.9		%		80-120	16-SEP-20
Beryllium (Be)-Dissolved			94.6		%		80-120	16-SEP-20
Bismuth (Bi)-Dissolved			97.6		%		80-120	16-SEP-20
Boron (B)-Dissolved			96.2		%		80-120	16-SEP-20
Cadmium (Cd)-Dissolved			102.2		%		80-120	16-SEP-20
Calcium (Ca)-Dissolved			103.8		%		80-120	16-SEP-20
Cesium (Cs)-Dissolved			105.6		%		80-120	16-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 13 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5224908							
WG3405191-2	LCS							
Chromium (Cr)-Dissolved			97.3		%		80-120	16-SEP-20
Cobalt (Co)-Dissolved			99.5		%		80-120	16-SEP-20
Copper (Cu)-Dissolved			98.5		%		80-120	16-SEP-20
Iron (Fe)-Dissolved			100.1		%		80-120	16-SEP-20
Lead (Pb)-Dissolved			104.4		%		80-120	16-SEP-20
Lithium (Li)-Dissolved			95.6		%		80-120	16-SEP-20
Magnesium (Mg)-Dissolved			88.6		%		80-120	16-SEP-20
Manganese (Mn)-Dissolved			95.3		%		80-120	16-SEP-20
Molybdenum (Mo)-Dissolved			109.9		%		80-120	16-SEP-20
Nickel (Ni)-Dissolved			98.5		%		80-120	16-SEP-20
Phosphorus (P)-Dissolved			90.4		%		70-130	16-SEP-20
Potassium (K)-Dissolved			97.2		%		80-120	16-SEP-20
Rubidium (Rb)-Dissolved			99.3		%		80-120	16-SEP-20
Selenium (Se)-Dissolved			106.5		%		80-120	16-SEP-20
Silicon (Si)-Dissolved			104.7		%		60-140	16-SEP-20
Silver (Ag)-Dissolved			112.4		%		80-120	16-SEP-20
Sodium (Na)-Dissolved			98.6		%		80-120	16-SEP-20
Strontium (Sr)-Dissolved			113.0		%		80-120	16-SEP-20
Sulfur (S)-Dissolved			99.4		%		80-120	16-SEP-20
Tellurium (Te)-Dissolved			109.1		%		80-120	16-SEP-20
Thallium (Tl)-Dissolved			104.8		%		80-120	16-SEP-20
Thorium (Th)-Dissolved			95.5		%		80-120	16-SEP-20
Tin (Sn)-Dissolved			103.1		%		80-120	16-SEP-20
Titanium (Ti)-Dissolved			95.5		%		80-120	16-SEP-20
Tungsten (W)-Dissolved			102.8		%		80-120	16-SEP-20
Uranium (U)-Dissolved			106.9		%		80-120	16-SEP-20
Vanadium (V)-Dissolved			100.5		%		80-120	16-SEP-20
Zinc (Zn)-Dissolved			101.5		%		80-120	16-SEP-20
Zirconium (Zr)-Dissolved			105.3		%		80-120	16-SEP-20
WG3405191-1	MB							
Aluminum (Al)-Dissolved			0.0037	B	mg/L		0.001	16-SEP-20
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 14 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5224908							
WG3405191-1 MB								
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	16-SEP-20
Boron (B)-Dissolved			<0.010		mg/L		0.01	16-SEP-20
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	16-SEP-20
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	16-SEP-20
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	16-SEP-20
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	16-SEP-20
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	16-SEP-20
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	16-SEP-20
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	16-SEP-20
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	16-SEP-20
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	16-SEP-20
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	16-SEP-20
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	16-SEP-20
Potassium (K)-Dissolved			<0.050		mg/L		0.05	16-SEP-20
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	16-SEP-20
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	16-SEP-20
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	16-SEP-20
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	16-SEP-20
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	16-SEP-20
Strontium (Sr)-Dissolved			<0.00020		mg/L		0.0002	16-SEP-20
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	16-SEP-20
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	16-SEP-20
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	16-SEP-20
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	16-SEP-20
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	16-SEP-20
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	16-SEP-20
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	16-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 15 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-VA		Water						
Batch	R5224908							
WG3405191-1 MB								
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	16-SEP-20
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	16-SEP-20
MET-T-CCMS-VA		Water						
Batch	R5223324							
WG3403461-3 DUP		L2498551-1						
Aluminum (Al)-Total		0.0223	0.0227		mg/L	1.6	20	14-SEP-20
Antimony (Sb)-Total		0.00012	0.00011		mg/L	9.5	20	14-SEP-20
Arsenic (As)-Total		0.00579	0.00557		mg/L	3.9	20	14-SEP-20
Barium (Ba)-Total		0.00980	0.00964		mg/L	1.6	20	14-SEP-20
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	14-SEP-20
Boron (B)-Total		0.041	0.041		mg/L	0.6	20	14-SEP-20
Cadmium (Cd)-Total		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	14-SEP-20
Calcium (Ca)-Total		25.6	24.3		mg/L	5.0	20	14-SEP-20
Cesium (Cs)-Total		0.000113	0.000116		mg/L	2.5	20	14-SEP-20
Chromium (Cr)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Cobalt (Co)-Total		0.00054	0.00051		mg/L	6.4	20	14-SEP-20
Copper (Cu)-Total		0.00106	0.00102		mg/L	4.5	20	14-SEP-20
Iron (Fe)-Total		0.132	0.126		mg/L	4.4	20	14-SEP-20
Lead (Pb)-Total		<0.000050	0.000053	RPD-NA	mg/L	N/A	20	14-SEP-20
Lithium (Li)-Total		0.0161	0.0154		mg/L	4.1	20	14-SEP-20
Magnesium (Mg)-Total		6.09	5.81		mg/L	4.7	20	14-SEP-20
Manganese (Mn)-Total		0.0114	0.0110		mg/L	2.9	20	14-SEP-20
Molybdenum (Mo)-Total		0.000521	0.000463		mg/L	12	20	14-SEP-20
Nickel (Ni)-Total		0.00433	0.00413		mg/L	4.7	20	14-SEP-20
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	14-SEP-20
Potassium (K)-Total		2.59	2.49		mg/L	4.3	20	14-SEP-20
Rubidium (Rb)-Total		0.00567	0.00539		mg/L	5.1	20	14-SEP-20
Selenium (Se)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	14-SEP-20
Silicon (Si)-Total		0.11	0.10		mg/L	6.1	20	14-SEP-20
Silver (Ag)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	14-SEP-20
Sodium (Na)-Total		10.2	9.79		mg/L	4.3	20	14-SEP-20
Strontium (Sr)-Total		0.157	0.161		mg/L	2.5	20	14-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 16 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5223324							
WG3403461-3	DUP	L2498551-1						
Sulfur (S)-Total		26.8	25.1		mg/L	6.5	20	14-SEP-20
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	14-SEP-20
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	14-SEP-20
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Titanium (Ti)-Total		0.00065	0.00070		mg/L	8.2	20	14-SEP-20
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	14-SEP-20
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	14-SEP-20
Zinc (Zn)-Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	14-SEP-20
Zirconium (Zr)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	14-SEP-20
WG3403461-2	LCS							
Aluminum (Al)-Total			97.9		%		80-120	14-SEP-20
Antimony (Sb)-Total			104.8		%		80-120	14-SEP-20
Arsenic (As)-Total			96.4		%		80-120	14-SEP-20
Barium (Ba)-Total			99.0		%		80-120	14-SEP-20
Beryllium (Be)-Total			98.6		%		80-120	14-SEP-20
Bismuth (Bi)-Total			103.3		%		80-120	14-SEP-20
Boron (B)-Total			94.2		%		80-120	14-SEP-20
Cadmium (Cd)-Total			99.6		%		80-120	14-SEP-20
Calcium (Ca)-Total			100.4		%		80-120	14-SEP-20
Cesium (Cs)-Total			101.2		%		80-120	14-SEP-20
Chromium (Cr)-Total			98.9		%		80-120	14-SEP-20
Cobalt (Co)-Total			99.7		%		80-120	14-SEP-20
Copper (Cu)-Total			97.9		%		80-120	14-SEP-20
Iron (Fe)-Total			102.1		%		80-120	14-SEP-20
Lead (Pb)-Total			102.7		%		80-120	14-SEP-20
Lithium (Li)-Total			96.3		%		80-120	14-SEP-20
Magnesium (Mg)-Total			96.5		%		80-120	14-SEP-20
Manganese (Mn)-Total			99.5		%		80-120	14-SEP-20
Molybdenum (Mo)-Total			100.9		%		80-120	14-SEP-20
Nickel (Ni)-Total			98.6		%		80-120	14-SEP-20
