2022 Q3 Post-Closure Environmental Monitoring Report

460 Stebbings Road, Shawnigan Lake, BC

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Executive Summary

SLR Consulting (Canada) Ltd. (SLR) was retained by Ralmax Ventures Ltd. (Ralmax) to complete post closure environmental monitoring for the third quarter (Q3) of 2022 at the former South Island Aggregates landfill located at 460 Stebbings Road, Shawnigan Lake, BC (the "site"). The 2022 Q3 environmental monitoring program comprised leachate and groundwater monitoring and sampling and monthly geotechnical assessments of the condition and maintenance of the landfill cover in June, July, and August 2022.

Groundwater samples collected from the monitoring wells surrounding the landfill had concentrations of petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), dissolved metals, and inorganics that were less than the BC Contaminated Sites Regulation (CSR) drinking water (DW) and freshwater aquatic life (AWF) standards, which were considered applicable to the site.

A Qualified Environmental Professional from Ralmax collected leachate samples from the storage tanks contained within the leachate and leak detection storage facility before and following treatment. The leachate was run through the onsite treatment system consisting of filters and the addition of potassium permanganate to reduce the manganese levels in preparation for disposal. Pre- and post-treatment leachate had concentrations of various metals that were greater than the applicable BC CSR DW and/or AWF standards. Concentrations of petroleum hydrocarbons and PAHs were less than the applicable standards. This water was removed from the tanks and disposed of at an authorized off-site facility.

Based on geochemical analysis of leachate, surface water, and groundwater data from the site between fall 2021 and present, there does not appear to be a mixing line connecting the leachate signature to the surface water/groundwater signature. Therefore, the leachate does not appear to be impacting the surface water or groundwater within the zones assessed.

The post-closure environmental monitoring program included monthly site visits to support geotechnical review of the permanent encapsulated area. The observations made during the June, July, and August visits were consistent with what has previously been observed and reported at the site.

This Executive Summary is intended to be read with the remainder of the report and is subject to the same limitation described in Section 7.0.

Table of Contents

Appended Tables

Appended Figures

Appendices

Acronyms and Abbreviations

AW	aquatic life water use
AWF	freshwater aquatic life water use
BV Labs	Bureau Veritas Laboratories
BFD	blind field duplicate
CHH	Cobble Hill Holdings Ltd.
CoA	Certificate of Analysis
CSR	Contaminated Sites Regulation
DW	drinking water use
EC	electrical conductivity
EMA	*Environmental Management Act*
EMP	Environmental Monitoring Plan
ENV	Ministry of Environment & Climate Change Strategy
EPH	extractable petroleum hydrocarbons
HASP	health and safety plan
HDPE	high-density polyethylene
HWR	Hazardous Waste Regulation
IW	irrigation water use
km	kilometres
L	litre
LCMSW	Landfill Criteria for Municipal Solid Waste
LEPH/HEPH	light/heavy extractable petroleum hydrocarbons
LW	livestock water use
m	metres
µg/L	micrograms per litre
µm	micrometre
mbTOC	metres below top of casing
PAH	polycyclic aromatic hydrocarbons
PEA	permanent encapsulated area
Q1	first quarter
Q2	second quarter
Q3	third quarter
Q4	fourth quarter
QA/QC	quality assurance/quality control

QEP	Qualified Environmental Professional
Ralmax	Ralmax Ventures Ltd.
RDL	reported detection limit
RPD	relative percent difference
SHA	Sperling Hansen Associates
SLR	SLR Consulting (Canada) Ltd.
SPO	Spill Prevention Order
TDS	total dissolved solids

1.0 Introduction

SLR Consulting (Canada) Ltd. (SLR) was retained by Ralmax Ventures Ltd. (Ralmax) to complete post closure environmental monitoring for the third quarter (Q3) of 2022 at the former South Island Aggregates landfill located at 460 Stebbings Road, Shawnigan Lake, BC (the "site"; Figure 1). The 2022 Q3 environmental monitoring program comprised leachate and groundwater monitoring and sampling per the Updated Environmental Monitoring Plan (EMP; Sperling Hansen Associates (SHA) 2020) and the Third Amended Spill Prevention Order (SPO; Ministry of Environment & Climate Change Strategy (ENV) 2021). Site visits were completed in June, July, and August for geotechnical assessment of the condition and maintenance of the landfill cover. The methods and findings of 2022 Q3 monitoring and review activities are summarized in this report.

1.1 Site Description

The site (formerly known as South Island Aggregates) is located approximately 5 kilometres (km) south of Shawnigan Lake and comprises Lot 23 Blocks 156, 201 and 323 Malahat District Plan VIP78459, with a total area of approximately 20 hectares. The site is bound to the east by Stebbings Road, to the north by fee simple property Lot 21, and to the west and south by Crown Land. An intermittent stream is located on the west side of the site and drains north into Shawnigan Creek, which flows into the south end of Shawnigan Lake.

As per the Cobble Hill Landfill Closure Design Report (SHA 2016) and Construction Wrap-up Report (SHA 2020b), the base of the permanent encapsulated area (PEA) of the landfill consists of a gravel drainage blanket layer directly atop bedrock to promote groundwater drainage to collection infrastructure (i.e., settling pond) on the west portion of the site. Above the drainage blanket is an engineered basal liner system consisting of a geosynthetic clay liner and a 40-mil geomembrane liner. The cover of the PEA consists of a low-permeable soil cap atop the landfill soils, followed by layers of non-woven geotextile and geomembrane liner, a gravel layer to capture and direct surface water, subsoil and topsoil, and vegetation at surface for erosion control.

Leachate collection piping extends the length of the northern (downslope) edge of the PEA and connects to a leachate conveyance pipe, which leads to the leachate storage facility. Seepage blanket monitoring wells were installed around the north and east perimeter of the PEA and collect water from the seepage blanket beneath the encapsulated soil. Two additional groundwater monitoring wells were installed further downgradient of the PEA and seepage blanket wells (SHA 2020b).

The locations of the PEA, seepage blanket wells, groundwater monitoring wells, surface water sampling location, and leachate storage facility are presented in Figure 2.

1.2 Background

Per the ENV website, the site was authorized under the *Environmental Management Act* (EMA) as a contaminated soil remediation facility and landfill in August 2013. The permit was originally issued to Cobble Hill Holdings Ltd. (CHH), allowing CHH to treat contaminated soil, landfill soil that cannot be treated, and discharge treated effluent to the stream west of the site. Between February 2014 and January 2017, the landfill accepted approximately 97,595 tonnes of contaminated soil classified as less than hazardous waste (SHA 2020). Since 2017, no additional contaminated soil has been accepted at the site.

On January 27, 2017, the permit was suspended, and an SPO was issued specifying actions required to prevent the discharge of leachate and waste to the environment. The SPO was later amended on March 15, 2017, and again on June 29, 2017, requiring CHH to submit a plan "for inspection, operation, maintenance of the Facility, and environmental monitoring post closure" (ENV 2021).

Per the ENV website, the landfill is to follow the guidance outlined in the 2016 BC Landfill Criteria for Municipal Solid Waste (LCMSW) for preparation of the closure plan and monitoring program. On June 24, 2020, SHA completed an Updated EMP for the site that meets the standard monitoring protocols for landfills in BC and specified requirements by the ENV. Specifically, the Updated EMP included the long-term monitoring and sampling of leachate, groundwater and surface water, and the assessment, operation and maintenance of the landfill cover including the leachate collection and storage works. SHA indicated that per Section 7.4 of the 2016 BC LCMSW, post-closure landfill monitoring and inspections are required for no less than 30 years. Since CHH stopped accepting soil and capped the site with a geomembrane in 2016, the monitoring program will extend to January 2046 (SHA 2020a). ENV approved the Cobble Hill Landfill Updated EMP and updated and signed the Third Amended SPO on February 17, 2021.

As per the approved Updated EMP (SHA 2020a) and SPO (ENV 2021), the Named Parties must submit quarterly implementation reports to ENV on or immediately before the last day of April, July, October, and January of each year, for the duration specified in the Updated EMP (SHA 2020a). Implementation reports must include records of inspections, operations and maintenance of the facility, records of the volumes of leachate collected, stored, and transported, including the name and location of the authorized facility(ies) receiving the leachate, and environmental monitoring program records interpreted by a Qualified Environmental Professional (QEP).

In August 2021, Ralmax purchased the mortgage for the site and entered a lease agreement with CHH allowing access to the site for continuing the post-closure monitoring of the PEA. On September 22, 2021, Ralmax informed SLR that the proposed monitoring, sampling, and geotechnical site assessment program is to be completed for five consecutive quarters as required under the Updated EMP (SHA 2020a) and the Third Amended SPO (ENV 2021). SLR completed environmental monitoring programs for Q4 of 2021 through Q2 of 2022 (SLR 2021, 2022a, 2022b, 2022c). This program marks the fourth quarterly sampling event at the site since Ralmax's involvement at the site.

2.0 Scope of Work

The scope of work for the 2022 Q3 post-closure environmental monitoring is outlined as follows:

- Prepare a site-specific health and safety plan (HASP) covering the anticipated hazards of the work and mitigative measures including those relating to COVID-19;
- Monitor and sample groundwater from ten existing groundwater monitoring wells and submit the samples to Bureau Veritas Laboratories (BV Labs) of Burnaby, BC, for analysis of potential contaminants of concern. There was insufficient water in the four seepage blanket monitoring wells and in the intermittent stream to collect water samples from these locations during the Q3 monitoring program;
- Prepare Piper plots for the cumulative groundwater, surface water, and leachate results to characterize the water onsite;
- Complete monthly site visits to observe and record the conditions of the PEA of the landfill closure area (i.e., cover stability for geotechnical assessment); and

- Prepare a summary report that outlines the field methods, analytical results, and conclusions regarding the presence/absence of groundwater impacts, and the conditions of the landfill closure area. The summary report will also include outlining the methods and analytical results of the leachate sampling and disposal completed by Ralmax.

3.0 Regulatory Standards

3.1 Regulatory Framework

The Contaminated Sites Regulation (CSR) and the EMA contain the principal regulatory requirements for contaminated sites management in BC. The CSR came into effect on April 1, 1997, and was amended most recently on July 7, 2021. Under Section 63.1 of EMA and protocols under Section 64, the director's interim standards are legally binding. The Hazardous Waste Regulation (HWR) may also apply where contaminated media are transported, managed, or disposed of offsite.

The EMA and CSR have provisions for incorporating numerical and risk-based standards approaches to managing site contamination. The legislation outlines site assessment procedures, remediation requirements, and application processes for environmental closure for a property. Numerical standards define whether a site is contaminated or has been satisfactorily remediated when using the numerical standards approach. Risk-based standards and risk-based remediation are recognized by the legislation.

Technical Guidance, Administrative Guidance, Procedure and Policy documents issued by ENV clarify the interpretation of regulatory standards and requirements and provide information regarding their application. Provisions in these documents are not legally binding but indicate the expectations of ENV.

3.2 Water Standards

The CSR presents numerical standards for substances in water in Schedule 3.2. It references the numerical standards for four classes of water use:

- Aquatic Life (AW)
- Irrigation (IW)
- Drinking Water (DW)
- Livestock (LW)

Schedule 3.2 water quality standards for volatile hydrocarbons and light extractable hydrocarbons apply to all sites in BC, irrespective of water use.

ENV Protocol 21 (ENV 2017) specifies that AW, DW, IW, and LW standards generally apply for evaluating groundwater quality where receiving waters are used by aquatic life, surface water intakes are present on the site or within 500 m, or where groundwater is used for livestock watering or irrigation for agricultural purposes. Essential aspects of applying water use standards are noted below, but other considerations may be relevant, and associated ENV guidance should also be consulted (e.g., for preferential groundwater flow corridors; water management plans; bedrock aquifers).

If water is used on a site or within 500 metres (m) for drinking water, DW standards are used to evaluate water quality. If the groundwater flow direction has been reliably determined using approved methods, then nearby current uses may be limited to include drinking water wells or surface water intakes 100 m upgradient and 500 m downgradient of the outer extent of the contamination source.

To protect future potable water consumption, DW use also applies if there is an aquifer below the site with a hydraulic conductivity greater than or equal to 1 x 10^{-6} m/s and a yield greater than or equal to 1.3 L/min. The presence of underlying regional aquifers meeting these conditions must also be assessed unless the presence of a natural confining barrier has been confirmed following the requirements of Protocol 21.

If a surface water body with aquatic life water use is within 500 m of a site, AW standards apply to evaluate water quality. If substances in groundwater are present at concentrations exceeding AW standards and may migrate to within 500 m of an aquatic life receptor, AW standards also apply to the site. In Table 1 of ENV's Technical Guidance 15, AW standards apply to groundwater at a point 10 m inland from the high water mark of a receiving environment, but not at a distance less than 10 m from the high water mark; BC water quality guidelines apply below the high water mark. Aquatic life water use standards do not apply at a site if approved methods are used to determine that groundwater at the site flows to a more distant surface water body.

Irrigation and livestock watering uses and the IW and LW standards apply at a site where groundwater or surface water within 500 m of the site is used for irrigation or livestock watering unless the groundwater has been reliably determined to flow away from such purposes. Nearby current uses may then be limited to include only irrigation or livestock water wells or surface water intakes within 100 m upgradient and 500 m downgradient of the furthest extent of the contamination source. Although the site-specific soil matrix standards for irrigation and livestock watering uses in Schedule 3.1 apply only to specific land uses, the IW and LW water standards in Schedule 3.2 apply to all land uses where appropriate.

The Generic Numerical Water Standards for iron, manganese, as well as 17-alpha ethinylestradiol, diisopropanolamine, nonylphenol and nonylphenol ethoxylates, perfluorooctane sulfonate, and sulfolane apply only to sites with specific Schedule 2 industrial or commercial activities that could be a source of these substances, as listed in the footnotes to Schedule 3.2. For example, sites that have temporarily elevated iron and manganese levels in groundwater associated only with the presence of petroleum hydrocarbon contamination will typically not be required to meet the CSR standards for iron and manganese if not used for the specified Schedule 2 activities.

Provision exists in the CSR (Section 11(3)) for considering background concentrations for groundwater. Protocol 9 specifies procedures for determining local background groundwater quality in a defined geographic area and for a defined groundwater flow system. They are to be followed if these alternative concentrations are to be used in place of numerical standards prescribed in the CSR.

For water to be classified as hazardous waste when transported from a site, it must meet criteria for one or more of TDGR Classes 2, 3, 4, 5, 6, 8 or 9 and HWR definitions for PCB waste; wastes containing dioxin; waste oil; leachable toxic waste (HWR Schedule 4, Table 1); waste containing tetrachloroethylene; and waste containing polycyclic aromatic hydrocarbon.

3.3 Applicable Standards at the Site

3.3.1 Groundwater and Leachate

Four aspects of the site relating to surface water and groundwater are essential for determining potentially applicable standards:

1. Firstly, the site is situated in between two freshwater bodies: Shawnigan Creek and an intermittent stream, located approximately 50 m to the east and immediately west, respectively. The nearest marine water body is Saanich Inlet, which is approximately 3.5 km from the site. In this case, the freshwater aquatic life (AWF) standards apply because groundwater exceeding aquatic life standards may migrate to freshwater bodies within 500 m of the site.
2. Secondly, the ENV groundwater database well search indicates approximately 10 water supply wells are within 500 m of the subject site, including one registered to South Island Aggregates (i.e., on-site). Therefore, DW standards apply.
3. ENV considers DW standards to be applicable at the site supporting future groundwater use unless:
    - Site conditions meet all the DW exemption requirements outlined in Protocol 21; or
    - ENV has approved a site-specific exemption from the DW standards.
4. Irrigation water use does not occur on or near the site. Livestock watering use similarly does not occur. Since no irrigation or livestock water wells or surface water intakes are within 100 m upgradient and 500 m downgradient of the edge of a stable contaminant plume, standards based on irrigation and livestock watering uses do not apply.

Therefore, for this report, groundwater and leachate analytical results have been compared to the CSR Schedule 3.2 AWF and DW standards.

Additionally, the site does not fall within the regions specified in Protocol 9, Table 1. Protocol 9; however, provides an interim value for cobalt (20 micrograms per litre (µg/L)) that may be applied to all regions of BC not included in the Table 1 regions. The Protocol 9 values have been used to dismiss exceedances of the CSR Schedule 3.2 standards for cobalt, where applicable.

4.0 Methods

The groundwater and surface water monitoring and sampling activities were completed following SLR's standard field procedures and technical guidance documents to maintain consistency in data collection and prevent cross-contamination. The procedures were developed based on accepted environmental practices and guidelines for site characterization established by BC ENV. Details of the methods used in this assessment are discussed below.

4.1 Health and Safety

The project was conducted in a manner consistent with SLR's Occupational Health, Safety, and Environmental Policy. A site-specific HASP was prepared prior to commencing field activities. The HASP outlined project tasks, potential hazards, and mitigative measures including those related to COVID-19.

SLR personnel were required to review and sign the HASP at the start of each field workday during the daily tailgate meetings. During tailgate meetings, new potential hazards were identified and added to the HASP.

4.2 Leachate Sampling

A QEP from Ralmax collected leachate samples from the leachate tanks contained within the leachate and leak detection storage facility (Figure 2) before and following treatment. Prior to sampling, leachate was purged from the leachate tank for approximately 10 minutes to allow for representative samples to be collected. The pre-treatment and post-treatment leachate was collected and transferred back into the leachate tanks. The pre-treatment sample was collected from the tank outlet pipe following purging, while post-treatment sample was collected from a sampling port after having been run through the onsite treatment system.

Pre- and post-treatment leachate to be analyzed for total parameters were pumped directly in laboratory-supplied bottles, while those to be analyzed for dissolved parameters were field filtered by pumping the leachate through a 0.45 micrometre (µm) in-line filter prior to being pumped into laboratory-supplied bottles. Sample containers were labelled with the sample identification, project number, and date of collection.

