

**ENVIRONMENTAL MONITORING PROGRAM  
RESOLUTE BAY AIRPORT LANDFILLS, RESOLUTE BAY, NUNAVUT**

**PSPC PROJECT R125284.001  
CUSTODIAN: TRANSPORT CANADA**

Prepared for:



**Public Services and Procurement Canada      Services publics et  
Approvisionnement Canada**  
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Internal Project Number: 230427

December 13, 2023

## EXECUTIVE SUMMARY

The BLM-KEL-60 Corporation (JV-60) joint venture was retained by Public Services and Procurement Canada (PSPC), on behalf of Transport Canada (TC), to complete the third year (2023-2024) Post-Remediation Environmental Monitoring Program (EMP) at the Resolute Bay Airport Landfills (the “Site”). The project was completed in accordance with the Nunavut Water Board (NWB) Amended Renewal Water Licence (WL) 1BR-RBL1929. JV-60 is comprised of BluMetric Environmental Inc (BLM), AccuTech Consulting Group and Kitkmeot Environmental Ltd. (KEL) with BLM acting as the Administrative Lead for the joint venture. For the purposes of this contract, BLM delivered environmental services with KEL (partner) providing logistical support and TREK Geotechnical Inc. (TREK, subcontractor) providing geotechnical expertise.

The Site is located adjacent to the Resolute Bay airport, approximately five kilometres (km) to the northwest of Resolute, in the Qikiqtaaluk Region on Cornwallis Island, Nunavut. Three Areas of Concern (AECs) are identified for the Site, as follows:

- AEC 1 Solid Waste Landfill
- AEC 2 Historical Landfill
- AEC 3 Former Vehicle and Waste Metal Storage Area

The program consisted of a preliminary (at freshet) and comprehensive visual inspection of the three historical landfills at AEC 1, AEC 2, and AEC 3, inspection of and downloading data from three thermistors at AEC 1, monitoring and attempted sampling of groundwater at 15 monitoring wells throughout the three landfill areas, and surface water sampling at downgradient locations from the three landfill areas. Field work for the freshet monitoring event was conducted by Ms. Doreen MacDonald (local staff) on July 7 and 8, 2023, and the comprehensive monitoring/sampling event was conducted by Ms. Kim Carlton (BLM) between July 20 and 24, 2023 with support from Mr. Peter Noah (local field assistant/wildlife monitor).

The overall conclusion is that the landfills appear to be functioning as designed. Visual inspections indicated a rating of “acceptable” for all three landfills. Details are discussed below.

### *AEC 1*

In general, AEC 1 was observed to have similar (not worsening) conditions compared to 2022. Small amounts of surficial metal debris (possibly litter) and possible exposed metal debris were observed at the top of the mound, and there was pooling water at the toe of the landfill (i.e., wet around RBL-2 and RBL-3). Evidence of historic overflow from the municipal sewage ponds was noted off-site and southeast of AEC 1.

Thermistor data at AEC 1 indicates that the temperatures recorded at depth correlate to the rise and fall of atmospheric temperatures in Resolute, which is similar to previous observations. As expected, and as seen in previous monitoring events (Dillon Outcome Joint Venture [DOJV], 2023), temperatures near surface fluctuate the most as the probe is physically closer to, and therefore more exposed to, atmospheric temperatures, while deeper temperatures vary less annually. Permafrost appears to have aggregated from 1.5 to 2.75 m over the first and second winter after thermistor installation, and the active layer is between 1.25 and 1.50 m, as inferred from plotted thermistor data.

Groundwater could only be collected from three of the four monitoring wells at AEC 1. Analytical results indicate that the concentrations of the chemical parameters analyzed at AEC 1 were below the Ontario Ministry of the Environment, Conservation and Parks (MECP) Table 3 Site Condition Standards (SCS) and the Maximum Allowable Effluent Discharge Concentration as per the DOJV 2023 report and the Nunavut Water Board (NWB) Water Licence letter approving the use of the SCS. It was noted that at RBL-3 and AEC-GW1, the concentrations of F2 were less than the detection limit for the 2023 sampling event, lower than the exceeding concentrations for the previous sampling event. The concentration of total suspended solids (TSS) at AEC-GW1 also did not exceed for 2023, as it did for the previous sampling event.

Surface water was collected from one location downgradient of AEC 1 at RBL-4. The concentration of hexavalent chromium and total copper exceeded the CCME guidelines in this sample. Copper has not exceeded guidelines for previous sampling events. The concentrations of all other analyzed parameters were below the CCME guidelines and the Maximum Allowable Effluent Discharge concentrations as per the NWB Water Licence.

## *AEC 2*

The conditions along the western edge of the AEC 2 landfill were observed to be similar to observations made during the previous year (2022). The isolated stress fractures caused by settlement, the depressions and the exposed metal debris do not appear to have degraded further. The approximate 20 m by 30 m disturbed area with uneven ground and potential gravel removal observed in 2022 appears similar to 2022 but the possible vehicle tracks noted in the 2022 observations were not present in 2023.

All six monitoring wells at AEC 2 were dry and no groundwater samples could be collected.

For surface water, one sample was collected at a similar downgradient location (RBL-8) to the previous event (2022). The concentrations of all analyzed parameters were below applicable guidelines. Comparing 2023 results to previous sampling events, the concentrations of total aluminum, total iron, total lead, ammonia and TSS were significantly lower than the 2022 event.

### AEC 3

At AEC 3, the isolated slope failure adjacent to the river valley at the north edge of the landfill area remains mostly unchanged since the 2022 and 2021 observations, with the addition of drainage channels that were observed on the slope during the 2023 Site visit.

All five monitoring wells at AEC 3 were dry and no groundwater samples could be collected.

Two surface water samples were collected from the McMaster River at locations downgradient of AEC 3 similar to the 2022 event. The locations were different for the 2021 event, when the samples were collected from ponded water to the south of AEC 3 due to the presence of polar bears in the river valley. The concentrations of all analyzed parameters were below applicable guidelines. At RBL-13, the concentrations of ammonia, total aluminum and total iron were similar to the previous monitoring event and were significantly lower than the exceedances observed in the 2021 monitoring event. At RBL-16, the concentrations of ammonia and total aluminum were similar to the previous monitoring event and were significantly lower than the exceedances observed in the 2021 monitoring event.

The following is recommended by JV-60:

- No repairs to the landfills are recommended at this time. The recent observations of minor exposed debris at AEC 2 and AEC 3 are acceptable and do not currently require action. Visual inspections should continue per the Post-Closure Monitoring Plan, and consideration should be given to repairs in the event of new or different observations that suggest the severity rating has progressed from “acceptable” to “marginal” for any feature. Any observations considered in the severity rating to be “significant” should be flagged for immediate action.
- The monitoring wells and thermistors remain in good condition. Staff inspected the monitoring well identified in 2022 as being damaged and did not identify any damage or blockage requiring action. No repairs to the monitoring wells or thermistors are recommended at this time.
- While challenges remain with securing adequate groundwater samples from the wells, this is attributed to Site and climatic conditions and are unlikely to be addressed through any changes to the monitoring wells or sampling protocols. No changes to the monitoring program are recommended at this time.
- Continued monitoring of the landfills consistent with the Post-Closure Monitoring Program is recommended, including a freshet monitoring event, and a second monitoring event, approximately one month later that also includes surface water and groundwater monitoring.
- Following the 2024 sampling event, some sampling locations will have the minimum four data points required for Mann Kendall trend analysis and should be considered in 2024 where applicable. Trend analysis may be able to modify or eliminate some or all of the monitoring program going forward, depending on the availability of data and the observed trends.



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## 1. INTRODUCTION

The BLM-KEL-60 Corp. (JV-60) joint venture was retained by Public Services and Procurement Canada (PSPC) Western Region, on behalf of Transport Canada (TC), to conduct the 2023-2024 Post-Remediation Environmental Monitoring Program (EMP) at the Resolute Bay Airport Landfills (the “Site”) in accordance with the Nunavut Water Board (NWB) Amended Renewal Water Licence (WL) 1BR-RBL1929. The JV-60 is comprised of BluMetric Environmental Inc (BLM), AccuTech Consulting Group (Accutech) and Kitkmeot Environmental Ltd. (KEL) with BLM acting as the Administrative Lead for the joint venture. For the purposes of this contract, BLM is delivering environmental services with KEL (partner) providing logistical support and TREK Geotechnical Inc. (TREK, subcontractor) providing geotechnical expertise.

The work was completed in accordance with the Terms of Reference (TOR) entitled “Environmental Monitoring Program at the Resolute Bay Airport Landfills, Risk Management and Remediation, Resolute Bay, NU” dated May 2023, Standing Offer Agreement (SOA) EW699-220414, and in accordance with the Nunavut Water Board (NWB) Water Licence 1BR-RBL1929 and the Post Closure Monitoring Plan (Dillon-Outcome Joint Venture [DOJV], 2020).

This report describes the results of the 2023-2024 EMP.

### 1.1 OBJECTIVES OF THE ENVIRONMENTAL MONITORING PROGRAM

The objective of the EMP for the 2023-2024 fiscal year is to meet the annual monitoring and reporting requirements of the NWB Water Licence 1BR-RBL1929. The EMP program follows the requirements of the Post-Closure Monitoring Plan (DOJV, 2020).

JV-60 understands that PSPC may be eligible to modify or terminate the environmental monitoring program based on findings of the Site’s environmental conditions.

### 1.2 SCOPE OF WORK

The scope of work was outlined in the TOR provided to JV60 by PSPC dated May 16, 2023 and is comprised of the following:

#### Pre Field Work

- Review of available reports, files and historical information for project related field activities and reporting including the NWB Water Licence No. 1BR-RB1929
- Obtain all applicable permits

- Submit a Site-specific health and safety plan (SSHASP) to address and mitigate Site-specific hazards as well as define the daily communication procedure (a reduced scope SSHASP was prepared for the freshet monitoring event)
- Submit a detailed Work Plan
- Submit a Letter of Approval from the laboratory for review and approval of the Quality Assurance/Quality Control plan

#### Field Work

- Conduct a general Site reconnaissance and natural environment monitoring to assess trends in the use of the Site by wildlife
- Complete visual integrity monitoring and inspection of landfill cover to assess performance and identify signs of instability or potential risk of failure (once at freshet and once during the main field visit)
- Complete monitoring and sampling of groundwater at monitoring wells at AEC-1, AEC-2 and AEC-3 to address potential groundwater impacts from landfills
- Conduct surface water/seep monitoring to address the potential for surface water impacts from landfills
- Complete thermal monitoring at AEC 1 landfill cap to confirm and track permafrost aggradation
- Document areas of concern with photographs and/or videos
- Survey sampling locations using a handheld GPS device

#### Post Field Work

- Document the field program in an EMP report
- Develop a stand-alone Class B cost estimate associated with recommendations

## **2. BACKGROUND INFORMATION**

### **2.1 SITE DESCRIPTION**

Background information was largely obtained from the DOJV 2023 report and is summarized below.

The legal description for the Site is Lot 1001, Quad 58 F/11, Plan 77590 (Public Works and Government Services Canada, 1994) and has a total area of 2,025 hectares. It is located on Cornwallis Island in the Qikitaalik Region of Nunavut, approximately five kilometers northwest of the Inuit Hamlet of Resolute.

The Site consists of three Areas of Concern (AECs) at the Resolute Bay Airport property (see Table 1 for details). The airport has been in operation since 1949 and is currently owned by the Government of Nunavut (GN). The Site location is provided on Figure 1 in **Appendix A**.

The Terms of Reference indicated that historical environmental investigations at the Site since 2009 identified geotechnical and stability issues for the landfills, and identified contaminants of concern (COCs) above applicable guidelines for soil, sediment, and/or water. A summary of the historical COCs and impacted media is provided in Table 1 below.

**Table 1: Summary of COCs and Impacted Media**

AECs	Location	Years in Operation	COCs	Impacted Media
AEC 1 Solid Waste Landfill (Landfill 1)	Located on airport property approximately 1.8 kilometres (km) northwest of the north end of the airstrip	Developed between the 1960s and 1970s and operated officially until 1995	Metals, petroleum hydrocarbons (PHCs), Polycyclic aromatic hydrocarbons (PAHs), benzene, toluene	Soil, sediment, surface water
AEC 2 Historical Landfill (Landfill 2)	Located approximately 0.5 km west of the airstrip	Operated from 1947 to 1996 and used by Canadian and American military, Transport Canada, and various airport tenants	Metals, PHCs, PAHs, benzene, toluene, ethylbenzene	Soil, groundwater, surface water
AEC 3 Waste metal storage area (WMSA)	Located approximately 2.75 km northwest of the airstrip and on the northern perimeter of the airport property	Operated between the late 1970s to mid-1980s; however, evidence of subsequent waste dumping was found in 2009	Metals, PHCs, PAHs	Soil, waste metal

To the southeast of AEC 1 is an operating municipal sewage lagoon (owned by the Government of Nunavut) that is reportedly operating beyond design capacity and experiences chronic overflow, as per discussion with the local wildlife monitor during the 2023 event and previous reports. Although the sewage lagoon is outside the Site area and therefore outside the scope of work, overflow has the potential to impact the performance of the landfill drainage and contribute to leachate production and evidence of historic overflows were observed while at the Site.

Detailed information on landfill design, environmental investigation and remediation work completed at the AECs, and monitoring activities is provided in the DOJV 2022-2023 EMP report and is not duplicated here.

## 2.2 HISTORICAL CONTEXT

The historical context in the following paragraphs is summarized from the Terms of Reference, Environmental Monitoring Program, Resolute Bay Airport Landfills, Risk Management and Remediation, Resolute Bay, Nunavut, May 16, 2023 and the EMP report completed by DOJV in 2023.

The airport began operations in 1949, and several landfills were developed over time to handle solid waste generated by the airport operations and the development of the Hamlet of Resolute. The three AECs on Site are the result of these landfill operations and include the following:

- AEC 1: A solid waste landfill opened in the 1960s to 1970s and closed in 1995
- AEC 2: An historical landfill operated from 1947 to 1996 by the Canadian and American military, Transport Canada and airport tenants
- AEC 3: An above-ground, waste metal storage area consisting of three areas officially used in the 1970s and 1980s, although there is evidence of use into the 2000s

Various environmental audits and environmental site assessments have occurred at the Site since 1993. In 2009, TC engaged PSPC to assist with remediation of the landfills. Franz Environmental (Franz) completed a Phase I/II ESA in 2010 which was the basis for the Remedial Action Plan (RAP) developed by TC and PSPC in consultation with Franz in 2011-2012. This involved the capping of AEC 1 and 2 with aggregate and without geomembrane materials. Franz completed a data gap analysis and developed design specifications in 2013-14, but execution did not immediately follow. Arcadis Canada (formerly Franz) and then DOJV were engaged to revisit and revise the remediation specifications and oversee the remedial work undertaken in 2018 by Kudlik Construction Ltd. The remedial work included the following:

- Removing surface hazardous and non-hazardous waste from AEC 1, AEC 2 and AEC 3
- Shipping hazardous materials to a licenced, off-Site waste disposal facility
- Consolidating non-hazardous waste from AEC 2 and AEC 3 at AEC 1
- Grading of AEC 1
- Capping of the landfills at AEC 1 and AEC 2
- Construction of swales to promote surface water drainage

DOJV completed a post remediation monitoring report for 2021 and 2022 that were submitted to the NWB to fulfill licence requirements. A copy of the NWB licence is included in **Appendix B**.



## **2.3 SUMMARY OF PREVIOUS MONITORING EVENTS**

Site monitoring was not conducted in 2020 as planned due to COVID-19 restrictions. Year 1 of the environmental monitoring activities was completed in 2021 and Year 2 was completed in 2022, both by DOJV. Previous EMP results are summarized below.

### **2.3.1 Confirmatory Sampling Program for the Resolute Bay Airport Landfill, Resolute Bay, Nunavut. DOJV, March 2022.**

The objective of this confirmatory sampling plan was to evaluate the effectiveness of the recently conducted Site remediation, and was considered Year 1 of the post-remediation EMP.

Field activities were conducted between August 24 and August 29, 2021, and included the following activities:

- Installation of three thermistors at AEC 1
- Monitoring and sampling of 11 groundwater monitoring wells:
  - only six of the 11 wells had enough water to sample
- Sampling at six surface water seep locations
- Visual inspection of AEC 1, AEC 2 and AEC 3

DOJV concluded that the landfills appeared to be functioning as designed, and performance at all three landfills was rated as “acceptable”. It was noted that isolated stress fractures were observed at AEC 2, parallel to the western edge of the landfill, that were attributed to possible sloughing. Isolated slope failure was observed at the northwest side of AEC 3 but was likely attributable to natural sloughing.

Groundwater analytical results indicated exceedances of applicable groundwater guidelines at two monitoring wells for AEC 1 (RBL-3 for PHC F2 and total suspended solids [TSS] and RBL-1 for TSS); at one monitoring well for AEC 2 (RBL-7 for cadmium, lead and TSS); and at one monitoring well for AEC 3 (RBL-14 for TSS).

Surface water analytical results indicated exceedances of applicable water guidelines at AEC 1 (RBL-4 for hexavalent chromium and ammonia), at AEC 2 (RBL-8 for ammonia), and at AEC 3 (RBL-13 for aluminum, iron and ammonia and at RBL-16 for ammonia).

DOJV recommended adjusting the NWB licence requirement to sampling once per year in mid-summer, due to the short field season.

### **2.3.2 Environmental Monitoring Program for the Resolute Bay Airport Landfills, Resolute Bay, Nunavut, Final Report. DOJV, March 2023.**

The Monitoring Program (EMP) followed the Post-Closure Monitoring Plan (DOJV 2020) and the NWB Water Licence 1BR-RB1929. The work involved included monitoring and sampling of groundwater and surface water, visual inspections of the three AECs and monitoring of three thermistors previously installed at AEC 1. Water samples were analyzed in accordance with the NWB Water Licence.

Visual inspections confirmed that the landfills were generally functioning as intended and their performance was rated as “acceptable”. There were some concerns noted at AEC 2 including deterioration of conditions along its western edge, isolated evidence of settling (e.g., stress fractures, depressions, exposed debris) and evidence of some removal of gravel and a 20 X 30 metre (m) disturbed area. An isolated area of slope failure was also noted on the northwest side of AEC 3.

Thermistor monitoring showed that the rise and fall of temperatures within the landfill mirrored the ambient temperatures in Resolute Bay.

Of the fifteen monitoring wells, six wells were dry and only nine could be sampled. All parameters measured were below applicable standards and guidelines except for the following:

- At AEC 1, water collected from two wells (RBL-3 and AEC1-GW1) contained PHC F2 concentrations that exceeded applicable guidelines. Total suspended solids (TSS) at RBL-1 also exceeded the NWB Water Licence effluent guideline.
- At AEC 2, water from three monitoring wells (RBL-7, FL-MW-7/DUP A, 2-MW-8) had PHC F2 concentrations exceeding applicable guidelines. TSS concentrations also exceeded the NWB Water Licence effluent guideline at RBL-7.
- At AEC 3, the concentrations of lead and zinc and exceeded the applicable guidelines at RBL-14.

Recommendations included planning for potential earthworks to repair the issues observed at AEC 2, repairs/unblocking or possible re-drilling of RBL-5, and removing surface water sampling from AEC 3 if surface water was not observed in future sampling events.

### **3. REGULATORY GUIDELINES**

#### **3.1 GUIDANCE DOCUMENTS**

BLM conducted the monitoring and reporting requirements associated with the Site in accordance with the NWB licence and the DOJV Post-Closure Monitoring Plan referred to herein as the long-term monitoring plan (LTMP) with support from KBL and TREK.

Guidance documents and background documents applicable to the Site are listed as follows:

- Terms of Reference (TOR) entitled “Environmental Monitoring Program at the Resolute Bay Airport Landfills, Risk Management and Remediation, Resolute Bay, NU” (May 2023)
- Nunavut Water Board Water Licence 1BR-RBL1929
- Dillon/Outcome Environmental Monitoring Program for Resolute Bay Airport Landfills, Resolute Bay, NU (March 2023)
- Dillon/Outcome Post-Closure Monitoring Plan for Resolute Bay Airport Landfills, Resolute Bay, NU (December 2020)
- CSA Z769-00 Phase II Environmental Site Assessment, Canadian Standards Association (revised 2018)
- Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites, Volumes I and II, Canadian Council of Ministers of the Environment (CCME, 1993)

#### **3.2 APPLICABLE GUIDELINES – OVERVIEW**

As per the LTMP, data was compared to the following guidelines and standards to determine if and where exceedances exist at the Site:

- Canadian Environmental Quality Guidelines (EQG). Canadian Water Quality Guidelines (CWQG) for the protection of Aquatic Life (freshwater), CCME, 2007 with updates

The CCME Canadian Environmental Quality Guidelines apply to the Site, as approved by the NWB. Further categories for the chosen water quality guidelines were based on the following factors:

- Marine Life guidelines were considered, however the ocean is located more than 675 m to the west of the Site and there are freshwater bodies in close proximity to the Site, therefore freshwater guidelines were used
- Land use is industrial based on historical landfilling activities
- Grain size for soil is coarse, based on historical soil data

- Groundwater is not used as drinking water, as the town obtains drinking water from Char Lake, located more than 2 km east of AEC 2

As directed by NWB, and as applied during previous monitoring events, the Ontario provincial guidelines were also used for comparison for groundwater parameters where federal guidelines do not exist, and are referenced as follows:

- Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*. Ontario Ministry of the Environment, April 15, 2015, Table 3 (Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition)

The use of Ontario guidelines was previously approved by the NWB due to the absence of guidelines for groundwater in the Water Licence, and a letter indicating this approval is provided in the previous EMP report (DOJV, 2023).

### **3.3 APPLICABLE GUIDELINES - GROUNDWATER**

Approval was granted by the NWB to use the Ontario Ministry of Environment, Conservation and Parks (MECP) 2011 Site Condition Standards (SCS, referenced in the previous section) in absence of groundwater guidelines in the Water Licence (DOJV, 2023). Table 3 of the MECP SCS refers to full depth generic site condition standards in a non-potable groundwater environment and are designed to protect the groundwater to surface water pathway. They are considered to be applicable to the Site due to the following:

- Municipal drinking water is supplied to the town by a drinking water system, i.e., drinking water for Resolute is obtained from Char Lake, located more than 2 km east of AEC 2
- There are no potable water wells located within 250 m of the Site boundary.

### **3.4 APPLICABLE GUIDELINES - SURFACE WATER**

Maximum Allowable Effluent Discharge Concentrations (Table 2, summarized below) are provided in the NWB Water Licence No. 1BR-RBL1929 for the following parameters. Where values were not available, the results were compared to the Canadian Council for Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines for the protection of Freshwater Aquatic Life (FWAL, Short Term/Long Term).

**Table 2: Summary of Maximum Allowable Effluent Discharge Concentrations and CCME CEQG**

Parameter	Maximum Allowable Effluent Discharge Concentrations	CCME CEQG FWAL (Short Term/Long Term)
pH	6 to 9	6.5 to 9
Total suspended solids	50 mg/L	NV
Oil and Grease	15 mg/L and no visible sheen	NV
Benzene	0.37 mg/L	NV
Toluene	0.002 mg/L	NV
Ethylbenzene	0.090 mg/L	NV/0.090 mg/L
Total Chromium (VI)	NV	NV/0.001 mg/L
Total Copper	NV	0.00232 – 0.00257 mg/L <sup>(a)</sup>
Total Iron	NV	NV/0.300 mg/L
Total Lead	0.001 mg/L	0.0031 to 0.0053 mg/L <sup>(b)</sup>
Ammonia	NV	NV/0.089 - 0.343 mg/L <sup>(c)</sup>

\*NV - No Value

a) value is determined using sample hardness, all 2023 samples had a hardness between 92 mg/L and 180 mg/L, therefore the equation was used. The guideline used for the 2022 monitoring event of 0.004 mg/L applies only to hardness above 180 mg/L. See [https://ccme.ca/en/chemical/71#\\_aqf\\_fresh\\_concentration](https://ccme.ca/en/chemical/71#_aqf_fresh_concentration) for more information.

b) value is determined using sample hardness, all 2023 sample had a hardness between 60 mg/L and 180 mg/L, therefore the equation was used. The guideline used for the 2022 monitoring event of 0.007 mg/L applies only to hardness above 180 mg/L. See [https://ccme.ca/en/chemical/124#\\_aqf\\_fresh\\_concentration](https://ccme.ca/en/chemical/124#_aqf_fresh_concentration) for more information.

c) value is determined from a table matrix using the pH and the temperature of the sample at the time of sample collection and rounded down to the nearest value (to be conservative). The guideline used for the 2022 monitoring event of 0.0231 mg/L applies only to samples with a pH of 7 and a temperature of 0 degrees Celsius. See [https://ccme.ca/en/chemical/5#\\_aqf\\_fresh\\_concentration](https://ccme.ca/en/chemical/5#_aqf_fresh_concentration) for more information.

Where no effluent guidelines are provided, as was previously noted, the CCME Water Quality Guidelines for the Protection of Freshwater Aquatic Life were used for comparison due to the proximity of freshwater bodies to the Site. Marine guidelines were not considered to be applicable due to the distance of the nearest marine water body from the Site (Resolute Bay, which is approximately 675 m to the west of the Site).

## 4. SITE INVESTIGATION METHODOLOGY

### 4.1 SCHEDULE AND PERSONNEL

The Site was accessed by vehicle and by foot for the freshet visual monitoring that took place July 7 and July 8, 2023. The assessment team for the freshet visit consisted of one Resolute based field assistant/wildlife monitor (Ms. McDonald), who carried out Site observations and photographs. Ms. McDonald received guidance from community members to ensure that the information gathered from the Site was relevant and comprehensive.

The Site was accessed by vehicle for the on-Site comprehensive monitoring that took place between July 20 and 24, 2023). The assessment team consisted of one BLM staff member (Ms. Carlton), and one locally sourced based field assistant/wildlife monitor (Mr. Noah). The main Site visit included a visual inspection of the landfill covers (written observations, photographs, measurements, and survey features where needed), as well as an inspection of wells and thermistors, groundwater and surface water sampling and downloading data from thermistors. Ms. Carlton was supported by engineers in the south and any required training regarding the thermistors was provided to Ms. Carlton prior to the Site visit.

#### **4.2 IMPEDIMENTS AND DEVIATIONS FROM THE WORK PLAN**

The work plan included visual inspection and natural environment monitoring of the landfill areas during freshet and during the comprehensive Site visit, and monitoring/sampling of 15 existing groundwater monitoring wells and four previously identified surface water locations during the comprehensive Site visit only.

The following deviations from the proposed work plan occurred during the sampling events based on site-specific observations:

- Site photographs were not completed for AEC 2 for the freshet event due to miscommunication with the local field assistant
- 12 of the 15 monitoring wells were dry, so only 3 monitoring wells were sampled. All the groundwater samples collected were from AEC 1

#### **4.3 VISUAL INSPECTION**

##### **4.3.1 Landfill Integrity**

The intent of the inspection was to assess the physical integrity of the landfills by observing parameters such as evidence of settlement, erosion, frost action, vegetation, and ponding/seepage of the AECs and surrounding areas. The checklist from the Post-Closure Monitoring Plan (DOJV, 2020) was used as guidance for the visual inspection of the landfills. Photographs and notes of the observations were collected.

The results of the visual inspection were compared to observations from 2021 and 2022 and are presented in Section 5. Table 3 below lists the definitions of landfill descriptors as provided in the DOJV EMP reports dated 2022 and 2023, for reference.

**Table 3: Visual Inspection Report Definitions**

Performance/Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion or settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion, or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion, or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: <ul style="list-style-type: none"> <li>• Debris exposed in erosion channels or areas of differential settlement.</li> <li>• Liner exposed.</li> <li>• Slope failure.</li> </ul>
Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

#### 4.3.2 Natural Environment Monitoring

Doreen McDonald and Peter Noah, in consultation with other residents of Resolute Bay, provided insight into the natural environment and wildlife activity at the Site. Anecdotal information provided was related to the following Site-specific data:

- Wildlife sightings (species, number, general, juveniles, health)
- Other evidence of recent wildlife presence (dropping, tracks, feathers/fur, carcass remains etc.)
- Wildlife activity (summering/nesting/denning, migratory/passing through)
- Qualitative assessments of relative numbers or health vs previous years (more, same, less)
- Revegetation of disturbed areas vs previous years (more, same, less)

Natural environment monitoring observations are provided for the specific AECs in Sections 5 and 6 and on the checklists in **Appendix D**.

#### 4.3.3 Post Visual Inspection Changes

After reviewing the visual inspection sheets, clarification was provided to define the types of debris found onsite. In historical reports all debris found onsite was referred to as debris. Post inspection, the debris onsite was defined further into two categories: “exposed debris” if it originated from the landfill and “foreign debris” if it was offsite garbage that migrated onto Site. Foreign debris is not a sign of landfill failure, whereas significant exposed debris could be.

#### 4.4 THERMAL MONITORING

Thermal monitoring was conducted at the AEC 1 landfill to track and confirm permafrost aggradation in the landfill cap. The three existing thermistors on-Site were located, surveyed, batteries checked, and inspected for any damage prior to downloading the data. This task was undertaken by BLM personnel with support from TREK, who provided training for BLM personnel prior to the Site visit, were available via phone for assistance and troubleshooting as required. The software used for the downloading the logger data was ProLog4.

The locations for the thermistors are detailed in Table 4 below and are shown on Figure 2 in Appendix A.

**Table 4: AEC 1 Thermistor Locations**

Thermistor ID	Northing	Easting	Depth (m bgs)
THRMS-01	8295590	440985	3
THRMS-02	8295607	441055	3
THRMS-03	8295577	441014	3

#### 4.5 GROUNDWATER MONITORING AND SAMPLING

15 monitoring wells were monitored as per the TOR. Only three of the four monitoring wells at AEC 1 contained enough water to collect a groundwater sample. All the monitoring wells at AEC 2 and AEC 3 were dry. The details of the well locations are provided in Table 5 below (as summarized from the previous EMP report, DOJV, 2023) and shown on Figure 2 (AEC 1), Figure 3 (AEC 2) and Figure 4 (AEC 3) in Appendix A.



**Table 5: Monitoring Well Locations**

AEC	Well ID	Northing	Easting	Elevation (m asl)	Description
AEC 1	RBL-1	8295630	441147	66.2	up-gradient of the landfill area
	RBL-2*	8295551	440943	52.2	down-gradient of the landfill area
	RBL-3*	8295608	440901	51.5	down-gradient of the landfill area
	AEC1-GW1*	8295526	441063	NA	down-gradient of the sewage lagoons
AEC 2	RBL-5	8292509	441662	53.1	up-gradient of the landfill area
	RBL-6	8292566	441420	42.7	down-gradient of the landfill area
	RBL-7	8292634	441384	43.2	down-gradient of the landfill area
	FL-MW-6	8292485	441484	NA	down-gradient of the landfill area
	FL-MW-7	8292468	441452	NA	down-gradient of the landfill area
	2-MW-8	8292499	441451	NA	down-gradient of the landfill area
AEC 3	RBL-10	8296242	440493	43.8	up-gradient of the historical waste storage area
	RBL-11	8296265	440383	41.6	down-gradient of the historical waste storage area
	RBL-12	8296335	440450	42.6	down-gradient of the historical waste storage area
	RBL-14	8296449	440682	55.4	down-gradient of the historical waste storage area
	RBL-15	8296468	440635	52.7	down-gradient of the historical waste storage area

Notes:

Coordinates are UTM Zone 15N

\* indicates a groundwater sample was collected at this location. The remainder of monitoring wells were dry.

Prior to purging, depth to groundwater and presence of light non-aqueous phase liquids (LNAPL) if observed were measured. The condition of the monitoring wells was inspected and if damaged, repairs were attempted.

Groundwater sampling was conducted following U.S. EPA Region 1 Low Stress (low flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells (revised September 19, 2017), which minimizes the disturbance of sediment for sample collection and analysis. Because available groundwater has been limited for previous sampling events, purging until stabilization of parameters was considered to be of lower priority than collection of samples. Therefore, for monitoring wells with insufficient recharge or volume to purge, samples would be collected without purging; however, 12 of the 15 monitoring wells had insufficient volume to purge and were identified as dry. At

monitoring wells with sufficient volume to purge (RBL-2, RBL-3, AEC-GW1), samples were collected following parameter stabilization to ensure samples were representative of subsurface conditions. Field forms for the groundwater sampling are provided in **Appendix D**.

Where sufficient water was available, monitoring wells were sampled with dedicated ¼ inch outside diameter (OD) LDPE tubing, a short section of dedicated ¼ inch inside diameter (ID) silicone tubing for the pump head, and a peristaltic pump. The outlet of the peristaltic pump was connected to a multi-parameter water quality instrument via an in-line flow-through cell system for monitoring. This permits for pH, conductivity, temperature, oxygen reduction potential (ORP), dissolved oxygen, and turbidity to be monitored and assessed. Based on previous year's recommendations, and with prior approvals from Airport Operations and Transport Canada, the purged water was collected into a 5-gallon pail and disposed of at the Resolute Landfill Airport Land Treatment Unit.

In addition to groundwater levels and water sampling data, the following items were recorded:

- Information that would assist in interpreting analytical results (such as sediment in monitoring wells, sheen, odours, etc.)
- Changes since previous sampling events
- Anomalies
- Immediate hazards
- Damaged, destroyed or otherwise inaccessible wells
- Field observations indicating the possible presence of contaminants of concern other than those included in the analytical program (to be communicated immediately to the PSPC project manager)

Groundwater samples which were able to be collected were analyzed for the Water Licence parameters listed in Section 4.8. Groundwater analytical results are presented in Section 5.4.

#### **4.6 SURFACE WATER SAMPLING**

Samples were collected from four surface water locations in close proximity to those sampled in previous reports. Details are provided in Table 6 below. Samples collected from these locations were analyzed for the NWB Water Licence parameters listed in Section 4.8.

**Table 6: Surface Water/Seep Locations**

AEC	Surface Water Location ID	Northing	Easting	Description	Notes
AEC 1	RBL-4	8295627	440884	Discharge from the Solid Waste Landfill	
AEC 2	RBL-8	8292688	441366	Discharge from the Historic Landfill	Further downgradient from 2022 location
AEC 3	RBL-13	8296454	440478	Discharge from Former Vehicle and Waste Metal Storage Area (Site 1)	Collected from McMaster River Valley (downgradient)
	RBL-16	8296336	440340	Discharge from the Former Vehicle and Waste Metal Storage Area (Site 2)	

Note:

Coordinates are UTM Zone 15N

Surface water samples were collected manually by dipping a clean, collection bottle without preservative, into the water without disturbing the sediments or vegetation. The water was then decanted into clean, pre-labeled sample bottles prepared by the laboratory. A clean pair of nitrile gloves was used for each sampling location to minimize cross contamination during sample collection.

During sampling, water quality parameters including pH, conductivity, temperature, oxygen reduction potential (ORP), dissolved oxygen and turbidity was monitored using a multi-parameter water quality instrument. Relevant Site observations and field readings were recorded by BLM personnel on a Field Data Form and in their field book, and photographs taken of any notable observations. All surface water samples were placed in a cooler at approximately 4°C for transport to the laboratory.

Surface water sampling locations are presented on Figure 2 (AEC 1), Figure 3 (AEC 2) and Figure 4 in **Appendix A**, and field sampling sheets are presented in **Appendix D**.

#### 4.7 QUALITY ASSURANCE AND QUALITY CONTROL

The QA/QC plan included the use of trip blanks, field blanks and collection of field duplicates, and proper sampling containment, preservation, handling, and transportation. Bureau Veritas (BV), a Standards Council of Canada accredited laboratory, was used for all sample analyses. BLM requested that the lab select method detection limits appropriate to the guidelines specified for the Site assessment. For direct measurements of parameters during the Field Investigation, QA/QC procedures included calibration of measuring devices. Following this QA/QC plan ensured that all collected data, and the decisions based on these data, were technically sound and statistically valid. Detailed information on the QA/QC procedures is discussed below.

The QA/QC approval letter from BV confirming that the QA/QC Program meets CCME requirements for field quality control is provided in **Appendix E**.

#### **4.7.1 Field Methods**

- Clean, disposable, powder-free nitrile gloves were donned prior to the collection of each groundwater and surface water sample. This was done to prevent cross-contamination between samples during collection and handling
- Samples were collected into clean, laboratory-supplied sample containers
- For direct measurements of parameters during field work, equipment was calibrated prior to use.
- Samples were individually, clearly labelled with a unique identification number
- Following collection, samples were stored in coolers with ice packs and shipped to the laboratory as soon as possible. Chain of custody documentation was included with each shipment.
- Approximately 40% of samples were collected as duplicates and analyzed by BV. The relative percent difference (RPD) for sample pairs offers a measure of precision/repeatability of the sampling procedure and analytical technique, heterogeneity of the sample, and representativeness of the sampling location
- Two field blanks were prepared on site by using clean de-ionized or distilled water from sealed, sterile containers provided by BV
- One trip blank was included in the sampling program, supplied by BV, that accompanied the sample shipment and was used to check for background contamination, contamination from transport and handling, and for the presence of container or preservative contamination

#### **4.7.2 Laboratory Methods**

Laboratory quality control consisted of the following methods:

- Analytical method blanks were used at a frequency of one blank per batch of samples
- Analytical duplicates were prepared by BV and included with each batch of samples analyzed by an instrument. Precision is evaluated by calculating an RPD for these samples
- Control spikes were utilized to detect analytical interference associated with the sample matrix. Analytical spikes were generated via the addition of a known quantity of target analyte to a sample of clean matrix or through the use of a known reference standard

#### **4.7.3 Data Validation**

Review of internal laboratory QA/QC reporting was conducted, and a discussion regarding the acceptability (or lack thereof) of the laboratory's QA/QC procedures and results, including any possible impacts to the reliability of, or the interpretation of, the data, is included in Section 8.

The results of field duplicates, field and trip blanks, analytical duplicates, analytical blanks, and control/analytical spikes are also provided in Section 8.

#### 4.7.3.1 Field Duplicates

The collection of duplicate samples provides a measure of precision/repeatability of the sampling procedure and analytical technique, heterogeneity of the sample, and representativeness of the sampling location. Approximately 40% of samples were collected and analyzed as duplicates.

The relative percent difference (RPD) for sample pairs is used to evaluate field duplicate precision:

$$\text{RPD (\%)} = [(Dup1 - Dup2) / (\text{average of } Dup1 + Dup2)] \times 100$$

An RPD is calculated for duplicate samples with concentrations greater than 5 times the method detection limit (MDL). Concentrations less than 5 times the MDL become increasingly imprecise, and, in these cases, the results are not considered sufficiently reliable and an RPD is not reviewed. When the analytical result for one or both of a duplicate pair are less than the RDL (i.e., non-detect), an RPD cannot be calculated.

If duplicates are not within control limits, then they should be reanalyzed because there may be a problem with sample homogeneity. However, in many cases, reanalysis may not be necessary if the outcome of the decision rule is consistent (e.g., if both results are above or below criteria), or if another parameter drives the decision rule. If this is the case, a non-conforming field duplicate can be accepted, but it must be recorded in the appropriate spreadsheet and reported. The calculated RPDs for the data set are discussed in Section 8.2.

## 4.8 LABORATORY ANALYTICAL PROGRAM

Groundwater and surface water samples were submitted for laboratory analyses for the following parameters as specified in the Water Licence:

- General chemistry/routine water parameters: pH, conductivity, total suspended solids, ammonia nitrogen, nitrate-nitrite, oil and grease, total phenols, sulfate, total hardness, alkalinity, sodium, potassium, magnesium, calcium, chloride, phosphorus
- Total metals: aluminum, arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, zinc
- Petroleum hydrocarbons (PHC): PHC F1-F4, polycyclic aromatic hydrocarbons (PAH), benzene, toluene, ethylbenzene, and xylenes (BTEX), visual oil & grease

## 5. SUMMARY OF AEC 1 CONDITIONS

### 5.1 AEC 1 OVERVIEW

The historical landfill at AEC 1 was inspected to assess its physical integrity by looking for evidence of settlement, erosion, frost action, exposed debris, evidence of animal use (e.g., burrows) and seepage and/or ponded water. Other features of interest could include staining, vegetation stress, and/or runoff.

Groundwater samples were collected from monitoring wells RBL-2, RBL-3 and AEC1-GW1. A groundwater sample could not be collected from RBL-1 as it was dry. Surface water sample RBL-4 was collected downgradient of AEC 1, at a similar location to the previous monitoring event for consistency and comparability. Thermistors were also inspected and the data downloaded.

The location of AEC 1 and associated sampling locations is provided on Figure 2 of **Appendix A**.

### 5.2 VISUAL INSPECTION EVALUATION AND STABILITY ASSESSMENT

Ms. Macdonald conducted the freshet visual inspection of AEC 1 and surrounding area on July 7 and 8, 2023. The comprehensive monitoring event was conducted between July 20 and 24, 2023 by Ms. Carlton with support from Mr. Noah. The visual monitoring checklist from the Post Closure Monitoring Plan (Dillon Outcome 2020) was completed and is summarized in Table 7 below and includes observations from 2021 and 2022 for comparison.

Completed field forms for the visual inspections (both freshet and comprehensive Site visits) are provided in **Appendix D**. Definitions for the terminology used in the visual inspection are provided in Section 4.3.1.

**Table 7: Visual Inspection Results for AEC 1**

Feature	Presence (Y/N)	Severity Rating / Extent (2021)	Severity Rating / Extent (2022)	Severity Rating / Extent (2023)
Settlement	N	Not Observed	Not Observed	Not Observed
Erosion	N	Not Observed	Not Observed	Not Observed
Frost Action	N	Not Observed	Not Observed	Not Observed
Animal Borrows	N	Not Observed	Not Observed	Not Observed
Vegetation	Y	Acceptable / Isolated. Near toe of landfill only. No vegetation on landfill cap.	Acceptable / Isolated. Near toe of landfill only. No vegetation on landfill cap.	Acceptable. Near toe of landfill. None observed on the top (landfill cap) or slopes.
Staining	N	Not Observed	Not Observed	Not Observed

Feature	Presence (Y/N)	Severity Rating / Extent (2021)	Severity Rating / Extent (2022)	Severity Rating / Extent (2023)
Vegetation Stress	Y	Not Observed	Not Observed	Acceptable. Some dead plants observed at the toe of the landfill in ponded areas.
Seepage / Ponded Water	Y	Acceptable / Occasional Pooling proximal to the toe landfill in small features and along swale near sewage ponds.	Acceptable / Occasional Pooling proximal to the toe landfill in small features and along swale near sewage ponds.	Acceptable. Some pooling observed at the toe of the landfill.
Exposed Debris	Y	Not Observed	Not Observed	Acceptable / Isolated. Possible exposed metal debris.
Grades/Topography	Y	Acceptable, as per landfill design.	Acceptable, as per landfill design.	Acceptable, as per landfill design.
Distance to downgradient surface water bodies	Y	Occasional. Surface water mapped as previously reported. No new surface water bodies.	Occasional. Surface water as previously reported. No new surface water bodies.	Occasional. Surface water pooling near toe of the landfill (wet around RBL-2 and RBL-3).
Distance to freshwater/marine habitat and habitat usage	Y	Acceptable. Set back from marine discharge.	Acceptable. Set back from marine discharge.	Acceptable. Set back from marine discharge.
Terrestrial Habitat	N	Acceptable. Canadian Geese and scat observed near surface water ponds approximately 200 m south of monitoring well RBL-2.	Not observed	Not observed
Land use	Y	Acceptable. Industrial (non-operational, open, unrestricted Airport property)	Acceptable. Industrial (non-operational, open, unrestricted Airport property)	Acceptable. ATV tracks on top of mound.
Debris	Y	Acceptable. None observed on-site	Not observed	Acceptable. Some evidence of foreign metal debris observed on top of the mound.
Landfill cover	Y	Acceptable, as per landfill design.	Acceptable, as per landfill design.	Acceptable, as per landfill design.
Snow, Sun Exposure, Surface Temperature, Wind effects	N	Not observed. No significant weather-related conditions.	Not observed. No significant weather-related conditions.	Not observed. No significant weather-related conditions.

Feature	Presence (Y/N)	Severity Rating / Extent (2021)	Severity Rating / Extent (2022)	Severity Rating / Extent (2023)
Surface Drainage	Y	Acceptable as per landfill design - drainage via swale system.	Acceptable as per landfill design.	Acceptable. Swale system appears to function properly, no drainage channels on slope.
Sewage Overflow	N	Acceptable, as per landfill design, no sewage overflow was observed on-site.	Acceptable, as per landfill design, no sewage overflow was observed on-site.	Acceptable, as per landfill design, no sewage overflow was observed on-site. Signs of historic overflow was noted off-site and should be monitored to ensure it does not flow on-site.
Potential Percolation into Landfill Cap	Y	Acceptable, as per landfill design, no pooling of water on landfill cap.	Acceptable, as per landfill design, no water pooling on landfill cap.	Acceptable, as per landfill design, no water pooling on landfill cap.
Runoff Diversion	Y	Acceptable. Swales/channels functioning as per landfill design.	Acceptable, as per landfill design.	Acceptable, as per landfill design.
Monitoring Well Condition	Y	Acceptable. Minor repairs to RBL-3 (sand and bentonite added to base to solidify casing).	Acceptable. AEC1-GW1 casing slightly bent. J plug added.	Acceptable. No new items.
<b>Overall Landfill Performance</b>		<b>Acceptable</b>		

Photographs for AEC 1 and a figure indicating the photographs locations and viewpoint directions are provided in **Appendix F**.

### 5.2.1 Vegetation

An area of vegetation growth corresponding to the approximately 75 m by 75 m area as described in the previous monitoring report (DOJV, 2023) was observed near the toe of the landfill and along the southern edge of the landfill, off-Site and downgradient from the sewage ponds. This is consistent with previous observations. Photographs 13, 14 and 15 showing the area are provided in **Appendix F**.

### 5.2.2 Wildlife

Wildlife was not directly observed at AEC 1. Mr. Noah, the local Wildlife Monitor, commented that there were not many animals on-Site, only birds and the occasional fox. Other evidence of wildlife within the confines of the Site (for example, tracks, scat, fur/feathers, carcass remains) was not observed at AEC 1.



Mr. Noah was also commented that the sewage smell from the adjacent sewage lagoons causes locals to avoid the area around AEC 1.

### 5.2.3 Seepage / Ponded Water

Similar to the previous monitoring event (DOJV, 2023), areas of ponded water were observed near the west toe of the landfill. Ground conditions in the ponded areas were wet to the touch and contained mossy vegetation but did not contain sufficient water for sampling. Evidence of staining or product seepage from the landfill was not observed. Photographs 13 and 14 showing the ponded areas are provided in **Appendix F**.

### 5.2.4 Summary

Based on the Site observations, the rating assigned to the AEC 1 landfill was "acceptable". In addition to the general visual inspection, the following items are recommended for observation in subsequent monitoring events:

- Metal surficial debris found at the top of the mound and possible exposed metal debris
- Pooling water at the toe of the landfill (i.e., wet around RBL-2 and RBL-3)

## 5.3 THERMAL MONITORING DATA

Results for the first three years of thermistor monitoring are provided in Table 8 below.

**Table 8: Thermistor Results (August 29, 2021 – July 21, 2023)**

Location	Reported permafrost depth (m bgs)	Depth (Month) with Average Monthly Temperatures above 0°C (m bgs)		
		2021	2022	2023
Thermistor 1	1.7	none	0.5, 0.75, 1.0 (July 2022) 0.5, 0.75, 1.0, 1.25 (Aug 2022) 1.0 (Sept 2022)	0.5 (June 2023) 0.5, 0.75, 1.0 (July 2023)
Thermistor 2	1.3	0.5, 0.75 (Aug 2021)	0.5, 0.75 (July 2022) 0.5, 0.75, and 1.0 (Aug 2022)	0.5, 0.75 (July 2023)
Thermistor 3	1.4	0.5, 0.75, 1.0, 1.25 (Aug 2021)	0.5, 0.75, 1.0 (July 2022) 0.5, 0.75, 1.0, 1.25 (Aug 2022) 1.0 (Sept 2022)	0.5 (June 2023) 0.5, 0.75, 1.0 (July 2023)

The data collected from the thermistors in 2023 (and for previous monitoring events) indicates that the temperatures recorded at depth correlate to the rise and fall of atmospheric temperatures in Resolute. Graphs 1a, 1b, 1c and 1d showing the thermistor data in graphical form are provided in **Appendix G**. As expected, and as seen in previous monitoring events (DOJV, 2023), temperatures near surface fluctuate the most as the probe is physically closer to, and therefore more exposed to, atmospheric temperatures, while deeper temperatures vary less annually.

Based on the thermistor monitoring data, permafrost appears to have aggregated from 1.5 to 2.75 m over the first and second winter after thermistor installation. The data also indicates the active layer (seasonal depth of freeze-thaw) is between 1.25 and 1.50 m. Assessing permafrost aggregation deeper than this is not possible as the thermistor sensors do not extend below 2.75 m.

#### **5.4 AEC 1 GROUNDWATER ANALYTICAL RESULTS**

At AEC 1, three groundwater samples (RBL-2, RBL-3 and AEC1-GW1) and one duplicate sample (DUP A) were collected and analyzed by Bureau Veritas in Ottawa, Ontario for the parameters specified in the NWB Water Licence (listed in Section 4.8). The fourth groundwater well (RBL-1) was dry and no sample was collected.

Concentrations of the chemical parameters analyzed at AEC 1 were below the MECP Table 3 Full Depth Generic Site Condition Standards (SCS) in a Non-Potable Groundwater Condition (Table 3 SCS). In addition, all parameters analyzed were below the Maximum Allowable Effluent Discharge Concentration as per the NWB Water Licence.

The concentrations of benzene, toluene, ethylbenzene, xylenes (BTEX) and PHC fractions F1 to F4 were less than the reported detection limits and none of the measured concentrations exceeded applicable guidelines.

PAH concentrations were detected at RBL-3/RBL-DUPA, for 1-methylnaphthene (0.84 µg/L and 0.61 µg/L, respectively), 2-methylnaphthene (1.40 µg/L and 0.99 µg/L respectively) and naphthalene (0.23 µg/L to 0.17 µg/L), though concentrations were three to four orders of magnitude below the applicable guidelines (1,800 µg/L, 1,800 µg/L and 1,400 µg/L respectively).

The concentrations of total metals, nutrients, routine water parameters, phenols and/or oil and grease were also detectable, with concentrations ranging from zero to three orders of magnitude below the applicable guidelines.

The locations and exceedances for monitoring wells at AEC 1 are presented on Figure 2 in **Appendix A**. Analytical results are provided in Table 2a in **Appendix C** and in laboratory Certificates of Analysis reports in **Appendix E**.

## 5.5 AEC 1 SURFACE WATER ANALYTICAL RESULTS

At AEC 1, one surface water sample was collected at RBL-4, which is anticipated to be hydraulically downgradient of the AEC. The concentrations of BTEX, PHCs, PAHs, oil and grease and phenols were all below the reported detection limits and were therefore below the applicable guidelines. Routine water and/or nutrient parameters also did not exceed applicable guidelines, and concentrations ranged from zero to two orders of magnitude below the applicable guidelines. For total metals, the concentration of hexavalent chromium (1.6 µg/L) exceeded the CCME guideline of 1 µg/L, and the concentration of total copper (2.9 µg/L) exceeded the CCME guideline of 2.57 µg/L. Note that the CEQG total copper guideline is calculated with an equation when the hardness of the water sample is between 92 mg/L and 180 mg/L; water hardness for RBL-4 was 110 mg/L. The concentrations of all other analyzed parameters were below the CCME guidelines and the Maximum Allowable Effluent Discharge concentrations as per the NWB Water Licence.

The concentration of ammonia at RBL-4 in 2021 was 0.33 mg/L and exceeded the CCME guideline. In the following year, the concentration of ammonia was below the reported detection limit and therefore below the guideline. For the 2023 sampling event, the concentration of ammonia was <0.05 µg/L, does not exceed the CCME guideline of 0.089 µg/L, and was consistent with the 2022 monitoring event. Note that the CEQG guideline for ammonia is determined from a table matrix using the pH and the temperature of the sample at the time of sample collection; the field notes indicate that pH for RBL-4 was 8.93 and the temperature was 15.92 degrees Celsius.

The sample locations and exceedances for AEC 1 are presented on Figure 2. The analytical results are presented in Table 2b in **Appendix C** and in the laboratory Certificates of Analysis in **Appendix E**.

## 6. SUMMARY OF AEC 2 CONDITIONS

### 6.1 AEC 2 OVERVIEW

The historical landfill at AEC 2 was inspected to assess its physical integrity by looking for evidence of settlement, erosion, frost action, exposed debris, evidence of animal use (e.g., burrows) and seepage and/or ponded water. Other features of interest could include staining, vegetation stress, and/or runoff. Groundwater samples were not collected from AEC 2 as all monitoring wells were found to be dry. Surface water sample RBL-8 was collected hydraulically downgradient of AEC 2, at a similar location to the previous monitoring event. See Figure 3 of **Appendix A** for the location of Site features and sampling locations.

### 6.2 VISUAL INSPECTION EVALUATION AND STABILITY ASSESSMENT

Ms. Macdonald conducted the freshet visual inspection of AEC 2 and surrounding area on July 7 and 8, 2023. Ms. Carlton conducted the comprehensive monitoring event was between July 20 and 24, 2023 supported by Mr. Noah. The visual monitoring checklist from the Post Closure Monitoring Plan (Dillon Outcome 2020) was completed and is summarized in Table 9 below and includes observations from 2021 and 2022 for comparison.

Completed field forms for the visual inspections (both freshet and comprehensive site visits) are provided in **Appendix D**. Definitions for the terminology used in the visual inspection are provided in Section 4.3.1.

**Table 9: Visual Inspection Results for AEC 2**

Feature	Presence (Y/N)	Severity Rating / Extent (2021 Observations)	Severity Rating / Extent (2022 Observations)	Severity Rating / Extent (2023 Observations)
Settlement	Y	Acceptable / Isolated stress fracture approx. 15 -20 m in length along western edge of landfill, minor cracking observed.	Marginal / Isolated - stress fractures, cracking, and depressions ~ 30 m in length along west crest of landfill. Appeared to be more degraded than previous year (2021).	Acceptable / Isolated - Stress fracture along western edge of landfill, minor cracking observed.
Erosion	N	Not Observed	Not Observed	Not Observed
Frost Action	N	Not Observed	Not Observed	Not Observed
Animal Borrows	N	Not Observed	Not Observed	Not Observed
Vegetation	Y	Acceptable / Isolated. Near toe of landfill only. No vegetation on landfill cap.	Acceptable / Isolated. Near toe of landfill only. No vegetation on landfill cap.	Acceptable - isolated, near toe of landfill.
Staining	N	Not Observed	Not Observed	Not Observed

Feature	Presence (Y/N)	Severity Rating / Extent (2021 Observations)	Severity Rating / Extent (2022 Observations)	Severity Rating / Extent (2023 Observations)
Vegetation Stress	Y	Not Observed. Vegetation downgradient from the toe of landfill	Not Observed. Vegetation downgradient from the toe of landfill	Acceptable. Some vegetation downgradient from the toe of landfill was dead
Seepage / Poned Water	N	Acceptable. Occasional and pooling at toe landfill in small features consistent with previous observations.	Acceptable. Occasional and pooling at toe landfill in small features consistent with previous observations.	Not Observed
Exposed Debris	Y	Acceptable/ Isolated. Domestic debris (very minor) on cap of landfill. Not considered as dumping, possibly windblown debris from community use from surrounding area.	Acceptable / Isolated. A small piece of exposed metal debris was observed in the disturbed area on the west crest of the landfill.	Acceptable / Isolated. Small pieces of exposed metal debris observed in the disturbed area on the west crest/slope of the landfill.
Grades/Topography	Y	Acceptable, as per landfill design.	Acceptable / Isolated. A disturbed area (~20 x ~30 m) with less and uneven gravel (possible vehicle tracks) was noted on west slope of the landfill.	Acceptable. Less gravel on west slope. Disturbed area/possible vehicle tracks noted previously were not present.
Distance to downgradient surface water bodies	N	Occasional. No surface water at toe of landfill. Small pond as previously mapped. No new surface water bodies	Occasional. No surface water at toe of landfill. Small pond as previously mapped. No new surface water bodies	Acceptable. Far enough distance.
Distance to freshwater/marine habitat and habitat usage	Y	Acceptable. Set back from marine discharge	Acceptable. Set back from marine discharge.	Acceptable
Terrestrial Habitat	Y	Acceptable. Arctic fox observed at toe of landfill along access road. Canadian Geese and scat observed near surface water ponds.	None observed	Acceptable. Lemmings observed.
Land use	Y	Acceptable. Industrial (non-operational, open, unrestricted Airport property).	Acceptable. Industrial (non-operational, open, unrestricted Airport property).	Acceptable. Some evidence of tire marks from vehicles around the Site.
Debris	Y	Acceptable. None observed.	None observed	Acceptable. Some foreign debris on west side of the Site.

Feature	Presence (Y/N)	Severity Rating / Extent (2021 Observations)	Severity Rating / Extent (2022 Observations)	Severity Rating / Extent (2023 Observations)
Landfill cover	Y	Acceptable, as per landfill design.	Acceptable / Isolated. A disturbed area (~20 x ~30 m) with less and uneven gravel (possible vehicle tracks) was noted on west slope of the landfill.	Acceptable, as per landfill design. Disturbed area/possible vehicle tracks noted previously were not present.
Snow, Sun Exposure, Surface Temperature, Wind	Y	Acceptable. No significant weather-related conditions	Acceptable. No significant weather-related conditions	Acceptable
Surface Drainage	Y	Acceptable, as per landfill design. Drainage within swale systems, drainage acting as designed	Acceptable, as per landfill design.	Acceptable, as per landfill design.
Surface Water Drainage, Runoff Diversion and Potential Percolation into Landfill Cap	Y	Acceptable. Swales and drainage system operating as designed	Acceptable. Swales and drainage system operating as designed	Acceptable. Swales and drainage system operating as designed
Permafrost Degradation	N	Acceptable. None observed	None observed	Acceptable
Monitoring Well Condition	N	Acceptable. Minor repairs to RBL-6 (sand and bentonite added at base to solidify well casing)	Marginal / Isolated. RBL-5 was broken at surface (likely from snow removal activities), repaired, however, depth is shallow, possibly blocked with soil. The well most likely will not yield water moving forward. Existing well FL-MW-6 was dry and the PVC is loose within the well casing.	Acceptable.
<b>Overall Landfill Performance</b>	<b>Acceptable but with discrete isolated areas and concerns of settlement, cracking, landfill cover and exposed debris</b>			

Photographs for AEC 2 and a figure indicating the photographs locations and viewpoint directions are provided in **Appendix F**.

### 6.2.1 Settlement

The cracking and settlement observed in 2022 at the central area along the western edge of the landfill, resulting in depressions and exposed debris, does not appear to have further deteriorated. This feature is not expected to impact the integrity of the landfill or cover, however further monitoring of this area is recommended. Additional areas of settlement at AEC 2 were not observed.

### 6.2.2 Disturbed Areas

For the 2022 observations, an area of less gravel and uneven topography of approximately 20 m by 30 m was observed along the western slope of the landfill. No significant changes were noted from the 2022 observations.

### 6.2.3 Vegetation

Similar to the previous year observations, one area of vegetation growth was observed near toe of the landfill. While close to the landfill, this area is located south of the access road and downgradient of the landfill area and is technically outside of the Site boundary. As observations from the previous year indicate, the vegetation growth is likely natural and not associated with landfill performance.

### 6.2.4 Wildlife

A direct wildlife observation was made on July 21, 2023, when a lemming was observed on-Site (see July 20, 2023 – General AEC 2 Visual Inspection Matrix in **Appendix D**). Mr. Noah, the Wildlife Monitor, commented that there were not many animals on-Site, only birds and the occasional fox. Other evidence of wildlife at the Site (for example, tracks, scat, fur/feathers, carcass remains) was limited to bones observed near AEC 2.

### 6.2.5 Seepage / Ponded Water

There was no evidence of staining or product seepage from the landfill. Areas of ponded water were observed from the west toe of the landfill as reported in the 2022 observations.

### 6.2.6 Summary

The rating assigned to the AEC 2 landfill was “acceptable” based on the 2023 observations. Isolated areas of exposed debris did not appear to have deteriorated further since the previous monitoring event in 2022. Further monitoring of depressions and partially exposed debris at the central area along the western edge of the landfill should be conducted during future Site visits.

### 6.3 AEC 2 GROUNDWATER RESULTS

All six wells at AEC 2 were dry and no groundwater samples were collected. The locations for monitoring wells at AEC 2 are presented on Figure 3 in **Appendix A**.

### 6.4 AEC 2 SURFACE WATER RESULTS

At AEC 2, surface water sample (RBL-8) and a duplicate (DUP B) were collected at an anticipated hydraulically downgradient location. The concentrations of BTEX, PHCs, PAH, oil and grease and phenols were all below reported detection limits and were therefore also below guidelines. The concentrations of total metals parameters, routine water, and/or nutrient parameters were detected above reported detection limits but were below applicable guidelines.

Comparing 2023 results to previous sampling events, the concentrations of the following parameters were significantly lower: total aluminum (50 µg/L, previously was 180 µg/L), total iron (<100 µg/L, previously was 2,200 µg/L), total lead (<0.5 µg/L, previously was 4.7 µg/L), and TSS (<10 µg/L, previously was 160 µg/L).

The sample locations for surface water at AEC 2 are presented on Figure 3 in **Appendix A**. Analytical results are provided in Table 2b in **Appendix C** and in laboratory Certificates of Analysis reports in **Appendix E**.

## 7. SUMMARY OF AEC 3 CONDITIONS

### 7.1 AREA SUMMARY

The historical landfill at AEC 3 was inspected to assess its physical integrity by looking for evidence of settlement, erosion, frost action, exposed debris, evidence of animal use (e.g., burrows) and seepage and/or ponded water. Other features of interest could include staining, vegetation stress, and/or runoff. Groundwater samples could not be collected from AEC 3 as all five monitoring wells were dry. Surface water samples were collected from RBL-13 and RBL-14, downgradient of AEC 3 and within the McMaster River Valley. The surface water samples were similar in location to the locations from 2022 (sample locations from 2021 were moved due to polar bear observations in the river valley).

See Figure 4 of **Appendix A** for Site details and associated sampling locations.



## 7.2 VISUAL INSPECTION EVALUATION AND STABILITY ASSESSMENT

Ms. Macdonald conducted the freshet visual inspection of AEC 3 and surrounding area on July 7 and 8, 2023. Ms. Carlton conducted the comprehensive monitoring event was between July 20 and 24, 2023 supported by Mr. Noah. The visual monitoring checklist from the Post Closure Monitoring Plan (Dillon Outcome 2020) was completed and is summarized in Table 10 below and includes observations from 2021 and 2022 for comparison.

Completed field forms for the visual inspections (both freshet and comprehensive Site visits) are provided in **Appendix D**. Definitions for the terminology used in the visual inspection are provided in Section 4.3.1.

**Table 10: Visual Inspection Results for AEC 3**

Feature	Presence (Y/N)	Severity Rating / Extent (2021 Observations)	Severity Rating / Extent (2022 Observations)	Severity Rating / Extent (2023 Observations)
Settlement	Y	Acceptable / Isolated. Settlement and slope failure approximately 15 m in length along northern edge of remedial area, with evidence of a minor shallow earth slide. This may have been natural due to proximity to the local valley and stream.	Acceptable / Isolated. Same slope slide as last year. No apparent change.	Acceptable / Isolated. Same slope slide as identified previously, no apparent change.
Erosion	N	Not Observed	Not Observed	Not Observed
Frost Action	N	Not Observed	Not Observed	Not Observed
Animal Borrows	N	Not Observed	Not Observed	Not Observed
Vegetation	N	Not Observed	Not Observed	Not Observed
Staining	Y	Not Observed	Acceptable / isolated. Two small burn pit areas were noted at central area of Site (southwest of RBL-12).	Acceptable / isolated. Two small burn pit areas were noted at central area of Site (southwest of RBL-12).
Vegetation Stress	N	Not Observed	Not Observed	Not Observed
Seepage / Poned Water	N	Acceptable. No water pooling in remedial area. Occasional and pooling south of the remedial area, consistent with previous observations.	Acceptable. No pooling on-Site.	Acceptable. No pooling on-Site.

Feature	Presence (Y/N)	Severity Rating / Extent (2021 Observations)	Severity Rating / Extent (2022 Observations)	Severity Rating / Extent (2023 Observations)
Exposed Debris	Y	Not Observed	Not Observed	Acceptable. Minor presence of metal debris near RBL-14, likely litter.
Grades/Topography	Y	Acceptable, as per landfill design.	Acceptable, as per landfill design.	Acceptable, as per landfill design.
Distance to downgradient surface water bodies	Y	Occasional. No surface water noted downgradient.	Occasional. Surface water within McMaster River Valley sampled to verify.	Occasional. Drainage channels near RBL-14 and RBL-15 to McMaster River.
Distance to freshwater/marine habitat and habitat usage	Y	Acceptable. No flow to valley stream to the North.	Acceptable. Surface water within McMaster River Valley sampled to verify.	Occasional. Valley to McMaster River.
Terrestrial Habitat	Y	Acceptable. Polar bear observed to the northwest of the AEC. Presence of the bear limited taking of observations in valley/stream to north.	Acceptable. No wildlife observed.	Acceptable. No wildlife observed.
Land use	Y	Acceptable. Wildlands.	Acceptable / Isolated. Evidence of burn pits on Site.	Acceptable / Isolated. Evidence of burn pits on Site.
Debris	N	Not Observed	Not Observed	Acceptable. Isolated area of broken glass noted.
Permafrost Degradation	N	Acceptable. None observed.	Acceptable. None observed.	Acceptable. None observed.
Landfill cover	Y	Acceptable, as per landfill design.	Acceptable, as per landfill design.	Acceptable, as per landfill design.
Snow, Sun Exposure, Surface Temperature, Wind	Y	Acceptable. No significant weather-related conditions.	Acceptable. No significant weather-related conditions.	Acceptable. No significant weather-related conditions.
Surface Water Drainage and Potential Percolation into Remedial Excavations	N	Acceptable as per landfill design. No pooling of water on remedial areas or north side of access road.	Acceptable as per landfill design. No pooling of water on remedial areas or north side of access road.	Acceptable as per landfill design. No pooling of water on remedial areas or north side of access road. Evidence of drainage channels near RBL-14 and RBL-15.
Runoff Diversion	Y	Acceptable. No runoff from remedial area.	Acceptable. No runoff from remedial area.	Acceptable. No runoff from remedial area.
Monitoring Well Condition	Y	Good condition – Acceptable. Minor repairs to RBL-10 (sand and	Acceptable. No issues flagged.	Acceptable. No issues noted.

Feature	Presence (Y/N)	Severity Rating / Extent (2021 Observations)	Severity Rating / Extent (2022 Observations)	Severity Rating / Extent (2023 Observations)
		bentonite added to base to solidify well casing)		
<b>Overall Landfill Performance</b>	<b>Acceptable</b>			

Photographs for AEC 3 and a figure indicating the photographs locations and viewpoint directions are provided in **Appendix F**.

### 7.2.1 Settlement

In 2021, an area of natural settlement/slope slide was observed along the central western edge of the remedial area. This area does not appear to have deteriorated compared to observations made in 2022 and remains approximately 15 m in length. In 2023, evidence of drainage channels were observed near monitoring well locations RBL-14 and RBL-15. This natural settlement feature is not anticipated to impact the performance of the landfill cover or remedial work but is recommended for continued monitoring during future sampling events.

### 7.2.2 Staining / Burn Pits

Similar to previous observations (2022), soot and ash were observed as evidence of two small burn pits at the central area of the AEC and southwest of monitoring well RBL-12. An example of the burn pit observation is shown in Photograph 6 in **Appendix F**.

### 7.2.3 Seepage / Ponded Water

Ponded water was not observed within the remediated area of AEC 3 or to the south of the access road. This is consistent with the 2022 observations, although ponded water was observed in 2021. Surface water samples were collected from the McMaster River (downgradient of AEC 3).

#### 7.2.4 Summary

The rating assigned to the AEC 3 landfill was “acceptable” based on the 2023 observations. Isolated areas of settlement did not appear to have deteriorated further since the previous monitoring event in 2022. Metal debris (likely litter) and broken glass was noted. Further monitoring of minor metal debris, settlement areas and burn pits should be conducted for future Site visits.

### 7.3 AEC 3 GROUNDWATER RESULTS

All five wells at AEC 3 were dry and no groundwater samples were collected. The locations for monitoring wells at AEC 3 are presented on Figure 4 in **Appendix A**.

### 7.4 AEC 3 SURFACE WATER RESULTS

At AEC 3, two surface water samples (RBL-13/RBL-DUPC and RBL-16) were collected from the McMaster River, at locations that are anticipated to be hydraulically downgradient of AEC 3. Similar to the 2022 results, the concentrations of BTEX, PHCs, PAHs, oil and grease and phenols were below the reported detection limits and were therefore also below applicable guidelines. Total metals parameters, routine water and/or nutrient parameters had detectable concentrations and did not exceed applicable guidelines.

At RBL-13, the concentrations of ammonia ( $<0.05 \mu\text{g/L}$ ), total aluminum ( $14 \mu\text{g/L}$ ) and total iron ( $<100 \mu\text{g/L}$ ) were similar to the previous monitoring event ( $<0.015 \mu\text{g/L}$ ,  $10 \mu\text{g/L}$ , and  $<60 \mu\text{g/L}$ , respectively) and were significantly lower than the exceedances observed in the 2021 monitoring event ( $0.53 \mu\text{g/L}$ ,  $399 \mu\text{g/L}$ , and  $507 \mu\text{g/L}$ , respectively).

At RBL-16, the concentration of ammonia ( $<0.05 \mu\text{g/L}$ ) was similar to the previous monitoring event ( $<0.015 \mu\text{g/L}$ ), and total aluminum ( $5.6 \text{ mg/L}$ ) was lower than the previous monitoring event ( $34 \mu\text{g/L}$ ). Both were significantly lower than the exceedances observed in the 2021 monitoring event ( $0.85 \mu\text{g/L}$  and  $147 \mu\text{g/L}$ ).

The sample locations for surface water at AEC 3 are presented on Figure 4 in **Appendix A**. Analytical results are provided in Table 2b in **Appendix C** and in laboratory Certificates of Analysis reports in **Appendix E**.

## 8. QA/QC RESULTS

The QA/QC plan included the use of field blanks, trip blanks and collection of blind field duplicate (BFD) samples, proper sampling containment, preservation, handling, and transportation. BV Laboratories, a Standards Council of Canada accredited laboratory, was used for all sample analyses. BLM requested that the lab select method detection limits appropriate to the guidelines specified for the site assessment. For direct measurements of parameters during the Field Investigation, QA/QC procedures included calibration of measuring devices. Following this QA/QC plan ensured that all collected data, and the decisions based on these data, are technically sound and statistically valid. Detailed information on the QA/QC procedures is discussed below.

### 8.1 SAMPLE MANAGEMENT AND QUALITY CONTROL

Samples were collected into clean sample containers provided by the laboratory. Each sample was clearly labeled with a unique identification number. Once collected, samples were stored in coolers with ice packs and shipped to the laboratory as soon as possible. Chain of custody documentation was completed for each shipment, and is attached in **Appendix E**.

Reported detection limits for total selenium and total mercury were above applicable guidelines for all samples; the analysis was re-run to lower detection limits. Sample AEC1-GW1 was also re-run for PAH, and the required re-extraction was analyzed past the recommended hold times. As reported by the laboratory on the Certificate of Analyses, "Exceedance of hold times increases the uncertainty of the test results but does not necessarily imply that results are compromised". Also of note was that nitrite/nitrate samples required dilution due to colour interferences and detection limits were adjusted accordingly, and coolers were measured above the recommended temperatures of 10 degrees Celsius.

Further details on laboratory QA/QC is provided in Section 8.4.

### 8.2 FIELD DUPLICATES

Blind field duplicate (BFD) samples were collected to demonstrate that the field sampling techniques utilized by JV-60 personnel are capable of yielding reproducible results. BFDs were collected from the same location and at the same time as the original sample and submitted to the laboratory under a "blind label" for the same analyses as the original sample. A collection frequency of 33.3% of samples was achieved for groundwater and 50% for surface water, greater than the ten percent (10%) as recommended by CCME 2016.

One groundwater BFD was collected (RBL-DUPA, matching sample RBL-3 at AEC 1). The RPD value calculated for total copper was 67%, above the CCME recommendation of 40%, and indicating potential heterogeneity in the groundwater sample. This is possibly due to greater sediment content in the sample, due to limited water supply in the wells. There was no exceedance for total copper in this sample or the duplicate pair, and this result is not expected to change the interpretation of the groundwater sampling results for AEC 1. The RPD values calculated for this duplicate pair were below the CCME recommendation of 40% for all remaining parameters.

Two surface water BFDs were collected (RBL-DUPB, matching sample RBL-8 at AEC 2 and RBL-DUPC, matching sample RBL-13 at AEC 3). For RBL-DUPB, the RPD value calculated for ionic balance was 58%, above the CCME recommendation of 40%. Ionic balance is a calculated parameter and RPD methodology is not considered to be applicable to this parameter, and the individual ions contributing to this calculation did not have RPDs above 40%. The RPD values calculated for these duplicate pairs were below the CCME recommended 40% for all remaining parameters.

Groundwater RPD results are presented in Table 2a and surface water RPD results are presented in Table 2b in **Appendix C**.

### 8.3 FIELD/TRIP BLANKS

JV-60 personnel prepared two field blank samples in the field to provide a measure of how “clean” the water sampling techniques are, and whether cross-contamination or contamination from exposure to the air has occurred. Field blanks were prepared by filling laboratory supplied bottles using deionized water also supplied by the laboratory. The field blanks were labelled appropriately, and submitted for analysis of BTEX, PHC F1-F4 and PAHs. Laboratory analytical results indicated the reported concentrations of BTEX, PHC F1-F4 and PAH parameters were below the reported detection limits, indicating that sample handling and sampling equipment did not influence the analytical results in the program.