Phosphorus (P)-Total			103.1		%		80-120	14-SEP-20
Potassium (K)-Total			99.4		%		80-120	14-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 17 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5223324							
WG3403461-2	LCS							
Rubidium (Rb)-Total			98.0		%		80-120	14-SEP-20
Selenium (Se)-Total			102.1		%		80-120	14-SEP-20
Silicon (Si)-Total			101.0		%		80-120	14-SEP-20
Silver (Ag)-Total			102.7		%		80-120	14-SEP-20
Sodium (Na)-Total			104.2		%		80-120	14-SEP-20
Strontium (Sr)-Total			105.9		%		80-120	14-SEP-20
Sulfur (S)-Total			91.8		%		80-120	14-SEP-20
Tellurium (Te)-Total			97.3		%		80-120	14-SEP-20
Thallium (Tl)-Total			102.5		%		80-120	14-SEP-20
Thorium (Th)-Total			97.8		%		80-120	14-SEP-20
Tin (Sn)-Total			100.3		%		80-120	14-SEP-20
Titanium (Ti)-Total			93.4		%		80-120	14-SEP-20
Tungsten (W)-Total			100.8		%		80-120	14-SEP-20
Uranium (U)-Total			103.7		%		80-120	14-SEP-20
Vanadium (V)-Total			98.0		%		80-120	14-SEP-20
Zinc (Zn)-Total			104.4		%		80-120	14-SEP-20
Zirconium (Zr)-Total			99.6		%		80-120	14-SEP-20
WG3403461-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	14-SEP-20
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Arsenic (As)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Barium (Ba)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	14-SEP-20
Boron (B)-Total			<0.010		mg/L		0.01	14-SEP-20
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	14-SEP-20
Calcium (Ca)-Total			<0.050		mg/L		0.05	14-SEP-20
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	14-SEP-20
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Copper (Cu)-Total			<0.00050		mg/L		0.0005	14-SEP-20
Iron (Fe)-Total			<0.010		mg/L		0.01	14-SEP-20
Lead (Pb)-Total			<0.000050		mg/L		0.00005	14-SEP-20
Lithium (Li)-Total			<0.0010		mg/L		0.001	14-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 18 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5223324							
WG3403461-1 MB								
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	14-SEP-20
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	14-SEP-20
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	14-SEP-20
Phosphorus (P)-Total			<0.050		mg/L		0.05	14-SEP-20
Potassium (K)-Total			<0.050		mg/L		0.05	14-SEP-20
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	14-SEP-20
Selenium (Se)-Total			<0.000050		mg/L		0.00005	14-SEP-20
Silicon (Si)-Total			<0.10		mg/L		0.1	14-SEP-20
Silver (Ag)-Total			<0.000010		mg/L		0.00001	14-SEP-20
Sodium (Na)-Total			<0.050		mg/L		0.05	14-SEP-20
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	14-SEP-20
Sulfur (S)-Total			<0.50		mg/L		0.5	14-SEP-20
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	14-SEP-20
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	14-SEP-20
Thorium (Th)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Tin (Sn)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	14-SEP-20
Tungsten (W)-Total			<0.00010		mg/L		0.0001	14-SEP-20
Uranium (U)-Total			<0.000010		mg/L		0.00001	14-SEP-20
Vanadium (V)-Total			<0.00050		mg/L		0.0005	14-SEP-20
Zinc (Zn)-Total			<0.0030		mg/L		0.003	14-SEP-20
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	14-SEP-20
WG3403461-4 MS		L2498425-1						
Aluminum (Al)-Total			92.6		%		70-130	14-SEP-20
Antimony (Sb)-Total			99.2		%		70-130	14-SEP-20
Arsenic (As)-Total			N/A	MS-B	%		-	14-SEP-20
Barium (Ba)-Total			84.3		%		70-130	14-SEP-20
Beryllium (Be)-Total			100.5		%		70-130	14-SEP-20
Bismuth (Bi)-Total			96.9		%		70-130	14-SEP-20
Boron (B)-Total			92.2		%		70-130	14-SEP-20
Cadmium (Cd)-Total			98.5		%		70-130	14-SEP-20
Calcium (Ca)-Total			N/A	MS-B	%		-	14-SEP-20
Cesium (Cs)-Total			99.2		%		70-130	14-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 19 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5223324							
WG3403461-4 MS		L2498425-1						
Chromium (Cr)-Total			91.5		%		70-130	14-SEP-20
Cobalt (Co)-Total			N/A	MS-B	%		-	14-SEP-20
Copper (Cu)-Total			92.7		%		70-130	14-SEP-20
Iron (Fe)-Total			95.3		%		70-130	14-SEP-20
Lead (Pb)-Total			94.5		%		70-130	14-SEP-20
Lithium (Li)-Total			101.1		%		70-130	14-SEP-20
Magnesium (Mg)-Total			N/A	MS-B	%		-	14-SEP-20
Manganese (Mn)-Total			N/A	MS-B	%		-	14-SEP-20
Molybdenum (Mo)-Total			99.5		%		70-130	14-SEP-20
Nickel (Ni)-Total			N/A	MS-B	%		-	14-SEP-20
Phosphorus (P)-Total			102.5		%		70-130	14-SEP-20
Potassium (K)-Total			95.0		%		70-130	14-SEP-20
Rubidium (Rb)-Total			93.3		%		70-130	14-SEP-20
Selenium (Se)-Total			100.4		%		70-130	14-SEP-20
Silicon (Si)-Total			90.7		%		70-130	14-SEP-20
Silver (Ag)-Total			98.1		%		70-130	14-SEP-20
Sodium (Na)-Total			N/A	MS-B	%		-	14-SEP-20
Strontium (Sr)-Total			N/A	MS-B	%		-	14-SEP-20
Sulfur (S)-Total			N/A	MS-B	%		-	14-SEP-20
Tellurium (Te)-Total			98.5		%		70-130	14-SEP-20
Thallium (Tl)-Total			94.3		%		70-130	14-SEP-20
Thorium (Th)-Total			101.0		%		70-130	14-SEP-20
Tin (Sn)-Total			98.2		%		70-130	14-SEP-20
Titanium (Ti)-Total			92.4		%		70-130	14-SEP-20
Tungsten (W)-Total			94.3		%		70-130	14-SEP-20
Uranium (U)-Total			95.8		%		70-130	14-SEP-20
Vanadium (V)-Total			95.8		%		70-130	14-SEP-20
Zinc (Zn)-Total			98.2		%		70-130	14-SEP-20
Zirconium (Zr)-Total			102.6		%		70-130	14-SEP-20
Batch	R5224180							
WG3403910-3 DUP		L2501367-2						
Aluminum (Al)-Total		0.0099	0.0091		mg/L	8.6	20	15-SEP-20
Antimony (Sb)-Total		0.00276	0.00278		mg/L	0.8	20	15-SEP-20
Arsenic (As)-Total		0.00020	0.00019		mg/L			15-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 20 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224180							
WG3403910-3	DUP	L2501367-2						
Arsenic (As)-Total		0.00020	0.00019		mg/L	2.7	20	15-SEP-20
Barium (Ba)-Total		0.0289	0.0294		mg/L	1.8	20	15-SEP-20
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	15-SEP-20
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	15-SEP-20
Boron (B)-Total		0.080	0.079		mg/L	0.7	20	15-SEP-20
Cadmium (Cd)-Total		0.000319	0.000322		mg/L	1.2	20	15-SEP-20
Calcium (Ca)-Total		324	332		mg/L	2.4	20	15-SEP-20
Cesium (Cs)-Total		0.000567	0.000576		mg/L	1.5	20	15-SEP-20
Chromium (Cr)-Total		0.00017	0.00023	J	mg/L	0.00006	0.0002	15-SEP-20
Cobalt (Co)-Total		0.0401	0.0401		mg/L	0.2	20	15-SEP-20
Copper (Cu)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	15-SEP-20
Iron (Fe)-Total		0.013	0.018	J	mg/L	0.005	0.02	15-SEP-20
Lead (Pb)-Total		0.00124	0.00121		mg/L	2.2	20	15-SEP-20
Lithium (Li)-Total		0.886	0.890		mg/L	0.4	20	15-SEP-20
Magnesium (Mg)-Total		126	127		mg/L	0.7	20	15-SEP-20
Manganese (Mn)-Total		0.255	0.253		mg/L	0.6	20	15-SEP-20
Molybdenum (Mo)-Total		0.00466	0.00456		mg/L	2.0	20	15-SEP-20
Nickel (Ni)-Total		0.196	0.195		mg/L	0.5	20	15-SEP-20
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	15-SEP-20
Potassium (K)-Total		15.8	15.1		mg/L	5.1	20	15-SEP-20
Rubidium (Rb)-Total		0.0257	0.0260		mg/L	0.8	20	15-SEP-20
Selenium (Se)-Total		0.00290	0.00308		mg/L	6.0	20	15-SEP-20
Silicon (Si)-Total		3.48	3.51		mg/L	0.9	20	15-SEP-20
Silver (Ag)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	15-SEP-20
Sodium (Na)-Total		14.8	14.8		mg/L	0.2	20	15-SEP-20
Strontium (Sr)-Total		0.821	0.827		mg/L	0.7	20	15-SEP-20
Sulfur (S)-Total		169	173		mg/L	2.2	20	15-SEP-20
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	15-SEP-20
Thallium (Tl)-Total		0.000171	0.000163		mg/L	5.0	20	15-SEP-20
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	15-SEP-20
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	15-SEP-20
Titanium (Ti)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	15-SEP-20
Tungsten (W)-Total		<0.00010	<0.00010		mg/L			15-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 21 of 35