Leachate samples were stored in an ice-filled cooler in the field and when being transported to BV Labs. A completed chain-of-custody report form accompanied the sample submission to the laboratory. The pre-treatment leachate sample was submitted for analysis of light and heavy extractable petroleum hydrocarbons (LEPH/HEPH), extractable petroleum hydrocarbons (EPH) C10-C19 and C19-C32, polycyclic aromatic hydrocarbons (PAHs), total and dissolved metals, alkalinity, inorganic parameters including chloride, fluoride, nitrate and sulfate, and total dissolved solids (TDS). The post-treatment leachate sample was submitted to BV Labs for analysis of dissolved metals and inorganics.

4.3 Groundwater Monitoring and Sampling

Groundwater wells were monitored and sampled as part of the post-closure monitoring event. During well monitoring, groundwater depths were measured using a Solinst oil-water interface meter. Between measurements, the interface meter probe was cleaned using an Alconox and water solution to avoid cross-contamination.

Prior to sampling, the monitoring wells were purged using a low-flow method to remove stagnant water from the well and encourage fresh formation water flow into the well. Depending on the well depths, diameters, and groundwater levels, low-flow purging was conducted using one of the following methods:

- Spectra Field Pro III peristaltic pump and high-density polyethylene (HDPE) tubing;
- 4.4-cm (1.75-inch) Sample Pro pneumatic groundwater sampling pump (i.e. bladder pump) with QED MicroPurge MP10H or MP50 controller and HDPE tubing; or
- 1.9-cm (0.75-inch) Sample Pro pneumatic groundwater sampling pump with QED Micro Purge MP10H or MP50 controller and HDPE tubing.

The purged water was monitored for physiochemical parameters including pH, temperature, and electrical conductivity (EC) using a PCTestr multiparameter probe, and for turbidity using a LaMotte turbidity meter.

Water samples were collected from the monitoring wells when the measured parameters in the purged water stabilized indicating that representative formation water was being extracted. New tubing was used at each location to purge and collect the groundwater samples to minimize the potential for cross contamination between monitoring wells.

Groundwater samples to be analyzed for total parameters were pumped directly in laboratory-supplied bottles, while those to be analyzed for dissolved parameters were field filtered by pumping the water through a 0.45 µm in-line filter prior to being pumped into laboratory-supplied bottles. A blind field duplicate (BFD) sample was collected in separate bottles simultaneously with the original sample from the same location. Sample containers were labelled with the sample identification, project number, and date of collection.

Groundwater samples were stored in an ice-filled cooler in the field and when being transported to BV Labs. A completed chain-of-custody report form accompanied the sample submission to the laboratory. The groundwater samples were submitted for analysis of analysis of dissolved metals, TDS, alkalinity, and inorganic parameters including chloride, fluoride, nitrate, and sulfate.

4.4 Geotechnical Site Assessment

As part of the requirements set out by the EMP, the post-closure environmental monitoring program completed by SLR included monthly site visits for geotechnical assessment of the PEA. The purpose of the site visits was to observe and record conditions of the capping for comparative review to ongoing assessment, including the initial assessment summarized in 2021 Q4 report (SLR, 2021) and quarterly reports (2022 Q1:SLR 2022b, 2022 Q2:SLR 2022c) . The site visits included recorded observations and photographic documentation of site conditions, including: the PEA landfill cover surface, surface water management, leachate collection and conveyance, and environmental monitoring infrastructure (i.e., monitoring wells).

4.5 Waste Disposal

Groundwater removed from the monitoring wells during purging and sampling was collected in a 205 litre (L) steel drum for temporary storage on site prior to receiving laboratory results. SLR plans to dispose of the wastewater drums in November 2022, following the 2022 Q4 monitoring and sampling activities.

4.6 Quality Assurance and Quality Control

A quality assurance and quality control (QA/QC) program was followed to ensure that the sampling and analytical data were interpretable, meaningful, and reproducible. Two stages of QA/QC were completed, with one stage completed by the laboratory and the other as part of field procedures performed by SLR.

4.6.1 Laboratory Program

BV Labs is accredited by the Canadian Association for Laboratory Accreditation that uses ENV recognized methods to conduct laboratory analyses. BV Labs is known for appropriate quality assurance services and participation in programs of inter-lab comparisons and on-site assessments based on international standards. As conveyed by the laboratory, method blanks, control standards, certified reference materials, method spikes, duplicates, surrogates, and blanks and routinely analyzed as part of their QA/QC programs.

4.6.2 Field Program

SLR implemented a standardized QA/QC program in accordance with BC ENV guidance and general industry-established guidelines. The following QA/QC procedures were conducted during groundwater and surface water collection, handling, identification, and shipping:

- Water sampling bottles were supplied by the laboratory to minimize sample container contamination;
- Equipment and materials that came into contact with water were decontaminated by washing with Alconox soap and rinsing with distilled water between sampling locations;
- New nitrile gloves were used for each sample to minimize the potential for cross-contamination;
- The field equipment was calibrated prior to sampling;
- New HDPE tubing was used for each well during groundwater sampling;
- Water samples were stored in ice-chilled coolers in the field or in a refrigerator until delivery to the laboratory;
- Completed chain-of-custody forms accompanied samples shipped to the laboratory;
- Samples were submitted to and analyzed by the laboratory within hold times specified by the laboratory to assure reliable results; and
- One BFD sample was/will be collected for every 10 samples collected over the course of the monitoring program (i.e., collectively over the five events).

BFD samples were collected to assess consistencies during the field sampling procedure and to perform an independent check on laboratory QA/QC. The relative percent difference (RPD) values between results for the parent sample and the duplicate sample are calculated to determine the precision of the results. RPD is defined as the absolute value of the difference of the duplicate results divided by the average of the duplicate results, expressed as a percentage. Analytical error increases near the reported detection limit (RDL); therefore, the RPD calculation was not performed unless the concentrations of both samples were greater than five times the RDL.

The calculated RPD values were compared to data quality objectives to evaluate the sample result variability. The data quality objectives for specific analytes are based on SLR's Technical Guidance, and industry accepted standards and are consistent with guidance provided by BC ENV.

5.0 Results

The monitoring and analytical results for the groundwater and leachate samples are summarized in the following sections along with the geochemical analysis results and geotechnical site assessment observations. The monitoring and analytical data is summarized in Tables 1 through 11 and Figures 3 and 4 following the text.

5.1 Leachate Management

Between February 22 and July 15, 2022, the total volume of leachate collected and stored onsite was approximately 64,866 L. On July 15 and 20, 2022, a total volume of approximately 64,866 L of leachate was transported by GFL Environmental Inc. to the SPL Wastewater Treatment Facility located at 995 Henry Eng Place, Langford, BC, for disposal.

5.2 Leachate Analytical Results

Sampling of pre- and post-treatment leachate was completed by Ralmax on June 8 and July 4, 2022, respectively. The pre-treatment sample was collected from the tank outlet pipe following purging, while post-treatment sample was collected from a sampling port after having been run through the onsite treatment system consisting of 1 µm Hydronix filters and the addition of potassium permanganate to reduce the manganese levels for disposal. Analytical results are discussed in the following sections and are presented in Tables 1 through 6 following the text and on Figure 3. Laboratory Certificate of Analysis (CoA) reports are included in Appendix A.

5.2.1 Physicochemical Properties

Pre-treatment leachate sample SHA-LE1 was analyzed for physiochemical properties including alkalinity, EC, and TDS. There are no applicable CSR standards for these parameters. Physiochemical properties for leachate are presented in Table 1 following the text.

5.2.2 Petroleum Hydrocarbons

Pre-treatment leachate sample SHA-LE1 was analyzed for petroleum hydrocarbons including LEPH, HEPH, EPH C10-C19, and EPH C19-C32. The analytical results indicated that petroleum hydrocarbon concentrations in leachate were less than the RDLs and the applicable CSR standards. Results for petroleum hydrocarbons in leachate are presented in Table 2 following the text.

5.2.3 Polycyclic Aromatic Hydrocarbons

Pre-treatment leachate sample SHA-LE1 was analyzed for PAHs. The analytical results indicated that PAH concentrations in leachate were less than the RDLs and the applicable CSR standards. Results for PAHs in leachate are presented in Table 3 following the text.

5.2.4 Dissolved Metals

Pre-treatment and post-treatment leachate samples were analyzed for dissolved metals. The analytical results indicated that dissolved sodium and strontium concentrations in leachate were greater than the applicable CSR standards. Results for dissolved metals in leachate are presented in Table 4 following the text.

5.2.5 Total Metals

Pre-treatment leachate sample SHA-LE1 was analyzed for total metals. Analytical results indicate that concentrations of sodium and strontium were greater than the applicable CSR standards. Results for total metals in leachate are presented in Table 5 following the text.

5.2.6 Inorganics

Pre- and post-treatment leachate samples were analyzed for inorganics. Analytical results indicate that concentrations of chloride and sulphate in both the pre-treatment and post-treatment samples were greater than the applicable CSR standards. Results for inorganics in leachate are presented in Table 6 following the text.

5.3 Groundwater Field Observations

Ten groundwater wells (MW19-01, MW19-02, MW-1D, MW-1S, MW-2, MW-3D, MW-3S, MW-5D, MW-5S, and MW-6) and four seepage blanket monitoring wells (SB-1, SB-2, SB-3, and SB-4) were monitored between August 17 and 19, 2022. The locations of these wells are presented in Figure 2.

Seepage blanket wells SB-1, SB-2, SB-3, and SB-4 were dry. Groundwater depths at the ten monitoring wells ranged from 4.660 metres below top of casing (mbTOC) in MW-3D to 18.505 mbTOC in MW-5S. Field measurements (including temperature, pH, EC, and turbidity), alkalinity, and TDS results are presented in Table 7 following the text.

5.4 Groundwater Analytical Results

Ten groundwater wells (MW19-01, MW19-02, MW-1D, MW-1S, MW-2, MW-3D, MW-3S, MW-5D, MW-5S, and MW-6) were sampled between August 17 and August 19, 2022. Analytical results are discussed in the following sections and are presented in Tables 8 through 11 following the text and summarized on Figure 4.

5.4.1 Petroleum Hydrocarbons

Ten groundwater samples and one BFD were analyzed for LEPH/HEPH, EPH C10-C19 and EPH C19-C32. Analytical results indicate that concentrations were less than the applicable CSR standards. Results for petroleum hydrocarbons in groundwater are presented in Table 8 following the text.

5.4.2 Polycyclic Aromatic Hydrocarbons

Ten groundwater samples and one BFD were analyzed for PAHs. Analytical results indicate that concentrations were less than the applicable CSR standards. Results for PAHs in groundwater are presented in Table 9 following the text.

5.4.3 Dissolved Metals

Three groundwater samples and one BFD were analyzed for dissolved metals. Analytical results indicate that concentrations were less than the applicable CSR standards. Results for dissolved metals in groundwater are presented in Table 10 following the text.

5.4.4 Inorganics

Three groundwater samples and one BFD were analyzed for inorganics. Analytical results indicate that concentrations were less than the applicable CSR standards. Results for inorganics in groundwater are presented in Table 11 following the text.

5.5 Quality Assurance and Quality Control Results

SLR assessed the laboratory QA data along with the RPD values calculated for the duplicate pair collected during this monitoring and sampling program. The results of both are discussed below.

5.5.1 Laboratory Quality Assurance Results

SLR completed a review of the QA data that accompanied the laboratory CoA reports. The QA section of each report concludes that laboratory duplicate RPDs, reference material measurements, method blank spike recoveries, and matrix spike recoveries met the laboratory acceptability criteria.

The laboratory issued a comment for groundwater samples MW19-01, MW19-02, MW-2S, and DUP-A indicating that the samples were analyzed past the method specified hold time for nitrate + nitrite and nitrite. However, the concentrations of nitrate in these samples were two orders of magnitude below the lowest applicable standard and impacts relating to sample hold times are considered negligible. The laboratory was contacted about this comment and has indicated that samples for this analysis will be expedited to avoid hold time exceedances in the future. The laboratory QA data is included with the CoA reports in Appendix A.

5.5.2 Relative Percent Difference

One groundwater BFD was analyzed by BV Labs and compared to the parent sample by SLR. The calculated RPD values are presented alongside the groundwater analytical data in Tables 6 through 11. RPD values for groundwater were below the alert limits. Based on this, the analytical data is considered reliable and representative of site conditions.

5.6 Geochemical Analysis

The major dissolved cations constituents (sodium, magnesium, calcium, and potassium) and anion constituents (bicarbonate, carbonate, sulphate, and chloride) of the groundwater, surface water, and leachate samples were plotted on a Piper plot. The purpose of the Piper plot is to show the composition of a water sample relative to its cation and anion constituents. This data can be used to determine the source of these constituents and effectively “fingerprint” each water type. The cation and anion data of the respective sample is expressed in milliequivalents/L and normalized so that the concentrations are expressed as a relative percentage.

The groundwater samples collected in August 2022 and leachate samples collected in June 2022 were drawn on a Piper plot along with the leachate, surface water, and groundwater data collected during the 2021 Q4, 2022 Q1, and 2022 Q2 monitoring events.

The Piper plot indicated the following characteristics:

- The data from the 2022 Q3 sampling program is generally consistent with that collected during the 2021 Q4, 2022 Q1, and 2022 Q2 sampling programs.
- With regards to cation composition, the leachate samples are more sodium and potassium-rich when compared to the groundwater and surface water samples, which are more calcium-rich.
- With regards to the anion composition, the leachate sample is chloride-rich compared to the groundwater and surface water samples, are more sulphate- and/or carbonate-rich.

- The surface water and groundwater samples plot in generally the same areas of the Piper plot indicating that the groundwater is likely sourced primarily from surface water infiltration.

Based on the Piper plot, there does not appear to be a mixing line connecting the leachate signature to the surface water/groundwater signature. The leachate does not appear to be impacting the surface water or groundwater within the zones assessed. The Piper plot is included in Appendix B.

5.7 Geotechnical Site Assessment

As part of the ongoing geotechnical assessment, three monthly site visits were conducted on June 17, July 18, and August 19, 2022. Observations made during these visits were documented with field notes and photographs. Select photographs, Photos 1 through 8 are provided in Appendix C. The referenced photographs are a collection of select observations, and form part of a larger photograph collection that was taken during the site visits, which are kept on file for future reference. A summary of observations from the field notes collected during the site visits is discussed below.

5.7.1 Encapsulated Landfill Area

The surface of the PEA (i.e., landfill cover) was more densely vegetated during the June through August site visits than observed in previous site visits. The vegetation primarily comprises moderate to dense coverage of Scotch broom with some grass and clover (Photos 1 through 5). The Scotch broom was up to 1.2 m tall at the time of the August assessment.

Much of the cover surface is obscured from the heavy vegetation; however based on site observation the erosional surface features are considered to generally be consistent with previous site visits and typically occur over steeper graded areas that are less densely vegetated (Photo 5). The area of subsidence first observed in February 2022 (SLR 2022b) is still present with no significant changes; with exception of being more densely vegetated by Scotch broom. The surface area of the PEA appears to be intact (with exception of small area of subsidence noted) with no new signs of disturbance, instability, cracking, burrowing, or exposed geosynthetics.

5.7.2 Surface Water Management

Standing water was not observed on the PEA cover or within the perimeter drainage diversion, mid-slope diversion, or toe ditches. A few shallow pools of standing water were observed near the perimeter of the landfill at the south boundary of the landfill (i.e., within the access road located at the south/southeast boundary of the landfill) during the June site visit, but these areas were observed to be dry on subsequent July and August site visits.

Vegetation is present in sections of the drainage ditches (Photo 4). There was no water observed within the drainage ditch system at the time of the site visits, and impact to drainage due to vegetation was not assessed but will likely become more apparent in the wet season.

5.7.3 Leachate and Leak Collection and Conveyance

The conditions of the leachate collection cleanout polyvinyl chloride (PVC) pipe stick-ups and seepage blanket monitoring well PVC pipe stick-ups with caps (SB-1 to SB-4) were consistent with the annual geotechnical assessment (SLR 2021).

5.7.4 Storage Tank Facility

The storage tank facility was observed for changes in the lock-block wall structure, surrounding backfill, and inlet pipes. The structure appeared to be in the same condition as the initial geotechnical assessment (SLR 2021) (Photos 6 through 8).

5.7.5 Monitoring Wells

The conditions of the monitoring wells (MW19-01/02, MW-1S/1D, MW-2, MW-3S/3D, MW-5S/5D, MW-6) were consistent with the initial geotechnical assessment (SLR 2021).

6.0 Conclusion

Water collected from the leachate tanks contained within the leachate and leak detection storage facility had concentrations of various metals and inorganics that exceeded the applicable CSR standards for the site before and following treatment. Concentrations of petroleum hydrocarbons and PAHs were less than the applicable CSR standards. The water was run through the onsite treatment system consisting of filters and the addition of potassium permanganate to reduce the manganese levels for disposal. This water was removed from the tanks and disposed of off-site.

Groundwater samples collected from the groundwater wells at the base of the landfill had concentrations of petroleum hydrocarbons, PAHs, dissolved metals, and inorganics that were less than the CSR standards applicable to the site.

A Piper plot analysis of the leachate, surface, and groundwater from the present and previous monitoring events indicated the following trends:

- The data from the 2022 Q3 sampling program is generally consistent with that collected during the 2021 Q4, 2022 Q1, and 2022 Q2 sampling programs.
- With regards to cation composition, the leachate samples are more sodium and potassium-rich when compared to the groundwater and surface water samples, which are more calcium-rich.
- With regards to the anion composition, the leachate sample is chloride-rich compared to the groundwater and surface water samples, which have nearly equal parts sulphate to carbonates or are more carbonate-rich.
- The surface water and groundwater samples plot in generally the same areas of the Piper plot indicating that the groundwater is likely sourced primarily from surface water infiltration.

Based on the Piper plot, there does not appear to be a mixing line connecting the leachate signature to the surface water/groundwater signature; therefore, leachate does not appear to be impacting the surface water or groundwater within the zones assessed.

The geotechnical site visits are limited to observational review and do not include any intrusive assessment or internal review of piping systems or confined space inspection of the leachate facility, piping, and tanks. The observations made during the 2022 Q3 site visits were generally consistent with the observations reported in the 2022 Q2 Post-Closure Environmental Monitoring Report (SLR 2022c).

7.0 Statement of Limitations

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for Ralmax Ventures Ltd., hereafter referred to as the "Client". It is intended for the sole and exclusive use of Ralmax Ventures Ltd. The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

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Sincerely,

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Tables

2022 Q3 Post-Closure Environmental Monitoring Report

460 Stebbings Road, Shawnigan Lake, BC

Ralmax Ventures Ltd.