The laboratory supplied one trip blank that accompanied the shipment to and from the Site, to check for background contamination, contamination from transport and handling, or for the presence of container or preservative contamination. The trip blank was submitted for analysis of BTEX and PHC F1-F4, and analytical results indicated the reported concentrations of BTEX and PHC parameters were below the reported detection limits. The trip blank results indicate that shipping and handling of the samples after sampling did not influence the analytical results.

The laboratory analytical results for the field and trip blanks are provided in Table 2a in **Appendix C**.

#### 8.4 LABORATORY QA/QC

Delays in shipping were anticipated due to the remoteness of the Site, therefore the holding times for some parameters were expected to be exceeded. For volatile constituents, exceeding hold times can bias a result low as VOCs have more time to degrade. JV-60 reviewed the laboratory QA/QC contained in the Certificates of Analysis and the following was noted:

- Job Number C3M6596:
  - Detection limits for nitrate and nitrite at RBL-2 were raised due to colour interference
  - Detection limits for total mercury and total selenium were lowered by request, indicating higher uncertainty for measurements between MDL and RDL
  - Benzo(a)pyrene at AEC-GW1 was re-analyzed past hold time due to required re-extraction.
  - Temperatures of the coolers were above 10°C upon receipt by the laboratory; this was due to shipping time from the remote site and warm summer temperatures
  - Method blanks or RPDs were outside control limits at RBL-2, RBL-3 and RBL-4, RBL-DUPB, RBL-DUPC and FIELD BLANK 1, however the overall quality control met acceptability criteria

Overall, the laboratory QA/QC indicates that there may be an increase in the uncertainty for the samples and analyses mentioned in the list above; however, this does not necessarily mean that the analytical results are compromised. The laboratory analytical results are considered to be acceptable since the overall quality control for the analyses met the laboratory acceptability criteria.

The analytical results are included in the laboratory certificates of analysis provided in **Appendix E**.

#### 9. CONCLUSIONS AND RECOMMENDATIONS

JV-60 was retained by PSPC, on behalf of TC, to complete the third year (2023-2024) Post-Remediation EMP) at the Resolute Bay Airport Landfills Site.

The program consisted of a preliminary and comprehensive visual inspection of the three historical landfills at AEC 1, AEC 2, and AEC 3, the inspection and downloading data from three thermistors at AEC 1, the monitoring and attempted sampling of groundwater at 15 monitoring wells and surface water sampling at downgradient locations from the three landfill areas. Field work for the preliminary (freshet) monitoring event was conducted by Ms. MacDonald (local staff) on July 7 and 8, 2023, and the comprehensive monitoring event and associated sampling was conducted by Ms. Carlton (BLM) with support from Mr. Noah between July 20 and 24, 2023.

The overall conclusion is that the landfills appear to be functioning as designed. Visual inspections indicated a rating of “acceptable” for all three landfills. Details are discussed below.

#### *AEC 1*

In general, AEC 1 was observed to have similar (not worsening) conditions compared to 2022 . Small amounts of surficial metal debris (possibly litter) and possible exposed metal debris were observed at the top of the mound, and there was pooling water at the toe of the landfill (i.e., wet around RBL-2 and RBL-3). Evidence of historic overflow from the municipal sewage ponds was noted off-site and southeast of AEC 1.

Thermistor data at AEC 1 indicates that the temperatures recorded at depth correlate to the rise and fall of atmospheric temperatures in Resolute, which is similar to previous observations. As expected, and as seen in previous monitoring events (Dillon Outcome Joint Venture [DOJV], 2023), temperatures near surface fluctuate the most as the probe is physically closer to, and therefore more exposed to, atmospheric temperatures, while deeper temperatures vary less annually. Permafrost appears to have aggregated from 1.5 to 2.75 m over the first and second winter after thermistor installation, and the active layer is between 1.25 and 1.50 m, as inferred from plotted thermistor data.

Groundwater could only be collected from three of the four monitoring wells at AEC 1. Analytical results indicate that the concentrations of the chemical parameters analyzed at AEC 1 were below the Ontario Ministry of the Environment, Conservation and Parks (MECP) Table 3 Site Condition Standards (SCS) and the Maximum Allowable Effluent Discharge Concentration as per the DOJV 2023 report and the Nunavut Water Board (NWB) Water Licence letter approving the use of the SCS. It was noted that at RBL-3 and AEC-GW1, the concentrations of F2 were less than the detection limit for the 2023 sampling event, lower than the exceeding concentrations for the previous sampling event. The concentration of total suspended solids (TSS) at AEC-GW1 also did not exceed for 2023, as it did for the previous sampling event.

Surface water was collected from one location downgradient of AEC 1 at RBL-4. The concentration of hexavalent chromium and total copper exceeded the CCME guidelines in this sample. Copper has not exceeded guidelines for previous sampling events. The concentrations of all other analyzed parameters were below the CCME guidelines and the Maximum Allowable Effluent Discharge concentrations as per the NWB Water Licence.

#### *AEC 2*

The conditions along the western edge of the AEC 2 landfill were observed to be similar to observations made during the previous year (2022). The isolated stress fractures caused by settlement, the depressions and the exposed metal debris do not appear to have degraded further. The approximate 20 m by 30 m disturbed area with uneven ground and potential gravel removal observed in 2022 appears similar to 2022 but the possible vehicle tracks noted in the 2022 observations were not present in 2023.



All six monitoring wells at AEC 2 were dry and no groundwater samples could be collected.

For surface water, one sample was collected at a similar downgradient location (RBL-8) to the previous event (2022). The concentrations of all analyzed parameters were below applicable guidelines. Comparing 2023 results to previous sampling events, the concentrations of total aluminum, total iron, total lead, ammonia and TSS were significantly lower than the 2022 event.

### *AEC 3*

At AEC 3, the isolated slope failure adjacent to the river valley at the north edge of the landfill area remains mostly unchanged since the 2022 and 2021 observations, with the addition of drainage channels that were observed on the slope during the 2023 Site visit.

All five monitoring wells at AEC 3 were dry and no groundwater samples could be collected.

Two surface water samples were collected from the McMaster River at locations downgradient of AEC 3 similar to the 2022 event. The locations were different for the 2021 event, when the samples were collected from ponded water to the south of AEC 3 due to the presence of polar bears in the river valley. The concentrations of all analyzed parameters were below applicable guidelines. At RBL-13, the concentrations of ammonia, total aluminum and total iron were similar to the previous monitoring event and were significantly lower than the exceedances observed in the 2021 monitoring event. At RBL-16, the concentrations of ammonia and total aluminum were similar to the previous monitoring event and were significantly lower than the exceedances observed in the 2021 monitoring event.

The following is recommended by JV-60:

- No repairs to the landfills are recommended at this time. The recent observations of minor exposed debris at AEC 2 and AEC 3 are acceptable and do not currently require action. Visual inspections should continue per the Post-Closure Monitoring Plan, and consideration should be given to repairs in the event of new or different observations that suggest the severity rating has progressed from “acceptable” to “marginal” for any feature. Any observations considered in the severity rating to be “significant” should be flagged for immediate action.
- The monitoring wells and thermistors remain in good condition. Staff inspected the monitoring well identified in 2022 as being damaged and did not identify any damage or blockage requiring action. No repairs to the monitoring wells or thermistors are recommended at this time.
- While challenges remain with securing adequate groundwater samples from the wells, this is attributed to Site and climatic conditions and are unlikely to be addressed through any changes to the monitoring wells or sampling protocols. No changes to the monitoring program are recommended at this time.

- Continued monitoring of the landfills consistent with the Post-Closure Monitoring Program is recommended, including a freshet monitoring event, and a second monitoring event, approximately one month later that also includes surface water and groundwater monitoring.
- Following the 2024 sampling event, some sampling locations will have the minimum four data points required for Mann Kendall trend analysis and should be considered in 2024 where applicable. Trend analysis may be able to modify or eliminate some or all of the monitoring program going forward, depending on the availability of data and the observed trends.

## 10. CLOSURE

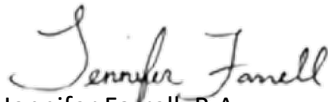
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BLM-KEL-60 Corporation makes no warranty as to the accuracy or completeness of the information provided by others, or of conclusions and recommendations predicated on the accuracy of that information.

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BLM-KEL-60 Corporation accepts no responsibility for any loss or damages suffered by any unauthorized third party as a result of decisions made or actions taken based on this report.

Respectfully submitted,



Jennifer Farrell, B.A.  
Environmental Scientist



Jaclyn Kalesnikoff, B.Sc., P.Geo. (NAPEG)  
Senior Environmental Scientist



Mark Somers, M.Eng., P.Eng. (NAPEG)  
Senior Engineer, Manager Environmental Engineering and Compliance



Wayne Ingham, HED, Ph.D.  
Manager, Director and Vice President  
**BLM-KEL-60 Corporation**

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## APPENDIX A

### Figures





LEGEND

Landfill Locations

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

**Public Services and Procurement Canada**

PROJECT

**Resolute Bay Landfills Monitoring**

TITLE

**Site Location**

**BLM-KEL-60 Corporation**

30b Mitik Street  
Cambridge Bay, NU X0B 0C0

PROJECT # <b>230427</b>		DATE <b>November 24, 2023</b>	
DRAWN <b>ZS</b>	CHECKED <b>JF</b>	FIG NO. <b>01</b>	REV <b>0</b>





Sample ID	CCME CEQG	RBL-4
Laboratory ID	FWAL *	WNL674
Sampling Date	(Short Term/Long Term)	24-Jul-23
Chromium (VI)	NV/1	1.6
Total Copper	2.57	2.9

LEGEND

- Monitoring Well
- Surface Water Sample Location
- Thermistor
- Other
- Sample Exceeds Guidelines
- Sample Below Guidelines

Notes:

Guideline Exceedance

Guideline CCME Water Quality for the Protection of Aquatic Life, Freshwater Pathway (Marine Pathway excluded)

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.

1:1,310

CLIENT

Public Services and Procurement Canada

PROJECT

Resolute Bay Landfills Monitoring

TITLE

AEC 1: Inactive Solid Waste Landfill Sampling Locations and Analytical Results

BLM-KEL-60 Corporation

30b Mitik Street  
Cambridge Bay, NU X0B 0C0

PROJECT # 230427		DATE November 24, 2023	
DRAWN ZS	CHECKED JF	FIG NO. 02	REV 0





LEGEND

- Monitoring Wells
- Surface Water Sampling Location
- Sample Below Guidelines
- Sample Exceeds Guidelines
- Other

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.

1:2,100

CLIENT

Public Services and Procurement Canada

PROJECT

Resolute Bay Landfills Monitoring

TITLE

AEC 2: Historical Landfill Sampling Locations and Analytical Results

BLM-KEL-60 Corporation

30b Mitik Street  
Cambridge Bay, NU X0B 0C0

PROJECT # 230427		DATE November 24, 2023	
DRAWN ZS	CHECKED JF	FIG NO. 03	REV 0





LEGEND

- Monitoring Wells
- Surface Water Location
- Other
- Area of Environmental Concern
- Airport Property Boundary (approximate)
- Watercourse
- Sample Below Guidelines
- Sample Exceeds Guidelines

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.

037.575Metres

1:1,567

N

W

E

S

CLIENT

Public Services and Procurement Canada

PROJECT

Resolute Bay Landfills Monitoring

TITLE

AEC 3: Former Vehicle and Waste Metal Storage Area

Sampling Locations and Analytical Results

BLM-KEL-60 Corporation

30b Mitik Street

Cambridge Bay, NU X0B 0C0

PROJECT #		DATE	
230427		November 24, 2023	
DRAWN	CHECKED	FIG NO.	REV
ZS	JF	04	0

C:\SP\Blumetric Environmental\Geomatics - GIS (1)\GIS\_PROJECTS\230000\230427 - PR01296 - JV60\SPC - Resolute Bay Airport Landfill Monitoring\APRX\2023-11-24\230427\_ResoluteBayAirport.aprx



## **APPENDIX B**

NWB Amended Water Licence



ᓄᓇᓂᓪ ᐃᓕᓂᓪᓴᓪ ᓴᓂᓕᓂᓪᓴᓪ  
NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

**File No.: 1BR-RBL1929**

May 13, 2019

Holly Poklitar  
Kelly Hunnie  
Transport Canada  
344 Edmonton St  
Winnipeg, MB R3C 0P6

Email: [holly.poklitar@tc.gc.ca](mailto:holly.poklitar@tc.gc.ca)  
[kelly.hunnie@tc.gc.ca](mailto:kelly.hunnie@tc.gc.ca)

**RE: NWB Amended Renewal Water Licence No. 1BR-RBL1929**

---

Dear Holly Poklitar, Kellie Hunnie:

Please find attached Licence No. 1BR-RBL1929 issued to Transport Canada by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)*. The terms and conditions of the attached Licence related to the use of Water and the deposit of Waste are an integral part of this approval.

If the Licensee contemplates the continuing of this Undertaking after the Water Licence expires, it is the responsibility of the Licensee to apply to the NWB for a renewal water licence. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the renewal Water Licence. Note that if the Licence expires before the NWB issues a new one, then the use of Water and the deposit of Waste must cease, or the Licensee may be in contravention of the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)*. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least **three (3) months** prior to the Licence expiry date. It should be noted that in accordance with s. 75(1)(a) of the *Nunavut Planning and Project Assessment Act (NuPPAA)*, the Board is not allowed to issue a permit or authorization for any project proposal that has not been submitted to the Nunavut Planning Commission (NPC) in accordance with s. 76 of *NuPPAA*.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public's interest, to hold a public hearing. The Licensee should submit applications for

amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment, however, a minimum of **sixty (60) days** is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and are acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received by CIRNAC on issues identified. This information is attached for your consideration.<sup>1</sup>

Sincerely,

---

Lootie Toomasie  
Nunavut Water Board,  
Chair

LT/ak/rqd

Enclosure: Renewal Licence No. 1BR-RBL1929

Comments – CIRNAC

Cc: Distribution List – Qikiqtani

---

<sup>1</sup> Crown-Indigenous and Northern Affairs Canada (CIRNAC), March 8, 2019.

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## DECISION

### LICENCE NUMBER: 1BR-RBL1929

This is the decision of the Nunavut Water Board (NWB) with respect to an application dated January 31, 2019 for a renewal of a Water Licence made by:

#### TRANSPORT CANADA

to allow for the deposit of Waste associated with the Resolute Bay Landfill Remediation Project located within the Qikiqtani Region, Nunavut, generally located at the geographical coordinates as follows:

Project Extents:

Latitude: 74° 44' 44.77" N	Longitude: 94° 01' 55.13" W
Latitude: 74° 44' 52.46" N	Longitude: 95° 01' 20.17" W
Latitude: 74° 42' 48.04" N	Longitude: 94° 58' 40.22" W
Latitude: 74° 42' 45.01" N	Longitude: 95° 00' 09.30" W

## DECISION

After having been satisfied that the Application is for a proposal that is in conformity with the North Baffin Regional Land Use Plan subject to the attached requirements as determined by the Nunavut Planning Commission (NPC)<sup>1</sup> and as determined by the Nunavut Impact Review Board (NIRB)<sup>2</sup>, a review of the Project is not required in accordance with s. 92(1)(a) of *NuPPAA*, subject to the terms and conditions recommended by NIRB's Screening Decision Report, the NWB decided that the application could proceed through the regulatory process. In accordance with s. 55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWSRTA or Act)* and Article 13 of the *Nunavut Agreement*, public notice of the Application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *Nunavut Agreement* and of the *Act*, waived the requirement to hold a public hearing, and determined that:

**Amended Renewal Licence No. 1BR-RBL1929 be issued subject to the terms and conditions contained therein (Motion #: 2019-B1-004).**

---

<sup>1</sup> Nunavut Planning Commission, Conformity Determination, March 27, 2018.

<sup>2</sup> Nunavut Impact Review Board (NIRB) Screening Decision, June 22, 2018.

Signed this 13<sup>th</sup> day of May, 2019 at Gjoa Haven, NU.

---

Lootie Toomasie  
Nunavut Water Board,  
Chair

LT/ak/rqd

## **INTRODUCTION**

The Resolute Bay Landfill Remediation Project (Project) involves the implementation of remediation activities planned for the Waste Disposal Facilities comprised of a Solid Waste Landfill (AEC 1), a Historical Landfill (AEC 2), and a Vehicle Storage Area (AEC 3), all of which are located proximal to the Resolute Bay Airport on Cornwallis Island, approximately 5 kilometres northwest of the current Resolute Bay Airport in the Qikiqtani Region of Nunavut.

Part of the preparatory work carried out for the project involved a Phase II/III Environmental Site Assessment (ESA) that took into consideration previous environmental studies and/or assessments carried out for the site. The following is a summary of the activities/undertakings proposed by the Licensee to achieve the Project's remediation objectives:

- Ship the remaining collected hazardous waste materials to a licensed hazardous waste disposal facility;
- Collect and consolidate the steel from AEC 2 into AEC 1;
- Develop one or more borrow sites on the airport property to create the gravel required for the landfill capping;
- Stabilize the landfill slopes at AEC 2 and AEC 1, along with grading and construction of drainage swales at both locations;
- Excavate approximately 125 m<sup>3</sup> of contaminated soil from AEC 3 and dispose at an approved facility;
- Cap both landfills with a layer of gravel to minimize water infiltration; and
- Install sampling wells for groundwater monitoring.

After the completion of above stated activities, the Licensee will undertake site monitoring.

## **PROCEDURAL HISTORY**

On July 11, 2014, the Nunavut Water Board issued a type "B" Water Licence 1BR-RBL1419 to Transport Canada to allow for the deposit of waste during the remediation activities at the Resolute Bay Landfill Remediation located proximal to the Resolute Bay Airport in the Qikiqtani Region, Nunavut. The Licence was set to expire on July 10, 2019.

The NWB acknowledged receipt on February 8, 2019 of the following documents as part of the water licence renewal application (Application) by Transport Canada for the Project:

- Water Licence Renewal Application;
- Nunavut Airports aggregate approval (July 5, 2018);
- Plan of Construction Operations (PCO) (July 5, 2018);
- Nav Canada approval in principle (June 21, 2018);
- Executive Summaries in English and Inuktitut;
- Topographical Map;
- NPC Determination dated March 2018;
- NPC Determination dated May 2011;
- NIRB Screening Decision dated February 2012;



- NIRB Screening Decision dated June 2018; and
- Health and Safety Plan.

On March 27, 2018, the Nunavut Planning Commission (NPC) issued correspondence indicating that the project proposal conforms to the North Baffin Regional Land Use Plan. On June 22, 2018, the Nunavut Impact Review Board issued its Screening Decision notifying that a review of the project is not required in accordance with paragraph 92(1)(a) of the Nunavut Planning and Project Assessment Act (NuPPAA). The Screening Decision was issued with recommendations.

## **GENERAL CONSIDERATIONS**

### **A. Term of the Licence**

In accordance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* S. 45, the NWB may issue a licence for a term not exceeding twenty-five years. The applicant requested a ten-year term for the licence, which the NWB believes is consistent with and appropriate for the type of undertaking and schedule of activities proposed in the application. The Board has therefore granted the requested term.

### **B. Annual Report**

Part B of the Licence addresses the general terms and conditions that apply to the undertaking, such as annual report submission, protocols for handling documents related to the Licence, posting of signage at sites associated with the undertaking, and more.

### **C. Water Use**

No water use is authorized under this Licence except for the purposes of groundwater monitoring and sampling.

### **D. Deposit of Waste**

#### *Aggregate Sources*

Information contained in the Phase II/III Environmental Site Assessment Report accompanying Application indicates that aggregate will be required to cap the landfills being remediated irrespective of the remediation option being chosen and implemented by the proponent. Conditions have been included under Part E in the Licence to ensure that aggregates used for any facilities associated with the project do not possess acid generating and/or metal leaching characteristics. In cases where it is determined that the materials are suitable for use, the Licensee is required to implement appropriate drainage control measures to prevent sediment loading into nearby water bodies. The NWB has included conditions under Part D and Part J to ensure that quality of effluent from borrow pits and quarries is monitored.

#### *Solid Waste Landfill (AEC 1)*

The Solid Waste Landfill, which has a surface area of approximately 40,000 m<sup>2</sup> and located proximal to the Resolute Bay Airport's Sewage Lagoon Facility, was used as a dump during the 1960s and 1970s, mainly. A new landfill was constructed southeast of the Hamlet in 1995; however, the information provided suggests that the Solid Waste Landfill had continued to be used unofficially as a dump up to 2005. The environmental assessment and audit carried out on the site identified a variety of waste types including drums, scrap metals and plastic scattered

near the site. Pools of standing water near the landfill, evidence of leachate containing petroleum hydrocarbons and metals, and significant vegetative growth were also observed near the landfill during the ESA. Drainage from the landfill discharges towards the west into Allen Bay while the area behind the toe of the landfill drains into a small unnamed creek and several small ponds. The NWB has included terms and conditions under Part D and Part J in the Licence requiring the Licensee to monitor this facility during and after remediation.

#### Historic Landfill (AEC 2)

The Historical Landfill covers an area of approximately 145,000 m<sup>2</sup> and is located southwest of the airport terminal building. The site was used from the period 1947 to 1996. The Canadian and American Military Forces used the site from 1947 to 1964 while Transport Canada and various airport tenants used the site from 1964 to 1995. Information provided as part of the application indicates that although disposal activities had ended in the early 1970s, the use of the landfill did not officially cease until 1996. The environmental assessment carried out on the site identified significant vegetative growth proximal to the landfill. The community water supply, Strip Lake, is located several kilometres to the south of the landfill and a hotel project is currently being developed along the northeast boundary of the Historic Landfill. Drainage from historical Historic Landfill is described as a complex of interconnected lakes and drainage channels that ultimately discharge towards the south into Resolute Bay. Three small lakes west of the landfill capture runoff and drainage from the landfill and eventually drain into Meretta Lake onto Resolute Lake and finally into Resolute Bay. A patchy, discontinuous wetland has developed at the toe of the Historic Landfill along its southern extents. Conditions have been included under Part D and Part J in the Licence to ensure that this facility is monitored before, during and after remediation activities.

#### Vehicle Storage Area (AEC 3)

The Vehicle Storage Area consists of two sites with areas of 3750 m<sup>2</sup> and 900 m<sup>2</sup>, respectively, and that are located 1 to 3 kilometers northwest of the airport terminal. The site has been used as an area for the disposal of vehicles and other equipment including drums, tires, tanks, glass, etc. Although the site was identified in an audit conducted in 1993, it was not included in the investigation carried out for the Solid Waste Landfill and Historic Landfill. Drainage from the Vehicle Storage Area discharges towards the west into Allen Bay and surficial flow drains into McMaster River Valley. The NWB has included conditions under Part D and Part J to ensure that potential runoff or leachate from this facility is monitored before, during and after remediation activities.

### **E. Camps, Access Infrastructures and Operations**

The Licensee is required to submit to the Board for approval within sixty (60) days following the completion of remediation of the Waste Disposal Facilities, an Operation and Maintenance (O&M) Manual for the Waste Disposal Facilities.

### **F. Drilling Operations**

The Licensee is authorized to drill for the purposes of installing monitoring wells and/or

thermistors, and other instrumentation required for the monitoring of the Waste Disposal Facilities.

#### **G. Construction and Modifications**

The Applicant is required to obtain permission from the NWB for modifications that do not meet the definition of modifications or the criteria of Part G, Item 1 of the Licence. Without written consent from the NWB, the Licensee is not allowed to carry out any modifications. Changes that do not meet the definition of modification under the Licence or the requirements of Part G may be considered amendments to the Licence.

#### **H. Spill Contingency Planning**

The Licensee shall implement the updated Plan submitted as additional information in section 10 “*Spill Contingency Plan*” of the Plan entitled “*Specific Health and Safety Plan*” dated June 2018.

#### **I. Closure and Reclamation or Temporary Closure**

Under Part I, the Licensee is required to submit to the Board for review, within sixty (60) days following the completion of remediation activities, an updated stand-alone Remedial Action Plan that reflects documented remediation options implemented for the Resolute Bay Landfill Remediation Project.

#### **J. Monitoring Program**

The Licensee shall submit to the Board for approval, at least sixty (60) days prior to initiating Long-Term Monitoring for the Project, a Post-closure Monitoring Plan for the site that includes information on Long-Term Monitoring of the Waste Disposal Facilities and that addresses water quality monitoring, site stability and the need for thermal monitoring and ground water monitoring. Conditions have been included that require the Licensee to monitor water quality up-gradient and down-gradient of the Solid Waste Landfill, Historic Landfill and proximal to the Vehicle Storage Area, as well as runoff from borrow pits and quarries. In addition, the Licensee is required to submit to the Board for review sixty (60) days prior to the first release of any effluent, a Quality Assurance/Quality Control (QA/QC) Plan. The Plan must receive approval from an analyst confirming Plan’s acceptability. All of the monitoring results, along with analyses carried out on the results, are to be provided to the NWB as part of the annual reporting requirements.



## NUNAVUT WATER BOARD WATER LICENCE AMENDMENT

---

### Licence No. 1BR-RBL1929

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

#### TRANSPORT CANADA

---

(Licensee)

**344 EDMONTON ST, WINNIPEG, MB R3C 0P6**

---

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water or dispose of Waste for a period subject to restrictions and conditions contained within this Licence Amendment:

Licence Number/Type: **1BR-RBL1929 / TYPE "B"**

---

Water Management Area: **BATHURST AND CORNWALLIS ISLANDS WATERSHED (55)**

---

Location: **QIKIQTANI REGION, NUNAVUT**

---

Classification: **MINING UNDERTAKING**

---

Purpose: **WATER USE FOR MONITORING AND DEPOSIT OF WASTE**

---

Quantity of Water use not to Exceed: **USE OF WATER IS NOT AUTHORIZED**

---

Date of Licence Issuance: **MAY 13, 2019**

---

Expiry of Licence: **MAY 12, 2029**

---

This Licence amendment, issued and recorded at Gjoa Haven, Nunavut, includes and is subject to the annexed conditions.

---

**Lootie Toomasie**  
**Nunavut Water Board, Chair**

## **PART A: SCOPE, DEFINITIONS AND ENFORCEMENT**

### **1. Scope**

This Licence allows for the use of Water and deposit of Waste for an Industrial undertaking classified as per Schedule 1 of the *Regulations* at the Resolute Bay Landfill Remediation Project, located approximately 5 kilometres northwest of the Hamlet of Resolute Bay within the Qikiqtani Region, Nunavut.

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of Water and the deposit of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and
- b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

### **2. Definitions**

“**Act**” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Addendum**” means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report;

“**Amendment**” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“**Applicant**” means the Licensee;

“**Appurtenant Undertaking**” means an undertaking in relation to which a use of water or a deposit of Waste is permitted by a licence issued by the Board;

“**Board**” means the Nunavut Water Board established under the *Nunavut Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Borrow Pits**” means sites for which materials, such as gravel or sand, are excavated for the purposes of constructing site infrastructure and facilities;

**“Closure and Reclamation Plan”** means a Plan developed to reach the closure goal and taking in account the “Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories” 2013;

**“Effluent”** means treated or untreated liquid Waste material that is discharged into the environment from a structure such as a settling pond, landfarm or a treatment plant;

**“Engineer”** means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

**“Final Discharge Point”** means the point at which the Licensee no longer exerts care and/or control over the quality and/or quantity of the effluent from a treatment process;

**“Greywater”** means all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet Wastes;

**“Hazardous waste”** means waste classified as “hazardous” by Nunavut Territorial or Federal Legislation, or as “dangerous goods” under the *Transportation of Dangerous Goods Act* at the time of clean-up;

**“High Water Mark”** means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities);

**“Inspector”** means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

**“Licensee”** means the holder of this Licence;

**“Modification”** means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

**“Nunavut Agreement”** means the “*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*”, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

**“Quarry or Quarries”** means the areas of surface excavation for extracting rock material for use as construction materials in the development of infrastructure and facilities for the Resolute Bay Landfill Remediation Project;

**“Regulations”** means the *Nunavut Waters Regulations* SOR/2013-69 18<sup>th</sup> April, 2013;

**“Secondary Containment”** means an impermeable structure, external to and separate from primary containment, which prevents unplanned spills of hazardous materials and

provides a minimum capacity of 110% of the original vessel. Where multiple vessels are stored within the containment, it must provide a minimum capacity equal to the sum of the largest vessel and 10% of the aggregate volume of all other vessels located in the containment. This structure shall also provide containment and control of hoses and nozzles;

**“Sewage”** means all toilet Wastes and greywater;

**“Spill Contingency Plan”** means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

**“Sump or Sumps”** A structure or depression that collects, controls, and filters liquid Waste before it is released to the environment. This structure should be designed to prevent erosion while allowing percolation of liquid Waste;

**“Toilet Wastes”** means all human excreta and associated products, but does not include greywater;

**“Type A Soil”** means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of lubricating oil and grease (F3 – F4 Fractions);

**“Type B Soil”** means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of fuel oil and/or diesel fuel and /or gasoline (F1 – F2 Fractions);

**“Waste”** means, as defined in s. 4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

**“Waste Disposal Facilities”** means all facilities designated for the purpose of disposing and/or treating waste including the Solid Waste Landfill, Historical Landfill and the Vehicle Storage Area as described in the original Application, which the NWB acknowledged receiving on June 23, 2011;

**“Water” or “Waters”** means waters as defined in section 4 of the *Act*.

### 3. **Enforcement**

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and

- c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of Waste by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

## **PART B: GENERAL CONDITIONS**

1. The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31<sup>st</sup> of the year following the calendar year being reported, containing the following information:
  - a. A summary report of Water use and Waste disposal activities;
  - b. Quantity of Waste disposed of on on-site Waste disposal facility;
  - c. Quantity of Waste backhauled to approved facility for disposal;
  - d. A list of unauthorized discharges and a summary of follow-up actions taken;
  - e. Any revisions to the management plans, as required by Part B, Item 6, submitted in the form of an Addendum;
  - f. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;
  - g. A summary of all information requested and results of the Monitoring Program;
  - h. A summary, including photographic records before, during and after any relevant construction activities or Modifications and/or major maintenance work carried out on facilities under this Licence and an outline of any work anticipated for the next year;
  - i. If applicable, a description of any trenches and sumps excavated, including but not limited to the following: GPS coordinates, dimensions, depth below active layer, and secondary containment features;
  - j. A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;
  - k. A summary of work done to address concerns or deficiencies listed in inspection reports and/or compliance reports prepared by an Inspector;
  - l. An executive summary in English and Inuktitut of all plans, reports, or studies conducted under this Licence; and
  - m. Any other details on Waste disposal requested by the Board by the 1<sup>st</sup> November of the year being reported.
2. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
3. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.



4. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
5. The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.
6. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
7. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:
  - (a) **Manager of Licensing:**  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Telephone: (867) 360-6338  
Fax: (867) 360-6369  
Email: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)
  - (b) **Inspector Contact:**  
Manager of Field Operations, CIRNAC  
Nunavut District, Nunavut Region  
P.O. Box 100  
Iqaluit, NU X0A 0H0  
Telephone: (867) 975-4295  
Fax: (867) 979-6445
8. The Licensee shall submit an electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
9. The Licensee shall ensure that all documents or correspondence submitted by the Licensee to the NWB are received and acknowledged by the Manager of Licensing.
10. This Licence is assignable as provided for in Section 44 of the *Act*.
11. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.

## **PART C: CONDITIONS APPLYING TO WATER USE**

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1. Water use is not authorized under this Licence except for the purposes of groundwater sampling.
2. The Licensee shall not conduct any work below the ordinary High Water Mark of any water body unless approved by the Board in writing.
3. The Licensee shall not cause erosion to the banks of any body of Water and shall provide necessary controls to prevent such erosion.
4. Sediment and erosion control measures shall be implemented prior to and maintained during the undertaking to prevent entry of sediment into Water.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall locate areas designated for Waste disposal at a minimum distance of thirty-one (31) metres from the ordinary High Water Mark of any water body such that the quality, quantity or flow of Water is not impaired, unless otherwise approved by the Board in writing.
2. The Licensee shall not practice on-site land filling of domestic Waste, unless otherwise approved by the Board in writing.
3. The Licensee is authorized to dispose of all acceptable food Waste, paper Waste and untreated wood products in an incinerator.
4. The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of Waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding Waters, unless otherwise approved by the Board in writing.
5. The Licensee shall direct appropriate Waste originating from the Resolute Bay Landfill Remediation Project to the Waste Disposal Facilities authorized under this Licence or as otherwise approved by the Board in writing.
6. The Licensee shall provide to the Board documented authorization from all communities in Nunavut receiving Waste from the Resolute Bay Landfill Remediation Project prior to any backhauling and disposal of Wastes to those communities.
7. The Licensee shall backhaul and dispose of all hazardous Waste, Waste oil and non-combustible Waste generated through the course of the operation at a licensed Waste disposal site.
8. The Licensee shall maintain records of all Waste backhauled and records of confirmation of proper disposal of backhauled Waste and include this information within the Annual Report, under Part B, Item 1. These records shall be made available to an Inspector upon request. The Licensee shall not transport hazardous wastes prior to registering with the

Government of Nunavut as a waste generator and utilizing the prescribed manifests.

9. The Licensee shall dispose of any hazardous materials including Polychlorinated Biphenyl (PCB) amended paints or lead painted products, and Petroleum Hydrocarbon Contaminated Soils that do not meet incineration criteria, off site at a currently approved treatment facility.
10. The Licensee shall provide notice to an Inspector at least ten (10) days prior to initiating any decant or discharge from the Waste Disposal Facilities.
11. All contact water associated with the Waste Disposal Facilities including seepage from Monitoring Program Stations shall meet the following Effluent quality limits prior to being released onto land at a location that is at least thirty-one (31) metres away from the ordinary High Water Mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created:

Parameter	Maximum Allowable Concentration (mg/L)
pH	6 to 9 (pH units)
TSS	50
Oil and Grease	15 and no visible sheen
Total Lead	0.001
Benzene	0.37
Toluene	0.002
Ethylbenzene	0.090

12. If the effluent associated with Part D, Item 11 does not meet the Effluent limits under Part D, Item 11, it shall be considered hazardous waste and disposed off-site at an approved facility or as otherwise approved by the Board in writing.
13. All surface runoff and/or discharge from borrow pits and quarries, and drainage management systems, during the construction of any facilities and infrastructure associated with this project, where flow may directly or indirectly enter a water body, at Monitoring Program Station(s) RBL-X shall not exceed the following Effluent quality limits:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of Any Grab Sample (mg/L)
Total Suspended Solids	50.0	100
Oil and Grease	15,000 and no visible sheen	15,000 and no visible sheen
pH	Between 6.5 and 9.5	Between 6.0 and 9.5

14. All water being pumped from excavated areas and borrow pits shall be contained at holding facility and shall be treated if necessary, to meet Effluent quality limits set in Part D, Item 13, prior to being released.

15. The Licensee shall dispose of all scrap metal, discarded machinery and parts, and other bulky material in a manner that conforms to the remedial option selected in the “Conceptual Remedial or Risk Management Action Plan” Section of the Phase II/III Environmental Site Assessment Final Report, Resolute Bay Airport Landfill Sites, Resolute Bay Nunavut, dated March 2010.

**PART E: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURES AND OPERATIONS**

1. No camp activities are authorized under the provisions of this Licence.
2. The Licensee may use aggregates for the purposes specified in the “*Conceptual Remedial or Risk Management Action Plan*” Section of the Phase II/III Environmental Site Assessment Final Report, Resolute Bay Airport Landfill Sites, Resolute Bay Nunavut, dated March 2010, provided that the aggregate sources are approved by an Inspector, free of contaminants.
3. The Licensee shall submit to the Board for approval, within sixty (60) days following the completion of remediation of the Waste Disposal Facilities, an Operation and Maintenance Manual for all facilities operated at the Resolute Bay Landfill Remediation Project. The manual shall be prepared in accordance with the “*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996*”.
4. The Operations and Maintenance Manual referred to in Part E, Item 3 shall address the following items:
  - a. As-built construction drawings of the facility (stamped by a professional Engineer registered in Nunavut);
  - b. Feasibility of alternative disposal methods and sites;
  - c. Operation and maintenance procedures for each facility;
  - d. Runoff diversion and management;
  - e. Monitoring Program for both water and soil.
5. The Licensee shall, upon the failure of any constructed facilities, repair such facilities immediately to the appropriate standards as recommended by an Engineer.
6. The Licensee shall implement proper handling, storage and transportation procedures for hazardous materials during remediation activities.
7. The Licensee shall minimize disturbance to terrain, permafrost and drainage during extraction of granular material, development and closure of landfills, movement of contractor’s equipment and personnel around the site and removal of site debris.
8. The Licensee shall not cause erosion to the banks of any body of water and shall provide and implement necessary controls prior to and maintained during the activities to prevent such erosion and entry of sediment into Water.

9. The Licensee shall design and construct all stream crossings to minimize erosion and/or deposition of Waste into water.
10. The Licensee shall ensure that existing creek channels are maintained at their normal width and depth to the extent possible, during and after construction.
11. Granular materials and rock rip-rap used for any temporary stream crossings, approaches or required for bank stabilization must be obtained from a source that is approved by an Inspector, and is clean and free of contaminants as outlined in Part E, Item 2. Such material must not be removed or gathered from below the ordinary High Water Mark of any water body.
12. All sites affected by construction or removal activities shall be stabilized, landscaped as necessary, and suitable erosion control measures implemented to minimize sediment deposition into watercourses located on or adjacent to the site.
13. The Licensee shall restore and stabilize all areas affected by the undertaking upon completion of the work.
14. The Licensee shall not deposit Waste in any water body, or on the banks thereof, which may impair the quality, quantity, or flow of water.
15. The Licensee shall not store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use.
16. The Licensee shall conduct all activities in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake corrective measures in the event of any impacts on surface drainage.
17. The Licensee shall construct all winter lake and stream crossings, including ice bridges, entirely of Water, ice or snow. The Licensee shall minimize disturbance by locating ice bridges in an area that requires the minimum approach grading and the shortest crossing route. Stream crossings shall be removed or the ice notched prior to spring break-up.
18. Stream crossing shall be a minimum of five hundred (500) meters from spawning areas.
19. With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the Water.
20. The Licensee shall not mobilize heavy equipment or vehicles for trenching or other activities unless the ground surface is capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall be suspended if rutting occurs.
21. The Licensee shall conduct quarrying activities in accordance with all applicable legislation, guidelines, and industry standards including the *Northern Land Use*

*Guidelines - Pits and Quarries (2009).*

22. The Licensee shall maintain a minimum of thirty-one (31) metres large undisturbed buffer zone between the periphery of quarry sites and the ordinary High Water Mark of any water body.
23. The Licensee shall not excavate and/or remove material from the quarry/borrow area beyond a depth of one (1) metre above the ordinary High Water Mark or above the groundwater table, to prevent contamination of groundwater.

#### **PART F: CONDITIONS APPLYING TO DRILLING OPERATIONS**

1. The Licensee is authorized to drill for the purposes of installing monitoring wells and/or thermistors, and other instrumentation required for the monitoring of the Waste Disposal Facilities.

#### **PART G: CONDITIONS APPLYING TO CONSTRUCTION AND MODIFICATIONS**

1. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
  - a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
  - b. such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
  - c. such Modifications are consistent with the NIRB Screening Decision;
  - d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
  - e. the Board has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part G, Item 1 have not been met can be carried out only with written approval from the Board.
3. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

#### **PART H: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING**

1. The Licensee shall implement the updated Plan submitted as additional information in section 10 “*Spill Contingency Plan*” of the Plan entitled “*Specific Health and Safety Plan*”

dated June 2018.

2. The Licensee shall prevent any chemicals, petroleum products or Wastes associated with the project from entering Water. All Sumps and fuel caches shall be located at a distance of at least thirty-one (31) metres from the ordinary High Water Mark of any adjacent water body and inspected on a regular basis.
3. The Licensee shall conduct any equipment maintenance and servicing in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other Waste and contain potential spills.
4. If during the term of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
  - a. Employ the approved Spill Contingency Plan;
  - b. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
  - c. For each spill occurrence, submit to the Inspector, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.
5. The Licensee shall, in addition to Part H, Item 4, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.

**PART I: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION OR TEMPORARY CLOSURE**

1. The Licensee shall carry out remediation activities on the Waste Disposal Facilities in accordance with the option selected under the “Conceptual Remedial or Risk Management Action Plan” Section of the Phase II/III Environmental Site Assessment Final Report, Resolute Bay Airport Landfill Sites, Resolute Bay Nunavut, dated March 2010. The Licensee is required to submit to the Board for review within sixty (60) days following the completion of remediation activities an updated stand-alone Remedial Action Plan that reflects the actual remedial options implemented for the Resolute Bay Landfill Remediation Project.
2. The Licensee shall complete all restoration work prior to the expiry of this Licence.
3. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee’s operations.
4. The Licensee shall remove from the site, all infrastructure and site materials, including all fuel caches, drums, barrels, buildings and contents, docks, water intakes, pumps and lines, material and equipment prior to the expiry of this Licence.



5. All roads, if any, shall be re-graded to match natural contour to reduce erosion.
6. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to meet objectives as outlined in the Government of Nunavut's Environmental Guideline for Site Remediation, 2010. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment and an Inspector.
7. The Licensee shall contour and stabilize all disturbed areas to reduce erosion and sedimentation to Water, upon completion of the undertaking.
8. All disturbed areas shall be stabilized and re-vegetated as required, upon completion of work, and restored as practically as possible to a pre-disturbed state.

## **PART J: CONDITIONS APPLYING TO THE MONITORING PROGRAM**

1. The Licensee shall submit to the Board for approval, at least sixty (60) days prior to initiating Long-Term Monitoring for the Project, a Post-closure Monitoring Plan for the site that includes information on Long-Term Monitoring of the Waste Disposal Facilities and that addresses water quality monitoring, site stability and the need for thermal monitoring and ground water monitoring.
2. The Licensee shall maintain Monitoring Program Stations at the following locations:

<b>Monitoring Program Station Number</b>	<b>Description</b>	<b>Status</b>
RBL-1	Monitoring Well installed up-gradient of the Solid Waste Landfill	Active (Water Quality)
RBL-2	Monitoring Well installed down-gradient of the Solid Waste Landfill	Active (Water Quality)
RBL-3	Monitoring Well installed down-gradient of the Solid Waste Landfill	Active (Water Quality)
RBL-4	Discharge from the Solid Waste Landfill	Active (Water Quality)
RBL-5	Monitoring Well installed up-gradient of the Historic Landfill	Active (Water Quality)
RBL-6	Monitoring Well installed down-gradient of the Historic Landfill	Active (Water Quality)
RBL-7	Monitoring Well installed down-gradient of the Historic Landfill	Active (Water Quality)
RBL-8	Discharge from the Historic Landfill	Active (Water Quality)
RBL-10	Monitoring Well installed up-gradient of the Vehicle Storage Area (Site 1)	Active (Water Quality)
RBL-11	Monitoring Well installed down-gradient of the Vehicle Storage Area (Site 1)	Active (Water Quality)



RBL-12	Monitoring Well installed down-gradient of the Vehicle Storage Area (Site 1)	Active (Water Quality)
RBL-13	Discharge from the Vehicle Storage Area (Site 1)	Active (Water Quality)
RBL-14	Monitoring Well installed up-gradient of the Vehicle Storage Area (Site 2)	Active (Water Quality)
RBL-15	Monitoring Well installed down-gradient of the Vehicle Storage Area (Site 2)	Active (Water Quality)
RBL-15	Monitoring Well installed down-gradient of the Vehicle Storage Area (Site 2)	Active (Water Quality)
RBL-16	Discharge from the Vehicle Storage Area (Site 2)	Active (Water Quality)
RBL-X where X refers to a number of a Station	Discharge from quarries and/or borrow pits	Active (Water Quality)

3. The Licensee shall measure and record, in cubic metres, the daily quantities of Effluent discharged from the Waste Disposal Facilities at Monitoring Program Stations RBL-4, RBL-8, RBL-13, RBL-16 and RBL-X.
4. The Licensee shall sample the Effluent, prior to discharge, at Monitoring Program Stations RBL-4, RBL-8, RBL-13, RBL-16 and RBL-X analyze for the following parameters:

pH	Conductivity
Total Suspended Solids (TSS)	Ammonia Nitrogen
Nitrate – Nitrite	Oil and Grease (visual)
Total Phenols	Sulphate
Total Hardness	Total Alkalinity
Sodium	Potassium
Magnesium	Calcium
Chloride	Total Cadmium
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
Total Zinc	Total Phosphorous
Total Aluminum	Total Manganese
Total Cobalt	Total Arsenic
Polycyclic Aromatic Hydrocarbons (PAH)	Total Petroleum Hydrocarbons (TPH)
Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	

5. The Licensee shall sample twice per year (once during spring freshet and once during mid-summer) water at Monitoring Program Stations RBL-1, RBL-2, RBL-3, RBL-5, RBL-6, RBL-7, RBL-9, RBL-10, RBL-11, RBL-12, RBL-14 and RBL-15 for the purpose of analyzing samples for the parameters listed under Part J Item 4.

6. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where wastes associated with the project operations are deposited.
7. The Licensee shall monitor compliance with respect to Part D Item 11, by collecting a representative sample once at the beginning of discharge, upon initial release and prior to the end of discharge, from the Final Discharge Points of the Waste Disposal Facilities at Monitoring Program Stations RBL-4, RBL-8, RBL-13, RBL-16, and with respect to Part D, Item 13 at the Monitoring Stations RBL-X.
8. The Licensee shall monitor compliance with respect to Part D Items 11 and 13 by collecting a representative composite sample from the total volume to be released from the Final Discharge Points identified in Part J, Item 2 of this Licence.
9. The Licensee shall assess and record, when carrying out the project, the concentration of F1 – F4 fractions in petroleum hydrocarbon contaminated soil, according to the *CCME Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil*, from all sources and excavations associated with the project.
10. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board in writing.
11. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
12. The Licensee shall submit to the Board for review, at least sixty (60) days prior to the first release of any effluent, a Quality Assurance/Quality Control Plan that conforms to the guidance document “*Quality Assurance (QA) and Quality Control (QC) Guidelines For Use by Class “B” Licensees in Collecting Representative Water Samples in the Field and for Submission of a QAQC Plan*” INAC (1996). The Plan shall be acceptable to an accredited laboratory and include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under the Licence.
13. The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.

## APPENDIX C

### Analytical Results Tables

Table 1 - Groundwater Monitoring  
Resolute Airport Landfills EMP, Resolute, Nunavut

Location (AEC)	Date Sampled	3TM Northing	3TM Easting	Groundwater Depth (mbTOP)	Total Well Depth (mbTOP)	pH	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (°C)	Notes
<b>Monitoring Wells</b>										
RBL-1 (AEC 1)	23-Jul-23	8295630	441147	1.30	1.32	NA	NA	NA	NA	Lock was cut; well was dry; acceptable well condition
RBL-2 (AEC 1)	23-Jul-23	8295551	440943	1.27	1.44	7.34	729	4.70	6.91	Lock was cut; acceptable well condition
RBL-3 (AEC 1)	23-Jul-23	8295608	440901	0.86	1.62	7.91	427	9.30	5.53	Lock was cut; acceptable well condition; RBL-DUPA @15:50, Field Blank 1 @15:40
AEC1-GW1 (AEC 1)	23-Jul-23	8295526	441063	1.30	1.74	7.86	1170	14.70	6.55	Lock was cut; acceptable well condition
RBL-5 (AEC 2)	23-Jul-23	8292509	441662	Dry	0.99	NA	NA	NA	NA	Did not appear to be damaged or blocked; acceptable well condition, dry at 0.99 mbTOP
RBL-6 (AEC 2)	23-Jul-23	8292566	441420	Dry	0.88	NA	NA	NA	n/a	Acceptable well condition; dry at 0.88 mbTOP
RBL-7 (AEC 2)	23-Jul-23	8292634	441384	Dry	1.34	NA	NA	NA	n/a	Acceptable well condition; dry at 1.34 mbTOP
FL-MW-6 (AEC 2)	23-Jul-23	8292485	441484	Dry	0.96	NA	NA	NA	n/a	Acceptable well condition; dry at 0.96 mbTOP
FL-MW-7 (AEC 2)	23-Jul-23	8292468	441452	Dry	1.49	NA	NA	NA	n/a	Acceptable well condition; dry at 1.49 mbTOP
2-MW-8 (AEC 2)	23-Jul-23	8292499	441451	Dry	1.06	NA	NA	NA	n/a	Acceptable well condition; dry at 1.06 mbTOP
RBL-10 (AEC 3)	23-Jul-23	8296242	440493	Dry	1.28	NA	NA	NA	n/a	Acceptable well condition; dry at 1.28 mbTOP
RBL-11 (AEC 3)	23-Jul-23	8296265	440383	Dry	1.30	NA	NA	NA	n/a	Acceptable well condition; dry at 1.30 mbTOP
RBL-12 (AEC 3)	23-Jul-23	8296335	440450	Dry	1.48	NA	NA	NA	n/a	Acceptable well condition; dry at 1.48 mbTOP
RBL-14 (AEC 3)	23-Jul-23	8296449	440682	Dry	1.42	NA	NA	NA	n/a	Acceptable well condition; dry at 1.42 mbTOP
RBL-15 (AEC 3)	23-Jul-23	8296468	440635	Dry	1.41	NA	NA	NA	n/a	Acceptable well condition; dry at 1.41 mbTOP
<b>Surface Water Locations</b>										
RBL-4 (AEC 1)	24-Jul-23	8295627	440884	n/a	n/a	8.93	307	0	15.92	collected at scheduled location @ 13:00
RBL-8 (AEC 2)	24-Jul-23	8292688	441366	n/a	n/a	8.54	384	6	11.57	collected at downgradient pond, RBL-DUPB @ 11:55
RBL-13 (AEC 3)	24-Jul-23	8296454	440478	n/a	n/a	8.27	216	0	9.37	collected at 2022 location, RBL-DUPC @ 11:20
RBL-16 (AEC 3)	24-Jul-23	8296336	440340	n/a	n/a	8.54	216	0	9.22	collected at 2022 locations, Field Blank 2 @ 10:40

**Notes:**

RBL monitoring wells were installed in 2019

Coordinates are expressed in 3TM, Zone 15N, NAD83 datum.

°C - degree celsius

mbTOP - metres below top of pipe.

NTU - nephelometric turbidity unit

uS/cm - microsiemens per centimeter

n/a - not applicable

NA - not available

Table 2a - Groundwater Analytical Results  
Resolute Airport Landfills EMP, Resolute, Nunavut  
BTEX, PHCs, Oil and Grease, Total Metals, Routine parameters, PAHs and Phenol Analysis

Sample ID Laboratory ID Sampling Date	MECP Table 3 <sup>1</sup>	Max. Allowable Discharge <sup>2</sup>	RDL	Units	AEC 1 - Inactive Solid Waste Landfill															AEC 2 - Historical Landfill														
					RBL-1 APR14-1 27-Aug-2022	RBL-1 A244-2 3-Aug-2022	RBL-1 APR14-2 23-Jul-2023	RBL-2 APR14-2 27-Aug-2022	RBL-2 A244-2 4-Aug-2022	RBL-2 W14-1 23-Jul-2023	RBL-2 A244-3 27-Aug-2022	RBL-3 APR14-1 27-Aug-2022	GW DUP 1 APR14-1 27-Aug-2022	RBL-3 A244-2 4-Aug-2022	RBL-3 W14-2 23-Jul-2023	RBL-DUPA W14-2 23-Jul-2023	RPD (%)	AEC 1-GW1 A244-1 3-Aug-2022	AEC1-GW1 W14-1 23-Jul-2023	RBL-4 A244-1 4-Aug-2022	RBL-6 A244-1 23-Jul-2023	RBL-7 APR14-5 27-Aug-2022	RBL-7 A244-7 4-Aug-2022	RBL-7 23-Jul-2023	2-MW-8 A244-8 4-Aug-2022	2-MW-8 23-Jul-2023	FL-MW-7 A244-9 2-Aug-2022	DUPA A244-10 2-Aug-2022						
PARAMETERS																																		
BTEX																																		
Benzene	44	370	0.2	µg/L	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.40	<0.2	<0.2	-	<0.40	<0.2	<0.40	Dry	<0.40	<0.40	Dry	0.77	Dry	1.6	1.6						
Toluene	18,000	2	0.2	µg/L	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.40	<0.2	<0.2	-	1.1	0.55	0.63	Dry	1.6	<0.40	Dry	0.66	Dry	6.8	6.7						
Ethylbenzene	2,300	90	0.2	µg/L	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.40	<0.2	<0.2	-	<0.40	<0.2	<0.40	Dry	0.77	<0.40	Dry	0.89	Dry	6.8	6.7						
m-Xylene & p-Xylene	NV	NV	0.4	µg/L	<0.80	<0.80	Dry	<0.80	<0.80	<0.4	<0.80	<0.80	<0.80	<0.80	<0.4	<0.4	-	<0.80	<0.4	<0.80	Dry	1.1	<0.80	Dry	11	Dry	30	29						
o-Xylene	NV	NV	0.2	µg/L	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.40	<0.2	<0.2	-	0.55	0.26	<0.40	Dry	1.6 (1)	<0.40	Dry	34	Dry	77	75						
Total Xylenes	4,200	NV	0.4	µg/L	<0.89	<0.89	Dry	<0.89	<0.89	<0.4	<0.89	<0.89	<0.89	<0.89	<0.4	<0.4	-	<0.89	<0.4	<0.89	Dry	4.8	<0.89	Dry	44	Dry	110	100						
Petroleum Hydrocarbons																																		
F1 (C6-C10)	750	NV	25	µg/L	<100	<100	Dry	<100	<100	<25	<100	<100	<100	<25	<25	-	120	<25	<100	Dry	<100	<100	Dry	300	Dry	610	590							
F1 (C6-C10) - BTEX	750	NV	25	µg/L	<100	<100	Dry	<100	<100	<25	<100	<100	<100	<25	<25	-	120	<25	<100	Dry	<100	<100	Dry	250	Dry	490	470							
F2 (C10-C16)	150	NV	100	µg/L	<100	<100	Dry	<100	<100	<100	370	170	160	<100	<100	<100	-	190	<100	<100	Dry	<100	240	Dry	340	Dry	370	370						
F3 (C16-C34)	500	NV	200	µg/L	<100	<100	Dry	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	160	<100	<100	Dry	<100	<100	Dry	270	Dry	280	280						
F4 (C34-C50)	500	NV	200	µg/L	<100	<100	Dry	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	Dry	<100	<100	Dry	<100	Dry	<100	<100						
Extractable Hydrocarbons																																		
Oil And Grease	NV	15,000	0.5	µg/L	<500	<2,000	Dry	<500	<2,000	<0.5	<500	<500	<2,000	<0.5	<0.5	-	<0.5	<0.5	<0.5	Dry	<500	2,000	Dry	40,000	Dry	7,700	6,500							
Total Metals																																		
Aluminum	NV	NV	3	µg/L	1,730	3,000	Dry	7.3	88	6.7	19.3	14.4	120	9.8	9.1	7	75	8	1,000	Dry	35,400	520	Dry	750	Dry	180	300							
Antimony	20,000	NV	0.5	µg/L	<0.50	<0.60	Dry	2.09	0.77	1.8	<0.50	<0.60	<0.50	<0.50	<0.50	-	0.60	<0.50	<0.60	Dry	<0.50	<0.60	Dry	<0.60	Dry	<0.60	1.1							
Arsenic	1,500	NV	1	µg/L	0.58	1.2	Dry	0.67	1.9	1.3	0.48	0.37	0.61	1.5	1.6	9	3.9	8.8	1.9	Dry	11.8	0.56	Dry	1.5	Dry	5.4	5.2							
Barium	29,000	NV	2	µg/L	42.7	62	Dry	62.2	59	43	83.1	77.2	110	96	95	1	15	12	34	Dry	454	24	Dry	36	Dry	91	110							
Beryllium	67	NV	0.4	µg/L	0.11	<1.0	Dry	<0.10	<1.0	<0.40	<0.10	<1.0	<0.40	<0.40	<0.40	<0.40	-	<1.0	<0.40	<1.0	Dry	2.4	<1.0	Dry	<1.0	Dry	<1.0	<0.2						
Boron (Total)	45,000	NV	10	µg/L	<50	39	Dry	157	160	130	80	76	95	81	80	1	450	430	<10	Dry	<500	<20	Dry	<10	Dry	45	54							
Cadmium	2.7	NV	0.09	µg/L	0.094	0.28	Dry	0.145	0.071	<0.090	<0.010	<0.010	<0.060	0.17	0.18	-	0.160	<0.090	0.08	Dry	0.08	0.08	Dry	0.08	Dry	0.08	0.16							
Chromium	810	NV	5	µg/L	3.9	5.4	Dry	<1.0	<1.0	<5.0	<1.0	<1.0	<1.2	<5.0	<5.0	-	1.0	<5.0	2.1	Dry	64	2.3	Dry	1.7	Dry	5.5	7.1							
Chromium (VI)	140	NV	0.5	µg/L	<0.99	<0.99	Dry	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	-	<0.99	<0.50	Dry	<0.99	<0.99	Dry	<0.99	Dry	<0.99	<0.99							
Cobalt	66	NV	0.5	µg/L	1.03	2.5	Dry	0.32	1.3	0.9	0.51	0.12	0.20	0.63	1.3	1.2	-	4.6	8.5	1.5	Dry	19.8	0.62	Dry	5.7	Dry	6.1	6.5						
Copper	87	NV	0.9	µg/L	2.71	6.1	Dry	2.71	1.5	2.1	0.74	0.66	1.5	2.5	2.5	0	8.9	2.8	3.1	Dry	61.4	1.7	Dry	2	Dry	3.1	5.2							
Iron	NV	100	NV	100	µg/L	1,970	4,200	Dry	25	1,800	<100	376	271	760	910	4	3300	7500	35,000	Dry	46,200	930	Dry	13,000	Dry	8,700	12,000							
Lead	25	1	0.5	µg/L	3.17	9.1	Dry	0.34	0.98	0.52	0.34	0.21	0.74	2	1.9	3.2	1.8	1.4	5.1	Dry	188	2.1	Dry	1.8	Dry	6.0	9.7							
Manganese	29,000	NV	2	µg/L	61.1	180	Dry	77	360	210	56.2	42.3	220	430	480	270	1,000	270	360	Dry	1,000	270	Dry	1,000	Dry	1,000	1,000							
Mercury	0.29	NV	0.1	µg/L	0.0033	0.086	Dry	0.0033	0.0032	<0.026 (2)	0.0084	0.005	0.0086	<0.026 (2)	<0.026 (2)	<0.026 (2)	-	0.034	-	Dry	0.0005	0.0146	Dry	0.031	Dry	0.114	0.069							
Molybdenum	9,200	NV	0.5	µg/L	<1.0	0.7	Dry	2.6	1.3	2.9	<1.0	<1.0	1.3	2.8	2.8	0	1.4	2.7	1.9	Dry	<10	0.99	Dry	0.38	Dry	0.94	1							
Nickel	490	NV	1.1	µg/L	3.1	5.2	Dry	2.3	5.8	1.9	1.2	1.1	1.5	1.9	1.8	5	19	16	4.7	Dry	51	3.1	Dry	3	Dry	13	15							
Phosphorus	NV	100	NV	100	µg/L	30	160 (2)	Dry	190	1,100	260	370	320	230	220	-	7,600 (2)	3300	-	Dry	86	23	Dry	38	Dry	180	180							
Selenium	63	NV	2	µg/L	0.24	0.22	Dry	0.22	0.25	<1.0 (3)	0.14	0.17	0.25	<1.0 (3)	<1.0 (3)	-	0.63	<1.0 (3)	<0.20	Dry	2.7	0.45	Dry	0.3	Dry	0.73	1.2							
Silver	1.5	NV	0.09	µg/L	<0.020	<0.10	Dry	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	0.22	<0.020	<0.10	Dry	0.48	1.2 (1)	Dry	0.62	Dry	0.76	0.76						
Sulfur	NV	200	NV	200	µg/L	4,200	2,800	Dry	88,100	51,000	NV	4,200	<3,000	6,400	NV	NV	-	3300	NV	1,900	Dry	<3,000	11,000	Dry	1,100	Dry	1,300	1,300						
Thallium	510	NV	0.05	µg/L	0.051	<0.20	Dry	0.011	0.4	<0.050	<0.010	<0.010	<0.20	<0.050	<0.050	-	<0.20	<0.050	<0.20	Dry	0.77	<0.20	Dry	<0.20	Dry	<0.20	<0.40							
Titanium	NV	5	1	µg/L	60.8	110	Dry	<5.0	2.9	<5.0	<5.0	<5.0	3.7	<5.0	<5.0	82	4.8	<5.0	82	Dry	696	16 (1)	Dry	22	Dry	37	39							
Uranium	400	0.1	NV	0.25	µg/L	0.41	0.41	Dry	0.36	0.26	0.33	0.31	0.18	0.27	0.33	0.31	0.18	0.27	0.33	Dry	4.8	<1.0	Dry	0.6	Dry	0.6	0.69							
Vanadium	250	NV	0.5	µg/L	<5.0	6.4	Dry	<5.0	<1.0	<0.50	<5.0	<5.0	<5.0	<5.0	<5.0	-	2.6	2.4	2.9	Dry	80	2.1	Dry	2.6	Dry	6.2	10							
Zinc	1,100	NV	5	µg/L	12.7	27	Dry	43.5	16	25	<5.0	<5.0	<5.0	8.1	15	15	-	17	6.7	20	Dry	421	64 (1)	Dry	93	Dry	14	170 (2)						
Routine Water																																		
pH	NV	6.0 - 9.0	NV	pH	8.21	7.62	Dry	7.99	7.18	7.83	7.63	7.70	7.14	7.81	7.8	0.1	7.24	7.46	-	Dry	8.13	8.17	Dry	7.64	Dry	7.30	7.33							
Electrical Conductivity	NV	2,000	µS/cm	500	180	NV	1100	930	690	470	450	420	410	410	-	11	1100	1100	-	Dry	620	520	Dry	290	Dry	820	790							
Total Suspended Solids	NV	50	10	mg/L	1200 (1)	490 (1)	Dry	10	13 (1)	<10	250 (1)	160 (1)	19 (1)	12	11	8.7	200 (1)	14	-	Dry	1100 (1)	550 (1)	Dry	471	Dry	461 (1)	57 (1)							
Hardness	NV	NV	0.5	mg/L	287	484	Dry	425	347	300	191	182	180	200	180	10.5	245	290	245	Dry	6,010	210	Dry	160	Dry	464	547							
Total Alkalinity	NV	100	NV	100	mg/L	240	380	Dry	240	180	240	180	170	170	140	170	180	170	180	Dry	100	170	Dry	380	Dry	380	380							
Bicarbonate	NV	NV	1	mg/L	170	160	Dry	270	290	180	230	220	200	170	170	-	500	410	-	Dry	230	<10	Dry	150	Dry	470	450							
Carbonate	NV	NV	1	mg/L	<1.0	<1.0	Dry	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	1	-	<1.0	1.1	-	Dry	<1.0	<1.0	Dry	<1.0	Dry	<1.0	<1.0						
Chloride	NV	1	10	mg/L	<1.0	<1.0	Dry	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	Dry	<1.0	<1.0	Dry	<1.0	Dry	<1.0	<1.0						
Calcium	NV	NV	0.5	mg/L	72	34	Dry	138	120	94	52	49	49	54	51	5.7	75	86	-	Dry	1,380	44	Dry	20	Dry	120	120							
Magnesium																																		

Table 2a - Groundwater Analytical Results  
Resolute Airport Landfills EMP, Resolute, Nunavut  
BTEX, PHCs, Oil and Grease, Total Metals, Routine parameters, PAHs and Phenol Analysis

					AEC 3 - Former Vehicle & Metal Storage Area							Blanks						
Sample ID	MECP Table 3 <sup>1</sup>	Max. Allowable Discharge <sup>2</sup>	RDL	Units	RBL-10 APPROX 27-Aug-2021	RBL-10 NW4850 23-Jul-2023	RBL-14 APPROX 27-Aug-2021	RBL-14 APPROX 3-Aug-2022	DUP B NW4850 3-Aug-2022	RBL-14 NW4850 23-Jul-2023	FIELD BLANK NW4851 27-Aug-2021	FIELD BLANK AD2192 4-Aug-2022	FIELD BLANK 1 NW4851 23-Jul-2023	FIELD BLANK 2 AD2192 24-Jul-2023	TRIP BLANK AD2193 4-Aug-2022	TRIP BLANK 1 NW4851 23-Jul-2023		
PARAMETERS																		
BTEX																		
Benzene	44	370	0.2	µg/L	<0.40	Dry	<0.40	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.2	<0.40	<0.2		
Toluene	18,000	2	0.2	µg/L	<0.40	Dry	<0.40	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.2	<0.40	<0.2		
Ethylbenzene	2,300	90	0.2	µg/L	<0.40	Dry	<0.40	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.2	<0.40	<0.2		
m-Xylene & p-Xylene	NV	NV	0.4	µg/L	<0.80	Dry	<0.80	<0.80	<0.80	Dry	<0.80	<0.80	<0.4	<0.4	<0.80	<0.4		
o-Xylene	NV	NV	0.2	µg/L	<0.40	Dry	<0.40	<0.40	<0.40	Dry	<0.40	<0.40	<0.2	<0.2	<0.40	<0.2		
Total Xylenes	4,200	NV	0.4	µg/L	<0.89	Dry	<0.89	<0.89	<0.89	Dry	<0.89	<0.89	<0.4	<0.4	<0.89	<0.4		
Petroleum Hydrocarbons																		
F1 (C6-C10)	750	NV	25	µg/L	<100	Dry	<100	<100	<100	Dry	<100	<100	<25	<25	<100	<25		
F1 (C6-C10) - BTEX	750	NV	25	µg/L	<100	Dry	<100	<100	<100	Dry	<100	<100	<25	<25	<100	<25		
F2 (C10-C14)	150	NV	100	µg/L	<100	Dry	<100	<100	<100	Dry	<100	<100	<100	<100	<100	<100		
F3 (C14-C18)	500	NV	200	µg/L	<100	Dry	<100	<100	<100	Dry	<100	<100	<100	<100	<100	<100		
F4 (C18-C24)	500	NV	200	µg/L	<200	Dry	<200	<200	<200	Dry	<200	<200	<200	<200	<200	<200		
Extractable Hydrocarbons																		
Oil And Grease	NV	15,000	0.5	µg/L	<1300	Dry	<500	<2,000	<2,000	Dry	<500	-	-	-	-	-		
Total Metals																		
Aluminum	NV	NV	3	µg/L	271	Dry	3,110	21,000	10,000	Dry	4.4	-	-	-	-	-		
Antimony	20,000	NV	0.5	µg/L	<0.50	Dry	<0.50	<12	7	Dry	<0.50	-	-	-	-	-		
Arsenic	1,900	NV	1	µg/L	0.62	Dry	1.62	14	7	Dry	<0.50	-	-	-	-	-		
Barium	20,000	NV	2	µg/L	72.1	Dry	32.3	210	190	Dry	<0.50	-	-	-	-	-		
Beryllium	67	NV	0.4	µg/L	<0.10	Dry	0.19	<20	<2.0	Dry	<0.50	-	-	-	-	-		
Boron (Total)	45,000	NV	10	µg/L	203	Dry	<50	48	34	Dry	<0.50	-	-	-	-	-		
Cadmium	2.7	NV	0.09	µg/L	0.034	Dry	0.11	1.8	1.8	Dry	<0.50	-	-	-	-	-		
Chromium	810	NV	5	µg/L	<1.0	Dry	6	40	20	Dry	<0.50	-	-	-	-	-		
Chromium (VI)	140	NV	0.5	µg/L	<0.99	Dry	<5 (2)	<0.99	<0.99	Dry	<0.50	-	-	-	-	-		
Cobalt	66	NV	0.5	µg/L	0.21	Dry	1.84	20	11	Dry	<0.50	-	-	-	-	-		
Copper	87	NV	0.9	µg/L	1.15	Dry	4.43	47	25	Dry	<0.50	-	-	-	-	-		
Iron	NV	NV	100	µg/L	310	Dry	4,040	39,000	16,000	Dry	<0.50	-	-	-	-	-		
Lead	25	1	0.5	µg/L	0.49	Dry	7.82	93	95	Dry	<0.50	-	-	-	-	-		
Manganese	NV	2	1	µg/L	13.7	Dry	127	1,400	1,300	Dry	<0.50	-	-	-	-	-		
Mercury	0.29	NV	0.1	µg/L	0.0023	Dry	0.0041	0.0047	<0.0019	Dry	<0.50	-	-	-	-	-		
Molybdenum	9,200	NV	0.5	µg/L	<1.0	Dry	<1.0	<4.0	0.62	Dry	<0.50	-	-	-	-	-		
Nickel	490	NV	1	µg/L	1.7	Dry	5.3	54	27	Dry	<0.50	-	-	-	-	-		
Phosphorus	NV	NV	100	µg/L	15	Dry	110	1,000	720	Dry	<0.50	-	-	-	-	-		
Selenium	63	NV	2	µg/L	0.85	Dry	1.36	<4.0	0.66	Dry	<0.50	-	-	-	-	-		
Silver	1.5	NV	0.09	µg/L	<0.020	Dry	0.024	<2.0	<0.20	Dry	<0.50	-	-	-	-	-		
Sulfur	NV	NV	200	µg/L	67,700	Dry	<3,000	2,500	2,100	Dry	<0.50	-	-	-	-	-		
Thallium	510	NV	0.05	µg/L	<0.010	Dry	0.027	<4.0	<0.40	Dry	<0.50	-	-	-	-	-		
Titanium	NV	NV	5	µg/L	12.6	Dry	83.7	560	280	Dry	<0.50	-	-	-	-	-		
Uranium	420	NV	0.1	µg/L	2.02	Dry	0.47	<2.0	1.1	Dry	<0.50	-	-	-	-	-		
Vanadium	250	NV	0.5	µg/L	<5.0	Dry	7.7	67	32	Dry	<0.50	-	-	-	-	-		
Zinc	1,100	NV	5	µg/L	<5.0	Dry	19	1,500	240	Dry	<0.50	-	-	-	-	-		
Routine Water																		
pH	NV	6.0 - 9.0	NV	pH	7.92	Dry	8.13	7.82	7.67	Dry	4.4	-	-	-	-	-		
Electrical Conductivity	NV	2,000	µS/cm	3000	Dry	340	350	350	350	Dry	<0.50	-	-	-	-	-		
Total Suspended Solids	NV	50	mg/L	20	Dry	999 (1)	179 (1)	199 (1)	199 (1)	Dry	<0.50	-	-	-	-	-		
Hardness	NV	0.5	mg/L	998	Dry	279	2,120	2,230	2,230	Dry	<0.50	-	-	-	-	-		
Total Alkalinity	NV	1	mg/L	390	Dry	160	170	170	170	Dry	<0.50	-	-	-	-	-		
Bicarbonate	NV	NV	1	mg/L	480	Dry	200	210	210	Dry	<0.50	-	-	-	-	-		
Carbonate	NV	1	mg/L	<1.0	Dry	<1.0	<1.0	<1.0	<1.0	Dry	<0.50	-	-	-	-	-		
Hydroxide	NV	1	mg/L	<1.0	Dry	<1.0	<1.0	<1.0	<1.0	Dry	<0.50	-	-	-	-	-		
Calcium	NV	NV	0.5	mg/L	217	Dry	73	47	48	Dry	<0.50	-	-	-	-	-		
Magnesium	NV	NV	0.5	mg/L	96	Dry	23	13	13	Dry	<0.50	-	-	-	-	-		
Potassium	NV	NV	0.5	mg/L	10	Dry	2	0.54	0.59	Dry	<0.50	-	-	-	-	-		
Sodium	2,300	NV	0.5	mg/L	269	Dry	9	7.4	7.5	Dry	<0.50	-	-	-	-	-		
Chloride	2,300	NV	1	mg/L	690	Dry	11	9.3	9.1	Dry	<0.50	-	-	-	-	-		
Sulfate (SO4)	NV	1	mg/L	390	Dry	3	2.8	2.1	2.1	Dry	<0.50	-	-	-	-	-		
Ionic Balance	NV	NV	NV	%		Dry	3	0.91	0.15	Dry	<5.0	-	-	-	-	-		
Nutrients																		
Ammonia	NV	NV	0.015	mg/L	1.3	Dry	0.49	0.075	0.069	Dry	4.4	-	-	-	-	-		
Nitrate - N	NV	NV	0.01	mg/L	1.6	Dry	0.25	0.19	0.18	Dry	<0.50	-	-	-	-	-		
Nitrite - N	NV	NV	0.01	mg/L	<0.010	Dry	<0.010	<0.010	<0.010	Dry	<0.50	-	-	-	-	-		
Nitrate and Nitrite - N	NV	NV	0.01	mg/L	1.6	Dry	0.25	0.19	0.18	Dry	<0.50	-	-	-	-	-		
Polycyclic Aromatic Hydrocarbons																		
Specific Parameters																		
Acenaphthene	600	NV	0.1	µg/L	<0.10	Dry	<0.10	<0.10	<0.10	Dry	<0.10	<0.10	<0.1	<0.1	<0.10	<0.1		
Acenaphthylene	1.8	NV	0.1	µg/L	<0.10	Dry	<0.10	<0.10	<0.10	Dry	<0.10	<0.10	<0.1	<0.1	<0.10	<0.1		
Acridine	NV	0.04	µg/L	<0.040	Dry	<0.040	<0.040	<0.040	<0.040	Dry	<0.040	<0.040	<0.04	<0.04	<0.040	<0.04		
Anthracene	2.4	NV	0.01	µg/L	<0.010	Dry	<0.010	<0.010	<0.010	Dry	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01		
Benzo[a]anthracene	4.7	NV	0.0085	µg/L	<0.0085	Dry	<0.0085	<0.0085	<0.0085	Dry	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085		
Benzo[b]fluoranthene	0.75	NV	0.0085	µg/L	<0.0085	Dry	<0.0085	<0.0085	<0.0085	Dry	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085		
Benzo[k]fluoranthene	0.4	NV	0.0085	µg/L	<0.0085	Dry	<0.0085	<0.0085	<0.0085	Dry	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085		
Benzo[a]hperylene	0.2	NV	0.05	µg/L	<0.050	Dry	<0.050	<0.0085	<0.0085	Dry	<0.050	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085		
Benzo[b]phenanthrene	NV	NV	0.0075	µg/L	<0.0075	Dry	<0.0075	<0.050	<0.050	Dry	<0.0075	<0.050	<0.05	<0.05	<0.050	<0.05		
Benzo[a]pyrene	0.81	NV	0.0075	µg/L	<0.0085	Dry	<0.0085	<0.0075	<0.0075	Dry	<0.0085	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075		
Benzo[e]pyrene	NV	NV	0.05	µg/L	<0.050	Dry	<0.050	<0.050	<0.050	Dry	<0.050	<0.05	<0.05	<0.05	<0.050	<0.05		
Benzo[a]anthracene (TPH - calculated)	NV	0.0075	µg/L	<0.0075	Dry	<0.010	<0.010	<0.010	<0.010	Dry	<0.010	<0.010	<0.01	<0.01	<0.010	<0.01		
Chrysene	1	NV	0.0085	µg/L	<0.0085	Dry	<0.0085	<0.0085	<0.0085	Dry	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085		
Dibenz[a,h]anthracene	0.52	NV	0.0075	µg/L	<0.0075	Dry	<0.0075	<0.0075	<0.0075	Dry	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075		
Fluoranthene	130	NV	0.1	µg/L	<0.10	Dry	<0.10	<0.10	<0.10	Dry	<0.10	<0.10	<0.1	<0.1	<0.10	<0.1		
Fluorene	400	NV	0.5	µg/L	<0.50	Dry	<0.50	<0.50	<0.50	Dry	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5		
Indeno[1,2,3-cd]pyrene	0.2	NV	0.0085	µg/L	<0.0085	Dry	<0.0085	<0.0085	<0.0085	Dry	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085		
1-Methylanthracene	1,800	NV	0.1	µg/L	<0.10	Dry	<0.10	<0.1	<0.1	Dry	<0.10	<0.10	<0.1	<0.1	<0.10	<0.1		
2-Methylnaphthalene	1,800	NV	0.1	µg/L	<0.10	Dry	<0.10	0.42	0.49	Dry	<0.10	<0.10	<0.1	<0.1	<0.10	<0.1		
Naphthalene	1,400	NV	0.1	µg/L	<0.10	Dry	<0.10	<0.10	<0.1	Dry	<0.10	<0.10	<0.1	<0.1	<0.10	<0.1		
Phenanthrene	580	NV	0.05	µg/L	<0.050	Dry	<0.050	<0.050	<0.050	Dry	<0.050	<0.050	<0.05	<0.05	<0.050	<0.05		
Pyrene	NV	NV	0.05	µg/L	<0.050	Dry	<0.050	<0.050	<0.050	Dry	<0.050	<0.050	<0.05	<0.05	<0.050	<0.05		
Pyrene	68	NV	0.02	µg/L	<0.020	Dry	<0.020	<0.020	<0.020	Dry	<0.020	<0.020	<0.02	<0.02	<0.020	<0.02		
Quinoline	NV	NV	0.2	µg/L	<0.20	Dry	<0.20	<0.20	<0.20	Dry	<0.20	<0.20	<0.2	<0.2	<0.20	<0.2		
Misc. Organics																		
Phenols	12,000	NV	1.5	µg/L	3.6	Dry	<1.5	<1.5	<1.5	Dry	<1.5	-	-	-	-	-		