Client:

BluMetric Environmental Inc. (Ottawa)
 4916 49 St
 Yellowknife NT X1A 1P3

Contact:

Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224180							
WG3403910-3	DUP	L2501367-2						
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	15-SEP-20
Uranium (U)-Total		0.0240	0.0238		mg/L	0.8	20	15-SEP-20
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	15-SEP-20
Zinc (Zn)-Total		0.0322	0.0314		mg/L	2.5	20	15-SEP-20
Zirconium (Zr)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	15-SEP-20
WG3403910-2	LCS							
Aluminum (Al)-Total			104.0		%		80-120	15-SEP-20
Antimony (Sb)-Total			103.5		%		80-120	15-SEP-20
Arsenic (As)-Total			97.9		%		80-120	15-SEP-20
Barium (Ba)-Total			106.2		%		80-120	15-SEP-20
Beryllium (Be)-Total			98.4		%		80-120	15-SEP-20
Bismuth (Bi)-Total			101.1		%		80-120	15-SEP-20
Boron (B)-Total			95.8		%		80-120	15-SEP-20
Cadmium (Cd)-Total			100.6		%		80-120	15-SEP-20
Calcium (Ca)-Total			102.7		%		80-120	15-SEP-20
Cesium (Cs)-Total			99.7		%		80-120	15-SEP-20
Chromium (Cr)-Total			101.3		%		80-120	15-SEP-20
Cobalt (Co)-Total			99.0		%		80-120	15-SEP-20
Copper (Cu)-Total			100.0		%		80-120	15-SEP-20
Iron (Fe)-Total			101.2		%		80-120	15-SEP-20
Lead (Pb)-Total			100.0		%		80-120	15-SEP-20
Lithium (Li)-Total			97.3		%		80-120	15-SEP-20
Magnesium (Mg)-Total			100.2		%		80-120	15-SEP-20
Manganese (Mn)-Total			103.9		%		80-120	15-SEP-20
Molybdenum (Mo)-Total			104.9		%		80-120	15-SEP-20
Nickel (Ni)-Total			99.8		%		80-120	15-SEP-20
Phosphorus (P)-Total			107.5		%		80-120	15-SEP-20
Potassium (K)-Total			101.6		%		80-120	15-SEP-20
Rubidium (Rb)-Total			96.5		%		80-120	15-SEP-20
Selenium (Se)-Total			104.3		%		80-120	15-SEP-20
Silicon (Si)-Total			102.4		%		80-120	15-SEP-20
Silver (Ag)-Total			105.4		%		80-120	15-SEP-20
Sodium (Na)-Total			100.1		%		80-120	15-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 22 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224180							
WG3403910-2	LCS							
Strontium (Sr)-Total			106.4		%		80-120	15-SEP-20
Sulfur (S)-Total			98.0		%		80-120	15-SEP-20
Tellurium (Te)-Total			94.2		%		80-120	15-SEP-20
Thallium (Tl)-Total			101.2		%		80-120	15-SEP-20
Thorium (Th)-Total			90.1		%		80-120	15-SEP-20
Tin (Sn)-Total			99.5		%		80-120	15-SEP-20
Titanium (Ti)-Total			92.0		%		80-120	15-SEP-20
Tungsten (W)-Total			100.1		%		80-120	15-SEP-20
Uranium (U)-Total			109.6		%		80-120	15-SEP-20
Vanadium (V)-Total			102.1		%		80-120	15-SEP-20
Zinc (Zn)-Total			101.1		%		80-120	15-SEP-20
Zirconium (Zr)-Total			101.2		%		80-120	15-SEP-20
WG3403910-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	15-SEP-20
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Arsenic (As)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Barium (Ba)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	15-SEP-20
Boron (B)-Total			<0.010		mg/L		0.01	15-SEP-20
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	15-SEP-20
Calcium (Ca)-Total			<0.050		mg/L		0.05	15-SEP-20
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	15-SEP-20
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Copper (Cu)-Total			<0.00050		mg/L		0.0005	15-SEP-20
Iron (Fe)-Total			<0.010		mg/L		0.01	15-SEP-20
Lead (Pb)-Total			<0.000050		mg/L		0.00005	15-SEP-20
Lithium (Li)-Total			<0.0010		mg/L		0.001	15-SEP-20
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	15-SEP-20
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	15-SEP-20
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	15-SEP-20
Phosphorus (P)-Total			<0.050		mg/L		0.05	15-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 23 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224180							
WG3403910-1 MB								
Potassium (K)-Total			<0.050		mg/L		0.05	15-SEP-20
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	15-SEP-20
Selenium (Se)-Total			<0.000050		mg/L		0.00005	15-SEP-20
Silicon (Si)-Total			<0.10		mg/L		0.1	15-SEP-20
Silver (Ag)-Total			<0.000010		mg/L		0.00001	15-SEP-20
Sodium (Na)-Total			<0.050		mg/L		0.05	15-SEP-20
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	15-SEP-20
Sulfur (S)-Total			<0.50		mg/L		0.5	15-SEP-20
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	15-SEP-20
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	15-SEP-20
Thorium (Th)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Tin (Sn)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	15-SEP-20
Tungsten (W)-Total			<0.00010		mg/L		0.0001	15-SEP-20
Uranium (U)-Total			<0.000010		mg/L		0.00001	15-SEP-20
Vanadium (V)-Total			<0.00050		mg/L		0.0005	15-SEP-20
Zinc (Zn)-Total			<0.0030		mg/L		0.003	15-SEP-20
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	15-SEP-20
WG3403910-4 MS		L2501367-3						
Aluminum (Al)-Total			99.0		%		70-130	15-SEP-20
Antimony (Sb)-Total			101.3		%		70-130	15-SEP-20
Arsenic (As)-Total			100.6		%		70-130	15-SEP-20
Barium (Ba)-Total			N/A	MS-B	%		-	15-SEP-20
Beryllium (Be)-Total			96.7		%		70-130	15-SEP-20
Bismuth (Bi)-Total			87.6		%		70-130	15-SEP-20
Boron (B)-Total			88.3		%		70-130	15-SEP-20
Cadmium (Cd)-Total			95.9		%		70-130	15-SEP-20
Calcium (Ca)-Total			N/A	MS-B	%		-	15-SEP-20
Cesium (Cs)-Total			99.8		%		70-130	15-SEP-20
Chromium (Cr)-Total			97.0		%		70-130	15-SEP-20
Cobalt (Co)-Total			N/A	MS-B	%		-	15-SEP-20
Copper (Cu)-Total			88.6		%		70-130	15-SEP-20
Iron (Fe)-Total			95.3		%		70-130	15-SEP-20
Lead (Pb)-Total			89.8		%		70-130	15-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 24 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224180							
WG3403910-4 MS		L2501367-3						
Lithium (Li)-Total			N/A	MS-B	%		-	15-SEP-20
Magnesium (Mg)-Total			N/A	MS-B	%		-	15-SEP-20
Manganese (Mn)-Total			N/A	MS-B	%		-	15-SEP-20
Molybdenum (Mo)-Total			105.3		%		70-130	15-SEP-20
Nickel (Ni)-Total			N/A	MS-B	%		-	15-SEP-20
Phosphorus (P)-Total			106.7		%		70-130	15-SEP-20
Potassium (K)-Total			N/A	MS-B	%		-	15-SEP-20
Rubidium (Rb)-Total			N/A	MS-B	%		-	15-SEP-20
Selenium (Se)-Total			108.4		%		70-130	15-SEP-20
Silicon (Si)-Total			95.6		%		70-130	15-SEP-20
Silver (Ag)-Total			100.0		%		70-130	15-SEP-20
Sodium (Na)-Total			N/A	MS-B	%		-	15-SEP-20
Strontium (Sr)-Total			N/A	MS-B	%		-	15-SEP-20
Sulfur (S)-Total			N/A	MS-B	%		-	15-SEP-20
Tellurium (Te)-Total			93.9		%		70-130	15-SEP-20
Thallium (Tl)-Total			88.6		%		70-130	15-SEP-20
Thorium (Th)-Total			99.9		%		70-130	15-SEP-20
Tin (Sn)-Total			100.2		%		70-130	15-SEP-20
Titanium (Ti)-Total			96.5		%		70-130	15-SEP-20
Tungsten (W)-Total			96.9		%		70-130	15-SEP-20
Uranium (U)-Total			N/A	MS-B	%		-	15-SEP-20
Vanadium (V)-Total			102.8		%		70-130	15-SEP-20
Zinc (Zn)-Total			91.6		%		70-130	15-SEP-20
Zirconium (Zr)-Total			111.7		%		70-130	15-SEP-20
Batch	R5224805							
WG3405217-3 DUP		L2498404-2						
Aluminum (Al)-Total		0.0147	0.0164		mg/L	11	20	16-SEP-20
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-SEP-20
Arsenic (As)-Total		0.00037	0.00040		mg/L	7.0	20	16-SEP-20
Barium (Ba)-Total		0.0195	0.0211		mg/L	8.2	20	16-SEP-20
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	16-SEP-20
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	16-SEP-20
Boron (B)-Total		0.016	0.016		mg/L	1.0	20	16-SEP-20



Quality Control Report

Workorder: L2498615
 Report Date: 17-SEP-20
 Page 26 of 35

Client: BluMetric Environmental Inc. (Ottawa)
 4916 49 St
 Yellowknife NT X1A 1P3
 Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224805							
WG3405217-2		LCS						
Aluminum (Al)-Total			105.4		%		80-120	16-SEP-20
Antimony (Sb)-Total			105.3		%		80-120	16-SEP-20
Arsenic (As)-Total			101.0		%		80-120	16-SEP-20
Barium (Ba)-Total			99.9		%		80-120	16-SEP-20
Beryllium (Be)-Total			101.5		%		80-120	16-SEP-20
Bismuth (Bi)-Total			106.3		%		80-120	16-SEP-20
Boron (B)-Total			99.0		%		80-120	16-SEP-20
Cadmium (Cd)-Total			101.2		%		80-120	16-SEP-20
Calcium (Ca)-Total			103.1		%		80-120	16-SEP-20
Cesium (Cs)-Total			101.8		%		80-120	16-SEP-20
Chromium (Cr)-Total			102.1		%		80-120	16-SEP-20
Cobalt (Co)-Total			101.5		%		80-120	16-SEP-20
Copper (Cu)-Total			99.5		%		80-120	16-SEP-20
Iron (Fe)-Total			101.4		%		80-120	16-SEP-20
Lead (Pb)-Total			102.1		%		80-120	16-SEP-20
Lithium (Li)-Total			95.7		%		80-120	16-SEP-20
Magnesium (Mg)-Total			101.5		%		80-120	16-SEP-20
Manganese (Mn)-Total			106.0		%		80-120	16-SEP-20
Molybdenum (Mo)-Total			100.1		%		80-120	16-SEP-20
Nickel (Ni)-Total			100.8		%		80-120	16-SEP-20
Phosphorus (P)-Total			105.4		%		80-120	16-SEP-20
Potassium (K)-Total			102.4		%		80-120	16-SEP-20
Rubidium (Rb)-Total			104.9		%		80-120	16-SEP-20
Selenium (Se)-Total			99.4		%		80-120	16-SEP-20
Silicon (Si)-Total			99.2		%		80-120	16-SEP-20
Silver (Ag)-Total			103.7		%		80-120	16-SEP-20
Sodium (Na)-Total			102.3		%		80-120	16-SEP-20
Strontium (Sr)-Total			104.9		%		80-120	16-SEP-20
Sulfur (S)-Total			115.8		%		80-120	16-SEP-20
Tellurium (Te)-Total			101.8		%		80-120	16-SEP-20
Thallium (Tl)-Total			102.3		%		80-120	16-SEP-20
Thorium (Th)-Total			100.8		%		80-120	16-SEP-20
Tin (Sn)-Total			103.2		%		80-120	16-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 27 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224805							
WG3405217-2	LCS							
Titanium (Ti)-Total			97.0		%		80-120	16-SEP-20
Tungsten (W)-Total			105.0		%		80-120	16-SEP-20
Uranium (U)-Total			106.0		%		80-120	16-SEP-20
Vanadium (V)-Total			104.7		%		80-120	16-SEP-20
Zinc (Zn)-Total			103.5		%		80-120	16-SEP-20
Zirconium (Zr)-Total			101.8		%		80-120	16-SEP-20
WG3405217-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	16-SEP-20
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Arsenic (As)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Barium (Ba)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	16-SEP-20
Boron (B)-Total			<0.010		mg/L		0.01	16-SEP-20
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	16-SEP-20
Calcium (Ca)-Total			<0.050		mg/L		0.05	16-SEP-20
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	16-SEP-20
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Copper (Cu)-Total			<0.00050		mg/L		0.0005	16-SEP-20
Iron (Fe)-Total			<0.010		mg/L		0.01	16-SEP-20
Lead (Pb)-Total			<0.000050		mg/L		0.00005	16-SEP-20
Lithium (Li)-Total			<0.0010		mg/L		0.001	16-SEP-20
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	16-SEP-20
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	16-SEP-20
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	16-SEP-20
Phosphorus (P)-Total			<0.050		mg/L		0.05	16-SEP-20
Potassium (K)-Total			<0.050		mg/L		0.05	16-SEP-20
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	16-SEP-20
Selenium (Se)-Total			<0.000050		mg/L		0.00005	16-SEP-20
Silicon (Si)-Total			<0.10		mg/L		0.1	16-SEP-20
Silver (Ag)-Total			<0.000010		mg/L		0.00001	16-SEP-20
Sodium (Na)-Total			<0.050		mg/L		0.05	16-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 28 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224805							
WG3405217-1 MB								
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	16-SEP-20
Sulfur (S)-Total			<0.50		mg/L		0.5	16-SEP-20
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	16-SEP-20
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	16-SEP-20
Thorium (Th)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Tin (Sn)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	16-SEP-20
Tungsten (W)-Total			<0.00010		mg/L		0.0001	16-SEP-20
Uranium (U)-Total			<0.000010		mg/L		0.00001	16-SEP-20
Vanadium (V)-Total			<0.00050		mg/L		0.0005	16-SEP-20
Zinc (Zn)-Total			<0.0030		mg/L		0.003	16-SEP-20
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	16-SEP-20
WG3405217-4 MS		L2502291-1						
Aluminum (Al)-Total			102.0		%		70-130	16-SEP-20
Antimony (Sb)-Total			105.9		%		70-130	16-SEP-20
Arsenic (As)-Total			102.6		%		70-130	16-SEP-20
Barium (Ba)-Total			96.6		%		70-130	16-SEP-20
Beryllium (Be)-Total			102.8		%		70-130	16-SEP-20
Bismuth (Bi)-Total			98.2		%		70-130	16-SEP-20
Boron (B)-Total			98.1		%		70-130	16-SEP-20
Cadmium (Cd)-Total			98.9		%		70-130	16-SEP-20
Calcium (Ca)-Total			N/A	MS-B	%		-	16-SEP-20
Cesium (Cs)-Total			105.4		%		70-130	16-SEP-20
Chromium (Cr)-Total			101.1		%		70-130	16-SEP-20
Cobalt (Co)-Total			94.2		%		70-130	16-SEP-20
Copper (Cu)-Total			94.5		%		70-130	16-SEP-20
Iron (Fe)-Total			102.3		%		70-130	16-SEP-20
Lead (Pb)-Total			95.8		%		70-130	16-SEP-20
Lithium (Li)-Total			N/A	MS-B	%		-	16-SEP-20
Magnesium (Mg)-Total			N/A	MS-B	%		-	16-SEP-20
Manganese (Mn)-Total			93.2		%		70-130	16-SEP-20
Molybdenum (Mo)-Total			101.0		%		70-130	16-SEP-20
Nickel (Ni)-Total			N/A	MS-B	%		-	16-SEP-20
Phosphorus (P)-Total			109.0		%		70-130	16-SEP-20