SLR Project No. 205.30042.00000

October 6, 2022

TABLE 1: LEACHATE ANALYTICAL RESULTS - PHYSICOCHEMICAL PROPERTIES

				Physicochemical					
				alkalinity (bicarbonate)	alkalinity (carbonate)	alkalinity (P)	alkalinity (total) as CaCO3	electrical conductivity (lab)	total dissolved solids
				mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L
Reported Detection Limit				1	1	1	1	2	50
Site Area	**Sample Location**	**Sample Date**	**Sample ID**						
Leachate Tank	SHA-LE-1	2022-Jun-8	SHA-LE1	240	<1	<1	200	11,000	8100

Notes:

< - less than reported detection limit

mg/L - milligrams per litre

µS/cm - microsiemens per centimetre

TABLE 2: LEACHATE ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS

				Petroleum Hydrocarbons			
				EPH C10-C19	EPH C19-C32	LEPHw	HEPHw
				µg/L	µg/L	µg/L	µg/L
Reported Detection Limit				200	200	200	200
BC CSR DW				**5000**			
BC CSR AWF				**5000**		**500**	
Site Area	**Sample Location**	**Sample Date**	**Sample ID**				
Leachate Tank	SHA-LE-1	2022-Jun-8	SHA-LE1	<200	<200	<200	<200

Standard/Guideline Descriptions

• BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water

• BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Notes:

• formatting of cells indicates exceedances of like-formatted standards

< - less than reported detection limit

µg/L - micrograms per litre

EPHw10-19 - extractable petroleum hydrocarbons (C10-C19)

EPHw19-32 – extractable petroleum hydrocarbons (C19-C32) in water

LEPHw – light extractable petroleum hydrocarbons in water; EPHw10-19 minus PAH compounds: acenaphthene, acridine, anthracene, fluorene, naphthalene and phenanthrene

HEPHw - heavy extractable petroleum hydrocarbons in water; EPHw19-32 minus PAH compounds: benz(a)anthracene, benzo(a)pyrene, fluoranthene and pyrene

PAH - polycyclic aromatic hydrocarbons

TABLE 3: LEACHATE ANALYTICAL RESULTS - POLYCYCLIC AROMATIC HYDROCARBONS

				PAHs																				
				acenaphthene	acenaphthylene	acridine	anthracene	benzo(a)anthracene	benzo(a)pyrene	benzo(b+j)fluoranthenes	benzo(g,h,i)perylene	benzo(k)fluoranthene	chrysene	dibenz(a,h)anthracene	fluoranthene	fluorene	indeno(1,2,3-cd)pyrene	methylnaphthalene, 1-	methylnaphthalene, 2-	naphthalene	phenanthrene	pyrene	quinoline	PAHs (sum of total)	heavy molecular weight PAHs	light molecular weight PAHs
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Reported Detection Limit				0.05	0.05	0.05	0.01	0.01	0.005	0.03	0.05	0.05	0.02	0.003	0.02	0.05	0.05	0.05	0.1	0.1	0.05	0.02	0.02	0.1	0.05	0.1
BC CSR DW				**250**			**1000**	**0.07**	**0.01**	**0.07**			**7**	**0.01**	**150**	**150**		**5.5**	**15**	**80**		**100**	**0.05**			
BC CSR AWF				**60**		**0.5**	**1**	**1**	**0.1**				**1**		**2**	**120**				**10**	**3**	**0.2**	**34**			
Site Area	**Sample Location**	**Sample Date**	**Sample ID**																							
Leachate Tank	SHA-LE-1	2022-Jun-8	SHA-LE1	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1

Standard/Guideline Descriptions

- BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water
- BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Notes:

- formatting of cells indicates exceedances of like-formatted standards

< - less than reported detection limit
µg/L - micrograms per litre
PAH - polycyclic aromatic hydrocarbons

TABLE 4: LEACHATE ANALYTICAL RESULTS - DISSOLVED METALS

Site Area	Sample Location	Sample Date	Sample ID	Dissolved Metals																																				
				pH (lab)	hardness as CaCO3 (Filtered)	aluminum (Filtered)	antimony (Filtered)	arsenic (Filtered)	barium (Filtered)	beryllium (Filtered)	bismuth (Filtered)	boron (Filtered)	cadmium (Filtered)	calcium (Filtered)	chromium (III+VI) (Filtered)	cobalt (Filtered)	copper (Filtered)	iron (Filtered)	lead (Filtered)	lithium (Filtered)	magnesium (Filtered)	manganese (Filtered)	molybdenum (Filtered)	nickel (Filtered)	potassium (Filtered)	selenium (Filtered)	silver (Filtered)	sodium (Filtered)	strontium (Filtered)	thallium (Filtered)	tin (Filtered)	titanium (Filtered)	uranium (Filtered)	vanadium (Filtered)	zinc (Filtered)	zirconium (Filtered)
				pH Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Reported Detection Limit					0.5	15	2.5	0.5	5	0.5	5	250	0.050	0.25	5	1	1	25	1	10	0.25	5	5	250	0.5	0.1	0.25	5	0.05	25	25	0.50	25	25	0.5
BC CSR DW						**9500**	**6**	**10**	**1000**	**8**		**5000**	**5**		**50**	**20[#1]**	**1500**		**10**	**8**			**250**	**80**		**10**	**20**	**200**	**2500**		**2500**		**20**	**20**	**3000**	
BC CSR AWF							**90**	**50**	**10000**	**1.5**		**12000**	**0.5 - 4 ***		**10**	**40**	**20 - 90 ***		**40 - 160 ***				**10000**	**250 - 1500 ***		**20**	**0.5 - 15 ***			**3**		**1000**	**85**	**75[#1] - 3150[#1] ***	
Leachate Tank	SHA-LE-1	2022-Jun-8	SHA-LE1	8	2410	<15	<2.5	<0.5	11.5	<0.5	<5	317	0.264	648	<5	1.4	3.4	<25	<1	<10	192	15,600	<5	6.1	21,200	<0.5	<0.1	**1280**	**3400**	<0.05	<25	<25	0.53	<25	25	<0.5
		2022-Jul-4	SHA-LE1	-	2580	<15	<2.5	<0.5	<5	<0.5	<5	320	<0.050	721	5.2	<1	3	<25	<1	<10	191	81.3	<5	<5	33,900	<0.5	<0.1	**1320**	**3500**	<0.05	<25	<25	0.62	<25	<25	<0.5

Standard/Guideline Descriptions

- BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water
- BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Standard/Guideline Comments

#1:The site does not fall within the regions specified in Protocol 9, Table 1. Protocol 9 provides an interim value for cobalt (20 µg/L) that may be applied to all regions of BC not included in the Table 1 regions. The Protocol 9 values have been used to dismiss exceedances of the CSR Schedule 3.2 standards for cobalt.
#2:Results with hardness >500 mg/L should be evaluated on a site by site basis; refer to BC Protocol 10

Notes:

- formatting of cells indicates exceedances of like-formatted standards
'-' - sample not analyzed for parameter indicated
< - less than reported detection limit
µg/L - micrograms per litre
mg/L - milligrams per litre
- BC CSR iron and manganese standards do not apply for lack of specific Schedule 2 industrial or commercial activities at the site. See BC CSR Schedule 3.2, Footnotes 43, 44 and 46, 47
- most stringent of chromium (III) and (VI) standards applied to chromium (total)
* - range of parameter-dependent standards; value is compared to standard derived from parameter of individual sample
H - hardness in mg/L of calcium carbonate ($CaCO_3$)
- metals with hardness-dependent standards:
Cd - cadmium, Cu - copper, Pb - lead, Ni - nickel, Ag - silver, Zn - zinc

*** BC CSR Parameter-Dependent Standards**

Cd - AWF	Cu - AWF	Pb - AWF	Ni - AWF	Ag - AWF	Zn - AWF
0.5 @ H < 30	20 @ H < 50	40 @ H < 50	250 @ H < 60	0.5 @ H ≤ 100	75 @ H < 90
1.5 @ H=30<90	30 @ H=50<75	50 @ H=50<100	650 @ H=60<120	15 @ H > 100	150 @ H=90<100
2.5 @ H=90<150	40 @ H=75<100	60 @ H=100<200	1,100 @ H=120<180		900 @ H=100<200
3.5 @ H=150<210	50 @ H=100<125	110 @ H=200<300	1,500 @ H ≥ 180		1,650 @ H=200<300
4 @ H ≥ 210	60 @ H=125<150	160 @ H ≥ 300			2,400 @ H=300<400
	70 @ H=150<175				3,150 @ H=400<500
	80 @ H=175<200				
	90 @ H ≥ 200				

TABLE 5: LEACHATE ANALYTICAL RESULTS - TOTAL METALS

						Total Metals																																
				pH (lab)	hardness as CaCO3	aluminum	antimony	arsenic	barium	beryllium	bismuth	boron	cadmium	calcium	chromium (III+VI)	cobalt	copper	iron	lead	lithium	magnesium	manganese	molybdenum	nickel	potassium	selenium	silver	sodium	strontium	thallium	tin	titanium	uranium	vanadium	zinc	zirconium
				pH Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Reported Detection Limit					0.5	15	2.5	0.50	5	0.5	5	250	0.050	0.25	5	1	2.5	50	1	10	0.25	5	5	5	250	0.5	0.1	0.25	5	0.05	25	25	0.5	25	25	0.5
BC CSR DW						**9500**	**6**	**10**	**1000**	**8**		**5000**	**5**		**50**	**20[#1]**	**1500**		**10**	**8**			**250**	**80**		**10**	**20**	**200**	**2500**		**2500**			**20**	**20**	**3000**	
BC CSR AWF							**90**	**50**	**10000**	**1.5**		**12000**	**0.5 - 4 ***		**10**	**40**	**20 - 90 ***		**40 - 160 ***				**10000**	**250 - 1500 ***		**20**	**0.5 - 15 ***			**3**		**1000**	**85**		**75[#2] - 3150[#2] ***	
Site Area	**Sample Location**	**Sample Date**	**Sample ID**																																			
Leachate Tank	SHA-LE-1	2022-Jun-8	SHA-LE1	8	2430	26	<2.5	0.53	9.3	<0.5	<5	334	0.298	646	<5	1.1	3.8	66	<1	<10	198	12,800	<5	6.8	21,900	<0.5	0.1	**1340**	**3480**	<0.05	<25	<25	<0.5	<25	27	<0.5

Standard/Guideline Descriptions

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- BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Standard/Guideline Comments

#1:The site does not fall within the regions specified in Protocol 9, Table 1. Protocol 9 provides an interim value for cobalt (20 µg/L) that may be applied to all regions of BC not included in the Table 1 regions. The Protocol 9 values have been used to dismiss exceedances of the CSR Schedule 3.2 standards for cobalt.
#2:Results with hardness >500 mg/L should be evaluated on a site by site basis; refer to BC Protocol 10

Notes:

- formatting of cells indicates exceedances of like-formatted standards
< - less than reported detection limit
µg/L - micrograms per litre
mg/L - milligrams per litre
- BC CSR iron and manganese standards do not apply for lack of specific Schedule 2 industrial or commercial activities at the site. see BC CSR Schedule 3.2, Footnotes 43, 44 and 46, 47
- most stringent of chromium (III) and (VI) standards applied to chromium (total)
* - range of parameter-dependent standards; value is compared to standard derived from parameter of individual sample
H - hardness in mg/L of calcium carbonate ($CaCO_3$)
- metals with hardness-dependent standards:
Cd - cadmium, Cu - copper, Pb - lead, Ni - nickel, Ag - silver, Zn - zinc

*** BC CSR Parameter-Dependent Standards**

Cd - AWF	Cu - AWF	Pb - AWF	Ni - AWF	Ag - AWF	Zn - AWF
0.5 @ H < 30	20 @ H < 50	40 @ H < 50	250 @ H < 60	0.5 @ H ≤ 100	75 @ H < 90
1.5 @ H=30<90	30 @ H=50<75	50 @ H=50<100	650 @ H=60<120	15 @ H > 100	150 @ H=90<100
2.5 @ H=90<150	40 @ H=75<100	60 @ H=100<200	1,100 @ H=120<180		900 @ H=100<200
3.5 @ H=150<210	50 @ H=100<125	110 @ H=200<300	1,500 @ H ≥ 180		1,650 @ H=200<300
4 @ H ≥ 210	60 @ H=125<150	160 @ H ≥ 300			2,400 @ H=300<400
	70 @ H=150<175				3,150 @ H=400<500
	80 @ H=175<200				
	90 @ H ≥ 200				

TABLE 6: LEACHATE ANALYTICAL RESULTS - INORGANICS

Site Area	Sample Location	Sample Date	Sample ID	Inorganics															
				pH (lab)	hardness as CaCO3	chloride ion	fluoride	hydrogen sulfide	hydroxide	nitrate (as N)	nitrate and nitrite (as N)	nitrite (as N)	silicon	silicon (Filtered)	sulphate	sulphide	sulfur as S	sulfur as S (Filtered)
				pH Units	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	µg/L	mg/L	mg/L
Reported Detection Limit					0.5	100	50	0.002	1	0.02	0.02	0.005	500	500	10	1.8	15	15
BC CSR DW						**250**	**1500**	**0.05**		**10**	**10**	**1**			**500**			
BC CSR AWF						**1500**	**2000 - 3000 ***	**0.02**		**400**	**400**	**0.2[#1] - 2[#1] ***			**1280 - 4290 ***			
Leachate Tank	SHA-LE-1	2022-Jun-8	SHA-LE1	8	2430	**2800**	69	-	<1	1.47	1.47	<0.005	6910	6980	**1700**	-	541	537
		2022-Jul-4	SHA-LE1	-	-	**1800**	-	<0.002	-	-	-	-	-	7240	**990**	<1.8	-	530

Standard/Guideline Descriptions

- BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water
- BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Standard/Guideline Comments

#1:Allowable concentrations of nitrite increase with ambient concentrations of chloride. The standard varies with chloride concentration to reflect the influence of chloride on nitrite toxicity and to provide adequate protection to the salmonids.

Notes:

- formatting of cells indicates exceedances of like-formatted standards
- '-' - sample not analyzed for parameter indicated
- < - less than reported detection limit
- µg/L - micrograms per litre
- mg/L - milligrams per litre
- guidelines for total fluoride (Fl) and sulphate(SO_4) dependent on hardness (as $CaCO_3$)
- nitrate and nitrite measured in mg/L of N
- nitrite (NO_2) guidelines dependent on chloride (Cl)
- verify exceedances of pH-/temperature-/hardness-dependent guidelines against root formulas or matrices

*** BC CSR Parameter-Dependent Standards**

Fl - AWF	NO_2 - AWF	SO_4 - AWF
2,000 @ H < 50	0.2 @ Cl < 2	1,280 @ H ≤ 30
3,000 @ H ≥ 50	0.4 @ Cl=2<4	2,180 @ H=31≤75
	0.6 @ Cl=4<6	3,090 @ H=76≤180
	0.8 @ Cl=6<8	4,290 @ H > 180
	1 @ Cl=8<10	
	2 @ Cl ≥ 10	

TABLE 7: GROUNDWATER ANALYTICAL RESULTS - FIELD MEASUREMENTS, ALKALINITY, AND TOTAL DISSOLVED SOLIDS

					Field					Alkalinity				TDS
					depth to water	pH (field)	temperature (field)	EC (field)	turbidity (field)	alkalinity (bicarbonate)	alkalinity (carbonate)	alkalinity (P)	alkalinity (total) as $CaCO_3$	total dissolved solids
					mbTOC	pH Units	°C	µS/cm	NTU	mg/L	mg/L	mg/L	mg/L	mg/L
Reported Detection Limit					-	-	-	-	-	1	1	1	1	10
Site Area	Sample Location	Well Screen Depth (mbg)	Sample Date	Sample ID										
Groundwater Monitoring Wells	MW19-01	-	2022-Aug-18	MW19-01	8.641	6.6	14.7	656	253	300	<1	<1	240	550
				DUP-A	8.641	6.6	14.7	656	253	300	<1	<1	240	570
			RPD (MW19-01 & DUP-A)		**NC**	**NC**	**NC**	**NC**	**NC**	**0%**	**NC**	**NC**	**0%**	**4%**
	MW19-02	-	2022-Aug-18	MW19-02	5.609	6.9	13	780	0.68	370	<1	<1	310	670
	MW-1D	77.70 - 83.80	2022-Aug-17	MW-1D	13.685	6.7	15.3	192	15.4	-	-	-	-	-
	MW-1S	44.20 - 50.30	2022-Aug-17	MW-1S	13.220	10	12.4	461	12.73	-	-	-	-	-
	MW-2	36.90 - 43.00	2022-Aug-17	MW-2	6.821	6.7	18.1	217	10.99	-	-	-	-	-
	MW-3D	39.60 - 45.70	2022-Aug-18	MW-3D	4.660	7.4	12.7	199	6.58	-	-	-	-	-
	MW-3S	15.20 - 21.30	2022-Aug-17	MW-3S	4.799	7.4	13.8	319	0.22	160	<1	<1	130	240
	MW-5D	35.00 - 38.00	2022-Aug-19	MW-5D	18.449	7	17.9	528	50.8	-	-	-	-	-
	MW-5S	22.00 - 29.00	2022-Aug-19	MW-5S	18.505	6.6	27.7	440	386.8	-	-	-	-	-
	MW-6	-	2022-Aug-18	MW-6	13.133	6.9	13	986	51.7	-	-	-	-	-

Notes:

• samples collected at the same location and date are blind field duplicate/parent pairs

< - less than reported detection limit

mbg - metres below grade

mbTOC - metres below top of casing

°C - degrees Celsius

EC - electrical conductivity

µS/cm - microsiemens per centimetre

NTU - nephelometric turbidity units

TDS - total dissolved solids

mg/L - milligrams per litre

RPD - relative percent difference

RPD calculation is equal to the absolute value of the difference divided by the average of the results x 100%.

RPD calculations not performed where results are less than five times the analytical detection limit.