Table 2b Surface Water Analytical Results  
Resolute Airport Landfills EMP: Resolute, Nunavut  
BTEX, PHCs, Oil and Grease, Total Metals, Routine parameters, PAHs and Phenols Analysis

					AEC 1 - Inactive Solid Waste Landfill										AEC 2 - Historical Landfill										AEC 3 - Former Vehicle & Metal Storage Area									
Sample ID	CCME CEQG	Max. Allowable Discharge <sup>1</sup>	RDL	Units	RBL-4 FWAL*	RBL-4 AZA428	DUP C AZA429	RBL-4 WNL674	RBL-8 AFW846	FIELD DUP 2 AFW847	RBL-8 AZA191	RBL-8 WNL675	RBL-DUPB (Dup of RBL-8) WNL679	RPD (%)	RBL-13 AFW849	RBL-13 AZA457	RBL-13 WNL676	RBL-DUPC (Dup of RBL-13) WNL680	RPD (%)	RBL-16 AFW909	RBL-16 AZA458	RBL-16 WNL677												
Laboratory ID	FWAL*	Discharge <sup>2</sup>			27-Aug-2021	3-Aug-2022	3-Aug-2022	24-Jul-2023	27-Aug-2021	27-Aug-2021	2-Aug-2022	24-Jul-2023	24-Jul-2023		27-Aug-2021	3-Aug-2022	24-Jul-2023	24-Jul-2023		27-Aug-2021	3-Aug-2022	24-Jul-2023												
Sampling Date	(Short Term/Long Term)																																	
PARAMETERS																																		
BTEX																																		
Benzene	NV/370	370	0.2	µg/L	<0.40	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.2	<0.2	-	<0.40	<0.40	<0.2	<0.20	-	<0.40	<0.40	<0.20												
Toluene	NV/2	2	0.2	µg/L	<0.40	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.2	<0.2	-	<0.40	<0.40	<0.2	<0.20	-	<0.40	<0.40	<0.20												
Ethylbenzene	NV/90	90	0.2	µg/L	<0.40	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.2	<0.2	-	<0.40	<0.40	<0.2	<0.20	-	<0.40	<0.40	<0.20												
m-Xylene & p-Xylene	NV	NV	0.4	µg/L	<0.80	<0.80	<0.80	<0.4	<0.80	<0.80	<0.80	<0.4	<0.4	-	<0.80	<0.80	<0.4	<0.20	-	<0.80	<0.80	<0.40												
o-Xylene	NV	NV	0.2	µg/L	<0.40	<0.40	<0.40	<0.2	<0.40	<0.40	<0.40	<0.2	<0.2	-	<0.40	<0.40	<0.2	<0.20	-	<0.40	<0.40	<0.20												
Total Xylenes	NV	NV	0.4	µg/L	<0.89	<0.89	<0.89	<0.4	<0.89	<0.89	<0.89	<0.4	<0.4	-	<0.89	<0.89	<0.4	<0.40	-	<0.89	<0.89	<0.40												
Petroleum Hydrocarbons																																		
F1 (C6-C10)	NV	NV	25	µg/L	<100	<100	<100	<25	<100	<100	<100	<25	<25	-	<100	<100	<25	<25	-	<100	<100	<25												
F1 (C6-C10) - BTEX	NV	NV	25	µg/L	<100	<100	<100	<25	<100	<100	<100	<25	<25	-	<100	<100	<25	<25	-	<100	<100	<25												
F2 (C10-C16)	NV	NV	100	µg/L	<100	<100	<100	<100	<100	<100	<100	320	<100	-	<100	<100	<100	<100	-	<100	<100	<100												
F3 (C16-C34)	NV	NV	200	µg/L	<100	<100	<100	<100	<100	<100	<100	260	<200	-	<100	<100	<200	<200	-	<100	<100	<200												
F4 (C34-C50)	NV	NV	200	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200	-	<200	<200	<200	<200	-	<200	<200	<200												
Extractable Hydrocarbons																																		
Oil And Grease	NV	15,000	0.5	µg/L	<500	<2,000	<2,000	<0.50	<500	500	2,500	<0.50	<0.50	-	<500	<2,000	<0.50	<0.50	-	<500	<2,000	<0.50												
Total Metals																																		
Aluminium	100	NV	3	µg/L	13.1	51	7.8	23	7	6.1	180	50	42	17	399	10	14	14	-	147	34	5.6												
Antimony	NV	NV	0.5	µg/L	<0.50	<0.60	<0.60	<0.50	<0.50	<0.50	<0.60	<0.50	<0.50	-	<0.50	<0.60	<0.50	<0.50	-	<0.50	<0.60	<0.50												
Arsenic	NV/5	NV	1	µg/L	0.26	0.36	0.26	<1.0	0.21	0.23	<1.0	<1.0	<1.0	-	0.27	<0.20	<1.0	<1.0	-	0.18	<0.20	<1.0												
Barium	NV	NV	2	µg/L	72.9	84	82	84	121	121	140	56	57	2	17.2	<10	4.5	5	-	15.5	<10	4.7												
Beryllium	NV	NV	0.4	µg/L	<0.10	<1.0	<1.0	<0.40	<0.10	<0.10	<0.40	<0.10	<0.40	-	<0.10	<1.0	<0.40	<0.40	-	<0.10	<1.0	<0.40												
Boron (Total)	29,000/1500	NV	10	µg/L	56	59	72	65	74	69	110	40	38	5	115	21	19	19	0	131	23	19												
Cadmium	2.1-3.2 <sup>(3)</sup>	NV	0.09	µg/L	0.033	0.01	0.054	0.091	0.013	0.014	0.048	<0.090	<0.090	-	0.018	<0.020	<0.090	<0.090	-	0.016	<0.020	<0.090												
Chromium	NV	NV	5	µg/L	1.5	2.5	1.8	<5.0	<1.0	<1.0	<1.0	<5.0	<5.0	-	1	<1.0	<5.0	<5.0	-	<1.0	<1.0	<5.0												
Chromium (VI)	NV/1	NV	0.5	µg/L	1.3	1.6	1.5	1.6	<0.99	<0.99	<0.99	0.51	0.51	-	<0.99	<0.99	<0.50	<0.50	-	<0.99	<0.99	<0.50												
Cobalt	NV	NV	0.5	µg/L	<0.20	<0.30	<0.30	<0.20	<0.20	<0.20	<0.30	<0.5	<0.50	-	0.23	<0.30	<0.50	<0.50	-	<0.20	<0.30	<0.50												
Copper	2.32 - 2.57 <sup>(4)</sup>	NV	0.9	µg/L	1.72	2.2	1.7	2.9	0.7	0.59	1.3	<0.9	<0.90	-	0.86	<1.0	<0.90	<0.90	-	1.87	<1.0	<0.90												
Iron	300	NV	25	µg/L	49	80	<60	<100	26	27	2,200	<100	<100	-	587	<60	<100	<100	-	177	72	<100												
Lead	3.1 - 5.3 <sup>(5)</sup>	1	0.5	µg/L	0.49	0.93	0.36	1.3	<0.20	<0.20	4.7	<0.5	<0.50	-	0.51	<0.20	<0.50	<0.50	-	0.51	<0.20	<0.50												
Manganese	380-1081 <sup>(6)</sup>	NV	2	µg/L	2.3	<4.0	<4.0	3.7	1.8	2.1	40	2.6	2.9	-	12.3	<4.0	<2.0	<2.0	-	5.3	<4.0	<2.0												
Mercury	NV/0.026	NV	0.026	µg/L	0.0022	0.0025	0.0029	<0.0025	<0.0019	0.0023	0.0103	<0.026 (5)	<0.026 (5)	-	<0.0019	<0.0019	<0.026 (5)	<0.026 (5)	-	<0.0019	<0.0019	<0.026 (5)												
Molybdenum	NV/73	NV	0.5	µg/L	1	0.92	1.2	0.74	<1.0	<1.0	0.67	0.53	0.57	7	<1.0	<0.20	<0.50	<0.50	-	<1	<0.20	<0.50												
Nickel	NV/94.12-130.07 <sup>(7)</sup>	NV	1	µg/L	<1	0.61	<1	<1	<1	<1	1.3	<1	<1.0	-	<1	<0.50	<1.0	<1.0	-	<1	<0.50	<1.0												
Phosphorus	NV	NV	100	µg/L	90	100	6.6	40	3	3.4	70	10	9.00	-	18	<100	<4	<4	-	4.2	<100	<4												
Selenium	NV/1	NV	1	µg/L	0.27	<0.20	0.2	0.08	0.21	0.25	<0.20	0.06	<1.0 (6)	-	0.1	<0.20	<0.05	<0.05	-	<0.10	<0.20	<0.05												
Silver	NV/0.25	NV	0.09	µg/L	<0.020	<0.10	<0.10	<0.090	<0.020	<0.020	<0.10	<0.090	<0.090	-	<0.020	<0.10	<0.090	<0.090	-	<0.020	<0.10	<0.090												
Sulfur	NV	NV	200	µg/L	5,500	5,800	5,700	NV	7,700	9,200	5,900	NV	NV	-	16,200	6200	NV	NV	-	20,700	6,300	NV												
Thallium	NV/0.8	NV	0.05	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.010	<0.010												
Titanium	NV	NV	5	µg/L	<5.0	1.1	<1.0	<5.0	<5.0	<5.0	6	<5.0	<5.0	-	11.9	<1.0	<5.0	<5.0	-	<5.0	1.4	<5.0												
Uranium	33/15	NV	0.1	µg/L	0.31	0.27	0.33	0.17	0.34	0.34	0.36	0.17	0.16	6	0.55	0.22	0.19	0.2	-	0.63	0.24	0.19												
Vanadium	NV	NV	0.5	µg/L	<5.0	<1.0	<1.0	<0.50	<5.0	<5.0	1	<0.50	<0.50	-	<5.0	<1.0	<0.50	<0.50	-	<5.0	<1.0	<0.50												
Zinc	377 <sup>(8)</sup>	NV	5	µg/L	7.6	17	8.1	11.00	<5.0	<5.0	4.7	<5	<5.0	-	<5.0	<3.0	<5.0	<5.0	-	<5.0	<3.0	<5.0												
Routine Water																																		
pH	6.5 - 9.0	NV	6.0 - 9.0	pH	8.11	7.76	7.80	8.72	8.10	8.06	8.00	8.29	8.29	-	8.15	7.47	8.15	8.08	1	8.22	7.48	8.12												
Electrical Conductivity	NV	NV	2,000	µS/cm	380	360	370	270	690	680	620	360	370	3	680	230	210	210	-	750	230	210.0												
Total Suspended Solids	NV	50/100 <sup>(9)</sup>	10	mg/L	9	18	19	<10	0.61	<0.40	160 (1) <sup>(10)</sup>	<10	<10	-	46	0.45	15	<10	-	18	6	<10												
Hardness	NV	NV	0.5	mg/L	144	134	132	110	285	286	276	150	140	7	253	105	99	99	-	220	107	98.0												
Total Alkalinity	NV	NV	1	mg/L	250	250	250	250	250	250	250	120	120	130	83	81	79	86	3	140	86	80.0												
Bicarbonate	NV	NV	1	mg/L	150	140	150	91	300	300	280	120	110	9	160	100	80	78	3	180	100	79.0												
Carbonate	NV	NV	1	mg/L	<1.0	<1.0	<1.0	4.5	<1.0	<1.0	<1.0	2.1	2.1	-	<1.0	<1.0	1.10	<1	-	<1.0	<1.0	<1												
Hydroxide	NV	NV	1	mg/L	<1.0	<1.0	<1.0	<1	<1.0	<1.0	<1	<1	<1	-	<1.0	<1.0	<1	<1	-	<1.0	<1.0	<1												
Calcium	NV	NV	0.5	mg/L	36	35	35	33	80	80	69	37	38	3	64	34	31	30	3	55	33	32.00												
Magnesium	NV	NV	0.5	mg/L	13	12	11	10	21	21	18	15	15	0	23	4.9	4.50	4.60	2	20	4.8	4.70												
Potassium	NV	NV	0.5	mg/L	2	1.9	1.9	2	2	2	1.50	1.60	1.60	6	3	0.6	0.65	0.67	3	4	0.6	0.65												
Sodium	NV	NV	0.5	mg/L	22	21																												

## APPENDIX D

### Field Notes



Project No.: 230427

Name: PSPC Resolute Bay Airport Landfill

Client: PSPC

Monitoring Well ID	Northing	Easting	AEC	LNAPL Level	Water Level	Well Depth	Sample Date	Sample Time	Dissolved Oxygen	ORP	Temp	pH	Cond	Turbidity	Notes
									(mg/L)	(mV)			(us/cm)	(NTU)	
RBL-1	8295630	441147	AEC 1	ND	1.3	1.32			IS	IS	IS	IS	IS	IS	
RBL-2	8295551	440943	AEC 1	ND	1.27	1.44	July 23/23	17:30	3.88	128	6.91	7.34	729	4.7	
RBL-3	8295608	440901	AEC 1	ND	0.86	1.62	July 23/23	15:30	19.81	12	5.53	7.91	427	9.3	RBL-DUPA @ 15:50, Field Blank 2 @ 15:40
AEC1-GW1	8295526	441063	AEC 1	ND	1.3	1.74	July 23/23	16:30	5.55	76	6.55	7.86	1.17	14.7	
RBL-5	8292509	441662	AEC 2	ND	IS	0.99			IS	IS	IS	IS	IS	IS	
RBL-6	8292566	441420	AEC 2	ND	IS	0.88			IS	IS	IS	IS	IS	IS	
RBL-7	8292634	441384	AEC 2	ND	IS	1.34			IS	IS	IS	IS	IS	IS	
FL-MW-6	8292485	441484	AEC 2	ND	IS	0.96			IS	IS	IS	IS	IS	IS	
FL-MW-7	8292468	441452	AEC 2	ND	IS	1.49			IS	IS	IS	IS	IS	IS	
2-MW-8	8292499	441451	AEC 2	ND	IS	1.06			IS	IS	IS	IS	IS	IS	
RBL-10	8296242	440493	AEC 3	ND	IS	1.28			IS	IS	IS	IS	IS	IS	
RBL-11	8296265	440383	AEC 3	ND	IS	1.3			IS	IS	IS	IS	IS	IS	
RBL-12	8296335	440450	AEC 3	ND	IS	1.48			IS	IS	IS	IS	IS	IS	
RBL-14	8296449	440682	AEC 3	ND	IS	1.42			IS	IS	IS	IS	IS	IS	
RBL-15	8296468	440635	AEC 3	ND	IS	1.41			IS	IS	IS	IS	IS	IS	

Notes:

IS - Insufficient Water

ND - Non-Detect

**Project No 230427**

**Name: PSPC Resolute Bay Airport Landfill**

**Client: PSPC**

Location	Northing	Easting	AEC	Sample Date	Sample Time	Dissolved Oxygen	ORP	Temp	pH	Cond	Turbidity	Notes
						(mg/L)	(mV)			(us/cm)	(NTU)	
<b>RBL-4</b>	8295627	440884	AEC 1	24-Jul-23	13:00	18.91	160	15.92	8.93	307	0	
<b>RBL-8</b>	8292688	441366	AEC 2	24-Jul-23	11:50	16.47	226	11.57	8.54	384	0	RBL-DUPB @ 11:55
<b>RBL-13</b>	8296454	440478	AEC 3	24-Jul-23	11:15	15.91	242	9.37	8.27	216	0	RBL-DUPC @ 11:20
<b>RBL-16</b>	8296336	440340	AEC 3	24-Jul-23	10:30	19.62	199	9.22	8.45	216	0	Field Blank 2 @ 10:40

Notes:

Historical RBL-8 areas dried, sampled closest water body down gradient

Historical RBL-13 and RBL-16 areas dried, sampled 2022 locations

**Project No.:** 230427  
**Name:** PSPC Resolute Bay Airport Landfill  
**Client:** PSPC

Thermistor	Northing	Easting	Data Download	Batteries Replaced	Condition and any issue	Accessibility
THRMS-01	8295590	440985	Friday, July 21, 2023	Monday, July 24, 2023	missing internal USB to Micro USB	Masterlock #1 or #11 Socket
THRMS-02	8295607	441055	Friday, July 21, 2023	Monday, July 24, 2023		Masterlock #1 or #11 Socket
THRMS-03	8295577	441014	Friday, July 21, 2023	Monday, July 24, 2023		Masterlock #1 or #11 Socket

**230427**

Accessibility:

AEC1: Lock keys are inside THRMS-03

AEC2: Wells are unlocked

AEC3: Wells are unlocked

Thermistors: Can be open with Masterlock#1 or #11 socket

TABLE 1: GENERAL AEC 1 (INACTIVE SOLID WASTE LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (June 2023)
Settlement	●		Not observed	FAR ENOUGH
Erosion	●		Not observed	EVERY WHERE
Frost Action	●		Not observed	UNKNOWN
Animal Burrows		●	Not observed	FOX & LEMMINGS
Vegetation	●		Acceptable, some isolated at toe	LOTS OF VEGETATION AROUND AREA
Staining		●	Not observed	EVERYWHERE BELOW
Vegetation Stress	●		Not observed	DEAD PLANTS
Seepage Points	●		Acceptable/occasional pooling at toe of landfill along south swale near sewage lagoon	SHOWS PAST OVER FLOWS TOWARDS OCEAN
Exposed Debris		●	Not observed	EVERYWHERE
Condition of Monitoring Instruments		●	Acceptable - AEC 1 GW1 casing slightly bent, plug added	STILL OPERATIONAL
Grades/Topography	●		Acceptable as per landfill design	FILTHY BELOW
Distance to Downgradient Surface Water Bodies	●		Occasional; southwest mapped as per previous	OCCASIONAL OVERFLOW TOWARDS OCEAN
Distance to Freshwater/Marine Habitat and Habitat Usage	●		Acceptable - set back from marine discharge	SEWAGE OVER FLOWS TOWARDS OCEAN
Terrestrial Habitat		●	Not observed	
Land Uses		●	Acceptable	VERY FILTHY
Debris		●	Not observed	EVERY WHERE
Permafrost Degredation	●			EVERY WHERE
Ensuring Landfill Cover Thickness	●		Acceptable as per landfill design	NEEDS CLEANING BELOW
Snow Cover Including Measured Depth	●		Not observed	ALMOST GONE

TABLE 1: GENERAL AEC 1 (INACTIVE SOLID WASTE LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (June 2023)
Sun Exposure	●		Acceptable	24/7
Surface Temperature	●		Acceptable	COLD
Wind Effects	●		Acceptable	STRONG
Surface Drainage	●		Acceptable as per landfill design - drainage via swale system	NOT DEEP ENOUGH AND NEED A PLASTIC BENEATH TO PROTECT GROUND
Sewage Lagoon Overflow		●	Acceptable as per landfill design, no overflow	SHOWS OF OVER FLOW'S TOWARDS OCEAN
Potential Percolation into the Landfill Cap	●		Acceptable, no pooling	NEEDS CLEANING
Ensuring a Sufficiently High Degree of Saturation of the Barrier Layer Below the Active Zone	●		Acceptable	?
Runoff Diversion	●		Acceptable, swales/channels operating as per landfill design	NEEDS CLOSER INSPECTIONS

TABLE 1: GENERAL AEC 2 (HISTORICAL LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (June 2023)
Settlement	●		Acceptable/isolated, stress fractures, cracking depressions, exposed debris noted on west crest	ACCEPTABLE
Erosion	●			ACCEPTABLE
Frost Action	●		Not observed	ACCEPTABLE
Animal Burrows		●	Not observed	BIRDS & LEMMINGS
Vegetation	●		acceptable, isolated at toe	EVERYWHERE NEAR
Staining		●	Not observed	BELOW ONLY
Vegetation Stress	●		Not observed	MANY DEAD BELOW
Seepage Points	●		Not observed	ACCEPTABLE
Exposed Debris		●	Acceptable - isolated, minor debris exposed at surface crest near disturbed area	←
Condition of Monitoring Instruments		●	Marginal - RBL-5 broke at surface (repaired but very shallow), likely won't produce water. FL-MW-6 PVC poor.	NOT OBSERVED
Grades/Topography	●		Acceptable/isolated, patch of less gravel on west slope	←
Distance to Downgradient Surface Water Bodies	●		occasional - no new surface water at toe	←
Distance to Freshwater/Marine Habitat and Habitat Usage	●		acceptable, set back from marine discharge	ACCEPTABLE
Terrestrial Habitat		●	none observed	NONE
Land Uses		●	Industrial (non-operational, open, unrestricted, airport property)	←
Debris		●	Acceptable - isolated, minor debris exposed at surface crest near disturbed area	←
Permafrost Degredation	●		none observed	NONE OBSERVED
Snow Cover Including Measured Depth	●		none observed	NONE
Sun Exposure	●		acceptable - no significant weather related conditions	24/7
Surface Temperature	●		acceptable - no significant weather related conditions	COLD / GOOD

TABLE 1: GENERAL AEC 2 (HISTORICAL LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (June 2023)
Wind Effects	●		acceptable - no significant weather related conditions	←
Potential Percolation into the Landfill Cap	●		acceptable - swale/drainage operating as designed	←
Runoff Diversion	●		acceptable - swale/drainage operating as designed	←



TABLE 1: GENERAL AEC 3 (Former Vehicle and Waste Metal Store Area) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (June 2023)
Settlement	●		acceptable, isolated, slope failure (natural), 15 m length along north edge of EX 1 remedial area	CLEAN
Erosion	●		not observed	NONE
Frost Action	●		not observed	NONE OBSERVED
Animal Burrows		●	not observed	BIRD'S NESTS LEMMINGS & FOXES
Vegetation	●		not observed	EVERYWHERE NEAR
Staining		●	acceptable, isolated, two burn areas noted, possible campfires	CLEAN AREA BUT BROKEN GLASSES NEAR SIGHTS
Vegetation Stress	●		not observed	PRETTY GOOD
Seepage Points	●		acceptable, no pooling on site	NO POOLING
Exposed Debris		●	none observed	NONE OBSERVED
Condition of Monitoring Instruments		●	acceptable, no issues noted	NO ISSUES NOTED
Grades/Topography	●		acceptable as per design	ACCEPTABLE
Distance to Downgradient Surface Water Bodies	●		acceptable, no flow to valley stream	1 AREA HAD RUST OVER FLOW
Distance to Freshwater/Marine Habitat and Habitat Usage	●		acceptable, no flow to valley stream	VALLEY BELOW
Terrestrial Habitat		●	not observed	
Land Uses		●	acceptable, isolated, two burn areas noted, possible campfires	←
Debris		●	not observed	NONE OBSERVED
Permafrost degradation	●		not observed	NONE
Snow Cover duration	●		acceptable, no significant weather related conditions	2-
Sun Exposure	●		acceptable, no significant weather related conditions	24/7

TABLE 1: GENERAL AEC 3 (Former Vehicle and Waste Metal Store Area) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (June 2023)
Surface Temperature	●		acceptable, no significant weather related conditions	ACCEPTABLE
Wind Effects	●		acceptable, no significant weather related conditions	ACCEPTABLE
Surface Drainage and percolation into landfill cap	●		acceptable, no pooling north/south of access road	CLEAN
Runoff Diversion	●		not observed	NOT OBSERVED

## Health & Safety Plan

### Anticipated Hazards & Control

FIELD H&S HANDBOOK SECTION REF.	HAZARD / FIELD H&S HANDBOOK SECTION	RELEVANT TO PROJECT? (Y/N)	ADDITIONAL CONTROLS SPECIFIC TO PROJECT
6.1	Physical	N	
6.2	Heavy Equipment	N	
6.3	Electrical	N	NONE
6.4	Power Tool	N	
6.5	Lifting	N	
6.6	Noise	N	JUST THE SEWER TRUCK
6.7	Ambient Air Quality	N	SMELLS LIKE SEWER IN AREA
6.8	Open Pit and Confined Space	N	NO BLACK PLASTIC BENEATH, JUST DUMPED TO PITTIED EARTH THAT FLOWS OUT OF PIT
6.9	Excavation and Trench	N	NOT DEEP ENOUGH (OVER FLOWS)
6.10	Biological	Y	Wildlife
6.11	Work at Height	N	OVER FLOWS OUT OF PIT
6.12	Heat and UV Exposure	Y	EXPOSED 24/7
6.13	Cold Stress & Severe Weather	Y	MOST TIMES
6.14	Chemical Hazards	N	UNKNOWN
6.15	Chemical Hazard Indicators	N	UNKNOWN
6.16	Chemical Hazard Prevention	N	UNKNOWN
6.17	Ladder Safety	N	NONE
6.18	Working On or Near Roads – Traffic Control Persons	N	NONE
6.19	Working Alone	Y	YES
6.20	Violence	N	Not anticipated
6.21	Unforeseen	N	
<b>ADDITIONAL HAZARDS / CONCERNS / CONTROLS</b>  Main health and safety risks are site are: - Driving - Wildlife - Heat/cold exposure - Slips, trips, falls - Working alone			

July 20, 2023

KIM CARLTON + PETER NOAH

TABLE 1: GENERAL AEC 1 (INACTIVE SOLID WASTE LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (July 2023)
Settlement	•		Not observed	not observed
Erosion	•		Not observed	slopes + top look good
Frost Action	•		Not observed	not observed
Animal Burrows		•	Not observed	not observed
Vegetation	•		Acceptable, some isolated at toe	<del>None</del> at bottom of hill, none on top or on slope
Staining		•	Not observed	not observed
Vegetation Stress	•		Not observed	some dead plants at bottom
Seepage Points	•		Acceptable/occasional pooling at toe of landfill along south swale near sewage lagoon	pooling at bottom of hill
Exposed Debris		•	Not observed	small metal pieces, nothing major
Condition of Monitoring Instruments		•	Acceptable - AEC 1 GW1 casing slightly bent, jplug added	that + no new items
Grades/Topography	•		Acceptable as per landfill design	acceptable
Distance to Downgradient Surface Water Bodies	•		Occasional; southwest mapped as per previous	wet immediately below hill (wet around RBL-2+RBL-3)
Distance to Freshwater/Marine Habitat and Habitat Usage	•		Acceptable - set back from marine discharge	sewage lagoon beside has issues
Terrestrial Habitat		•	Not observed	bird poop on thermistors + on well lids, no other signs
Land Uses		•	Acceptable	ATV tracks on top of hill Peter said people avoid area due to sewage smell
Debris		•	Not observed	-small metal pieces on hill -some blown from adjacent dump
Permafrost Degredation	•			
Ensuring Landfill Cover Thickness	•		Acceptable as per landfill design	assumed acceptable
Snow Cover Including Measured Depth	•		Not observed	not observed



TABLE 1: GENERAL AEC 1 (INACTIVE SOLID WASTE LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (July 2023)
Sun Exposure	•		Acceptable	24/7
Surface Temperature	•		Acceptable	Cold to the touch
Wind Effects	•		Acceptable	acceptable
Surface Drainage	•		Acceptable as per landfill design - drainage via swale system	Swale system seems to work - no drainage channels on slope
Sewage Lagoon Overflow		•	Acceptable as per landfill design, no overflow	evidence of over flow, high amount of vegetation below
Potential Percolation into the Landfill Cap	•		Acceptable, no pooling	acceptable, no pooling
Ensuring a Sufficiently High Degree of Saturation of the Barrier Layer Below the Active Zone	•		Acceptable	- not sure
Runoff Diversion	•		Acceptable, swales/channels operating as per landfill design	acceptable

July 20, 2023

KIM CARLTON AND PETER NOAH

TABLE 2: GENERAL AEC 2 (HISTORICAL LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (July 2023)
Settlement	•		Acceptable/isolated, stress fractures, cracking depressions, exposed debris noted on west crest	acceptable, some debris noted throughout site
Erosion	•			
Frost Action	•		Not observed	acceptable
Animal Burrows		•	Not observed	lemmings (seen in area)
Vegetation	•		acceptable, isolated at toe	none on top, some below.
Staining		•	Not observed	not observed
Vegetation Stress	•		Not observed	some dead below
Seepage Points	•		Not observed	not observed
Exposed Debris		•	Acceptable - isolated, minor debris exposed at surface crest near disturbed area	some little pieces on top
Condition of Monitoring Instruments		•	Marginal - RBL-5 broke at surface (repaired but very shallow), likely won't produce water. FL-MW-6 PVC poor.	not observed
Grades/Topography	•		Acceptable/isolated, patch of less gravel on west slope	acceptable. less gravel on west slope
Distance to Downgradient Surface Water Bodies	•		occasional - no new surface water at toe	far enough distance
Distance to Freshwater/Marine Habitat and Habitat Usage	•		acceptable, set back from marine discharge	acceptable
Terrestrial Habitat		•	none observed	lemmings
Land Uses		•	industrial (non-operational, open, unrestricted, airport property)	Some roads around area (cutting corners when driving)
Debris		•	Acceptable - isolated, minor debris exposed at surface crest near disturbed area	some exposed on west side - acceptable
Permafrost Degredation	•		none observed	none observed
Snow Cover Including Measured Depth	•		none observed	none observed
Sun Exposure	•		acceptable - no significant weather related conditions	24/7

\* ~~no~~ wildlife around AEC 2 - maybe birds or a fox - note of bones found on site  
 ↳ saw a lemming on site July 21

TABLE 2: GENERAL AEC 2 (HISTORICAL LANDFILL) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (July 2023)
Surface Temperature	●		acceptable - no significant weather related conditions	← ✓
Wind Effects	●		acceptable - no significant weather related conditions	← ✓
Potential Percolation into the Landfill Cap	●		acceptable - swale/drainage operating as designed	← ✓
Runoff Diversion	●		acceptable - swale/drainage operating as designed	← ✓



July 20, 2023  
KIM CARLTON + PETER NOAH

TABLE 3: GENERAL AEC 3 (Former Vehicle and Waste Metal Store Area) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (July 2023)
Settlement	•		acceptable, isolated, slope failure (natural), 15 m length along north edge of EX 1 remedial area	evidence of drainage channels near RBL-14 + RBL-15
Erosion	•		not observed	none observed
Frost Action	•		not observed	none observed
Animal Burrows		•	not observed	lemmings
Vegetation	•		not observed	a little on cap, more down slope towards McMaster River
Staining		•	acceptable, isolated, two burn areas noted, possible campfires	2 burn areas
Vegetation Stress	•		not observed	not observed
Seepage Points	•		acceptable, no pooling on site	no pooling
Exposed Debris		•	none observed	little pieces of metal near RBL-14
Condition of Monitoring Instruments		•	acceptable, no issues noted	no issues noted
Grades/Topography	•		acceptable as per design	acceptable
Distance to Downgradient Surface Water Bodies	•		acceptable, no flow to valley stream	drainage channels near RBL-14/15 to River
Distance to Freshwater/Marine Habitat and Habitat Usage	•		acceptable, no flow to valley stream	valley to McMaster River
Terrestrial Habitat		•	not observed	bird poop
Land Uses		•	acceptable, isolated, two burn areas noted, possible campfires	- 2 burn areas some debris on south end
Debris		•	not observed	- glass area - some debris near RBL-14/15
Permafrost degradation	•		not observed	none
Snow Cover duration	•		acceptable, no significant weather related conditions	none noted while onsite
Sun Exposure	•		acceptable, no significant weather related conditions	24/7

- not alot of animals, maybe birds in August and the odd fox



TABLE 3: GENERAL AEC 3 (Former Vehicle and Waste Metal Store Area) VISUAL INSPECTION MATRIX

Observation Parameter	Operational Feature	Maintenance Feature	Observations from Previous Report (2022)	Current Observations (July 2023)
Surface Temperature	●		acceptable, no significant weather related conditions	cold to touch
Wind Effects	●		acceptable, no significant weather related conditions	acceptable
Surface Drainage and percolation into landfill cap	●		acceptable, no pooling north/south of access road	drainage from RBL14/15 to valleys
Runoff Diversion	●		not observed	drainage from RBL-14/15 to valleys

Monitoring Well ID	Northing (a,b)	Easting (a,b)	AEC	Water Level	Well Depth	Dissolved Oxygen (mg/L)	ORP (mV)	Temp	pH	Cond (µS/cm) (mg/L)	Turbidity (NTU)
RBL-1 cut lock 2"	8295630(a)	441147(a)	AEC 1	1.27 OLNAPL	1.44						
RBL-2 cut lock	8295551(a)	440943(a)	AEC 1	1.30 DRY @ 1.30m	1.32	3.88	128	6.91	7.34	0.729	4.7
RBL-3 cut lock	8295608(a)	440901(a)	AEC 1	0.86 OLNAPL	1.62	19.81	12	5.53	7.91	0.427	9.3
AEC1-GW1 2"	8295526(b)	441063(b)	AEC 1	1.30 OLNAPL	1.74	5.55	78	6.55	7.86	1.17	14.7
RBL-5 cut lock 2"	8292509(a)	441662(a)	AEC 2	DRY @ 0.99m	—						
RBL-6 cut lock 2"	8292566(a)	441420(a)	AEC 2	DRY at 0.88m	—						
RBL-7 cut lock 2"	8292634(a)	441384(a)	AEC 2	DRY @ 1.34	—						
FL-MW-6 2" well	8292485(b)	441484(b)	AEC 2	DRY at 0.96m	—						
FL-MW-7 2" well	8292468(b)	441452(b)	AEC 2	DRY at 1.49	—						
2-MW-8 1" well	8292499(b) no spring	441451(b)	AEC 2	DRY at 1.06m	—						
RBL-10 2"	8296242(a)	440493(a)	AEC 3	DRY @ 1.28m	—						
RBL-11 2"	8296265(a)	440383(a)	AEC 3	DRY @ 1.30	—						
RBL-12 2"	8296335(a)	440450(a)	AEC 3	DRY @ 1.48m	—						
RBL-14 2"	8296449(a)	440682(a)	AEC 3	DRY @ 1.42	—						
RBL-15 2"	8296468(a)	440635(a)	AEC 3	DRY @ 1.41	—						

Dup taken at RBL-3

Field blank taken at RBL-3

Table 1: Surface Water/Seep Locations

Location	Northing (°)	Easting (°)	AEC	Dissolved Oxygen (mg/L)	ORP (mV)	Temp	pH	Cond (us/cm)	Turbidity (NTU)
RBL-4	8295627	440884	AEC 1	18.91	160	15.92	8.93	307	0
RBL-8	8292688	441366	AEC 2	16.47	226	11.57	8.54	384	6
RBL-13	8296454	440478	AEC 3	15.91	242	9.37	8.27	216	0
RBL-16	8296336	440340	AEC 3	19.62	199	7.22	8.45	216	0

took at downgradient pond  
taken at 2022 location

## **APPENDIX E**

Laboratory Certificates of Analyses, Chain of Custody Forms and  
Lab Letter of Approval for BluMetric's QA/QC



Your Project #: 230427  
 Site Location: RESOLUTE BAY LANDFILL  
 Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
 1682 Woodward Drive  
 Ottawa, ON  
 CANADA K2C 3R8

**Report Date: 2023/08/14**

Report #: R7763510

Version: 1 - Final

## CERTIFICATE OF ANALYSIS

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

Sample Matrix: Water  
 # Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	10	N/A	2023/08/01	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	10	N/A	2023/08/02	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	10	N/A	2023/08/02	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	10	N/A	2023/08/01	CAM SOP-00414	SM 23 2510 m
Chromium (VI) in Water	10	N/A	2023/08/03	CAM SOP-00436	EPA 7199 m
Petroleum Hydro. CCME F1 & BTEX in Water	3	N/A	2023/08/04	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Water	9	N/A	2023/08/05	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2023/08/06	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	13	2023/08/04	2023/08/04	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	10	N/A	2023/08/04	CAM SOP 00102/00408/00447	SM 2340 B
Mercury in Water by CVAA	7	2023/08/01	2023/08/02	CAM SOP-00453	EPA 7470A m
Mercury in Water by CVAA	2	2023/08/02	2023/08/02	CAM SOP-00453	EPA 7470A m
Lab Filtered Metals by ICPMS	8	2023/08/10	2023/08/11	CAM SOP-00447	EPA 6020B m
Lab Filtered Metals by ICPMS	2	2023/08/10	2023/08/14	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	10	2023/08/02	2023/08/02	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	8	N/A	2023/08/11		
Ion Balance (% Difference)	2	N/A	2023/08/14		
Anion and Cation Sum	8	N/A	2023/08/11		
Anion and Cation Sum	2	N/A	2023/08/14		
B[a]P Total Potency Equivalent (1, 3)	11	N/A	2023/08/06		CCME
B[a]P Total Potency Equivalent (1, 3)	1	N/A	2023/08/09		CCME
PAH in Water by GC/MS (1)	11	2023/08/05	2023/08/06	AB SOP-00037/AB SOP-00003	EPA 3510C/8270E m
PAH in Water by GC/MS (1)	1	2023/08/08	2023/08/08	AB SOP-00037/AB SOP-00003	EPA 3510C/8270E m
Phenols (4-AAP) (1)	10	N/A	2023/08/08	AB SOP-00088	EPA 9066 R0 m
Total Ammonia-N	10	N/A	2023/08/03	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (4)	10	N/A	2023/08/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Total Oil and Grease	10	2023/08/06	2023/08/06	CAM SOP-00326	EPA1664B m, SM5520B m
pH	10	2023/07/31	2023/08/01	CAM SOP-00413	SM 4500H+ B m





Your Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
1682 Woodward Drive  
Ottawa, ON  
CANADA K2C 3R8

**Report Date: 2023/08/14**

Report #: R7763510

Version: 1 - Final

## **CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

Sample Matrix: Water  
# Samples Received: 13

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Sulphate by Automated Turbidimetry	10	N/A	2023/08/02	CAM SOP-00464	SM 23 4500-SO42- E m
Total Phosphorus (Colourimetric)	10	2023/08/01	2023/08/03	CAM SOP-00407	SM 23 4500-P I
Mineral/Synthetic O & G (TPH Heavy Oil) (5)	10	2023/08/06	2023/08/06	CAM SOP-00326	EPA1664B m, SM5520F m
Total Suspended Solids	10	2023/08/01	2023/08/02	CAM SOP-00428	SM 23 2540D m

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Calgary (19th), 4000 19th Street NE, Calgary, AB, T2E 6P8

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(3) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(4) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.



Your Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
1682 Woodward Drive  
Ottawa, ON  
CANADA K2C 3R8

**Report Date: 2023/08/14**  
Report #: R7763510  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

(5) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Christine Gipton, Senior Project Manager  
Email: Christine.Gipton@bureauveritas.com  
Phone# (519)652-9444

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This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL671	WNL672	WNL673	WNL674	WNL675			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30	2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-2	RBL-3	AEC1-GW1	RBL-4	RBL-8	RDL	MDL	QC Batch

#### Polyaromatic Hydrocarbons

Benzo(a)pyrene Total Potency Equiv.	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	0.84	<0.10	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	1.4	0.12	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	0.23	0.12	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	N/A	8837189

#### Surrogate Recovery (%)

D10-Anthracene	%	127	121	105	117	109			8837189
D14-Terphenyl	%	156 (1)	129	75	138 (1)	130			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL671	WNL672	WNL673	WNL674	WNL675			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30	2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-2	RBL-3	AEC1-GW1	RBL-4	RBL-8	RDL	MDL	QC Batch
D8-Acenaphthylene	%	112	97	85	109	96			8837189
D8-Naphthalene	%	75	45 (1)	59	92	72			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



### CCME PAHS (WATER)

Bureau Veritas ID		WNL676	WNL677	WNL678	WNL679	WNL680			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30	2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-13	RBL-16	RBL-DUPA	RBL-DUPB	RBL-DUPC	RDL	MDL	QC Batch

Polyaromatic Hydrocarbons									
Benzo(a)pyrene Total Potency Equiv.	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.61	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.99	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	<0.10	0.17	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	N/A	8837189

Surrogate Recovery (%)									
D10-Anthracene	%	105	106	104	119	124			8837189
D14-Terphenyl	%	124	125	119	144 (1)	141 (1)			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL676	WNL677	WNL678	WNL679	WNL680			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30	2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-13	RBL-16	RBL-DUPA	RBL-DUPB	RBL-DUPC	RDL	MDL	QC Batch
D8-Acenaphthylene	%	90	96	92	113	110			8837189
D8-Naphthalene	%	72	83	64	99	92			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									



### CCME PAHS (WATER)

Bureau Veritas ID		WNL680				WNL681	WNL683			
Sampling Date		2023/07/24 11:55				2023/07/23 15:40	2023/07/24 10:40			
COC Number		n/a				n/a	n/a			
	UNITS	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch	FEILD BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
<b>Polyaromatic Hydrocarbons</b>										
Benzo(a)pyrene Total Potency Equiv.	ug/L					<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	0.040	N/A	8837189	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	0.010	N/A	8837189	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	0.0075	N/A	8837189	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	0.0075	N/A	8837189	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	0.010	N/A	8837189	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	0.020	N/A	8837189	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	0.20	N/A	8837189	<0.20	<0.20	0.20	N/A	8837189
<b>Surrogate Recovery (%)</b>										
D10-Anthracene	%	120			8837189	118	106			8837189
D14-Terphenyl	%	134 (1)			8837189	139 (1)	126			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.										



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL680				WNL681	WNL683			
Sampling Date		2023/07/24 11:55				2023/07/23 15:40	2023/07/24 10:40			
COC Number		n/a				n/a	n/a			
	UNITS	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch	FEILD BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
D8-Acenaphthylene	%	107			8837189	106	95			8837189
D8-Naphthalene	%	89			8837189	90	81			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID		WNL671	WNL672				WNL672			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30				2023/07/23 15:30			
COC Number		n/a	n/a				n/a			
	UNITS	RBL-2	RBL-3	RDL	MDL	QC Batch	RBL-3 Lab-Dup	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
Toluene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
Ethylbenzene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
o-Xylene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
p+m-Xylene	ug/L	<0.40	<0.40	0.40	0.080	8833426				
Total Xylenes	ug/L	<0.40	<0.40	0.40	0.080	8833426				
F1 (C6-C10)	ug/L	<25	<25	25	20	8833426				
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	20	8833426				
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	50	8833643	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	70	8833643	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	50	8833643	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes			8833643	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	89	88			8833426				
4-Bromofluorobenzene	%	108	105			8833426				
D10-o-Xylene	%	92	88			8833426				
D4-1,2-Dichloroethane	%	100	100			8833426				
o-Terphenyl	%	95	97			8833643	96			8833643
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
Lab-Dup = Laboratory Initiated Duplicate										



### CCME PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID		WNL673	WNL674	WNL675	WNL676		WNL677			
Sampling Date		2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50	2023/07/24 11:15		2023/07/24 10:30			
COC Number		n/a	n/a	n/a	n/a		n/a			
	UNITS	AEC1-GW1	RBL-4	RBL-8	RBL-13	QC Batch	RBL-16	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
Toluene	ug/L	0.55	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
o-Xylene	ug/L	0.26	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	8833426	<0.40	0.40	0.080	8833432
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	8833426	<0.40	0.40	0.080	8833432
F1 (C6-C10)	ug/L	<25	<25	<25	<25	8833426	<25	25	20	8833432
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	8833426	<25	25	20	8833432
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	8833643	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	8833643	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	8833643	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	8833643	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	88	91	86	88	8833426	102			8833432
4-Bromofluorobenzene	%	107	109	107	107	8833426	83			8833432
D10-o-Xylene	%	91	89	88	88	8833426	91			8833432
D4-1,2-Dichloroethane	%	99	100	97	99	8833426	95			8833432
o-Terphenyl	%	96	96	94	95	8833643	94			8833643
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



**CCME PHCS, BTEX/F1-F4 (WATER)**

Bureau Veritas ID		WNL678	WNL679	WNL680	WNL681	WNL682	WNL683			
Sampling Date		2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55	2023/07/23 15:40	2023/07/23 09:00	2023/07/24 10:40			
COC Number		n/a	n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-DUPA	RBL-DUPB	RBL-DUPC	FEILD BLANK 1	TRIP BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	0.080	8833426
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	0.080	8833426
F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	<25	25	20	8833426
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	<25	<25	25	20	8833426
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	<100	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	91	90	89	90	88	89			8833426
4-Bromofluorobenzene	%	108	105	106	102	106	108			8833426
D10-o-Xylene	%	92	90	89	89	88	86			8833426
D4-1,2-Dichloroethane	%	98	99	101	95	96	100			8833426
o-Terphenyl	%	95	96	94	93	94	96			8833643
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL671				WNL672			
Sampling Date		2023/07/23 17:30				2023/07/23 15:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-3	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.0064	0.0015	0.0015	8841753	0.038	0.0015	0.0015	8841753
<b>Calculated Parameters</b>									
Anion Sum	me/L	7.10	N/A	N/A	8822383	3.94	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	180	1.0	0.20	8822389	170	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.1	1.0	0.20	8822389	1.0	1.0	0.20	8822389
Cation Sum	me/L	7.60	N/A	N/A	8822383	4.83	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	300	1.0	1.0	8822385	200	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	3.35	N/A	N/A	8822382	10.1	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	1.9	0.050	0.0080	8828243	2.2	0.050	0.0080	8828243
Conductivity	umho/cm	690	1.0	0.20	8824108	410	1.0	0.20	8824108
pH	pH	7.83			8824099	7.81			8824099
Total Phosphorus	mg/L	0.26	0.004	0.002	8826856	0.23	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	10	2.0	8824642	12	10	2.0	8827102
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	130	1.0	0.10	8823998	9.6	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	180	1.0	0.20	8824109	170	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	26	1.0	0.30	8823994	11	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.050	0.050	0.010	8823978	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	0.78	0.50	0.050	8823978	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	0.81	0.50	0.050	8823978	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL673				WNL674			
Sampling Date		2023/07/23 16:30				2023/07/24 13:00			
COC Number		n/a				n/a			
	UNITS	AEC1-GW1	RDL	MDL	QC Batch	RBL-4	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.30	0.030	0.030	8841754	<0.0015	0.0015	0.0015	8841753
<b>Calculated Parameters</b>									
Anion Sum	me/L	10.5	N/A	N/A	8822383	2.65	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	410	1.0	0.20	8822389	91	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.1	1.0	0.20	8822389	4.5	1.0	0.20	8822389
Cation Sum	me/L	12.5	N/A	N/A	8822383	3.00	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	290	1.0	1.0	8822385	110	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	8.68	N/A	N/A	8822382	6.22	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	48	1.0	0.16	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	1100	1.0	0.20	8824320	270	1.0	0.20	8824320
pH	pH	7.46			8824318	8.72			8824318
Total Phosphorus	mg/L	3.3	0.004	0.002	8826856	0.040	0.004	0.002	8826856
Total Suspended Solids	mg/L	14	10	2.0	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	25	1.0	0.10	8823998	11	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	410	1.0	0.20	8824319	96	1.0	0.20	8824319
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	61	1.0	0.30	8823994	18	1.0	0.30	8823994
Nitrite (N)	mg/L	0.014	0.010	0.0020	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL675		WNL676		WNL677			
Sampling Date		2023/07/24 11:50		2023/07/24 11:15		2023/07/24 10:30			
COC Number		n/a		n/a		n/a			
	UNITS	RBL-8	QC Batch	RBL-13	QC Batch	RBL-16	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	<0.0015	8841753	<0.0015	8841754	<0.0015	0.0015	0.0015	8841754
<b>Calculated Parameters</b>									
Anion Sum	me/L	3.71	8822383	2.10	8822383	2.05	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	120	8822389	80	8822389	79	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	2.1	8822389	1.1	8822389	<1.0	1.0	0.20	8822389
Cation Sum	me/L	3.82	8822383	2.22	8822383	2.19	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	150	8822385	99	8822385	98	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	8822389	<1.0	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	1.47	8822382	NC	8822382	NC	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	<0.050	8828243	<0.050	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	360	8824108	210	8824320	210	1.0	0.20	8824108
pH	pH	8.29	8824099	8.15	8824318	8.12			8824099
Total Phosphorus	mg/L	0.010	8826856	<0.004	8826856	<0.004	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	8827102	15	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	11	8823998	16	8823998	16	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	120	8824109	81	8824319	80	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	39	8823994	4.2	8823994	3.9	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.010	8824309	<0.010	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	8824309	0.12	8824309	0.12	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	8824309	0.12	8824309	0.12	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	8836996	<0.50	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	8837000	<0.50	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



### RESULTS OF ANALYSES OF WATER

<b>Bureau Veritas ID</b>		WNL678				WNL678			
<b>Sampling Date</b>		2023/07/23 15:50				2023/07/23 15:50			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-DUPA</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-DUPA Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.038	0.0015	0.0015	8841753				
<b>Calculated Parameters</b>									
Anion Sum	me/L	3.84	N/A	N/A	8822383				
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	170	1.0	0.20	8822389				
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.0	1.0	0.20	8822389				
Cation Sum	me/L	4.40	N/A	N/A	8822383				
Hardness (CaCO <sub>3</sub> )	mg/L	180	1.0	1.0	8822385				
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389				
Ion Balance (% Difference)	%	6.87	N/A	N/A	8822382				
<b>Inorganics</b>									
Total Ammonia-N	mg/L	2.1	0.050	0.0080	8828243				
Conductivity	umho/cm	410	1.0	0.20	8824108				
pH	pH	7.80			8824099				
Total Phosphorus	mg/L	0.22	0.004	0.002	8826856				
Total Suspended Solids	mg/L	11	10	2.0	8824642				
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	6.7	1.0	0.10	8823998				
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	170	1.0	0.20	8824109				
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	7.7	1.0	0.30	8823994				
Nitrite (N)	mg/L	<0.010	0.010	0.0020	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996				
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



## RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL679		WNL680			
Sampling Date		2023/07/24 11:20		2023/07/24 11:55			
COC Number		n/a		n/a			
	UNITS	RBL-DUPB	QC Batch	RBL-DUPC	RDL	MDL	QC Batch
<b>Inorganics</b>							
Phenols-4AAP	mg/L	<0.0015	8841754	<0.0015	0.0015	0.0015	8841753
<b>Calculated Parameters</b>							
Anion Sum	me/L	3.67	8822383	1.94	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	110	8822389	78	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	2.1	8822389	<1.0	1.0	0.20	8822389
Cation Sum	me/L	3.87	8822383	2.23	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	140	8822385	99	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	2.67	8822382	NC	N/A	N/A	8822382
<b>Inorganics</b>							
Total Ammonia-N	mg/L	<0.050	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	370	8824108	210	1.0	0.20	8824108
pH	pH	8.29	8824099	8.08			8824099
Total Phosphorus	mg/L	0.009	8826856	<0.004	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	11	8823998	11	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	120	8824109	79	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	39	8823994	4.6	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.010	8823978	<0.010	0.010	0.0020	8823978
Nitrate (N)	mg/L	<0.10	8823978	0.12	0.10	0.010	8823978
Nitrate + Nitrite (N)	mg/L	<0.10	8823978	0.12	0.10	0.010	8823978
<b>Petroleum Hydrocarbons</b>							
Total Oil & Grease	mg/L	<0.50	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable							



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL671				WNL671			
Sampling Date		2023/07/23 17:30				2023/07/23 17:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-2 Lab-Dup	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.00010	0.00010	0.000050	8827927				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927				
Total Aluminum (Al)	ug/L	6.7	4.9	2.0	8828011				
Dissolved Antimony (Sb)	ug/L	1.8	0.50	N/A	8843927				
Total Antimony (Sb)	ug/L	1.8	0.50	0.30	8828011				
Dissolved Arsenic (As)	ug/L	1.3	1.0	N/A	8843927				
Total Arsenic (As)	ug/L	1.3	1.0	0.50	8828011				
Dissolved Barium (Ba)	ug/L	39	2.0	2.0	8843927				
Total Barium (Ba)	ug/L	43	2.0	0.50	8828011				
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927				
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011				
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927				
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011				
Dissolved Boron (B)	ug/L	130	10	N/A	8843927				
Total Boron (B)	ug/L	130	10	0.30	8828011				
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927				
Total Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8828011				
Dissolved Calcium (Ca)	ug/L	98000	200	N/A	8843927				
Total Calcium (Ca)	ug/L	94000	200	50	8828011				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927				
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011				
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927				
Total Cobalt (Co)	ug/L	0.51	0.50	0.10	8828011				
Dissolved Copper (Cu)	ug/L	1.7	0.90	0.90	8843927				
Total Copper (Cu)	ug/L	2.1	0.90	0.50	8828011				
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927				
Total Iron (Fe)	ug/L	<100	100	10	8828011				
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927				
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									
N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL671				WNL671			
Sampling Date		2023/07/23 17:30				2023/07/23 17:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-2 Lab-Dup	RDL	MDL	QC Batch
Total Lead (Pb)	ug/L	0.52	0.50	0.10	8828011				
Dissolved Lithium (Li)	ug/L	6.0	5.0	N/A	8843927				
Total Lithium (Li)	ug/L	6.1	5.0	0.50	8828011				
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843927				
Total Magnesium (Mg)	ug/L	14000	50	20	8828011				
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927				
Total Manganese (Mn)	ug/L	210	2.0	0.50	8828011				
Dissolved Molybdenum (Mo)	ug/L	2.9	0.50	0.50	8843927				
Total Molybdenum (Mo)	ug/L	2.9	0.50	0.20	8828011				
Dissolved Nickel (Ni)	ug/L	1.6	1.0	N/A	8843927				
Total Nickel (Ni)	ug/L	1.9	1.0	0.50	8828011				
Dissolved Phosphorus (P)	ug/L	270	100	N/A	8843927				
Dissolved Potassium (K)	ug/L	13000	200	N/A	8843927				
Total Potassium (K)	ug/L	13000	200	50	8828011				
Dissolved Selenium (Se)	ug/L	<2.0	2.0	N/A	8843927				
Total Selenium (Se)	ug/L	<2.0	2.0	0.50	8828011				
Dissolved Silicon (Si)	ug/L	1300	50	N/A	8843927				
Total Silicon (Si)	ug/L	1300	50	30	8828011				
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927				
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011				
Dissolved Sodium (Na)	ug/L	26000	100	N/A	8843927				
Total Sodium (Na)	ug/L	24000	100	50	8828011				
Dissolved Strontium (Sr)	ug/L	380	1.0	N/A	8843927				
Total Strontium (Sr)	ug/L	360	1.0	0.50	8828011				
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927				
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927				
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011				
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927				
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL671				WNL671			
Sampling Date		2023/07/23 17:30				2023/07/23 17:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-2 Lab-Dup	RDL	MDL	QC Batch
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927				
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011				
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927				
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Uranium (U)	ug/L	0.28	0.10	N/A	8843927				
Total Uranium (U)	ug/L	0.31	0.10	0.050	8828011				
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927				
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011				
Dissolved Zinc (Zn)	ug/L	13	5.0	N/A	8843927				
Total Zinc (Zn)	ug/L	25	5.0	3.0	8828011				
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927				
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.00010	0.00010	0.000050	8825734				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927	<4.9	4.9	4.9	8843927
Total Aluminum (Al)	ug/L	9.8	4.9	2.0	8828011	8.0	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	1.0	N/A	8843927	7.6	1.0	N/A	8843927
Total Arsenic (As)	ug/L	1.5	1.0	0.50	8828011	8.8	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	81	2.0	2.0	8843927	4.5	2.0	2.0	8843927
Total Barium (Ba)	ug/L	96	2.0	0.50	8828011	12	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927	<0.40	0.40	0.40	8843927
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	77	10	N/A	8843927	400	10	N/A	8843927
Total Boron (B)	ug/L	81	10	0.30	8828011	430	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Cadmium (Cd)	ug/L	0.17	0.090	0.090	8828011	<0.090	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	56000	200	N/A	8843927	92000	200	N/A	8843927
Total Calcium (Ca)	ug/L	54000	200	50	8828011	86000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927	9.2	0.50	N/A	8843927
Total Cobalt (Co)	ug/L	1.3	0.50	0.10	8828011	8.5	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	2.2	0.90	0.90	8843927	1.2	0.90	0.90	8843927
Total Copper (Cu)	ug/L	2.5	0.90	0.50	8828011	2.8	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927	4400	100	N/A	8843927
Total Iron (Fe)	ug/L	910	100	10	8828011	7500	100	10	8828011
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Lead (Pb)	ug/L	2.0	0.50	0.10	8828011	1.4	0.50	0.10	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
Dissolved Lithium (Li)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843927	14000	50	N/A	8843927
Total Magnesium (Mg)	ug/L	13000	50	20	8828011	13000	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927	470	2.0	N/A	8843927
Total Manganese (Mn)	ug/L	430	2.0	0.50	8828011	440	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	2.8	0.50	0.50	8843927	2.4	0.50	0.50	8843927
Total Molybdenum (Mo)	ug/L	2.8	0.50	0.20	8828011	2.7	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	1.4	1.0	N/A	8843927	17	1.0	N/A	8843927
Total Nickel (Ni)	ug/L	1.9	1.0	0.50	8828011	16	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	100	N/A	8843927	1600	100	N/A	8843927
Dissolved Potassium (K)	ug/L	5700	200	N/A	8843927	24000	200	N/A	8843927
Total Potassium (K)	ug/L	5000	200	50	8828011	22000	200	50	8828011
Dissolved Selenium (Se)	ug/L	<2.0	2.0	N/A	8843927	<2.0	2.0	N/A	8843927
Total Selenium (Se)	ug/L	<2.0	2.0	0.50	8828011	<2.0	2.0	0.50	8828011
Dissolved Silicon (Si)	ug/L	880	50	N/A	8843927	2500	50	N/A	8843927
Total Silicon (Si)	ug/L	970	50	30	8828011	2400	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	14000	100	N/A	8843927	57000	100	N/A	8843927
Total Sodium (Na)	ug/L	12000	100	50	8828011	51000	100	50	8828011
Dissolved Strontium (Sr)	ug/L	150	1.0	N/A	8843927	200	1.0	N/A	8843927
Total Strontium (Sr)	ug/L	140	1.0	0.50	8828011	180	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927	<0.050	0.050	N/A	8843927
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011	<5.0	5.0	4.0	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.36	0.10	N/A	8843927	0.21	0.10	N/A	8843927
Total Uranium (U)	ug/L	0.33	0.10	0.050	8828011	0.21	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927	2.0	0.50	0.50	8843927
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011	2.4	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Zinc (Zn)	ug/L	15	5.0	3.0	8828011	6.7	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674		WNL675				WNL675			
Sampling Date		2023/07/24 13:00		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-4	QC Batch	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch

Metals											
Chromium (VI)	ug/L	1.6	8825340	0.51	0.50	0.30	8825340				
Mercury (Hg)	mg/L	<0.00010	8825734	<0.00010	0.00010	0.000050	8827927				
Dissolved Aluminum (Al)	ug/L	6.5	8843927	<4.9	4.9	4.9	8843936	<4.9	4.9	4.9	8843936
Total Aluminum (Al)	ug/L	23	8828011	50	4.9	2.0	8828011				
Dissolved Antimony (Sb)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Antimony (Sb)	ug/L	<0.50	8828011	<0.50	0.50	0.30	8828011				
Dissolved Arsenic (As)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Arsenic (As)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
Dissolved Barium (Ba)	ug/L	72	8843927	56	2.0	2.0	8843936	54	2.0	2.0	8843936
Total Barium (Ba)	ug/L	84	8828011	56	2.0	0.50	8828011				
Dissolved Beryllium (Be)	ug/L	<0.40	8843927	<0.40	0.40	0.40	8843936	<0.40	0.40	0.40	8843936
Total Beryllium (Be)	ug/L	<0.40	8828011	<0.40	0.40	0.10	8828011				
Dissolved Bismuth (Bi)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Bismuth (Bi)	ug/L	<1.0	8828011	<1.0	1.0	0.070	8828011				
Dissolved Boron (B)	ug/L	45	8843927	38	10	N/A	8843936	37	10	N/A	8843936
Total Boron (B)	ug/L	45	8828011	40	10	0.30	8828011				
Dissolved Cadmium (Cd)	ug/L	<0.090	8843927	<0.090	0.090	0.081	8843936	<0.090	0.090	0.081	8843936
Total Cadmium (Cd)	ug/L	0.091	8828011	<0.090	0.090	0.090	8828011				
Dissolved Calcium (Ca)	ug/L	29000	8843927	35000	200	N/A	8843936	35000	200	N/A	8843936
Total Calcium (Ca)	ug/L	33000	8828011	37000	200	50	8828011				
Dissolved Chromium (Cr)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Chromium (Cr)	ug/L	<5.0	8828011	<5.0	5.0	5.0	8828011				
Dissolved Cobalt (Co)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Cobalt (Co)	ug/L	<0.50	8828011	<0.50	0.50	0.10	8828011				
Dissolved Copper (Cu)	ug/L	2.8	8843927	<0.90	0.90	0.90	8843936	<0.90	0.90	0.90	8843936
Total Copper (Cu)	ug/L	2.9	8828011	<0.90	0.90	0.50	8828011				
Dissolved Iron (Fe)	ug/L	<100	8843927	<100	100	N/A	8843936	<100	100	N/A	8843936
Total Iron (Fe)	ug/L	<100	8828011	<100	100	10	8828011				
Dissolved Lead (Pb)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674		WNL675				WNL675			
Sampling Date		2023/07/24 13:00		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-4	QC Batch	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch
Total Lead (Pb)	ug/L	1.3	8828011	<0.50	0.50	0.10	8828011				
Dissolved Lithium (Li)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Lithium (Li)	ug/L	<5.0	8828011	<5.0	5.0	0.50	8828011				
Dissolved Magnesium (Mg)	ug/L	10000	8843927	14000	50	N/A	8843936	13000	50	N/A	8843936
Total Magnesium (Mg)	ug/L	10000	8828011	14000	50	20	8828011				
Dissolved Manganese (Mn)	ug/L	<2.0	8843927	<2.0	2.0	N/A	8843936	<2.0	2.0	N/A	8843936
Total Manganese (Mn)	ug/L	3.7	8828011	2.6	2.0	0.50	8828011				
Dissolved Molybdenum (Mo)	ug/L	0.89	8843927	0.54	0.50	0.50	8843936	0.56	0.50	0.50	8843936
Total Molybdenum (Mo)	ug/L	0.74	8828011	0.53	0.50	0.20	8828011				
Dissolved Nickel (Ni)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Nickel (Ni)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
Dissolved Phosphorus (P)	ug/L	<100	8843927	<100	100	N/A	8843936	<100	100	N/A	8843936
Dissolved Potassium (K)	ug/L	1400	8843927	1400	200	N/A	8843936	1400	200	N/A	8843936
Total Potassium (K)	ug/L	1100	8828011	1500	200	50	8828011				
Dissolved Selenium (Se)	ug/L	<2.0	8843927	<2.0	2.0	N/A	8843936	<2.0	2.0	N/A	8843936
Total Selenium (Se)	ug/L	<2.0	8828011	<2.0	2.0	0.50	8828011				
Dissolved Silicon (Si)	ug/L	240	8843927	200	50	N/A	8843936	190	50	N/A	8843936
Total Silicon (Si)	ug/L	360	8828011	290	50	30	8828011				
Dissolved Silver (Ag)	ug/L	<0.090	8843927	<0.090	0.090	0.081	8843936	<0.090	0.090	0.081	8843936
Total Silver (Ag)	ug/L	<0.090	8828011	<0.090	0.090	0.070	8828011				
Dissolved Sodium (Na)	ug/L	15000	8843927	20000	100	N/A	8843936	21000	100	N/A	8843936
Total Sodium (Na)	ug/L	15000	8828011	21000	100	50	8828011				
Dissolved Strontium (Sr)	ug/L	87	8843927	170	1.0	N/A	8843936	160	1.0	N/A	8843936
Total Strontium (Sr)	ug/L	88	8828011	150	1.0	0.50	8828011				
Dissolved Tellurium (Te)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tellurium (Te)	ug/L	<1.0	8828011	<1.0	1.0	0.70	8828011				
Dissolved Thallium (Tl)	ug/L	<0.050	8843927	<0.050	0.050	N/A	8843936	<0.050	0.050	N/A	8843936
Total Thallium (Tl)	ug/L	<0.050	8828011	<0.050	0.050	0.020	8828011				
Dissolved Tin (Sn)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tin (Sn)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674		WNL675				WNL675			
Sampling Date		2023/07/24 13:00		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-4	QC Batch	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch
Dissolved Titanium (Ti)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Titanium (Ti)	ug/L	<5.0	8828011	<5.0	5.0	4.0	8828011				
Dissolved Tungsten (W)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tungsten (W)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
Dissolved Uranium (U)	ug/L	0.18	8843927	0.21	0.10	N/A	8843936	0.20	0.10	N/A	8843936
Total Uranium (U)	ug/L	0.17	8828011	0.17	0.10	0.050	8828011				
Dissolved Vanadium (V)	ug/L	<0.50	8843927	<0.50	0.50	0.50	8843936	<0.50	0.50	0.50	8843936
Total Vanadium (V)	ug/L	<0.50	8828011	<0.50	0.50	0.40	8828011				
Dissolved Zinc (Zn)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Zinc (Zn)	ug/L	11	8828011	<5.0	5.0	3.0	8828011				
Dissolved Zirconium (Zr)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Zirconium (Zr)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable											





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677		WNL678		WNL679			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30		2023/07/23 15:50		2023/07/24 11:20			
COC Number		n/a	n/a		n/a		n/a			
	UNITS	RBL-13	RBL-16	QC Batch	RBL-DUPA	QC Batch	RBL-DUPB	RDL	MDL	QC Batch

<b>Metals</b>										
Chromium (VI)	ug/L	<0.50	<0.50	8825340	<0.50	8825340	0.51	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.00010	<0.00010	8825734	<0.00010	8827927	<0.00010	0.00010	0.000050	8825734
Dissolved Aluminum (Al)	ug/L	<4.9	<4.9	8843927	<4.9	8843936	<4.9	4.9	4.9	8843927
Total Aluminum (Al)	ug/L	14	5.6	8828011	9.1	8828011	42	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	8843927	<0.50	8843936	<0.50	0.50	N/A	8843927
Total Antimony (Sb)	ug/L	<0.50	<0.50	8828011	<0.50	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	8843927	<1.0	8843936	<1.0	1.0	N/A	8843927
Total Arsenic (As)	ug/L	<1.0	<1.0	8828011	1.6	8828011	<1.0	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	4.3	4.5	8843927	78	8843936	53	2.0	2.0	8843927
Total Barium (Ba)	ug/L	4.5	4.7	8828011	95	8828011	57	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	8843927	<0.40	8843936	<0.40	0.40	0.40	8843927
Total Beryllium (Be)	ug/L	<0.40	<0.40	8828011	<0.40	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	8843927	<1.0	8843936	<1.0	1.0	N/A	8843927
Total Bismuth (Bi)	ug/L	<1.0	<1.0	8828011	<1.0	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	19	21	8843927	82	8843936	37	10	N/A	8843927
Total Boron (B)	ug/L	19	19	8828011	80	8828011	38	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	8843927	<0.090	8843936	<0.090	0.090	0.081	8843927
Total Cadmium (Cd)	ug/L	<0.090	<0.090	8828011	0.18	8828011	<0.090	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	32000	31000	8843927	50000	8843936	35000	200	N/A	8843927
Total Calcium (Ca)	ug/L	31000	32000	8828011	51000	8828011	38000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	8843927	<5.0	8843936	<5.0	5.0	N/A	8843927
Total Chromium (Cr)	ug/L	<5.0	<5.0	8828011	<5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	8843927	<0.50	8843936	<0.50	0.50	N/A	8843927
Total Cobalt (Co)	ug/L	<0.50	<0.50	8828011	1.2	8828011	<0.50	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	<0.90	<0.90	8843927	1.1	8843936	<0.90	0.90	0.90	8843927
Total Copper (Cu)	ug/L	<0.90	<0.90	8828011	2.5	8828011	<0.90	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	<100	8843927	<100	8843936	<100	100	N/A	8843927
Total Iron (Fe)	ug/L	<100	<100	8828011	870	8828011	<100	100	10	8828011
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	8843927	<0.50	8843936	<0.50	0.50	N/A	8843927
Total Lead (Pb)	ug/L	<0.50	<0.50	8828011	1.9	8828011	<0.50	0.50	0.10	8828011

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677		WNL678		WNL679			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30		2023/07/23 15:50		2023/07/24 11:20			
COC Number		n/a	n/a		n/a		n/a			
	UNITS	RBL-13	RBL-16	QC Batch	RBL-DUPA	QC Batch	RBL-DUPB	RDL	MDL	QC Batch
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	8843927	<5.0	8843936	<5.0	5.0	N/A	8843927
Total Lithium (Li)	ug/L	<5.0	<5.0	8828011	<5.0	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	4800	4800	8843927	13000	8843936	14000	50	N/A	8843927
Total Magnesium (Mg)	ug/L	4500	4700	8828011	13000	8828011	15000	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	<2.0	8843927	<2.0	8843936	<2.0	2.0	N/A	8843927
Total Manganese (Mn)	ug/L	<2.0	<2.0	8828011	440	8828011	2.9	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	<0.50	<0.50	8843927	2.6	8843936	0.62	0.50	0.50	8843927
Total Molybdenum (Mo)	ug/L	<0.50	<0.50	8828011	2.8	8828011	0.57	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	8843927	1.7	8843936	<1.0	1.0	N/A	8843927
Total Nickel (Ni)	ug/L	<1.0	<1.0	8828011	1.8	8828011	<1.0	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	<100	8843927	<100	8843936	<100	100	N/A	8843927
Dissolved Potassium (K)	ug/L	710	680	8843927	4900	8843936	1600	200	N/A	8843927
Total Potassium (K)	ug/L	650	650	8828011	4800	8828011	1600	200	50	8828011
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	8843927	<2.0	8843936	<2.0	2.0	N/A	8843927
Total Selenium (Se)	ug/L	<2.0	<2.0	8828011	<2.0	8828011	<2.0	2.0	0.50	8828011
Dissolved Silicon (Si)	ug/L	270	260	8843927	840	8843936	210	50	N/A	8843927
Total Silicon (Si)	ug/L	300	270	8828011	930	8828011	290	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	8843927	<0.090	8843936	<0.090	0.090	0.081	8843927
Total Silver (Ag)	ug/L	<0.090	<0.090	8828011	<0.090	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	5200	5000	8843927	13000	8843936	22000	100	N/A	8843927
Total Sodium (Na)	ug/L	5000	5000	8828011	13000	8828011	22000	100	50	8828011
Dissolved Strontium (Sr)	ug/L	84	83	8843927	150	8843936	160	1.0	N/A	8843927
Total Strontium (Sr)	ug/L	78	79	8828011	140	8828011	160	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	<1.0	8843927	<1.0	8843936	<1.0	1.0	N/A	8843927
Total Tellurium (Te)	ug/L	<1.0	<1.0	8828011	<1.0	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	8843927	<0.050	8843936	<0.050	0.050	N/A	8843927
Total Thallium (Tl)	ug/L	<0.050	<0.050	8828011	<0.050	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	<1.0	8843927	<1.0	8843936	<1.0	1.0	N/A	8843927
Total Tin (Sn)	ug/L	<1.0	<1.0	8828011	<1.0	8828011	<1.0	1.0	0.50	8828011
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	8843927	<5.0	8843936	<5.0	5.0	N/A	8843927
Total Titanium (Ti)	ug/L	<5.0	<5.0	8828011	<5.0	8828011	<5.0	5.0	4.0	8828011

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677		WNL678		WNL679			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30		2023/07/23 15:50		2023/07/24 11:20			
COC Number		n/a	n/a		n/a		n/a			
	UNITS	RBL-13	RBL-16	QC Batch	RBL-DUPA	QC Batch	RBL-DUPB	RDL	MDL	QC Batch
Dissolved Tungsten (W)	ug/L	<1.0	<1.0	8843927	<1.0	8843936	<1.0	1.0	N/A	8843927
Total Tungsten (W)	ug/L	<1.0	<1.0	8828011	<1.0	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.21	0.21	8843927	0.34	8843936	0.18	0.10	N/A	8843927
Total Uranium (U)	ug/L	0.19	0.19	8828011	0.33	8828011	0.16	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	8843927	<0.50	8843936	<0.50	0.50	0.50	8843927
Total Vanadium (V)	ug/L	<0.50	<0.50	8828011	<0.50	8828011	<0.50	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	8843927	<5.0	8843936	<5.0	5.0	N/A	8843927
Total Zinc (Zn)	ug/L	<5.0	<5.0	8828011	15	8828011	<5.0	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	<1.0	8843927	<1.0	8843936	<1.0	1.0	N/A	8843927
Total Zirconium (Zr)	ug/L	<1.0	<1.0	8828011	<1.0	8828011	<1.0	1.0	0.50	8828011

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL680				WNL680			
<b>Sampling Date</b>		2023/07/24 11:55				2023/07/24 11:55			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-DUPC</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-DUPC Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8825340				
Mercury (Hg)	mg/L	<0.00010	0.00010	0.000050	8827927				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927				
Total Aluminum (Al)	ug/L	14	4.9	2.0	8828011	14	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	N/A	8843927				
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	1.0	N/A	8843927				
Total Arsenic (As)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	4.7	2.0	2.0	8843927				
Total Barium (Ba)	ug/L	5.0	2.0	0.50	8828011	4.8	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927				
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927				
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	18	10	N/A	8843927				
Total Boron (B)	ug/L	19	10	0.30	8828011	19	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927				
Total Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8828011	<0.090	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	32000	200	N/A	8843927				
Total Calcium (Ca)	ug/L	30000	200	50	8828011	32000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927				
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927				
Total Cobalt (Co)	ug/L	<0.50	0.50	0.10	8828011	<0.50	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	<0.90	0.90	0.90	8843927				
Total Copper (Cu)	ug/L	<0.90	0.90	0.50	8828011	<0.90	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927				
Total Iron (Fe)	ug/L	<100	100	10	8828011	<100	100	10	8828011
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927				
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									
N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL680				WNL680			
<b>Sampling Date</b>		2023/07/24 11:55				2023/07/24 11:55			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-DUPC</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-DUPC Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
Total Lead (Pb)	ug/L	<0.50	0.50	0.10	8828011	<0.50	0.50	0.10	8828011
Dissolved Lithium (Li)	ug/L	<5.0	5.0	N/A	8843927				
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	4800	50	N/A	8843927				
Total Magnesium (Mg)	ug/L	4600	50	20	8828011	4500	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927				
Total Manganese (Mn)	ug/L	<2.0	2.0	0.50	8828011	<2.0	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	<0.50	0.50	0.50	8843927				
Total Molybdenum (Mo)	ug/L	<0.50	0.50	0.20	8828011	<0.50	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	N/A	8843927				
Total Nickel (Ni)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	100	N/A	8843927				
Dissolved Potassium (K)	ug/L	700	200	N/A	8843927				
Total Potassium (K)	ug/L	670	200	50	8828011	650	200	50	8828011
Dissolved Selenium (Se)	ug/L	<2.0	2.0	N/A	8843927				
Total Selenium (Se)	ug/L	<2.0	2.0	0.50	8828011	<2.0	2.0	0.50	8828011
Dissolved Silicon (Si)	ug/L	280	50	N/A	8843927				
Total Silicon (Si)	ug/L	290	50	30	8828011	300	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927				
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	5100	100	N/A	8843927				
Total Sodium (Na)	ug/L	5100	100	50	8828011	4900	100	50	8828011
Dissolved Strontium (Sr)	ug/L	85	1.0	N/A	8843927				
Total Strontium (Sr)	ug/L	78	1.0	0.50	8828011	78	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927				
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927				
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927				
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL680				WNL680			
<b>Sampling Date</b>		2023/07/24 11:55				2023/07/24 11:55			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-DUPC</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-DUPC Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927				
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011	<5.0	5.0	4.0	8828011
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927				
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.21	0.10	N/A	8843927				
Total Uranium (U)	ug/L	0.20	0.10	0.050	8828011	0.20	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927				
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011	<0.50	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	N/A	8843927				
Total Zinc (Zn)	ug/L	<5.0	5.0	3.0	8828011	<5.0	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927				
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL671  
**Sample ID:** RBL-2  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/02	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL671 Dup  
**Sample ID:** RBL-2  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck

**Bureau Veritas ID:** WNL672  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL672  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8827102	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL672 Dup  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu

**Bureau Veritas ID:** WNL673  
**Sample ID:** AEC1-GW1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/09	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/08	2023/08/08	Shuang (Jessica) Chen



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL673  
**Sample ID:** AEC1-GW1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL674  
**Sample ID:** RBL-4  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL675  
**Sample ID:** RBL-8  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahn
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/02	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/14	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/14	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8827102	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL675 Dup  
**Sample ID:** RBL-8  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad

**Bureau Veritas ID:** WNL676  
**Sample ID:** RBL-13  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahn
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL676  
**Sample ID:** RBL-13  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL677  
**Sample ID:** RBL-16  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833432	N/A	2023/08/06	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL677  
**Sample ID:** RBL-16  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL678  
**Sample ID:** RBL-DUPA  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahn
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/14	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/14	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL678 Dup  
**Sample ID:** RBL-DUPA  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL679  
**Sample ID:** RBL-DUPB  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL680  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL680  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL680 Dup  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen

**Bureau Veritas ID:** WNL681  
**Sample ID:** FEILD BLANK 1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen

**Bureau Veritas ID:** WNL682  
**Sample ID:** TRIP BLANK 1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou

**Bureau Veritas ID:** WNL683  
**Sample ID:** FEILD BLANK 2  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL683  
**Sample ID:** FEILD BLANK 2  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen



Bureau Veritas Job #: C3M6596  
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BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	19.0°C
Package 2	19.0°C
Package 3	18.7°C
Package 4	18.0°C

Sample WNL671 [RBL-2] : Nitrite/Nitrate: Due to colour interferences, sample required dilution. Detection limits were adjusted accordingly.