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 29 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-VA		Water						
Batch	R5224805							
WG3405217-4 MS		L2502291-1						
Potassium (K)-Total			N/A	MS-B	%		-	16-SEP-20
Rubidium (Rb)-Total			98.7		%		70-130	16-SEP-20
Selenium (Se)-Total			106.7		%		70-130	16-SEP-20
Silicon (Si)-Total			94.2		%		70-130	16-SEP-20
Silver (Ag)-Total			102.4		%		70-130	16-SEP-20
Sodium (Na)-Total			N/A	MS-B	%		-	16-SEP-20
Strontium (Sr)-Total			N/A	MS-B	%		-	16-SEP-20
Sulfur (S)-Total			N/A	MS-B	%		-	16-SEP-20
Tellurium (Te)-Total			105.8		%		70-130	16-SEP-20
Thallium (Tl)-Total			95.1		%		70-130	16-SEP-20
Thorium (Th)-Total			106.3		%		70-130	16-SEP-20
Tin (Sn)-Total			103.1		%		70-130	16-SEP-20
Titanium (Ti)-Total			101.8		%		70-130	16-SEP-20
Tungsten (W)-Total			103.8		%		70-130	16-SEP-20
Uranium (U)-Total			N/A	MS-B	%		-	16-SEP-20
Vanadium (V)-Total			103.8		%		70-130	16-SEP-20
Zinc (Zn)-Total			99.6		%		70-130	16-SEP-20
Zirconium (Zr)-Total			108.2		%		70-130	16-SEP-20
NO2-L-IC-N-VA		Water						
Batch	R5224181							
WG3403335-3 DUP		L2498615-1						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	14-SEP-20
WG3403335-2 LCS			101.1		%		90-110	14-SEP-20
WG3403335-1 MB			<0.0010		mg/L		0.001	14-SEP-20
WG3403335-4 MS		L2498615-2	98.2		%		75-125	14-SEP-20
NO3-L-IC-N-VA		Water						
Batch	R5224181							
WG3403335-3 DUP		L2498615-1						
Nitrate (as N)		0.0342	0.0348		mg/L	2.0	20	14-SEP-20
WG3403335-2 LCS			102.0		%		90-110	14-SEP-20
WG3403335-1 MB								



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 30 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-L-IC-N-VA								
Water								
Batch	R5224181							
WG3403335-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	14-SEP-20
WG3403335-4	MS	L2498615-2						
Nitrate (as N)			100.3		%		75-125	14-SEP-20
PCB-WT								
Water								
Batch	R5224193							
WG3403672-2	LCS							
Aroclor 1242			97.7		%		65-130	15-SEP-20
Aroclor 1248			87.3		%		65-130	15-SEP-20
Aroclor 1254			94.4		%		65-130	15-SEP-20
Aroclor 1260			95.5		%		65-130	15-SEP-20
WG3403672-1	MB							
Aroclor 1242			<0.020		ug/L		0.02	15-SEP-20
Aroclor 1248			<0.020		ug/L		0.02	15-SEP-20
Aroclor 1254			<0.020		ug/L		0.02	15-SEP-20
Aroclor 1260			<0.020		ug/L		0.02	15-SEP-20
Surrogate: Decachlorobiphenyl			85.5		%		50-150	15-SEP-20
Surrogate: Tetrachloro-m-xylene			61.4		%		50-150	15-SEP-20
PH-PCT-VA								
Water								
Batch	R5223184							
WG3403340-2	CRM	VA-PH7-BUF						
pH			7.01		pH		6.9-7.1	12-SEP-20
WG3403340-4	DUP	L2498615-1						
pH		6.22	6.25	J	pH	0.03	0.3	12-SEP-20
SO4-IC-N-VA								
Water								
Batch	R5224181							
WG3403335-3	DUP	L2498615-1						
Sulfate (SO4)		1.58	1.58		mg/L	0.0	20	14-SEP-20
WG3403335-2	LCS							
Sulfate (SO4)			102.9		%		90-110	14-SEP-20
WG3403335-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	14-SEP-20
WG3403335-4	MS	L2498615-2						
Sulfate (SO4)			100.8		%		75-125	14-SEP-20
TDS-VA								
Water								



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 31 of 35

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Contact: Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TDS-VA		Water						
Batch	R5223182							
WG3402705-6	DUP	L2498615-4						
Total Dissolved Solids		1980	2090		mg/L	5.1	20	11-SEP-20
WG3402705-5	LCS							
Total Dissolved Solids			101.6		%		85-115	11-SEP-20
WG3402705-4	MB							
Total Dissolved Solids			<10		mg/L		10	11-SEP-20
TSS-VA		Water						
Batch	R5222647							
WG3402701-3	DUP	L2497936-2						
Total Suspended Solids		<3.0	<3.0	RPD-NA	mg/L	N/A	20	11-SEP-20
WG3402701-6	DUP	L2498914-1						
Total Suspended Solids		<3.0	<3.0	RPD-NA	mg/L	N/A	20	11-SEP-20
WG3402701-2	LCS							
Total Suspended Solids			105.2		%		85-115	11-SEP-20
WG3402701-5	LCS							
Total Suspended Solids			102.8		%		85-115	11-SEP-20
WG3402701-1	MB							
Total Suspended Solids			<3.0		mg/L		3	11-SEP-20
WG3402701-4	MB							
Total Suspended Solids			<3.0		mg/L		3	11-SEP-20
VOC7-HSMS-VA		Water						
Batch	R5203993							
WG3402276-3	DUP	L2498294-1						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	11-SEP-20
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	11-SEP-20
Methyl t-butyl ether (MTBE)		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	11-SEP-20
Styrene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	11-SEP-20
Toluene		<0.00045	<0.00045	RPD-NA	mg/L	N/A	30	11-SEP-20
meta- & para-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	11-SEP-20
ortho-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	11-SEP-20
WG3402276-2	LCS							
Benzene			98.4		%		70-130	11-SEP-20
Ethylbenzene			92.2		%		70-130	11-SEP-20
Methyl t-butyl ether (MTBE)			105.3		%		70-130	11-SEP-20
Styrene			87.8		%		70-130	11-SEP-20
Toluene			95.6		%		70-130	11-SEP-20



Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Page 32 of 35

Client:

BluMetric Environmental Inc. (Ottawa)
 4916 49 St
 Yellowknife NT X1A 1P3

Contact:

Karen Phong

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed	
VOC7-HSMS-VA		Water							
Batch	R5203993								
WG3402276-2	LCS								
meta- & para-Xylene			103.3		%		70-130	11-SEP-20	
ortho-Xylene			93.4		%		70-130	11-SEP-20	
WG3402276-1	MB								
Benzene			<0.00050		mg/L		0.0005	11-SEP-20	
Ethylbenzene			<0.00050		mg/L		0.0005	11-SEP-20	
Methyl t-butyl ether (MTBE)			<0.00050		mg/L		0.0005	11-SEP-20	
Styrene			<0.00050		mg/L		0.0005	11-SEP-20	
Toluene			<0.00045		mg/L		0.00045	11-SEP-20	
meta- & para-Xylene			<0.00050		mg/L		0.0005	11-SEP-20	
ortho-Xylene			<0.00050		mg/L		0.0005	11-SEP-20	
WG3402276-5	MS		L2498615-1						
Benzene				97.0		%		50-150	11-SEP-20
Ethylbenzene				87.4		%		50-150	11-SEP-20
Methyl t-butyl ether (MTBE)				104.7		%		50-150	11-SEP-20
Styrene				84.3		%		50-150	11-SEP-20
Toluene				91.5		%		50-150	11-SEP-20
meta- & para-Xylene				99.0		%		50-150	11-SEP-20
ortho-Xylene			89.6		%		50-150	11-SEP-20	