NC - relative percent difference not calculated

TABLE 8: GROUNDWATER ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS

					Petroleum Hydrocarbons			
					EPH C10-C19	EPH C19-C32	LEPHw	HEPHw
					µg/L	µg/L	µg/L	µg/L
Reported Detection Limit					200	200	200	200
BC CSR DW					**5000**			
BC CSR AWF					**5000**		**500**	
Site Area	**Sample Location**	**Well Screen Depth (mbg)**	**Sample Date**	**Sample ID**				
Groundwater Monitoring Wells	MW19-01	-	2022-Aug-18	MW19-01	<200	<200	<200	<200
				DUP-A	<200	<200	<200	<200
			RPD (MW19-01 & DUP-A)		**NC**	**NC**	**NC**	**NC**
	MW19-02	-	2022-Aug-18	MW19-02	<200	<200	<200	<200
	MW-1D	77.70 - 83.80	2022-Aug-17	MW-1D	<200	<200	<200	<200
	MW-1S	44.20 - 50.30	2022-Aug-17	MW-1S	<200	<200	<200	<200
	MW-2	36.90 - 43.00	2022-Aug-17	MW-2	<200	450	<200	450
	MW-3D	39.60 - 45.70	2022-Aug-18	MW-3D	<200	540	<200	540
	MW-3S	15.20 - 21.30	2022-Aug-17	MW-3S	<200	<200	<200	<200
	MW-5D	35.00 - 38.00	2022-Aug-19	MW-5D	<200	<200	<200	<200
	MW-5S	22.00 - 29.00	2022-Aug-19	MW-5S	<200	<200	<200	<200
	MW-6	-	2022-Aug-18	MW-6	<200	<200	<200	<200

Standard/Guideline Descriptions

• BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water

• BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Notes:

• formatting of cells indicates exceedances of like-formatted standards

• samples collected at the same location and date are blind field duplicate/parent pairs

< - less than reported detection limit

mbg - metres below grade

µg/L - micrograms per litre

PAH - polycyclic aromatic hydrocarbons

EPHw10-19 - extractable petroleum hydrocarbons (C10-C19)

EPHw19-32 – extractable petroleum hydrocarbons (C19-C32) in water

LEPHw – light extractable petroleum hydrocarbons in water; EPHw10-19 minus PAH compounds: acenaphthene, acridine, anthracene, fluorene, naphthalene and phenanthrene

HEPHw - heavy extractable petroleum hydrocarbons in water; EPHw19-32 minus PAH compounds: benz(a)anthracene, benzo(a)pyrene, fluoranthene and pyrene

RPD calculation is equal to the absolute value of the difference divided by the average of the results x 100%.

RPD calculations not performed where results are less than five times the analytical detection limit.

NC - relative percent difference not calculated

UNDERLINED RPD values exceed the data quality objective. The data quality objective for organics in water is 45%.

TABLE 9: GROUNDWATER ANALYTICAL RESULTS - POLYCYCLIC AROMATIC HYDROCARBONS

					PAHs																						
					acenaphthene	acenaphthylene	acridine	anthracene	benzo(a)anthracene	benzo(a)pyrene	benzo(b+j)fluoranthenes	benzo(g,h,i)perylene	benzo(k)fluoranthene	chrysene	dibenz(a,h)anthracene	fluoranthene	fluorene	indeno(1,2,3-cd)pyrene	methylnaphthalene, 1-	methylnaphthalene, 2-	naphthalene	phenanthrene	pyrene	quinoline	PAHs (sum of total)	heavy molecular weight PAHs	light molecular weight PAHs
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Reported Detection Limit					0.05	0.05	0.05	0.01	0.01	0.005	0.03	0.05	0.05	0.02	0.003	0.02	0.05	0.05	0.05	0.1	0.1	0.05	0.02	0.02	0.1	0.05	0.1
BC CSR DW					**250**			**1000**	**0.07**	**0.01**	**0.07**			**7**	**0.01**	**150**	**150**		**5.5**	**15**	**80**		**100**	**0.05**			
BC CSR AWF					**60**		**0.5**	**1**	**1**	**0.1**				**1**		**2**	**120**				**10**	**3**	**0.2**	**34**			
Site Area	**Sample Location**	**Well Screen Depth (mbg)**	**Sample Date**	**Sample ID**																							
Groundwater Monitoring Wells	MW19-01	-	2022-Aug-18	MW19-01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
				DUP-A	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
			RPD (MW19-01 & DUP-A)		**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**
	MW19-02	-	2022-Aug-18	MW19-02	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-1D	77.70 - 83.80	2022-Aug-17	MW-1D	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-1S	44.20 - 50.30	2022-Aug-17	MW-1S	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-2	36.90 - 43.00	2022-Aug-17	MW-2	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-3D	39.60 - 45.70	2022-Aug-18	MW-3D	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-3S	15.20 - 21.30	2022-Aug-17	MW-3S	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-5D	35.00 - 38.00	2022-Aug-19	MW-5D	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-5S	22.00 - 29.00	2022-Aug-19	MW-5S	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1
	MW-6	-	2022-Aug-18	MW-6	<0.05	<0.05	<0.05	<0.01	<0.01	<0.005	<0.03	<0.05	<0.05	<0.02	<0.003	<0.02	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02	<0.1	<0.05	<0.1

Standard/Guideline Descriptions

- BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water
- BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Notes:

- formatting of cells indicates exceedances of like-formatted standards
- samples collected at the same location and date are blind field duplicate/parent pairs

'-' - sample not analyzed for parameter indicated
< - less than reported detection limit
mbg - metres below grade
µg/L - micrograms per litre
PAH - polycyclic aromatic hydrocarbons
RPD calculation is equal to the absolute value of the difference divided by the average of the results x 100%.
RPD calculations not performed where results are less than five times the analytical detection limit.
NC - relative percent difference not calculated
UNDERLINED RPD values exceed the data quality objective. The data quality objective for organics in water is 45%.

TABLE 10: GROUNDWATER ANALYTICAL RESULTS - DISSOLVED METALS

Site Area	Sample Location	Well Screen Depth (mbg)	Sample Date	Sample ID	Dissolved Metals																																		
					pH (lab)	hardness as CaCO	aluminum	antimony	arsenic	barium	beryllium	bismuth	boron	cadmium	calcium	chromium (III+VI)	cobalt	copper	iron	lead	lithium	magnesium	manganese	mercury	molybdenum	nickel	potassium	selenium	silver	sodium	strontium	thallium	tin	titanium	uranium	vanadium	zinc	zirconium
					pH Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Reported Detection Limit					-	0.5	3	0.50	0.10	1	0.1	1	50	0.010	0.05	1	0.20	0.20	5	0.2	2	0.05	1	0.0019	1	1	50	0.10	0.02	0.05	1	0.010	5	5	0.10	5	5	0.1
BC CSR DW							**9500**	**6**	**10**	**1000**	**8**		**5000**	**5**		**50**	**20[#1]**	**1500**	**6500**	**10**	**8**		**1500**	**1**	**250**	**80**		**10**	**20**	**200**	**2500**		**2500**		**20**	**20**	**3000**	
BC CSR AWF								**90**	**50**	**10000**	**1.5**		**12000**	**0.5 - 4 ***		**10**	**40**	**20 - 90 ***		**40 - 160 ***				**0.25**	**10000**	**250 - 1500 ***		**20**	**0.5 - 15 ***			**3**		**1000**	**85**		**75[#2] - 3150[#2] ***	
Groundwater Monitoring Wells	MW19-01	-	2022-Aug-18	MW19-01	8.04	369	<3	<0.50	0.29	21.7	<0.1	<1	<50	0.041	121	<1	0.99	0.87	118	<0.2	<2	16.2	293	<0.0019	<1	7.6	1600	0.22	<0.02	19.2	408	0.010	<5	<5	3.70	<5	<5	<0.1
				DUP-A	8.01	368	<3	<0.50	0.29	21.4	<0.1	<1	<50	0.045	122	<1	1.01	0.87	119	<0.2	<2	15.6	280	<0.0019	<1	7.5	1580	0.24	<0.02	19.1	398	0.010	<5	<5	3.70	<5	<5	<0.1
			RPD (MW19-01 & DUP-A)		**NC**	**0%**	**NC**	**NC**	**NC**	**1%**	**NC**	**NC**	**NC**	**NC**	**1%**	**NC**	**NC**	**NC**	**1%**	**NC**	**NC**	**4%**	**5%**	**NC**	**NC**	**1%**	**1%**	**NC**	**NC**	**1%**	**2%**	**NC**	**NC**	**NC**	**0%**	**NC**	**NC**	**NC**
	MW19-02	-	2022-Aug-18	MW19-02	8.06	476	6.6	<0.50	0.17	27.7	<0.1	<1	<50	0.024	153	<1	<0.20	2.15	<5	<0.2	<2	22.8	1.1	<0.0019	<1	<1	1280	0.39	<0.02	17.2	411	<0.010	<5	<5	2.97	<5	<5	<0.1
	MW-3S	15.20 - 21.30	2022-Aug-17	MW-3S	8.22	154	<3	0.64	1.0	30.3	<0.1	<1	<50	0.174	49.7	<1	<0.20	1.50	<5	<0.2	<2	7.17	2.7	<0.0019	4.8	<1	1130	<0.10	<0.02	14.6	258	0.011	<5	<5	0.97	<5	<5	<0.1

Standard/Guideline Descriptions

- BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water
- BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Standard/Guideline Comments

#1:The site does not fall within the regions specified in Protocol 9, Table 1. Protocol 9 provides an interim value for cobalt (20 µg/L) that may be applied to all regions of BC not included in the Table 1 regions. The Protocol 9 values have been used to dismiss exceedances of the CSR Schedule 3.2 standards for cobalt.
#2:Results with hardness >500 mg/L should be evaluated on a site by site basis; refer to BC Protocol 10

Notes:

- formatting of cells indicates exceedances of like-formatted standards
- samples collected at the same location and date are blind field duplicate/parent pairs

< - less than reported detection limit
mbg - metres below grade
µg/L - micrograms per litre
mg/L - milligrams per litre

- BC CSR iron and manganese standards do not apply for lack of specific Schedule 2 industrial or commercial activities at the site. See BC CSR Schedule 3.2, Footnotes 43, 44 and 46, 47
- most stringent of chromium (III) and (VI) standards applied to chromium (total)

* - range of paramater-dependent standards; value is compared to standard derived from parameter of individual sample

H - hardness in mg/L of calcium carbonate ($CaCO_3$)

- metals with hardness-dependent standards:
  Cd - cadmium, Cu - copper, Pb - lead, Ni - nickel, Ag - silver, Zn - zinc

RPD calculation is equal to the absolute value of the difference divided by the average of the results x 100%.
RPD calculations not performed where results are less than five times the analytical detection limit.
NC - relative percent difference not calculated
UNDERLINED RPD values exceed the alert limit. The alert limit for metals and inorganics in water is 30%.

*** BC CSR Parameter-Dependent Standards/Guidelines**

Cd - AWF	Cu - AWF	Pb - AWF	Ni - AWF	Ag - AWF	Zn - AWF
0.5 @ H < 30	20 @ H < 50	40 @ H < 50	250 @ H < 60	0.5 @ H ≤ 100	75 @ H < 90
1.5 @ H 30<90	30 @ H 50<75	50 @ H 50<100	650 @ H 60<120	15 @ H > 100	150 @ H 90<100
2.5 @ H 90<150	40 @ H 75<100	60 @ H 100<200	1,100 @ H 120<180		900 @ H 100<200
3.5 @ H 150<210	50 @ H 100<125	110 @ H 200<300	1,500 @ H ≥ 180		1,650 @ H 200<300
4 @ H ≥ 210	60 @ H 125<150	160 @ H ≥ 300			2,400 @ H 300<400
	70 @ H 150<175				
	80 @ H 175<200				
	90 @ H ≥ 200				

TABLE 11: GROUNDWATER ANALYTICAL RESULTS - INORGANICS

					Inorganics						
					chloride ion	fluoride	hydroxide	nitrate (as N	silicon	sulphate	sulfur as S
					mg/L	µg/L	mg/L	mg/L	µg/L	mg/L	mg/L
Reported Detection Limit					1	50	1	0.020	100	1	3
BC CSR DW					**250**	**1500**		**10**		**500**	
BC CSR AWF					**1500**	**2000 - 3000 ***		**400**		**1280 - 4290 ***	
Site Area	**Sample Location**	**Well Screen Depth (mbg)**	**Sample Date**	**Sample ID**							
Groundwater Monitoring Wells	MW19-01	-	2022-Aug-18	MW19-01	41	<50	<1	0.739	6540	100	35.3
				DUP-A	41	<50	<1	0.747	6660	100	34
			RPD (MW19-01 & DUP-A)		**0%**	**NC**	**NC**	**1%**	**2%**	**0%**	**4%**
	MW19-02	-	2022-Aug-18	MW19-02	22	52	<1	0.501	6880	170	57.4
	MW-3S	15.20 - 21.30	2022-Aug-17	MW-3S	15	100	<1	0.296	6390	40	12.9

Standard/Guideline Descriptions

- BC CSR DW:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Drinking Water
- BC CSR AWF:BC Contaminated Sites Regulation, Schedule 3.2 Generic Numerical Water Standards, Freshwater Aquatic Life

Notes:

- formatting of cells indicates exceedances of like-formatted standards
- samples collected at the same location and date are blind field duplicate/parent pairs

< - less than reported detection limit
mbg - metres below grade
µg/L - micrograms per litre
mg/L - milligrams per litre

- nitrate measured in mg/L of N
- fluoride (Fl) and sulphate (SO_4) guidelines dependent on hardness (as $CaCO_3$)

<u>* BC CSR Parameter-Dependent Standards</u>

Fl - AWF	**SO_4 - AWF**
2,000 @ H < 50	1,280 @ H ≤ 30
3,000 @ H ≥ 50	2,180 @ H=31≤75
	3,090 @ H=76≤180
	4,290 @ H > 180

RPD calculation is equal to the absolute value of the difference divided by the average of the results x 100%.
RPD calculations not performed where results are less than five times the analytical detection limit.
NC - relative percent difference not calculated
<u>UNDERLINED</u> RPD values exceed the alert limit. The alert limit for metals and inorganics in water is 30%.

Figures

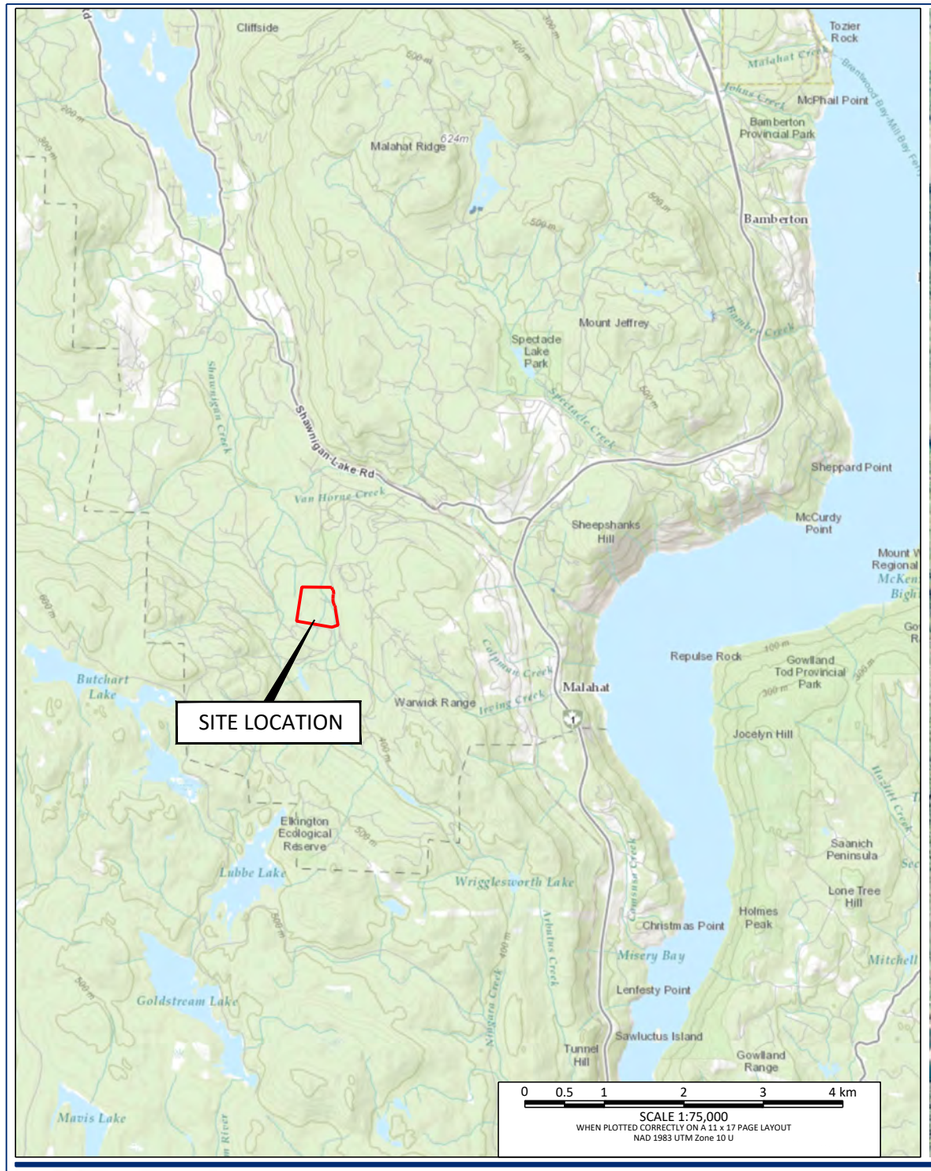
2022 Q3 Post-Closure Environmental Monitoring Report