Sample WNL673 [AEC1-GW1] : Sample was analyzed past method specified hold time for PAH in Water by GC/MS due to required re-extraction. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

**Results relate only to the items tested.**



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

## QUALITY ASSURANCE REPORT

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8833426	1,4-Difluorobenzene	2023/08/04	88	70 - 130	89	70 - 130	91	%				
8833426	4-Bromofluorobenzene	2023/08/04	108	70 - 130	108	70 - 130	103	%				
8833426	D10-o-Xylene	2023/08/04	85	70 - 130	88	70 - 130	91	%				
8833426	D4-1,2-Dichloroethane	2023/08/04	98	70 - 130	96	70 - 130	93	%				
8833432	1,4-Difluorobenzene	2023/08/06	101	70 - 130	98	70 - 130	102	%				
8833432	4-Bromofluorobenzene	2023/08/06	101	70 - 130	99	70 - 130	83	%				
8833432	D10-o-Xylene	2023/08/06	97	70 - 130	94	70 - 130	87	%				
8833432	D4-1,2-Dichloroethane	2023/08/06	84	70 - 130	84	70 - 130	95	%				
8833643	o-Terphenyl	2023/08/04	100	60 - 130	97	60 - 130	92	%				
8837189	D10-Anthracene	2023/08/06	118	50 - 130	104	50 - 130	111	%				
8837189	D14-Terphenyl	2023/08/06	123	50 - 130	110	50 - 130	125	%				
8837189	D8-Acenaphthylene	2023/08/06	102	50 - 130	86	50 - 130	74	%				
8837189	D8-Naphthalene	2023/08/06	89	50 - 130	59	50 - 130	43 (1)	%				
8823978	Nitrate (N)	2023/08/01	100	80 - 120	101	80 - 120	<0.10	mg/L	1.1	20		
8823978	Nitrite (N)	2023/08/01	105	80 - 120	107	80 - 120	<0.010	mg/L	NC	20		
8823994	Dissolved Chloride (Cl-)	2023/08/02	NC	80 - 120	100	80 - 120	<1.0	mg/L	3.5	20		
8823998	Dissolved Sulphate (SO4)	2023/08/02	NC	75 - 125	104	80 - 120	<1.0	mg/L	0.82	20		
8824099	pH	2023/08/01			102	98 - 103			0.028	N/A		
8824108	Conductivity	2023/08/01			99	85 - 115	<1.0	umho/cm	0.83	10		
8824109	Alkalinity (Total as CaCO3)	2023/08/01			96	85 - 115	<1.0	mg/L	1.1	20		
8824309	Nitrate (N)	2023/08/01	102	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
8824309	Nitrite (N)	2023/08/01	106	80 - 120	106	80 - 120	<0.010	mg/L	NC	20		
8824318	pH	2023/08/01			102	98 - 103			1.2	N/A		
8824319	Alkalinity (Total as CaCO3)	2023/08/01			97	85 - 115	<1.0	mg/L	1.9	20		
8824320	Conductivity	2023/08/01			101	85 - 115	<1.0	umho/cm	0.25	10		
8824642	Total Suspended Solids	2023/08/02			96	85 - 115	<10	mg/L	3.4	20		
8825340	Chromium (VI)	2023/08/03	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8825734	Mercury (Hg)	2023/08/02	101	75 - 125	103	80 - 120	<0.00010	mg/L	NC	20		
8826856	Total Phosphorus	2023/08/03	100	80 - 120	105	80 - 120	<0.004	mg/L	0.35	20	111	80 - 120



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8827102	Total Suspended Solids	2023/08/02			99	85 - 115	<10	mg/L	9.5	20		
8827927	Mercury (Hg)	2023/08/02	102	75 - 125	103	80 - 120	<0.00010	mg/L	NC	20		
8828011	Total Aluminum (Al)	2023/08/02	102	80 - 120	101	80 - 120	<4.9	ug/L	2.0	20		
8828011	Total Antimony (Sb)	2023/08/02	108	80 - 120	105	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Arsenic (As)	2023/08/02	99	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Barium (Ba)	2023/08/02	101	80 - 120	99	80 - 120	<2.0	ug/L	4.1	20		
8828011	Total Beryllium (Be)	2023/08/02	95	80 - 120	94	80 - 120	<0.40	ug/L	NC	20		
8828011	Total Bismuth (Bi)	2023/08/02	96	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Boron (B)	2023/08/02	96	80 - 120	96	80 - 120	<10	ug/L	1.1	20		
8828011	Total Cadmium (Cd)	2023/08/02	99	80 - 120	99	80 - 120	<0.090	ug/L	NC	20		
8828011	Total Calcium (Ca)	2023/08/02	NC	80 - 120	99	80 - 120	<200	ug/L	6.1	20		
8828011	Total Chromium (Cr)	2023/08/02	92	80 - 120	92	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Cobalt (Co)	2023/08/02	99	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Copper (Cu)	2023/08/02	100	80 - 120	96	80 - 120	<0.90	ug/L	NC	20		
8828011	Total Iron (Fe)	2023/08/02	99	80 - 120	96	80 - 120	<100	ug/L	NC	20		
8828011	Total Lead (Pb)	2023/08/02	100	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Lithium (Li)	2023/08/02	92	80 - 120	95	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Magnesium (Mg)	2023/08/02	98	80 - 120	100	80 - 120	<50	ug/L	1.3	20		
8828011	Total Manganese (Mn)	2023/08/02	96	80 - 120	96	80 - 120	<2.0	ug/L	NC	20		
8828011	Total Molybdenum (Mo)	2023/08/02	99	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Nickel (Ni)	2023/08/02	95	80 - 120	94	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Potassium (K)	2023/08/02	102	80 - 120	100	80 - 120	<200	ug/L	2.2	20		
8828011	Total Selenium (Se)	2023/08/02	105	80 - 120	103	80 - 120	<2.0	ug/L	NC	20		
8828011	Total Silicon (Si)	2023/08/02	100	80 - 120	97	80 - 120	<50	ug/L	3.4	20		
8828011	Total Silver (Ag)	2023/08/02	94	80 - 120	93	80 - 120	<0.090	ug/L	NC	20		
8828011	Total Sodium (Na)	2023/08/02	100	80 - 120	96	80 - 120	<100	ug/L	3.7	20		
8828011	Total Strontium (Sr)	2023/08/02	95	80 - 120	95	80 - 120	<1.0	ug/L	0.0064	20		
8828011	Total Tellurium (Te)	2023/08/02	106	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Thallium (Tl)	2023/08/02	97	80 - 120	98	80 - 120	<0.050	ug/L	NC	20		
8828011	Total Tin (Sn)	2023/08/02	103	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Titanium (Ti)	2023/08/02	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8828011	Total Tungsten (W)	2023/08/02	101	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Uranium (U)	2023/08/02	100	80 - 120	98	80 - 120	<0.10	ug/L	1.5	20		
8828011	Total Vanadium (V)	2023/08/02	95	80 - 120	93	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Zinc (Zn)	2023/08/02	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Zirconium (Zr)	2023/08/02	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8828243	Total Ammonia-N	2023/08/03	97	75 - 125	102	80 - 120	<0.050	mg/L	0.038	20		
8833426	Benzene	2023/08/05	77	50 - 140	77	50 - 140	<0.20	ug/L	7.6	30		
8833426	Ethylbenzene	2023/08/05	83	50 - 140	85	50 - 140	<0.20	ug/L	NC	30		
8833426	F1 (C6-C10) - BTEX	2023/08/05					<25	ug/L	NC	30		
8833426	F1 (C6-C10)	2023/08/05	89	60 - 140	90	60 - 140	<25	ug/L	NC	30		
8833426	o-Xylene	2023/08/05	82	50 - 140	84	50 - 140	<0.20	ug/L	NC	30		
8833426	p+m-Xylene	2023/08/05	80	50 - 140	86	50 - 140	<0.40	ug/L	NC	30		
8833426	Toluene	2023/08/05	74	50 - 140	75	50 - 140	<0.20	ug/L	NC	30		
8833426	Total Xylenes	2023/08/05					<0.40	ug/L	NC	30		
8833432	Benzene	2023/08/08	NC	50 - 140	84	50 - 140	<0.20	ug/L	7.2	30		
8833432	Ethylbenzene	2023/08/08	109	50 - 140	96	50 - 140	<0.20	ug/L	5.3	30		
8833432	F1 (C6-C10) - BTEX	2023/08/08					<25	ug/L	NC	30		
8833432	F1 (C6-C10)	2023/08/08	112	60 - 140	93	60 - 140	<25	ug/L	0.79	30		
8833432	o-Xylene	2023/08/08	102	50 - 140	93	50 - 140	<0.20	ug/L	4.7	30		
8833432	p+m-Xylene	2023/08/08	100	50 - 140	87	50 - 140	<0.40	ug/L	6.8	30		
8833432	Toluene	2023/08/08	90	50 - 140	78	50 - 140	<0.20	ug/L	3.2	30		
8833432	Total Xylenes	2023/08/08					<0.40	ug/L	5.5	30		
8833643	F2 (C10-C16 Hydrocarbons)	2023/08/04	108	60 - 130	102	60 - 130	<100	ug/L	NC	30		
8833643	F3 (C16-C34 Hydrocarbons)	2023/08/04	109	60 - 130	106	60 - 130	<200	ug/L	NC	30		
8833643	F4 (C34-C50 Hydrocarbons)	2023/08/04	107	60 - 130	104	60 - 130	<200	ug/L	NC	30		
8836996	Total Oil & Grease	2023/08/06			99	85 - 115	<0.50	mg/L	0.51	25		
8837000	Total Oil & Grease Mineral/Synthetic	2023/08/06			97	85 - 115	<0.50	mg/L	0.52	25		
8837189	1-Methylnaphthalene	2023/08/06	64	50 - 130	56	50 - 130	<0.10	ug/L	NC	30		
8837189	2-Methylnaphthalene	2023/08/06	79	50 - 130	69	50 - 130	<0.10	ug/L	NC	30		
8837189	Acenaphthene	2023/08/06	93	50 - 130	83	50 - 130	<0.10	ug/L	NC	30		
8837189	Acenaphthylene	2023/08/06	95	50 - 130	82	50 - 130	<0.10	ug/L	NC	30		





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## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8837189	Acridine	2023/08/06	98	50 - 130	84	50 - 130	<0.040	ug/L	NC	30		
8837189	Anthracene	2023/08/06	85	50 - 130	74	50 - 130	<0.010	ug/L	NC	30		
8837189	Benzo(a)anthracene	2023/08/06	119	50 - 130	99	50 - 130	<0.0085	ug/L	NC	30		
8837189	Benzo(a)pyrene	2023/08/06	128	50 - 130	110	50 - 130	<0.0075	ug/L	NC	30		
8837189	Benzo(b,j)fluoranthene	2023/08/06	121	50 - 130	103	50 - 130	<0.0085	ug/L	NC	30		
8837189	Benzo(c)phenanthrene	2023/08/06	123	50 - 130	104	50 - 130	<0.050	ug/L	NC	30		
8837189	Benzo(e)pyrene	2023/08/06	106	50 - 130	90	50 - 130	<0.050	ug/L	NC	30		
8837189	Benzo(g,h,i)perylene	2023/08/06	112	50 - 130	91	50 - 130	<0.0085	ug/L	NC	30		
8837189	Benzo(k)fluoranthene	2023/08/06	117	50 - 130	120	50 - 130	<0.0085	ug/L	NC	30		
8837189	Chrysene	2023/08/06	116	50 - 130	100	50 - 130	<0.0085	ug/L	NC	30		
8837189	Dibenzo(a,h)anthracene	2023/08/06	115	50 - 130	89	50 - 130	<0.0075	ug/L	NC	30		
8837189	Fluoranthene	2023/08/06	116	50 - 130	100	50 - 130	<0.010	ug/L	NC	30		
8837189	Fluorene	2023/08/06	103	50 - 130	89	50 - 130	<0.050	ug/L	NC	30		
8837189	Indeno(1,2,3-cd)pyrene	2023/08/06	119	50 - 130	92	50 - 130	<0.0085	ug/L	NC	30		
8837189	Naphthalene	2023/08/06	80	50 - 130	69	50 - 130	<0.10	ug/L	NC	30		
8837189	Perylene	2023/08/06	104	50 - 130	89	50 - 130	<0.050	ug/L	NC	30		
8837189	Phenanthrene	2023/08/06	115	50 - 130	101	50 - 130	<0.050	ug/L	NC	30		
8837189	Pyrene	2023/08/06	115	50 - 130	101	50 - 130	<0.020	ug/L	NC	30		
8837189	Quinoline	2023/08/06	79	50 - 130	79	50 - 130	<0.20	ug/L	NC	30		
8841753	Phenols-4AAP	2023/08/08	99	80 - 120	107	80 - 120	<0.0015	mg/L				
8841754	Phenols-4AAP	2023/08/08	99	80 - 120	108	80 - 120	<0.0015	mg/L				
8843927	Dissolved Aluminum (Al)	2023/08/11	105	80 - 120	99	80 - 120	<4.9	ug/L	NC	20		
8843927	Dissolved Antimony (Sb)	2023/08/11	111	80 - 120	103	80 - 120	<0.50	ug/L	15	20		
8843927	Dissolved Arsenic (As)	2023/08/11	106	80 - 120	100	80 - 120	<1.0	ug/L	0.24	20		
8843927	Dissolved Barium (Ba)	2023/08/11	104	80 - 120	98	80 - 120	<2.0	ug/L	2.6	20		
8843927	Dissolved Beryllium (Be)	2023/08/11	104	80 - 120	96	80 - 120	<0.40	ug/L	NC	20		
8843927	Dissolved Bismuth (Bi)	2023/08/11	103	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Boron (B)	2023/08/11	103	80 - 120	96	80 - 120	<10	ug/L	1.3	20		
8843927	Dissolved Cadmium (Cd)	2023/08/11	106	80 - 120	99	80 - 120	<0.090	ug/L	NC	20		
8843927	Dissolved Calcium (Ca)	2023/08/11	NC	80 - 120	101	80 - 120	<200	ug/L	2.0	20		
8843927	Dissolved Chromium (Cr)	2023/08/11	105	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		



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## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843927	Dissolved Cobalt (Co)	2023/08/11	104	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8843927	Dissolved Copper (Cu)	2023/08/11	105	80 - 120	98	80 - 120	<0.90	ug/L	0.35	20		
8843927	Dissolved Iron (Fe)	2023/08/11	107	80 - 120	101	80 - 120	<100	ug/L	NC	20		
8843927	Dissolved Lead (Pb)	2023/08/11	104	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
8843927	Dissolved Lithium (Li)	2023/08/11	109	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Magnesium (Mg)	2023/08/11	105	80 - 120	99	80 - 120	<50	ug/L	2.9	20		
8843927	Dissolved Manganese (Mn)	2023/08/11	106	80 - 120	100	80 - 120	<2.0	ug/L	0.0044	20		
8843927	Dissolved Molybdenum (Mo)	2023/08/11	112	80 - 120	103	80 - 120	<0.50	ug/L	2.2	20		
8843927	Dissolved Nickel (Ni)	2023/08/11	104	80 - 120	99	80 - 120	<1.0	ug/L	0.80	20		
8843927	Dissolved Phosphorus (P)	2023/08/11	110	80 - 120	97	80 - 120	<100	ug/L	NC	20		
8843927	Dissolved Potassium (K)	2023/08/11	107	80 - 120	101	80 - 120	<200	ug/L	1.6	20		
8843927	Dissolved Selenium (Se)	2023/08/11	105	80 - 120	101	80 - 120	<2.0	ug/L	NC	20		
8843927	Dissolved Silicon (Si)	2023/08/11	107	80 - 120	101	80 - 120	<50	ug/L	0.11	20		
8843927	Dissolved Silver (Ag)	2023/08/11	107	80 - 120	100	80 - 120	<0.090	ug/L	NC	20		
8843927	Dissolved Sodium (Na)	2023/08/11	105	80 - 120	99	80 - 120	<100	ug/L	1.4	20		
8843927	Dissolved Strontium (Sr)	2023/08/11	107	80 - 120	102	80 - 120	<1.0	ug/L	2.3	20		
8843927	Dissolved Tellurium (Te)	2023/08/11	106	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Thallium (Tl)	2023/08/11	107	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
8843927	Dissolved Tin (Sn)	2023/08/11	110	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Titanium (Ti)	2023/08/11	105	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Tungsten (W)	2023/08/11	109	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Uranium (U)	2023/08/11	105	80 - 120	97	80 - 120	<0.10	ug/L	0.62	20		
8843927	Dissolved Vanadium (V)	2023/08/11	107	80 - 120	100	80 - 120	<0.50	ug/L	2.3	20		
8843927	Dissolved Zinc (Zn)	2023/08/11	104	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Zirconium (Zr)	2023/08/11	115	80 - 120	107	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Aluminum (Al)	2023/08/14	105	80 - 120	97	80 - 120	<4.9	ug/L	NC	20		
8843936	Dissolved Antimony (Sb)	2023/08/14	108	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Arsenic (As)	2023/08/14	107	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Barium (Ba)	2023/08/14	105	80 - 120	98	80 - 120	<2.0	ug/L	3.8	20		
8843936	Dissolved Beryllium (Be)	2023/08/14	101	80 - 120	93	80 - 120	<0.40	ug/L	NC	20		
8843936	Dissolved Bismuth (Bi)	2023/08/14	104	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		



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## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843936	Dissolved Boron (B)	2023/08/14	103	80 - 120	98	80 - 120	<10	ug/L	1.3	20		
8843936	Dissolved Cadmium (Cd)	2023/08/14	105	80 - 120	98	80 - 120	<0.090	ug/L	NC	20		
8843936	Dissolved Calcium (Ca)	2023/08/14	NC	80 - 120	98	80 - 120	<200	ug/L	0.80	20		
8843936	Dissolved Chromium (Cr)	2023/08/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Cobalt (Co)	2023/08/14	104	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Copper (Cu)	2023/08/14	107	80 - 120	101	80 - 120	<0.90	ug/L	NC	20		
8843936	Dissolved Iron (Fe)	2023/08/14	106	80 - 120	99	80 - 120	<100	ug/L	NC	20		
8843936	Dissolved Lead (Pb)	2023/08/14	103	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Lithium (Li)	2023/08/14	109	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Magnesium (Mg)	2023/08/14	101	80 - 120	102	80 - 120	<50	ug/L	5.6	20		
8843936	Dissolved Manganese (Mn)	2023/08/14	105	80 - 120	98	80 - 120	<2.0	ug/L	NC	20		
8843936	Dissolved Molybdenum (Mo)	2023/08/14	106	80 - 120	96	80 - 120	<0.50	ug/L	3.1	20		
8843936	Dissolved Nickel (Ni)	2023/08/14	105	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Phosphorus (P)	2023/08/14	112	80 - 120	105	80 - 120	<100	ug/L	NC	20		
8843936	Dissolved Potassium (K)	2023/08/14	107	80 - 120	101	80 - 120	<200	ug/L	0.84	20		
8843936	Dissolved Selenium (Se)	2023/08/14	107	80 - 120	100	80 - 120	<2.0	ug/L	NC	20		
8843936	Dissolved Silicon (Si)	2023/08/14	104	80 - 120	96	80 - 120	<50	ug/L	1.8	20		
8843936	Dissolved Silver (Ag)	2023/08/14	101	80 - 120	96	80 - 120	<0.090	ug/L	NC	20		
8843936	Dissolved Sodium (Na)	2023/08/14	109	80 - 120	98	80 - 120	<100	ug/L	4.6	20		
8843936	Dissolved Strontium (Sr)	2023/08/14	108	80 - 120	101	80 - 120	<1.0	ug/L	0.82	20		
8843936	Dissolved Tellurium (Te)	2023/08/14	107	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Thallium (Tl)	2023/08/14	105	80 - 120	98	80 - 120	<0.050	ug/L	NC	20		
8843936	Dissolved Tin (Sn)	2023/08/14	110	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Titanium (Ti)	2023/08/14	104	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Tungsten (W)	2023/08/14	107	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Uranium (U)	2023/08/14	106	80 - 120	97	80 - 120	<0.10	ug/L	4.4	20		
8843936	Dissolved Vanadium (V)	2023/08/14	104	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Zinc (Zn)	2023/08/14	106	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		



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## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843936	Dissolved Zirconium (Zr)	2023/08/14	110	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
<p>N/A = Not Applicable</p> <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)</p> <p>NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference &lt;= 2x RDL).</p> <p>(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.</p>												



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BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Cristina Carriere, Senior Scientific Specialist

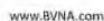
Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

Sandy Yuan, M.Sc., QP, Scientific Specialist

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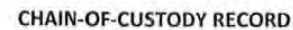
6740 Campobello Road, Mississauga, Ontario L5N 2L8  
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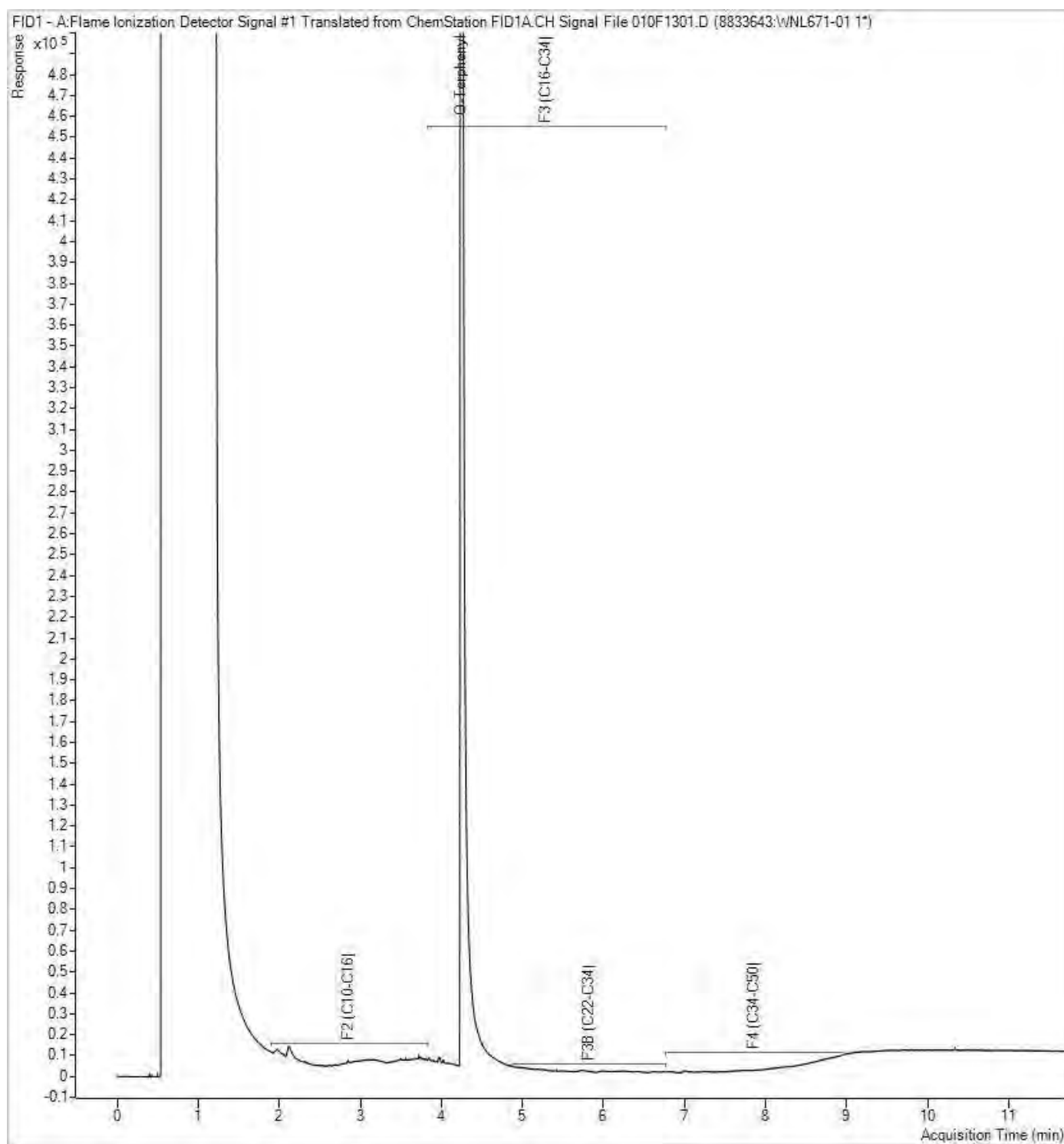
Invoice Information				Invoice to (requires report)				Company:				Company:				Project Information															
Company:				BluMetric Environmental Inc				Company:				BluMetric Environmental Inc				Quotation #:				C32559											
Contact Name:				Accounts Payable				Contact Name:				Jaclyn Kalesnikoff				P.O. #/ AFE#:															
Street Address:				1682 Woodward Drive				Street Address:				1682 Woodward Drive				Project #:				230427											
City:		Ottawa		Prov:		ON		Postal Code:		K2C 3R8		City:		Ottawa		Prov:		ON		Postal Code:		K2C 3R8		Site #:							
Phone:				613-839-3053				Phone:				877-487-8436 x339				Site Location:				Resolute Bay Landfill				Rush Confirmation #:							
Email:				ap@blumetric.ca				Email:				jkalesnikoff@blumetric.ca				Site Location Province:															
Copies:				jkalesnikoff@blumetric.ca				Copies:				jbrown@blumetric.ca				Sampled By:				KC											
Regulatory Criteria																															
REG 133 Table 1 Res/Park Med/Fine CME Reg 406, Table: Table 2 Ind/Comm Course leg 558* Sanitary Sewer Bylaw Table 3 Agri/other For RSC min 3 day TAT Storm Sewer Bylaw Table WQA MISA Municipality WQO Other:																															
Include Criteria on Certificate of Analysis (check if yes):																															
SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS																															
Sample Identification												Date Sampled				Time (24hr)				Matrix											
												YY MM DD				HH MM															
1 FIELD BLANK 2												23 07 24				10 40				Water - Surface											
2																															
3																															
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*UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS AND CONDITIONS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS OR BY CALLING THE LABORATORY LISTED ABOVE TO OBTAIN A COPY																															
LAB USE ONLY				Yes No				LAB USE ONLY				Yes No				LAB USE ONLY				Yes No				Temperature reading by:							
Seal present								Seal present								Seal present															
Seal intact								Seal intact								Seal intact															
Cooling media present								Cooling media present								Cooling media present															
Relinquished by: (Signature/ Print)												Date				Time				Received by: (Signature/ Print)											
												YY MM DD				HH MM															
KIM CARLTON												23 07 25				11 50				See pg. 1											
																				See page 1											





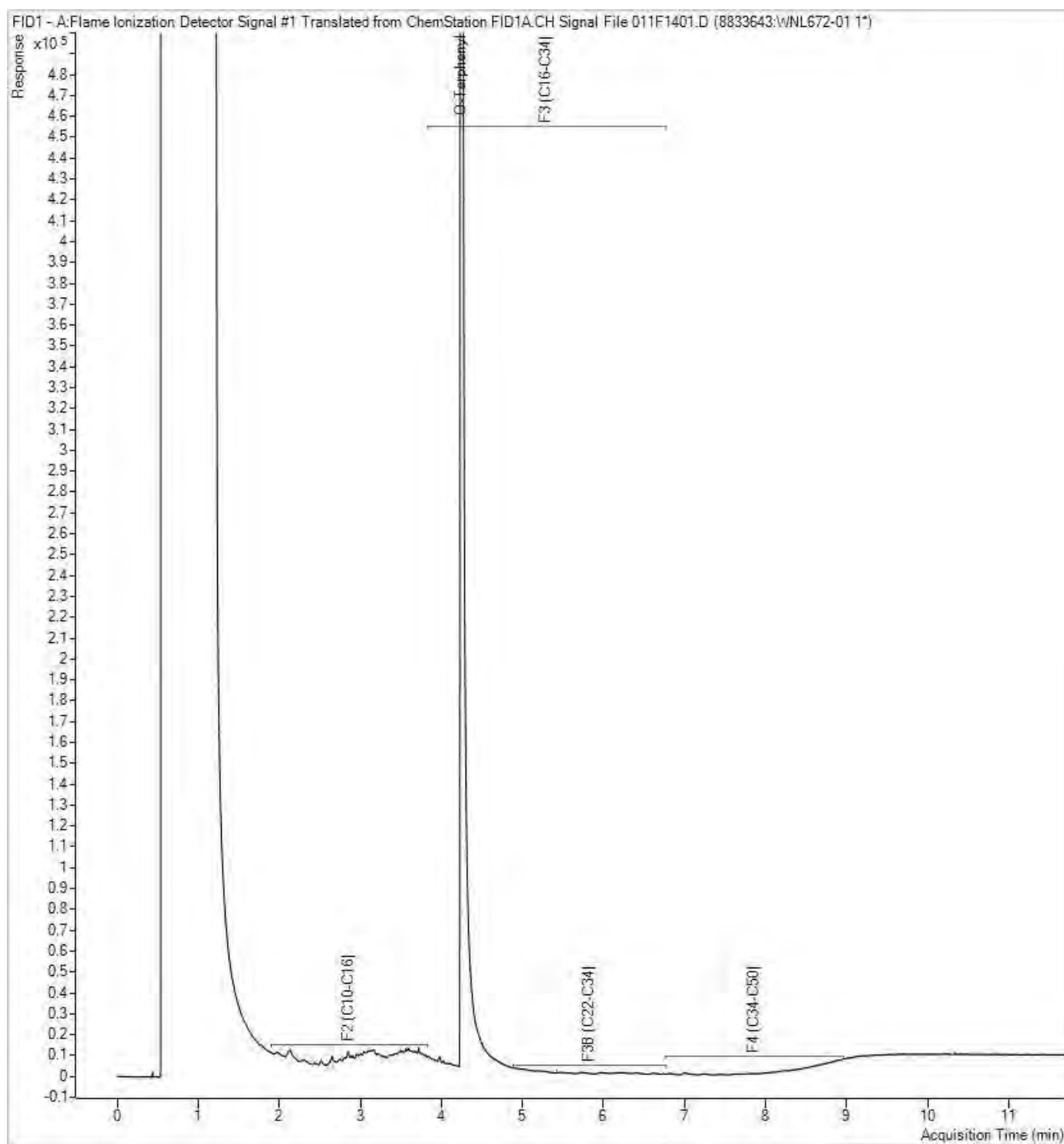
RECEIVED BY (SIGN & PRINT)		DATE (YYYY/MM/DD)	TIME (HH:MM)
<i>Aneri</i>	ANERI	2013/07/28	08:40

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram

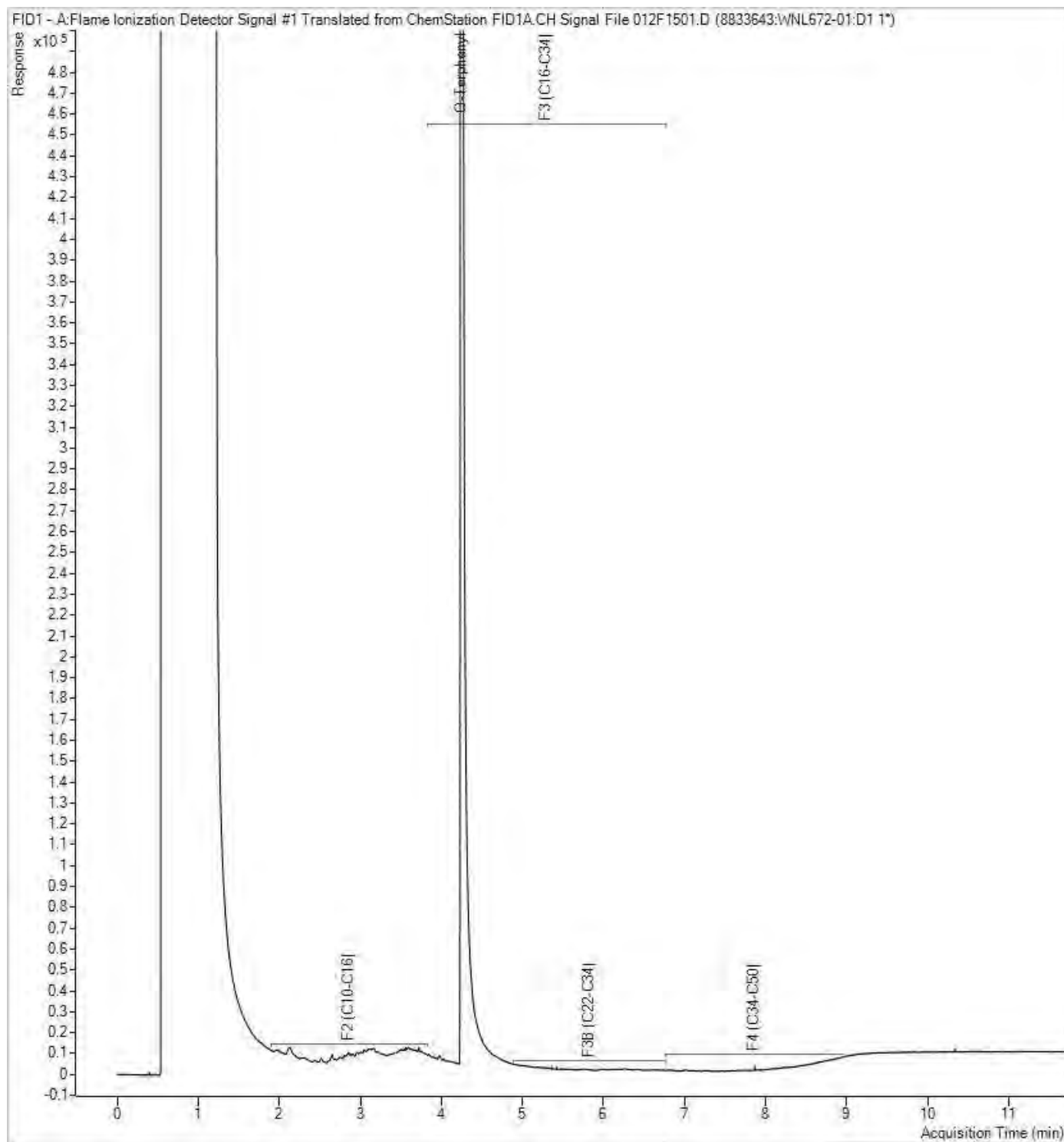


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/14  
Bureau Veritas Sample: WNL672 Lab-Dup

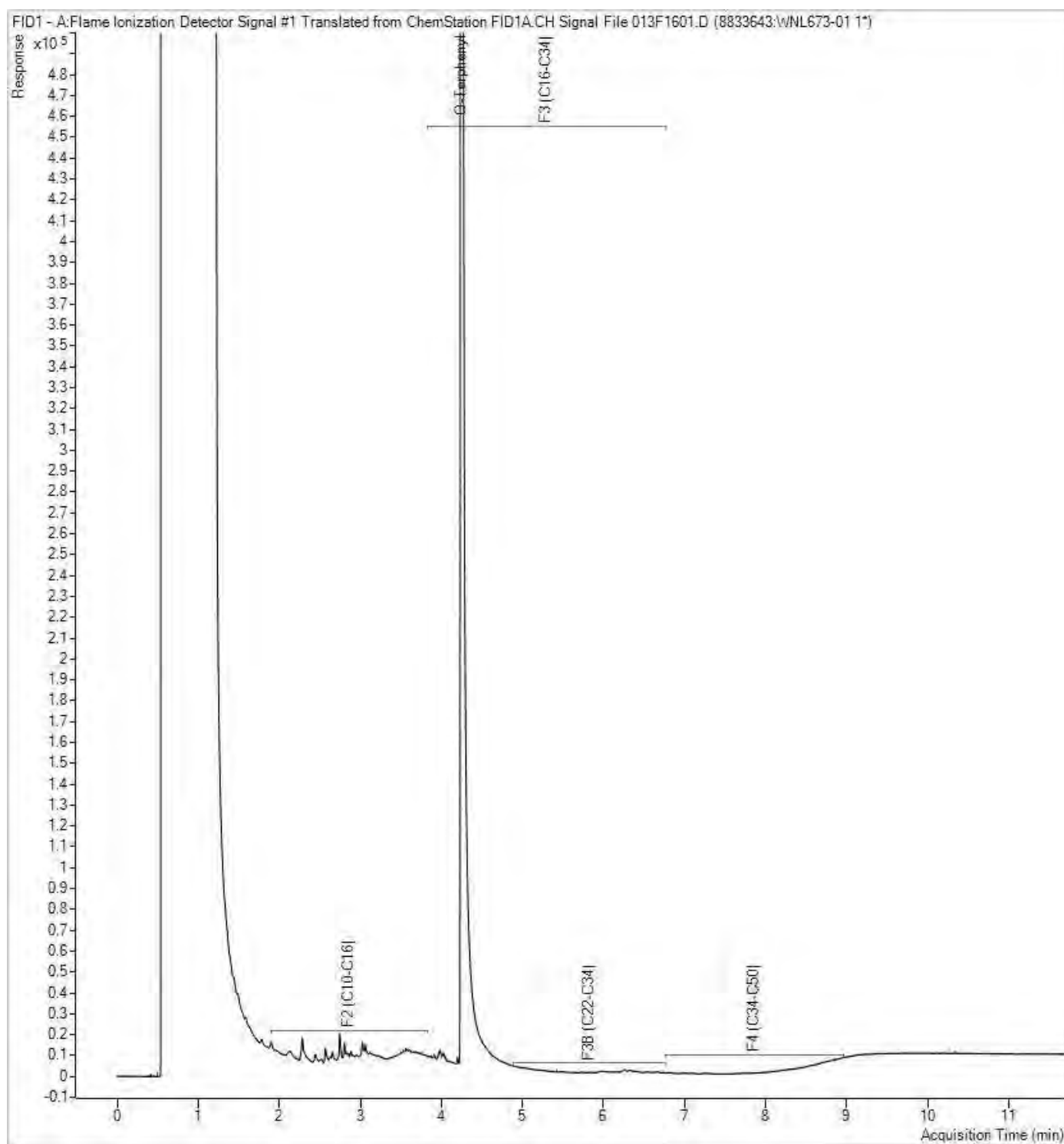
BluMetric Environmental Inc  
Client Project #: 230427  
Project name: RESOLUTE BAY LANDFILL  
Client ID: RBL-3

**Petroleum Hydrocarbons F2-F4 in Water Chromatogram**



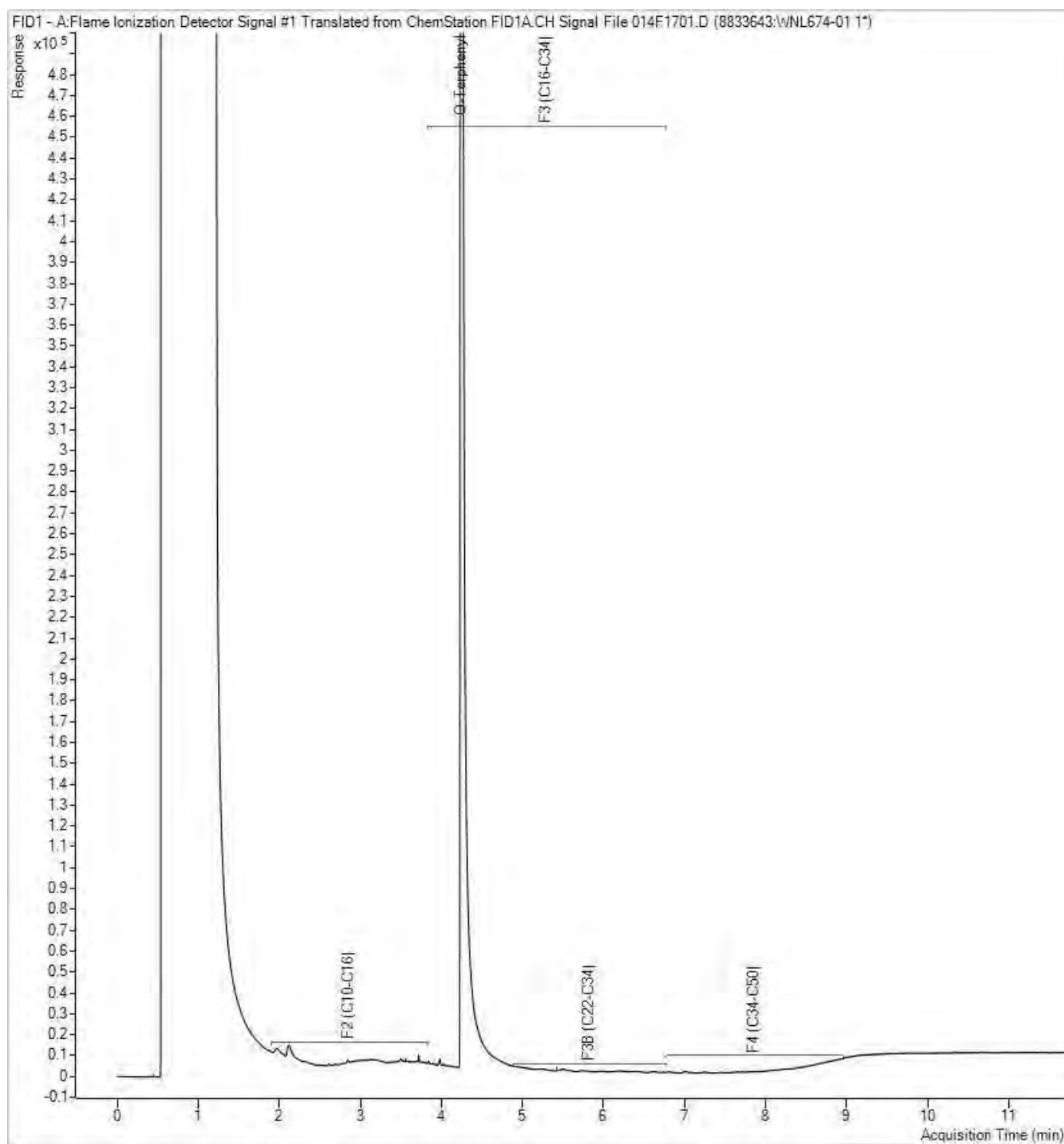
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

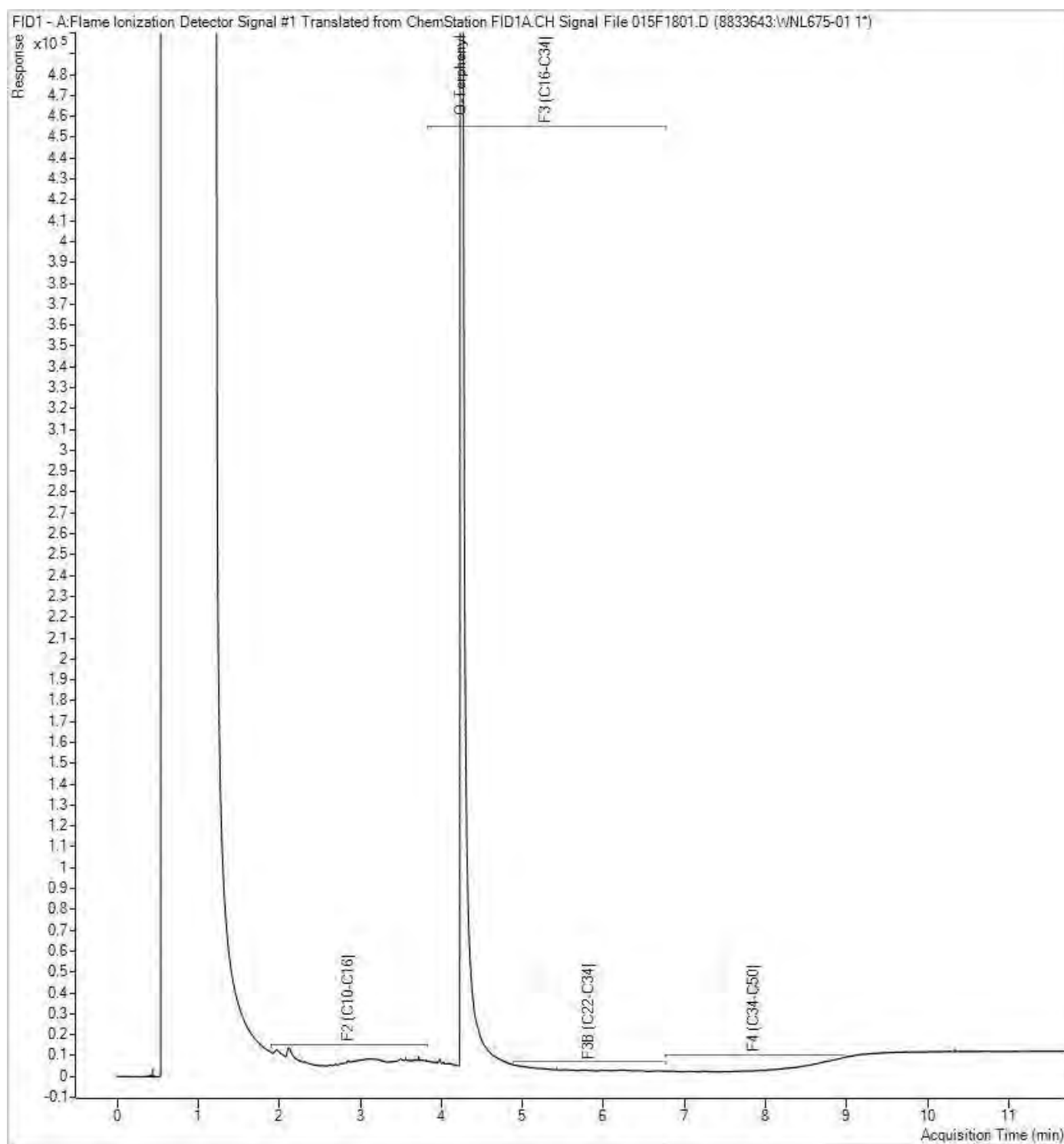
Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

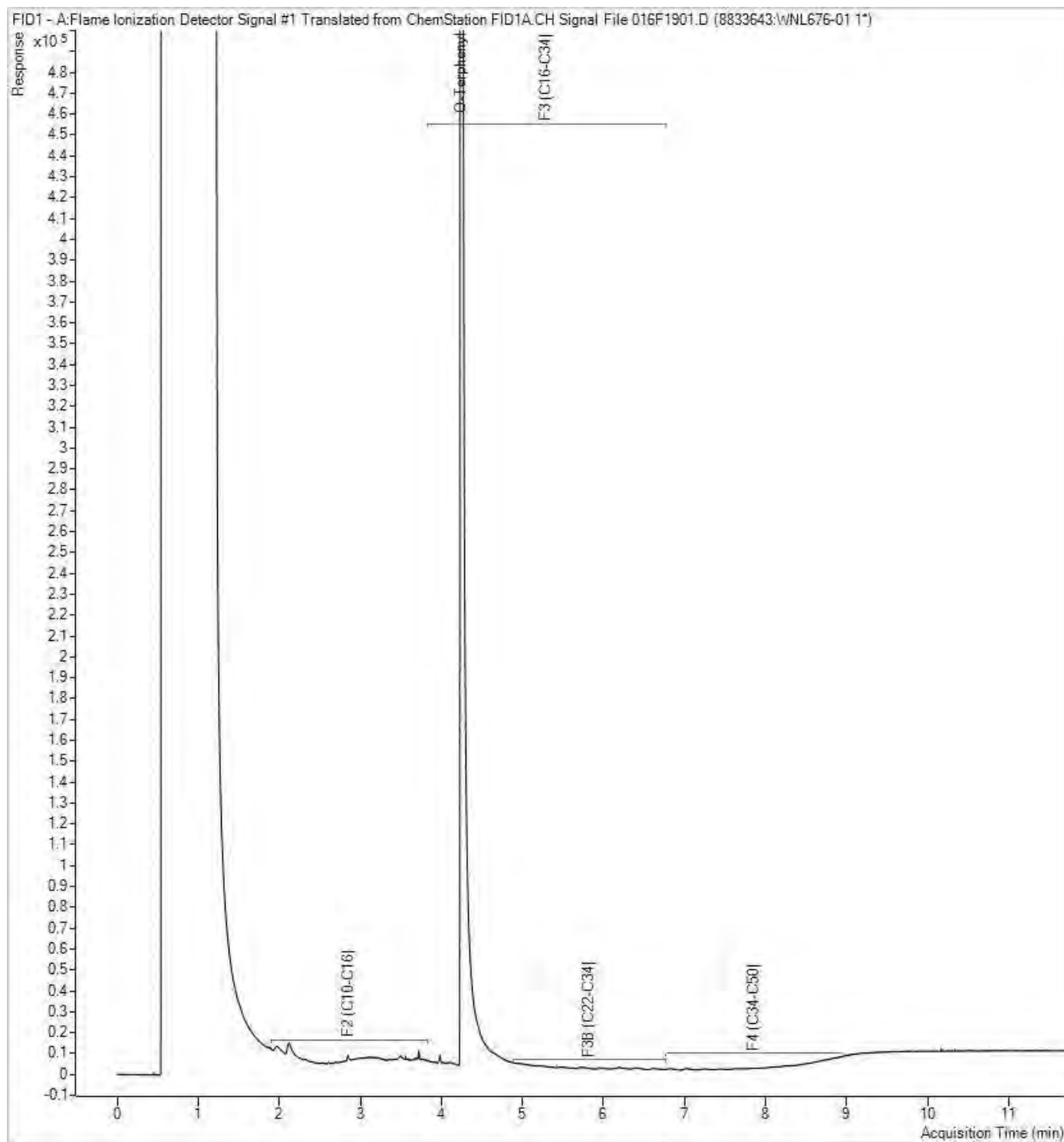


Petroleum Hydrocarbons F2-F4 in Water Chromatogram



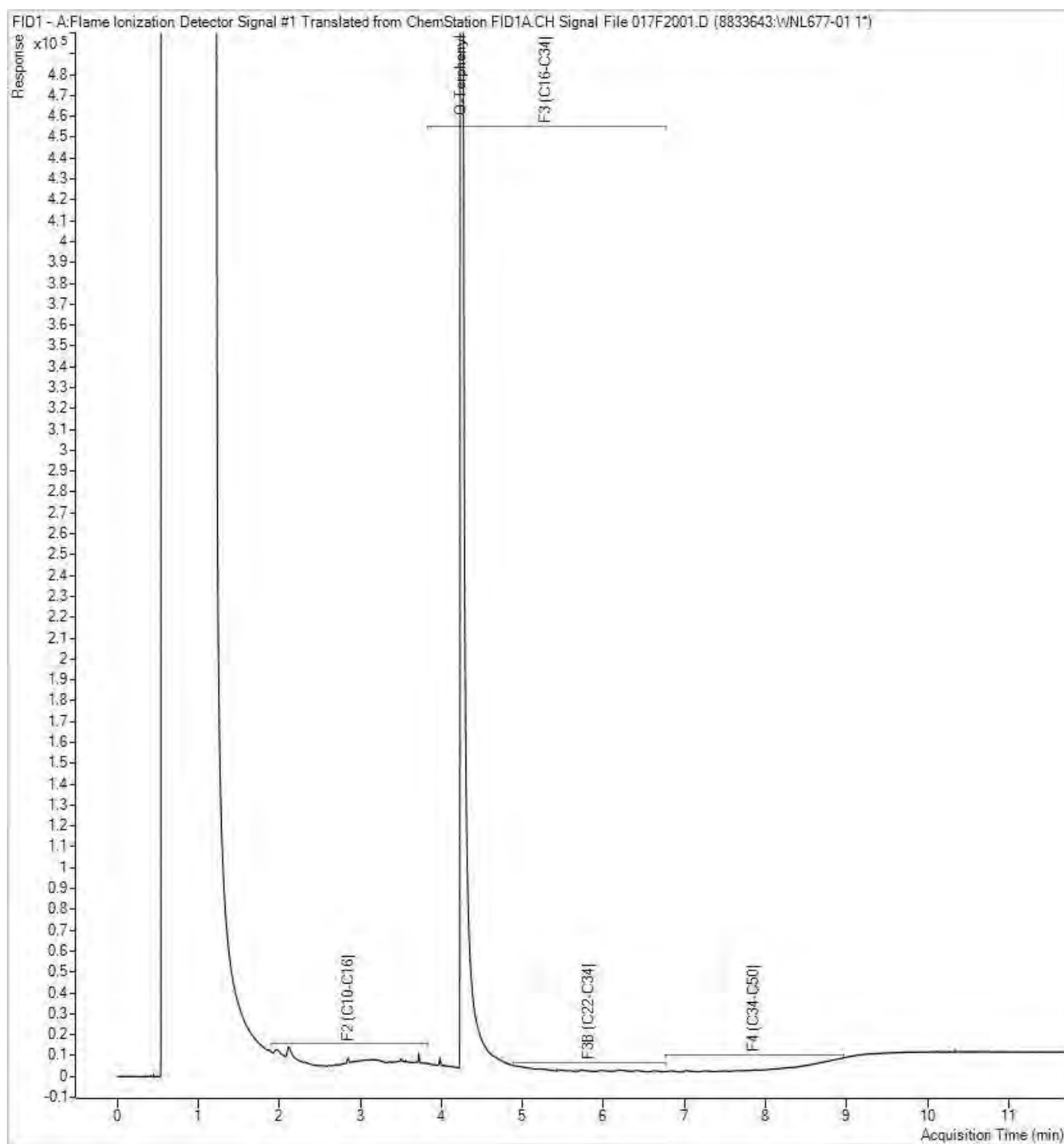
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



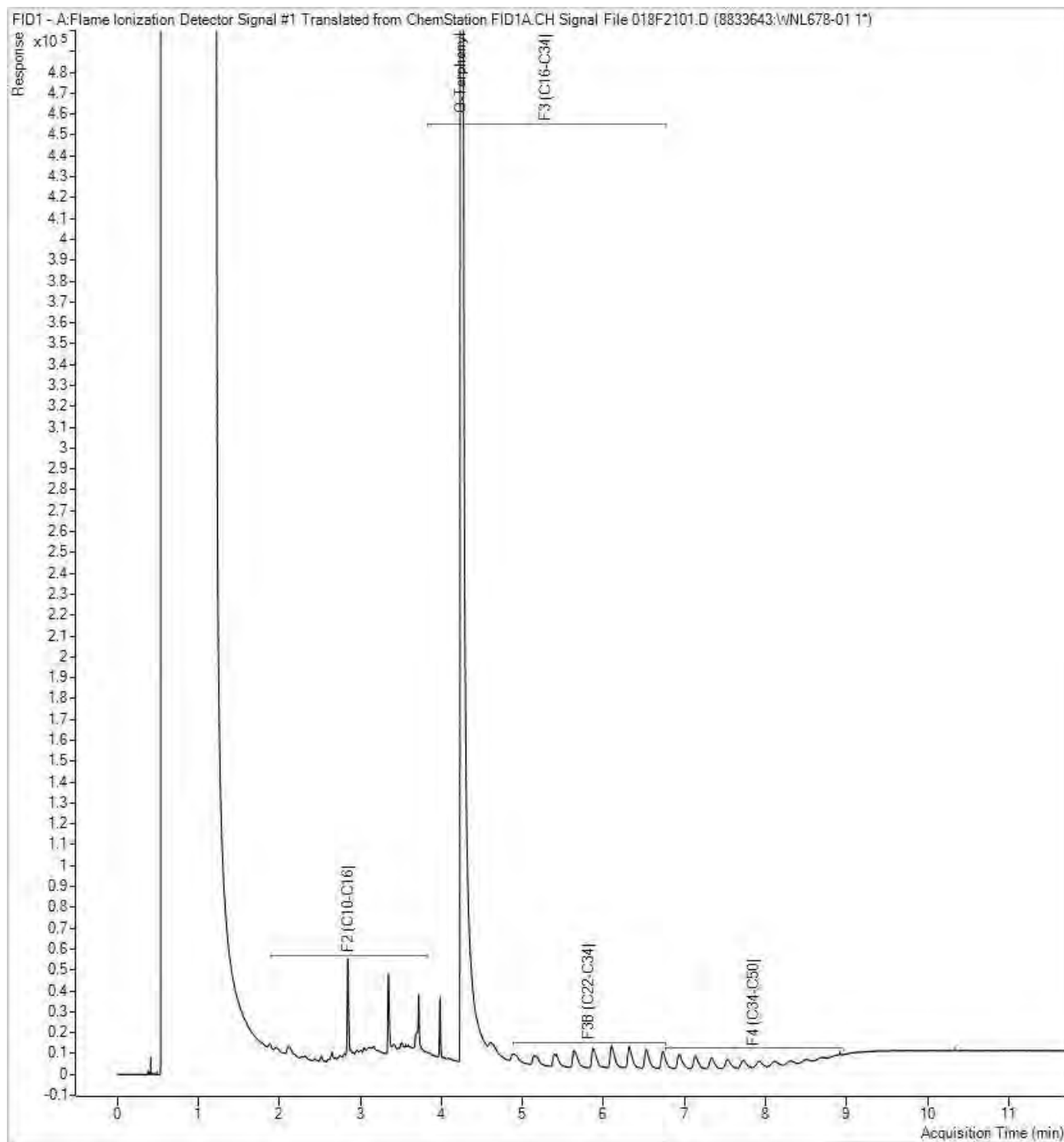
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



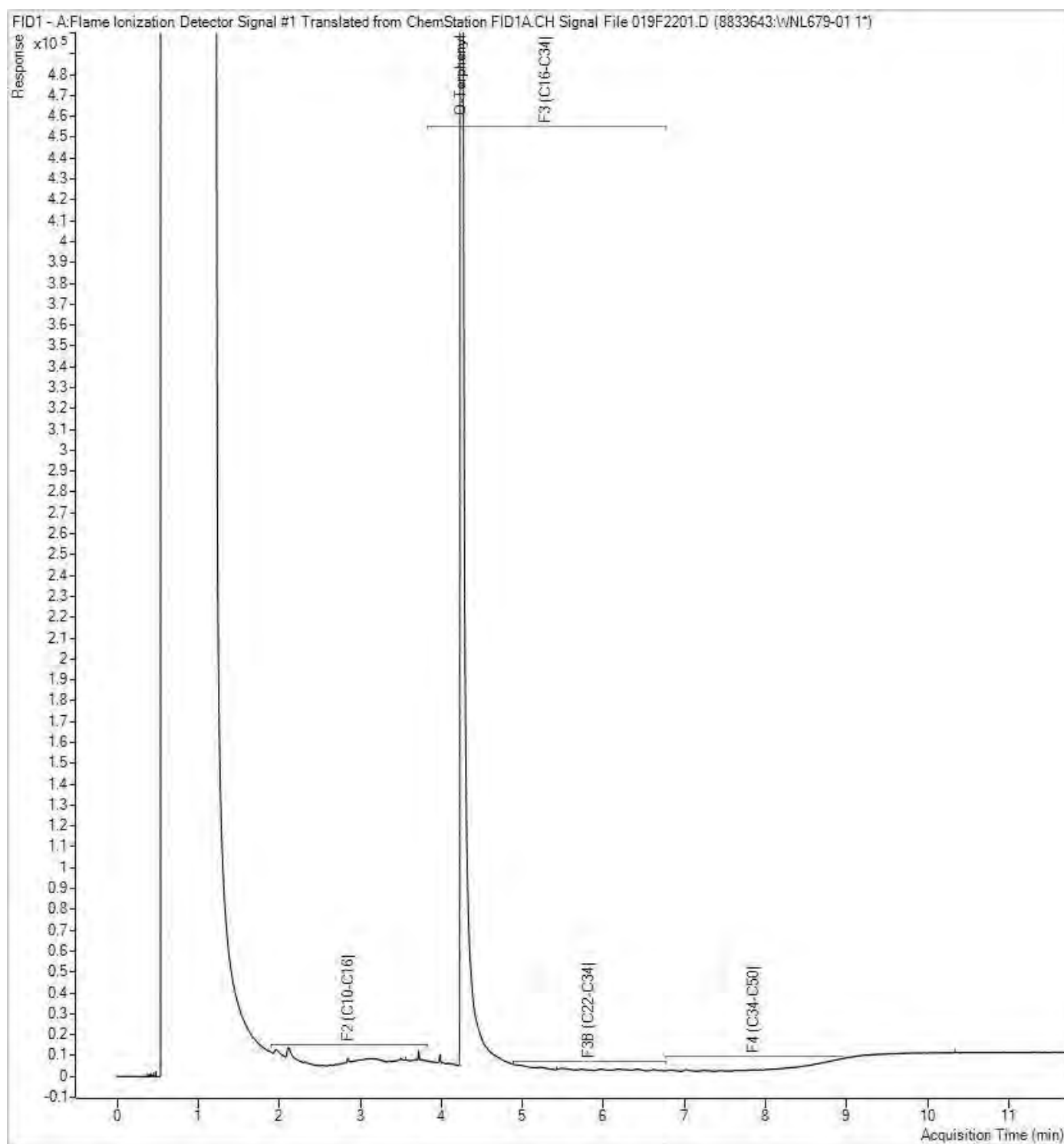
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



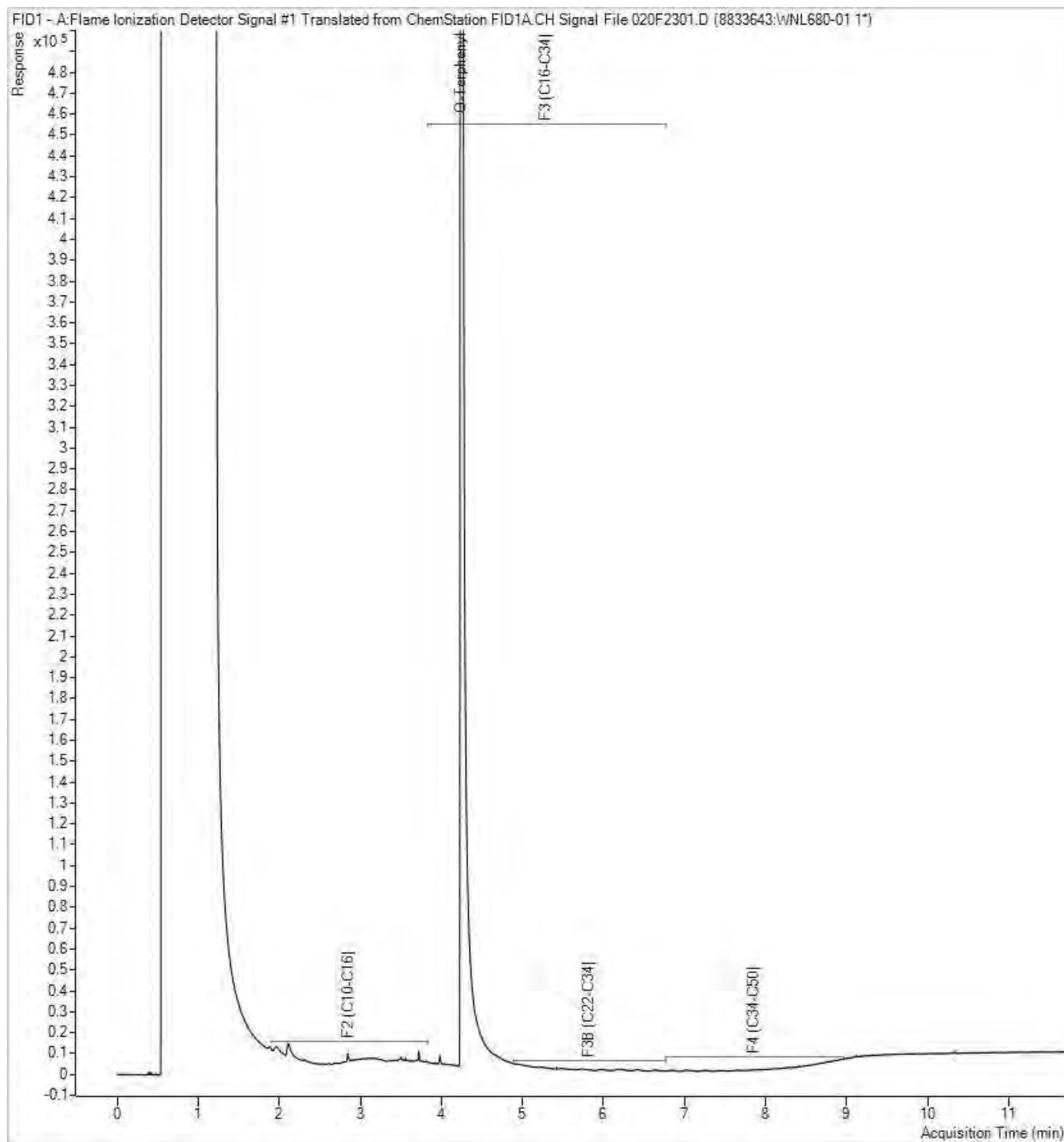
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