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3

Page 33 of 35

Contact: Karen Phong

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Report Date: 17-SEP-20

Page 34 of 35

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Total Dissolved Solids by Gravimetric							
	1	27-AUG-20 12:00	11-SEP-20 12:30	7	15	days	EHTR
	2	27-AUG-20 12:00	11-SEP-20 12:30	7	15	days	EHTR
	4	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	5	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	6	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	7	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	8	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	9	30-AUG-20 12:00	11-SEP-20 12:30	7	12	days	EHT
Total Suspended Solids by Gravimetric							
	1	27-AUG-20 12:00	11-SEP-20 12:30	7	15	days	EHTR
	2	27-AUG-20 12:00	11-SEP-20 12:30	7	15	days	EHTR
	4	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	5	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	6	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	7	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	8	28-AUG-20 12:00	11-SEP-20 12:30	7	14	days	EHTL
	9	30-AUG-20 12:00	11-SEP-20 12:30	7	12	days	EHT
pH by Meter (Automated)							
	1	27-AUG-20 12:00	12-SEP-20 10:54	0.25	383	hours	EHTR-FM
	2	27-AUG-20 12:00	12-SEP-20 10:54	0.25	383	hours	EHTR-FM
	4	28-AUG-20 12:00	12-SEP-20 10:54	0.25	359	hours	EHTR-FM
	5	28-AUG-20 12:00	12-SEP-20 10:54	0.25	359	hours	EHTR-FM
	6	28-AUG-20 12:00	12-SEP-20 10:54	0.25	359	hours	EHTR-FM
	7	28-AUG-20 12:00	12-SEP-20 10:54	0.25	359	hours	EHTR-FM
	8	28-AUG-20 12:00	12-SEP-20 10:54	0.25	359	hours	EHTR-FM
	9	30-AUG-20 12:00	12-SEP-20 10:54	0.25	311	hours	EHTR-FM
Anions and Nutrients							
Nitrate in Water by IC (Low Level)							
	1	27-AUG-20 12:00	14-SEP-20 14:06	3	18	days	EHTR
	2	27-AUG-20 12:00	14-SEP-20 14:06	3	18	days	EHTR
	4	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	5	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	6	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	7	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	8	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	9	30-AUG-20 12:00	14-SEP-20 14:06	3	15	days	EHTR
Nitrite in Water by IC (Low Level)							
	1	27-AUG-20 12:00	14-SEP-20 14:06	3	18	days	EHTR
	2	27-AUG-20 12:00	14-SEP-20 14:06	3	18	days	EHTR
	4	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	5	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	6	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	7	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	8	28-AUG-20 12:00	14-SEP-20 14:06	3	17	days	EHTR
	9	30-AUG-20 12:00	14-SEP-20 14:06	3	15	days	EHTR
Hydrocarbons							
CCME F2-F4 Hydrocarbons in Water							
	1	27-AUG-20 12:00	11-SEP-20 04:08	14	15	days	EHT
	2	27-AUG-20 12:00	11-SEP-20 04:08	14	15	days	EHT
Polychlorinated Biphenyls							

Quality Control Report

Workorder: L2498615

Report Date: 17-SEP-20

Client: BluMetric Environmental Inc. (Ottawa)
4916 49 St
Yellowknife NT X1A 1P3
Contact: Karen Phong

Page 35 of 35

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Polychlorinated Biphenyls							
Polychlorinated Biphenyls	1	27-AUG-20 12:00	14-SEP-20 20:21	14	18	days	EHT
	2	27-AUG-20 12:00	14-SEP-20 20:21	14	18	days	EHT
	3	27-AUG-20 12:00	14-SEP-20 20:21	14	18	days	EHT
	4	28-AUG-20 12:00	14-SEP-20 20:21	14	17	days	EHT
	5	28-AUG-20 12:00	14-SEP-20 20:21	14	17	days	EHT
	6	28-AUG-20 12:00	14-SEP-20 20:21	14	17	days	EHT
	7	28-AUG-20 12:00	14-SEP-20 20:21	14	17	days	EHT
	8	28-AUG-20 12:00	14-SEP-20 20:21	14	17	days	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2498615 were received on 03-SEP-20 12:30.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

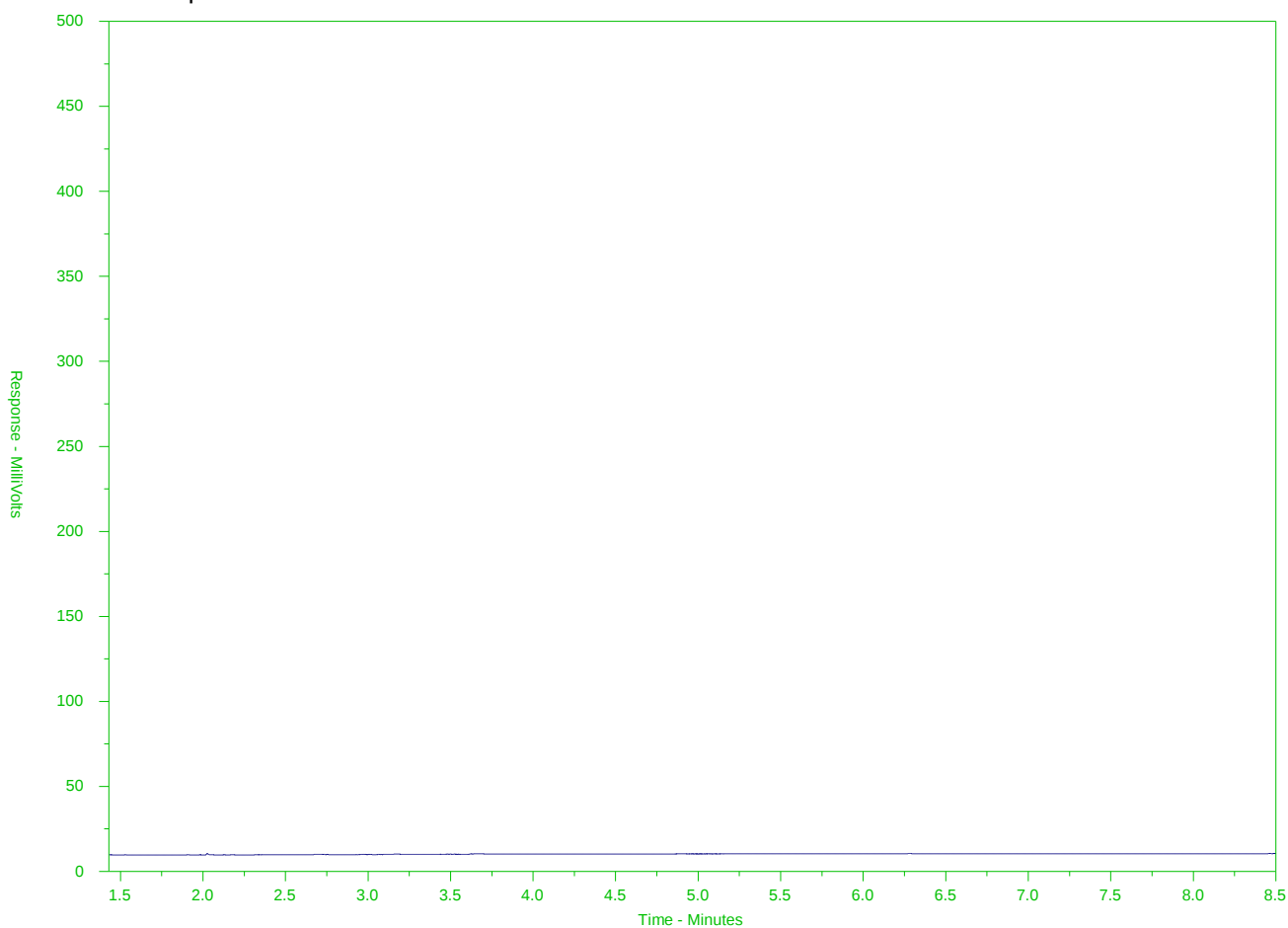
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2498615-C-1
Client Sample ID: MWLF-3



← 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.

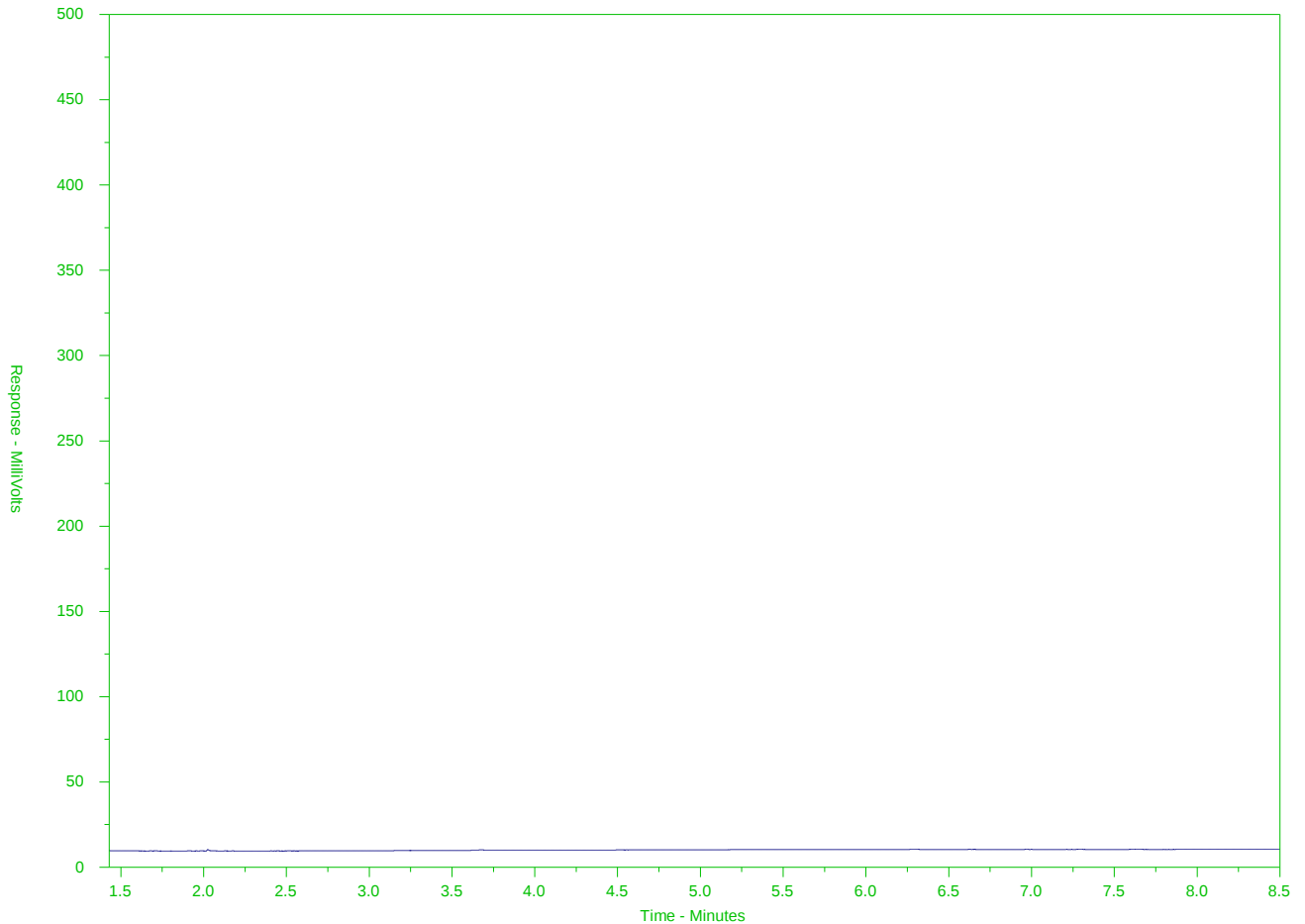
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2498615-C-2