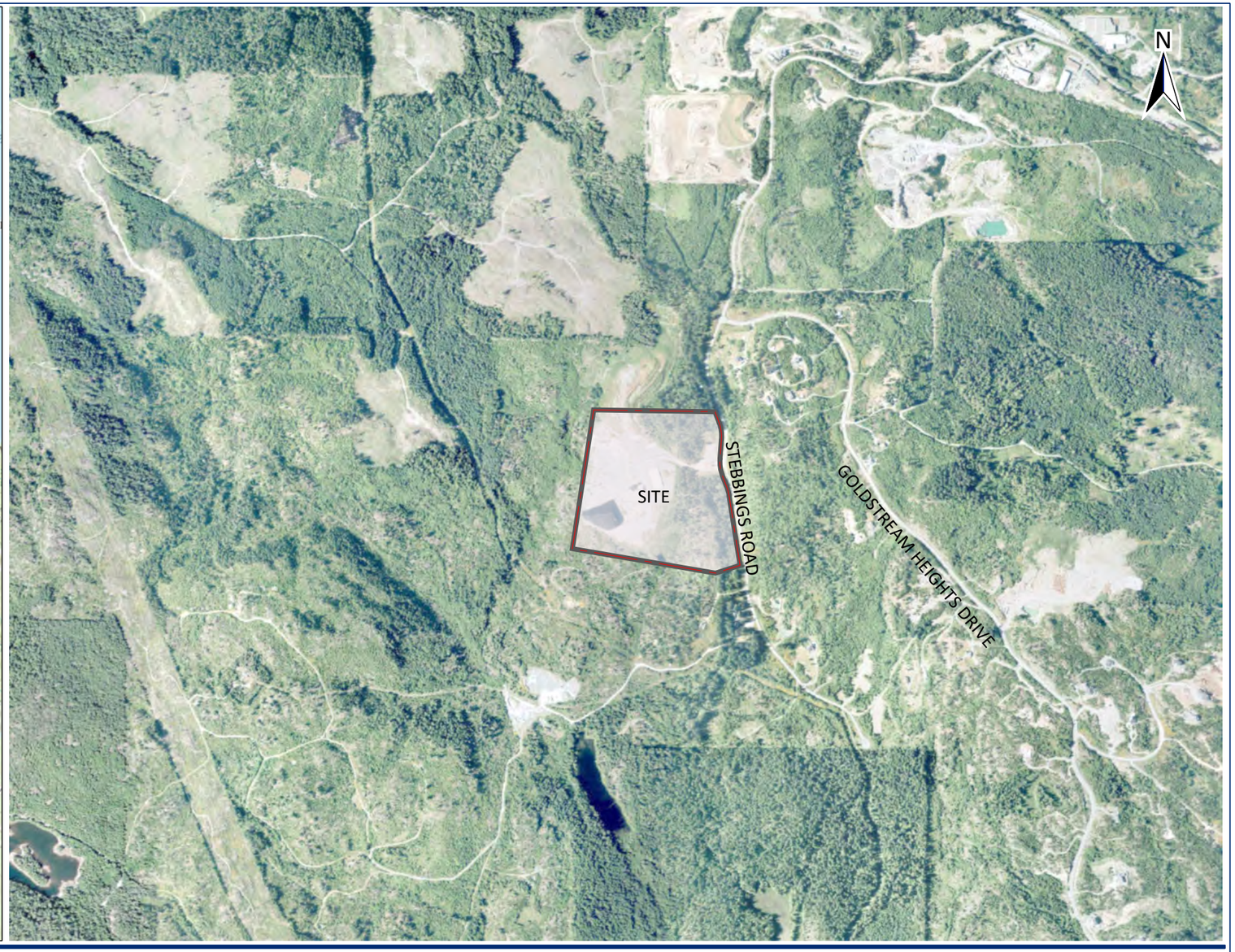
460 Stebbings Road, Shawnigan Lake, BC

Ralmax Ventures Ltd.

SLR Project No. 205.30042.00000

October 6, 2022





NOTES:
NOT A LEGAL SURVEY. DO NOT USE FOR CONSTRUCTION.

IMAGERY: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (IMAGE DATE: JUNE 11, 2019 prior to completion of the landfill permanent encapsulation area)

BASEDATA:
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

LEGEND:

PROPERTY BOUNDARY

SITE BOUNDARY

0 0.25 0.5 1.0 km
SCALE 1:15,000
WHEN PLOTTED CORRECTLY ON A 11 x 17 PAGE LAYOUT
NAD 1983 UTM Zone 10 U

RALMAX VENTURES LTD.
460 STEBBINGS ROAD
SHAWNIGAN LAKE, BC

2022 Q3 POST-CLOSURE ENVIRONMENTAL MONITORING REPORT

SITE LOCATION

SLR

FIGURE NO:
1

DATE: September 12, 2022

PROJECT NO: 205.30042.00000

Cadfile name: S_205-30042-00000-A5.dwg

LEGEND:

- PROPERTY BOUNDARY
- SITE BOUNDARY
- PERMANENT ENCAPSULATION AREA
- FORMER FACILITY/FEATURE
- BOREHOLE COMPLETED AS A MONITORING WELL (OTHERS)
- BOREHOLE COMPLETED AS A MONITORING WELL (DESTROYED)
- SURFACE WATER SAMPLE (OTHERS)
- SEEPAGE BLANKET MONITORING WELL (OTHERS)
- LEACHATE SAMPLE (OTHERS)

NOTES:

NOT A LEGAL SURVEY. DO NOT USE FOR CONSTRUCTION.

REFERENCED FROM: SPERLING HANSEN ASSOCIATES, PROJECT No. PRJ19074 FIGURE 1, DATE 2019/12/19

IMAGERY: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (IMAGE DATE: JUNE 11, 2019 prior to completion of the landfill permanent encapsulation area)

0 25 50 100 150 m

SCALE 1:2,500
WHEN PLOTTED CORRECTLY ON A 11 x 17 PAGE LAYOUT
NAD 1983 UTM Zone 10 U

RALMAX VENTURES LTD.
460 STEBBINGS ROAD
SHAWNIGAN LAKE, BC

2022 Q3 POST-CLOSURE ENVIRONMENTAL MONITORING REPORT

SITE PLAN

SLR

FIGURE NO:
2

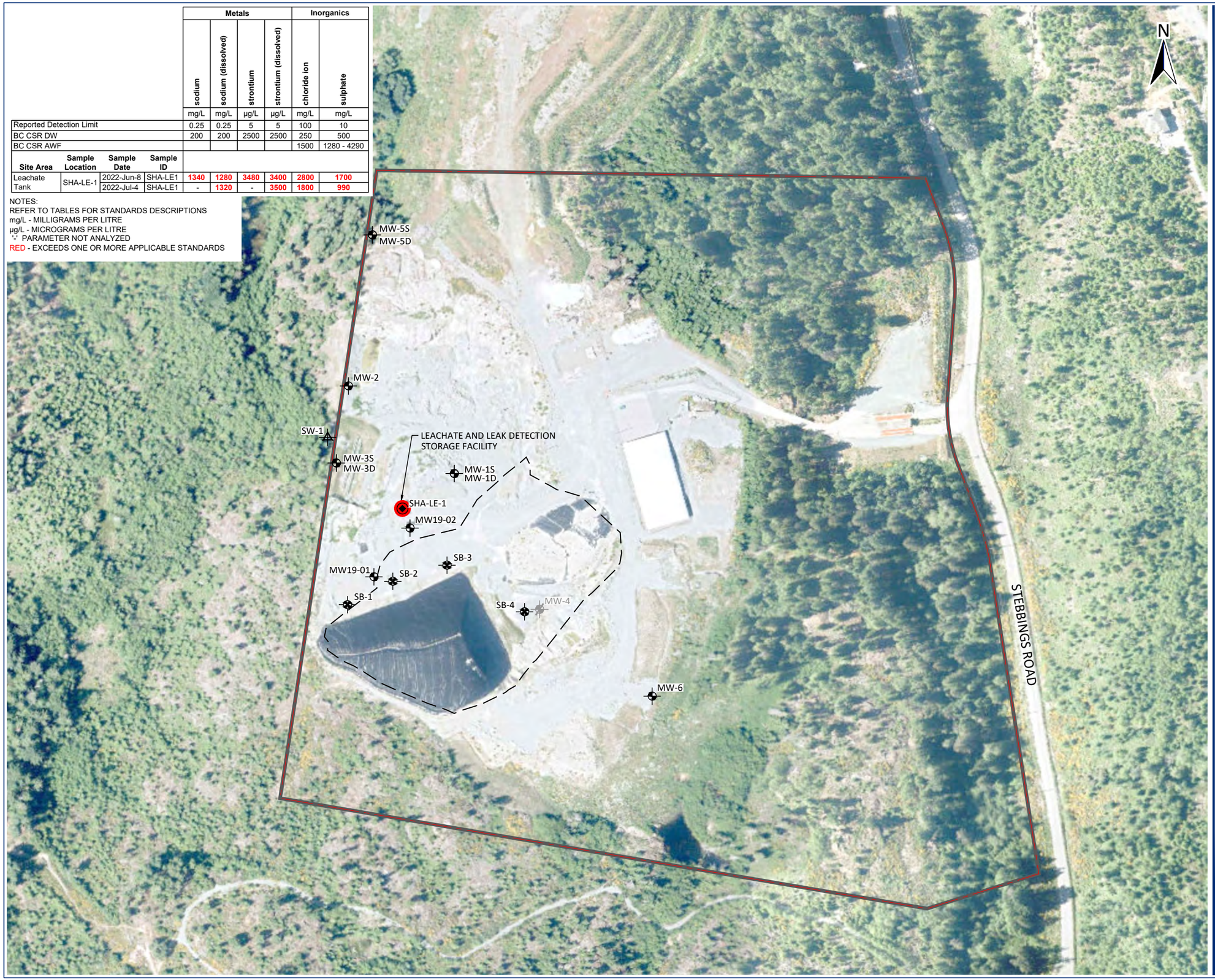
DATE: September 12, 2022

PROJECT NO: 205.30042.00000

Cadfile name: S_205-30042-00000-A5.dwg

				Metals				Inorganics	
				sodium	sodium (dissolved)	strontium	strontium (dissolved)	chloride ion	sulphate
				mg/L	mg/L	µg/L	µg/L	mg/L	mg/L
Reported Detection Limit				0.25	0.25	5	5	100	10
BC CSR DW				200	200	2500	2500	250	500
BC CSR AWF								1500	1280 - 4290
Site Area	**Sample Location**	**Sample Date**	**Sample ID**						
Leachate Tank	SHA-LE-1	2022-Jun-8	SHA-LE1	1340	1280	3480	3400	2800	1700
		2022-Jul-4	SHA-LE1	-	1320	-	3500	1800	990

NOTES:
REFER TO TABLES FOR STANDARDS DESCRIPTIONS
mg/L - MILLIGRAMS PER LITRE
µg/L - MICROGRAMS PER LITRE
'-' PARAMETER NOT ANALYZED
RED - EXCEEDS ONE OR MORE APPLICABLE STANDARDS



LEGEND:

- PROPERTY BOUNDARY
- SITE BOUNDARY
- PERMANENT ENCAPSULATION AREA
- FORMER FACILITY/FEATURE
- BOREHOLE COMPLETED AS A MONITORING WELL (OTHERS)
- BOREHOLE COMPLETED AS A MONITORING WELL (DESTROYED)
- SURFACE WATER SAMPLE (OTHERS)
- SEEPAGE BLANKET MONITORING WELL (OTHERS)
- LEACHATE SAMPLE (OTHERS)
- **SOIL LABORATORY ANALYSIS RESULTS**
  CONCENTRATIONS LESS THAN OR EQUAL TO APPLICABLE CSR STANDARDS
- CONCENTRATION(S) GREATER THAN APPLICABLE CSR STANDARD(S)

NOTES:
NOT A LEGAL SURVEY. DO NOT USE FOR CONSTRUCTION.

REFERENCED FROM: SPERLING HANSEN ASSOCIATES, PROJECT No. PRJ19074 FIGURE 1, DATE 2019/12/19

IMAGERY: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (IMAGE DATE: JUNE 11, 2019 prior to completion of the landfill permanent encapsulation area)

0 25 50 100 150 m

SCALE 1:2,500
WHEN PLOTTED CORRECTLY ON A 11 x 17 PAGE LAYOUT
NAD 1983 UTM Zone 10 U

RALMAX VENTURES LTD.
460 STEBBINGS ROAD
SHAWNIGAN LAKE, BC

2022 Q3 POST-CLOSURE ENVIRONMENTAL MONITORING REPORT

LEACHATE ANALYTICAL RESULTS

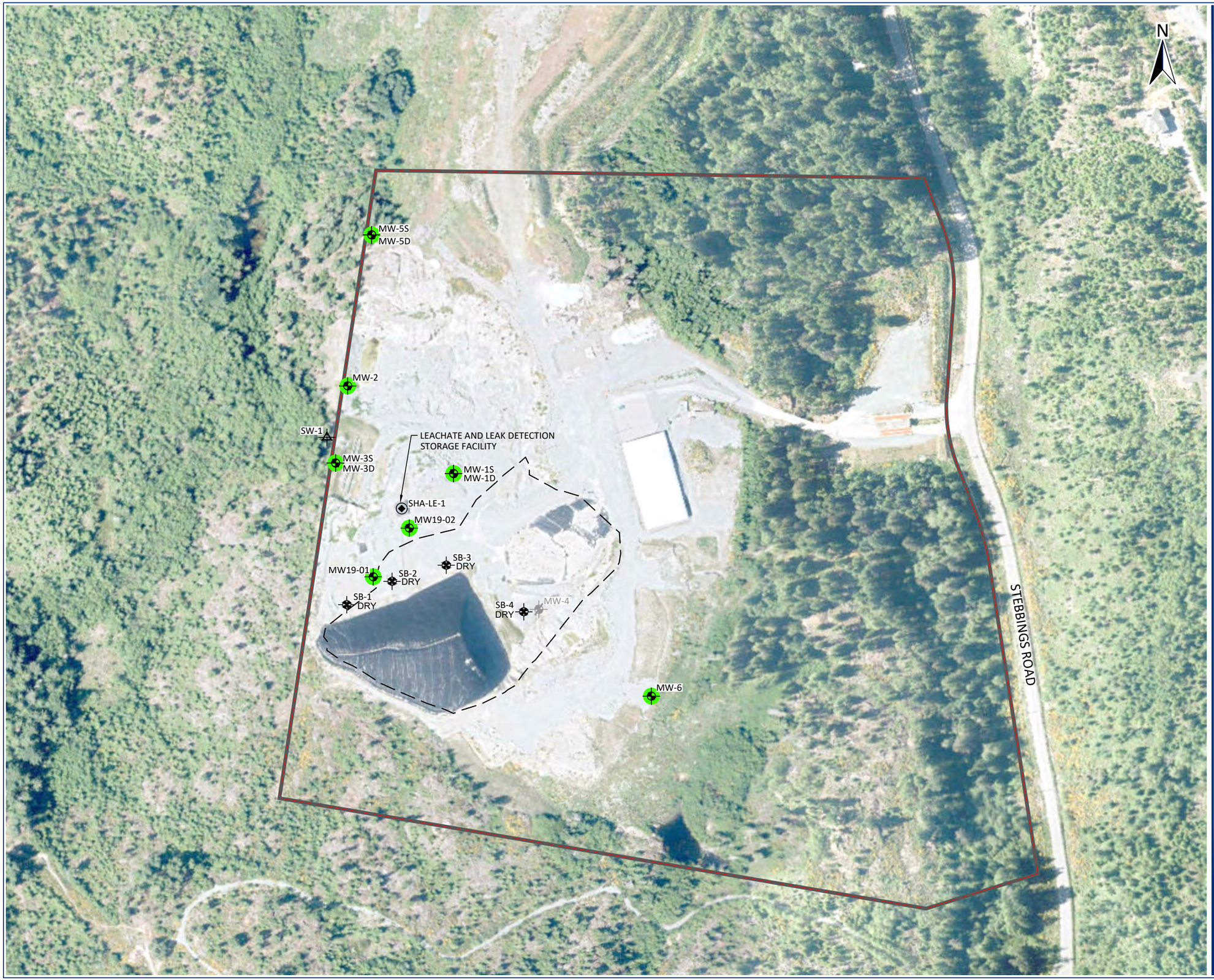
SLR

FIGURE NO:
3

DATE: September 12, 2022

PROJECT NO: 205.30042.00000

Cadfile name: S_205-30042-00000-A5.dwg



LEGEND:

- PROPERTY BOUNDARY
- SITE BOUNDARY
- PERMANENT ENCAPSULATION AREA
- FORMER FACILITY/FEATURE
- BOREHOLE COMPLETED AS A MONITORING WELL (OTHERS)
- BOREHOLE COMPLETED AS A MONITORING WELL (DESTROYED)
- SURFACE WATER SAMPLE (OTHERS)
- SEEPAGE BLANKET MONITORING WELL (OTHERS)
- LEACHATE SAMPLE (OTHERS)
- **GROUNDWATER LABORATORY ANALYSIS RESULTS**
  CONCENTRATIONS LESS THAN OR EQUAL TO THE APPLICABLE STANDARDS

NOTES:

NOT A LEGAL SURVEY. DO NOT USE FOR CONSTRUCTION.

REFERENCED FROM: SPERLING HANSEN ASSOCIATES, PROJECT No. PRJ19074 FIGURE 1, DATE 2019/12/19

IMAGERY: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community (IMAGE DATE: JUNE 11, 2019 prior to completion of the landfill permanent encapsulation area)

0 25 50 100 150 m

SCALE 1:2,500
WHEN PLOTTED CORRECTLY ON A 11 x 17 PAGE LAYOUT
NAD 1983 UTM Zone 10 U

RALMAX VENTURES LTD.
460 STEBBINGS ROAD
SHAWNIGAN LAKE, BC

2022 Q3 POST-CLOSURE ENVIRONMENTAL MONITORING REPORT

GROUNDWATER ANALYTICAL RESULTS

SLR

FIGURE NO:
4

DATE: September 12, 2022

PROJECT NO: 205.30042.00000

Cadfile name: S_205-30042-00000-A5.dwg

Appendix A Laboratory Certificates of Analysis

2022 Q3 Post-Closure Environmental Monitoring Report

460 Stebbings Road, Shawnigan Lake, BC

Ralmax Ventures Ltd.