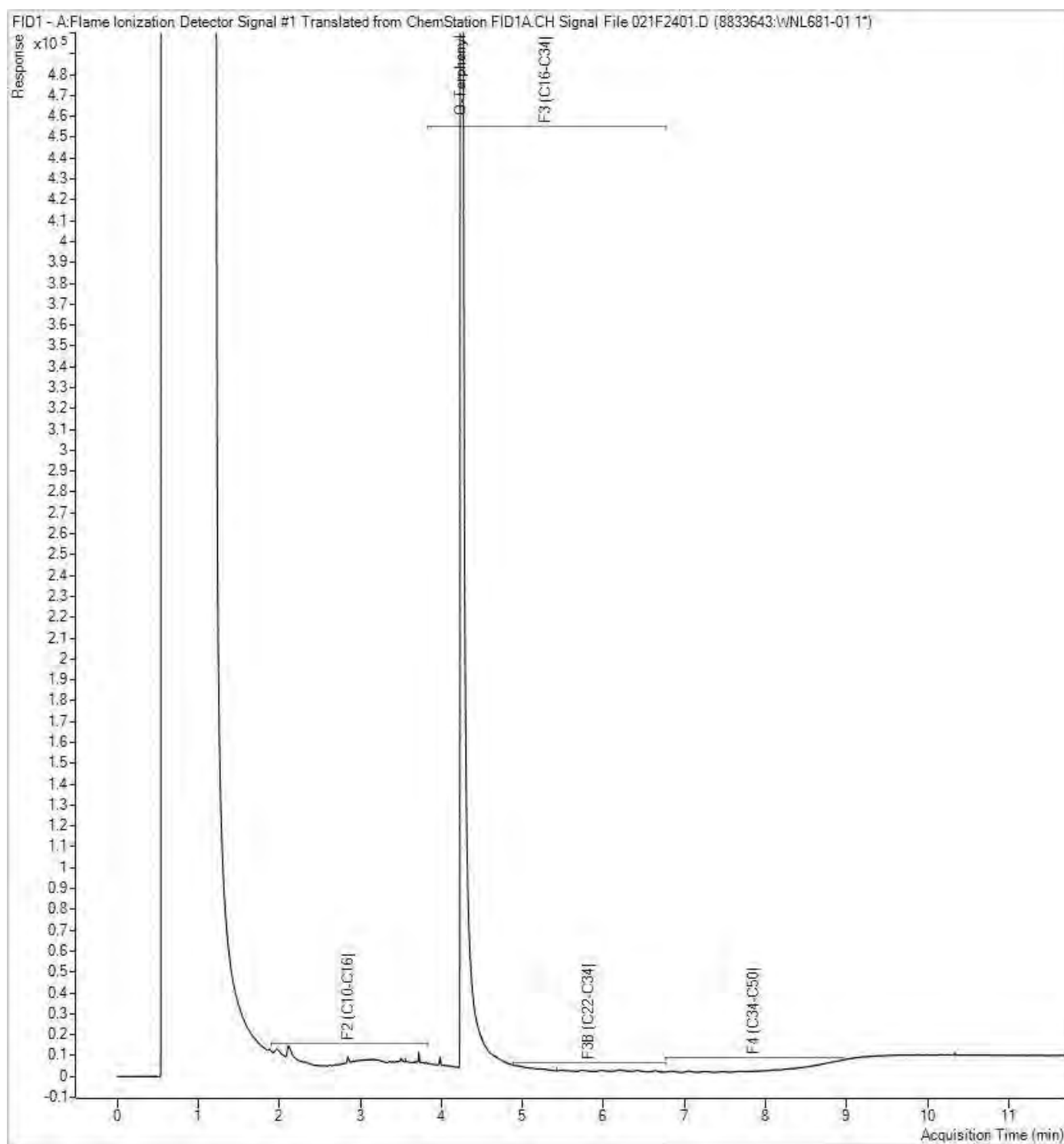
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

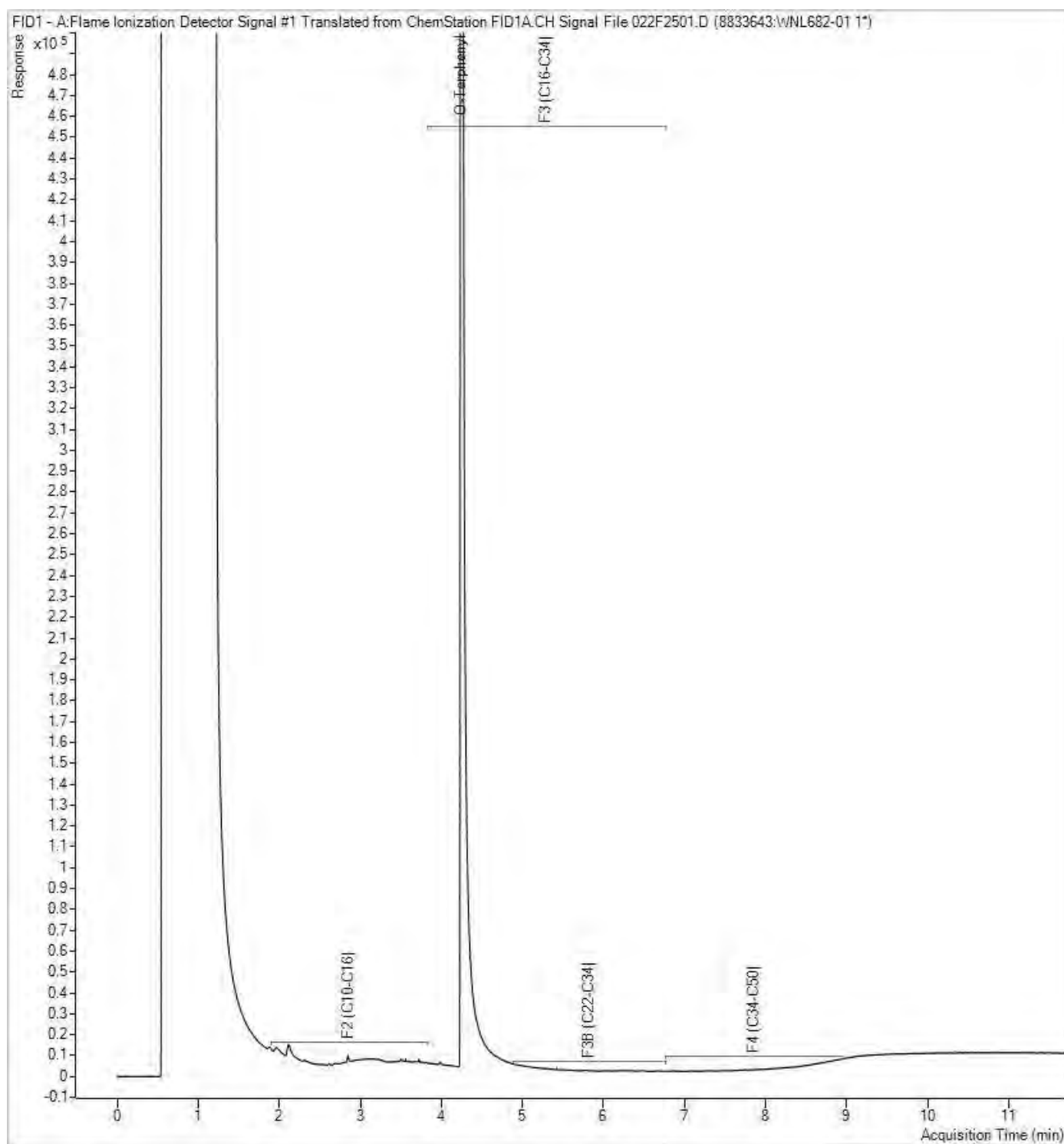
Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

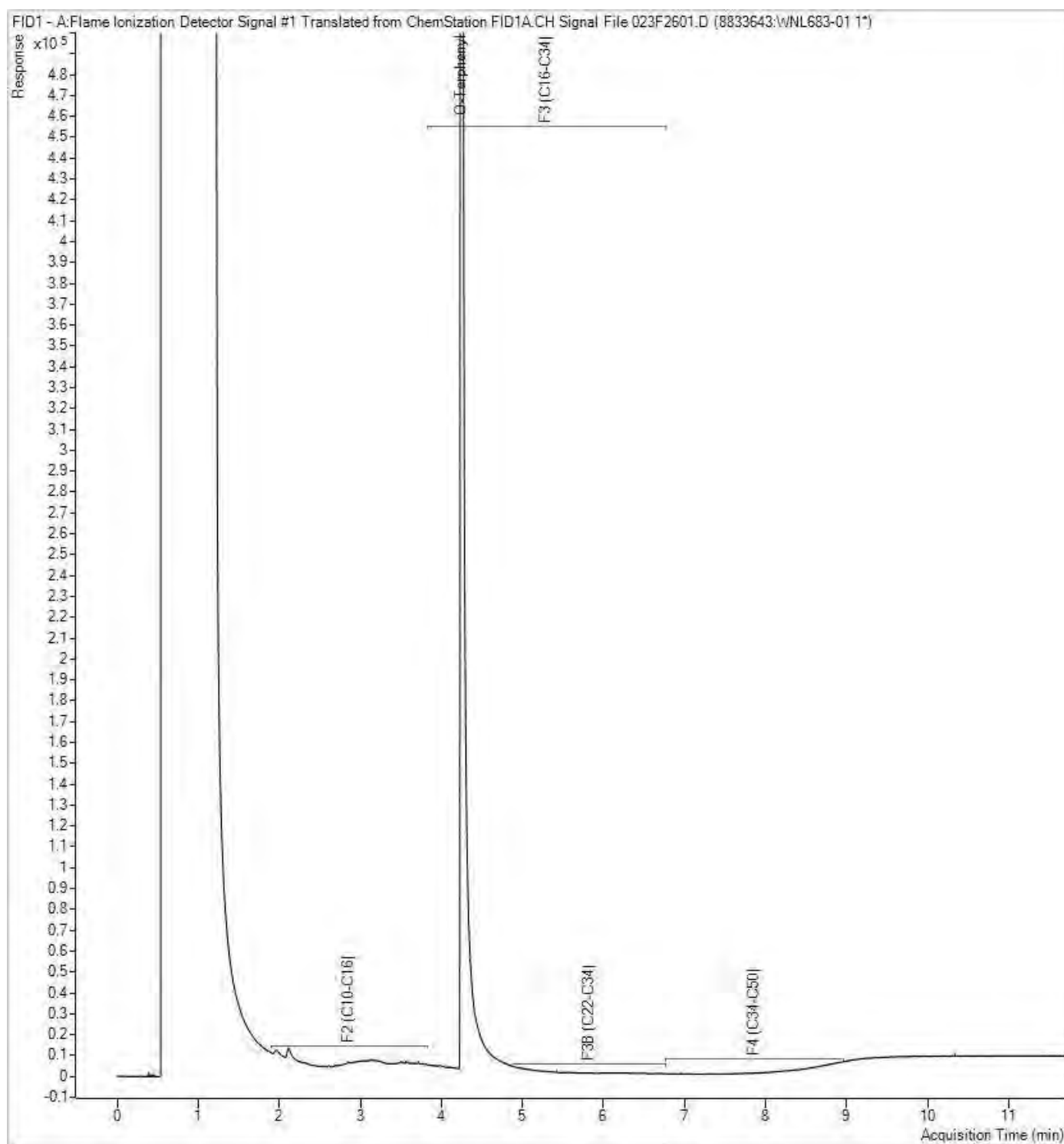


Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 230427  
 Site Location: RESOLUTE BAY LANDFILL  
 Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
 1682 Woodward Drive  
 Ottawa, ON  
 CANADA K2C 3R8

**Report Date: 2023/08/29**

Report #: R7787100

Version: 2 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

Sample Matrix: Water  
 # Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity (1)	10	N/A	2023/08/01	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	10	N/A	2023/08/02	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	10	N/A	2023/08/02	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	10	N/A	2023/08/01	CAM SOP-00414	SM 23 2510 m
Chromium (VI) in Water (1)	10	N/A	2023/08/03	CAM SOP-00436	EPA 7199 m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2023/08/04	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	9	N/A	2023/08/05	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2023/08/06	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 3)	13	2023/08/04	2023/08/04	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3) (1)	10	N/A	2023/08/04	CAM SOP 00102/00408/00447	SM 2340 B
Mercury in Water by CVAA (1)	7	2023/08/01	2023/08/02	CAM SOP-00453	EPA 7470A m
Mercury in Water by CVAA (1)	2	2023/08/02	2023/08/02	CAM SOP-00453	EPA 7470A m
Lab Filtered Metals by ICPMS (1)	8	2023/08/10	2023/08/11	CAM SOP-00447	EPA 6020B m
Lab Filtered Metals by ICPMS (1)	2	2023/08/10	2023/08/14	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS (1)	10	2023/08/02	2023/08/02	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference) (1)	8	N/A	2023/08/11		
Ion Balance (% Difference) (1)	2	N/A	2023/08/14		
Anion and Cation Sum (1)	8	N/A	2023/08/11		
Anion and Cation Sum (1)	2	N/A	2023/08/14		
B[a]P Total Potency Equivalent (2, 4)	11	N/A	2023/08/06		CCME
B[a]P Total Potency Equivalent (2, 4)	1	N/A	2023/08/09		CCME
PAH in Water by GC/MS (2)	11	2023/08/05	2023/08/06	AB SOP-00037/AB SOP-00003	EPA 3510C/8270E m
PAH in Water by GC/MS (2)	1	2023/08/08	2023/08/08	AB SOP-00037/AB SOP-00003	EPA 3510C/8270E m
Phenols (4-AAP) (2)	10	N/A	2023/08/08	AB SOP-00088	EPA 9066 R0 m
Total Ammonia-N (1)	10	N/A	2023/08/03	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1, 5)	10	N/A	2023/08/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Total Oil and Grease (1)	10	2023/08/06	2023/08/06	CAM SOP-00326	EPA1664B m, SM5520B m
pH (1)	10	2023/07/31	2023/08/01	CAM SOP-00413	SM 4500H+ B m
Sulphate by Automated Turbidimetry (1)	10	N/A	2023/08/02	CAM SOP-00464	SM 23 4500-SO42- E m



Your Project #: 230427  
 Site Location: RESOLUTE BAY LANDFILL  
 Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
 1682 Woodward Drive  
 Ottawa, ON  
 CANADA K2C 3R8

**Report Date: 2023/08/29**  
 Report #: R7787100  
 Version: 2 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

Sample Matrix: Water  
 # Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Phosphorus (Colourimetric) (1)	10	2023/08/01	2023/08/03	CAM SOP-00407	SM 23 4500-P I
Mineral/Synthetic O & G (TPH Heavy Oil) (1, 6)	10	2023/08/06	2023/08/06	CAM SOP-00326	EPA1664B m, SM5520F m
Total Suspended Solids (1)	10	2023/08/01	2023/08/02	CAM SOP-00428	SM 23 2540D m

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd, Mississauga, ON, L5N 2L8

(2) This test was performed by Bureau Veritas Calgary (19th), 4000 19th Street NE, Calgary, AB, T2E 6P8

(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(4) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(5) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(6) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease



Your Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
1682 Woodward Drive  
Ottawa, ON  
CANADA K2C 3R8

**Report Date: 2023/08/29**  
Report #: R7787100  
Version: 2 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Christine Gipton, Senior Project Manager  
Email: Christine.Gipton@bureauveritas.com  
Phone# (519)652-9444

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL671	WNL672	WNL673	WNL674	WNL675			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30	2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-2	RBL-3	AEC1-GW1	RBL-4	RBL-8	RDL	MDL	QC Batch

Polyaromatic Hydrocarbons									
Benzo(a)pyrene Total Potency Equiv.	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	0.84	<0.10	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	1.4	0.12	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	0.23	0.12	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	N/A	8837189

Surrogate Recovery (%)									
D10-Anthracene	%	127	121	105	117	109			8837189
D14-Terphenyl	%	156 (1)	129	75	138 (1)	130			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL671	WNL672	WNL673	WNL674	WNL675			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30	2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-2	RBL-3	AEC1-GW1	RBL-4	RBL-8	RDL	MDL	QC Batch
D8-Acenaphthylene	%	112	97	85	109	96			8837189
D8-Naphthalene	%	75	45 (1)	59	92	72			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.





### CCME PAHS (WATER)

Bureau Veritas ID		WNL676	WNL677	WNL678	WNL679	WNL680			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30	2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-13	RBL-16	RBL-DUPA	RBL-DUPB	RBL-DUPC	RDL	MDL	QC Batch

Polyaromatic Hydrocarbons									
Benzo(a)pyrene Total Potency Equiv.	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.61	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.99	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	<0.10	0.17	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	N/A	8837189

Surrogate Recovery (%)									
D10-Anthracene	%	105	106	104	119	124			8837189
D14-Terphenyl	%	124	125	119	144 (1)	141 (1)			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL676	WNL677	WNL678	WNL679	WNL680			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30	2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-13	RBL-16	RBL-DUPA	RBL-DUPB	RBL-DUPC	RDL	MDL	QC Batch
D8-Acenaphthylene	%	90	96	92	113	110			8837189
D8-Naphthalene	%	72	83	64	99	92			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									



### CCME PAHS (WATER)

Bureau Veritas ID		WNL680				WNL681	WNL683			
Sampling Date		2023/07/24 11:55				2023/07/23 15:40	2023/07/24 10:40			
COC Number		n/a				n/a	n/a			
	UNITS	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch	FEILD BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
<b>Polyaromatic Hydrocarbons</b>										
Benzo(a)pyrene Total Potency Equiv.	ug/L					<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	0.040	N/A	8837189	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	0.010	N/A	8837189	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	0.0075	N/A	8837189	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	0.0075	N/A	8837189	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	0.010	N/A	8837189	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	0.020	N/A	8837189	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	0.20	N/A	8837189	<0.20	<0.20	0.20	N/A	8837189
<b>Surrogate Recovery (%)</b>										
D10-Anthracene	%	120			8837189	118	106			8837189
D14-Terphenyl	%	134 (1)			8837189	139 (1)	126			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.										



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
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Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL680				WNL681	WNL683			
Sampling Date		2023/07/24 11:55				2023/07/23 15:40	2023/07/24 10:40			
COC Number		n/a				n/a	n/a			
	UNITS	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch	FEILD BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
D8-Acenaphthylene	%	107			8837189	106	95			8837189
D8-Naphthalene	%	89			8837189	90	81			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



**CCME PHCS, BTEX/F1-F4 (WATER)**

<b>Bureau Veritas ID</b>		WNL671	WNL672				WNL672			
<b>Sampling Date</b>		2023/07/23 17:30	2023/07/23 15:30				2023/07/23 15:30			
<b>COC Number</b>		n/a	n/a				n/a			
	<b>UNITS</b>	<b>RBL-2</b>	<b>RBL-3</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-3 Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
Toluene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
Ethylbenzene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
o-Xylene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
p+m-Xylene	ug/L	<0.40	<0.40	0.40	0.080	8833426				
Total Xylenes	ug/L	<0.40	<0.40	0.40	0.080	8833426				
F1 (C6-C10)	ug/L	<25	<25	25	20	8833426				
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	20	8833426				
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	50	8833643	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	70	8833643	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	50	8833643	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes			8833643	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	89	88			8833426				
4-Bromofluorobenzene	%	108	105			8833426				
D10-o-Xylene	%	92	88			8833426				
D4-1,2-Dichloroethane	%	100	100			8833426				
o-Terphenyl	%	95	97			8833643	96			8833643
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
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Sampler Initials: KC

### CCME PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID		WNL673	WNL674	WNL675	WNL676		WNL677			
Sampling Date		2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50	2023/07/24 11:15		2023/07/24 10:30			
COC Number		n/a	n/a	n/a	n/a		n/a			
	UNITS	AEC1-GW1	RBL-4	RBL-8	RBL-13	QC Batch	RBL-16	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
Toluene	ug/L	0.55	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
o-Xylene	ug/L	0.26	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	8833426	<0.40	0.40	0.080	8833432
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	8833426	<0.40	0.40	0.080	8833432
F1 (C6-C10)	ug/L	<25	<25	<25	<25	8833426	<25	25	20	8833432
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	8833426	<25	25	20	8833432
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	8833643	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	8833643	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	8833643	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	8833643	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	88	91	86	88	8833426	102			8833432
4-Bromofluorobenzene	%	107	109	107	107	8833426	83			8833432
D10-o-Xylene	%	91	89	88	88	8833426	91			8833432
D4-1,2-Dichloroethane	%	99	100	97	99	8833426	95			8833432
o-Terphenyl	%	96	96	94	95	8833643	94			8833643
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



Bureau Veritas Job #: C3M6596  
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BluMetric Environmental Inc  
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### CCME PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID		WNL678	WNL679	WNL680	WNL681	WNL682	WNL683			
Sampling Date		2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55	2023/07/23 15:40	2023/07/23 09:00	2023/07/24 10:40			
COC Number		n/a	n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-DUPA	RBL-DUPB	RBL-DUPC	FEILD BLANK 1	TRIP BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	0.080	8833426
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	0.080	8833426
F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	<25	25	20	8833426
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	<25	<25	25	20	8833426
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	<100	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	91	90	89	90	88	89			8833426
4-Bromofluorobenzene	%	108	105	106	102	106	108			8833426
D10-o-Xylene	%	92	90	89	89	88	86			8833426
D4-1,2-Dichloroethane	%	98	99	101	95	96	100			8833426
o-Terphenyl	%	95	96	94	93	94	96			8833643
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										





### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL671				WNL672			
Sampling Date		2023/07/23 17:30				2023/07/23 15:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-3	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.0064	0.0015	0.0015	8841753	0.038	0.0015	0.0015	8841753
<b>Calculated Parameters</b>									
Anion Sum	me/L	7.10	N/A	N/A	8822383	3.94	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	180	1.0	0.20	8822389	170	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.1	1.0	0.20	8822389	1.0	1.0	0.20	8822389
Cation Sum	me/L	7.60	N/A	N/A	8822383	4.83	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	300	1.0	1.0	8822385	200	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	3.35	N/A	N/A	8822382	10.1	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	1.9	0.050	0.0080	8828243	2.2	0.050	0.0080	8828243
Conductivity	umho/cm	690	1.0	0.20	8824108	410	1.0	0.20	8824108
pH	pH	7.83			8824099	7.81			8824099
Total Phosphorus	mg/L	0.26	0.004	0.002	8826856	0.23	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	10	2.0	8824642	12	10	2.0	8827102
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	130	1.0	0.10	8823998	9.6	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	180	1.0	0.20	8824109	170	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	26	1.0	0.30	8823994	11	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.050	0.050	0.010	8823978	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	0.78	0.50	0.050	8823978	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	0.81	0.50	0.050	8823978	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
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Sampler Initials: KC

### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL673				WNL674			
Sampling Date		2023/07/23 16:30				2023/07/24 13:00			
COC Number		n/a				n/a			
	UNITS	AEC1-GW1	RDL	MDL	QC Batch	RBL-4	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.30	0.030	0.030	8841754	<0.0015	0.0015	0.0015	8841753
<b>Calculated Parameters</b>									
Anion Sum	me/L	10.5	N/A	N/A	8822383	2.65	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	410	1.0	0.20	8822389	91	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.1	1.0	0.20	8822389	4.5	1.0	0.20	8822389
Cation Sum	me/L	12.5	N/A	N/A	8822383	3.00	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	290	1.0	1.0	8822385	110	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	8.68	N/A	N/A	8822382	6.22	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	48	1.0	0.16	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	1100	1.0	0.20	8824320	270	1.0	0.20	8824320
pH	pH	7.46			8824318	8.72			8824318
Total Phosphorus	mg/L	3.3	0.004	0.002	8826856	0.040	0.004	0.002	8826856
Total Suspended Solids	mg/L	14	10	2.0	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	25	1.0	0.10	8823998	11	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	410	1.0	0.20	8824319	96	1.0	0.20	8824319
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	61	1.0	0.30	8823994	18	1.0	0.30	8823994
Nitrite (N)	mg/L	0.014	0.010	0.0020	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL675		WNL676		WNL677			
Sampling Date		2023/07/24 11:50		2023/07/24 11:15		2023/07/24 10:30			
COC Number		n/a		n/a		n/a			
	UNITS	RBL-8	QC Batch	RBL-13	QC Batch	RBL-16	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	<0.0015	8841753	<0.0015	8841754	<0.0015	0.0015	0.0015	8841754
<b>Calculated Parameters</b>									
Anion Sum	me/L	3.71	8822383	2.10	8822383	2.05	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	120	8822389	80	8822389	79	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	2.1	8822389	1.1	8822389	<1.0	1.0	0.20	8822389
Cation Sum	me/L	3.82	8822383	2.22	8822383	2.19	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	150	8822385	99	8822385	98	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	8822389	<1.0	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	1.47	8822382	NC	8822382	NC	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	<0.050	8828243	<0.050	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	360	8824108	210	8824320	210	1.0	0.20	8824108
pH	pH	8.29	8824099	8.15	8824318	8.12			8824099
Total Phosphorus	mg/L	0.010	8826856	<0.004	8826856	<0.004	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	8827102	15	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	11	8823998	16	8823998	16	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	120	8824109	81	8824319	80	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	39	8823994	4.2	8823994	3.9	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.010	8824309	<0.010	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	8824309	0.12	8824309	0.12	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	8824309	0.12	8824309	0.12	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	8836996	<0.50	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	8837000	<0.50	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



### RESULTS OF ANALYSES OF WATER

<b>Bureau Veritas ID</b>		WNL678				WNL678			
<b>Sampling Date</b>		2023/07/23 15:50				2023/07/23 15:50			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-DUPA</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-DUPA Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.038	0.0015	0.0015	8841753				
<b>Calculated Parameters</b>									
Anion Sum	me/L	3.84	N/A	N/A	8822383				
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	170	1.0	0.20	8822389				
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.0	1.0	0.20	8822389				
Cation Sum	me/L	4.40	N/A	N/A	8822383				
Hardness (CaCO <sub>3</sub> )	mg/L	180	1.0	1.0	8822385				
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389				
Ion Balance (% Difference)	%	6.87	N/A	N/A	8822382				
<b>Inorganics</b>									
Total Ammonia-N	mg/L	2.1	0.050	0.0080	8828243				
Conductivity	umho/cm	410	1.0	0.20	8824108				
pH	pH	7.80			8824099				
Total Phosphorus	mg/L	0.22	0.004	0.002	8826856				
Total Suspended Solids	mg/L	11	10	2.0	8824642				
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	6.7	1.0	0.10	8823998				
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	170	1.0	0.20	8824109				
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	7.7	1.0	0.30	8823994				
Nitrite (N)	mg/L	<0.010	0.010	0.0020	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996				
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



## RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL679		WNL680			
Sampling Date		2023/07/24 11:20		2023/07/24 11:55			
COC Number		n/a		n/a			
	UNITS	RBL-DUPB	QC Batch	RBL-DUPC	RDL	MDL	QC Batch
<b>Inorganics</b>							
Phenols-4AAP	mg/L	<0.0015	8841754	<0.0015	0.0015	0.0015	8841753
<b>Calculated Parameters</b>							
Anion Sum	me/L	3.67	8822383	1.94	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	110	8822389	78	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	2.1	8822389	<1.0	1.0	0.20	8822389
Cation Sum	me/L	3.87	8822383	2.23	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	140	8822385	99	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	2.67	8822382	NC	N/A	N/A	8822382
<b>Inorganics</b>							
Total Ammonia-N	mg/L	<0.050	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	370	8824108	210	1.0	0.20	8824108
pH	pH	8.29	8824099	8.08			8824099
Total Phosphorus	mg/L	0.009	8826856	<0.004	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	11	8823998	11	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	120	8824109	79	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	39	8823994	4.6	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.010	8823978	<0.010	0.010	0.0020	8823978
Nitrate (N)	mg/L	<0.10	8823978	0.12	0.10	0.010	8823978
Nitrate + Nitrite (N)	mg/L	<0.10	8823978	0.12	0.10	0.010	8823978
<b>Petroleum Hydrocarbons</b>							
Total Oil & Grease	mg/L	<0.50	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable							



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL671				WNL671			
Sampling Date		2023/07/23 17:30				2023/07/23 17:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-2 Lab-Dup	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.000026 (1)	0.000026	0.000013	8827927				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927				
Total Aluminum (Al)	ug/L	6.7	4.9	2.0	8828011				
Dissolved Antimony (Sb)	ug/L	1.8	0.50	N/A	8843927				
Total Antimony (Sb)	ug/L	1.8	0.50	0.30	8828011				
Dissolved Arsenic (As)	ug/L	1.3	1.0	N/A	8843927				
Total Arsenic (As)	ug/L	1.3	1.0	0.50	8828011				
Dissolved Barium (Ba)	ug/L	39	2.0	2.0	8843927				
Total Barium (Ba)	ug/L	43	2.0	0.50	8828011				
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927				
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011				
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927				
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011				
Dissolved Boron (B)	ug/L	130	10	N/A	8843927				
Total Boron (B)	ug/L	130	10	0.30	8828011				
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927				
Total Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8828011				
Dissolved Calcium (Ca)	ug/L	98000	200	N/A	8843927				
Total Calcium (Ca)	ug/L	94000	200	50	8828011				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927				
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011				
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927				
Total Cobalt (Co)	ug/L	0.51	0.50	0.10	8828011				
Dissolved Copper (Cu)	ug/L	1.7	0.90	0.90	8843927				
Total Copper (Cu)	ug/L	2.1	0.90	0.50	8828011				
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927				
Total Iron (Fe)	ug/L	<100	100	10	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL671				WNL671			
Sampling Date		2023/07/23 17:30				2023/07/23 17:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-2 Lab-Dup	RDL	MDL	QC Batch
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927				
Total Lead (Pb)	ug/L	0.52	0.50	0.10	8828011				
Dissolved Lithium (Li)	ug/L	6.0	5.0	N/A	8843927				
Total Lithium (Li)	ug/L	6.1	5.0	0.50	8828011				
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843927				
Total Magnesium (Mg)	ug/L	14000	50	20	8828011				
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927				
Total Manganese (Mn)	ug/L	210	2.0	0.50	8828011				
Dissolved Molybdenum (Mo)	ug/L	2.9	0.50	0.50	8843927				
Total Molybdenum (Mo)	ug/L	2.9	0.50	0.20	8828011				
Dissolved Nickel (Ni)	ug/L	1.6	1.0	N/A	8843927				
Total Nickel (Ni)	ug/L	1.9	1.0	0.50	8828011				
Dissolved Phosphorus (P)	ug/L	270	100	N/A	8843927				
Dissolved Potassium (K)	ug/L	13000	200	N/A	8843927				
Total Potassium (K)	ug/L	13000	200	50	8828011				
Dissolved Selenium (Se)	ug/L	<1.0 (1)	1.0	N/A	8843927				
Total Selenium (Se)	ug/L	<1.0 (1)	1.0	0.25	8828011				
Dissolved Silicon (Si)	ug/L	1300	50	N/A	8843927				
Total Silicon (Si)	ug/L	1300	50	30	8828011				
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927				
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011				
Dissolved Sodium (Na)	ug/L	26000	100	N/A	8843927				
Total Sodium (Na)	ug/L	24000	100	50	8828011				
Dissolved Strontium (Sr)	ug/L	380	1.0	N/A	8843927				
Total Strontium (Sr)	ug/L	360	1.0	0.50	8828011				
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927				
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927				
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL671				WNL671			
<b>Sampling Date</b>		2023/07/23 17:30				2023/07/23 17:30			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-2</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-2 Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927				
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927				
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011				
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927				
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Uranium (U)	ug/L	0.28	0.10	N/A	8843927				
Total Uranium (U)	ug/L	0.31	0.10	0.050	8828011				
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927				
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011				
Dissolved Zinc (Zn)	ug/L	13	5.0	N/A	8843927				
Total Zinc (Zn)	ug/L	25	5.0	3.0	8828011				
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927				
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL672				WNL673			
<b>Sampling Date</b>		2023/07/23 15:30				2023/07/23 16:30			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-3</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>AEC1-GW1</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>

<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.000026 (1)	0.000026	0.000013	8825734				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927	<4.9	4.9	4.9	8843927
Total Aluminum (Al)	ug/L	9.8	4.9	2.0	8828011	8.0	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	1.0	N/A	8843927	7.6	1.0	N/A	8843927
Total Arsenic (As)	ug/L	1.5	1.0	0.50	8828011	8.8	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	81	2.0	2.0	8843927	4.5	2.0	2.0	8843927
Total Barium (Ba)	ug/L	96	2.0	0.50	8828011	12	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927	<0.40	0.40	0.40	8843927
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	77	10	N/A	8843927	400	10	N/A	8843927
Total Boron (B)	ug/L	81	10	0.30	8828011	430	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Cadmium (Cd)	ug/L	0.17	0.090	0.090	8828011	<0.090	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	56000	200	N/A	8843927	92000	200	N/A	8843927
Total Calcium (Ca)	ug/L	54000	200	50	8828011	86000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927	9.2	0.50	N/A	8843927
Total Cobalt (Co)	ug/L	1.3	0.50	0.10	8828011	8.5	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	2.2	0.90	0.90	8843927	1.2	0.90	0.90	8843927
Total Copper (Cu)	ug/L	2.5	0.90	0.50	8828011	2.8	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927	4400	100	N/A	8843927
Total Iron (Fe)	ug/L	910	100	10	8828011	7500	100	10	8828011
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
Total Lead (Pb)	ug/L	2.0	0.50	0.10	8828011	1.4	0.50	0.10	8828011
Dissolved Lithium (Li)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843927	14000	50	N/A	8843927
Total Magnesium (Mg)	ug/L	13000	50	20	8828011	13000	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927	470	2.0	N/A	8843927
Total Manganese (Mn)	ug/L	430	2.0	0.50	8828011	440	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	2.8	0.50	0.50	8843927	2.4	0.50	0.50	8843927
Total Molybdenum (Mo)	ug/L	2.8	0.50	0.20	8828011	2.7	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	1.4	1.0	N/A	8843927	17	1.0	N/A	8843927
Total Nickel (Ni)	ug/L	1.9	1.0	0.50	8828011	16	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	100	N/A	8843927	1600	100	N/A	8843927
Dissolved Potassium (K)	ug/L	5700	200	N/A	8843927	24000	200	N/A	8843927
Total Potassium (K)	ug/L	5000	200	50	8828011	22000	200	50	8828011
Dissolved Selenium (Se)	ug/L	<1.0 (1)	1.0	N/A	8843927	<1.0 (1)	1.0	N/A	8843927
Total Selenium (Se)	ug/L	<1.0 (1)	1.0	0.25	8828011	<1.0 (1)	1.0	0.25	8828011
Dissolved Silicon (Si)	ug/L	880	50	N/A	8843927	2500	50	N/A	8843927
Total Silicon (Si)	ug/L	970	50	30	8828011	2400	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	14000	100	N/A	8843927	57000	100	N/A	8843927
Total Sodium (Na)	ug/L	12000	100	50	8828011	51000	100	50	8828011
Dissolved Strontium (Sr)	ug/L	150	1.0	N/A	8843927	200	1.0	N/A	8843927
Total Strontium (Sr)	ug/L	140	1.0	0.50	8828011	180	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927	<0.050	0.050	N/A	8843927
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									
(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011	<5.0	5.0	4.0	8828011
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.36	0.10	N/A	8843927	0.21	0.10	N/A	8843927
Total Uranium (U)	ug/L	0.33	0.10	0.050	8828011	0.21	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927	2.0	0.50	0.50	8843927
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011	2.4	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Zinc (Zn)	ug/L	15	5.0	3.0	8828011	6.7	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674		WNL675				WNL675			
Sampling Date		2023/07/24 13:00		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-4	QC Batch	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch

Metals											
Chromium (VI)	ug/L	1.6	8825340	0.51	0.50	0.30	8825340				
Mercury (Hg)	mg/L	<0.000026 (1)	8825734	<0.000026 (1)	0.000026	0.000013	8827927				
Dissolved Aluminum (Al)	ug/L	6.5	8843927	<4.9	4.9	4.9	8843936	<4.9	4.9	4.9	8843936
Total Aluminum (Al)	ug/L	23	8828011	50	4.9	2.0	8828011				
Dissolved Antimony (Sb)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Antimony (Sb)	ug/L	<0.50	8828011	<0.50	0.50	0.30	8828011				
Dissolved Arsenic (As)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Arsenic (As)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
Dissolved Barium (Ba)	ug/L	72	8843927	56	2.0	2.0	8843936	54	2.0	2.0	8843936
Total Barium (Ba)	ug/L	84	8828011	56	2.0	0.50	8828011				
Dissolved Beryllium (Be)	ug/L	<0.40	8843927	<0.40	0.40	0.40	8843936	<0.40	0.40	0.40	8843936
Total Beryllium (Be)	ug/L	<0.40	8828011	<0.40	0.40	0.10	8828011				
Dissolved Bismuth (Bi)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Bismuth (Bi)	ug/L	<1.0	8828011	<1.0	1.0	0.070	8828011				
Dissolved Boron (B)	ug/L	45	8843927	38	10	N/A	8843936	37	10	N/A	8843936
Total Boron (B)	ug/L	45	8828011	40	10	0.30	8828011				
Dissolved Cadmium (Cd)	ug/L	<0.090	8843927	<0.090	0.090	0.081	8843936	<0.090	0.090	0.081	8843936
Total Cadmium (Cd)	ug/L	0.091	8828011	<0.090	0.090	0.090	8828011				
Dissolved Calcium (Ca)	ug/L	29000	8843927	35000	200	N/A	8843936	35000	200	N/A	8843936
Total Calcium (Ca)	ug/L	33000	8828011	37000	200	50	8828011				
Dissolved Chromium (Cr)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Chromium (Cr)	ug/L	<5.0	8828011	<5.0	5.0	5.0	8828011				
Dissolved Cobalt (Co)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Cobalt (Co)	ug/L	<0.50	8828011	<0.50	0.50	0.10	8828011				
Dissolved Copper (Cu)	ug/L	2.8	8843927	<0.90	0.90	0.90	8843936	<0.90	0.90	0.90	8843936
Total Copper (Cu)	ug/L	2.9	8828011	<0.90	0.90	0.50	8828011				
Dissolved Iron (Fe)	ug/L	<100	8843927	<100	100	N/A	8843936	<100	100	N/A	8843936
Total Iron (Fe)	ug/L	<100	8828011	<100	100	10	8828011				

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674		WNL675				WNL675			
Sampling Date		2023/07/24 13:00		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-4	QC Batch	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch
Dissolved Lead (Pb)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Lead (Pb)	ug/L	1.3	8828011	<0.50	0.50	0.10	8828011				
Dissolved Lithium (Li)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Lithium (Li)	ug/L	<5.0	8828011	<5.0	5.0	0.50	8828011				
Dissolved Magnesium (Mg)	ug/L	10000	8843927	14000	50	N/A	8843936	13000	50	N/A	8843936
Total Magnesium (Mg)	ug/L	10000	8828011	14000	50	20	8828011				
Dissolved Manganese (Mn)	ug/L	<2.0	8843927	<2.0	2.0	N/A	8843936	<2.0	2.0	N/A	8843936
Total Manganese (Mn)	ug/L	3.7	8828011	2.6	2.0	0.50	8828011				
Dissolved Molybdenum (Mo)	ug/L	0.89	8843927	0.54	0.50	0.50	8843936	0.56	0.50	0.50	8843936
Total Molybdenum (Mo)	ug/L	0.74	8828011	0.53	0.50	0.20	8828011				
Dissolved Nickel (Ni)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Nickel (Ni)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
Dissolved Phosphorus (P)	ug/L	<100	8843927	<100	100	N/A	8843936	<100	100	N/A	8843936
Dissolved Potassium (K)	ug/L	1400	8843927	1400	200	N/A	8843936	1400	200	N/A	8843936
Total Potassium (K)	ug/L	1100	8828011	1500	200	50	8828011				
Dissolved Selenium (Se)	ug/L	<1.0 (1)	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Selenium (Se)	ug/L	<1.0 (1)	8828011	<1.0 (1)	1.0	0.25	8828011				
Dissolved Silicon (Si)	ug/L	240	8843927	200	50	N/A	8843936	190	50	N/A	8843936
Total Silicon (Si)	ug/L	360	8828011	290	50	30	8828011				
Dissolved Silver (Ag)	ug/L	<0.090	8843927	<0.090	0.090	0.081	8843936	<0.090	0.090	0.081	8843936
Total Silver (Ag)	ug/L	<0.090	8828011	<0.090	0.090	0.070	8828011				
Dissolved Sodium (Na)	ug/L	15000	8843927	20000	100	N/A	8843936	21000	100	N/A	8843936
Total Sodium (Na)	ug/L	15000	8828011	21000	100	50	8828011				
Dissolved Strontium (Sr)	ug/L	87	8843927	170	1.0	N/A	8843936	160	1.0	N/A	8843936
Total Strontium (Sr)	ug/L	88	8828011	150	1.0	0.50	8828011				
Dissolved Tellurium (Te)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tellurium (Te)	ug/L	<1.0	8828011	<1.0	1.0	0.70	8828011				
Dissolved Thallium (Tl)	ug/L	<0.050	8843927	<0.050	0.050	N/A	8843936	<0.050	0.050	N/A	8843936
Total Thallium (Tl)	ug/L	<0.050	8828011	<0.050	0.050	0.020	8828011				

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674		WNL675				WNL675			
Sampling Date		2023/07/24 13:00		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-4	QC Batch	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch
Dissolved Tin (Sn)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tin (Sn)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
Dissolved Titanium (Ti)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Titanium (Ti)	ug/L	<5.0	8828011	<5.0	5.0	4.0	8828011				
Dissolved Tungsten (W)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tungsten (W)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
Dissolved Uranium (U)	ug/L	0.18	8843927	0.21	0.10	N/A	8843936	0.20	0.10	N/A	8843936
Total Uranium (U)	ug/L	0.17	8828011	0.17	0.10	0.050	8828011				
Dissolved Vanadium (V)	ug/L	<0.50	8843927	<0.50	0.50	0.50	8843936	<0.50	0.50	0.50	8843936
Total Vanadium (V)	ug/L	<0.50	8828011	<0.50	0.50	0.40	8828011				
Dissolved Zinc (Zn)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Zinc (Zn)	ug/L	11	8828011	<5.0	5.0	3.0	8828011				
Dissolved Zirconium (Zr)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Zirconium (Zr)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable											





### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677		WNL678			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30		2023/07/23 15:50			
COC Number		n/a	n/a		n/a			
	UNITS	RBL-13	RBL-16	QC Batch	RBL-DUPA	RDL	MDL	QC Batch
<b>Metals</b>								
Chromium (VI)	ug/L	<0.50	<0.50	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.000026 (1)	<0.000026 (1)	8825734	<0.000026 (1)	0.000026	0.000013	8827927
Dissolved Aluminum (Al)	ug/L	<4.9	<4.9	8843927	<4.9	4.9	4.9	8843936
Total Aluminum (Al)	ug/L	14	5.6	8828011	9.1	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	8843927	<0.50	0.50	N/A	8843936
Total Antimony (Sb)	ug/L	<0.50	<0.50	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	8843927	<1.0	1.0	N/A	8843936
Total Arsenic (As)	ug/L	<1.0	<1.0	8828011	1.6	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	4.3	4.5	8843927	78	2.0	2.0	8843936
Total Barium (Ba)	ug/L	4.5	4.7	8828011	95	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	8843927	<0.40	0.40	0.40	8843936
Total Beryllium (Be)	ug/L	<0.40	<0.40	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	8843927	<1.0	1.0	N/A	8843936
Total Bismuth (Bi)	ug/L	<1.0	<1.0	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	19	21	8843927	82	10	N/A	8843936
Total Boron (B)	ug/L	19	19	8828011	80	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	8843927	<0.090	0.090	0.081	8843936
Total Cadmium (Cd)	ug/L	<0.090	<0.090	8828011	0.18	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	32000	31000	8843927	50000	200	N/A	8843936
Total Calcium (Ca)	ug/L	31000	32000	8828011	51000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	8843927	<5.0	5.0	N/A	8843936
Total Chromium (Cr)	ug/L	<5.0	<5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	8843927	<0.50	0.50	N/A	8843936
Total Cobalt (Co)	ug/L	<0.50	<0.50	8828011	1.2	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	<0.90	<0.90	8843927	1.1	0.90	0.90	8843936
Total Copper (Cu)	ug/L	<0.90	<0.90	8828011	2.5	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	<100	8843927	<100	100	N/A	8843936
Total Iron (Fe)	ug/L	<100	<100	8828011	870	100	10	8828011
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	8843927	<0.50	0.50	N/A	8843936
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
N/A = Not Applicable								
(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.								



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677		WNL678			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30		2023/07/23 15:50			
COC Number		n/a	n/a		n/a			
	UNITS	RBL-13	RBL-16	QC Batch	RBL-DUPA	RDL	MDL	QC Batch
Total Lead (Pb)	ug/L	<0.50	<0.50	8828011	1.9	0.50	0.10	8828011
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	8843927	<5.0	5.0	N/A	8843936
Total Lithium (Li)	ug/L	<5.0	<5.0	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	4800	4800	8843927	13000	50	N/A	8843936
Total Magnesium (Mg)	ug/L	4500	4700	8828011	13000	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	<2.0	8843927	<2.0	2.0	N/A	8843936
Total Manganese (Mn)	ug/L	<2.0	<2.0	8828011	440	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	<0.50	<0.50	8843927	2.6	0.50	0.50	8843936
Total Molybdenum (Mo)	ug/L	<0.50	<0.50	8828011	2.8	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	8843927	1.7	1.0	N/A	8843936
Total Nickel (Ni)	ug/L	<1.0	<1.0	8828011	1.8	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	<100	8843927	<100	100	N/A	8843936
Dissolved Potassium (K)	ug/L	710	680	8843927	4900	200	N/A	8843936
Total Potassium (K)	ug/L	650	650	8828011	4800	200	50	8828011
Dissolved Selenium (Se)	ug/L	<1.0 (1)	<1.0 (1)	8843927	<1.0	1.0	N/A	8843936
Total Selenium (Se)	ug/L	<1.0 (1)	<1.0 (1)	8828011	<1.0 (1)	1.0	0.25	8828011
Dissolved Silicon (Si)	ug/L	270	260	8843927	840	50	N/A	8843936
Total Silicon (Si)	ug/L	300	270	8828011	930	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	8843927	<0.090	0.090	0.081	8843936
Total Silver (Ag)	ug/L	<0.090	<0.090	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	5200	5000	8843927	13000	100	N/A	8843936
Total Sodium (Na)	ug/L	5000	5000	8828011	13000	100	50	8828011
Dissolved Strontium (Sr)	ug/L	84	83	8843927	150	1.0	N/A	8843936
Total Strontium (Sr)	ug/L	78	79	8828011	140	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	<1.0	8843927	<1.0	1.0	N/A	8843936
Total Tellurium (Te)	ug/L	<1.0	<1.0	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	8843927	<0.050	0.050	N/A	8843936
Total Thallium (Tl)	ug/L	<0.050	<0.050	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	<1.0	8843927	<1.0	1.0	N/A	8843936
Total Tin (Sn)	ug/L	<1.0	<1.0	8828011	<1.0	1.0	0.50	8828011

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677		WNL678			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30		2023/07/23 15:50			
COC Number		n/a	n/a		n/a			
	UNITS	RBL-13	RBL-16	QC Batch	RBL-DUPA	RDL	MDL	QC Batch
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	8843927	<5.0	5.0	N/A	8843936
Total Titanium (Ti)	ug/L	<5.0	<5.0	8828011	<5.0	5.0	4.0	8828011
Dissolved Tungsten (W)	ug/L	<1.0	<1.0	8843927	<1.0	1.0	N/A	8843936
Total Tungsten (W)	ug/L	<1.0	<1.0	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.21	0.21	8843927	0.34	0.10	N/A	8843936
Total Uranium (U)	ug/L	0.19	0.19	8828011	0.33	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	8843927	<0.50	0.50	0.50	8843936
Total Vanadium (V)	ug/L	<0.50	<0.50	8828011	<0.50	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	8843927	<5.0	5.0	N/A	8843936
Total Zinc (Zn)	ug/L	<5.0	<5.0	8828011	15	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	<1.0	8843927	<1.0	1.0	N/A	8843936
Total Zirconium (Zr)	ug/L	<1.0	<1.0	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable								



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL679		WNL680				WNL680			
Sampling Date		2023/07/24 11:20		2023/07/24 11:55				2023/07/24 11:55			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-DUPB	QC Batch	RBL-DUPC	RDL	MDL	QC Batch	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch

Metals											
Chromium (VI)	ug/L	0.51	8825340	<0.50	0.50	0.30	8825340				
Mercury (Hg)	mg/L	<0.000026 (1)	8825734	<0.000026 (1)	0.000026	0.000013	8827927				
Dissolved Aluminum (Al)	ug/L	<4.9	8843927	<4.9	4.9	4.9	8843927				
Total Aluminum (Al)	ug/L	42	8828011	14	4.9	2.0	8828011	14	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843927				
Total Antimony (Sb)	ug/L	<0.50	8828011	<0.50	0.50	0.30	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843927				
Total Arsenic (As)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	53	8843927	4.7	2.0	2.0	8843927				
Total Barium (Ba)	ug/L	57	8828011	5.0	2.0	0.50	8828011	4.8	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	8843927	<0.40	0.40	0.40	8843927				
Total Beryllium (Be)	ug/L	<0.40	8828011	<0.40	0.40	0.10	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843927				
Total Bismuth (Bi)	ug/L	<1.0	8828011	<1.0	1.0	0.070	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	37	8843927	18	10	N/A	8843927				
Total Boron (B)	ug/L	38	8828011	19	10	0.30	8828011	19	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	8843927	<0.090	0.090	0.081	8843927				
Total Cadmium (Cd)	ug/L	<0.090	8828011	<0.090	0.090	0.090	8828011	<0.090	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	35000	8843927	32000	200	N/A	8843927				
Total Calcium (Ca)	ug/L	38000	8828011	30000	200	50	8828011	32000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843927				
Total Chromium (Cr)	ug/L	<5.0	8828011	<5.0	5.0	5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843927				
Total Cobalt (Co)	ug/L	<0.50	8828011	<0.50	0.50	0.10	8828011	<0.50	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	<0.90	8843927	<0.90	0.90	0.90	8843927				
Total Copper (Cu)	ug/L	<0.90	8828011	<0.90	0.90	0.50	8828011	<0.90	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	8843927	<100	100	N/A	8843927				
Total Iron (Fe)	ug/L	<100	8828011	<100	100	10	8828011	<100	100	10	8828011

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL679		WNL680				WNL680			
Sampling Date		2023/07/24 11:20		2023/07/24 11:55				2023/07/24 11:55			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-DUPB	QC Batch	RBL-DUPC	RDL	MDL	QC Batch	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch
Dissolved Lead (Pb)	ug/L	<0.50	8843927	<0.50	0.50	N/A	8843927				
Total Lead (Pb)	ug/L	<0.50	8828011	<0.50	0.50	0.10	8828011	<0.50	0.50	0.10	8828011
Dissolved Lithium (Li)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843927				
Total Lithium (Li)	ug/L	<5.0	8828011	<5.0	5.0	0.50	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	14000	8843927	4800	50	N/A	8843927				
Total Magnesium (Mg)	ug/L	15000	8828011	4600	50	20	8828011	4500	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	8843927	<2.0	2.0	N/A	8843927				
Total Manganese (Mn)	ug/L	2.9	8828011	<2.0	2.0	0.50	8828011	<2.0	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	0.62	8843927	<0.50	0.50	0.50	8843927				
Total Molybdenum (Mo)	ug/L	0.57	8828011	<0.50	0.50	0.20	8828011	<0.50	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843927				
Total Nickel (Ni)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	8843927	<100	100	N/A	8843927				
Dissolved Potassium (K)	ug/L	1600	8843927	700	200	N/A	8843927				
Total Potassium (K)	ug/L	1600	8828011	670	200	50	8828011	650	200	50	8828011
Dissolved Selenium (Se)	ug/L	<1.0 (1)	8843927	<1.0 (1)	1.0	N/A	8843927				
Total Selenium (Se)	ug/L	<1.0 (1)	8828011	<1.0 (1)	1.0	0.25	8828011	<1.0	1.0	0.25	8828011
Dissolved Silicon (Si)	ug/L	210	8843927	280	50	N/A	8843927				
Total Silicon (Si)	ug/L	290	8828011	290	50	30	8828011	300	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	8843927	<0.090	0.090	0.081	8843927				
Total Silver (Ag)	ug/L	<0.090	8828011	<0.090	0.090	0.070	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	22000	8843927	5100	100	N/A	8843927				
Total Sodium (Na)	ug/L	22000	8828011	5100	100	50	8828011	4900	100	50	8828011
Dissolved Strontium (Sr)	ug/L	160	8843927	85	1.0	N/A	8843927				
Total Strontium (Sr)	ug/L	160	8828011	78	1.0	0.50	8828011	78	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843927				
Total Tellurium (Te)	ug/L	<1.0	8828011	<1.0	1.0	0.70	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	8843927	<0.050	0.050	N/A	8843927				
Total Thallium (Tl)	ug/L	<0.050	8828011	<0.050	0.050	0.020	8828011	<0.050	0.050	0.020	8828011

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL679		WNL680				WNL680			
Sampling Date		2023/07/24 11:20		2023/07/24 11:55				2023/07/24 11:55			
COC Number		n/a		n/a				n/a			
	UNITS	RBL-DUPB	QC Batch	RBL-DUPC	RDL	MDL	QC Batch	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch
Dissolved Tin (Sn)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843927				
Total Tin (Sn)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Titanium (Ti)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843927				
Total Titanium (Ti)	ug/L	<5.0	8828011	<5.0	5.0	4.0	8828011	<5.0	5.0	4.0	8828011
Dissolved Tungsten (W)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843927				
Total Tungsten (W)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.18	8843927	0.21	0.10	N/A	8843927				
Total Uranium (U)	ug/L	0.16	8828011	0.20	0.10	0.050	8828011	0.20	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	8843927	<0.50	0.50	0.50	8843927				
Total Vanadium (V)	ug/L	<0.50	8828011	<0.50	0.50	0.40	8828011	<0.50	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	8843927	<5.0	5.0	N/A	8843927				
Total Zinc (Zn)	ug/L	<5.0	8828011	<5.0	5.0	3.0	8828011	<5.0	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	8843927	<1.0	1.0	N/A	8843927				
Total Zirconium (Zr)	ug/L	<1.0	8828011	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable											



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL671  
**Sample ID:** RBL-2  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/02	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL671 Dup  
**Sample ID:** RBL-2  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck

**Bureau Veritas ID:** WNL672  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL672  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8827102	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL672 Dup  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou

**Bureau Veritas ID:** WNL673  
**Sample ID:** AEC1-GW1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/09	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/08	2023/08/08	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL673  
**Sample ID:** AEC1-GW1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL674  
**Sample ID:** RBL-4  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngandu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL675  
**Sample ID:** RBL-8  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL675  
**Sample ID:** RBL-8  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/02	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/14	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/14	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8827102	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL675 Dup  
**Sample ID:** RBL-8  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad

**Bureau Veritas ID:** WNL676  
**Sample ID:** RBL-13  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti



Bureau Veritas Job #: C3M6596

Report Date: 2023/08/29

BluMetric Environmental Inc

Client Project #: 230427

Site Location: RESOLUTE BAY LANDFILL

Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL676

**Sample ID:** RBL-13

**Matrix:** Water

**Collected:** 2023/07/24

**Shipped:**

**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL677

**Sample ID:** RBL-16

**Matrix:** Water

**Collected:** 2023/07/24

**Shipped:**

**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833432	N/A	2023/08/06	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL678  
**Sample ID:** RBL-DUPA  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/14	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/14	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL678 Dup  
**Sample ID:** RBL-DUPA  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal

**Bureau Veritas ID:** WNL679  
**Sample ID:** RBL-DUPB  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL679  
**Sample ID:** RBL-DUPB  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL680  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh





Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL680  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL680 Dup  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen

**Bureau Veritas ID:** WNL681  
**Sample ID:** FEILD BLANK 1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen

**Bureau Veritas ID:** WNL682  
**Sample ID:** TRIP BLANK 1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou

**Bureau Veritas ID:** WNL683  
**Sample ID:** FEILD BLANK 2  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen





### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	19.0°C
Package 2	19.0°C
Package 3	18.7°C
Package 4	18.0°C

Sample WNL671 [RBL-2] : Nitrite/Nitrate: Due to colour interferences, sample required dilution. Detection limits were adjusted accordingly.

Sample WNL673 [AEC1-GW1] : Sample was analyzed past method specified hold time for PAH in Water by GC/MS due to required re-extraction. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

**Results relate only to the items tested.**



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## QUALITY ASSURANCE REPORT

BluMetric Environmental Inc  
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Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8833426	1,4-Difluorobenzene	2023/08/04	88	70 - 130	89	70 - 130	91	%				
8833426	4-Bromofluorobenzene	2023/08/04	108	70 - 130	108	70 - 130	103	%				
8833426	D10-o-Xylene	2023/08/04	85	70 - 130	88	70 - 130	91	%				
8833426	D4-1,2-Dichloroethane	2023/08/04	98	70 - 130	96	70 - 130	93	%				
8833432	1,4-Difluorobenzene	2023/08/06	101	70 - 130	98	70 - 130	102	%				
8833432	4-Bromofluorobenzene	2023/08/06	101	70 - 130	99	70 - 130	83	%				
8833432	D10-o-Xylene	2023/08/06	97	70 - 130	94	70 - 130	87	%				
8833432	D4-1,2-Dichloroethane	2023/08/06	84	70 - 130	84	70 - 130	95	%				
8833643	o-Terphenyl	2023/08/04	100	60 - 130	97	60 - 130	92	%				
8837189	D10-Anthracene	2023/08/06	118	50 - 130	104	50 - 130	111	%				
8837189	D14-Terphenyl	2023/08/06	123	50 - 130	110	50 - 130	125	%				
8837189	D8-Acenaphthylene	2023/08/06	102	50 - 130	86	50 - 130	74	%				
8837189	D8-Naphthalene	2023/08/06	89	50 - 130	59	50 - 130	43 (1)	%				
8823978	Nitrate (N)	2023/08/01	100	80 - 120	101	80 - 120	<0.10	mg/L	1.1	20		
8823978	Nitrite (N)	2023/08/01	105	80 - 120	107	80 - 120	<0.010	mg/L	NC	20		
8823994	Dissolved Chloride (Cl-)	2023/08/02	NC	80 - 120	100	80 - 120	<1.0	mg/L	3.5	20		
8823998	Dissolved Sulphate (SO4)	2023/08/02	NC	75 - 125	104	80 - 120	<1.0	mg/L	0.82	20		
8824099	pH	2023/08/01			102	98 - 103			0.028	N/A		
8824108	Conductivity	2023/08/01			99	85 - 115	<1.0	umho/cm	0.83	10		
8824109	Alkalinity (Total as CaCO3)	2023/08/01			96	85 - 115	<1.0	mg/L	1.1	20		
8824309	Nitrate (N)	2023/08/01	102	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
8824309	Nitrite (N)	2023/08/01	106	80 - 120	106	80 - 120	<0.010	mg/L	NC	20		
8824318	pH	2023/08/01			102	98 - 103			1.2	N/A		
8824319	Alkalinity (Total as CaCO3)	2023/08/01			97	85 - 115	<1.0	mg/L	1.9	20		
8824320	Conductivity	2023/08/01			101	85 - 115	<1.0	umho/cm	0.25	10		
8824642	Total Suspended Solids	2023/08/02			96	85 - 115	<10	mg/L	3.4	20		
8825340	Chromium (VI)	2023/08/03	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8825734	Mercury (Hg)	2023/08/02	101	75 - 125	103	80 - 120	<0.000026	mg/L	NC	20		
8826856	Total Phosphorus	2023/08/03	100	80 - 120	105	80 - 120	<0.004	mg/L	0.35	20	111	80 - 120
8827102	Total Suspended Solids	2023/08/02			99	85 - 115	<10	mg/L	9.5	20		



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BluMetric Environmental Inc  
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Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8827927	Mercury (Hg)	2023/08/02	102	75 - 125	103	80 - 120	<0.000026	mg/L	NC	20		
8828011	Total Aluminum (Al)	2023/08/02	102	80 - 120	101	80 - 120	<4.9	ug/L	2.0	20		
8828011	Total Antimony (Sb)	2023/08/02	108	80 - 120	105	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Arsenic (As)	2023/08/02	99	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Barium (Ba)	2023/08/02	101	80 - 120	99	80 - 120	<2.0	ug/L	4.1	20		
8828011	Total Beryllium (Be)	2023/08/02	95	80 - 120	94	80 - 120	<0.40	ug/L	NC	20		
8828011	Total Bismuth (Bi)	2023/08/02	96	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Boron (B)	2023/08/02	96	80 - 120	96	80 - 120	<10	ug/L	1.1	20		
8828011	Total Cadmium (Cd)	2023/08/02	99	80 - 120	99	80 - 120	<0.090	ug/L	NC	20		
8828011	Total Calcium (Ca)	2023/08/02	NC	80 - 120	99	80 - 120	<200	ug/L	6.1	20		
8828011	Total Chromium (Cr)	2023/08/02	92	80 - 120	92	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Cobalt (Co)	2023/08/02	99	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Copper (Cu)	2023/08/02	100	80 - 120	96	80 - 120	<0.90	ug/L	NC	20		
8828011	Total Iron (Fe)	2023/08/02	99	80 - 120	96	80 - 120	<100	ug/L	NC	20		
8828011	Total Lead (Pb)	2023/08/02	100	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Lithium (Li)	2023/08/02	92	80 - 120	95	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Magnesium (Mg)	2023/08/02	98	80 - 120	100	80 - 120	<50	ug/L	1.3	20		
8828011	Total Manganese (Mn)	2023/08/02	96	80 - 120	96	80 - 120	<2.0	ug/L	NC	20		
8828011	Total Molybdenum (Mo)	2023/08/02	99	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Nickel (Ni)	2023/08/02	95	80 - 120	94	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Potassium (K)	2023/08/02	102	80 - 120	100	80 - 120	<200	ug/L	2.2	20		
8828011	Total Selenium (Se)	2023/08/02	105	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Silicon (Si)	2023/08/02	100	80 - 120	97	80 - 120	<50	ug/L	3.4	20		
8828011	Total Silver (Ag)	2023/08/02	94	80 - 120	93	80 - 120	<0.090	ug/L	NC	20		
8828011	Total Sodium (Na)	2023/08/02	100	80 - 120	96	80 - 120	<100	ug/L	3.7	20		
8828011	Total Strontium (Sr)	2023/08/02	95	80 - 120	95	80 - 120	<1.0	ug/L	0.0064	20		
8828011	Total Tellurium (Te)	2023/08/02	106	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Thallium (Tl)	2023/08/02	97	80 - 120	98	80 - 120	<0.050	ug/L	NC	20		
8828011	Total Tin (Sn)	2023/08/02	103	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Titanium (Ti)	2023/08/02	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Tungsten (W)	2023/08/02	101	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Uranium (U)	2023/08/02	100	80 - 120	98	80 - 120	<0.10	ug/L	1.5	20		



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BluMetric Environmental Inc  
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QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8828011	Total Vanadium (V)	2023/08/02	95	80 - 120	93	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Zinc (Zn)	2023/08/02	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Zirconium (Zr)	2023/08/02	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8828243	Total Ammonia-N	2023/08/03	97	75 - 125	102	80 - 120	<0.050	mg/L	0.038	20		
8833426	Benzene	2023/08/05	77	50 - 140	77	50 - 140	<0.20	ug/L	7.6	30		
8833426	Ethylbenzene	2023/08/05	83	50 - 140	85	50 - 140	<0.20	ug/L	NC	30		
8833426	F1 (C6-C10) - BTEX	2023/08/05					<25	ug/L	NC	30		
8833426	F1 (C6-C10)	2023/08/05	89	60 - 140	90	60 - 140	<25	ug/L	NC	30		
8833426	o-Xylene	2023/08/05	82	50 - 140	84	50 - 140	<0.20	ug/L	NC	30		
8833426	p+m-Xylene	2023/08/05	80	50 - 140	86	50 - 140	<0.40	ug/L	NC	30		
8833426	Toluene	2023/08/05	74	50 - 140	75	50 - 140	<0.20	ug/L	NC	30		
8833426	Total Xylenes	2023/08/05					<0.40	ug/L	NC	30		
8833432	Benzene	2023/08/08	NC	50 - 140	84	50 - 140	<0.20	ug/L	7.2	30		
8833432	Ethylbenzene	2023/08/08	109	50 - 140	96	50 - 140	<0.20	ug/L	5.3	30		
8833432	F1 (C6-C10) - BTEX	2023/08/08					<25	ug/L	NC	30		
8833432	F1 (C6-C10)	2023/08/08	112	60 - 140	93	60 - 140	<25	ug/L	0.79	30		
8833432	o-Xylene	2023/08/08	102	50 - 140	93	50 - 140	<0.20	ug/L	4.7	30		
8833432	p+m-Xylene	2023/08/08	100	50 - 140	87	50 - 140	<0.40	ug/L	6.8	30		
8833432	Toluene	2023/08/08	90	50 - 140	78	50 - 140	<0.20	ug/L	3.2	30		
8833432	Total Xylenes	2023/08/08					<0.40	ug/L	5.5	30		
8833643	F2 (C10-C16 Hydrocarbons)	2023/08/04	108	60 - 130	102	60 - 130	<100	ug/L	NC	30		
8833643	F3 (C16-C34 Hydrocarbons)	2023/08/04	109	60 - 130	106	60 - 130	<200	ug/L	NC	30		
8833643	F4 (C34-C50 Hydrocarbons)	2023/08/04	107	60 - 130	104	60 - 130	<200	ug/L	NC	30		
8836996	Total Oil & Grease	2023/08/06			99	85 - 115	<0.50	mg/L	0.51	25		
8837000	Total Oil & Grease Mineral/Synthetic	2023/08/06			97	85 - 115	<0.50	mg/L	0.52	25		
8837189	1-Methylnaphthalene	2023/08/06	64	50 - 130	56	50 - 130	<0.10	ug/L	NC	30		
8837189	2-Methylnaphthalene	2023/08/06	79	50 - 130	69	50 - 130	<0.10	ug/L	NC	30		
8837189	Acenaphthene	2023/08/06	93	50 - 130	83	50 - 130	<0.10	ug/L	NC	30		
8837189	Acenaphthylene	2023/08/06	95	50 - 130	82	50 - 130	<0.10	ug/L	NC	30		
8837189	Acridine	2023/08/06	98	50 - 130	84	50 - 130	<0.040	ug/L	NC	30		
8837189	Anthracene	2023/08/06	85	50 - 130	74	50 - 130	<0.010	ug/L	NC	30		
8837189	Benzo(a)anthracene	2023/08/06	119	50 - 130	99	50 - 130	<0.0085	ug/L	NC	30		



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Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8837189	Benzo(a)pyrene	2023/08/06	128	50 - 130	110	50 - 130	<0.0075	ug/L	NC	30		
8837189	Benzo(b/j)fluoranthene	2023/08/06	121	50 - 130	103	50 - 130	<0.0085	ug/L	NC	30		
8837189	Benzo(c)phenanthrene	2023/08/06	123	50 - 130	104	50 - 130	<0.050	ug/L	NC	30		
8837189	Benzo(e)pyrene	2023/08/06	106	50 - 130	90	50 - 130	<0.050	ug/L	NC	30		
8837189	Benzo(g,h,i)perylene	2023/08/06	112	50 - 130	91	50 - 130	<0.0085	ug/L	NC	30		
8837189	Benzo(k)fluoranthene	2023/08/06	117	50 - 130	120	50 - 130	<0.0085	ug/L	NC	30		
8837189	Chrysene	2023/08/06	116	50 - 130	100	50 - 130	<0.0085	ug/L	NC	30		
8837189	Dibenzo(a,h)anthracene	2023/08/06	115	50 - 130	89	50 - 130	<0.0075	ug/L	NC	30		
8837189	Fluoranthene	2023/08/06	116	50 - 130	100	50 - 130	<0.010	ug/L	NC	30		
8837189	Fluorene	2023/08/06	103	50 - 130	89	50 - 130	<0.050	ug/L	NC	30		
8837189	Indeno(1,2,3-cd)pyrene	2023/08/06	119	50 - 130	92	50 - 130	<0.0085	ug/L	NC	30		
8837189	Naphthalene	2023/08/06	80	50 - 130	69	50 - 130	<0.10	ug/L	NC	30		
8837189	Perylene	2023/08/06	104	50 - 130	89	50 - 130	<0.050	ug/L	NC	30		
8837189	Phenanthrene	2023/08/06	115	50 - 130	101	50 - 130	<0.050	ug/L	NC	30		
8837189	Pyrene	2023/08/06	115	50 - 130	101	50 - 130	<0.020	ug/L	NC	30		
8837189	Quinoline	2023/08/06	79	50 - 130	79	50 - 130	<0.20	ug/L	NC	30		
8841753	Phenols-4AAP	2023/08/08	99	80 - 120	107	80 - 120	<0.0015	mg/L				
8841754	Phenols-4AAP	2023/08/08	99	80 - 120	108	80 - 120	<0.0015	mg/L				
8843927	Dissolved Aluminum (Al)	2023/08/11	105	80 - 120	99	80 - 120	<4.9	ug/L	NC	20		
8843927	Dissolved Antimony (Sb)	2023/08/11	111	80 - 120	103	80 - 120	<0.50	ug/L	15	20		
8843927	Dissolved Arsenic (As)	2023/08/11	106	80 - 120	100	80 - 120	<1.0	ug/L	0.24	20		
8843927	Dissolved Barium (Ba)	2023/08/11	104	80 - 120	98	80 - 120	<2.0	ug/L	2.6	20		
8843927	Dissolved Beryllium (Be)	2023/08/11	104	80 - 120	96	80 - 120	<0.40	ug/L	NC	20		
8843927	Dissolved Bismuth (Bi)	2023/08/11	103	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Boron (B)	2023/08/11	103	80 - 120	96	80 - 120	<10	ug/L	1.3	20		
8843927	Dissolved Cadmium (Cd)	2023/08/11	106	80 - 120	99	80 - 120	<0.090	ug/L	NC	20		
8843927	Dissolved Calcium (Ca)	2023/08/11	NC	80 - 120	101	80 - 120	<200	ug/L	2.0	20		
8843927	Dissolved Chromium (Cr)	2023/08/11	105	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Cobalt (Co)	2023/08/11	104	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8843927	Dissolved Copper (Cu)	2023/08/11	105	80 - 120	98	80 - 120	<0.90	ug/L	0.35	20		
8843927	Dissolved Iron (Fe)	2023/08/11	107	80 - 120	101	80 - 120	<100	ug/L	NC	20		
8843927	Dissolved Lead (Pb)	2023/08/11	104	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		



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QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843927	Dissolved Lithium (Li)	2023/08/11	109	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Magnesium (Mg)	2023/08/11	105	80 - 120	99	80 - 120	<50	ug/L	2.9	20		
8843927	Dissolved Manganese (Mn)	2023/08/11	106	80 - 120	100	80 - 120	<2.0	ug/L	0.0044	20		
8843927	Dissolved Molybdenum (Mo)	2023/08/11	112	80 - 120	103	80 - 120	<0.50	ug/L	2.2	20		
8843927	Dissolved Nickel (Ni)	2023/08/11	104	80 - 120	99	80 - 120	<1.0	ug/L	0.80	20		
8843927	Dissolved Phosphorus (P)	2023/08/11	110	80 - 120	97	80 - 120	<100	ug/L	NC	20		
8843927	Dissolved Potassium (K)	2023/08/11	107	80 - 120	101	80 - 120	<200	ug/L	1.6	20		
8843927	Dissolved Selenium (Se)	2023/08/11	105	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Silicon (Si)	2023/08/11	107	80 - 120	101	80 - 120	<50	ug/L	0.11	20		
8843927	Dissolved Silver (Ag)	2023/08/11	107	80 - 120	100	80 - 120	<0.090	ug/L	NC	20		
8843927	Dissolved Sodium (Na)	2023/08/11	105	80 - 120	99	80 - 120	<100	ug/L	1.4	20		
8843927	Dissolved Strontium (Sr)	2023/08/11	107	80 - 120	102	80 - 120	<1.0	ug/L	2.3	20		
8843927	Dissolved Tellurium (Te)	2023/08/11	106	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Thallium (Tl)	2023/08/11	107	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
8843927	Dissolved Tin (Sn)	2023/08/11	110	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Titanium (Ti)	2023/08/11	105	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Tungsten (W)	2023/08/11	109	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Uranium (U)	2023/08/11	105	80 - 120	97	80 - 120	<0.10	ug/L	0.62	20		
8843927	Dissolved Vanadium (V)	2023/08/11	107	80 - 120	100	80 - 120	<0.50	ug/L	2.3	20		
8843927	Dissolved Zinc (Zn)	2023/08/11	104	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Zirconium (Zr)	2023/08/11	115	80 - 120	107	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Aluminum (Al)	2023/08/14	105	80 - 120	97	80 - 120	<4.9	ug/L	NC	20		
8843936	Dissolved Antimony (Sb)	2023/08/14	108	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Arsenic (As)	2023/08/14	107	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Barium (Ba)	2023/08/14	105	80 - 120	98	80 - 120	<2.0	ug/L	3.8	20		
8843936	Dissolved Beryllium (Be)	2023/08/14	101	80 - 120	93	80 - 120	<0.40	ug/L	NC	20		
8843936	Dissolved Bismuth (Bi)	2023/08/14	104	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Boron (B)	2023/08/14	103	80 - 120	98	80 - 120	<10	ug/L	1.3	20		
8843936	Dissolved Cadmium (Cd)	2023/08/14	105	80 - 120	98	80 - 120	<0.090	ug/L	NC	20		
8843936	Dissolved Calcium (Ca)	2023/08/14	NC	80 - 120	98	80 - 120	<200	ug/L	0.80	20		
8843936	Dissolved Chromium (Cr)	2023/08/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Cobalt (Co)	2023/08/14	104	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843936	Dissolved Copper (Cu)	2023/08/14	107	80 - 120	101	80 - 120	<0.90	ug/L	NC	20		
8843936	Dissolved Iron (Fe)	2023/08/14	106	80 - 120	99	80 - 120	<100	ug/L	NC	20		
8843936	Dissolved Lead (Pb)	2023/08/14	103	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Lithium (Li)	2023/08/14	109	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Magnesium (Mg)	2023/08/14	101	80 - 120	102	80 - 120	<50	ug/L	5.6	20		
8843936	Dissolved Manganese (Mn)	2023/08/14	105	80 - 120	98	80 - 120	<2.0	ug/L	NC	20		
8843936	Dissolved Molybdenum (Mo)	2023/08/14	106	80 - 120	96	80 - 120	<0.50	ug/L	3.1	20		
8843936	Dissolved Nickel (Ni)	2023/08/14	105	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Phosphorus (P)	2023/08/14	112	80 - 120	105	80 - 120	<100	ug/L	NC	20		
8843936	Dissolved Potassium (K)	2023/08/14	107	80 - 120	101	80 - 120	<200	ug/L	0.84	20		
8843936	Dissolved Selenium (Se)	2023/08/14	107	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Silicon (Si)	2023/08/14	104	80 - 120	96	80 - 120	<50	ug/L	1.8	20		
8843936	Dissolved Silver (Ag)	2023/08/14	101	80 - 120	96	80 - 120	<0.090	ug/L	NC	20		
8843936	Dissolved Sodium (Na)	2023/08/14	109	80 - 120	98	80 - 120	<100	ug/L	4.6	20		
8843936	Dissolved Strontium (Sr)	2023/08/14	108	80 - 120	101	80 - 120	<1.0	ug/L	0.82	20		
8843936	Dissolved Tellurium (Te)	2023/08/14	107	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Thallium (Tl)	2023/08/14	105	80 - 120	98	80 - 120	<0.050	ug/L	NC	20		
8843936	Dissolved Tin (Sn)	2023/08/14	110	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Titanium (Ti)	2023/08/14	104	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Tungsten (W)	2023/08/14	107	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Uranium (U)	2023/08/14	106	80 - 120	97	80 - 120	<0.10	ug/L	4.4	20		
8843936	Dissolved Vanadium (V)	2023/08/14	104	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Zinc (Zn)	2023/08/14	106	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		