Client Sample ID: MWLF-3-D



← 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.

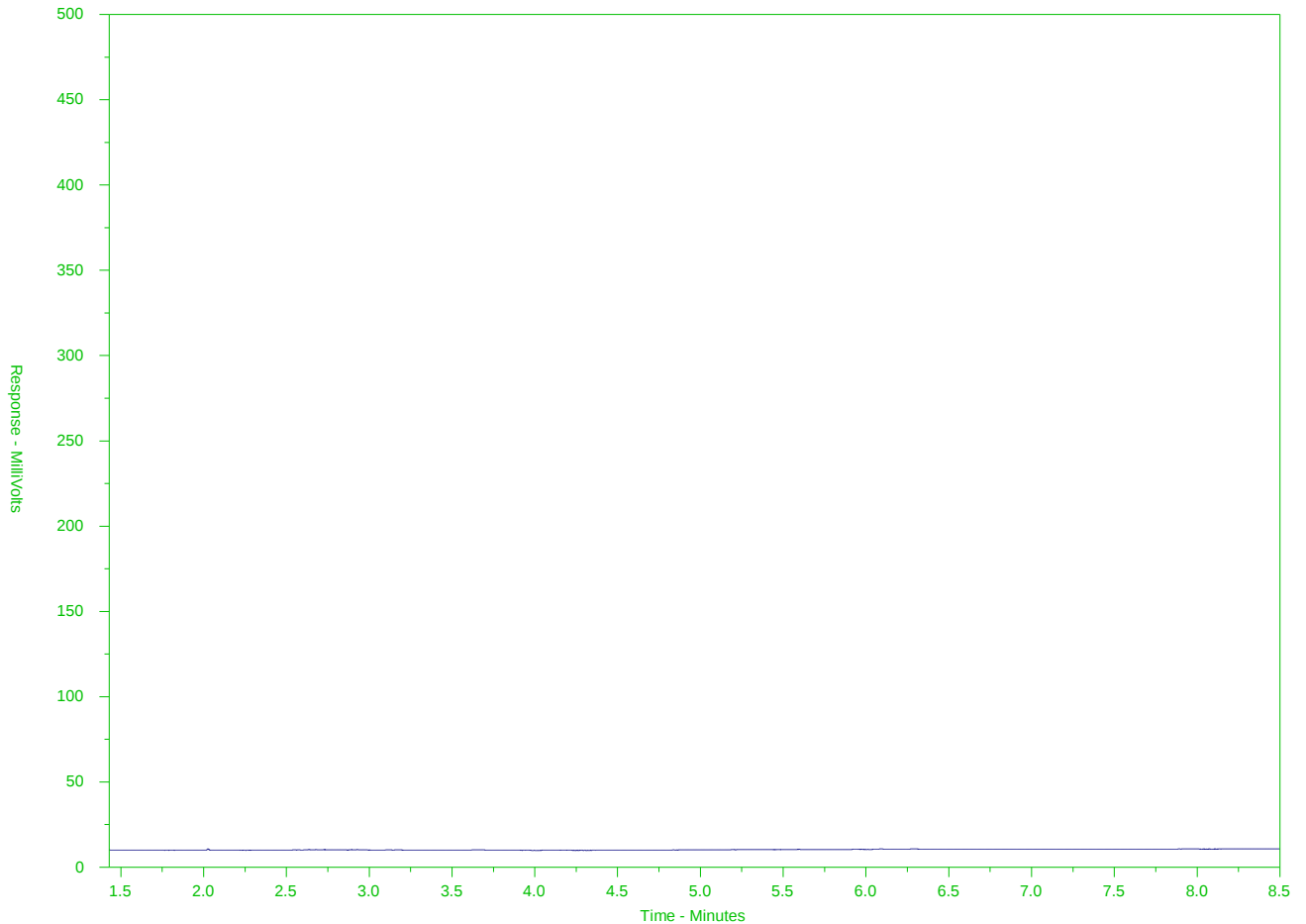
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2498615-C-4

Client Sample ID: MW01



← 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.

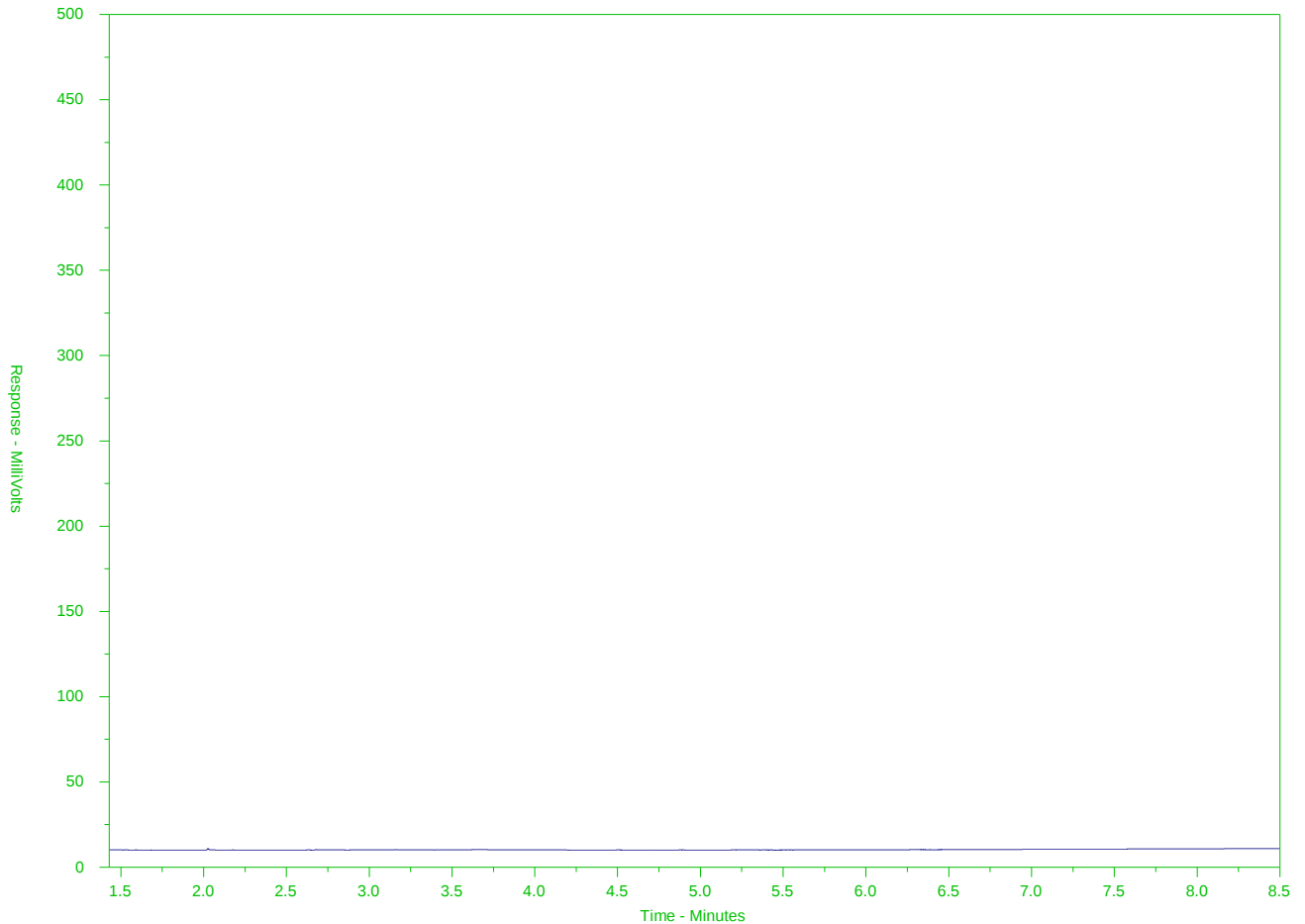
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2498615-C-5

Client Sample ID: MW02



← 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.