SLR Project No. 205.30042.00000

October 6, 2022

Your Project #: LEACHATE TANKS
Site Location: 460 SLEBBINGS RD
Your C.O.C. #: G145189

Attention: Alana Duncan

Ralmax Group Holdings Ltd.
343A Bay Street
Victoria, BC
CANADA V8T 1P5

Report Date: 2022/06/14
Report #: R3186221
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C239471
Received: 2022/06/08, 14:03

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2022/06/11	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/06/13	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2022/06/11	BBY6SOP-00026	SM 23 2510 B m
Fluoride	1	N/A	2022/06/10	BBY6SOP-00048	SM 23 4500-F C m
Hardness Total (calculated as CaCO3) (1)	1	N/A	2022/06/14	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2022/06/14	BBY WI-00033	Auto Calc
EPH in Water when PAH required	1	2022/06/10	2022/06/10	BBY8SOP-00029	BCMOE BCLM Sep2017 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2022/06/14	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (2)	1	N/A	2022/06/10	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2022/06/09	2022/06/14	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	1	2022/06/10	2022/06/11	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrate + Nitrite (N)	1	N/A	2022/06/10	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrite (N) by CFA	1	N/A	2022/06/10	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrogen - Nitrate (as N)	1	N/A	2022/06/10	BBY WI-00033	Auto Calc
PAH in Water by GC/MS (SIM)	1	2022/06/10	2022/06/12	BBY8SOP-00021	BCMOE BCLM Jul2017m
Total LMW, HMW, Total PAH Calc (3)	1	N/A	2022/06/13	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	1	N/A	2022/06/09	BBY7 WI-00004	SM 23 3030B m
pH @25°C (4)	1	N/A	2022/06/11	BBY6SOP-00026	SM 23 4500-H+ B m
Total Dissolved Solids (Filt. Residue)	1	2022/06/10	2022/06/13	BBY6SOP-00033	SM 23 2540 C m
EPH less PAH in Water by GC/FID (5)	1	N/A	2022/06/13	BBY WI-00033	Auto Calc

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, MELCC, 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.

Your Project #: LEACHATE TANKS
Site Location: 460 SLEBBINGS RD
Your C.O.C. #: G145189

Attention: Alana Duncan

Ralmax Group Holdings Ltd.
343A Bay Street
Victoria, BC
CANADA V8T 1P5

Report Date: 2022/06/14
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C239471
Received: 2022/06/08, 14:03

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.

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) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(2) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Total PAHs in Water include: Quinoline, Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Acridine, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b&j)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(g,h,i)perylene.
(4) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(5) LEPH = EPH (C10 to C19) - (Acenaphthene + Acridine + Anthracene + Fluorene + Naphthalene + Phenanthrene)
HEPH = EPH (C19 to C32) - (Benzo(a)anthracene + Benzo(a)pyrene + Fluoranthene + Pyrene)

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
14 Jun 2022 16:12:48

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (604) 734 7276
==========
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 Signature Page.

Bureau Veritas Job #: C239471
Report Date: 2022/06/14

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 SLEBBINGS RD
Sampler Initials: AD

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		AUP574		
Sampling Date		2022/06/08 11:15		
COC Number		G145189		
	UNITS	SHA-LE1	RDL	QC Batch
ANIONS				
Nitrite (N)	mg/L	<0.0050	0.0050	A605885
Calculated Parameters				
Filter and HNO3 Preservation	N/A	FIELD		ONSITE
Dissolved Hardness (CaCO3)	mg/L	2410	0.50	A603543
Total Hardness (CaCO3)	mg/L	2430	0.50	A603490
Nitrate (N)	mg/L	1.47	0.020	A603662
Low Molecular Weight PAH`s	ug/L	<0.10	0.10	A603551
High Molecular Weight PAH`s	ug/L	<0.050	0.050	A603551
Total PAH	ug/L	<0.10	0.10	A603551
Misc. Inorganics				
Conductivity	uS/cm	11000	2.0	A607595
pH	pH	8.00	N/A	A607591
Total Dissolved Solids	mg/L	8100 (1)	50	A605572
Anions				
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	A607597
Alkalinity (Total as CaCO3)	mg/L	200	1.0	A607597
Bicarbonate (HCO3)	mg/L	240	1.0	A607597
Carbonate (CO3)	mg/L	<1.0	1.0	A607597
Dissolved Fluoride (F)	mg/L	0.069	0.050	A604954
Hydroxide (OH)	mg/L	<1.0	1.0	A607597
Chloride (Cl)	mg/L	2800	100	A608172
Sulphate (SO4)	mg/L	1700	10	A608172
Nutrients				
Nitrate plus Nitrite (N)	mg/L	1.47	0.020	A605884

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) RDL raised due to high concentration of solids in the sample.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AUP574		
Sampling Date		2022/06/08 11:15		
COC Number		G145189		
	UNITS	**SHA-LE1**	**RDL**	**QC Batch**
Polycyclic Aromatics				
Quinoline	ug/L	<0.020	0.020	A604783
Naphthalene	ug/L	<0.10	0.10	A604783
1-Methylnaphthalene	ug/L	<0.050	0.050	A604783
2-Methylnaphthalene	ug/L	<0.10	0.10	A604783
Acenaphthylene	ug/L	<0.050	0.050	A604783
Acenaphthene	ug/L	<0.050	0.050	A604783
Fluorene	ug/L	<0.050	0.050	A604783
Phenanthrene	ug/L	<0.050	0.050	A604783
Anthracene	ug/L	<0.010	0.010	A604783
Acridine	ug/L	<0.050	0.050	A604783
Fluoranthene	ug/L	<0.020	0.020	A604783
Pyrene	ug/L	<0.020	0.020	A604783
Benzo(a)anthracene	ug/L	<0.010	0.010	A604783
Chrysene	ug/L	<0.020	0.020	A604783
Benzo(b&j)fluoranthene	ug/L	<0.030	0.030	A604783
Benzo(k)fluoranthene	ug/L	<0.050	0.050	A604783
Benzo(a)pyrene	ug/L	<0.0050	0.0050	A604783
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	A604783
Dibenz(a,h)anthracene	ug/L	<0.0030	0.0030	A604783
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	A604783
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	82		A604783
D8-ACENAPHTHYLENE (sur.)	%	80		A604783
D8-NAPHTHALENE (sur.)	%	76		A604783
TERPHENYL-D14 (sur.)	%	82		A604783
RDL = Reportable Detection Limit				

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AUP574		
Sampling Date		2022/06/08 11:15		
COC Number		G145189		
	UNITS	SHA-LE1	RDL	QC Batch
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	<15	15	A604698
Dissolved Antimony (Sb)	ug/L	<2.5	2.5	A604698
Dissolved Arsenic (As)	ug/L	<0.50	0.50	A604698
Dissolved Barium (Ba)	ug/L	11.5	5.0	A604698
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	A604698
Dissolved Bismuth (Bi)	ug/L	<5.0	5.0	A604698
Dissolved Boron (B)	ug/L	317	250	A604698
Dissolved Cadmium (Cd)	ug/L	0.264	0.050	A604698
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	A604698
Dissolved Cobalt (Co)	ug/L	1.4	1.0	A604698
Dissolved Copper (Cu)	ug/L	3.4	1.0	A604698
Dissolved Iron (Fe)	ug/L	<25	25	A604698
Dissolved Lead (Pb)	ug/L	<1.0	1.0	A604698
Dissolved Lithium (Li)	ug/L	<10	10	A604698
Dissolved Manganese (Mn)	ug/L	15600	5.0	A604698
Dissolved Molybdenum (Mo)	ug/L	<5.0	5.0	A604698
Dissolved Nickel (Ni)	ug/L	6.1	5.0	A604698
Dissolved Selenium (Se)	ug/L	<0.50	0.50	A604698
Dissolved Silicon (Si)	ug/L	6980	500	A604698
Dissolved Silver (Ag)	ug/L	<0.10	0.10	A604698
Dissolved Strontium (Sr)	ug/L	3400	5.0	A604698
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	A604698
Dissolved Tin (Sn)	ug/L	<25	25	A604698
Dissolved Titanium (Ti)	ug/L	<25	25	A604698
Dissolved Uranium (U)	ug/L	0.53	0.50	A604698
Dissolved Vanadium (V)	ug/L	<25	25	A604698
Dissolved Zinc (Zn)	ug/L	25	25	A604698
Dissolved Zirconium (Zr)	ug/L	<0.50	0.50	A604698
Dissolved Calcium (Ca)	mg/L	648	0.25	A603544
Dissolved Magnesium (Mg)	mg/L	192	0.25	A603544
Dissolved Potassium (K)	mg/L	21.2	0.25	A603544
RDL = Reportable Detection Limit				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AUP574		
Sampling Date		2022/06/08 11:15		
COC Number		G145189		
	UNITS	**SHA-LE1**	**RDL**	**QC Batch**
Dissolved Sodium (Na)	mg/L	1280	0.25	A603544
Dissolved Sulphur (S)	mg/L	537	15	A603544
Total Metals by ICPMS				
Total Aluminum (Al)	ug/L	26	15	A604733
Total Antimony (Sb)	ug/L	<2.5	2.5	A604733
Total Arsenic (As)	ug/L	0.53	0.50	A604733
Total Barium (Ba)	ug/L	9.3	5.0	A604733
Total Beryllium (Be)	ug/L	<0.50	0.50	A604733
Total Bismuth (Bi)	ug/L	<5.0	5.0	A604733
Total Boron (B)	ug/L	334	250	A604733
Total Cadmium (Cd)	ug/L	0.298	0.050	A604733
Total Chromium (Cr)	ug/L	<5.0	5.0	A604733
Total Cobalt (Co)	ug/L	1.1	1.0	A604733
Total Copper (Cu)	ug/L	3.8	2.5	A604733
Total Iron (Fe)	ug/L	66	50	A604733
Total Lead (Pb)	ug/L	<1.0	1.0	A604733
Total Lithium (Li)	ug/L	<10	10	A604733
Total Manganese (Mn)	ug/L	12800	5.0	A604733
Total Molybdenum (Mo)	ug/L	<5.0	5.0	A604733
Total Nickel (Ni)	ug/L	6.8	5.0	A604733
Total Selenium (Se)	ug/L	<0.50	0.50	A604733
Total Silicon (Si)	ug/L	6910	500	A604733
Total Silver (Ag)	ug/L	0.10	0.10	A604733
Total Strontium (Sr)	ug/L	3480	5.0	A604733
Total Thallium (Tl)	ug/L	<0.050	0.050	A604733
Total Tin (Sn)	ug/L	<25	25	A604733
Total Titanium (Ti)	ug/L	<25	25	A604733
Total Uranium (U)	ug/L	<0.50	0.50	A604733
Total Vanadium (V)	ug/L	<25	25	A604733
Total Zinc (Zn)	ug/L	27	25	A604733
Total Zirconium (Zr)	ug/L	<0.50	0.50	A604733
Total Calcium (Ca)	mg/L	646	0.25	A603491
RDL = Reportable Detection Limit				

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AUP574		
Sampling Date		2022/06/08 11:15		
COC Number		G145189		
	UNITS	**SHA-LE1**	**RDL**	**QC Batch**
Total Magnesium (Mg)	mg/L	198	0.25	A603491
Total Potassium (K)	mg/L	21.9	0.25	A603491
Total Sodium (Na)	mg/L	1340	0.25	A603491
Total Sulphur (S)	mg/L	541	15	A603491
RDL = Reportable Detection Limit				

Bureau Veritas Job #: C239471
Report Date: 2022/06/14

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 SLEBBINGS RD
Sampler Initials: AD

TOTAL PETROLEUM HYDROCARBONS (WATER)

Bureau Veritas ID		AUP574		
Sampling Date		2022/06/08 11:15		
COC Number		G145189		
	UNITS	**SHA-LE1**	**RDL**	**QC Batch**
Calculated Parameters				
LEPH (C10-C19 less PAH)	mg/L	<0.20	0.20	A603555
HEPH (C19-C32 less PAH)	mg/L	<0.20	0.20	A603555
Ext. Pet. Hydrocarbon				
EPH (C10-C19)	mg/L	<0.20	0.20	A604773
EPH (C19-C32)	mg/L	<0.20	0.20	A604773
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	102		A604773
RDL = Reportable Detection Limit				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A604698	BAL	Matrix Spike	Dissolved Aluminum (Al)	2022/06/10		96	%	80 - 120
			Dissolved Antimony (Sb)	2022/06/10		105	%	80 - 120
			Dissolved Arsenic (As)	2022/06/10		103	%	80 - 120
			Dissolved Barium (Ba)	2022/06/10		101	%	80 - 120
			Dissolved Beryllium (Be)	2022/06/10		100	%	80 - 120
			Dissolved Bismuth (Bi)	2022/06/10		99	%	80 - 120
			Dissolved Boron (B)	2022/06/10		102	%	80 - 120
			Dissolved Cadmium (Cd)	2022/06/10		100	%	80 - 120
			Dissolved Chromium (Cr)	2022/06/10		98	%	80 - 120
			Dissolved Cobalt (Co)	2022/06/10		99	%	80 - 120
			Dissolved Copper (Cu)	2022/06/10		97	%	80 - 120
			Dissolved Iron (Fe)	2022/06/10		102	%	80 - 120
			Dissolved Lead (Pb)	2022/06/10		102	%	80 - 120
			Dissolved Lithium (Li)	2022/06/10		101	%	80 - 120
			Dissolved Manganese (Mn)	2022/06/10		97	%	80 - 120
			Dissolved Molybdenum (Mo)	2022/06/10		101	%	80 - 120
			Dissolved Nickel (Ni)	2022/06/10		98	%	80 - 120
			Dissolved Selenium (Se)	2022/06/10		101	%	80 - 120
			Dissolved Silicon (Si)	2022/06/10		112	%	80 - 120
			Dissolved Silver (Ag)	2022/06/10		98	%	80 - 120
			Dissolved Strontium (Sr)	2022/06/10		100	%	80 - 120
			Dissolved Thallium (Tl)	2022/06/10		99	%	80 - 120
			Dissolved Tin (Sn)	2022/06/10		98	%	80 - 120
			Dissolved Titanium (Ti)	2022/06/10		101	%	80 - 120
			Dissolved Uranium (U)	2022/06/10		101	%	80 - 120
			Dissolved Vanadium (V)	2022/06/10		99	%	80 - 120
			Dissolved Zinc (Zn)	2022/06/10		102	%	80 - 120
			Dissolved Zirconium (Zr)	2022/06/10		98	%	80 - 120
A604698	BAL	Spiked Blank	Dissolved Aluminum (Al)	2022/06/10		99	%	80 - 120
			Dissolved Antimony (Sb)	2022/06/10		108	%	80 - 120
			Dissolved Arsenic (As)	2022/06/10		105	%	80 - 120
			Dissolved Barium (Ba)	2022/06/10		103	%	80 - 120
			Dissolved Beryllium (Be)	2022/06/10		100	%	80 - 120
			Dissolved Bismuth (Bi)	2022/06/10		101	%	80 - 120
			Dissolved Boron (B)	2022/06/10		104	%	80 - 120
			Dissolved Cadmium (Cd)	2022/06/10		103	%	80 - 120
			Dissolved Chromium (Cr)	2022/06/10		101	%	80 - 120
			Dissolved Cobalt (Co)	2022/06/10		102	%	80 - 120
			Dissolved Copper (Cu)	2022/06/10		101	%	80 - 120
			Dissolved Iron (Fe)	2022/06/10		102	%	80 - 120
			Dissolved Lead (Pb)	2022/06/10		103	%	80 - 120
			Dissolved Lithium (Li)	2022/06/10		101	%	80 - 120
			Dissolved Manganese (Mn)	2022/06/10		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2022/06/10		107	%	80 - 120
			Dissolved Nickel (Ni)	2022/06/10		100	%	80 - 120
			Dissolved Selenium (Se)	2022/06/10		103	%	80 - 120
			Dissolved Silicon (Si)	2022/06/10		110	%	80 - 120
			Dissolved Silver (Ag)	2022/06/10		102	%	80 - 120
			Dissolved Strontium (Sr)	2022/06/10		103	%	80 - 120
			Dissolved Thallium (Tl)	2022/06/10		99	%	80 - 120
			Dissolved Tin (Sn)	2022/06/10		101	%	80 - 120
			Dissolved Titanium (Ti)	2022/06/10		102	%	80 - 120
			Dissolved Uranium (U)	2022/06/10		104	%	80 - 120

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Vanadium (V)	2022/06/10		101	%	80 - 120
			Dissolved Zinc (Zn)	2022/06/10		105	%	80 - 120
			Dissolved Zirconium (Zr)	2022/06/10		101	%	80 - 120
A604698	BAL	Method Blank	Dissolved Aluminum (Al)	2022/06/10	<3.0		ug/L	
			Dissolved Antimony (Sb)	2022/06/10	<0.50		ug/L	
			Dissolved Arsenic (As)	2022/06/10	<0.10		ug/L	
			Dissolved Barium (Ba)	2022/06/10	<1.0		ug/L	
			Dissolved Beryllium (Be)	2022/06/10	<0.10		ug/L	
			Dissolved Bismuth (Bi)	2022/06/10	<1.0		ug/L	
			Dissolved Boron (B)	2022/06/10	<50		ug/L	
			Dissolved Cadmium (Cd)	2022/06/10	<0.010		ug/L	
			Dissolved Chromium (Cr)	2022/06/10	<1.0		ug/L	
			Dissolved Cobalt (Co)	2022/06/10	<0.20		ug/L	
			Dissolved Copper (Cu)	2022/06/10	<0.20		ug/L	
			Dissolved Iron (Fe)	2022/06/10	<5.0		ug/L	
			Dissolved Lead (Pb)	2022/06/10	<0.20		ug/L	
			Dissolved Lithium (Li)	2022/06/10	<2.0		ug/L	
			Dissolved Manganese (Mn)	2022/06/10	<1.0		ug/L	
			Dissolved Molybdenum (Mo)	2022/06/10	<1.0		ug/L	
			Dissolved Nickel (Ni)	2022/06/10	<1.0		ug/L	
			Dissolved Selenium (Se)	2022/06/10	<0.10		ug/L	
			Dissolved Silicon (Si)	2022/06/10	<100		ug/L	
			Dissolved Silver (Ag)	2022/06/10	<0.020		ug/L	
			Dissolved Strontium (Sr)	2022/06/10	<1.0		ug/L	
			Dissolved Thallium (Tl)	2022/06/10	<0.010		ug/L	
			Dissolved Tin (Sn)	2022/06/10	<5.0		ug/L	
			Dissolved Titanium (Ti)	2022/06/10	<5.0		ug/L	
			Dissolved Uranium (U)	2022/06/10	<0.10		ug/L	
			Dissolved Vanadium (V)	2022/06/10	<5.0		ug/L	
			Dissolved Zinc (Zn)	2022/06/10	<5.0		ug/L	
			Dissolved Zirconium (Zr)	2022/06/10	<0.10		ug/L	
A604698	BAL	RPD	Dissolved Aluminum (Al)	2022/06/10	NC		%	20
			Dissolved Antimony (Sb)	2022/06/10	NC		%	20
			Dissolved Arsenic (As)	2022/06/10	NC		%	20
			Dissolved Barium (Ba)	2022/06/10	NC		%	20
			Dissolved Beryllium (Be)	2022/06/10	NC		%	20
			Dissolved Bismuth (Bi)	2022/06/10	NC		%	20
			Dissolved Boron (B)	2022/06/10	NC		%	20
			Dissolved Cadmium (Cd)	2022/06/10	NC		%	20
			Dissolved Chromium (Cr)	2022/06/10	NC		%	20
			Dissolved Cobalt (Co)	2022/06/10	NC		%	20
			Dissolved Copper (Cu)	2022/06/10	NC		%	20
			Dissolved Iron (Fe)	2022/06/10	NC		%	20
			Dissolved Lead (Pb)	2022/06/10	NC		%	20
			Dissolved Lithium (Li)	2022/06/10	NC		%	20
			Dissolved Manganese (Mn)	2022/06/10	NC		%	20
			Dissolved Molybdenum (Mo)	2022/06/10	NC		%	20
			Dissolved Nickel (Ni)	2022/06/10	NC		%	20
			Dissolved Selenium (Se)	2022/06/10	NC		%	20
			Dissolved Silicon (Si)	2022/06/10	NC		%	20
			Dissolved Silver (Ag)	2022/06/10	NC		%	20
			Dissolved Strontium (Sr)	2022/06/10	NC		%	20
			Dissolved Thallium (Tl)	2022/06/10	NC		%	20