Bureau Veritas Job #: C3M6596  
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## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843936	Dissolved Zirconium (Zr)	2023/08/14	110	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
<p>N/A = Not Applicable</p> <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)</p> <p>NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference &lt;= 2x RDL).</p> <p>(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.</p>												



Bureau Veritas Job #: C3M6596  
Report Date: 2023/08/29

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

Cristina Carriere, Senior Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

Sandy Yuan, M.Sc., QP, Scientific Specialist

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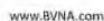
CHAIN OF CUSTODY RECORD

ENV COC - 00014v3

Page 1 of 2

Invoice Information				Report Information (if differs from invoice)				Project Information							
Company:	BluMetric Environmental Inc			Company:	BluMetric Environmental Inc			Quotation #:	C32559						
Contact Name:	Accounts Payable			Contact Name:	Jaclyn Kalesnikoff			P.O. #/ AFE#:							
Street Address:	1682 Woodward Drive			Street Address:	1682 Woodward Drive			Project #:	230427						
City:	Ottawa	Prov:	ON	City:	Ottawa	Prov:	ON	Site #:							
Phone:	613-839-3053			Phone:	877-487-8436 x339			Site Location:	Resolute Bay Landfill						
Email:	ap@blumetric.ca			Email:	jkalesnikoff@blumetric.ca			Site Location Province:	WP ENV-1704						
Copies:	jkalesnikoff@blumetric.ca			Copies:	jbrown@blumetric.ca			Sampled By:	KC						
<b>Regulatory Criteria</b>				<b>Regulatory Criteria</b>				<b>Regulatory Criteria</b>							
Table 1	Res/Park	Med/Fine	✓ CME	Table 2	Ind/Comm	Course	Reg 406, Table:	Table 3	Agri/other	For RSC	Sanitary Sewer Bylaw				
Table 1	Ind/Comm	For RSC	✓ min 3 day TAT	Table 2	Agri/other	For RSC	Storm Sewer Bylaw	Table 3	Ind/Comm	For RSC	Municipality				
Table 1	Agri/other	For RSC	✓ WQA	Table 2	Agri/other	For RSC	Other:	Table 3	Agri/other	For RSC	Other:				
Include Criteria on Certificate of Analysis (check if yes):				Include Criteria on Certificate of Analysis (check if yes):				Include Criteria on Certificate of Analysis (check if yes):							
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Sample Identification				Date Sampled				Time (24hr)				Matrix			
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1 RBL-2				23 07 23 17 30				Water - Ground				N Y N X X X X X X X X X X			
2 RBL-3				23 07 23 15 30				Water - Ground				N Y N X X X X X X X X X X			
3 AEC1-GW1				23 07 23 16 30				Water - Ground				N Y N X X X X X X X X X X			
4 RBL-4				23 07 24 13 00				Water - Surface				N Y N X X X X X X X X X X			
5 RBL-8				23 07 24 11 50				Water - Surface				N Y N X X X X X X X X X X			
6 RBL-13				23 07 24 11 15				Water - Surface				N Y N X X X X X X X X X X			
7 RBL-16				23 07 24 10 30				Water - Surface				N Y N X X X X X X X X X X			
8 RBL-DUPA				23 07 23 15 50				Water - Ground				N Y N X X X X X X X X X X			
9 RBL-DUPB				23 07 24 11 20				Water - Surface				N Y N X X X X X X X X X X			
10 RBL-DUPC				23 07 24 11 55				Water - Surface				N Y N X X X X X X X X X X			
11 FIELD BLANK 1				23 07 23 15 40				Water - Ground				N Y N X X X X X X X X X X			
12 TRIP BLANK 1				23 07 23 9 00				Water - Ground				N Y N X X X X X X X X X X			
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Seal intact				Seal intact				Seal intact				Seal intact			
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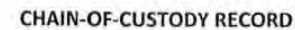


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Page 2 of 2

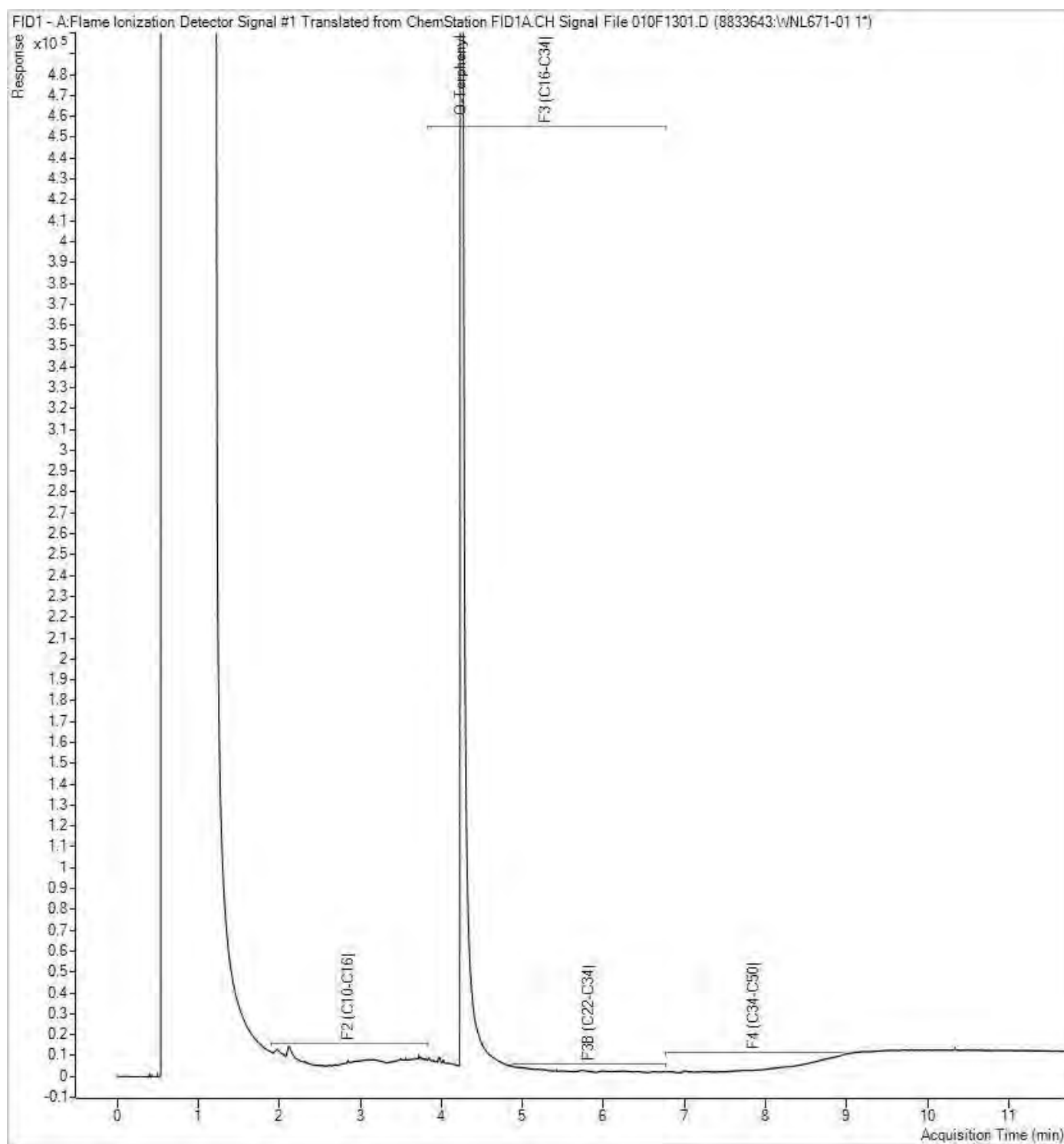
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Company :				BluMetric Environmental Inc				Company:				BluMetric Environmental Inc								Quotation #:				C32559															
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Phone:				613-839-3053				Phone:				877-487-8436 x339				Site Location:				Resolute Bay Landfill				Rush Confirmation #:															
Email:				ap@blumetric.ca				Email:				jkalesnikoff@blumetric.ca				Site Location Province:																							
Copies:				jkalesnikoff@blumetric.ca				Copies:				jbrown@blumetric.ca				Sampled By:				KC																			
Regulatory Criteria																																							
REG 53 Table 1 Res/Park Med/Fine ✓ CME Reg 406, Table: Table 2 Ind/Comm Course leg 558* Sanitary Sewer Bylaw Table 3 Agri/other For RSC min 3 day TAT Storm Sewer Bylaw Table MISA Municipality WQO Other: _____																																							
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KIM CARLTON										See pg. 1										See page 1																			



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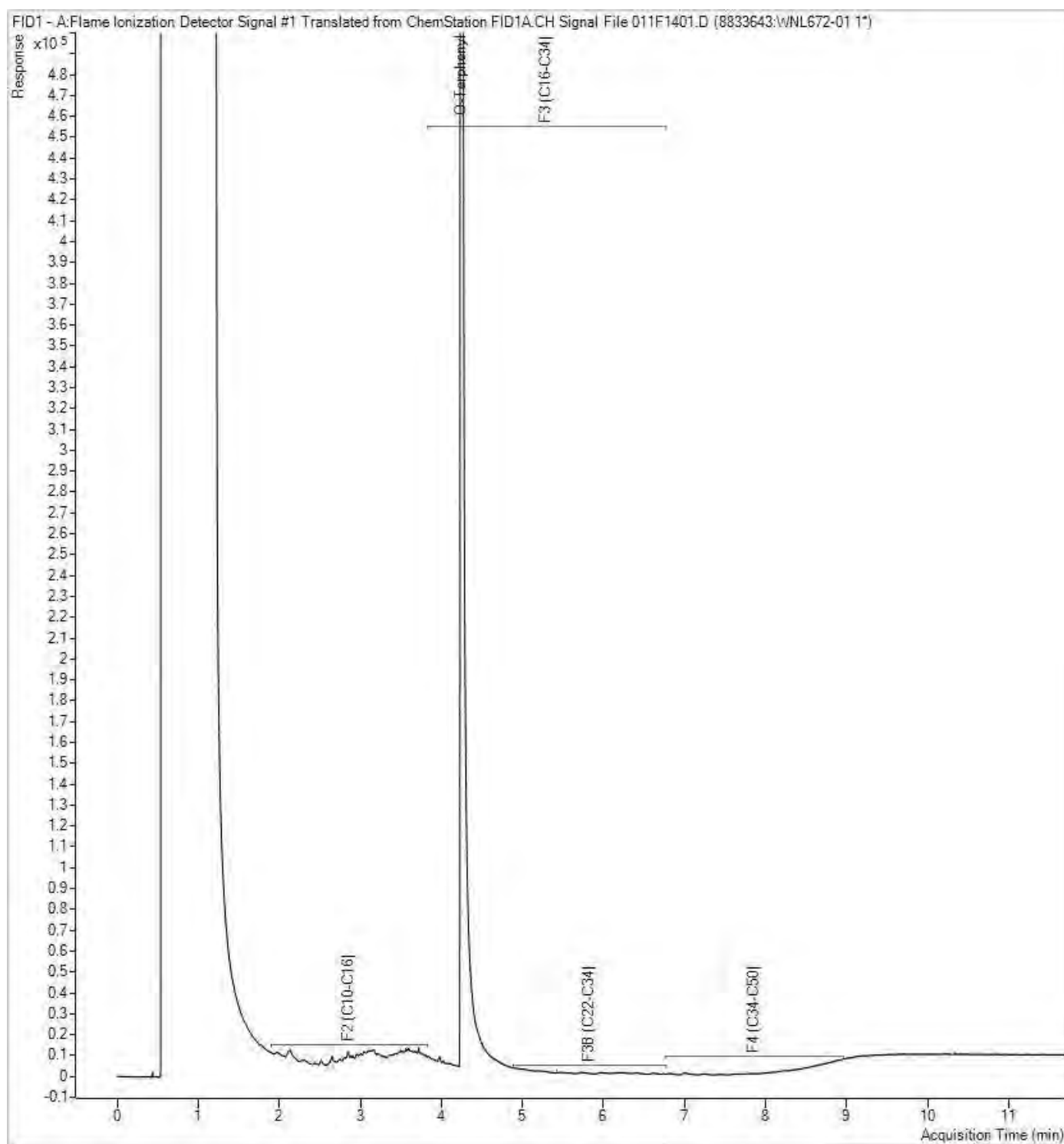
Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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Petroleum Hydrocarbons F2-F4 in Water Chromatogram



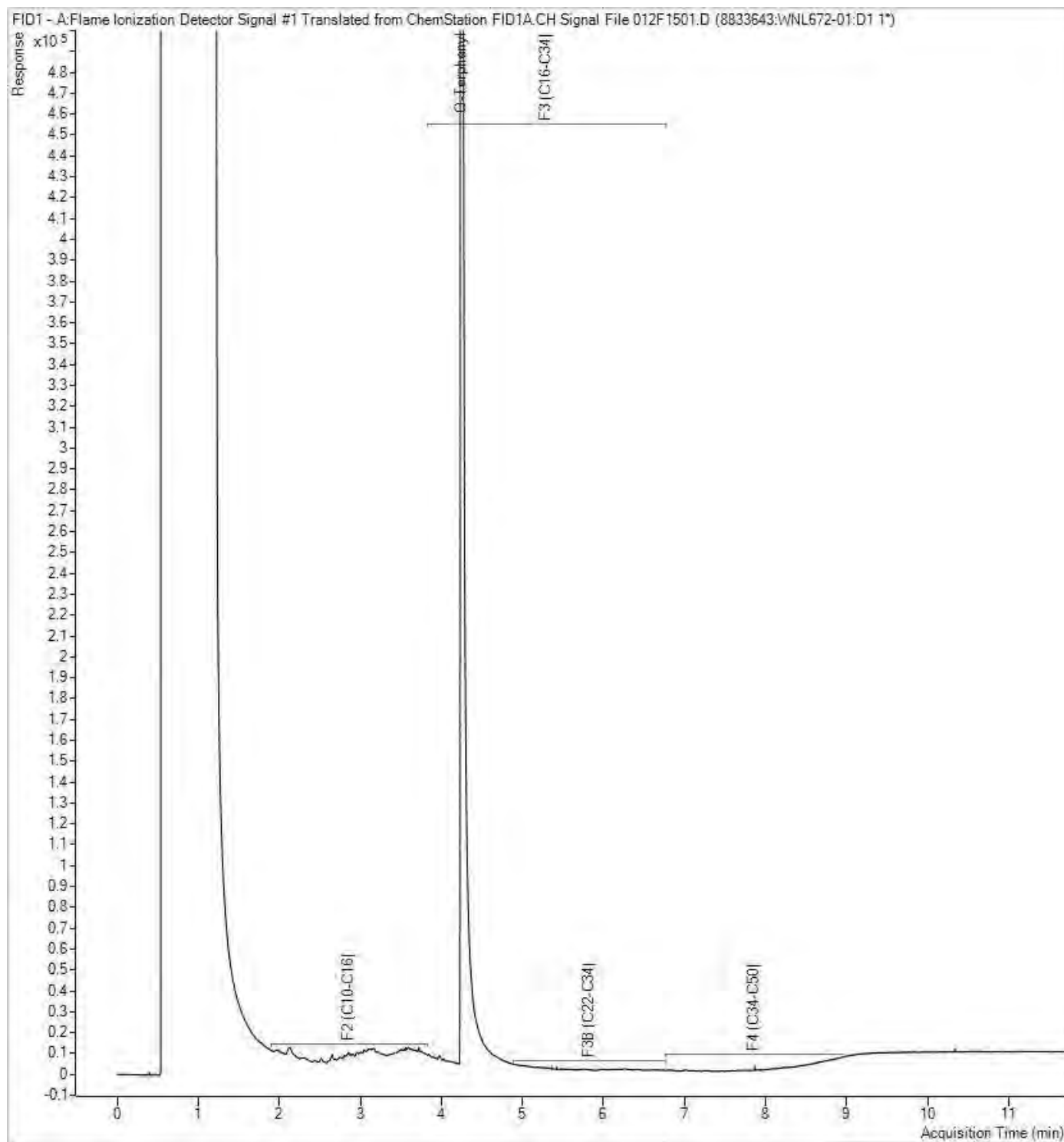
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Report Date: 2023/08/29  
Bureau Veritas Sample: WNL672 Lab-Dup

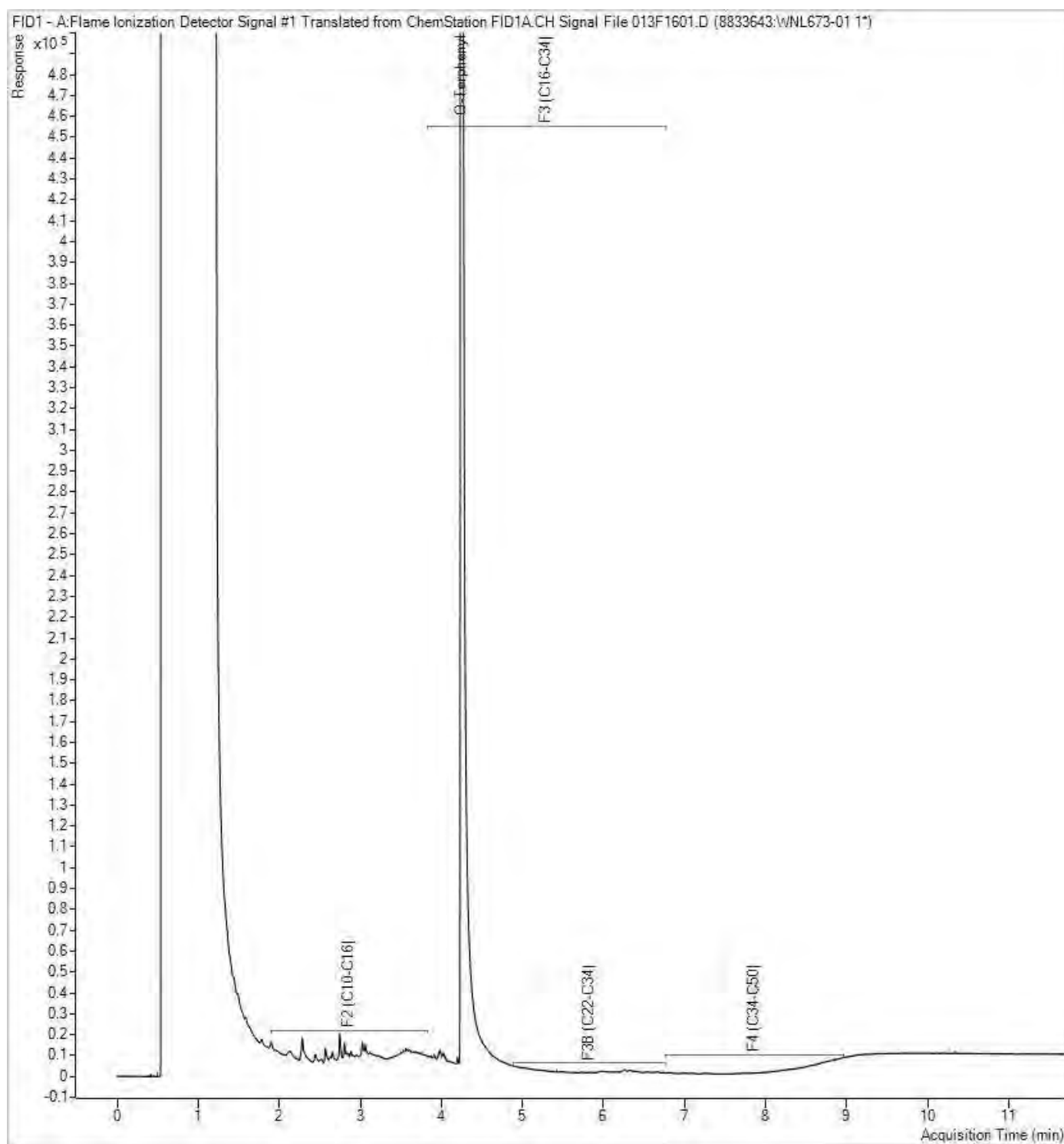
BluMetric Environmental Inc  
Client Project #: 230427  
Project name: RESOLUTE BAY LANDFILL  
Client ID: RBL-3

**Petroleum Hydrocarbons F2-F4 in Water Chromatogram**



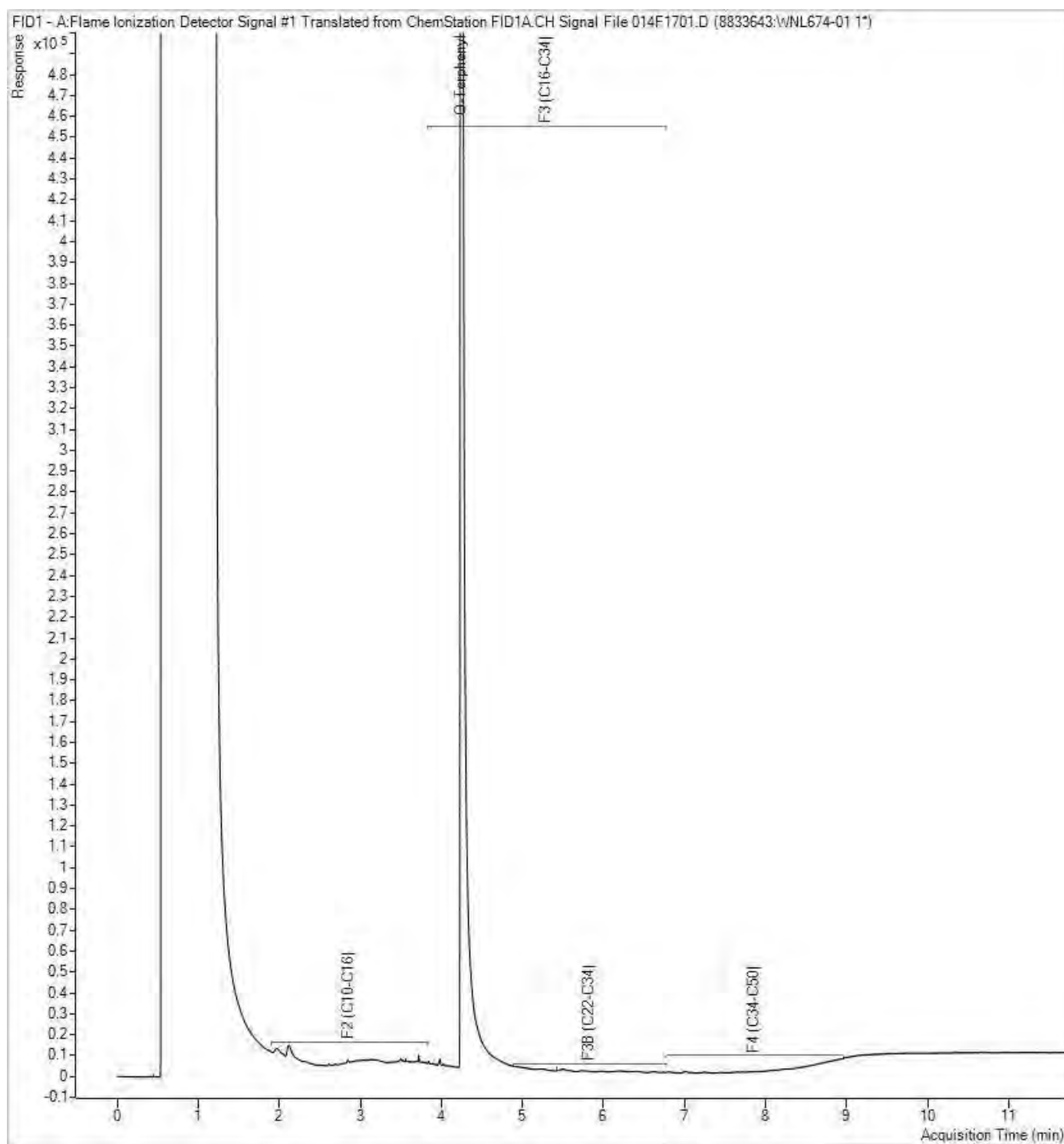
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Petroleum Hydrocarbons F2-F4 in Water Chromatogram



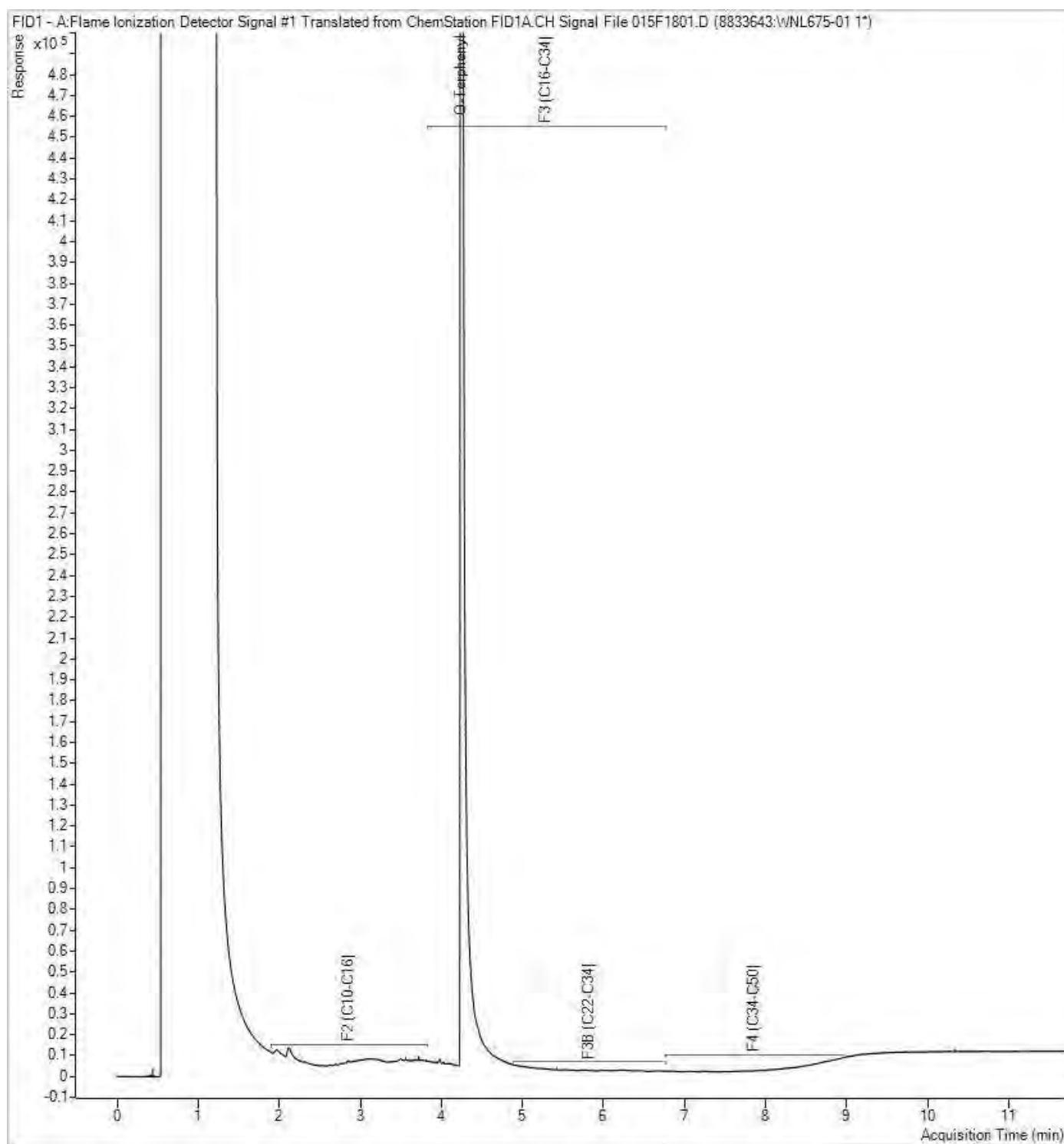
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Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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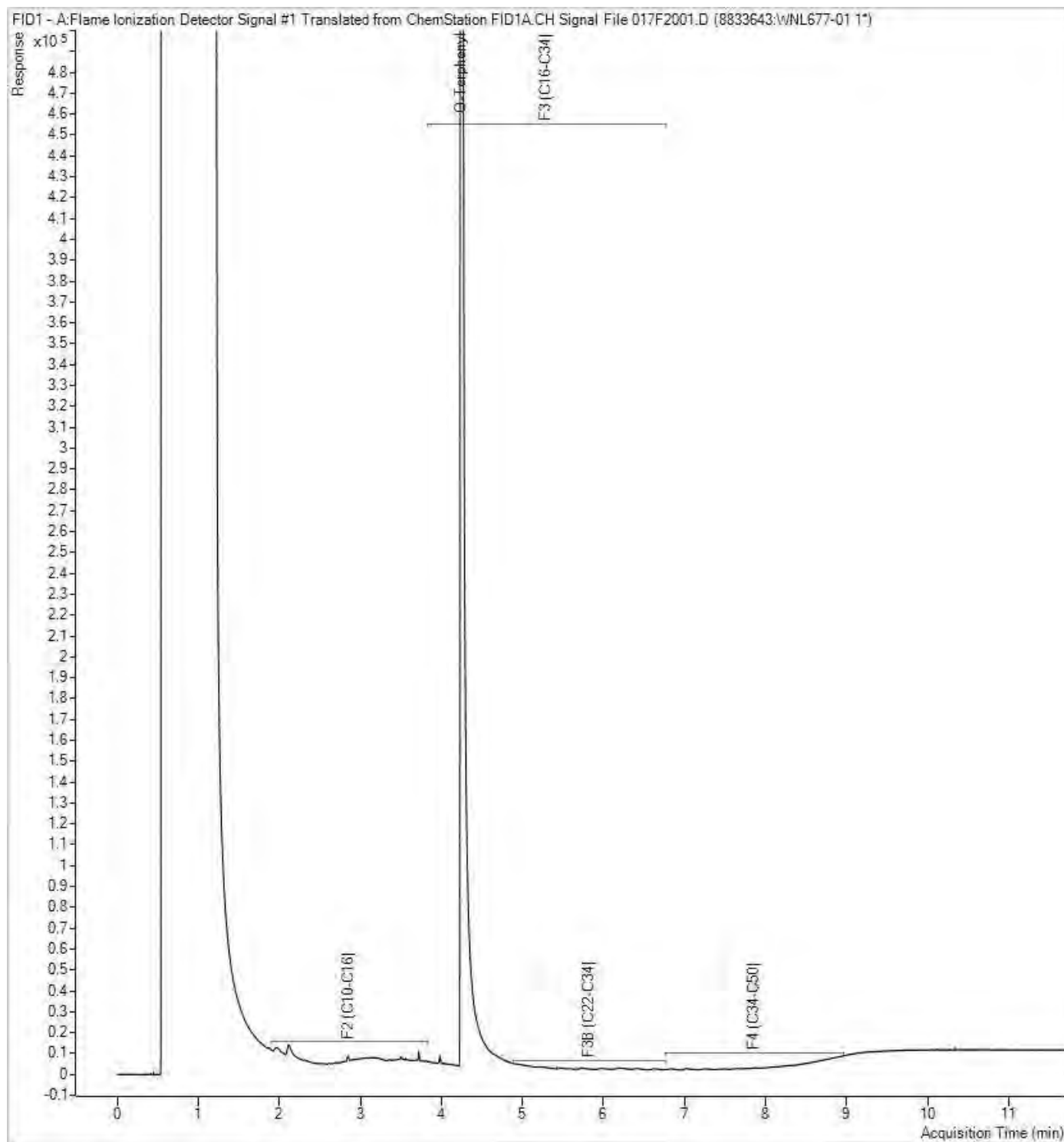
Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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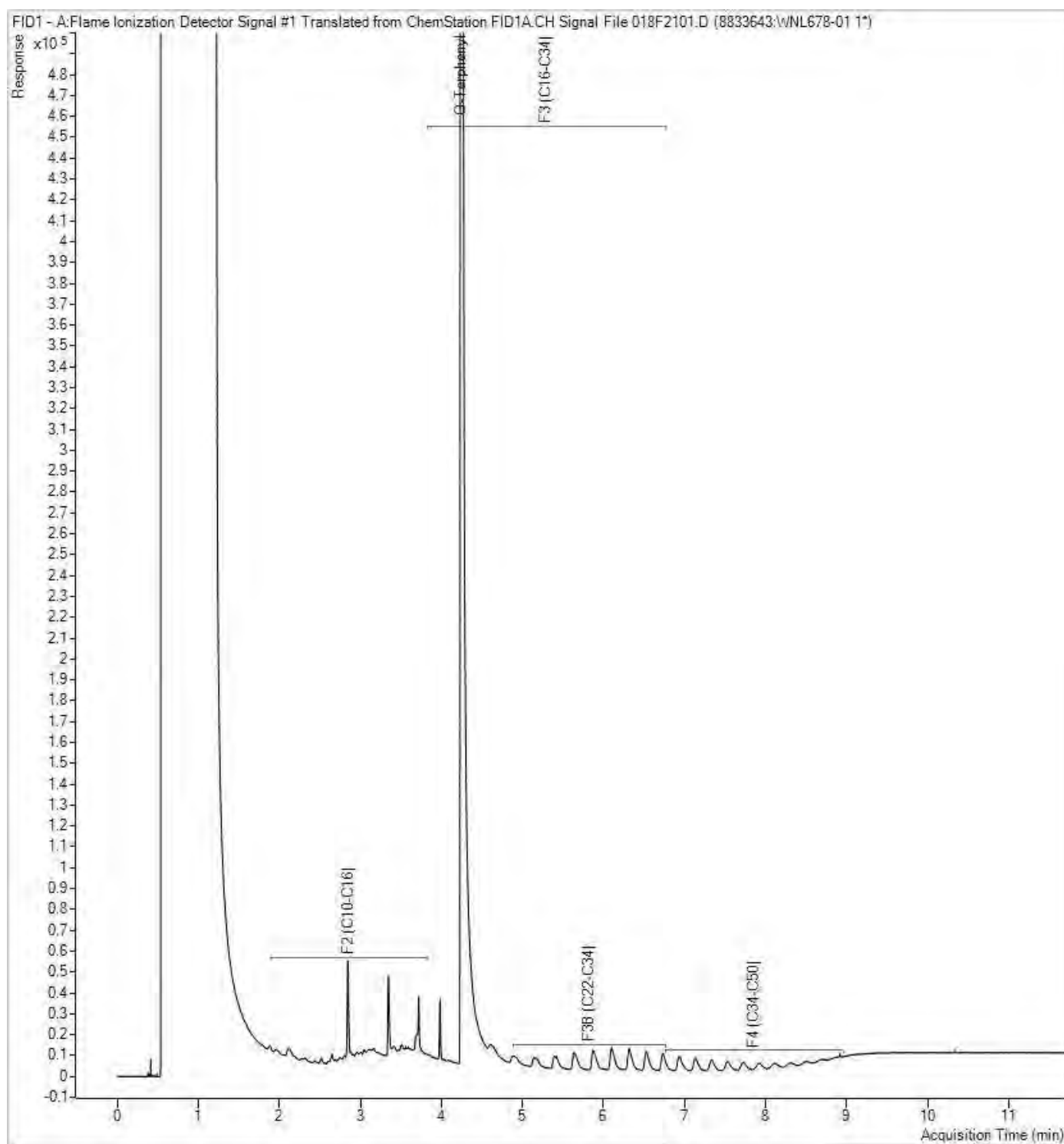


Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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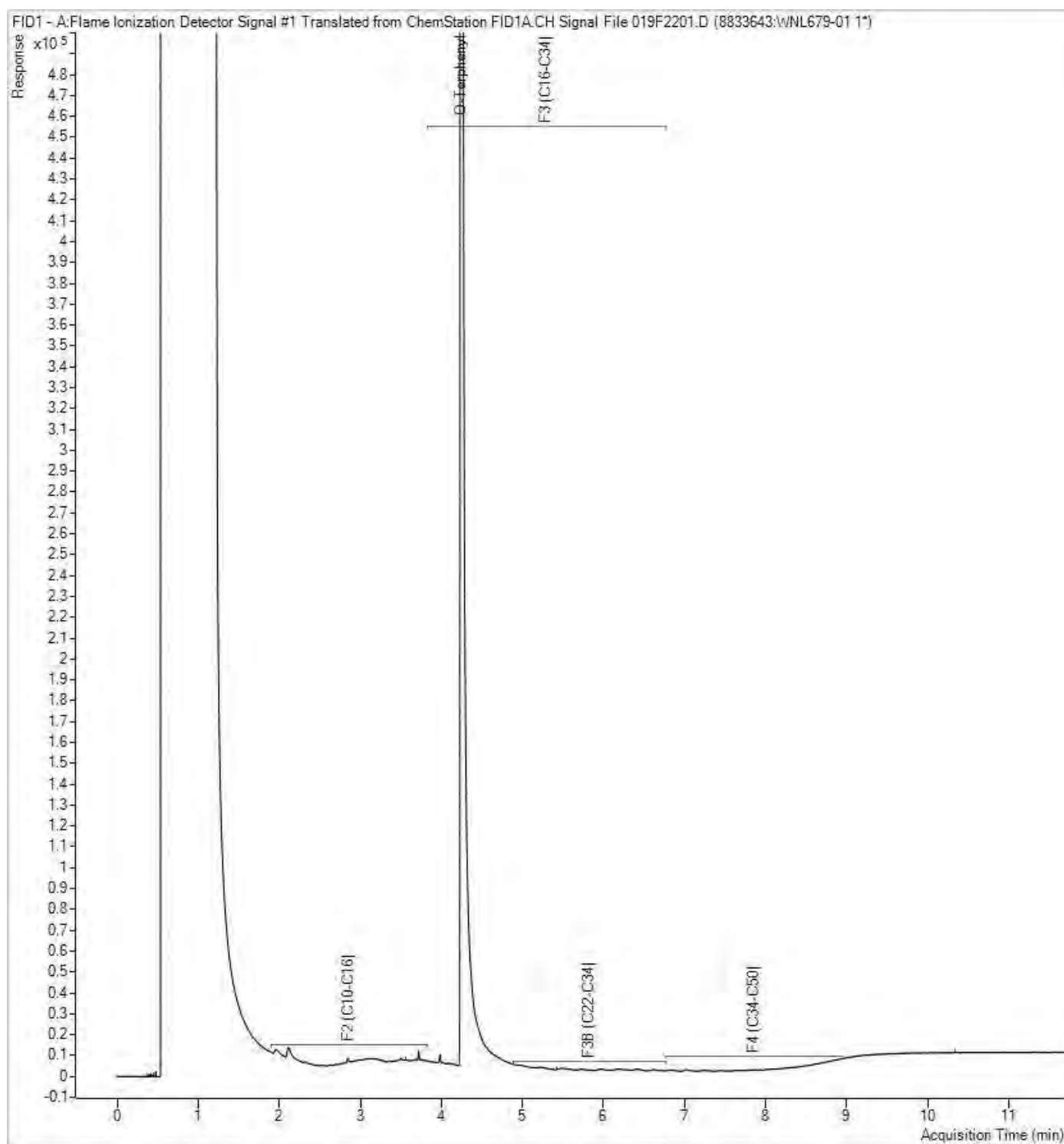
Petroleum Hydrocarbons F2-F4 in Water Chromatogram



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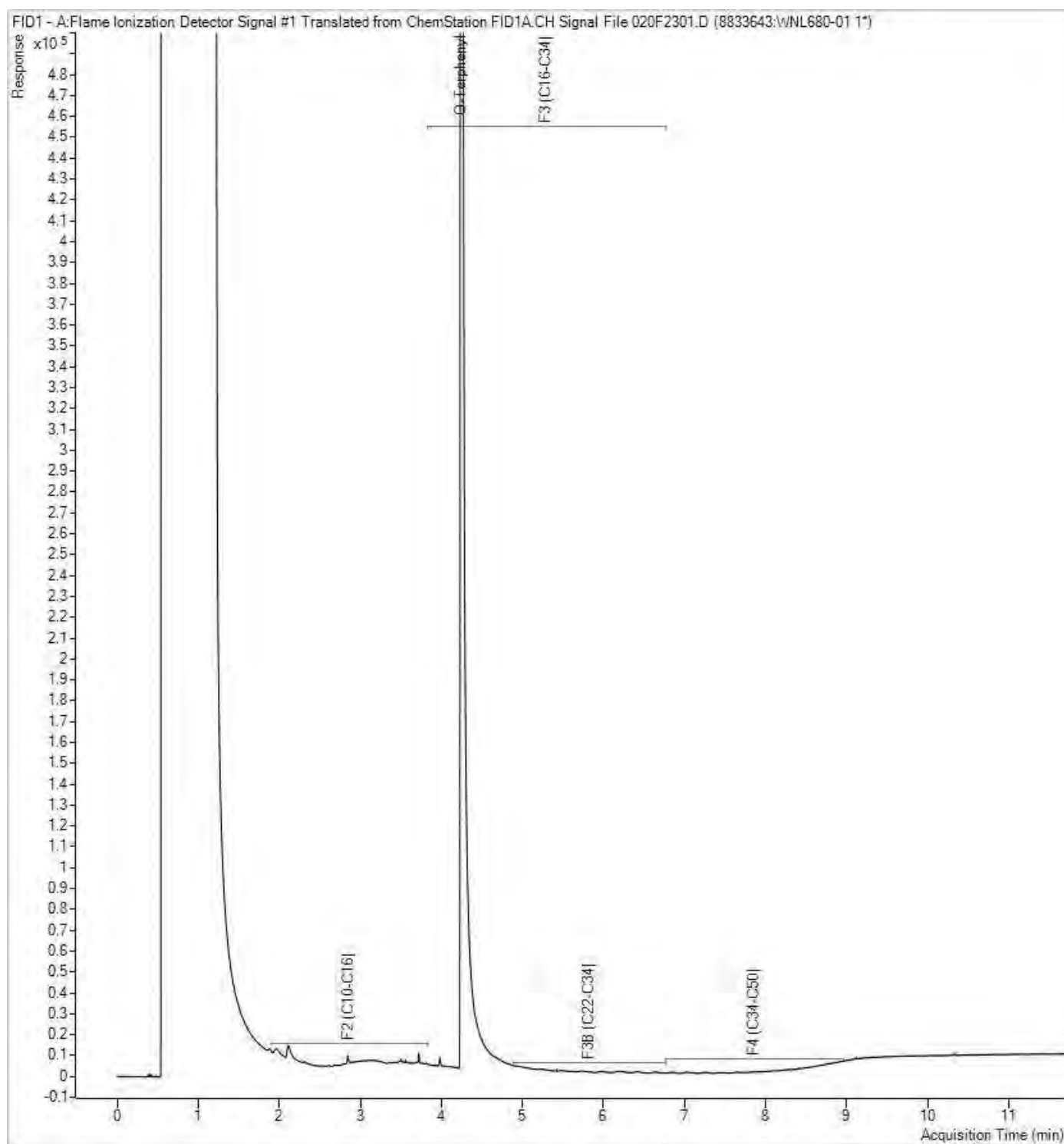


Petroleum Hydrocarbons F2-F4 in Water Chromatogram



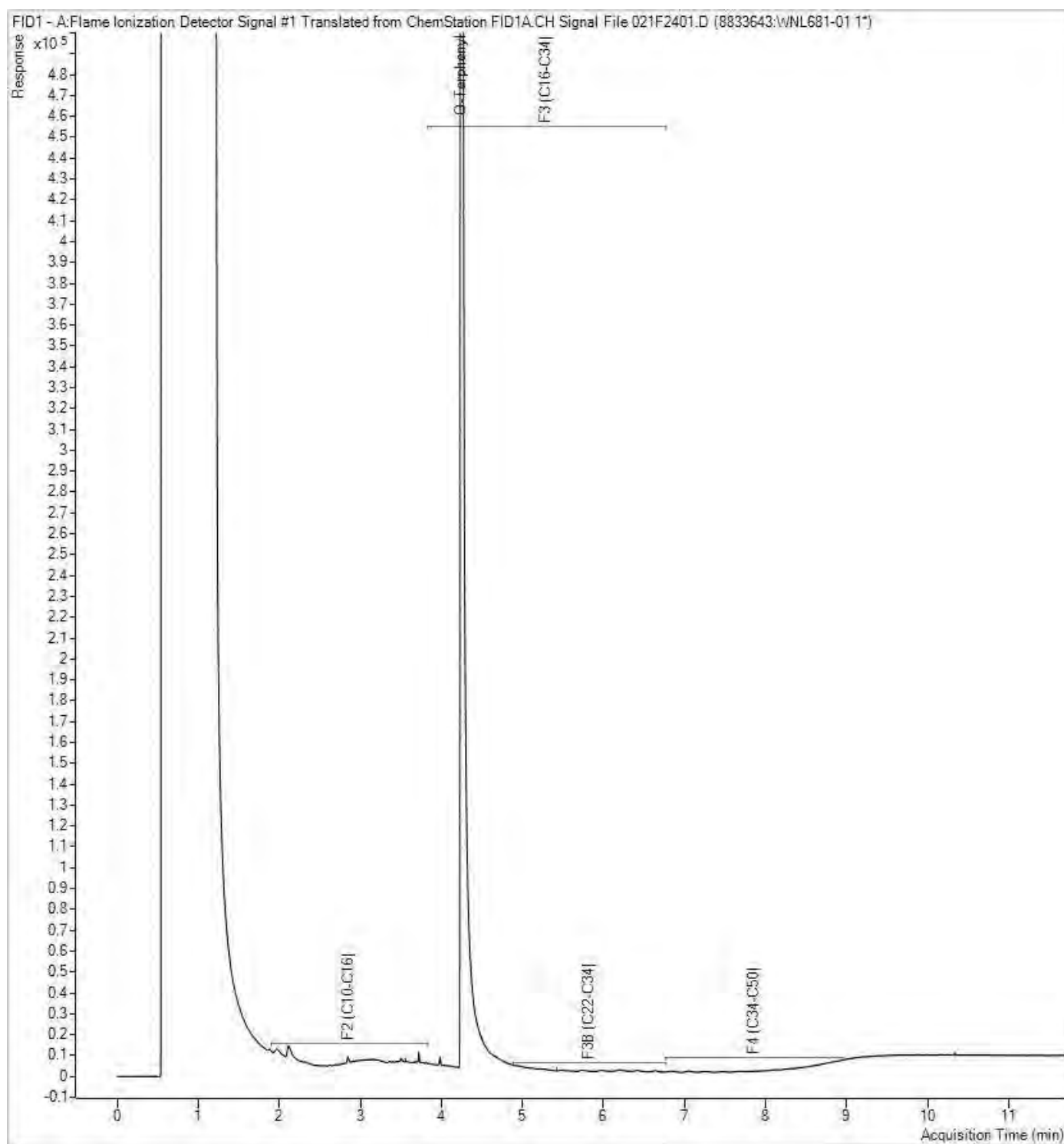
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



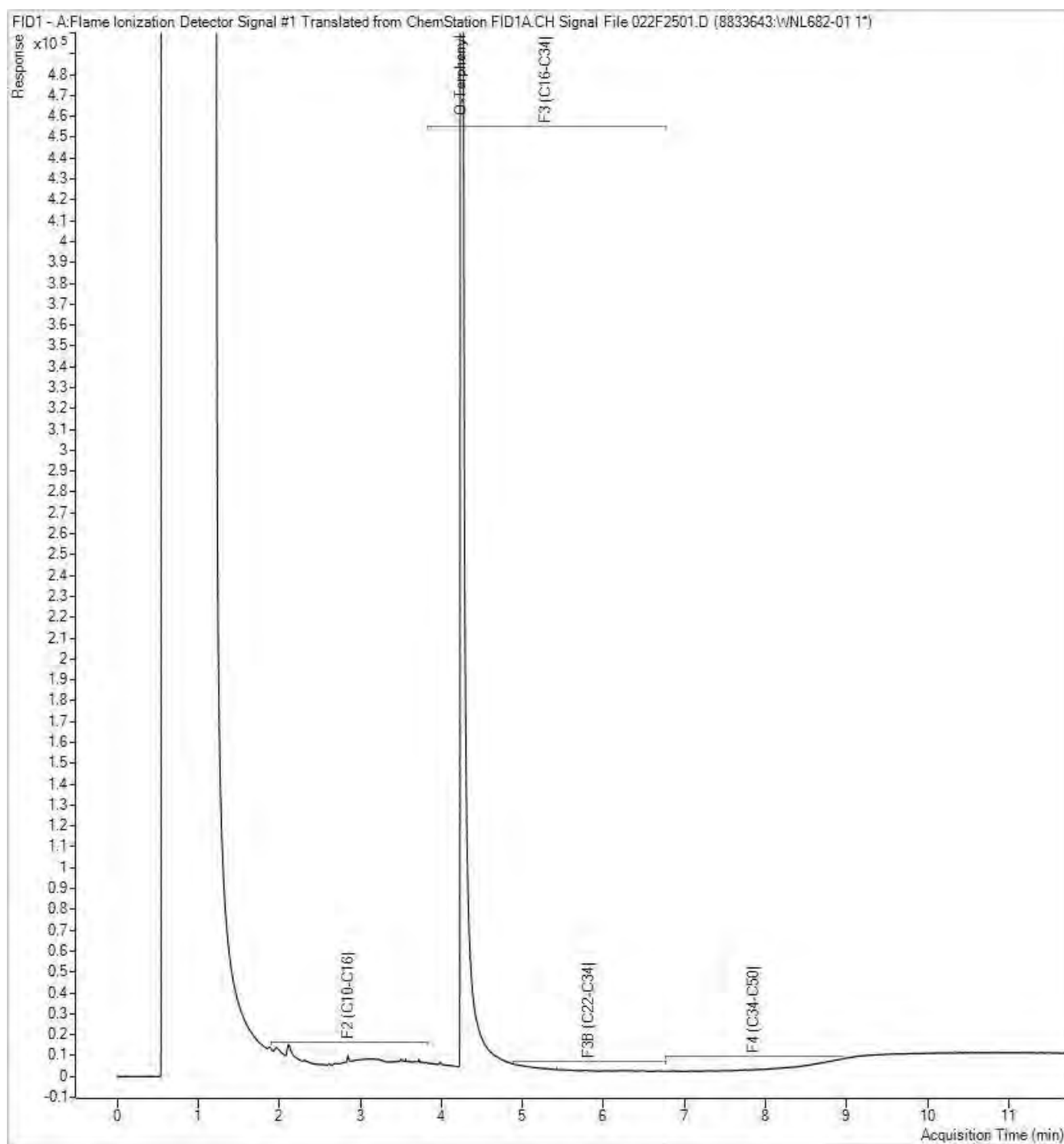
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



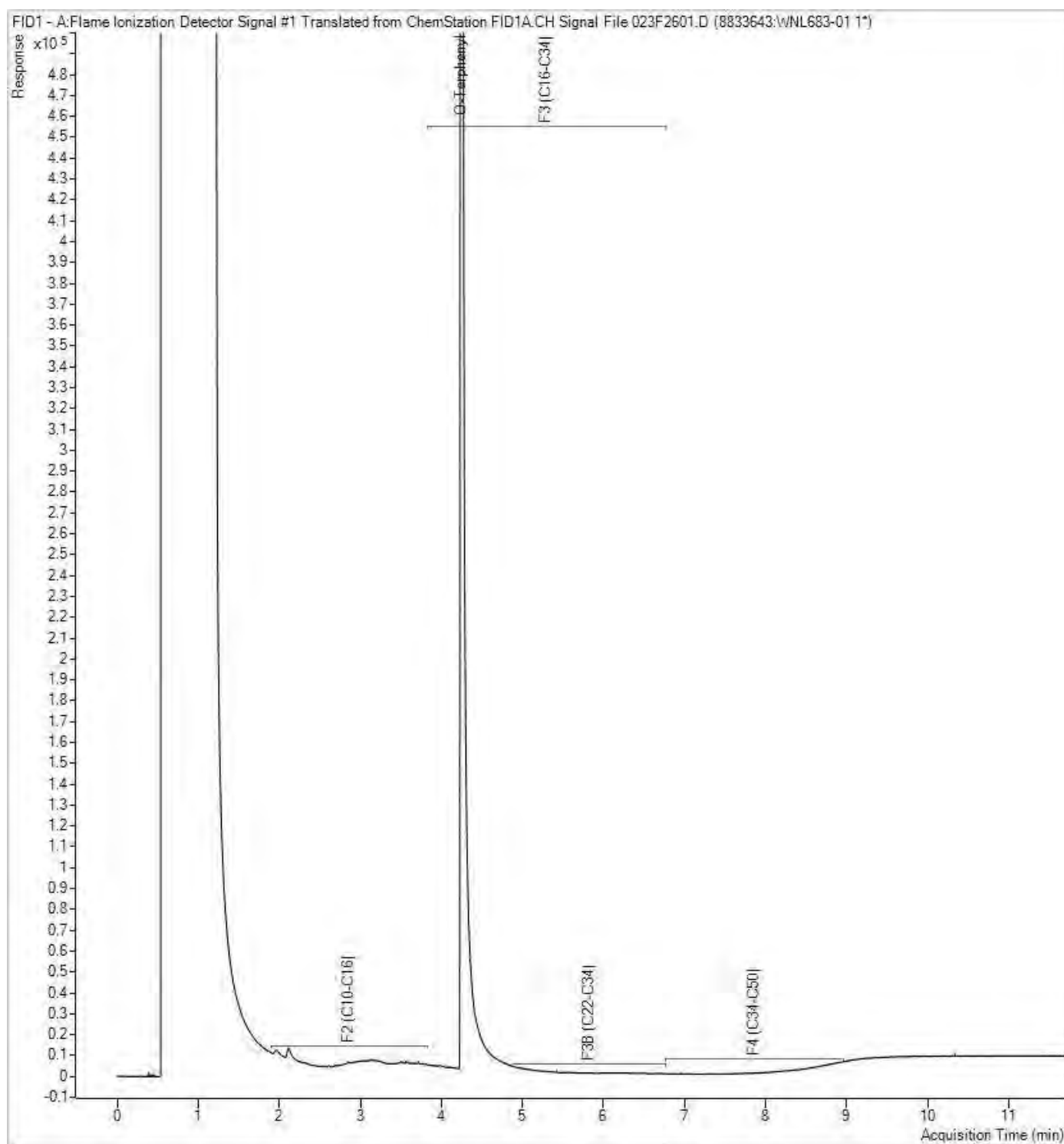
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 230427  
 Site Location: RESOLUTE BAY LANDFILL  
 Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
 1682 Woodward Drive  
 Ottawa, ON  
 CANADA K2C 3R8

**Report Date: 2023/09/01**  
 Report #: R7794117  
 Version: 3 - Revision

**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

Sample Matrix: Water  
 # Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity (1)	10	N/A	2023/08/01	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide (1)	10	N/A	2023/08/02	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry (1)	10	N/A	2023/08/02	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity (1)	10	N/A	2023/08/01	CAM SOP-00414	SM 23 2510 m
Chromium (VI) in Water (1)	10	N/A	2023/08/03	CAM SOP-00436	EPA 7199 m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2023/08/04	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	9	N/A	2023/08/05	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2023/08/06	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 3)	13	2023/08/04	2023/08/04	CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3) (1)	10	N/A	2023/08/04	CAM SOP 00102/00408/00447	SM 2340 B
Mercury in Water by CVAA (1)	7	2023/08/01	2023/08/02	CAM SOP-00453	EPA 7470A m
Mercury in Water by CVAA (1)	2	2023/08/02	2023/08/02	CAM SOP-00453	EPA 7470A m
Mercury (low level) (1)	5	2023/08/30	2023/08/30	CAM SOP-00453	EPA 7470 m
Lab Filtered Metals by ICPMS (1)	8	2023/08/10	2023/08/11	CAM SOP-00447	EPA 6020B m
Lab Filtered Metals by ICPMS (1)	2	2023/08/10	2023/08/14	CAM SOP-00447	EPA 6020B m
Low Level Total Metals in Water by ICPMS (1)	5	2023/08/31	2023/08/31	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS (1)	10	2023/08/02	2023/08/02	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference) (1)	8	N/A	2023/08/11		
Ion Balance (% Difference) (1)	2	N/A	2023/08/14		
Anion and Cation Sum (1)	8	N/A	2023/08/11		
Anion and Cation Sum (1)	2	N/A	2023/08/14		
B[a]P Total Potency Equivalent (2, 4)	11	N/A	2023/08/06		CCME
B[a]P Total Potency Equivalent (2, 4)	1	N/A	2023/08/09		CCME
PAH in Water by GC/MS (2)	11	2023/08/05	2023/08/06	AB SOP-00037/AB SOP-00003	EPA 3510C/8270E m
PAH in Water by GC/MS (2)	1	2023/08/08	2023/08/08	AB SOP-00037/AB SOP-00003	EPA 3510C/8270E m
Phenols (4-AAP) (2)	10	N/A	2023/08/08	AB SOP-00088	EPA 9066 R0 m
Total Ammonia-N (1)	10	N/A	2023/08/03	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1, 5)	10	N/A	2023/08/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Total Oil and Grease (1)	10	2023/08/06	2023/08/06	CAM SOP-00326	EPA1664B m,SM5520B m



Your Project #: 230427  
 Site Location: RESOLUTE BAY LANDFILL  
 Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

BluMetric Environmental Inc  
 1682 Woodward Drive  
 Ottawa, ON  
 CANADA K2C 3R8

**Report Date: 2023/09/01**  
 Report #: R7794117  
 Version: 3 - Revision

## CERTIFICATE OF ANALYSIS – REVISED REPORT

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

Sample Matrix: Water  
 # Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
pH (1)	10	2023/07/31	2023/08/01	CAM SOP-00413	SM 4500H+ B m
Sulphate by Automated Turbidimetry (1)	10	N/A	2023/08/02	CAM SOP-00464	SM 23 4500-SO42- E m
Total Phosphorus (Colourimetric) (1)	10	2023/08/01	2023/08/03	CAM SOP-00407	SM 23 4500-P I
Mineral/Synthetic O & G (TPH Heavy Oil) (1, 6)	10	2023/08/06	2023/08/06	CAM SOP-00326	EPA1664B m, SM5520F m
Total Suspended Solids (1)	10	2023/08/01	2023/08/02	CAM SOP-00428	SM 23 2540D m

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd, Mississauga, ON, L5N 2L8

(2) This test was performed by Bureau Veritas Calgary (19th), 4000 19th Street NE, Calgary, AB, T2E 6P8

(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(4) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.





Your Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Your C.O.C. #: n/a

**Attention: Jaclyn Kalesnikoff**

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1682 Woodward Drive  
Ottawa, ON  
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**Report Date: 2023/09/01**  
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**CERTIFICATE OF ANALYSIS – REVISED REPORT**

**BUREAU VERITAS JOB #: C3M6596**

**Received: 2023/07/27, 12:57**

(5) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(6) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to:

Christine Gripton, Senior Project Manager  
Email: Christine.Gripton@bureauveritas.com  
Phone# (519)652-9444

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL671	WNL672	WNL673	WNL674	WNL675			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30	2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-2	RBL-3	AEC1-GW1	RBL-4	RBL-8	RDL	MDL	QC Batch

Polyaromatic Hydrocarbons									
Benzo(a)pyrene Total Potency Equiv.	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	0.84	<0.10	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	1.4	0.12	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	0.23	0.12	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	N/A	8837189

Surrogate Recovery (%)									
D10-Anthracene	%	127	121	105	117	109			8837189
D14-Terphenyl	%	156 (1)	129	75	138 (1)	130			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL671	WNL672	WNL673	WNL674	WNL675			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30	2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-2	RBL-3	AEC1-GW1	RBL-4	RBL-8	RDL	MDL	QC Batch
D8-Acenaphthylene	%	112	97	85	109	96			8837189
D8-Naphthalene	%	75	45 (1)	59	92	72			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



### CCME PAHS (WATER)

Bureau Veritas ID		WNL676	WNL677	WNL678	WNL679	WNL680			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30	2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-13	RBL-16	RBL-DUPA	RBL-DUPB	RBL-DUPC	RDL	MDL	QC Batch

#### Polyaromatic Hydrocarbons

Benzo(a)pyrene Total Potency Equiv.	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.61	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.99	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	<0.10	0.17	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	N/A	8837189

#### Surrogate Recovery (%)

D10-Anthracene	%	105	106	104	119	124			8837189
D14-Terphenyl	%	124	125	119	144 (1)	141 (1)			8837189

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL676	WNL677	WNL678	WNL679	WNL680			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30	2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-13	RBL-16	RBL-DUPA	RBL-DUPB	RBL-DUPC	RDL	MDL	QC Batch
D8-Acenaphthylene	%	90	96	92	113	110			8837189
D8-Naphthalene	%	72	83	64	99	92			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									



### CCME PAHS (WATER)

Bureau Veritas ID		WNL680				WNL681	WNL683			
Sampling Date		2023/07/24 11:55				2023/07/23 15:40	2023/07/24 10:40			
COC Number		n/a				n/a	n/a			
	UNITS	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch	FEILD BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
<b>Polyaromatic Hydrocarbons</b>										
Benzo(a)pyrene Total Potency Equiv.	ug/L					<0.010	<0.010	0.010	N/A	8841752
Acenaphthene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Acenaphthylene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Acridine	ug/L	<0.040	0.040	N/A	8837189	<0.040	<0.040	0.040	N/A	8837189
Anthracene	ug/L	<0.010	0.010	N/A	8837189	<0.010	<0.010	0.010	N/A	8837189
Benzo(a)anthracene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(b/j)fluoranthene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(k)fluoranthene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(g,h,i)perylene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Benzo(c)phenanthrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Benzo(a)pyrene	ug/L	<0.0075	0.0075	N/A	8837189	<0.0075	<0.0075	0.0075	N/A	8837189
Benzo(e)pyrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Chrysene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
Dibenzo(a,h)anthracene	ug/L	<0.0075	0.0075	N/A	8837189	<0.0075	<0.0075	0.0075	N/A	8837189
Fluoranthene	ug/L	<0.010	0.010	N/A	8837189	<0.010	<0.010	0.010	N/A	8837189
Fluorene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	0.0085	N/A	8837189	<0.0085	<0.0085	0.0085	N/A	8837189
1-Methylnaphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
2-Methylnaphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Naphthalene	ug/L	<0.10	0.10	N/A	8837189	<0.10	<0.10	0.10	N/A	8837189
Phenanthrene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Perylene	ug/L	<0.050	0.050	N/A	8837189	<0.050	<0.050	0.050	N/A	8837189
Pyrene	ug/L	<0.020	0.020	N/A	8837189	<0.020	<0.020	0.020	N/A	8837189
Quinoline	ug/L	<0.20	0.20	N/A	8837189	<0.20	<0.20	0.20	N/A	8837189
<b>Surrogate Recovery (%)</b>										
D10-Anthracene	%	120			8837189	118	106			8837189
D14-Terphenyl	%	134 (1)			8837189	139 (1)	126			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.										