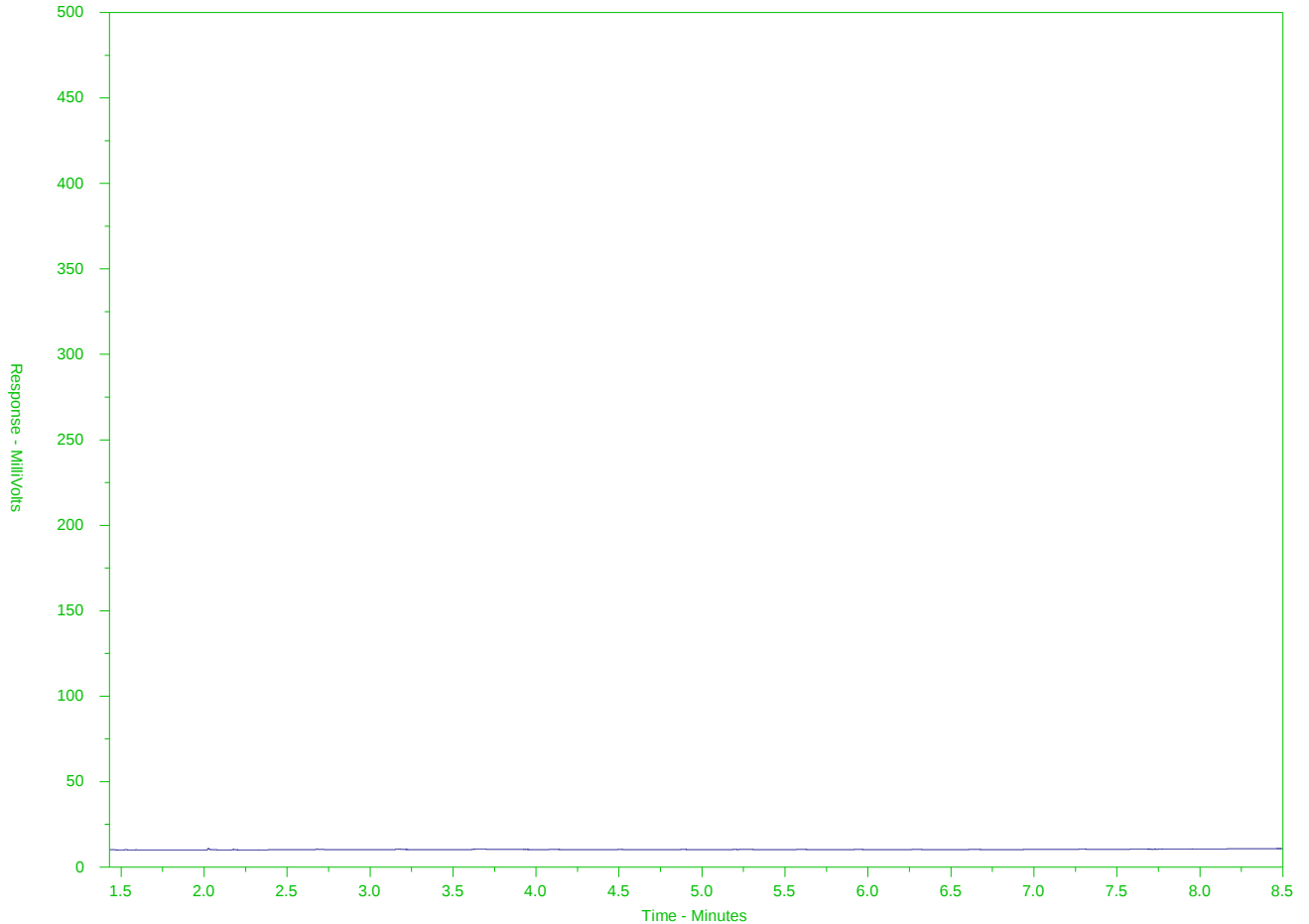
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2498615-C-6
Client Sample ID: MW02-D



← 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.

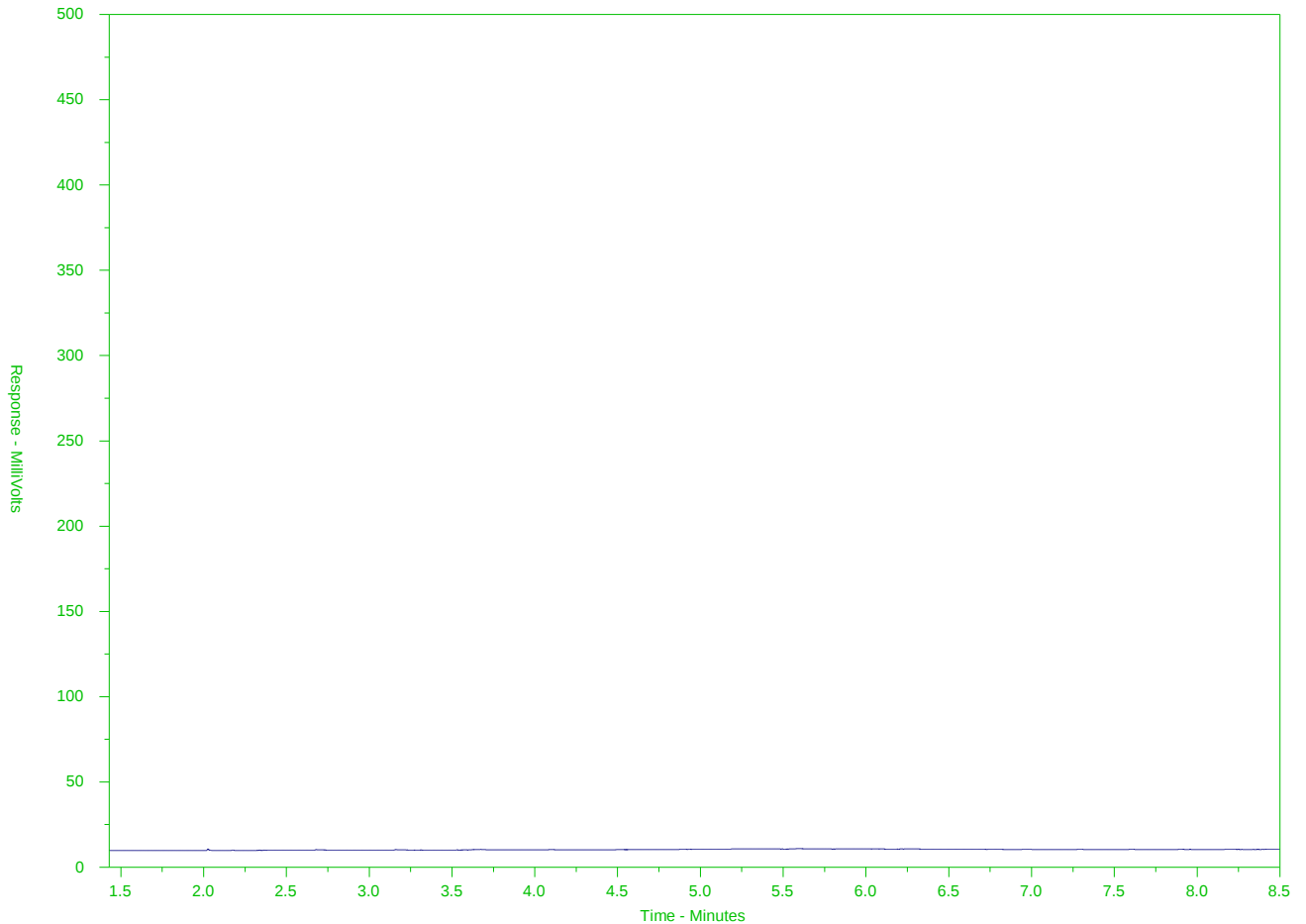
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2498615-C-7
Client Sample ID: MW03



← 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.

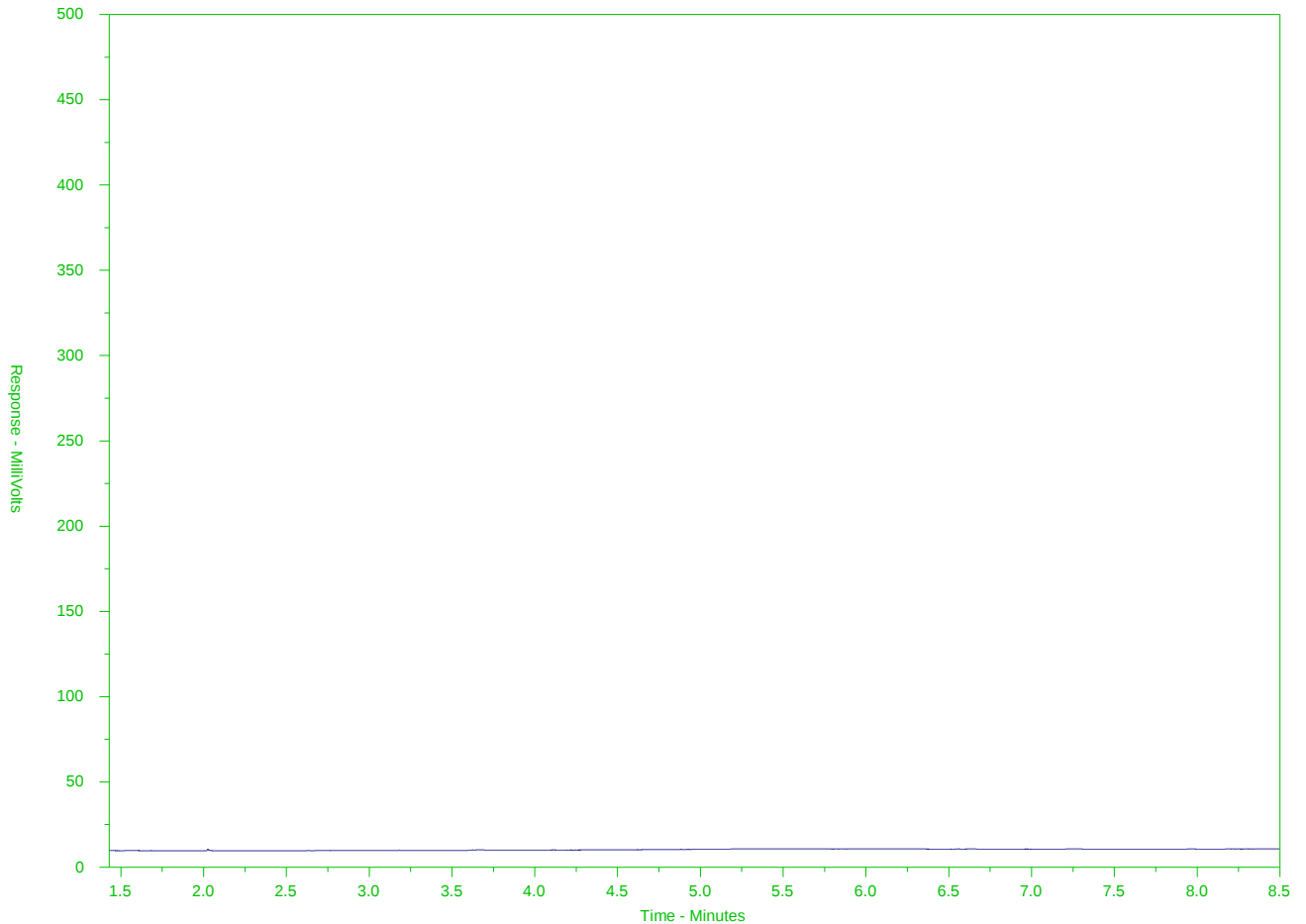
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2498615-C-8

Client Sample ID: MW04



← 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.