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Tin (Sn)	2022/06/10	NC		%	20
			Dissolved Titanium (Ti)	2022/06/10	NC		%	20
			Dissolved Uranium (U)	2022/06/10	NC		%	20
			Dissolved Vanadium (V)	2022/06/10	NC		%	20
			Dissolved Zinc (Zn)	2022/06/10	NC		%	20
			Dissolved Zirconium (Zr)	2022/06/10	NC		%	20
			Dissolved Arsenic (As)	2022/06/10	NC		%	20
			Dissolved Beryllium (Be)	2022/06/10	NC		%	20
			Dissolved Chromium (Cr)	2022/06/10	NC		%	20
			Dissolved Copper (Cu)	2022/06/10	1.8		%	20
A604733	BAL	Matrix Spike	Total Aluminum (Al)	2022/06/11		NC	%	80 - 120
			Total Antimony (Sb)	2022/06/11		101	%	80 - 120
			Total Arsenic (As)	2022/06/11		104	%	80 - 120
			Total Barium (Ba)	2022/06/11		98	%	80 - 120
			Total Beryllium (Be)	2022/06/11		106	%	80 - 120
			Total Bismuth (Bi)	2022/06/11		100	%	80 - 120
			Total Boron (B)	2022/06/11		109	%	80 - 120
			Total Cadmium (Cd)	2022/06/11		104	%	80 - 120
			Total Chromium (Cr)	2022/06/11		111	%	80 - 120
			Total Cobalt (Co)	2022/06/11		105	%	80 - 120
			Total Copper (Cu)	2022/06/11		103	%	80 - 120
			Total Iron (Fe)	2022/06/11		NC	%	80 - 120
			Total Lead (Pb)	2022/06/11		104	%	80 - 120
			Total Lithium (Li)	2022/06/11		108	%	80 - 120
			Total Manganese (Mn)	2022/06/11		NC	%	80 - 120
			Total Molybdenum (Mo)	2022/06/11		107	%	80 - 120
			Total Nickel (Ni)	2022/06/11		101	%	80 - 120
			Total Selenium (Se)	2022/06/11		106	%	80 - 120
			Total Silicon (Si)	2022/06/11		123 (1)	%	80 - 120
			Total Silver (Ag)	2022/06/11		102	%	80 - 120
			Total Strontium (Sr)	2022/06/11		103	%	80 - 120
			Total Thallium (Tl)	2022/06/11		103	%	80 - 120
			Total Tin (Sn)	2022/06/11		101	%	80 - 120
			Total Titanium (Ti)	2022/06/11		111	%	80 - 120
			Total Uranium (U)	2022/06/11		105	%	80 - 120
			Total Vanadium (V)	2022/06/11		101	%	80 - 120
			Total Zinc (Zn)	2022/06/11		102	%	80 - 120
			Total Zirconium (Zr)	2022/06/11		120	%	80 - 120
A604733	BAL	Spiked Blank	Total Aluminum (Al)	2022/06/11		104	%	80 - 120
			Total Antimony (Sb)	2022/06/11		104	%	80 - 120
			Total Arsenic (As)	2022/06/11		108	%	80 - 120
			Total Barium (Ba)	2022/06/11		102	%	80 - 120
			Total Beryllium (Be)	2022/06/11		107	%	80 - 120
			Total Bismuth (Bi)	2022/06/11		103	%	80 - 120
			Total Boron (B)	2022/06/11		111	%	80 - 120
			Total Cadmium (Cd)	2022/06/11		104	%	80 - 120
			Total Chromium (Cr)	2022/06/11		105	%	80 - 120
			Total Cobalt (Co)	2022/06/11		105	%	80 - 120
			Total Copper (Cu)	2022/06/11		103	%	80 - 120
			Total Iron (Fe)	2022/06/11		104	%	80 - 120
			Total Lead (Pb)	2022/06/11		103	%	80 - 120
			Total Lithium (Li)	2022/06/11		108	%	80 - 120
			Total Manganese (Mn)	2022/06/11		104	%	80 - 120

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Molybdenum (Mo)	2022/06/11		108	%	80 - 120
			Total Nickel (Ni)	2022/06/11		105	%	80 - 120
			Total Selenium (Se)	2022/06/11		106	%	80 - 120
			Total Silicon (Si)	2022/06/11		116	%	80 - 120
			Total Silver (Ag)	2022/06/11		102	%	80 - 120
			Total Strontium (Sr)	2022/06/11		105	%	80 - 120
			Total Thallium (Tl)	2022/06/11		101	%	80 - 120
			Total Tin (Sn)	2022/06/11		103	%	80 - 120
			Total Titanium (Ti)	2022/06/11		105	%	80 - 120
			Total Uranium (U)	2022/06/11		106	%	80 - 120
			Total Vanadium (V)	2022/06/11		102	%	80 - 120
			Total Zinc (Zn)	2022/06/11		105	%	80 - 120
			Total Zirconium (Zr)	2022/06/11		103	%	80 - 120
A604733	BAL	Method Blank	Total Aluminum (Al)	2022/06/11	<3.0		ug/L	
			Total Antimony (Sb)	2022/06/11	<0.50		ug/L	
			Total Arsenic (As)	2022/06/11	<0.10		ug/L	
			Total Barium (Ba)	2022/06/11	<1.0		ug/L	
			Total Beryllium (Be)	2022/06/11	<0.10		ug/L	
			Total Bismuth (Bi)	2022/06/11	<1.0		ug/L	
			Total Boron (B)	2022/06/11	<50		ug/L	
			Total Cadmium (Cd)	2022/06/11	<0.010		ug/L	
			Total Chromium (Cr)	2022/06/11	<1.0		ug/L	
			Total Cobalt (Co)	2022/06/11	<0.20		ug/L	
			Total Copper (Cu)	2022/06/11	<0.50		ug/L	
			Total Iron (Fe)	2022/06/11	<10		ug/L	
			Total Lead (Pb)	2022/06/11	<0.20		ug/L	
			Total Lithium (Li)	2022/06/11	<2.0		ug/L	
			Total Manganese (Mn)	2022/06/11	<1.0		ug/L	
			Total Molybdenum (Mo)	2022/06/11	<1.0		ug/L	
			Total Nickel (Ni)	2022/06/11	<1.0		ug/L	
			Total Selenium (Se)	2022/06/11	<0.10		ug/L	
			Total Silicon (Si)	2022/06/11	<100		ug/L	
			Total Silver (Ag)	2022/06/11	<0.020		ug/L	
			Total Strontium (Sr)	2022/06/11	<1.0		ug/L	
			Total Thallium (Tl)	2022/06/11	<0.010		ug/L	
			Total Tin (Sn)	2022/06/11	<5.0		ug/L	
			Total Titanium (Ti)	2022/06/11	<5.0		ug/L	
			Total Uranium (U)	2022/06/11	<0.10		ug/L	
			Total Vanadium (V)	2022/06/11	<5.0		ug/L	
			Total Zinc (Zn)	2022/06/11	<5.0		ug/L	
			Total Zirconium (Zr)	2022/06/11	<0.10		ug/L	
A604733	BAL	RPD	Total Aluminum (Al)	2022/06/11	5.8		%	20
			Total Arsenic (As)	2022/06/11	4.8		%	20
			Total Barium (Ba)	2022/06/11	1.9		%	20
			Total Cadmium (Cd)	2022/06/11	14		%	20
			Total Chromium (Cr)	2022/06/11	5.1		%	20
			Total Copper (Cu)	2022/06/11	1.9		%	20
			Total Iron (Fe)	2022/06/11	5.6		%	20
			Total Lead (Pb)	2022/06/11	3.5		%	20
			Total Manganese (Mn)	2022/06/11	2.6		%	20
			Total Molybdenum (Mo)	2022/06/11	NC		%	20
			Total Nickel (Ni)	2022/06/11	3.5		%	20
			Total Selenium (Se)	2022/06/11	11		%	20

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Silver (Ag)	2022/06/11	NC		%	20
			Total Thallium (Tl)	2022/06/11	3.1		%	20
			Total Zinc (Zn)	2022/06/11	4.2		%	20
A604773	PN2	Matrix Spike	O-TERPHENYL (sur.)	2022/06/10		103	%	60 - 140
			EPH (C10-C19)	2022/06/10		NC	%	60 - 140
			EPH (C19-C32)	2022/06/10		NC	%	60 - 140
A604773	PN2	Spiked Blank	O-TERPHENYL (sur.)	2022/06/10		109	%	60 - 140
			EPH (C10-C19)	2022/06/10		103	%	70 - 130
			EPH (C19-C32)	2022/06/10		105	%	70 - 130
A604773	PN2	Method Blank	O-TERPHENYL (sur.)	2022/06/10		108	%	60 - 140
			EPH (C10-C19)	2022/06/10	<0.20		mg/L	
			EPH (C19-C32)	2022/06/10	<0.20		mg/L	
A604773	PN2	RPD	EPH (C10-C19)	2022/06/10	0.47		%	30
			EPH (C19-C32)	2022/06/10	NC		%	30
A604783	JP1	Matrix Spike	D10-ANTHRACENE (sur.)	2022/06/10		80	%	50 - 140
			D8-ACENAPHTHYLENE (sur.)	2022/06/10		79	%	50 - 140
			D8-NAPHTHALENE (sur.)	2022/06/10		74	%	50 - 140
			TERPHENYL-D14 (sur.)	2022/06/10		89	%	50 - 140
			Quinoline	2022/06/10		98	%	50 - 140
			Naphthalene	2022/06/10		67	%	50 - 140
			1-Methylnaphthalene	2022/06/10		64	%	50 - 140
			2-Methylnaphthalene	2022/06/10		68	%	50 - 140
			Acenaphthylene	2022/06/10		66	%	50 - 140
			Acenaphthene	2022/06/10		73	%	50 - 140
			Fluorene	2022/06/10		74	%	50 - 140
			Phenanthrene	2022/06/10		69	%	50 - 140
			Anthracene	2022/06/10		69	%	50 - 140
			Acridine	2022/06/10		91	%	50 - 140
			Fluoranthene	2022/06/10		75	%	50 - 140
			Pyrene	2022/06/10		76	%	50 - 140
			Benzo(a)anthracene	2022/06/10		67	%	50 - 140
			Chrysene	2022/06/10		66	%	50 - 140
			Benzo(b&j)fluoranthene	2022/06/10		61	%	50 - 140
			Benzo(k)fluoranthene	2022/06/10		72	%	50 - 140
			Benzo(a)pyrene	2022/06/10		62	%	50 - 140
			Indeno(1,2,3-cd)pyrene	2022/06/10		52	%	50 - 140
			Dibenz(a,h)anthracene	2022/06/10		51	%	50 - 140
			Benzo(g,h,i)perylene	2022/06/10		50	%	50 - 140
A604783	JP1	Spiked Blank	D10-ANTHRACENE (sur.)	2022/06/10		86	%	50 - 140
			D8-ACENAPHTHYLENE (sur.)	2022/06/10		87	%	50 - 140
			D8-NAPHTHALENE (sur.)	2022/06/10		91	%	50 - 140
			TERPHENYL-D14 (sur.)	2022/06/10		97	%	50 - 140
			Quinoline	2022/06/10		97	%	50 - 140
			Naphthalene	2022/06/10		81	%	50 - 140
			1-Methylnaphthalene	2022/06/10		75	%	50 - 140
			2-Methylnaphthalene	2022/06/10		77	%	50 - 140
			Acenaphthylene	2022/06/10		74	%	50 - 140
			Acenaphthene	2022/06/10		82	%	50 - 140
			Fluorene	2022/06/10		82	%	50 - 140
			Phenanthrene	2022/06/10		73	%	50 - 140
			Anthracene	2022/06/10		76	%	50 - 140
			Acridine	2022/06/10		92	%	50 - 140
			Fluoranthene	2022/06/10		82	%	50 - 140

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2022/06/10		83	%	50 - 140
			Benzo(a)anthracene	2022/06/10		75	%	50 - 140
			Chrysene	2022/06/10		75	%	50 - 140
			Benzo(b&j)fluoranthene	2022/06/10		71	%	50 - 140
			Benzo(k)fluoranthene	2022/06/10		86	%	50 - 140
			Benzo(a)pyrene	2022/06/10		74	%	50 - 140
			Indeno(1,2,3-cd)pyrene	2022/06/10		73	%	50 - 140
			Dibenz(a,h)anthracene	2022/06/10		74	%	50 - 140
			Benzo(g,h,i)perylene	2022/06/10		72	%	50 - 140
A604783	JP1	Method Blank	D10-ANTHRACENE (sur.)	2022/06/10		84	%	50 - 140
			D8-ACENAPHTHYLENE (sur.)	2022/06/10		82	%	50 - 140
			D8-NAPHTHALENE (sur.)	2022/06/10		78	%	50 - 140
			TERPHENYL-D14 (sur.)	2022/06/10		91	%	50 - 140
			Quinoline	2022/06/10	<0.020		ug/L	
			Naphthalene	2022/06/10	<0.10		ug/L	
			1-Methylnaphthalene	2022/06/10	<0.050		ug/L	
			2-Methylnaphthalene	2022/06/10	<0.10		ug/L	
			Acenaphthylene	2022/06/10	<0.050		ug/L	
			Acenaphthene	2022/06/10	<0.050		ug/L	
			Fluorene	2022/06/10	<0.050		ug/L	
			Phenanthrene	2022/06/10	<0.050		ug/L	
			Anthracene	2022/06/10	<0.010		ug/L	
			Acridine	2022/06/10	<0.050		ug/L	
			Fluoranthene	2022/06/10	<0.020		ug/L	
			Pyrene	2022/06/10	<0.020		ug/L	
			Benzo(a)anthracene	2022/06/10	<0.010		ug/L	
			Chrysene	2022/06/10	<0.020		ug/L	
			Benzo(b&j)fluoranthene	2022/06/10	<0.030		ug/L	
			Benzo(k)fluoranthene	2022/06/10	<0.050		ug/L	
			Benzo(a)pyrene	2022/06/10	<0.0050		ug/L	
			Indeno(1,2,3-cd)pyrene	2022/06/10	<0.050		ug/L	
			Dibenz(a,h)anthracene	2022/06/10	<0.0030		ug/L	
			Benzo(g,h,i)perylene	2022/06/10	<0.050		ug/L	
A604783	JP1	RPD	Quinoline	2022/06/12	NC		%	40
			Naphthalene	2022/06/12	NC		%	40
			1-Methylnaphthalene	2022/06/12	NC		%	40
			2-Methylnaphthalene	2022/06/12	NC		%	40
			Acenaphthylene	2022/06/12	NC		%	40
			Acenaphthene	2022/06/12	NC		%	40
			Fluorene	2022/06/12	NC		%	40
			Phenanthrene	2022/06/12	NC		%	40
			Anthracene	2022/06/12	NC		%	40
			Acridine	2022/06/12	NC		%	40
			Fluoranthene	2022/06/12	NC		%	40
			Pyrene	2022/06/12	NC		%	40
			Benzo(a)anthracene	2022/06/12	NC		%	40
			Chrysene	2022/06/12	NC		%	40
			Benzo(b&j)fluoranthene	2022/06/12	NC		%	40
			Benzo(k)fluoranthene	2022/06/12	NC		%	40
			Benzo(a)pyrene	2022/06/12	NC		%	40
			Indeno(1,2,3-cd)pyrene	2022/06/12	NC		%	40
			Dibenz(a,h)anthracene	2022/06/12	NC		%	40
			Benzo(g,h,i)perylene	2022/06/12	NC		%	40

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A604954	BTM	Matrix Spike	Dissolved Fluoride (F)	2022/06/10		106	%	80 - 120
A604954	BTM	Spiked Blank	Dissolved Fluoride (F)	2022/06/10		102	%	80 - 120
A604954	BTM	Method Blank	Dissolved Fluoride (F)	2022/06/10	<0.050		mg/L	
A604954	BTM	RPD	Dissolved Fluoride (F)	2022/06/10	NC		%	20
A605572	WZ1	Matrix Spike	Total Dissolved Solids	2022/06/13		99	%	80 - 120
A605572	WZ1	Spiked Blank	Total Dissolved Solids	2022/06/13		97	%	80 - 120
A605572	WZ1	Method Blank	Total Dissolved Solids	2022/06/13	<10		mg/L	
A605572	WZ1	RPD	Total Dissolved Solids	2022/06/13	7.1		%	20
A605884	YIL	Matrix Spike	Nitrate plus Nitrite (N)	2022/06/10		NC	%	80 - 120
A605884	YIL	Spiked Blank	Nitrate plus Nitrite (N)	2022/06/10		103	%	80 - 120
A605884	YIL	Method Blank	Nitrate plus Nitrite (N)	2022/06/10	<0.020		mg/L	
A605884	YIL	RPD	Nitrate plus Nitrite (N)	2022/06/10	1.1		%	25
A605885	YIL	Matrix Spike	Nitrite (N)	2022/06/10		106	%	80 - 120
A605885	YIL	Spiked Blank	Nitrite (N)	2022/06/10		105	%	80 - 120
A605885	YIL	Method Blank	Nitrite (N)	2022/06/10	<0.0050		mg/L	
A605885	YIL	RPD	Nitrite (N)	2022/06/10	NC		%	20
A607591	TSO	Spiked Blank	pH	2022/06/10		102	%	97 - 103
A607595	TSO	Spiked Blank	Conductivity	2022/06/10		102	%	80 - 120
A607595	TSO	Method Blank	Conductivity	2022/06/10	<2.0		uS/cm	
A607597	TSO	Matrix Spike	Alkalinity (Total as CaCO3)	2022/06/10		103	%	80 - 120
A607597	TSO	Spiked Blank	Alkalinity (Total as CaCO3)	2022/06/10		101	%	80 - 120
A607597	TSO	Method Blank	Alkalinity (PP as CaCO3)	2022/06/10	<1.0		mg/L	
			Alkalinity (Total as CaCO3)	2022/06/10	<1.0		mg/L	
			Bicarbonate (HCO3)	2022/06/10	<1.0		mg/L	
			Carbonate (CO3)	2022/06/10	<1.0		mg/L	
			Hydroxide (OH)	2022/06/10	<1.0		mg/L	
A607597	TSO	RPD	Alkalinity (PP as CaCO3)	2022/06/10	NC		%	20
			Alkalinity (Total as CaCO3)	2022/06/10	0.93		%	20
			Bicarbonate (HCO3)	2022/06/10	0.93		%	20
			Carbonate (CO3)	2022/06/10	NC		%	20
			Hydroxide (OH)	2022/06/10	NC		%	20
A608172	BB3	Spiked Blank	Chloride (Cl)	2022/06/13		99	%	80 - 120
			Sulphate (SO4)	2022/06/13		107	%	80 - 120
A608172	BB3	Method Blank	Chloride (Cl)	2022/06/13	<1.0		mg/L	
			Sulphate (SO4)	2022/06/13	<1.0		mg/L	

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.