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PAHS (WATER)

Bureau Veritas ID		WNL680				WNL681	WNL683			
Sampling Date		2023/07/24 11:55				2023/07/23 15:40	2023/07/24 10:40			
COC Number		n/a				n/a	n/a			
	UNITS	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch	FEILD BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
D8-Acenaphthylene	%	107			8837189	106	95			8837189
D8-Naphthalene	%	89			8837189	90	81			8837189
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										





**CCME PHCS, BTEX/F1-F4 (WATER)**

Bureau Veritas ID		WNL671	WNL672				WNL672			
Sampling Date		2023/07/23 17:30	2023/07/23 15:30				2023/07/23 15:30			
COC Number		n/a	n/a				n/a			
	UNITS	RBL-2	RBL-3	RDL	MDL	QC Batch	RBL-3 Lab-Dup	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
Toluene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
Ethylbenzene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
o-Xylene	ug/L	<0.20	<0.20	0.20	0.040	8833426				
p+m-Xylene	ug/L	<0.40	<0.40	0.40	0.080	8833426				
Total Xylenes	ug/L	<0.40	<0.40	0.40	0.080	8833426				
F1 (C6-C10)	ug/L	<25	<25	25	20	8833426				
F1 (C6-C10) - BTEX	ug/L	<25	<25	25	20	8833426				
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	100	50	8833643	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	200	70	8833643	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	200	50	8833643	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes			8833643	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	89	88			8833426				
4-Bromofluorobenzene	%	108	105			8833426				
D10-o-Xylene	%	92	88			8833426				
D4-1,2-Dichloroethane	%	100	100			8833426				
o-Terphenyl	%	95	97			8833643	96			8833643
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### CCME PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID		WNL673	WNL674	WNL675	WNL676		WNL677			
Sampling Date		2023/07/23 16:30	2023/07/24 13:00	2023/07/24 11:50	2023/07/24 11:15		2023/07/24 10:30			
COC Number		n/a	n/a	n/a	n/a		n/a			
	UNITS	AEC1-GW1	RBL-4	RBL-8	RBL-13	QC Batch	RBL-16	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
Toluene	ug/L	0.55	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
o-Xylene	ug/L	0.26	<0.20	<0.20	<0.20	8833426	<0.20	0.20	0.040	8833432
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	8833426	<0.40	0.40	0.080	8833432
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	8833426	<0.40	0.40	0.080	8833432
F1 (C6-C10)	ug/L	<25	<25	<25	<25	8833426	<25	25	20	8833432
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	8833426	<25	25	20	8833432
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	8833643	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	8833643	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	8833643	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	8833643	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	88	91	86	88	8833426	102			8833432
4-Bromofluorobenzene	%	107	109	107	107	8833426	83			8833432
D10-o-Xylene	%	91	89	88	88	8833426	91			8833432
D4-1,2-Dichloroethane	%	99	100	97	99	8833426	95			8833432
o-Terphenyl	%	96	96	94	95	8833643	94			8833643
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



**CCME PHCS, BTEX/F1-F4 (WATER)**

Bureau Veritas ID		WNL678	WNL679	WNL680	WNL681	WNL682	WNL683			
Sampling Date		2023/07/23 15:50	2023/07/24 11:20	2023/07/24 11:55	2023/07/23 15:40	2023/07/23 09:00	2023/07/24 10:40			
COC Number		n/a	n/a	n/a	n/a	n/a	n/a			
	UNITS	RBL-DUPA	RBL-DUPB	RBL-DUPC	FEILD BLANK 1	TRIP BLANK 1	FEILD BLANK 2	RDL	MDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>										
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	0.040	8833426
p+m-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	0.080	8833426
Total Xylenes	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	0.080	8833426
F1 (C6-C10)	ug/L	<25	<25	<25	<25	<25	<25	25	20	8833426
F1 (C6-C10) - BTEX	ug/L	<25	<25	<25	<25	<25	<25	25	20	8833426
<b>F2-F4 Hydrocarbons</b>										
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	<100	<100	<100	100	50	8833643
F3 (C16-C34 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	70	8833643
F4 (C34-C50 Hydrocarbons)	ug/L	<200	<200	<200	<200	<200	<200	200	50	8833643
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes	Yes	Yes			8833643
<b>Surrogate Recovery (%)</b>										
1,4-Difluorobenzene	%	91	90	89	90	88	89			8833426
4-Bromofluorobenzene	%	108	105	106	102	106	108			8833426
D10-o-Xylene	%	92	90	89	89	88	86			8833426
D4-1,2-Dichloroethane	%	98	99	101	95	96	100			8833426
o-Terphenyl	%	95	96	94	93	94	96			8833643
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL671				WNL672			
Sampling Date		2023/07/23 17:30				2023/07/23 15:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-3	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.0064	0.0015	0.0015	8841753	0.038	0.0015	0.0015	8841753
<b>Calculated Parameters</b>									
Anion Sum	me/L	7.10	N/A	N/A	8822383	3.94	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	180	1.0	0.20	8822389	170	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.1	1.0	0.20	8822389	1.0	1.0	0.20	8822389
Cation Sum	me/L	7.60	N/A	N/A	8822383	4.83	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	300	1.0	1.0	8822385	200	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	3.35	N/A	N/A	8822382	10.1	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	1.9	0.050	0.0080	8828243	2.2	0.050	0.0080	8828243
Conductivity	umho/cm	690	1.0	0.20	8824108	410	1.0	0.20	8824108
pH	pH	7.83			8824099	7.81			8824099
Total Phosphorus	mg/L	0.26	0.004	0.002	8826856	0.23	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	10	2.0	8824642	12	10	2.0	8827102
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	130	1.0	0.10	8823998	9.6	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	180	1.0	0.20	8824109	170	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	26	1.0	0.30	8823994	11	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.050	0.050	0.010	8823978	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	0.78	0.50	0.050	8823978	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	0.81	0.50	0.050	8823978	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL673				WNL674			
Sampling Date		2023/07/23 16:30				2023/07/24 13:00			
COC Number		n/a				n/a			
	UNITS	AEC1-GW1	RDL	MDL	QC Batch	RBL-4	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.30	0.030	0.030	8841754	<0.0015	0.0015	0.0015	8841753
<b>Calculated Parameters</b>									
Anion Sum	me/L	10.5	N/A	N/A	8822383	2.65	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	410	1.0	0.20	8822389	91	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.1	1.0	0.20	8822389	4.5	1.0	0.20	8822389
Cation Sum	me/L	12.5	N/A	N/A	8822383	3.00	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	290	1.0	1.0	8822385	110	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	8.68	N/A	N/A	8822382	6.22	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	48	1.0	0.16	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	1100	1.0	0.20	8824320	270	1.0	0.20	8824320
pH	pH	7.46			8824318	8.72			8824318
Total Phosphorus	mg/L	3.3	0.004	0.002	8826856	0.040	0.004	0.002	8826856
Total Suspended Solids	mg/L	14	10	2.0	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	25	1.0	0.10	8823998	11	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	410	1.0	0.20	8824319	96	1.0	0.20	8824319
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	61	1.0	0.30	8823994	18	1.0	0.30	8823994
Nitrite (N)	mg/L	0.014	0.010	0.0020	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL675		WNL676		WNL677			
Sampling Date		2023/07/24 11:50		2023/07/24 11:15		2023/07/24 10:30			
COC Number		n/a		n/a		n/a			
	UNITS	RBL-8	QC Batch	RBL-13	QC Batch	RBL-16	RDL	MDL	QC Batch
<b>Inorganics</b>									
Phenols-4AAP	mg/L	<0.0015	8841753	<0.0015	8841754	<0.0015	0.0015	0.0015	8841754
<b>Calculated Parameters</b>									
Anion Sum	me/L	3.71	8822383	2.10	8822383	2.05	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	120	8822389	80	8822389	79	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	2.1	8822389	1.1	8822389	<1.0	1.0	0.20	8822389
Cation Sum	me/L	3.82	8822383	2.22	8822383	2.19	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	150	8822385	99	8822385	98	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	8822389	<1.0	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	1.47	8822382	NC	8822382	NC	N/A	N/A	8822382
<b>Inorganics</b>									
Total Ammonia-N	mg/L	<0.050	8828243	<0.050	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	360	8824108	210	8824320	210	1.0	0.20	8824108
pH	pH	8.29	8824099	8.15	8824318	8.12			8824099
Total Phosphorus	mg/L	0.010	8826856	<0.004	8826856	<0.004	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	8827102	15	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	11	8823998	16	8823998	16	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	120	8824109	81	8824319	80	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	39	8823994	4.2	8823994	3.9	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.010	8824309	<0.010	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	8824309	0.12	8824309	0.12	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	8824309	0.12	8824309	0.12	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	8836996	<0.50	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	8837000	<0.50	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

**RESULTS OF ANALYSES OF WATER**

<b>Bureau Veritas ID</b>		WNL678				WNL678			
<b>Sampling Date</b>		2023/07/23 15:50				2023/07/23 15:50			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-DUPA</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-DUPA Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
<b>Inorganics</b>									
Phenols-4AAP	mg/L	0.038	0.0015	0.0015	8841753				
<b>Calculated Parameters</b>									
Anion Sum	me/L	3.84	N/A	N/A	8822383				
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	170	1.0	0.20	8822389				
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	1.0	1.0	0.20	8822389				
Cation Sum	me/L	4.40	N/A	N/A	8822383				
Hardness (CaCO <sub>3</sub> )	mg/L	180	1.0	1.0	8822385				
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	1.0	N/A	8822389				
Ion Balance (% Difference)	%	6.87	N/A	N/A	8822382				
<b>Inorganics</b>									
Total Ammonia-N	mg/L	2.1	0.050	0.0080	8828243				
Conductivity	umho/cm	410	1.0	0.20	8824108				
pH	pH	7.80			8824099				
Total Phosphorus	mg/L	0.22	0.004	0.002	8826856				
Total Suspended Solids	mg/L	11	10	2.0	8824642				
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	6.7	1.0	0.10	8823998				
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	170	1.0	0.20	8824109				
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	7.7	1.0	0.30	8823994				
Nitrite (N)	mg/L	<0.010	0.010	0.0020	8824309	<0.010	0.010	0.0020	8824309
Nitrate (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	0.010	8824309	<0.10	0.10	0.010	8824309
<b>Petroleum Hydrocarbons</b>									
Total Oil & Grease	mg/L	<0.50	0.50	0.10	8836996				
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	0.50	0.10	8837000				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									





### RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WNL679		WNL680			
Sampling Date		2023/07/24 11:20		2023/07/24 11:55			
COC Number		n/a		n/a			
	UNITS	RBL-DUPB	QC Batch	RBL-DUPC	RDL	MDL	QC Batch
<b>Inorganics</b>							
Phenols-4AAP	mg/L	<0.0015	8841754	<0.0015	0.0015	0.0015	8841753
<b>Calculated Parameters</b>							
Anion Sum	me/L	3.67	8822383	1.94	N/A	N/A	8822383
Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	110	8822389	78	1.0	0.20	8822389
Carb. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	2.1	8822389	<1.0	1.0	0.20	8822389
Cation Sum	me/L	3.87	8822383	2.23	N/A	N/A	8822383
Hardness (CaCO <sub>3</sub> )	mg/L	140	8822385	99	1.0	1.0	8822385
Hydrox. Alkalinity (calc. as CaCO <sub>3</sub> )	mg/L	<1.0	8822389	<1.0	1.0	N/A	8822389
Ion Balance (% Difference)	%	2.67	8822382	NC	N/A	N/A	8822382
<b>Inorganics</b>							
Total Ammonia-N	mg/L	<0.050	8828243	<0.050	0.050	0.0080	8828243
Conductivity	umho/cm	370	8824108	210	1.0	0.20	8824108
pH	pH	8.29	8824099	8.08			8824099
Total Phosphorus	mg/L	0.009	8826856	<0.004	0.004	0.002	8826856
Total Suspended Solids	mg/L	<10	8824642	<10	10	2.0	8824642
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	11	8823998	11	1.0	0.10	8823998
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	120	8824109	79	1.0	0.20	8824109
Dissolved Chloride (Cl <sup>-</sup> )	mg/L	39	8823994	4.6	1.0	0.30	8823994
Nitrite (N)	mg/L	<0.010	8823978	<0.010	0.010	0.0020	8823978
Nitrate (N)	mg/L	<0.10	8823978	0.12	0.10	0.010	8823978
Nitrate + Nitrite (N)	mg/L	<0.10	8823978	0.12	0.10	0.010	8823978
<b>Petroleum Hydrocarbons</b>							
Total Oil & Grease	mg/L	<0.50	8836996	<0.50	0.50	0.10	8836996
Total Oil & Grease Mineral/Synthetic	mg/L	<0.50	8837000	<0.50	0.50	0.10	8837000
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable							



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL671				WNL671			
Sampling Date		2023/07/23 17:30				2023/07/23 17:30			
COC Number		n/a				n/a			
	UNITS	RBL-2	RDL	MDL	QC Batch	RBL-2 Lab-Dup	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.000026 (1)	0.000026	0.000013	8827927				
Total Selenium (Se)	ug/L	<1.0 (1)	1.0	0.25	8828011				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927				
Total Aluminum (Al)	ug/L	6.7	4.9	2.0	8828011				
Dissolved Antimony (Sb)	ug/L	1.8	0.50	N/A	8843927				
Total Antimony (Sb)	ug/L	1.8	0.50	0.30	8828011				
Dissolved Arsenic (As)	ug/L	1.3	1.0	N/A	8843927				
Total Arsenic (As)	ug/L	1.3	1.0	0.50	8828011				
Dissolved Barium (Ba)	ug/L	39	2.0	2.0	8843927				
Total Barium (Ba)	ug/L	43	2.0	0.50	8828011				
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927				
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011				
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927				
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011				
Dissolved Boron (B)	ug/L	130	10	N/A	8843927				
Total Boron (B)	ug/L	130	10	0.30	8828011				
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927				
Total Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8828011				
Dissolved Calcium (Ca)	ug/L	98000	200	N/A	8843927				
Total Calcium (Ca)	ug/L	94000	200	50	8828011				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927				
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011				
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927				
Total Cobalt (Co)	ug/L	0.51	0.50	0.10	8828011				
Dissolved Copper (Cu)	ug/L	1.7	0.90	0.90	8843927				
Total Copper (Cu)	ug/L	2.1	0.90	0.50	8828011				
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL671				WNL671			
<b>Sampling Date</b>		2023/07/23 17:30				2023/07/23 17:30			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-2</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-2 Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
Total Iron (Fe)	ug/L	<100	100	10	8828011				
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927				
Total Lead (Pb)	ug/L	0.52	0.50	0.10	8828011				
Dissolved Lithium (Li)	ug/L	6.0	5.0	N/A	8843927				
Total Lithium (Li)	ug/L	6.1	5.0	0.50	8828011				
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843927				
Total Magnesium (Mg)	ug/L	14000	50	20	8828011				
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927				
Total Manganese (Mn)	ug/L	210	2.0	0.50	8828011				
Dissolved Molybdenum (Mo)	ug/L	2.9	0.50	0.50	8843927				
Total Molybdenum (Mo)	ug/L	2.9	0.50	0.20	8828011				
Dissolved Nickel (Ni)	ug/L	1.6	1.0	N/A	8843927				
Total Nickel (Ni)	ug/L	1.9	1.0	0.50	8828011				
Dissolved Phosphorus (P)	ug/L	270	100	N/A	8843927				
Dissolved Potassium (K)	ug/L	13000	200	N/A	8843927				
Total Potassium (K)	ug/L	13000	200	50	8828011				
Dissolved Selenium (Se)	ug/L	<1.0 (1)	1.0	N/A	8843927				
Dissolved Silicon (Si)	ug/L	1300	50	N/A	8843927				
Total Silicon (Si)	ug/L	1300	50	30	8828011				
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927				
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011				
Dissolved Sodium (Na)	ug/L	26000	100	N/A	8843927				
Total Sodium (Na)	ug/L	24000	100	50	8828011				
Dissolved Strontium (Sr)	ug/L	380	1.0	N/A	8843927				
Total Strontium (Sr)	ug/L	360	1.0	0.50	8828011				
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927				
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927				
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL671				WNL671			
<b>Sampling Date</b>		2023/07/23 17:30				2023/07/23 17:30			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-2</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-2 Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927				
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927				
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011				
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927				
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Uranium (U)	ug/L	0.28	0.10	N/A	8843927				
Total Uranium (U)	ug/L	0.31	0.10	0.050	8828011				
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927				
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011				
Dissolved Zinc (Zn)	ug/L	13	5.0	N/A	8843927				
Total Zinc (Zn)	ug/L	25	5.0	3.0	8828011				
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927				
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.000026 (1)	0.000026	0.000013	8825734				
Total Selenium (Se)	ug/L	<1.0 (1)	1.0	0.25	8828011	<1.0 (1)	1.0	0.25	8828011
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927	<4.9	4.9	4.9	8843927
Total Aluminum (Al)	ug/L	9.8	4.9	2.0	8828011	8.0	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	1.0	N/A	8843927	7.6	1.0	N/A	8843927
Total Arsenic (As)	ug/L	1.5	1.0	0.50	8828011	8.8	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	81	2.0	2.0	8843927	4.5	2.0	2.0	8843927
Total Barium (Ba)	ug/L	96	2.0	0.50	8828011	12	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927	<0.40	0.40	0.40	8843927
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	77	10	N/A	8843927	400	10	N/A	8843927
Total Boron (B)	ug/L	81	10	0.30	8828011	430	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Cadmium (Cd)	ug/L	0.17	0.090	0.090	8828011	<0.090	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	56000	200	N/A	8843927	92000	200	N/A	8843927
Total Calcium (Ca)	ug/L	54000	200	50	8828011	86000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927	9.2	0.50	N/A	8843927
Total Cobalt (Co)	ug/L	1.3	0.50	0.10	8828011	8.5	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	2.2	0.90	0.90	8843927	1.2	0.90	0.90	8843927
Total Copper (Cu)	ug/L	2.5	0.90	0.50	8828011	2.8	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927	4400	100	N/A	8843927
Total Iron (Fe)	ug/L	910	100	10	8828011	7500	100	10	8828011
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									
(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Lead (Pb)	ug/L	2.0	0.50	0.10	8828011	1.4	0.50	0.10	8828011
Dissolved Lithium (Li)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843927	14000	50	N/A	8843927
Total Magnesium (Mg)	ug/L	13000	50	20	8828011	13000	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927	470	2.0	N/A	8843927
Total Manganese (Mn)	ug/L	430	2.0	0.50	8828011	440	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	2.8	0.50	0.50	8843927	2.4	0.50	0.50	8843927
Total Molybdenum (Mo)	ug/L	2.8	0.50	0.20	8828011	2.7	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	1.4	1.0	N/A	8843927	17	1.0	N/A	8843927
Total Nickel (Ni)	ug/L	1.9	1.0	0.50	8828011	16	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	100	N/A	8843927	1600	100	N/A	8843927
Dissolved Potassium (K)	ug/L	5700	200	N/A	8843927	24000	200	N/A	8843927
Total Potassium (K)	ug/L	5000	200	50	8828011	22000	200	50	8828011
Dissolved Selenium (Se)	ug/L	<1.0 (1)	1.0	N/A	8843927	<1.0 (1)	1.0	N/A	8843927
Dissolved Silicon (Si)	ug/L	880	50	N/A	8843927	2500	50	N/A	8843927
Total Silicon (Si)	ug/L	970	50	30	8828011	2400	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	14000	100	N/A	8843927	57000	100	N/A	8843927
Total Sodium (Na)	ug/L	12000	100	50	8828011	51000	100	50	8828011
Dissolved Strontium (Sr)	ug/L	150	1.0	N/A	8843927	200	1.0	N/A	8843927
Total Strontium (Sr)	ug/L	140	1.0	0.50	8828011	180	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927	<0.050	0.050	N/A	8843927
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									
(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL672				WNL673			
Sampling Date		2023/07/23 15:30				2023/07/23 16:30			
COC Number		n/a				n/a			
	UNITS	RBL-3	RDL	MDL	QC Batch	AEC1-GW1	RDL	MDL	QC Batch
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011	<5.0	5.0	4.0	8828011
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.36	0.10	N/A	8843927	0.21	0.10	N/A	8843927
Total Uranium (U)	ug/L	0.33	0.10	0.050	8828011	0.21	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927	2.0	0.50	0.50	8843927
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011	2.4	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Zinc (Zn)	ug/L	15	5.0	3.0	8828011	6.7	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									





### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674				WNL674			
Sampling Date		2023/07/24 13:00				2023/07/24 13:00			
COC Number		n/a				n/a			
	UNITS	RBL-4	RDL	MDL	QC Batch	RBL-4 Lab-Dup	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	1.6	0.50	0.30	8825340				
Mercury (Hg)	mg/L	<0.000026 (1)	0.000026	0.000013	8825734				
Mercury (Hg)	ug/L	<0.01	0.01	0.004	8887279				
Total Selenium (Se)	ug/L	0.08	0.05	0.04	8888725	0.07	0.05	0.04	8888725
Dissolved Aluminum (Al)	ug/L	6.5	4.9	4.9	8843927				
Total Aluminum (Al)	ug/L	23	4.9	2.0	8828011				
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	N/A	8843927				
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011				
Dissolved Arsenic (As)	ug/L	<1.0	1.0	N/A	8843927				
Total Arsenic (As)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Barium (Ba)	ug/L	72	2.0	2.0	8843927				
Total Barium (Ba)	ug/L	84	2.0	0.50	8828011				
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927				
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011				
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927				
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011				
Dissolved Boron (B)	ug/L	45	10	N/A	8843927				
Total Boron (B)	ug/L	45	10	0.30	8828011				
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927				
Total Cadmium (Cd)	ug/L	0.091	0.090	0.090	8828011				
Dissolved Calcium (Ca)	ug/L	29000	200	N/A	8843927				
Total Calcium (Ca)	ug/L	33000	200	50	8828011				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927				
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011				
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927				
Total Cobalt (Co)	ug/L	<0.50	0.50	0.10	8828011				
Dissolved Copper (Cu)	ug/L	2.8	0.90	0.90	8843927				
Total Copper (Cu)	ug/L	2.9	0.90	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL674				WNL674			
Sampling Date		2023/07/24 13:00				2023/07/24 13:00			
COC Number		n/a				n/a			
	UNITS	RBL-4	RDL	MDL	QC Batch	RBL-4 Lab-Dup	RDL	MDL	QC Batch
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927				
Total Iron (Fe)	ug/L	<100	100	10	8828011				
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927				
Total Lead (Pb)	ug/L	1.3	0.50	0.10	8828011				
Dissolved Lithium (Li)	ug/L	<5.0	5.0	N/A	8843927				
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011				
Dissolved Magnesium (Mg)	ug/L	10000	50	N/A	8843927				
Total Magnesium (Mg)	ug/L	10000	50	20	8828011				
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927				
Total Manganese (Mn)	ug/L	3.7	2.0	0.50	8828011				
Dissolved Molybdenum (Mo)	ug/L	0.89	0.50	0.50	8843927				
Total Molybdenum (Mo)	ug/L	0.74	0.50	0.20	8828011				
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	N/A	8843927				
Total Nickel (Ni)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Phosphorus (P)	ug/L	<100	100	N/A	8843927				
Dissolved Potassium (K)	ug/L	1400	200	N/A	8843927				
Total Potassium (K)	ug/L	1100	200	50	8828011				
Dissolved Selenium (Se)	ug/L	<1.0 (1)	1.0	N/A	8843927				
Dissolved Silicon (Si)	ug/L	240	50	N/A	8843927				
Total Silicon (Si)	ug/L	360	50	30	8828011				
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927				
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011				
Dissolved Sodium (Na)	ug/L	15000	100	N/A	8843927				
Total Sodium (Na)	ug/L	15000	100	50	8828011				
Dissolved Strontium (Sr)	ug/L	87	1.0	N/A	8843927				
Total Strontium (Sr)	ug/L	88	1.0	0.50	8828011				
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927				
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL674				WNL674			
<b>Sampling Date</b>		2023/07/24 13:00				2023/07/24 13:00			
<b>COC Number</b>		n/a				n/a			
	<b>UNITS</b>	<b>RBL-4</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>	<b>RBL-4 Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011				
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927				
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927				
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011				
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927				
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Uranium (U)	ug/L	0.18	0.10	N/A	8843927				
Total Uranium (U)	ug/L	0.17	0.10	0.050	8828011				
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927				
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011				
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	N/A	8843927				
Total Zinc (Zn)	ug/L	11	5.0	3.0	8828011				
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927				
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL675				WNL675			
Sampling Date		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a				n/a			
	UNITS	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	0.51	0.50	0.30	8825340				
Mercury (Hg)	mg/L	<0.000026 (1)	0.000026	0.000013	8827927				
Mercury (Hg)	ug/L	<0.01	0.01	0.004	8887279				
Total Selenium (Se)	ug/L	0.06	0.05	0.04	8888725				
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843936	<4.9	4.9	4.9	8843936
Total Aluminum (Al)	ug/L	50	4.9	2.0	8828011				
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011				
Dissolved Arsenic (As)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Arsenic (As)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Barium (Ba)	ug/L	56	2.0	2.0	8843936	54	2.0	2.0	8843936
Total Barium (Ba)	ug/L	56	2.0	0.50	8828011				
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843936	<0.40	0.40	0.40	8843936
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011				
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011				
Dissolved Boron (B)	ug/L	38	10	N/A	8843936	37	10	N/A	8843936
Total Boron (B)	ug/L	40	10	0.30	8828011				
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843936	<0.090	0.090	0.081	8843936
Total Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8828011				
Dissolved Calcium (Ca)	ug/L	35000	200	N/A	8843936	35000	200	N/A	8843936
Total Calcium (Ca)	ug/L	37000	200	50	8828011				
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011				
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Cobalt (Co)	ug/L	<0.50	0.50	0.10	8828011				
Dissolved Copper (Cu)	ug/L	<0.90	0.90	0.90	8843936	<0.90	0.90	0.90	8843936
Total Copper (Cu)	ug/L	<0.90	0.90	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL675				WNL675			
Sampling Date		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a				n/a			
	UNITS	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843936	<100	100	N/A	8843936
Total Iron (Fe)	ug/L	<100	100	10	8828011				
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843936	<0.50	0.50	N/A	8843936
Total Lead (Pb)	ug/L	<0.50	0.50	0.10	8828011				
Dissolved Lithium (Li)	ug/L	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011				
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843936	13000	50	N/A	8843936
Total Magnesium (Mg)	ug/L	14000	50	20	8828011				
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843936	<2.0	2.0	N/A	8843936
Total Manganese (Mn)	ug/L	2.6	2.0	0.50	8828011				
Dissolved Molybdenum (Mo)	ug/L	0.54	0.50	0.50	8843936	0.56	0.50	0.50	8843936
Total Molybdenum (Mo)	ug/L	0.53	0.50	0.20	8828011				
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Nickel (Ni)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Phosphorus (P)	ug/L	<100	100	N/A	8843936	<100	100	N/A	8843936
Dissolved Potassium (K)	ug/L	1400	200	N/A	8843936	1400	200	N/A	8843936
Total Potassium (K)	ug/L	1500	200	50	8828011				
Dissolved Selenium (Se)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Dissolved Silicon (Si)	ug/L	200	50	N/A	8843936	190	50	N/A	8843936
Total Silicon (Si)	ug/L	290	50	30	8828011				
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843936	<0.090	0.090	0.081	8843936
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011				
Dissolved Sodium (Na)	ug/L	20000	100	N/A	8843936	21000	100	N/A	8843936
Total Sodium (Na)	ug/L	21000	100	50	8828011				
Dissolved Strontium (Sr)	ug/L	170	1.0	N/A	8843936	160	1.0	N/A	8843936
Total Strontium (Sr)	ug/L	150	1.0	0.50	8828011				
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011				
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843936	<0.050	0.050	N/A	8843936
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011				
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									
N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL675				WNL675			
Sampling Date		2023/07/24 11:50				2023/07/24 11:50			
COC Number		n/a				n/a			
	UNITS	RBL-8	RDL	MDL	QC Batch	RBL-8 Lab-Dup	RDL	MDL	QC Batch
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011				
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011				
Dissolved Uranium (U)	ug/L	0.21	0.10	N/A	8843936	0.20	0.10	N/A	8843936
Total Uranium (U)	ug/L	0.17	0.10	0.050	8828011				
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843936	<0.50	0.50	0.50	8843936
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011				
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	N/A	8843936	<5.0	5.0	N/A	8843936
Total Zinc (Zn)	ug/L	<5.0	5.0	3.0	8828011				
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843936	<1.0	1.0	N/A	8843936
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677				WNL678			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30				2023/07/23 15:50			
COC Number		n/a	n/a				n/a			
	UNITS	RBL-13	RBL-16	RDL	MDL	QC Batch	RBL-DUPA	RDL	MDL	QC Batch

<b>Metals</b>										
Chromium (VI)	ug/L	<0.50	<0.50	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.000026 (1)	<0.000026 (1)	0.000026	0.000013	8825734	<0.000026 (1)	0.000026	0.000013	8827927
Mercury (Hg)	ug/L	<0.01	<0.01	0.01	0.004	8887279				
Total Selenium (Se)	ug/L	<0.05	<0.05	0.05	0.04	8888725	<1.0 (1)	1.0	0.25	8828011
Dissolved Aluminum (Al)	ug/L	<4.9	<4.9	4.9	4.9	8843927	<4.9	4.9	4.9	8843936
Total Aluminum (Al)	ug/L	14	5.6	4.9	2.0	8828011	9.1	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843936
Total Antimony (Sb)	ug/L	<0.50	<0.50	0.50	0.30	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843936
Total Arsenic (As)	ug/L	<1.0	<1.0	1.0	0.50	8828011	1.6	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	4.3	4.5	2.0	2.0	8843927	78	2.0	2.0	8843936
Total Barium (Ba)	ug/L	4.5	4.7	2.0	0.50	8828011	95	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	0.40	0.40	8843927	<0.40	0.40	0.40	8843936
Total Beryllium (Be)	ug/L	<0.40	<0.40	0.40	0.10	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843936
Total Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	0.070	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	19	21	10	N/A	8843927	82	10	N/A	8843936
Total Boron (B)	ug/L	19	19	10	0.30	8828011	80	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843936
Total Cadmium (Cd)	ug/L	<0.090	<0.090	0.090	0.090	8828011	0.18	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	32000	31000	200	N/A	8843927	50000	200	N/A	8843936
Total Calcium (Ca)	ug/L	31000	32000	200	50	8828011	51000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843936
Total Chromium (Cr)	ug/L	<5.0	<5.0	5.0	5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843936
Total Cobalt (Co)	ug/L	<0.50	<0.50	0.50	0.10	8828011	1.2	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	<0.90	<0.90	0.90	0.90	8843927	1.1	0.90	0.90	8843936
Total Copper (Cu)	ug/L	<0.90	<0.90	0.90	0.50	8828011	2.5	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	<100	100	N/A	8843927	<100	100	N/A	8843936

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.





Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677				WNL678			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30				2023/07/23 15:50			
COC Number		n/a	n/a				n/a			
	UNITS	RBL-13	RBL-16	RDL	MDL	QC Batch	RBL-DUPA	RDL	MDL	QC Batch
Total Iron (Fe)	ug/L	<100	<100	100	10	8828011	870	100	10	8828011
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843936
Total Lead (Pb)	ug/L	<0.50	<0.50	0.50	0.10	8828011	1.9	0.50	0.10	8828011
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843936
Total Lithium (Li)	ug/L	<5.0	<5.0	5.0	0.50	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	4800	4800	50	N/A	8843927	13000	50	N/A	8843936
Total Magnesium (Mg)	ug/L	4500	4700	50	20	8828011	13000	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	<2.0	2.0	N/A	8843927	<2.0	2.0	N/A	8843936
Total Manganese (Mn)	ug/L	<2.0	<2.0	2.0	0.50	8828011	440	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	<0.50	<0.50	0.50	0.50	8843927	2.6	0.50	0.50	8843936
Total Molybdenum (Mo)	ug/L	<0.50	<0.50	0.50	0.20	8828011	2.8	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	1.0	N/A	8843927	1.7	1.0	N/A	8843936
Total Nickel (Ni)	ug/L	<1.0	<1.0	1.0	0.50	8828011	1.8	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	<100	100	N/A	8843927	<100	100	N/A	8843936
Dissolved Potassium (K)	ug/L	710	680	200	N/A	8843927	4900	200	N/A	8843936
Total Potassium (K)	ug/L	650	650	200	50	8828011	4800	200	50	8828011
Dissolved Selenium (Se)	ug/L	<1.0 (1)	<1.0 (1)	1.0	N/A	8843927	<1.0	1.0	N/A	8843936
Dissolved Silicon (Si)	ug/L	270	260	50	N/A	8843927	840	50	N/A	8843936
Total Silicon (Si)	ug/L	300	270	50	30	8828011	930	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843936
Total Silver (Ag)	ug/L	<0.090	<0.090	0.090	0.070	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	5200	5000	100	N/A	8843927	13000	100	N/A	8843936
Total Sodium (Na)	ug/L	5000	5000	100	50	8828011	13000	100	50	8828011
Dissolved Strontium (Sr)	ug/L	84	83	1.0	N/A	8843927	150	1.0	N/A	8843936
Total Strontium (Sr)	ug/L	78	79	1.0	0.50	8828011	140	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843936
Total Tellurium (Te)	ug/L	<1.0	<1.0	1.0	0.70	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	N/A	8843927	<0.050	0.050	N/A	8843936
Total Thallium (Tl)	ug/L	<0.050	<0.050	0.050	0.020	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843936

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL676	WNL677				WNL678			
Sampling Date		2023/07/24 11:15	2023/07/24 10:30				2023/07/23 15:50			
COC Number		n/a	n/a				n/a			
	UNITS	RBL-13	RBL-16	RDL	MDL	QC Batch	RBL-DUPA	RDL	MDL	QC Batch
Total Tin (Sn)	ug/L	<1.0	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843936
Total Titanium (Ti)	ug/L	<5.0	<5.0	5.0	4.0	8828011	<5.0	5.0	4.0	8828011
Dissolved Tungsten (W)	ug/L	<1.0	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843936
Total Tungsten (W)	ug/L	<1.0	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.21	0.21	0.10	N/A	8843927	0.34	0.10	N/A	8843936
Total Uranium (U)	ug/L	0.19	0.19	0.10	0.050	8828011	0.33	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	0.50	0.50	8843927	<0.50	0.50	0.50	8843936
Total Vanadium (V)	ug/L	<0.50	<0.50	0.50	0.40	8828011	<0.50	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843936
Total Zinc (Zn)	ug/L	<5.0	<5.0	5.0	3.0	8828011	15	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843936
Total Zirconium (Zr)	ug/L	<1.0	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL679				WNL680			
Sampling Date		2023/07/24 11:20				2023/07/24 11:55			
COC Number		n/a				n/a			
	UNITS	RBL-DUPB	RDL	MDL	QC Batch	RBL-DUPC	RDL	MDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	0.51	0.50	0.30	8825340	<0.50	0.50	0.30	8825340
Mercury (Hg)	mg/L	<0.000026 (1)	0.000026	0.000013	8825734	<0.000026 (1)	0.000026	0.000013	8827927
Mercury (Hg)	ug/L					<0.01	0.01	0.004	8887279
Total Selenium (Se)	ug/L	<1.0 (1)	1.0	0.25	8828011	<0.05	0.05	0.04	8888725
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	4.9	8843927	<4.9	4.9	4.9	8843927
Total Aluminum (Al)	ug/L	42	4.9	2.0	8828011	14	4.9	2.0	8828011
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011	<0.50	0.50	0.30	8828011
Dissolved Arsenic (As)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Arsenic (As)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Barium (Ba)	ug/L	53	2.0	2.0	8843927	4.7	2.0	2.0	8843927
Total Barium (Ba)	ug/L	57	2.0	0.50	8828011	5.0	2.0	0.50	8828011
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	0.40	8843927	<0.40	0.40	0.40	8843927
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011	<0.40	0.40	0.10	8828011
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011	<1.0	1.0	0.070	8828011
Dissolved Boron (B)	ug/L	37	10	N/A	8843927	18	10	N/A	8843927
Total Boron (B)	ug/L	38	10	0.30	8828011	19	10	0.30	8828011
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8828011	<0.090	0.090	0.090	8828011
Dissolved Calcium (Ca)	ug/L	35000	200	N/A	8843927	32000	200	N/A	8843927
Total Calcium (Ca)	ug/L	38000	200	50	8828011	30000	200	50	8828011
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011	<5.0	5.0	5.0	8828011
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Cobalt (Co)	ug/L	<0.50	0.50	0.10	8828011	<0.50	0.50	0.10	8828011
Dissolved Copper (Cu)	ug/L	<0.90	0.90	0.90	8843927	<0.90	0.90	0.90	8843927
Total Copper (Cu)	ug/L	<0.90	0.90	0.50	8828011	<0.90	0.90	0.50	8828011
Dissolved Iron (Fe)	ug/L	<100	100	N/A	8843927	<100	100	N/A	8843927
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									
(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.									



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL679				WNL680			
Sampling Date		2023/07/24 11:20				2023/07/24 11:55			
COC Number		n/a				n/a			
	UNITS	RBL-DUPB	RDL	MDL	QC Batch	RBL-DUPC	RDL	MDL	QC Batch
Total Iron (Fe)	ug/L	<100	100	10	8828011	<100	100	10	8828011
Dissolved Lead (Pb)	ug/L	<0.50	0.50	N/A	8843927	<0.50	0.50	N/A	8843927
Total Lead (Pb)	ug/L	<0.50	0.50	0.10	8828011	<0.50	0.50	0.10	8828011
Dissolved Lithium (Li)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011	<5.0	5.0	0.50	8828011
Dissolved Magnesium (Mg)	ug/L	14000	50	N/A	8843927	4800	50	N/A	8843927
Total Magnesium (Mg)	ug/L	15000	50	20	8828011	4600	50	20	8828011
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	N/A	8843927	<2.0	2.0	N/A	8843927
Total Manganese (Mn)	ug/L	2.9	2.0	0.50	8828011	<2.0	2.0	0.50	8828011
Dissolved Molybdenum (Mo)	ug/L	0.62	0.50	0.50	8843927	<0.50	0.50	0.50	8843927
Total Molybdenum (Mo)	ug/L	0.57	0.50	0.20	8828011	<0.50	0.50	0.20	8828011
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Nickel (Ni)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Phosphorus (P)	ug/L	<100	100	N/A	8843927	<100	100	N/A	8843927
Dissolved Potassium (K)	ug/L	1600	200	N/A	8843927	700	200	N/A	8843927
Total Potassium (K)	ug/L	1600	200	50	8828011	670	200	50	8828011
Dissolved Selenium (Se)	ug/L	<1.0 (1)	1.0	N/A	8843927	<1.0 (1)	1.0	N/A	8843927
Dissolved Silicon (Si)	ug/L	210	50	N/A	8843927	280	50	N/A	8843927
Total Silicon (Si)	ug/L	290	50	30	8828011	290	50	30	8828011
Dissolved Silver (Ag)	ug/L	<0.090	0.090	0.081	8843927	<0.090	0.090	0.081	8843927
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011	<0.090	0.090	0.070	8828011
Dissolved Sodium (Na)	ug/L	22000	100	N/A	8843927	5100	100	N/A	8843927
Total Sodium (Na)	ug/L	22000	100	50	8828011	5100	100	50	8828011
Dissolved Strontium (Sr)	ug/L	160	1.0	N/A	8843927	85	1.0	N/A	8843927
Total Strontium (Sr)	ug/L	160	1.0	0.50	8828011	78	1.0	0.50	8828011
Dissolved Tellurium (Te)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011	<1.0	1.0	0.70	8828011
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	N/A	8843927	<0.050	0.050	N/A	8843927
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011	<0.050	0.050	0.020	8828011
Dissolved Tin (Sn)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) RDL was adjusted by client request. Results between the MDL and RDL may have higher uncertainty.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL679				WNL680			
Sampling Date		2023/07/24 11:20				2023/07/24 11:55			
COC Number		n/a				n/a			
	UNITS	RBL-DUPB	RDL	MDL	QC Batch	RBL-DUPC	RDL	MDL	QC Batch
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011	<5.0	5.0	4.0	8828011
Dissolved Tungsten (W)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
Dissolved Uranium (U)	ug/L	0.18	0.10	N/A	8843927	0.21	0.10	N/A	8843927
Total Uranium (U)	ug/L	0.16	0.10	0.050	8828011	0.20	0.10	0.050	8828011
Dissolved Vanadium (V)	ug/L	<0.50	0.50	0.50	8843927	<0.50	0.50	0.50	8843927
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011	<0.50	0.50	0.40	8828011
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	N/A	8843927	<5.0	5.0	N/A	8843927
Total Zinc (Zn)	ug/L	<5.0	5.0	3.0	8828011	<5.0	5.0	3.0	8828011
Dissolved Zirconium (Zr)	ug/L	<1.0	1.0	N/A	8843927	<1.0	1.0	N/A	8843927
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		WNL680			
Sampling Date		2023/07/24 11:55			
COC Number		n/a			
	UNITS	RBL-DUPC Lab-Dup	RDL	MDL	QC Batch
<b>Metals</b>					
Total Selenium (Se)	ug/L	<1.0	1.0	0.25	8828011
Total Aluminum (Al)	ug/L	14	4.9	2.0	8828011
Total Antimony (Sb)	ug/L	<0.50	0.50	0.30	8828011
Total Arsenic (As)	ug/L	<1.0	1.0	0.50	8828011
Total Barium (Ba)	ug/L	4.8	2.0	0.50	8828011
Total Beryllium (Be)	ug/L	<0.40	0.40	0.10	8828011
Total Bismuth (Bi)	ug/L	<1.0	1.0	0.070	8828011
Total Boron (B)	ug/L	19	10	0.30	8828011
Total Cadmium (Cd)	ug/L	<0.090	0.090	0.090	8828011
Total Calcium (Ca)	ug/L	32000	200	50	8828011
Total Chromium (Cr)	ug/L	<5.0	5.0	5.0	8828011
Total Cobalt (Co)	ug/L	<0.50	0.50	0.10	8828011
Total Copper (Cu)	ug/L	<0.90	0.90	0.50	8828011
Total Iron (Fe)	ug/L	<100	100	10	8828011
Total Lead (Pb)	ug/L	<0.50	0.50	0.10	8828011
Total Lithium (Li)	ug/L	<5.0	5.0	0.50	8828011
Total Magnesium (Mg)	ug/L	4500	50	20	8828011
Total Manganese (Mn)	ug/L	<2.0	2.0	0.50	8828011
Total Molybdenum (Mo)	ug/L	<0.50	0.50	0.20	8828011
Total Nickel (Ni)	ug/L	<1.0	1.0	0.50	8828011
Total Potassium (K)	ug/L	650	200	50	8828011
Total Silicon (Si)	ug/L	300	50	30	8828011
Total Silver (Ag)	ug/L	<0.090	0.090	0.070	8828011
Total Sodium (Na)	ug/L	4900	100	50	8828011
Total Strontium (Sr)	ug/L	78	1.0	0.50	8828011
Total Tellurium (Te)	ug/L	<1.0	1.0	0.70	8828011
Total Thallium (Tl)	ug/L	<0.050	0.050	0.020	8828011
Total Tin (Sn)	ug/L	<1.0	1.0	0.50	8828011
Total Titanium (Ti)	ug/L	<5.0	5.0	4.0	8828011
Total Tungsten (W)	ug/L	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Lab-Dup = Laboratory Initiated Duplicate					



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

<b>Bureau Veritas ID</b>		WNL680			
<b>Sampling Date</b>		2023/07/24 11:55			
<b>COC Number</b>		n/a			
	<b>UNITS</b>	<b>RBL-DUPC Lab-Dup</b>	<b>RDL</b>	<b>MDL</b>	<b>QC Batch</b>
Total Uranium (U)	ug/L	0.20	0.10	0.050	8828011
Total Vanadium (V)	ug/L	<0.50	0.50	0.40	8828011
Total Zinc (Zn)	ug/L	<5.0	5.0	3.0	8828011
Total Zirconium (Zr)	ug/L	<1.0	1.0	0.50	8828011
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate					





Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL671  
**Sample ID:** RBL-2  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/02	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL671 Dup  
**Sample ID:** RBL-2  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck

**Bureau Veritas ID:** WNL672  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL672  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8827102	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL672 Dup  
**Sample ID:** RBL-3  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu

**Bureau Veritas ID:** WNL673  
**Sample ID:** AEC1-GW1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/09	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/08	2023/08/08	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL673  
**Sample ID:** AEC1-GW1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL674  
**Sample ID:** RBL-4  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Mercury (low level)	CV/AA	8887279	2023/08/30	2023/08/30	Gagandeep Rai
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Low Level Total Metals in Water by ICPMS	ICP1/MS	8888725	2023/08/31	2023/08/31	Thuy Linh Nguyen
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL674 Dup  
**Sample ID:** RBL-4  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Low Level Total Metals in Water by ICPMS	ICP1/MS	8888725	2023/08/31	2023/08/31	Thuy Linh Nguyen

**Bureau Veritas ID:** WNL675  
**Sample ID:** RBL-8  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/02	2023/08/02	Jaswinder Kaur
Mercury (low level)	CV/AA	8887279	2023/08/30	2023/08/30	Gagandeep Rai
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad
Low Level Total Metals in Water by ICPMS	ICP1/MS	8888725	2023/08/31	2023/08/31	Thuy Linh Nguyen
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/14	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/14	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8827102	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL675 Dup  
**Sample ID:** RBL-8  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL676  
**Sample ID:** RBL-13  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824319	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824320	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Mercury (low level)	CV/AA	8887279	2023/08/30	2023/08/30	Gagandeep Rai
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Low Level Total Metals in Water by ICPMS	ICP1/MS	8888725	2023/08/31	2023/08/31	Thuy Linh Nguyen
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824318	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL677  
**Sample ID:** RBL-16  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833432	N/A	2023/08/06	Haibin Wu
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Mercury (low level)	CV/AA	8887279	2023/08/30	2023/08/30	Gagandeep Rai
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Low Level Total Metals in Water by ICPMS	ICP1/MS	8888725	2023/08/31	2023/08/31	Thuy Linh Nguyen
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL677  
**Sample ID:** RBL-16  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL678  
**Sample ID:** RBL-DUPA  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO3)		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8827927	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843936	2023/08/10	2023/08/14	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/14	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/14	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall





Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL678 Dup  
**Sample ID:** RBL-DUPA  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	8824309	N/A	2023/08/01	Chandra Nandlal

**Bureau Veritas ID:** WNL679  
**Sample ID:** RBL-DUPB  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk
Mercury in Water by CVAA	CV/AA	8825734	2023/08/01	2023/08/02	Jaswinder Kaur
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841754	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH <sub>4</sub>	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL680  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8824109	N/A	2023/08/01	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	8822389	N/A	2023/08/02	Automated Statchk
Chloride by Automated Colourimetry	KONE	8823994	N/A	2023/08/02	Massarat Jan
Conductivity	AT	8824108	N/A	2023/08/01	Yogesh Patel
Chromium (VI) in Water	IC	8825340	N/A	2023/08/03	Theodora Luck
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/05	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
Hardness (calculated as CaCO <sub>3</sub> )		8822385	N/A	2023/08/04	Automated Statchk





Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL680  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury in Water by CVAA	CV/AA	8827927	2023/08/01	2023/08/02	Jaswinder Kaur
Mercury (low level)	CV/AA	8887279	2023/08/30	2023/08/30	Gagandeep Rai
Lab Filtered Metals by ICPMS	ICP/MS	8843927	2023/08/10	2023/08/11	Prempal Bhatti
Low Level Total Metals in Water by ICPMS	ICP1/MS	8888725	2023/08/31	2023/08/31	Thuy Linh Nguyen
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
Ion Balance (% Difference)	CALC	8822382	N/A	2023/08/11	Automated Statchk
Anion and Cation Sum	CALC	8822383	N/A	2023/08/11	Automated Statchk
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen
Phenols (4-AAP)	TECH/PHEN	8841753	N/A	2023/08/08	Taylor Mullings
Total Ammonia-N	LACH/NH4	8828243	N/A	2023/08/03	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8823978	N/A	2023/08/01	Chandra Nandlal
Total Oil and Grease	BAL	8836996	2023/08/06	2023/08/06	Navneet Singh
pH	AT	8824099	2023/07/31	2023/08/01	Yogesh Patel
Sulphate by Automated Turbidimetry	KONE	8823998	N/A	2023/08/02	Massarat Jan
Total Phosphorus (Colourimetric)	SKAL/P	8826856	2023/08/01	2023/08/03	Muskan
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8837000	2023/08/06	2023/08/06	Navneet Singh
Total Suspended Solids	BAL	8824642	2023/08/01	2023/08/02	Shaneil Hall

**Bureau Veritas ID:** WNL680 Dup  
**Sample ID:** RBL-DUPC  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Metals Analysis by ICPMS	ICP/MS	8828011	2023/08/02	2023/08/02	Thuy Linh Nguyen
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen

**Bureau Veritas ID:** WNL681  
**Sample ID:** FEILD BLANK 1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen

**Bureau Veritas ID:** WNL682  
**Sample ID:** TRIP BLANK 1  
**Matrix:** Water

**Collected:** 2023/07/23  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngondou



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## TEST SUMMARY

**Bureau Veritas ID:** WNL683  
**Sample ID:** FEILD BLANK 2  
**Matrix:** Water

**Collected:** 2023/07/24  
**Shipped:**  
**Received:** 2023/07/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	8833426	N/A	2023/08/04	Lincoln Ramdahin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	8833643	2023/08/04	2023/08/04	Dennis Ngundu
B[a]P Total Potency Equivalent	GC/MS	8841752	N/A	2023/08/06	Automated Statchk
PAH in Water by GC/MS	GC/MS	8837189	2023/08/05	2023/08/06	Shuang (Jessica) Chen



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

## GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	19.0°C
Package 2	19.0°C
Package 3	18.7°C
Package 4	18.0°C

Revised report (2023/08/31): Includes Se and Hg run by low level methods.

Sample WNL671 [RBL-2] : Nitrite/Nitrate: Due to colour interferences, sample required dilution. Detection limits were adjusted accordingly.

Sample WNL673 [AEC1-GW1] : Sample was analyzed past method specified hold time for PAH in Water by GC/MS due to required re-extraction. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

**Results relate only to the items tested.**



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

## QUALITY ASSURANCE REPORT

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8833426	1,4-Difluorobenzene	2023/08/04	88	70 - 130	89	70 - 130	91	%				
8833426	4-Bromofluorobenzene	2023/08/04	108	70 - 130	108	70 - 130	103	%				
8833426	D10-o-Xylene	2023/08/04	85	70 - 130	88	70 - 130	91	%				
8833426	D4-1,2-Dichloroethane	2023/08/04	98	70 - 130	96	70 - 130	93	%				
8833432	1,4-Difluorobenzene	2023/08/06	101	70 - 130	98	70 - 130	102	%				
8833432	4-Bromofluorobenzene	2023/08/06	101	70 - 130	99	70 - 130	83	%				
8833432	D10-o-Xylene	2023/08/06	97	70 - 130	94	70 - 130	87	%				
8833432	D4-1,2-Dichloroethane	2023/08/06	84	70 - 130	84	70 - 130	95	%				
8833643	o-Terphenyl	2023/08/04	100	60 - 130	97	60 - 130	92	%				
8837189	D10-Anthracene	2023/08/06	118	50 - 130	104	50 - 130	111	%				
8837189	D14-Terphenyl	2023/08/06	123	50 - 130	110	50 - 130	125	%				
8837189	D8-Acenaphthylene	2023/08/06	102	50 - 130	86	50 - 130	74	%				
8837189	D8-Naphthalene	2023/08/06	89	50 - 130	59	50 - 130	43 (1)	%				
8823978	Nitrate (N)	2023/08/01	100	80 - 120	101	80 - 120	<0.10	mg/L	1.1	20		
8823978	Nitrite (N)	2023/08/01	105	80 - 120	107	80 - 120	<0.010	mg/L	NC	20		
8823994	Dissolved Chloride (Cl-)	2023/08/02	NC	80 - 120	100	80 - 120	<1.0	mg/L	3.5	20		
8823998	Dissolved Sulphate (SO4)	2023/08/02	NC	75 - 125	104	80 - 120	<1.0	mg/L	0.82	20		
8824099	pH	2023/08/01			102	98 - 103			0.028	N/A		
8824108	Conductivity	2023/08/01			99	85 - 115	<1.0	umho/cm	0.83	10		
8824109	Alkalinity (Total as CaCO3)	2023/08/01			96	85 - 115	<1.0	mg/L	1.1	20		
8824309	Nitrate (N)	2023/08/01	102	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
8824309	Nitrite (N)	2023/08/01	106	80 - 120	106	80 - 120	<0.010	mg/L	NC	20		
8824318	pH	2023/08/01			102	98 - 103			1.2	N/A		
8824319	Alkalinity (Total as CaCO3)	2023/08/01			97	85 - 115	<1.0	mg/L	1.9	20		
8824320	Conductivity	2023/08/01			101	85 - 115	<1.0	umho/cm	0.25	10		
8824642	Total Suspended Solids	2023/08/02			96	85 - 115	<10	mg/L	3.4	20		
8825340	Chromium (VI)	2023/08/03	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8825734	Mercury (Hg)	2023/08/02	101	75 - 125	103	80 - 120	<0.000026	mg/L	NC	20		
8826856	Total Phosphorus	2023/08/03	100	80 - 120	105	80 - 120	<0.004	mg/L	0.35	20	111	80 - 120
8827102	Total Suspended Solids	2023/08/02			99	85 - 115	<10	mg/L	9.5	20		



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8827927	Mercury (Hg)	2023/08/02	102	75 - 125	103	80 - 120	<0.000026	mg/L	NC	20		
8828011	Total Aluminum (Al)	2023/08/02	102	80 - 120	101	80 - 120	<4.9	ug/L	2.0	20		
8828011	Total Antimony (Sb)	2023/08/02	108	80 - 120	105	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Arsenic (As)	2023/08/02	99	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Barium (Ba)	2023/08/02	101	80 - 120	99	80 - 120	<2.0	ug/L	4.1	20		
8828011	Total Beryllium (Be)	2023/08/02	95	80 - 120	94	80 - 120	<0.40	ug/L	NC	20		
8828011	Total Bismuth (Bi)	2023/08/02	96	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Boron (B)	2023/08/02	96	80 - 120	96	80 - 120	<10	ug/L	1.1	20		
8828011	Total Cadmium (Cd)	2023/08/02	99	80 - 120	99	80 - 120	<0.090	ug/L	NC	20		
8828011	Total Calcium (Ca)	2023/08/02	NC	80 - 120	99	80 - 120	<200	ug/L	6.1	20		
8828011	Total Chromium (Cr)	2023/08/02	92	80 - 120	92	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Cobalt (Co)	2023/08/02	99	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Copper (Cu)	2023/08/02	100	80 - 120	96	80 - 120	<0.90	ug/L	NC	20		
8828011	Total Iron (Fe)	2023/08/02	99	80 - 120	96	80 - 120	<100	ug/L	NC	20		
8828011	Total Lead (Pb)	2023/08/02	100	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Lithium (Li)	2023/08/02	92	80 - 120	95	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Magnesium (Mg)	2023/08/02	98	80 - 120	100	80 - 120	<50	ug/L	1.3	20		
8828011	Total Manganese (Mn)	2023/08/02	96	80 - 120	96	80 - 120	<2.0	ug/L	NC	20		
8828011	Total Molybdenum (Mo)	2023/08/02	99	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Nickel (Ni)	2023/08/02	95	80 - 120	94	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Potassium (K)	2023/08/02	102	80 - 120	100	80 - 120	<200	ug/L	2.2	20		
8828011	Total Selenium (Se)	2023/08/02	105	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Silicon (Si)	2023/08/02	100	80 - 120	97	80 - 120	<50	ug/L	3.4	20		
8828011	Total Silver (Ag)	2023/08/02	94	80 - 120	93	80 - 120	<0.090	ug/L	NC	20		
8828011	Total Sodium (Na)	2023/08/02	100	80 - 120	96	80 - 120	<100	ug/L	3.7	20		
8828011	Total Strontium (Sr)	2023/08/02	95	80 - 120	95	80 - 120	<1.0	ug/L	0.0064	20		
8828011	Total Tellurium (Te)	2023/08/02	106	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Thallium (Tl)	2023/08/02	97	80 - 120	98	80 - 120	<0.050	ug/L	NC	20		
8828011	Total Tin (Sn)	2023/08/02	103	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Titanium (Ti)	2023/08/02	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Tungsten (W)	2023/08/02	101	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8828011	Total Uranium (U)	2023/08/02	100	80 - 120	98	80 - 120	<0.10	ug/L	1.5	20		



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8828011	Total Vanadium (V)	2023/08/02	95	80 - 120	93	80 - 120	<0.50	ug/L	NC	20		
8828011	Total Zinc (Zn)	2023/08/02	99	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8828011	Total Zirconium (Zr)	2023/08/02	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8828243	Total Ammonia-N	2023/08/03	97	75 - 125	102	80 - 120	<0.050	mg/L	0.038	20		
8833426	Benzene	2023/08/05	77	50 - 140	77	50 - 140	<0.20	ug/L	7.6	30		
8833426	Ethylbenzene	2023/08/05	83	50 - 140	85	50 - 140	<0.20	ug/L	NC	30		
8833426	F1 (C6-C10) - BTEX	2023/08/05					<25	ug/L	NC	30		
8833426	F1 (C6-C10)	2023/08/05	89	60 - 140	90	60 - 140	<25	ug/L	NC	30		
8833426	o-Xylene	2023/08/05	82	50 - 140	84	50 - 140	<0.20	ug/L	NC	30		
8833426	p+m-Xylene	2023/08/05	80	50 - 140	86	50 - 140	<0.40	ug/L	NC	30		
8833426	Toluene	2023/08/05	74	50 - 140	75	50 - 140	<0.20	ug/L	NC	30		
8833426	Total Xylenes	2023/08/05					<0.40	ug/L	NC	30		
8833432	Benzene	2023/08/08	NC	50 - 140	84	50 - 140	<0.20	ug/L	7.2	30		
8833432	Ethylbenzene	2023/08/08	109	50 - 140	96	50 - 140	<0.20	ug/L	5.3	30		
8833432	F1 (C6-C10) - BTEX	2023/08/08					<25	ug/L	NC	30		
8833432	F1 (C6-C10)	2023/08/08	112	60 - 140	93	60 - 140	<25	ug/L	0.79	30		
8833432	o-Xylene	2023/08/08	102	50 - 140	93	50 - 140	<0.20	ug/L	4.7	30		
8833432	p+m-Xylene	2023/08/08	100	50 - 140	87	50 - 140	<0.40	ug/L	6.8	30		
8833432	Toluene	2023/08/08	90	50 - 140	78	50 - 140	<0.20	ug/L	3.2	30		
8833432	Total Xylenes	2023/08/08					<0.40	ug/L	5.5	30		
8833643	F2 (C10-C16 Hydrocarbons)	2023/08/04	108	60 - 130	102	60 - 130	<100	ug/L	NC	30		
8833643	F3 (C16-C34 Hydrocarbons)	2023/08/04	109	60 - 130	106	60 - 130	<200	ug/L	NC	30		
8833643	F4 (C34-C50 Hydrocarbons)	2023/08/04	107	60 - 130	104	60 - 130	<200	ug/L	NC	30		
8836996	Total Oil & Grease	2023/08/06			99	85 - 115	<0.50	mg/L	0.51	25		
8837000	Total Oil & Grease Mineral/Synthetic	2023/08/06			97	85 - 115	<0.50	mg/L	0.52	25		
8837189	1-Methylnaphthalene	2023/08/06	64	50 - 130	56	50 - 130	<0.10	ug/L	NC	30		
8837189	2-Methylnaphthalene	2023/08/06	79	50 - 130	69	50 - 130	<0.10	ug/L	NC	30		
8837189	Acenaphthene	2023/08/06	93	50 - 130	83	50 - 130	<0.10	ug/L	NC	30		
8837189	Acenaphthylene	2023/08/06	95	50 - 130	82	50 - 130	<0.10	ug/L	NC	30		
8837189	Acridine	2023/08/06	98	50 - 130	84	50 - 130	<0.040	ug/L	NC	30		
8837189	Anthracene	2023/08/06	85	50 - 130	74	50 - 130	<0.010	ug/L	NC	30		
8837189	Benzo(a)anthracene	2023/08/06	119	50 - 130	99	50 - 130	<0.0085	ug/L	NC	30		



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8837189	Benzo(a)pyrene	2023/08/06	128	50 - 130	110	50 - 130	<0.0075	ug/L	NC	30		
8837189	Benzo(b/j)fluoranthene	2023/08/06	121	50 - 130	103	50 - 130	<0.0085	ug/L	NC	30		
8837189	Benzo(c)phenanthrene	2023/08/06	123	50 - 130	104	50 - 130	<0.050	ug/L	NC	30		
8837189	Benzo(e)pyrene	2023/08/06	106	50 - 130	90	50 - 130	<0.050	ug/L	NC	30		
8837189	Benzo(g,h,i)perylene	2023/08/06	112	50 - 130	91	50 - 130	<0.0085	ug/L	NC	30		
8837189	Benzo(k)fluoranthene	2023/08/06	117	50 - 130	120	50 - 130	<0.0085	ug/L	NC	30		
8837189	Chrysene	2023/08/06	116	50 - 130	100	50 - 130	<0.0085	ug/L	NC	30		
8837189	Dibenzo(a,h)anthracene	2023/08/06	115	50 - 130	89	50 - 130	<0.0075	ug/L	NC	30		
8837189	Fluoranthene	2023/08/06	116	50 - 130	100	50 - 130	<0.010	ug/L	NC	30		
8837189	Fluorene	2023/08/06	103	50 - 130	89	50 - 130	<0.050	ug/L	NC	30		
8837189	Indeno(1,2,3-cd)pyrene	2023/08/06	119	50 - 130	92	50 - 130	<0.0085	ug/L	NC	30		
8837189	Naphthalene	2023/08/06	80	50 - 130	69	50 - 130	<0.10	ug/L	NC	30		
8837189	Perylene	2023/08/06	104	50 - 130	89	50 - 130	<0.050	ug/L	NC	30		
8837189	Phenanthrene	2023/08/06	115	50 - 130	101	50 - 130	<0.050	ug/L	NC	30		
8837189	Pyrene	2023/08/06	115	50 - 130	101	50 - 130	<0.020	ug/L	NC	30		
8837189	Quinoline	2023/08/06	79	50 - 130	79	50 - 130	<0.20	ug/L	NC	30		
8841753	Phenols-4AAP	2023/08/08	99	80 - 120	107	80 - 120	<0.0015	mg/L				
8841754	Phenols-4AAP	2023/08/08	99	80 - 120	108	80 - 120	<0.0015	mg/L				
8843927	Dissolved Aluminum (Al)	2023/08/11	105	80 - 120	99	80 - 120	<4.9	ug/L	NC	20		
8843927	Dissolved Antimony (Sb)	2023/08/11	111	80 - 120	103	80 - 120	<0.50	ug/L	15	20		
8843927	Dissolved Arsenic (As)	2023/08/11	106	80 - 120	100	80 - 120	<1.0	ug/L	0.24	20		
8843927	Dissolved Barium (Ba)	2023/08/11	104	80 - 120	98	80 - 120	<2.0	ug/L	2.6	20		
8843927	Dissolved Beryllium (Be)	2023/08/11	104	80 - 120	96	80 - 120	<0.40	ug/L	NC	20		
8843927	Dissolved Bismuth (Bi)	2023/08/11	103	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Boron (B)	2023/08/11	103	80 - 120	96	80 - 120	<10	ug/L	1.3	20		
8843927	Dissolved Cadmium (Cd)	2023/08/11	106	80 - 120	99	80 - 120	<0.090	ug/L	NC	20		
8843927	Dissolved Calcium (Ca)	2023/08/11	NC	80 - 120	101	80 - 120	<200	ug/L	2.0	20		
8843927	Dissolved Chromium (Cr)	2023/08/11	105	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Cobalt (Co)	2023/08/11	104	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8843927	Dissolved Copper (Cu)	2023/08/11	105	80 - 120	98	80 - 120	<0.90	ug/L	0.35	20		
8843927	Dissolved Iron (Fe)	2023/08/11	107	80 - 120	101	80 - 120	<100	ug/L	NC	20		
8843927	Dissolved Lead (Pb)	2023/08/11	104	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		





Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843927	Dissolved Lithium (Li)	2023/08/11	109	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Magnesium (Mg)	2023/08/11	105	80 - 120	99	80 - 120	<50	ug/L	2.9	20		
8843927	Dissolved Manganese (Mn)	2023/08/11	106	80 - 120	100	80 - 120	<2.0	ug/L	0.0044	20		
8843927	Dissolved Molybdenum (Mo)	2023/08/11	112	80 - 120	103	80 - 120	<0.50	ug/L	2.2	20		
8843927	Dissolved Nickel (Ni)	2023/08/11	104	80 - 120	99	80 - 120	<1.0	ug/L	0.80	20		
8843927	Dissolved Phosphorus (P)	2023/08/11	110	80 - 120	97	80 - 120	<100	ug/L	NC	20		
8843927	Dissolved Potassium (K)	2023/08/11	107	80 - 120	101	80 - 120	<200	ug/L	1.6	20		
8843927	Dissolved Selenium (Se)	2023/08/11	105	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Silicon (Si)	2023/08/11	107	80 - 120	101	80 - 120	<50	ug/L	0.11	20		
8843927	Dissolved Silver (Ag)	2023/08/11	107	80 - 120	100	80 - 120	<0.090	ug/L	NC	20		
8843927	Dissolved Sodium (Na)	2023/08/11	105	80 - 120	99	80 - 120	<100	ug/L	1.4	20		
8843927	Dissolved Strontium (Sr)	2023/08/11	107	80 - 120	102	80 - 120	<1.0	ug/L	2.3	20		
8843927	Dissolved Tellurium (Te)	2023/08/11	106	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Thallium (Tl)	2023/08/11	107	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
8843927	Dissolved Tin (Sn)	2023/08/11	110	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Titanium (Ti)	2023/08/11	105	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Tungsten (W)	2023/08/11	109	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843927	Dissolved Uranium (U)	2023/08/11	105	80 - 120	97	80 - 120	<0.10	ug/L	0.62	20		
8843927	Dissolved Vanadium (V)	2023/08/11	107	80 - 120	100	80 - 120	<0.50	ug/L	2.3	20		
8843927	Dissolved Zinc (Zn)	2023/08/11	104	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843927	Dissolved Zirconium (Zr)	2023/08/11	115	80 - 120	107	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Aluminum (Al)	2023/08/14	105	80 - 120	97	80 - 120	<4.9	ug/L	NC	20		
8843936	Dissolved Antimony (Sb)	2023/08/14	108	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Arsenic (As)	2023/08/14	107	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Barium (Ba)	2023/08/14	105	80 - 120	98	80 - 120	<2.0	ug/L	3.8	20		
8843936	Dissolved Beryllium (Be)	2023/08/14	101	80 - 120	93	80 - 120	<0.40	ug/L	NC	20		
8843936	Dissolved Bismuth (Bi)	2023/08/14	104	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Boron (B)	2023/08/14	103	80 - 120	98	80 - 120	<10	ug/L	1.3	20		
8843936	Dissolved Cadmium (Cd)	2023/08/14	105	80 - 120	98	80 - 120	<0.090	ug/L	NC	20		
8843936	Dissolved Calcium (Ca)	2023/08/14	NC	80 - 120	98	80 - 120	<200	ug/L	0.80	20		
8843936	Dissolved Chromium (Cr)	2023/08/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Cobalt (Co)	2023/08/14	104	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8843936	Dissolved Copper (Cu)	2023/08/14	107	80 - 120	101	80 - 120	<0.90	ug/L	NC	20		
8843936	Dissolved Iron (Fe)	2023/08/14	106	80 - 120	99	80 - 120	<100	ug/L	NC	20		
8843936	Dissolved Lead (Pb)	2023/08/14	103	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Lithium (Li)	2023/08/14	109	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Magnesium (Mg)	2023/08/14	101	80 - 120	102	80 - 120	<50	ug/L	5.6	20		
8843936	Dissolved Manganese (Mn)	2023/08/14	105	80 - 120	98	80 - 120	<2.0	ug/L	NC	20		
8843936	Dissolved Molybdenum (Mo)	2023/08/14	106	80 - 120	96	80 - 120	<0.50	ug/L	3.1	20		
8843936	Dissolved Nickel (Ni)	2023/08/14	105	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Phosphorus (P)	2023/08/14	112	80 - 120	105	80 - 120	<100	ug/L	NC	20		
8843936	Dissolved Potassium (K)	2023/08/14	107	80 - 120	101	80 - 120	<200	ug/L	0.84	20		
8843936	Dissolved Selenium (Se)	2023/08/14	107	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Silicon (Si)	2023/08/14	104	80 - 120	96	80 - 120	<50	ug/L	1.8	20		
8843936	Dissolved Silver (Ag)	2023/08/14	101	80 - 120	96	80 - 120	<0.090	ug/L	NC	20		
8843936	Dissolved Sodium (Na)	2023/08/14	109	80 - 120	98	80 - 120	<100	ug/L	4.6	20		
8843936	Dissolved Strontium (Sr)	2023/08/14	108	80 - 120	101	80 - 120	<1.0	ug/L	0.82	20		
8843936	Dissolved Tellurium (Te)	2023/08/14	107	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Thallium (Tl)	2023/08/14	105	80 - 120	98	80 - 120	<0.050	ug/L	NC	20		
8843936	Dissolved Tin (Sn)	2023/08/14	110	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Titanium (Ti)	2023/08/14	104	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Tungsten (W)	2023/08/14	107	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8843936	Dissolved Uranium (U)	2023/08/14	106	80 - 120	97	80 - 120	<0.10	ug/L	4.4	20		
8843936	Dissolved Vanadium (V)	2023/08/14	104	80 - 120	97	80 - 120	<0.50	ug/L	NC	20		
8843936	Dissolved Zinc (Zn)	2023/08/14	106	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8843936	Dissolved Zirconium (Zr)	2023/08/14	110	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8887279	Mercury (Hg)	2023/08/30	109	75 - 125	109	80 - 120	<0.01	ug/L	NC	20		



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

## QUALITY ASSURANCE REPORT(CONT'D)

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8888725	Total Selenium (Se)	2023/08/31	93	80 - 120	95	80 - 120	<0.05	ug/L	11	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01

BluMetric Environmental Inc  
Client Project #: 230427  
Site Location: RESOLUTE BAY LANDFILL  
Sampler Initials: KC

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

Cristina Carriere, Senior Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

Sandy Yuan, M.Sc., QP, Scientific Specialist

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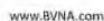
CHAIN OF CUSTODY RECORD

ENV COC - 00014v3

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Invoice Information				Report Information (if differs from invoice)				Project Information							
Company:	BluMetric Environmental Inc			Company:	BluMetric Environmental Inc			Quotation #:	C32559						
Contact Name:	Accounts Payable			Contact Name:	Jaclyn Kalesnikoff			P.O. #/ AFE#:							
Street Address:	1682 Woodward Drive			Street Address:	1682 Woodward Drive			Project #:	230427						
City:	Ottawa	Prov:	ON	City:	Ottawa	Prov:	ON	Site #:							
Phone:	613-839-3053			Phone:	877-487-8436 x339			Site Location:	Resolute Bay Landfill						
Email:	ap@blumetric.ca			Email:	jkalesnikoff@blumetric.ca			Site Location Province:	WP ENV-1704						
Copies:	jkalesnikoff@blumetric.ca			Copies:	jbrown@blumetric.ca			Sampled By:	KC						
<b>Regulatory Criteria</b>				<b>Regulatory Criteria</b>				<b>Regulatory Criteria</b>							
Table 1	Res/Park	Med/Fine	✓ CME	Table 2	Ind/Comm	Course	Reg 406, Table:	Table 3	Agri/other	For RSC	Sanitary Sewer Bylaw				
Table 1	Ind/Comm	For RSC	min 3 day TAT	Table 2	Agri/other	For RSC	Storm Sewer Bylaw	Table 3	Ind/Comm	For RSC	Municipality				
Table 1	Agri/other	For RSC	WQA	Table 2	Ind/Comm	For RSC	WQA	Table 3	Agri/other	For RSC	WQA				
Include Criteria on Certificate of Analysis (check if yes):				Include Criteria on Certificate of Analysis (check if yes):				Include Criteria on Certificate of Analysis (check if yes):							
SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS				SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS				SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS							
Sample Identification				Date Sampled				Time (24hr)				Matrix			
YY MM DD HH MM				YY MM DD HH MM				YY MM DD HH MM				YY MM DD HH MM			
1 RBL-2				23 07 23 17 30				Water - Ground				N Y N X X X X X X X X X X			
2 RBL-3				23 07 23 15 30				Water - Ground				N Y N X X X X X X X X X X			
3 AEC1-GW1				23 07 23 16 30				Water - Ground				N Y N X X X X X X X X X X			
4 RBL-4				23 07 24 13 00				Water - Surface				N Y N X X X X X X X X X X			
5 RBL-8				23 07 24 11 50				Water - Surface				N Y N X X X X X X X X X X			
6 RBL-13				23 07 24 11 15				Water - Surface				N Y N X X X X X X X X X X			
7 RBL-16				23 07 24 10 30				Water - Surface				N Y N X X X X X X X X X X			
8 RBL-DUPA				23 07 23 15 50				Water - Ground				N Y N X X X X X X X X X X			
9 RBL-DUPB				23 07 24 11 20				Water - Surface				N Y N X X X X X X X X X X			
10 RBL-DUPC				23 07 24 11 55				Water - Surface				N Y N X X X X X X X X X X			
11 FIELD BLANK 1				23 07 23 15 40				Water - Ground				N Y N X X X X X X X X X X			
12 TRIP BLANK 1				23 07 23 9 00				Water - Ground				N Y N X X X X X X X X X X			
LAB USE ONLY				LAB USE ONLY				LAB USE ONLY				LAB USE ONLY			
Seal present				Seal present				Seal present				Seal present			
Seal intact				Seal intact				Seal intact				Seal intact			
Cooling media present				Cooling media present				Cooling media present				Cooling media present			
Relinquished by: (Signature/ Print)				Relinquished by: (Signature/ Print)				Relinquished by: (Signature/ Print)				Relinquished by: (Signature/ Print)			
Date				Date				Date				Date			
YY MM DD HH MM				YY MM DD HH MM				YY MM DD HH MM				YY MM DD HH MM			
23 07 25 11:50				23 07 25 11:50				23 07 25 11:50				23 07 25 11:50			
Received by: (Signature/ Print)				Received by: (Signature/ Print)				Received by: (Signature/ Print)				Received by: (Signature/ Print)			
Date				Date				Date				Date			
YY MM DD HH MM				YY MM DD HH MM				YY MM DD HH MM				YY MM DD HH MM			
2023 07 27 12 57				2023 07 27 12 57				2023 07 27 12 57				2023 07 27 12 57			
Special Instructions				Special Instructions				Special Instructions				Special Instructions			
1 Samuel Durand				1 Samuel Durand				1 Samuel Durand				1 Samuel Durand			
2 Aneri				2 Aneri				2 Aneri				2 Aneri			





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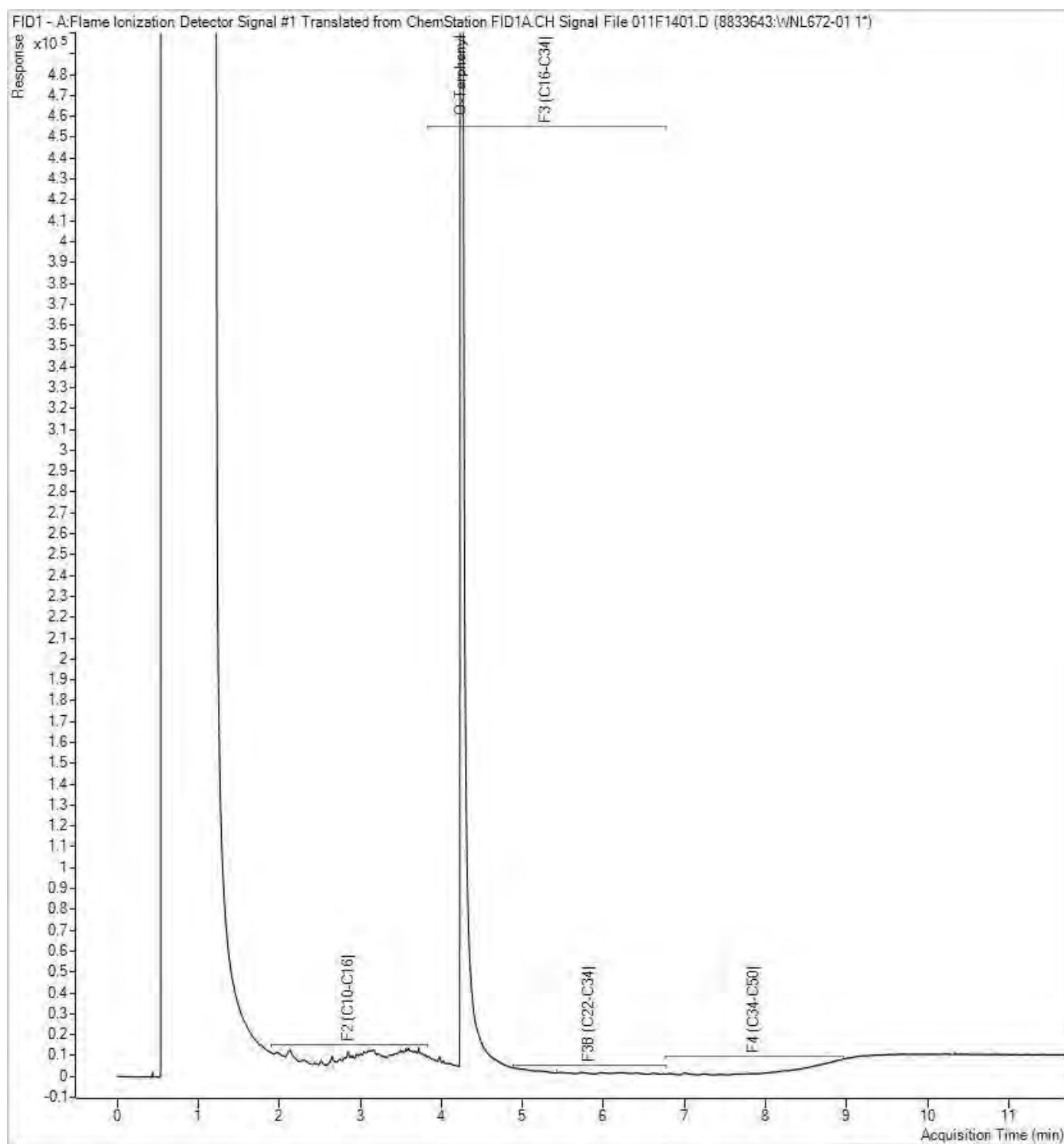
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Petroleum Hydrocarbons F2-F4 in Water Chromatogram

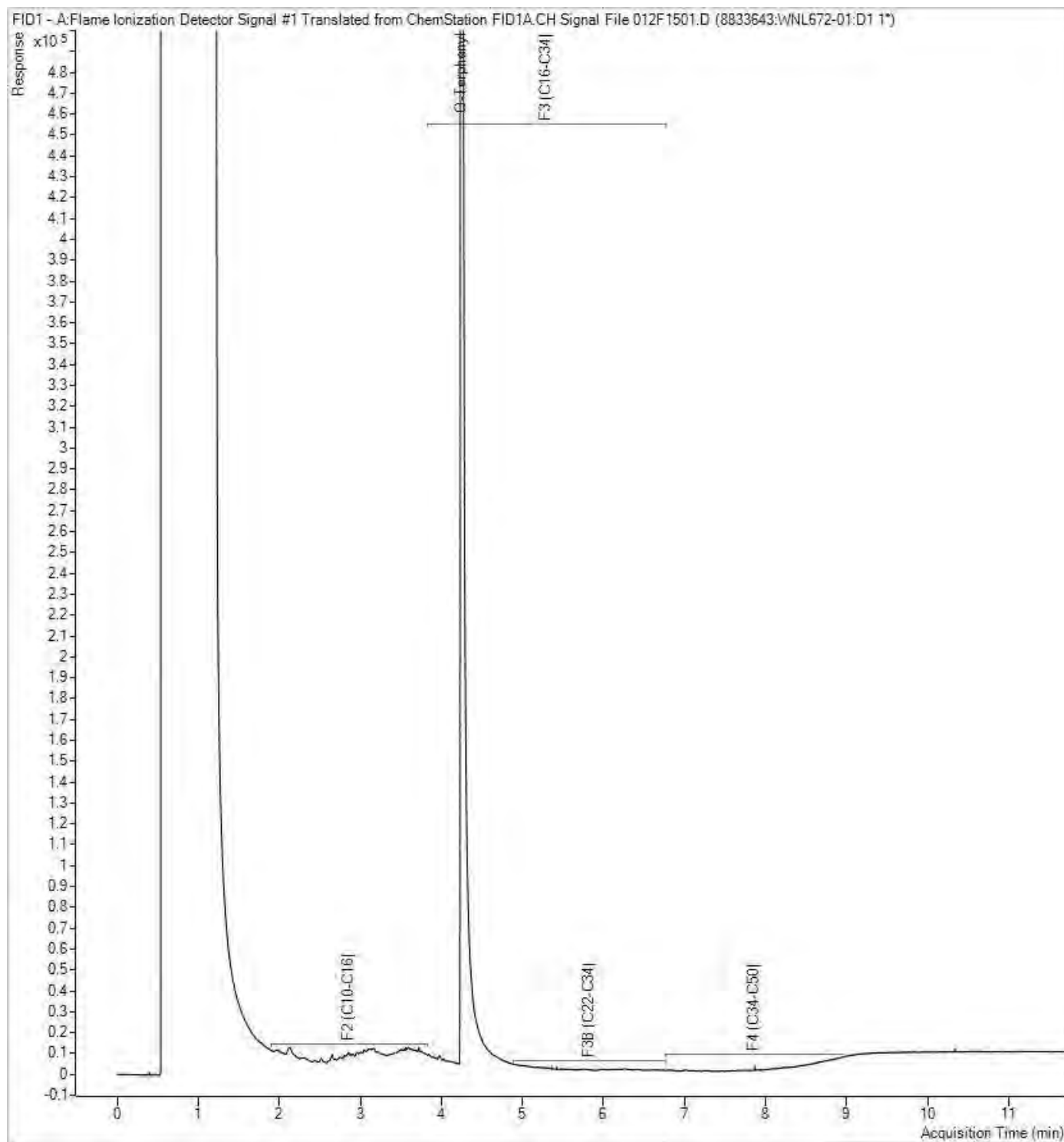


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C3M6596  
Report Date: 2023/09/01  
Bureau Veritas Sample: WNL672 Lab-Dup