Report To Company: <u>BLM & R</u> Contact: <u>Karen Phang</u> Address: <u>4916 XIA St Yellowknife</u> Phone: <u>647 207 7765</u>		Report Format / Distribution Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL) Quality Control (QC) Report with Report ☐ Yes ☐ No Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: <u>KPhang@blmretail.ca</u> Email 2:		Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests) R ☒ Regular (Standard TAT if received by 3pm) P ☐ Priority (2-4 business days if received by 3pm) E ☐ Emergency (1-2 business days if received by 3pm) E2 ☐ Same day or weekend emergency if received by 10am - contact ALS for surcharge. Specify Date Required for E2, E or P:																																																				
Invoice To Same as Report To ☒ Yes ☐ No Copy of Invoice with Report ☒ Yes ☐ No Company: Contact:		Invoice Distribution Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: Email 2:		Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																				
Project Information ALS Quote #: <u>200537</u> Job #: <u>200537</u> PO / AFE: LSD:		Oil and Gas Required Fields (client use) Approver ID: Cost Center: GL Account: Routing Code: Activity Code: Location:		Number of Containers																																																				
ALS Lab Work Order # (lab use only) <u>12498615</u>		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	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">Metals</td> <td style="width:10%;">As-FY</td> <td style="width:10%;">Li</td> <td style="width:10%;">Gen Chem</td> <td style="width:10%;">PCB</td> </tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>		Metals	As-FY	Li	Gen Chem	PCB	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Metals	As-FY	Li	Gen Chem	PCB																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
X	X	X	X	X																																																				
	MWLF-3	27 Aug 20	PM	Water																																																				
	MWLF-3-D	27 Aug 20		Water																																																				
	MWLF-1	27 Aug 20																																																						
	MW01	28 Aug 20																																																						
	MW02	28 Aug 20																																																						
	MW02-D	28 Aug 20																																																						
	MW03	28 Aug 20																																																						
	MW04	28 Aug 20																																																						
	MW103	30 Aug 20																																																						

GENERAL TERMS AND CONDITIONS:

These terms and conditions are incorporated in and form part of the Agreement between ALS Group's Environmental Division and the party named in the Offer. (the "Client").

1. Definitions. Capitalized Terms not defined in these Terms and Conditions have the definitions set out in the other Agreement documents.
2. The Services. ALS will provide the Services to the Client as described in the Offer and in any change of custody form provided with any sample.
3. Prices. ALS may review and change all prices, fees, surcharges or other charges set out in the Agreement if there are changes to ALS's cost beyond ALS's control, including changes in legislative requirements, Client variations of sample numbers and Client requests for changes to standard reporting requirements. Notwithstanding Condition 3, all quotations are reviewed and updated on a yearly basis.
4. Payment Terms. The Client shall pay ALS within 30 days of the invoice date OAC. ALS may, for reasonable business reasons, require the Client to arrange for payment in advance.
5. Quotation Numbers. The Client shall provide the quotation number to ALS (where applicable) to ensure correct pricing.
6. Taxes. Applicable taxes are not included in prices, surcharges and additional fees and will be added at the time of invoicing.
7. Quality Control. ALS has an extensive QA/QC program. Clients' samples are analyzed using approved, referenced procedures followed by thorough data validation prior to reporting the analytical results.
8. Test Results are Not Guaranteed. Results are obtained from analytical measurements that are subject to inherent variability. Measurement results reflect characteristics of submitted test samples at time of analysis. The Client is responsible for informing itself on the limitation of test results and acknowledges that test results are not guaranteed.
9. Standard of Care. ALS will use reasonable care and diligence as required by the laws of the province or territory where the sample is tested.
10. Storage. Where possible, ALS will store samples for 30 days from the date a final report is issued to the Client, after which ALS may discard the samples.
11. Holds. If the Client requests a sample to be placed on hold, ALS will store the sample for 30 days from date of receipt, after which ALS will invoice the Client and discard the sample. Longer hold periods are available upon request.
12. Archives. If the Client requests a sample be archived, ALS will invoice in advance and store the sample for the period requested, after which ALS may discard the sample.
13. Handling Protocol. Legal sample handling protocol must be arranged before samples are collected. ALS charges a minimum 20% surcharge on the list price plus the hourly technologist or chemist rates for legal sample protocol. Additional charges will apply for samples that require storage by ALS.
14. Samples. The quality, condition, content and source of samples stored and tested are not known to ALS except as declared and described on the chain of custody form completed and submitted by the Client and accompanying the sample.
15. Risk of Loss. ALS will use reasonable care to protect samples during storage, however all samples are stored at the Client's risk and the Client is responsible for obtaining appropriate insurance, if desired. The Client acknowledges that during the performance of the Services samples may be altered, lost, damaged or destroyed and the Client releases ALS from any claim the Client may have for any loss or damage to the sample.
16. Environmental. The Client must comply with all applicable environment legislation, including labeling all hazardous samples to comply with WHMIS and TDG regulations, and must provide appropriate safety data sheets (previously referred to as 'MSDS') that include the nature of the hazard and a contact name and phone number to call for information. The Client will indemnify ALS for all loss or damages, including any fine or cost of complying with an order of any government authority, resulting from the Client's breach of this paragraph.
17. Hazardous Materials Disposal. ALS may return, at the Client's cost, hazardous material to the Client for disposal.
18. Hazardous Materials Surcharge. ALS may apply an additional surcharge for handling of hazardous samples or samples with Naturally Occurring Radioactive Materials (NORM), H2S, CN, etc.
19. Sample Containers. ALS may ship sample containers to the Client's location by the most cost effective means using ALS preferred courier suppliers, within the specified project timeline.
20. Additional Charges. ALS may charge the Client (a) its cost for emergency bottle shipments and shipments to and from a remote site, and (b) where pick up and delivery services are provided, subject in each instance to a minimum charge of \$25.00.
21. Re-Tests. ALS reserves the right to re-test any samples that remains in its possession. Re-tests requested by the Client may be charged.
22. Waiver. The Client is responsible for making any assessment regarding the suitability of the Services and the intended results for the Client's purposes and waives any claims against ALS it may have as a result of the interpretation of the results. The Client shall indemnify ALS for all claims made by any third party against ALS in respect of all losses however arising from the performance of the Services or the use of any report provided in the performance of the Services.
23. Limitation of Liability. In no event shall ALS be liable for any consequential, indirect, incidental, special, exemplary or punitive damages, whether foreseeable or unforeseeable, (including claims for loss of profits or revenue or losses caused by stoppage of other work or impairment of other assets) incurred by the Client arising out of breach or failure of express or implied warranty, breach of contract, breach of warranty, misrepresentation, negligence, strict liability in tort or otherwise. In any event, the liability of ALS to the Client shall be limited to the cost of testing the sample as requested in the chain of custody form under which the sample was originally deposited. For the purposes of this paragraph and paragraphs 8, 15, 16, 22 and 24, as the applicable, "ALS" includes without limitations its directors, officers, employees and affiliates and the "Client" includes without limitation any third party that may have a claim against ALS through the Client.
24. Notice of Liability. Notwithstanding paragraph 23, ALS shall not be liable to the Client unless the Client provides notice in writing to ALS of such loss or damage, together with full particulars thereof, within 30 days of the Client's receipt of the report of the analysis of the sample giving rise to such liability. The provisions of this paragraph allocate the risk under the Agreement between the Client and ALS, and the fees to be paid by the Client to ALS reflect this allocation of risks and the limitations of liability in this Agreement.
25. Entire Agreement. The Agreement is the entire agreement between the parties and supersedes and takes precedence over any terms and conditions contained in any documentation provided by the Client. ALS's execution of any subsequent documentation from the Client only acknowledges receipt and not acceptance of any terms or conditions therein. If there is a conflict between these terms and conditions and any other Agreement document, these terms and conditions prevail.
26. Term. Providing the first batch of samples to which this tender refers is submitted within three months of the starting date of this quotation, the following prices, terms and conditions will remain firm until the closing date. This offer, and terms and conditions will automatically lapse if the offer has not been accepted, and samples not delivered to ALS, within the Closing Date.
27. Termination. (a) Either party may terminate this Agreement for any reason by giving the other party thirty (30) days written notice (Notice Period). (b) If the Agreement is terminated pursuant to clause (a), then the Client must pay ALS for all Services performed up to the expiry of the Notice Period.

BluMetric Environmental Inc.

1682 Woodward Drive
Ottawa, Ontario
Canada K2C 3R8
Tel: 613.839.3053
Fax: 613.839.5376
ottawa@blumetric.ca

4 Cataragui Street
The Tower, The Woolen Mill
Kingston, Ontario
Canada K7K 1Z7
Tel: 613.531.2725
Fax: 613.531.1852
kingston@blumetric.ca

209 Frederick Street
Unit 3B
Kitchener, Ontario
Canada N2H 2M7
Tel: 519.742.6685
kitchener@blumetric.ca

825 Milner Avenue
Toronto, Ontario
Canada M1B 3C3
Tel: 877.487.8436
toronto@blumetric.ca

102-957 Cambrian Heights Drive
Sudbury, Ontario
Canada P3C 5S5
Tel: 705.525.6075
Fax: 705.525.6077
sudbury@blumetric.ca

PO Box 36
Shebandowan, Ontario
Canada P0T 2T0
Tel: 807.707.1687
thunderbay@blumetric.ca

4-41 de Valcourt Street
Gatineau, Quebec
Canada J8T 8G9
Tel: 819.243.7555
Fax: 819.243.0167
gatineau@blumetric.ca

276 Saint-Jacques Street
Suite 818
Montreal, Quebec
Canada H2Y 1N3
Tel: 514.844.7199
Fax: 514.841.9111
montreal@blumetric.ca

4916 – 49th Street
Yellowknife, NT
Canada X1A 1P3
Tel: 867.873.3500
Fax: 867.873.3499
yellowknife@blumetric.ca

202b Strickland Street
Whitehorse, Yukon
Canada Y1A 2J8
Tel: 867.689.8465
whitehorse@blumetric.ca

www.blumetric.ca