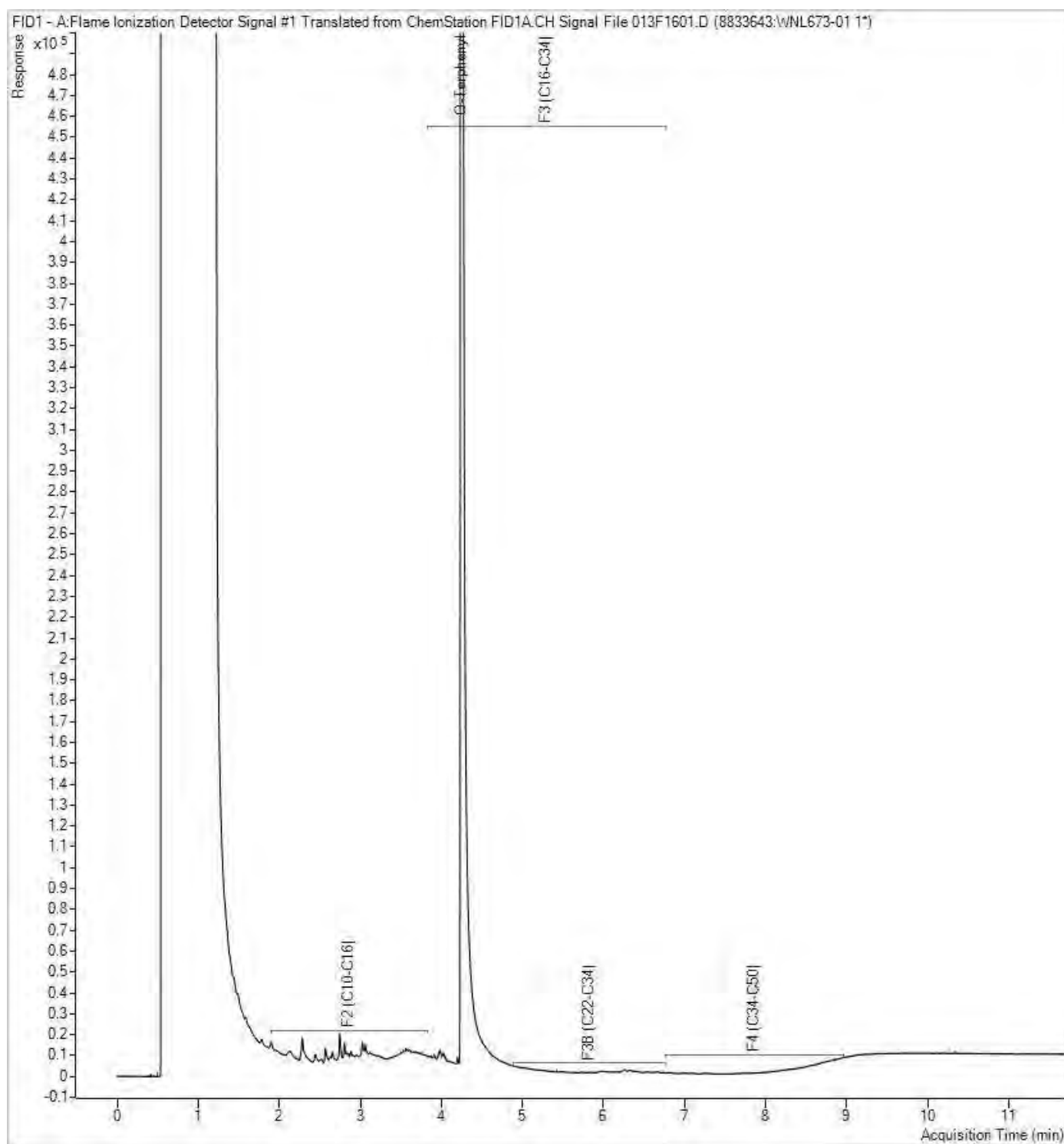
BluMetric Environmental Inc  
Client Project #: 230427  
Project name: RESOLUTE BAY LANDFILL  
Client ID: RBL-3

**Petroleum Hydrocarbons F2-F4 in Water Chromatogram**



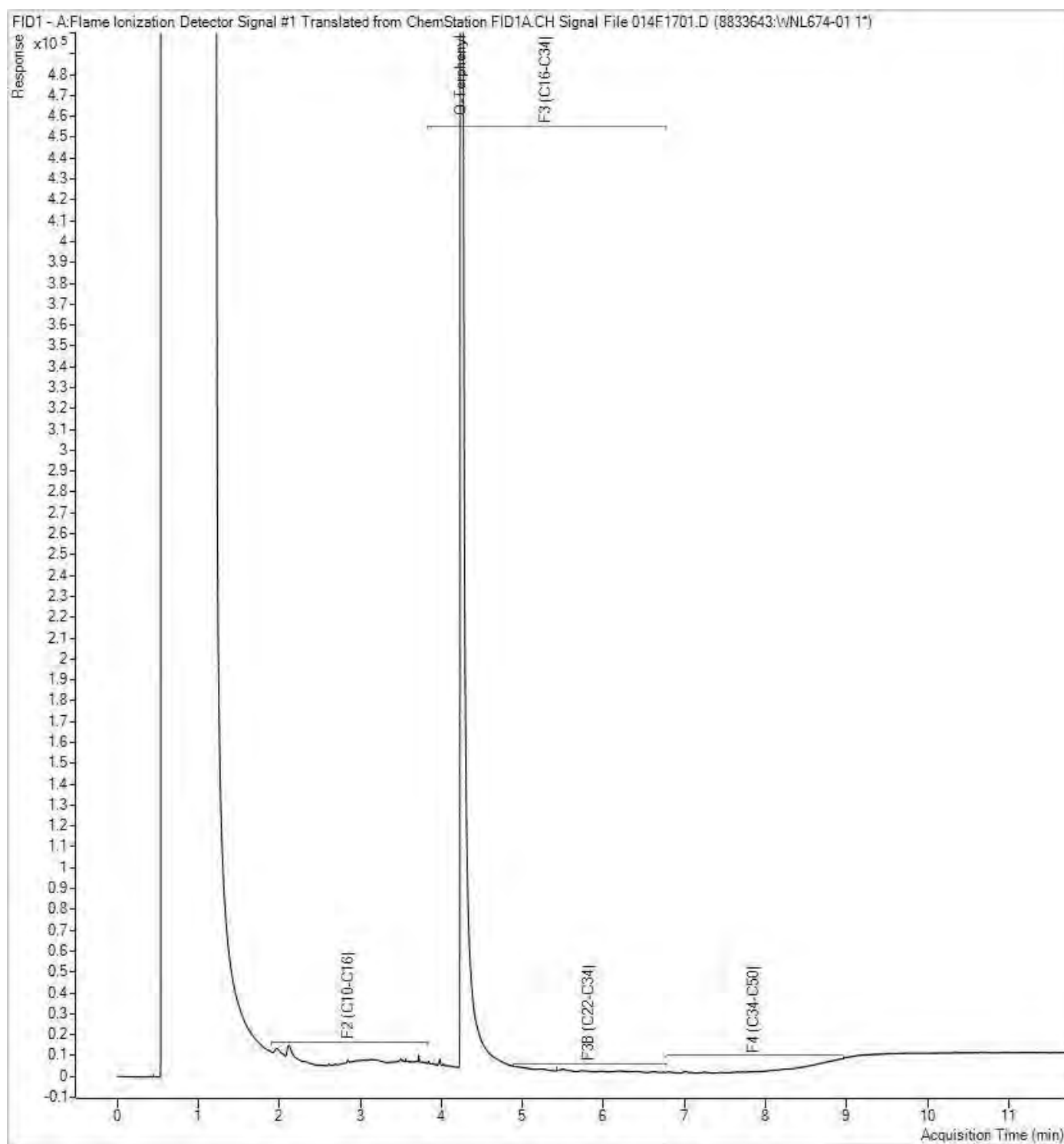
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



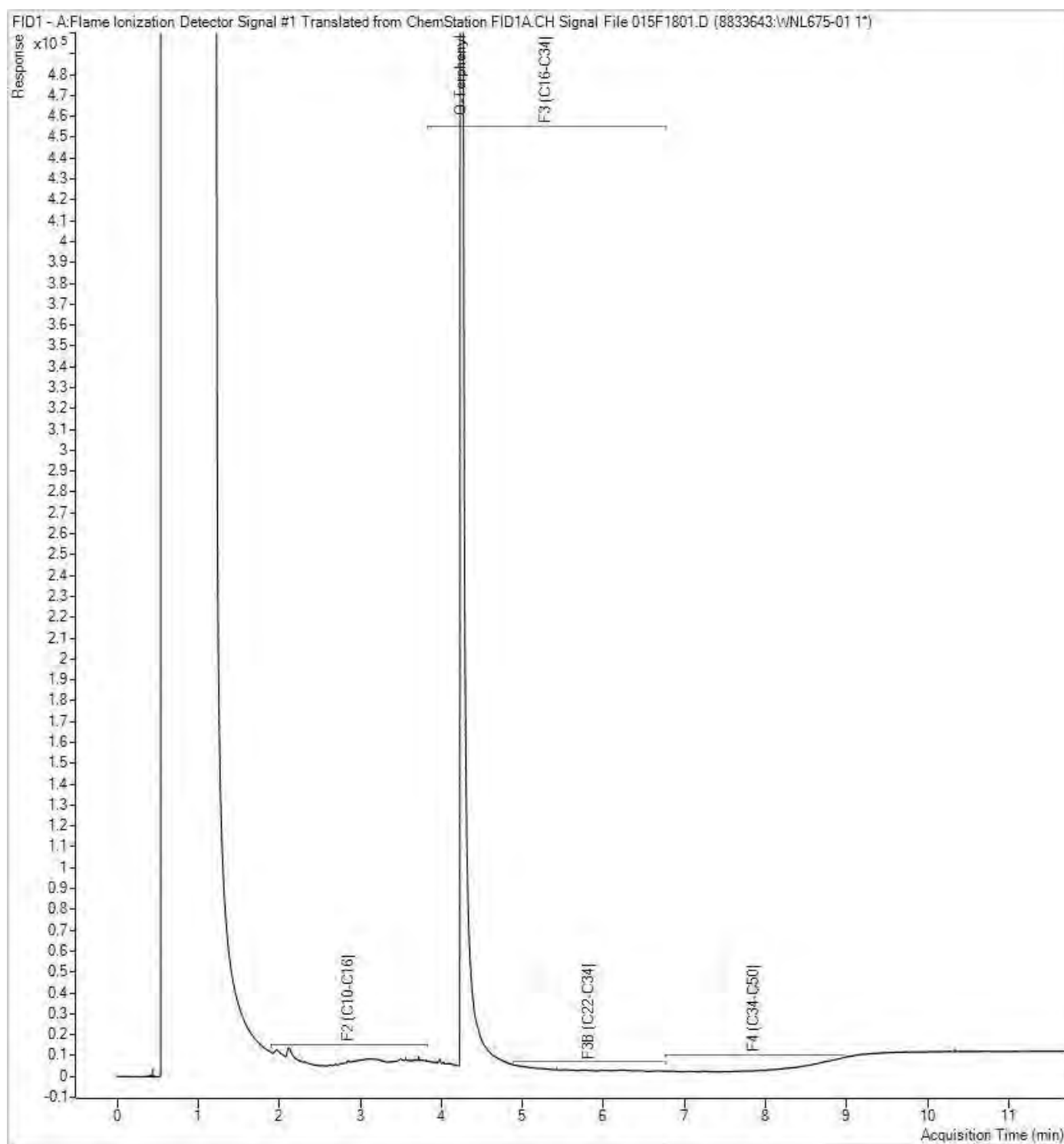
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



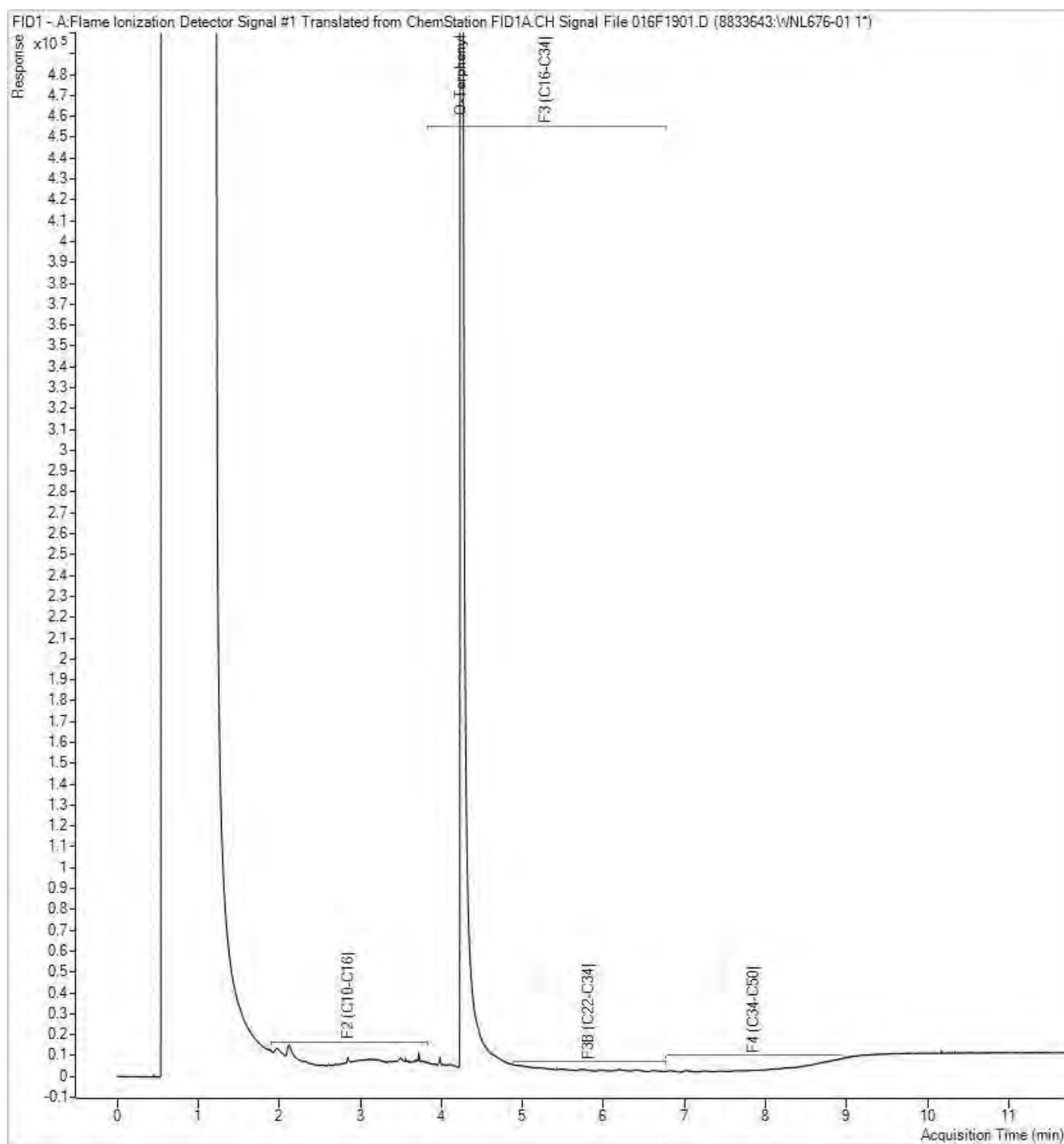
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

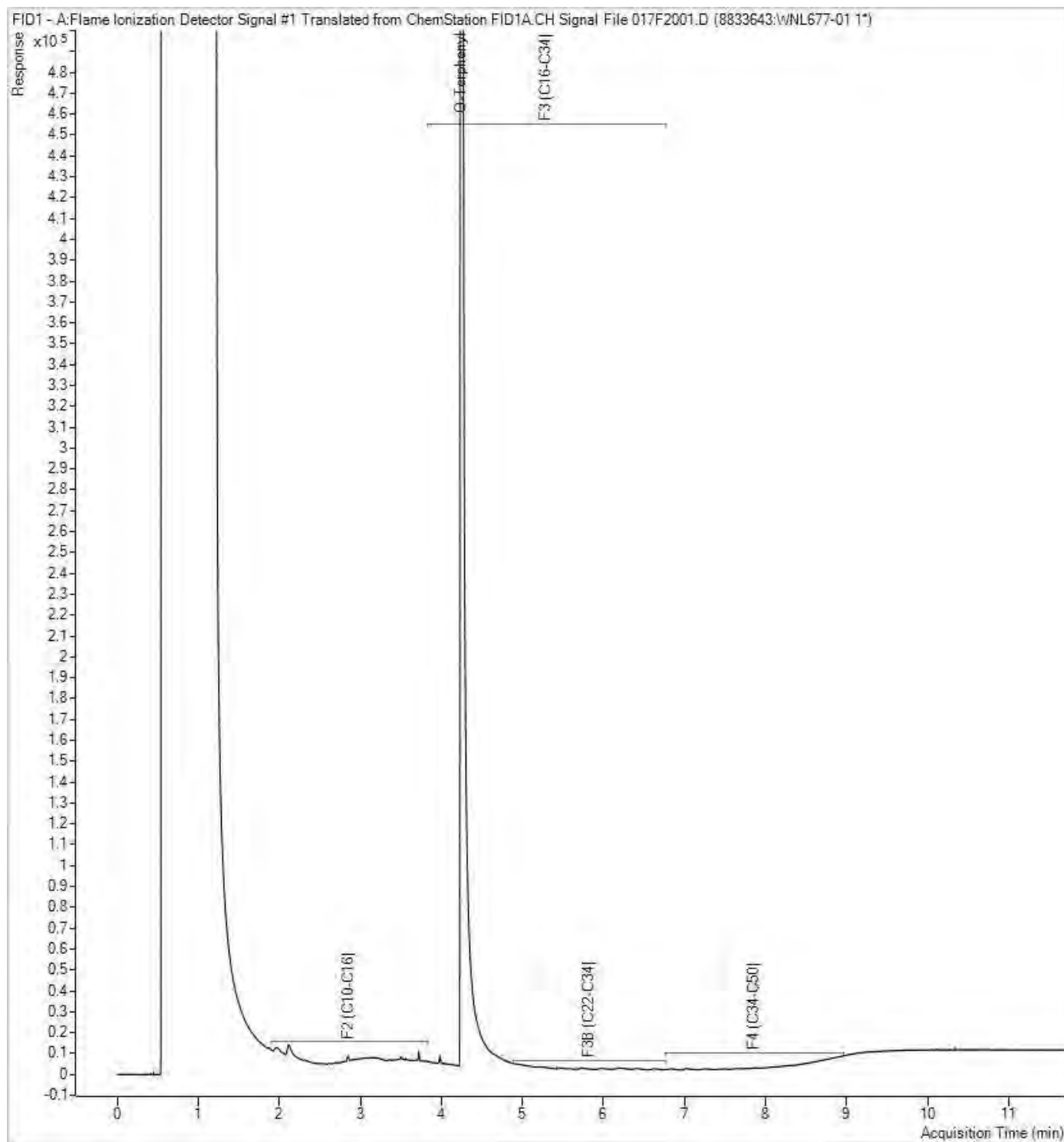
Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

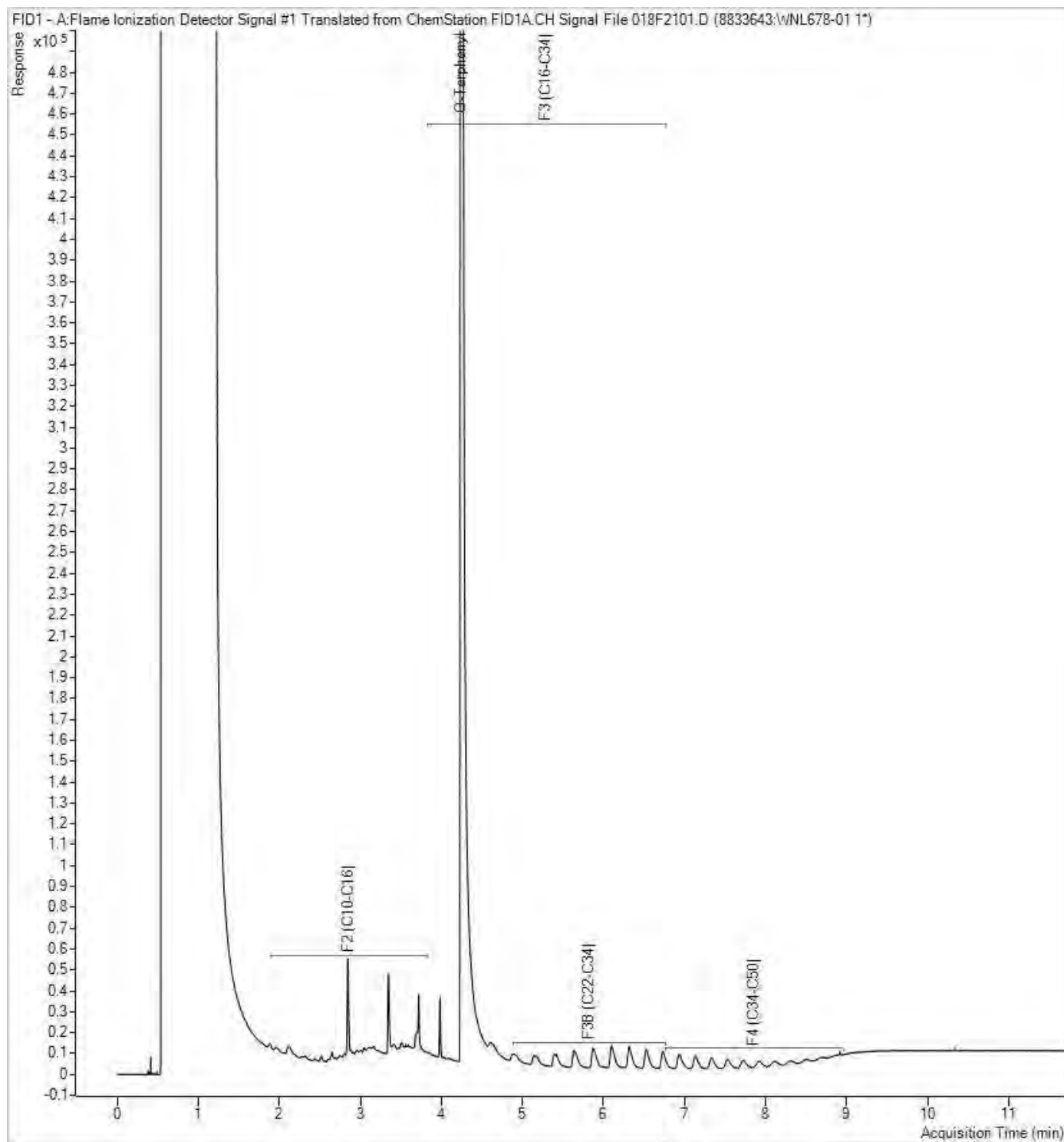


Petroleum Hydrocarbons F2-F4 in Water Chromatogram



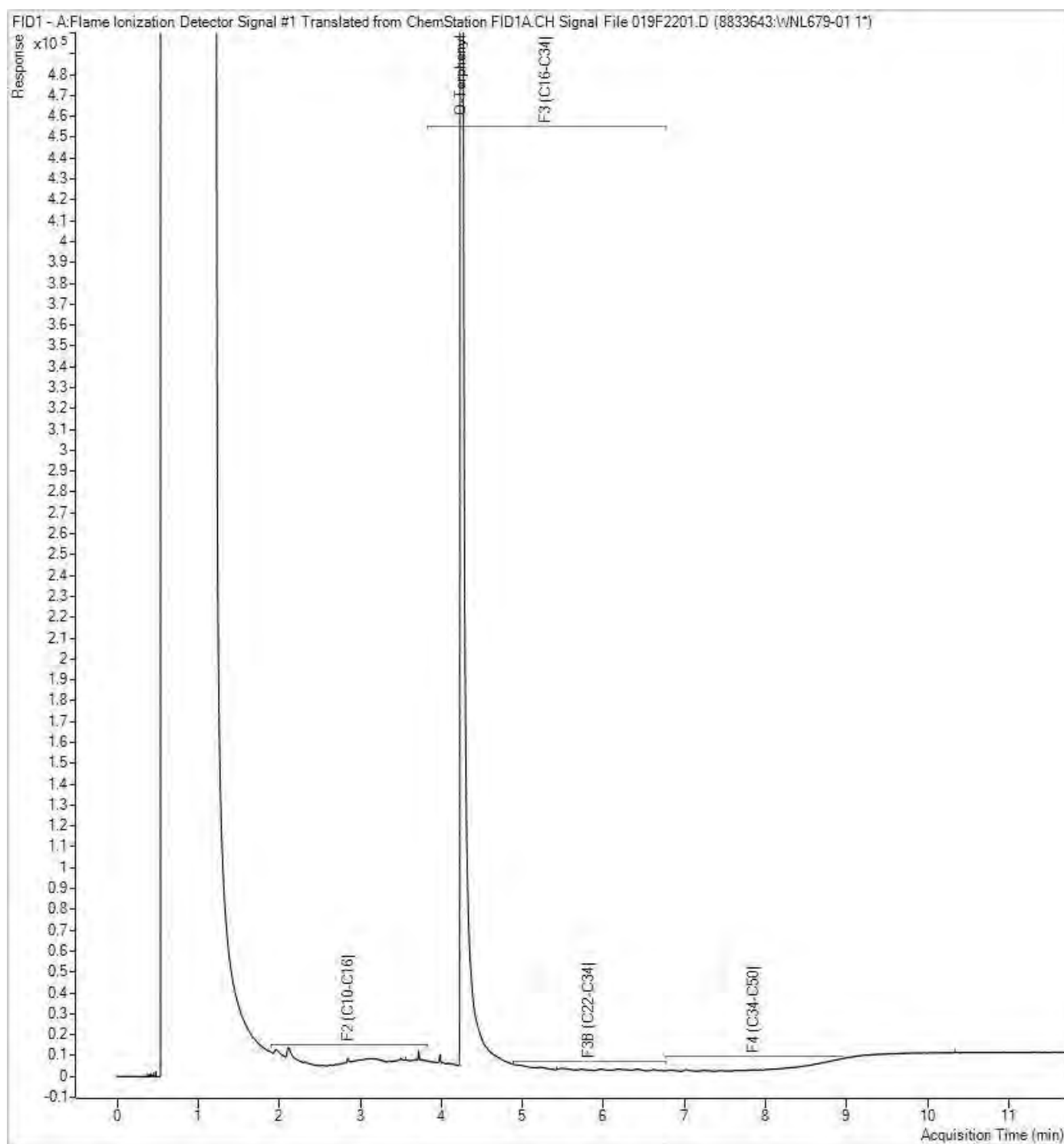
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



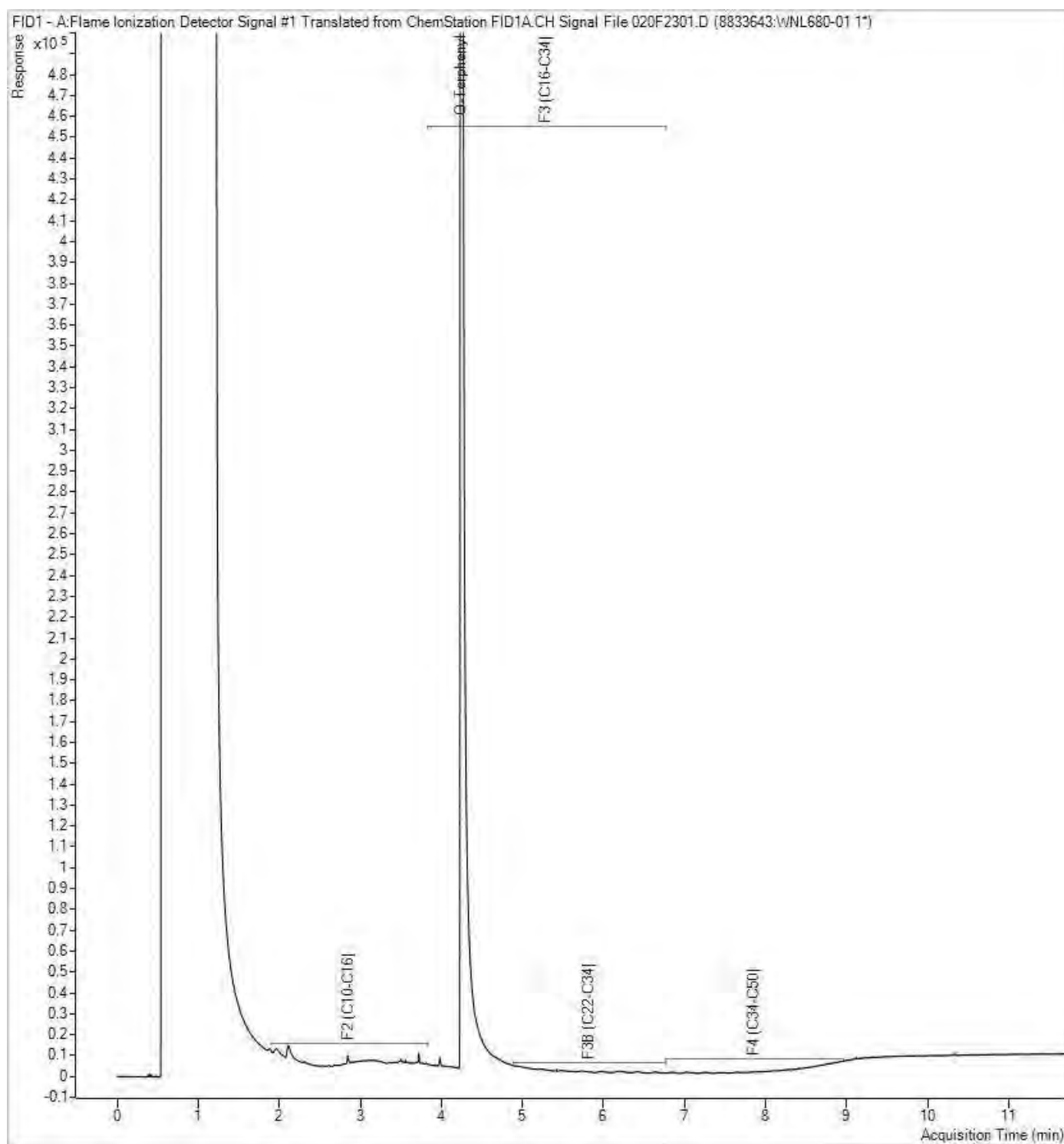
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



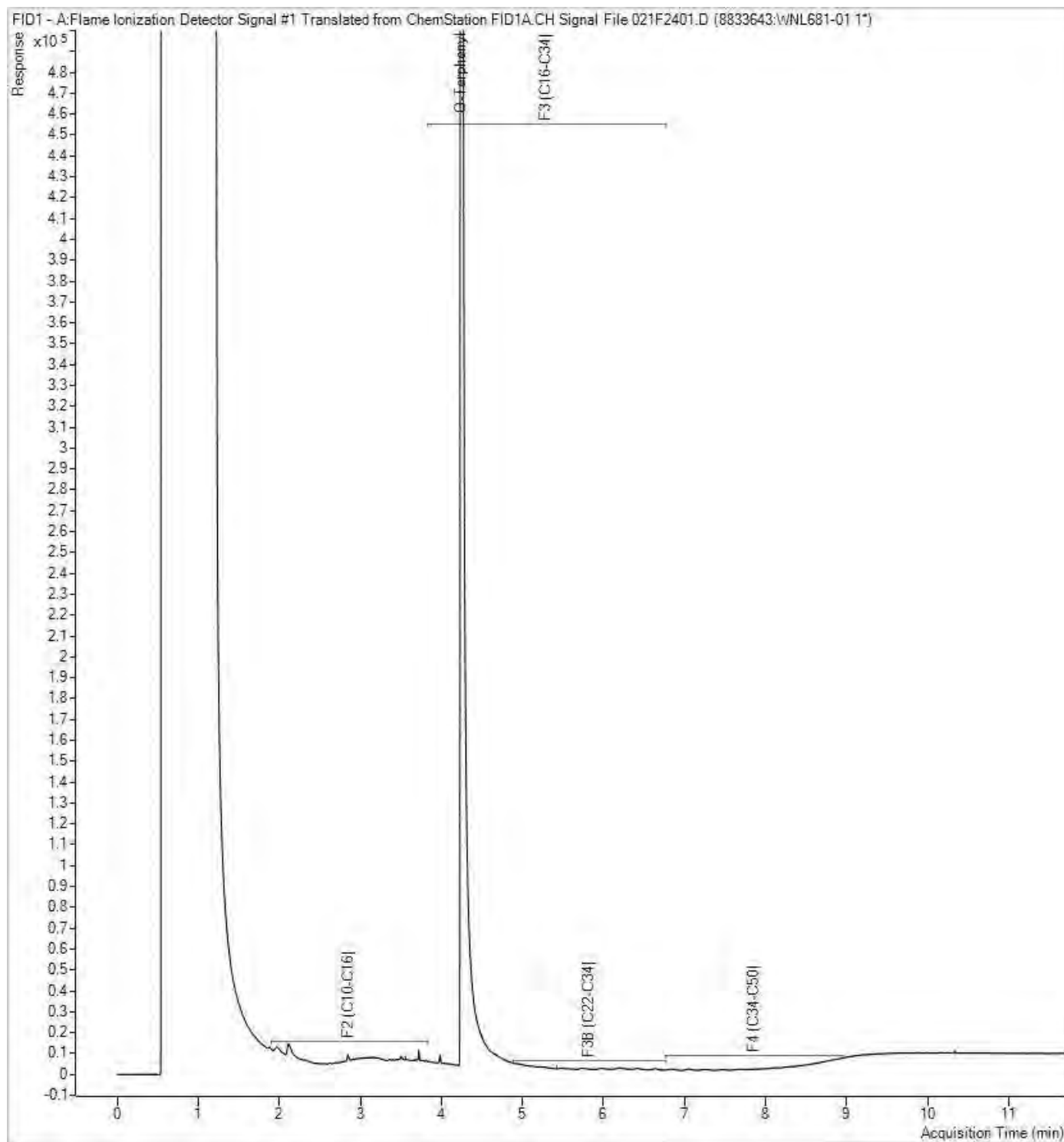
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



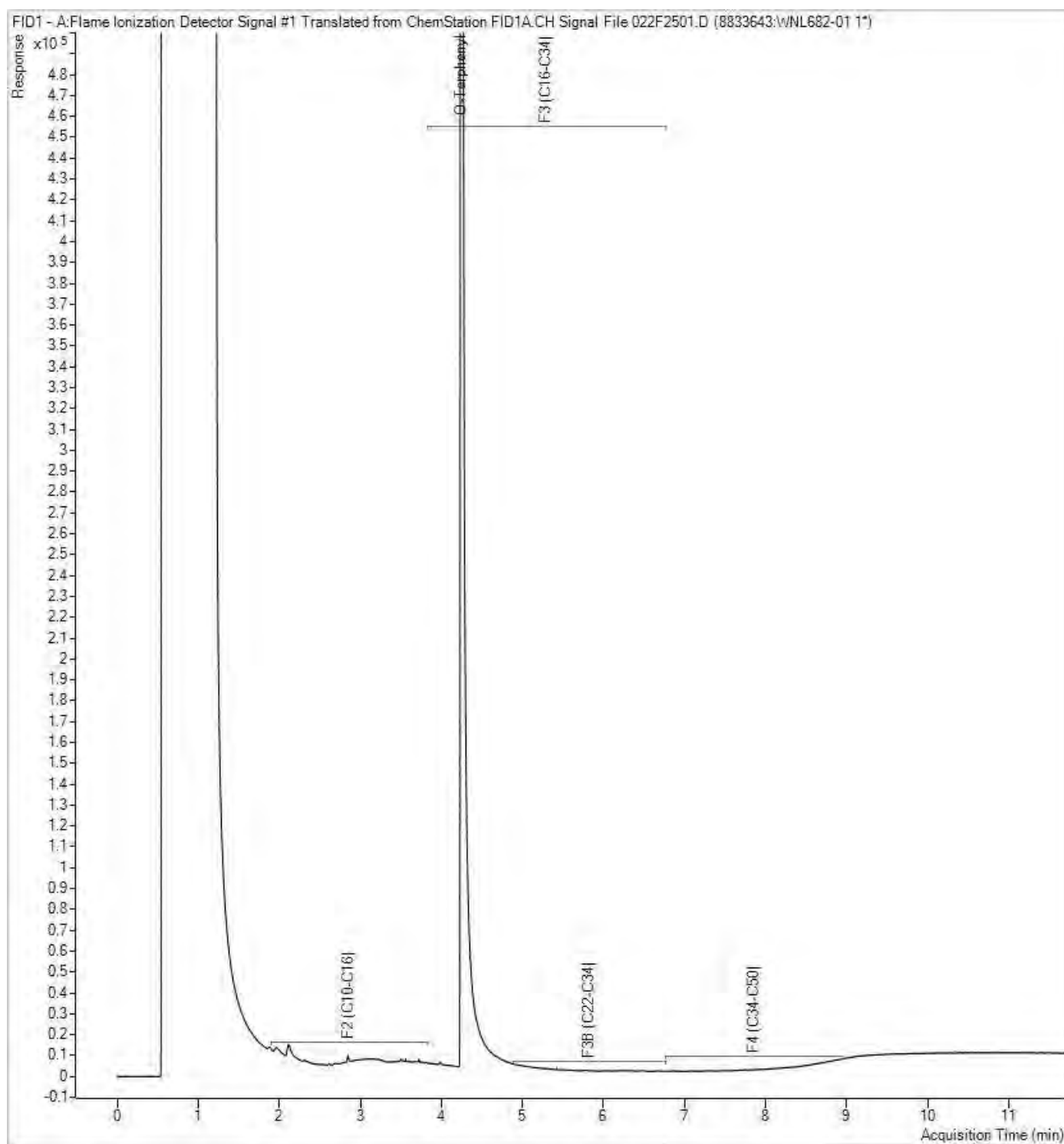
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



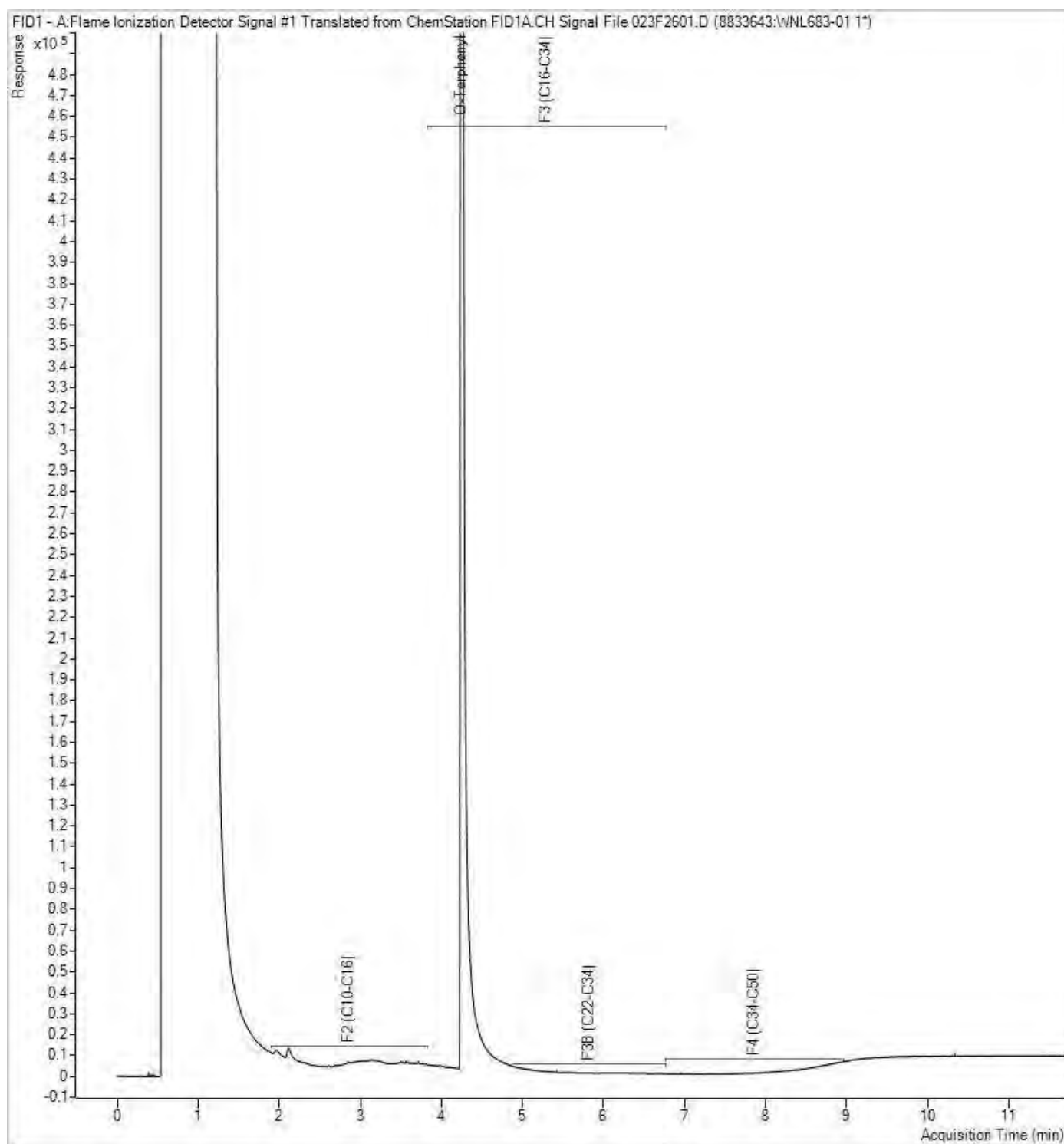
**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



**Note:** This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.





BluMetric Environmental

July 17, 2023

Attention: Jaclyn Kalesnikoff

Re: Resolute Bay Airport Landfill Sampling Program

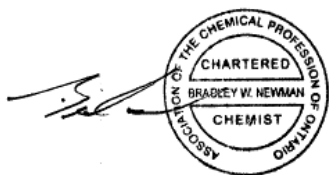
Dear Ms. Kalesnikoff,

As requested, Bureau Veritas Laboratories has reviewed the 2023 / 2024 Resolute Bay Airport Landfill Sampling Program. In our opinion, the Program meets the CCME requirements for field quality control.

I trust this meets your needs. If anything further is required, please do not hesitate to contact me directly.

brad.newmna@bureauveritas.com 416 528-9778.

Sincerely,



Brad Newman, B.Sc., C.Chem.  
Consulting Scientist, Site Assessment & Remediation  
Environmental Services

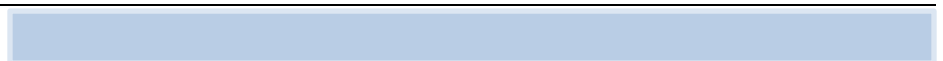
6740 Campobello Road, Mississauga, L5N 2L8

Tel: +1 (905) 817-5700

Fax: +1 (905) 817-5777

## APPENDIX F

### Site Photograph Logs and Photograph Location Figures





Sample ID	CCME CEQG	RBL-4
Laboratory ID	FWAL *	WNL674
Sampling Date	(Short Term/Long Term)	24-Jul-23
Chromium (VI)	NV/1	1.6
Total Copper	2.57	2.9

LEGEND

Monitoring Well

Surface Water Sample Location

Thermistor

Other

Sample Exceeds Guidelines

Sample Below Guidelines

Notes:

Guideline Exceedance

Guideline CCME Water Quality for the Protection of Aquatic Life, Freshwater Pathway (Marine Pathway excluded)

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK

REFERENCES

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CLIENT

Public Services and Procurement Canada

PROJECT

Resolute Bay Landfills Monitoring

TITLE

AEC 1: Inactive Solid Waste Landfill Photolog Locations

BLM-KEL-60 Corporation

30b Mitik Street

Cambridge Bay, NU X0B 0C0




PROJECT #		DATE	
230427		November 24, 2023	
DRAWN	CHECKED	FIG NO.	REV
ZS	JF	05	0






230427  
Photo Log AEC1

 <p>AEC1 RBL-1 BluMetric Environmental 230427 Resolute Bay Landfill Monitoring 21 Jul 2023</p>	<p>Photo 1</p> <p>Viewing Direction: Facing West</p> <p>Description: AEC 1 Overview from behind RBL-1</p>
 <p>BluMetric Environmental 230427 Resolute Bay Landfill Monitoring 21 Jul 2023</p>	<p>Photo 2</p> <p>Viewing Direction: Facing Southwest</p> <p>Description: View of Drainage swale and landfill plateau.</p>
 <p>BluMetric Environmental 230427 Resolute Bay Landfill Monitoring 21 Jul 2023</p>	<p>Photo 3</p> <p>Viewing Direction: Facing West</p> <p>Description: View of Drainage swale and landfill plateau. Thermistor 1 in background.</p>

230427  
Photo Log AEC1

	<p>Photo 4</p> <p>Viewing Direction: Facing Northeast</p> <p>Description: View of Drainage swale and landfill plateau.</p>
	<p>Photo 5</p> <p>Viewing Direction: Facing North</p> <p>Description: View of drainage swale and adjacent Metal waste depot in background.</p>
	<p>Photo 6</p> <p>Viewing Direction: Facing South</p> <p>Description: View of sewage lagoons. Evidence of overflow along west edge.</p>

230427  
Photo Log AEC1

	<p>Photo 7</p> <p>Viewing Direction: Facing Southwest</p> <p>Description: View of sewage lagoons. Evidence of overflow along west edge.</p>
	<p>Photo 8</p> <p>Viewing Direction: Facing Southeast</p> <p>Description: View of monitoring well AEC1-GW1 (downgradient from sewage lagoons)</p>
	<p>Photo 9</p> <p>Viewing Direction: Facing west</p> <p>Description: View from AEC1-GW1 showing drainage swale and landfill slope</p>



230427  
Photo Log AEC1





	<p>Photo 10</p> <p>Viewing Direction: Facing West</p> <p>Description: Viewing of south drainage swale end point at toe of landfill</p>
	<p>Photo 11</p> <p>Viewing Direction: Facing Northwest</p> <p>Description: View of landfill toe/slope at south drainage swale</p>
	<p>Photo 12</p> <p>Viewing Direction: Facing South</p> <p>Description: View of south drainage swale/landfill toe taken from landfill crest. Thermistor 1 in foreground.</p>

	Photo 13
	Viewing Direction: Facing Southwest
	Description: View of wetlands at toe of landfill, taken from landfill crest. Thermistor 1 in foreground. Photo taken July 21, 2023.


	Photo 14
	Viewing Direction: West
	Description: View of wetlands at toe of landfill, taken from landfill crest. Thermistor 1 in foreground.

	Photo 15
	Viewing Direction: Northwest
	Description: View of wetlands at toe of landfill, taken from landfill crest. Thermistor 1 in foreground.



230427

Photo Log AEC1

	Photo 16
	Viewing Direction: Facing Northeast
	Description: RBL-4 surface water location with Metal Waste depot in background

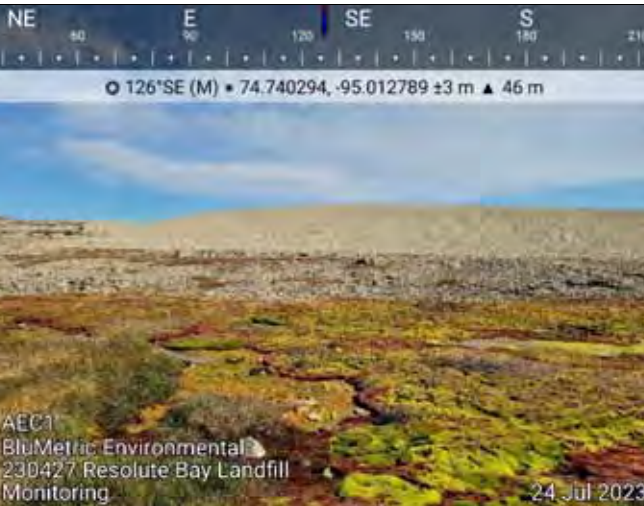
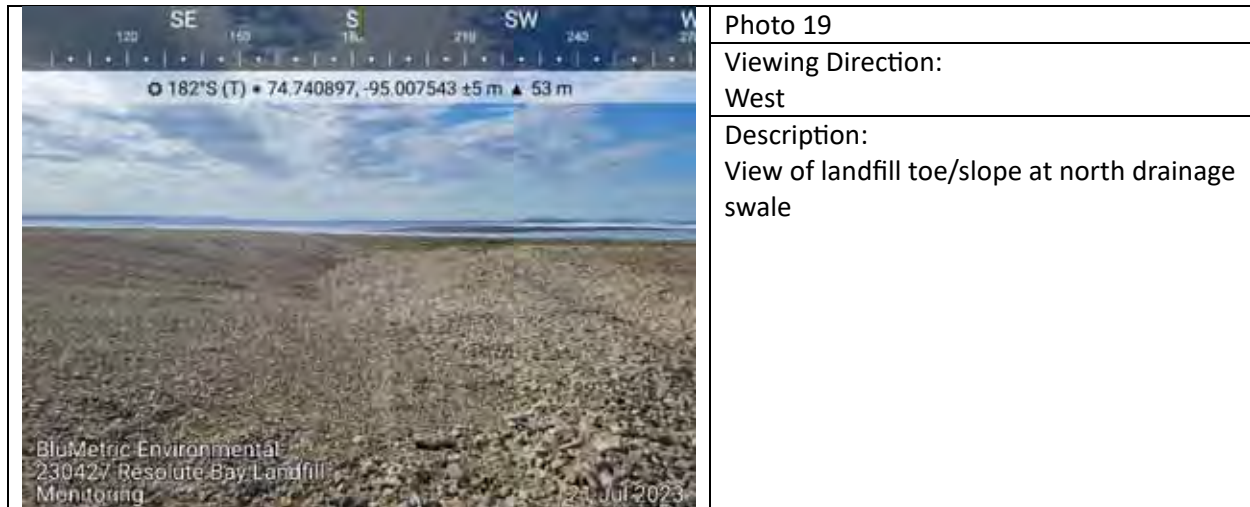
	Photo 17
	Viewing Direction: East
	Description: RBL-4 surface water location with landfill in background

	Photo 18
	Viewing Direction: North
	Description: View of drainage swale and northern limits of landfill. Metal waste depot in background.

230427  
Photo Log AEC1









LEGEND

- Monitoring Wells
- Surface Water Sampling Location
- Sample Below Guidelines
- Other
- Sample Exceeds Guidelines

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK

REFERENCES

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CLIENT

Public Services and Procurement Canada

PROJECT

Resolute Bay Landfills Monitoring

TITLE

AEC 2: Inactive Solid Waste Landfill Photolog Locations

BLM-KEL-60 Corporation

30b Mitik Street  
Cambridge Bay, NU X0B 0C0

PROJECT # 230427		DATE November 24, 2023	
DRAWN ZS	CHECKED JF	FIG NO. 06	REV 0

C:\SP\Blumetric Environmental\Geomatics - GIS (1)\GIS\_PROJECTS\230000\230427 - PR01296 - JV60PSPC - Resolute Bay Airport Landfill Monitoring\APRX\2023-11-24\230427\_ResoluteBayAirport.aprx



	Photo 1
	Viewing Direction: From roadway facing South
	Description: View of drainage swale and landfill plateau.

	Photo 2
	Viewing Direction: From roadway facing Southwest
	Description: View of drainage swale and landfill plateau.

	Photo 3
	Viewing Direction: From roadway facing West
	Description: View of landfill plateau.

\*Note: AEC2 photos were taken in the incorrect location during Freshnet monitoring.

	Photo 4
	Viewing Direction: From roadway facing Northwest
	Description: View of drainage swale and landfill plateau.

	Photo 5
	Viewing Direction: From roadway facing North
	Description: View of drainage swale and culvert.

	Photo 6
	Viewing Direction: South
	Description: View of drainage swale in North portion of landfill.


	Photo 7
	Viewing Direction: West
	Description: View of drainage swale in North portion of landfill.

	Photo 8
	Viewing Direction: Northwest
	Description: View of drainage swale in North portion of landfill.

	Photo 9
	Viewing Direction: North-northeast
	Description: South end of landfill near drainage swale.



	Photo 10
	Viewing Direction: East
	Description: Toe of main landfill, with slope of the landfill and drainage swale.

	Photo 11
	Viewing Direction: East-southeast
	Description: Two drainage swales on opposite side of East-West Road.

	Photo 12
	Viewing Direction: Southwest
	Description: From south most drainage swale. View of monitoring wells 2-MW-8 and FL-MW-7.

	Photo 13
	Viewing Direction: Facing Northeast
	Description: Area northeast of monitoring well RBL-5.

	Photo 14
	Viewing Direction: East
	Description: Monitoring well east of RBL-5.

	Photo 15
	Viewing Direction: Southeast
	Description: Area southeast of monitoring well RBL-5.

	Photo 16
	Viewing Direction: Facing Northeast
	Description: From RBL-7, view of rock armor condition from toe of landfill.

	Photo 17
	Viewing Direction: Facing East
	Description: From RBL-7, view of rock armor condition from toe of landfill

	Photo 18
	Viewing Direction: Facing East
	Description: Scrap metal debris exposed along landfill slope.





LEGEND

- Monitoring Wells
- Surface Water Location
- Other
- Area of Environmental Concern
- Airport Property Boundary (approximate)
- Watercourse
- Sample Below Guidelines
- Sample Exceeds Guidelines

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK

REFERENCES

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CLIENT

Public Services and Procurement Canada

PROJECT

Resolute Bay Landfills Monitoring

TITLE

AEC 3: Former Vehicle and Waste Metal Storage Area  
Photolog Locations

BLM-KEL-60 Corporation

30b Mitik Street  
Cambridge Bay, NU X0B 0C0

PROJECT # 230427		DATE November 24, 2023	
DRAWN ZS	CHECKED JF	FIG NO. 07	REV 0



230427  
Photo Log AEC3

	Photo 1
	Viewing Direction: Facing West
	Description: AEC 3 Overview from roadway

	Photo 2
	Viewing Direction: Facing Northwest
	Description: AEC 3 Overview from roadway

	Photo 3
	Viewing Direction: Facing North
	Description: AEC 3 Overview from roadway

230427  
Photo Log AEC3

 A wide-angle photograph of a flat, grassy landscape under a cloudy sky. The terrain is covered in dry, brownish grass. In the bottom left corner, there is text: 'AEC3', 'BluMetric Environmental', '230427 Resolute Bay Landfill', and 'Monitoring'. In the bottom right corner, the date '24 Jul 2023' is visible.	Photo 4
	Viewing Direction: Facing Northeast
	Description: AEC3 overview from roadway

 A photograph of a grassy field with a blue marker in the foreground. The marker is a vertical blue pipe. In the background, there are some low-lying bushes. In the bottom left corner, there is text: 'AEC3 RBL-11', 'BluMetric Environmental', '230427 Resolute Bay Landfill', and 'Monitoring'. In the bottom right corner, the date '21 Jul 2023' is visible.	Photo 5
	Viewing Direction: Facing North
	Description: From SW corner, monitoring well RBL-11 in foreground

 A photograph of a grassy field with a dark, charred area in the foreground. The area appears to be a burn pit. In the background, there are some low-lying bushes. In the bottom left corner, there is text: 'AEC3 Burn Pit', 'BluMetric Environmental', '230427 Resolute Bay Landfill', and 'Monitoring'. In the bottom right corner, the date '21 Jul 2023' is visible.	Photo 6
	Viewing Direction: Facing South
	Description: From SW corner, view across site of former excavations 2, 3, 4, and 6. Burn pit evidence noted as human activity onsite.

 <p>AEC3 McMaster River BluMetric Environmental 230427 Resolute Bay Landfill Monitoring</p> <p>21 Jul 2023</p>	Photo 7
	Viewing Direction: Facing West
	Description: From NW corner, view of McMaster River Valley

 <p>AEC3 McMaster River BluMetric Environmental 230427 Resolute Bay Landfill Monitoring</p> <p>21 Jul 2023</p>	Photo 8
	Viewing Direction: Facing Northwest
	Description: From NW corner, view of McMaster River Valley

 <p>AEC3 McMaster River BluMetric Environmental 230427 Resolute Bay Landfill Monitoring</p> <p>21 Jul 2023</p>	Photo 9
	Viewing Direction: Facing west
	Description: From NW corner, view of McMaster River Valley, Looking down at RBL-16 surface water sampling location





	Photo 13
	Viewing Direction: Facing West
	Description: From excavation 4 area. Monitoring well RBL-12 in background.

	Photo 14
	Viewing Direction: Facing Southeast
	Description: From monitoring well RBL-12. Looking towards excavation 4 and 3 area.

	Photo 15
	Viewing Direction: Northwest
	Description: From monitoring well RBL-12. Looking towards excavation 4 and 3 area.

	Photo 16
	Viewing Direction: Facing West
	Description: From Monitoring well RBL-10.

	Photo 17
	Viewing Direction: Facing Northwest
	Description: From Monitoring well RBL-10.

	Photo 18
	Viewing Direction: Northeast
	Description: From Monitoring well RBL-10.



	Photo 19
	Viewing Direction: Northeast
	Description: From monitoring well RBL-15 looking towards excavation 5 area

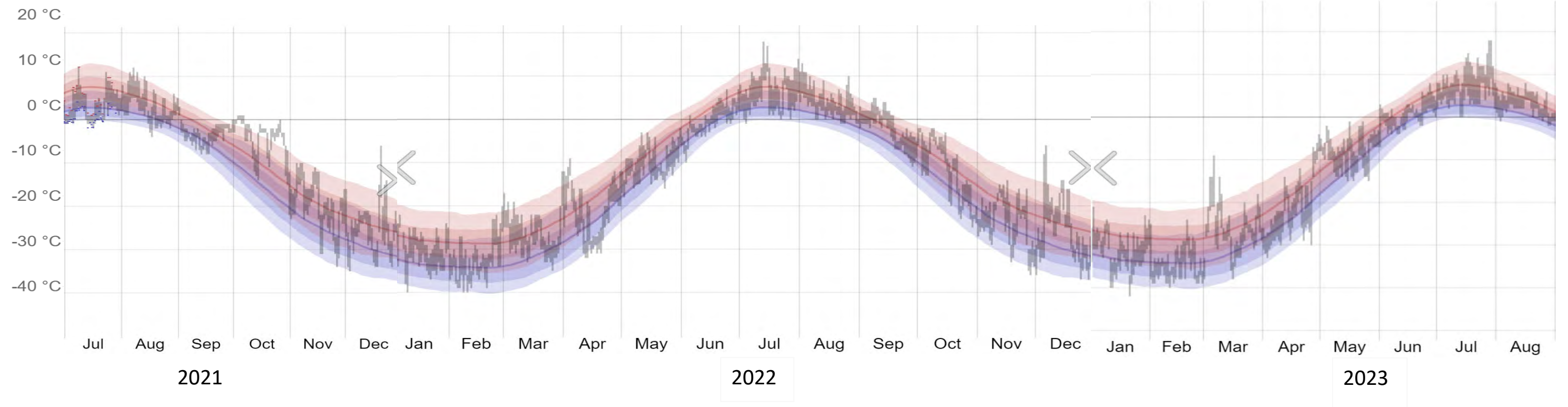
	Photo 20
	Viewing Direction: Facing Southwest
	Description: From monitoring well RBL-15 looking towards excavation 5 area

	Photo 21
	Viewing Direction: Facing Northwest
	Description: From monitoring well RBL-14 looking towards excavation 5 area. RBL-15 can be seen in background.

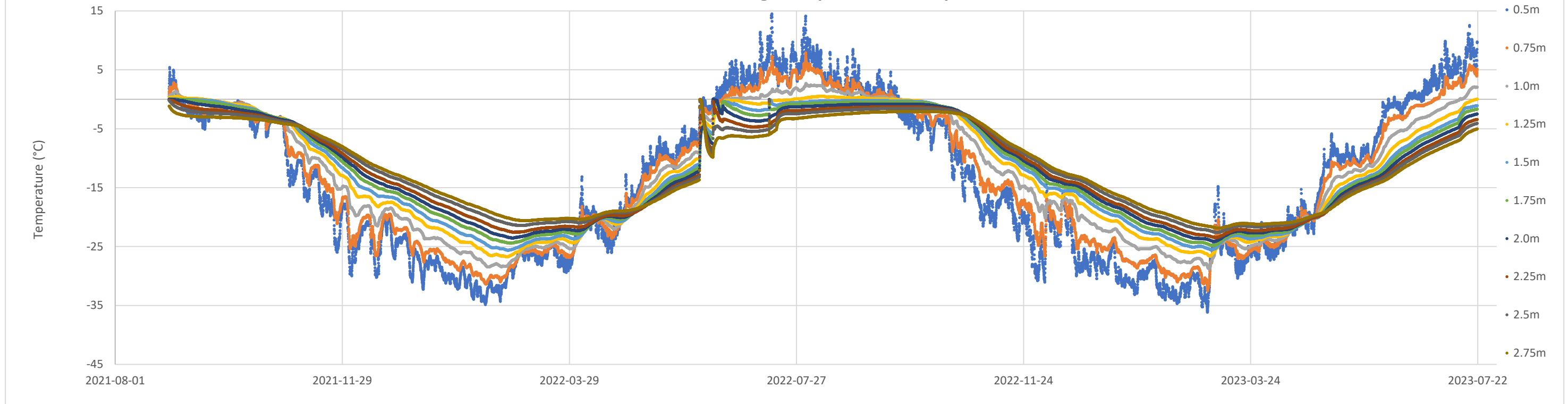
## **APPENDIX G**

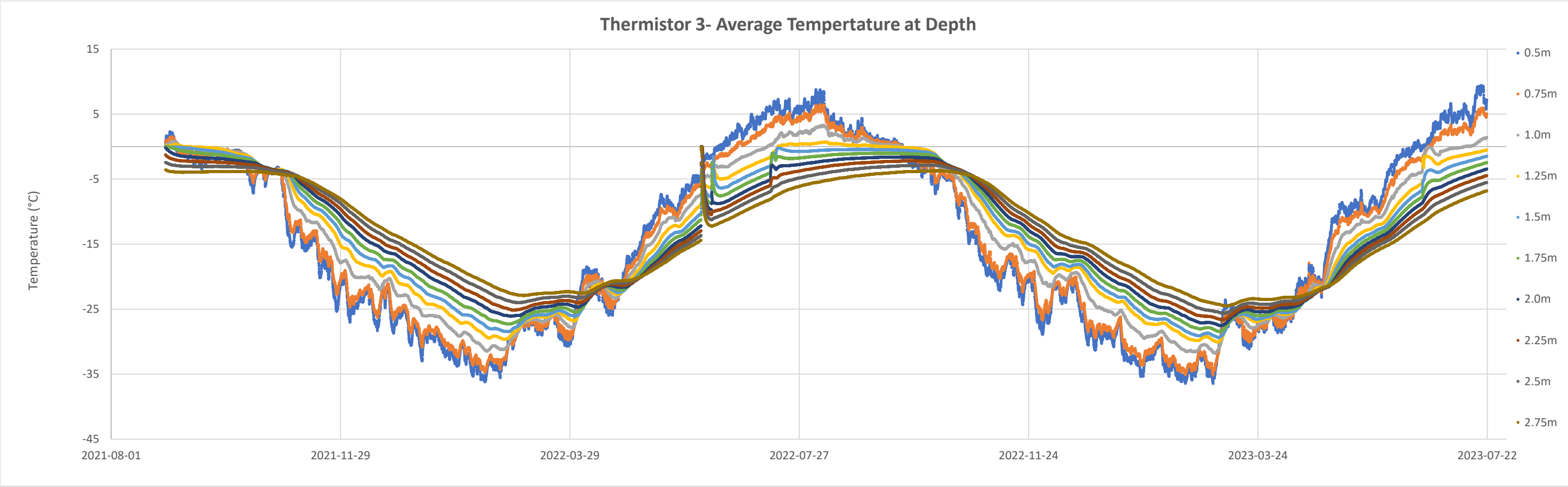
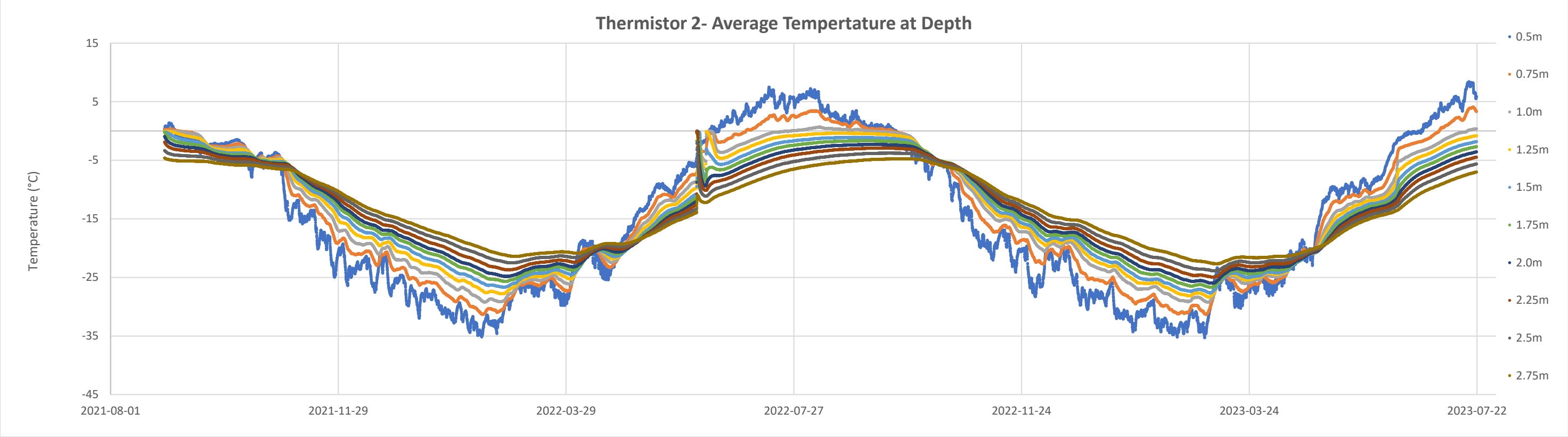
### Thermistor Results

Temperature Data 2021-2023



Thermistor 1- Average Temperature at Depth



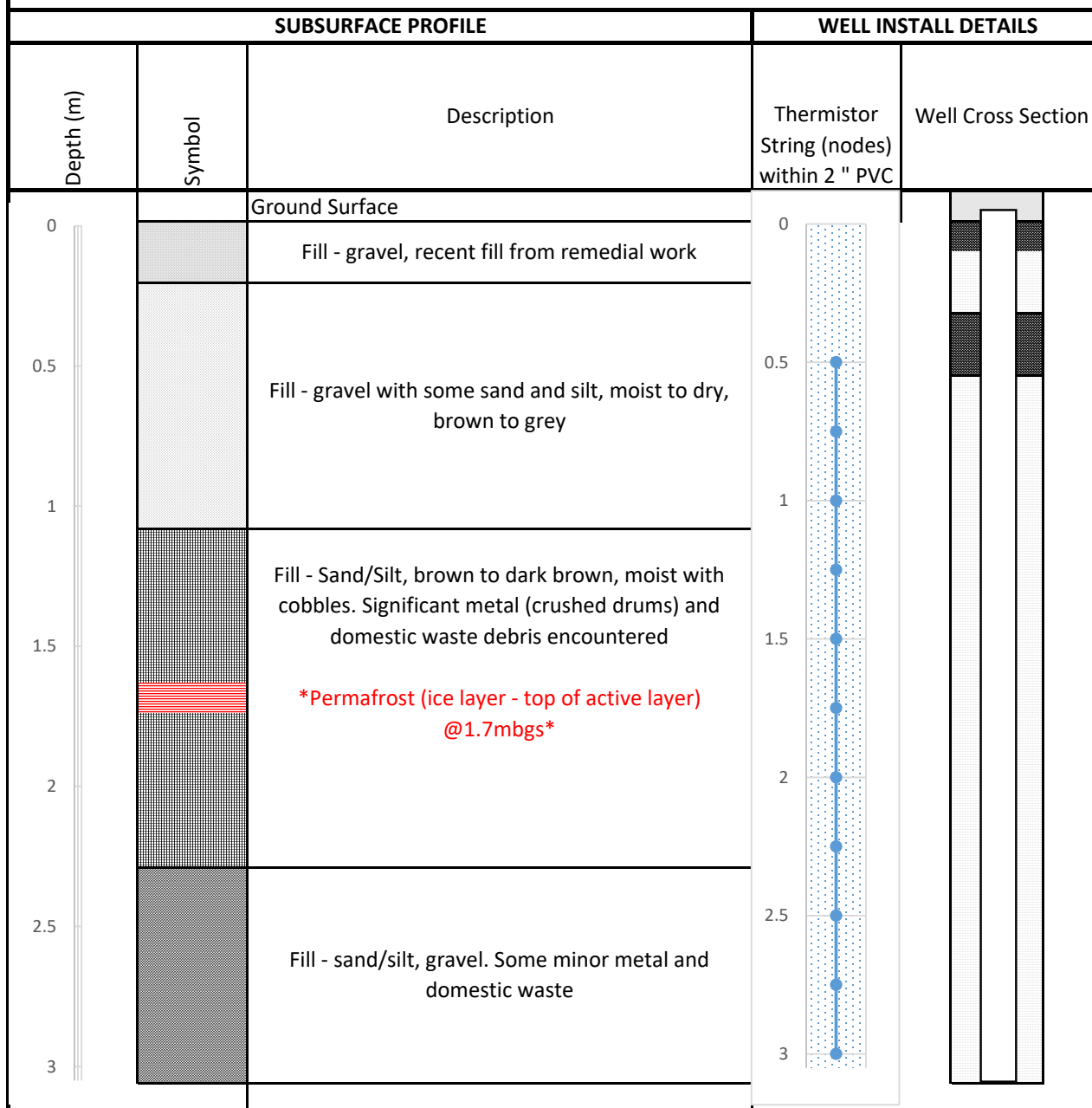






Project No: P2021-09  
Project: Resolute Bay Landfill CSP  
Client: PSPC  
Location: AEC 1

THRMS-01  
Logged by: S. Livingstone  
Engineer:



Sample Type n/a  
Excavation Method Excavator  
Date: 26-Aug-21  
UTM N: 8295590  
UTM E: 440985

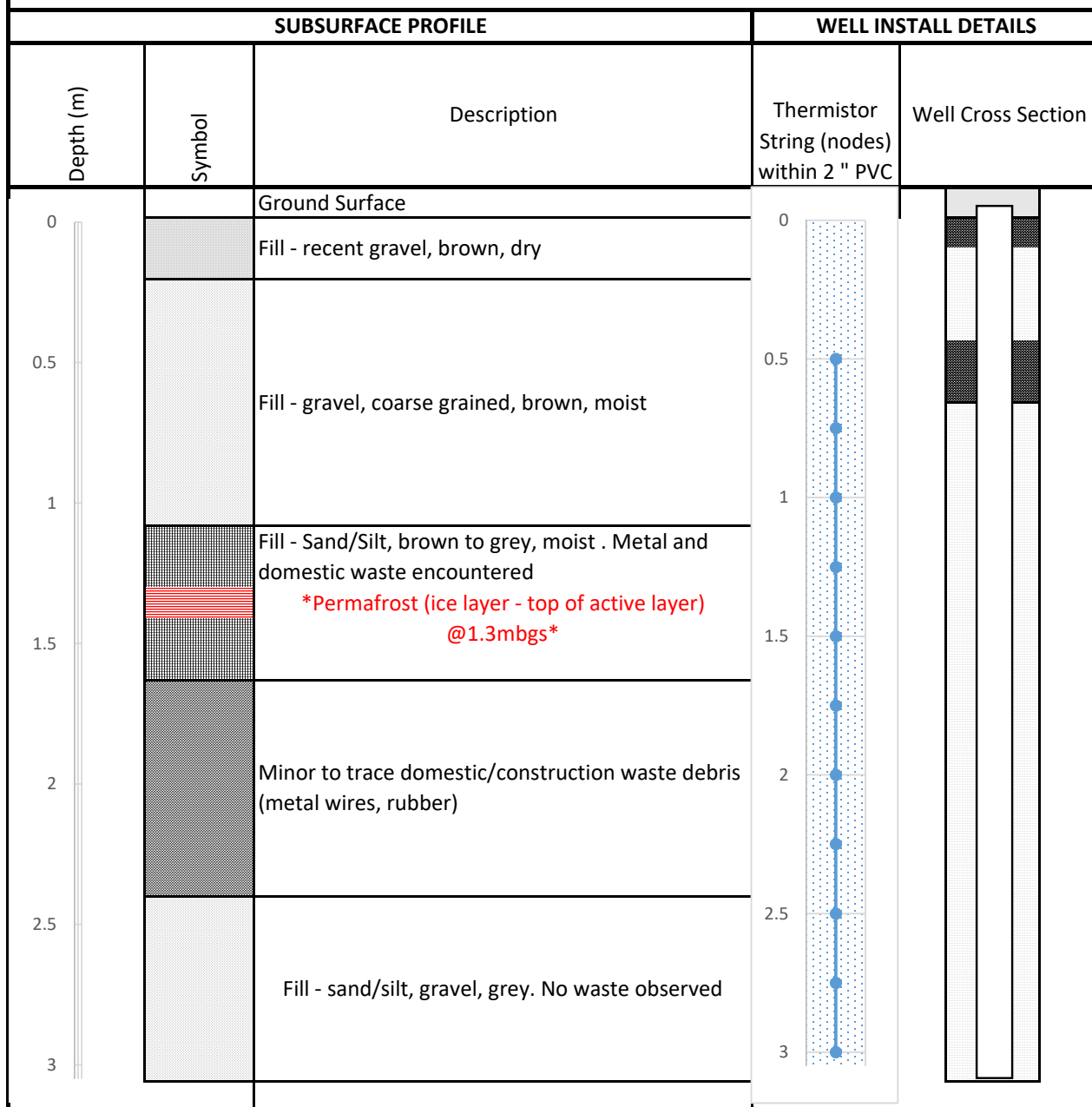
Checked by: \_\_\_\_\_



Project No: P2021-09  
 Project: Resolute Bay Landfill CSP  
 Client: PSPC  
 Location: AEC 1

THRMS-02

Logged by: S. Livingstone  
 Engineer:



Sample Type n/a  
 Excavation Method Excavator  
 Date: 27-Aug-21  
 UTM N: 8295607  
 UTM E: 441055

Checked by: \_\_\_\_\_



Project No: P2021-09  
 Project: Resolute Bay Landfill CSP  
 Client: PSPC  
 Location: AEC 1

THRMS-03

Logged by: S. Livingstone  
 Engineer:

SUBSURFACE PROFILE			WELL INSTALL DETAILS	
Depth (m)	Symbol	Description	Thermistor String (nodes) within 2" PVC	Well Cross Section
0		Ground Surface		
		Fill - gravel, recent fill from remedial work		
0.5		Fill - gravel with some sand and silt, moist to dry, brown to light grey		
1		Fill - Sand/Silt, brown to grey. Debris and domestic waste encountered		
1.5		*Permafrost (ice layer - top of active layer) @1.4 mbgs*		
2		Minor waste encountered (wood, wire, rubber tubing)		
2.5		Fill - sand/silt, gravel. Some minor to trace metal and domestic waste		
3				

--	--

Sample Type	n/a	
Excavation Method	Excavator	
Date:	26-Aug-21	Checked by: _____
UTM N:	8295577	
UTM E:	441014	