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.

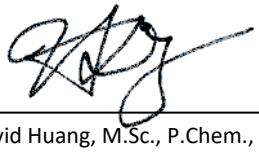
Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C239471
Report Date: 2022/06/14

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 SLEBBINGS RD
Sampler Initials: AD

VALIDATION SIGNATURE PAGE

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



David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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 Signature Page.

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Burnaby: 4606 Canada Way, Burnaby, BC V5G 1K5 Toll Free (833) 282-5227
Victoria: 851 Viewfield Road, Unit 1, Victoria, BC V9A 4V2 Toll Free (833) 282-5227
bvlabs.com

CHAIN OF CUSTODY RECORD

G 145189

Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information	Turnaround Time (TAT) Required
Company: Rolmax	Company:	Quotation: C00237	[X] 5 - 7 Days Regular (Most analyses)
Contact Name: Alana Duncan	Contact Name:	P.O. #/AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 343A Bay St Victoria PC: V8T 1P5	Address: PC:	Project #: Leachate Tanks	Rush TAT (Surcharges will be applied)
Phone/Fax: 250-812-4091	Phone/Fax:	Site Location: 460 Stebbings Rd	[ ] Same Day [ ] 2 Days
Email: alanaduncan@rdmax.com	Email:	Site #:	[ ] 1 Day [ ] 3-4 Days
Copies:	Copies:	Sampled By: Alana Duncan	Date Required:
			Rush Confirmation #:

Laboratory Use Only

	YES	NO	Cooler ID	Temp		
Seal Present		X				
Seal Intact		X				
Cooling Media	X			12	12	11
	YES	NO	Cooler ID			
Seal Present						
Seal Intact			Temp			
Cooling Media						
	YES	NO	Cooler ID			
Seal Present						
Seal Intact			Temp			
Cooling Media						

Depot Reception

Analysis Requested

Sample Identification	Date Sampled (yyyy/mm/dd)	Time Sampled (hh:mm)	Matrix	# of Containers	BTEXS / VPH	BTEX F1	PAH	EPH	Dissolved Metals	Dissolved Mercury	Total Metals	Total Mercury	Chloride	TSS	pH	Nitrite	Hardness (as CaCO3)	HOLD - DO NOT ANALYZE	Special Instructions
1 SHA-LE1	20220608	11:15	Water	8			X		X		X		X	X	X	X	X		total metals incl.
2																			Ca, Mg, Mn, K, Na
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Regulatory Criteria
[X] BC CSR
[ ] YK CSR
[ ] CCME
[X] Drinking Water
[ ] BC Water Quality
[ ] Other

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 acknowledgement and acceptance

Relinquished by: (Signature/ Print)	Date (yyyy/mm/dd):	Time (hh:mm):	Received by: (Signature/ Print)	Date (yyyy/mm/dd):	Time (hh:mm):
A Duncan	20220608	13:40	SHA-SNicholson	2022/06/03	1403

C239471_COC

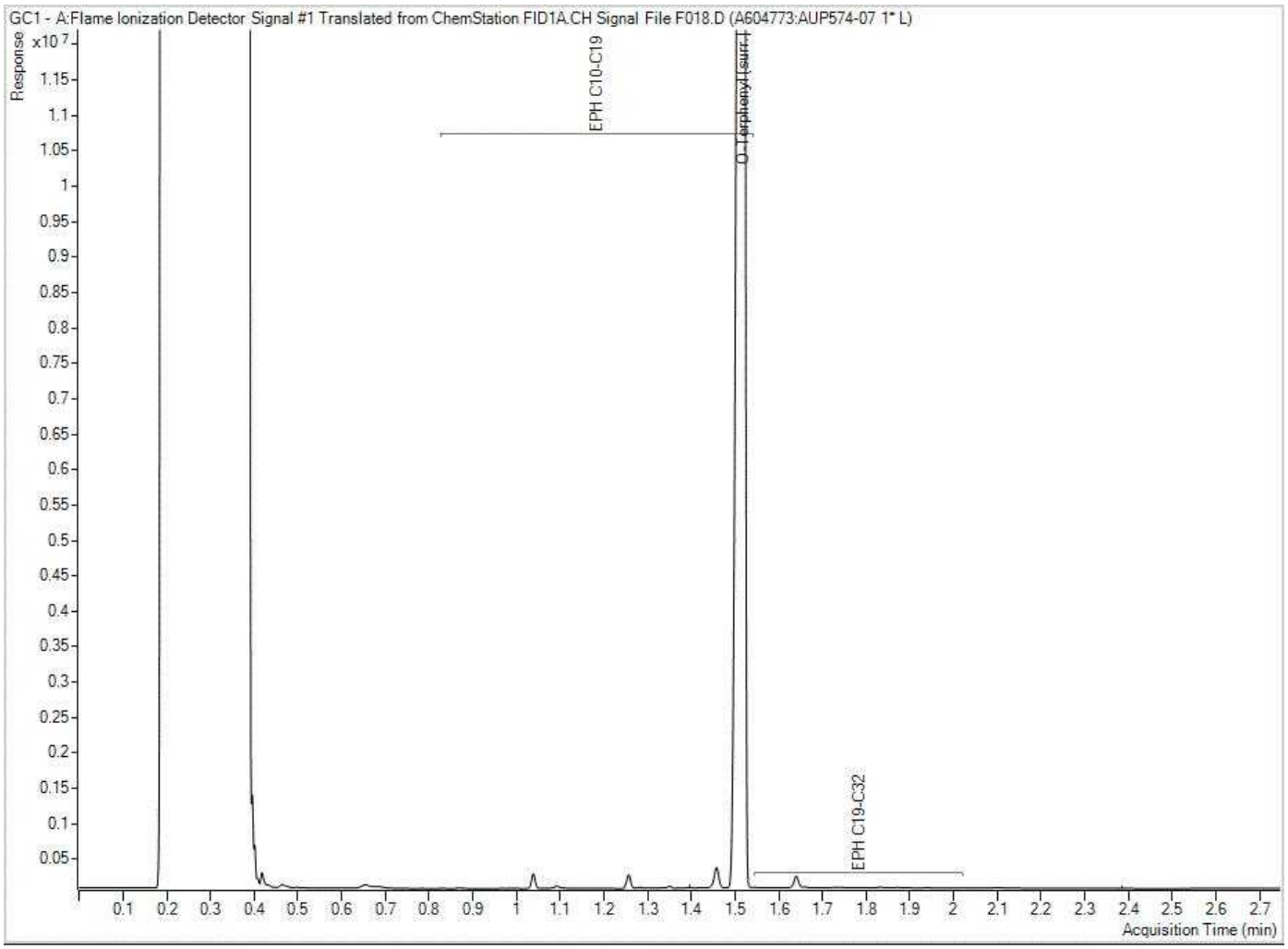
COC-1020

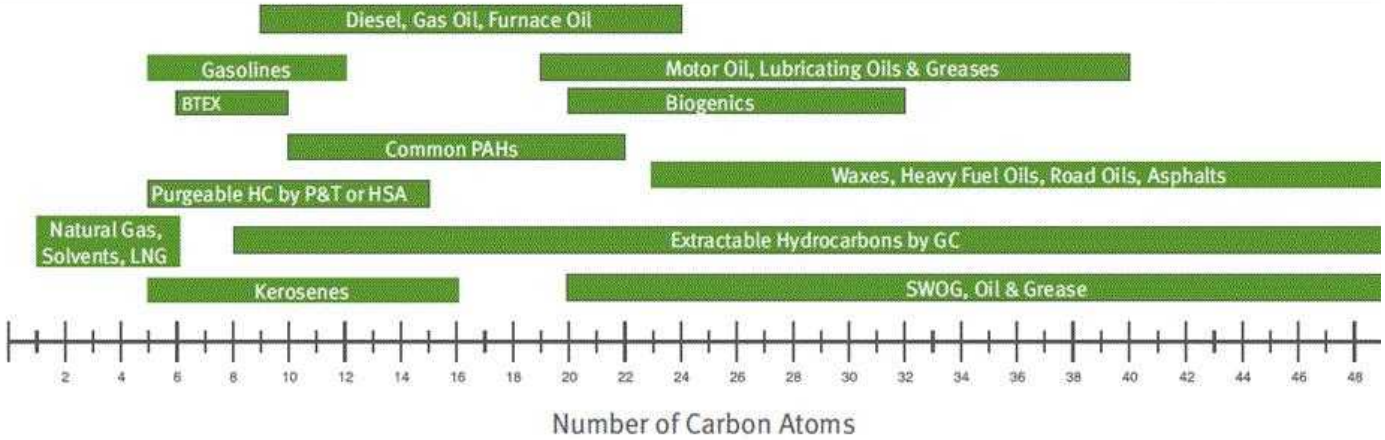
Bureau Veritas Shaping a World of Trust©

Bureau Veritas Job #: C239471
Report Date: 2022/06/14
Bureau Veritas Sample: AUP574

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Reference: 460 SLEBBINGS RD
Client ID: SHA-LE1

EPH in Water when PAH required Chromatogram





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

Your Project #: LEACHATE TANKS
Site Location: 460 STEBBINGS RD.
Your C.O.C. #: 658502-01-01

Attention: Alana Duncan - DNU

Ralmax Group Holdings Ltd.
343A Bay Street
Victoria, BC
CANADA V8T 1P5

Report Date: 2022/07/08
Report #: R3197350
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C247220
Received: 2022/07/04, 12:10

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/07/07	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO4-E m
Sulphide (as H2S) (1)	1	N/A	2022/07/07		Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2022/07/08	BBY WI-00033	Auto Calc
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2022/07/08	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (2)	1	N/A	2022/07/08	BBY7SOP-00002	EPA 6020b R2 m
Filter and HNO3 Preserve for Metals	1	N/A	2022/07/04	BBY7 WI-00004	SM 23 3030B m
Total Sulphide (1)	1	N/A	2022/07/07	AB SOP-00080	SM 23 4500 S2-A D Fm

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, MELCC, 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.

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, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Your Project #: LEACHATE TANKS
Site Location: 460 STEBBINGS RD.
Your C.O.C. #: 658502-01-01

Attention: Alana Duncan - DNU

Ralmax Group Holdings Ltd.
343A Bay Street
Victoria, BC
CANADA V8T 1P5

Report Date: 2022/07/08
Report #: R3197350
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C247220
Received: 2022/07/04, 12:10

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
08 Jul 2022 16:46:49

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (604) 734 7276
==========
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Bureau Veritas Job #: C247220
Report Date: 2022/07/08

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 STEBBINGS RD.
Sampler Initials: AD

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		AWK263		
Sampling Date		2022/07/04 11:25		
COC Number		658502-01-01		
	UNITS	**SHA-LE1**	**RDL**	**QC Batch**
Calculated Parameters				
Filter and HNO3 Preservation	N/A	FIELD		ONSITE
Dissolved Hardness (CaCO3)	mg/L	2580	0.50	A636052
Sulphide (as H2S)	mg/L	<0.0020	0.0020	A630875
Anions				
Total Sulphide	mg/L	<0.0018 (1)	0.0018	A635872
Chloride (Cl)	mg/L	1800 (2)	100	A636745
Sulphate (SO4)	mg/L	990 (2)	100	A636745

RDL = Reportable Detection Limit
(1) Sample was not submitted in an appropriate container for this analysis.
Sample was received unpreserved.
Sample pH <9, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.
(2) RDL raised due to sample matrix interference.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C247220
Report Date: 2022/07/08

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 STEBBINGS RD.
Sampler Initials: AD

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AWK263		
Sampling Date		2022/07/04 11:25		
COC Number		658502-01-01		
	UNITS	SHA-LE1	RDL	QC Batch
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	<15	15	A637331
Dissolved Antimony (Sb)	ug/L	<2.5	2.5	A637331
Dissolved Arsenic (As)	ug/L	<0.50	0.50	A637331
Dissolved Barium (Ba)	ug/L	<5.0	5.0	A637331
Dissolved Beryllium (Be)	ug/L	<0.50	0.50	A637331
Dissolved Bismuth (Bi)	ug/L	<5.0	5.0	A637331
Dissolved Boron (B)	ug/L	320	250	A637331
Dissolved Cadmium (Cd)	ug/L	<0.050	0.050	A637331
Dissolved Chromium (Cr)	ug/L	5.2	5.0	A637331
Dissolved Cobalt (Co)	ug/L	<1.0	1.0	A637331
Dissolved Copper (Cu)	ug/L	3.0	1.0	A637331
Dissolved Iron (Fe)	ug/L	<25	25	A637331
Dissolved Lead (Pb)	ug/L	<1.0	1.0	A637331
Dissolved Lithium (Li)	ug/L	<10	10	A637331
Dissolved Manganese (Mn)	ug/L	81.3	5.0	A637331
Dissolved Molybdenum (Mo)	ug/L	<5.0	5.0	A637331
Dissolved Nickel (Ni)	ug/L	<5.0	5.0	A637331
Dissolved Selenium (Se)	ug/L	<0.50	0.50	A637331
Dissolved Silicon (Si)	ug/L	7240	500	A637331
Dissolved Silver (Ag)	ug/L	<0.10	0.10	A637331
Dissolved Strontium (Sr)	ug/L	3500	5.0	A637331
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	A637331
Dissolved Tin (Sn)	ug/L	<25	25	A637331
Dissolved Titanium (Ti)	ug/L	<25	25	A637331
Dissolved Uranium (U)	ug/L	0.62	0.50	A637331
Dissolved Vanadium (V)	ug/L	<25	25	A637331
Dissolved Zinc (Zn)	ug/L	<25	25	A637331
Dissolved Zirconium (Zr)	ug/L	<0.50	0.50	A637331
Dissolved Calcium (Ca)	mg/L	721	0.25	A636053
Dissolved Magnesium (Mg)	mg/L	191	0.25	A636053
Dissolved Potassium (K)	mg/L	33.9	0.25	A636053
RDL = Reportable Detection Limit				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AWK263		
Sampling Date		2022/07/04 11:25		
COC Number		658502-01-01		
	UNITS	**SHA-LE1**	**RDL**	**QC Batch**
Dissolved Sodium (Na)	mg/L	1320	0.25	A636053
Dissolved Sulphur (S)	mg/L	530	15	A636053
RDL = Reportable Detection Limit				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 STEBBINGS RD.
Sampler Initials: AD

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C247220
Report Date: 2022/07/08

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 STEBBINGS RD.
Sampler Initials: AD

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A635872	JM0	Matrix Spike	Total Sulphide	2022/07/07		119	%	80 - 120
A635872	JM0	Spiked Blank	Total Sulphide	2022/07/07		103	%	80 - 120
A635872	JM0	Method Blank	Total Sulphide	2022/07/07	<0.0018		mg/L	
A635872	JM0	RPD	Total Sulphide	2022/07/07	NC		%	20
A636745	JRV	Spiked Blank	Chloride (Cl)	2022/07/07		103	%	80 - 120
			Sulphate (SO4)	2022/07/07		109	%	80 - 120
A636745	JRV	Method Blank	Chloride (Cl)	2022/07/07	<1.0		mg/L	
			Sulphate (SO4)	2022/07/07	<1.0		mg/L	
A637331	LWA	Matrix Spike	Dissolved Aluminum (Al)	2022/07/08		98	%	80 - 120
			Dissolved Antimony (Sb)	2022/07/08		102	%	80 - 120
			Dissolved Arsenic (As)	2022/07/08		106	%	80 - 120
			Dissolved Barium (Ba)	2022/07/08		NC	%	80 - 120
			Dissolved Beryllium (Be)	2022/07/08		105	%	80 - 120
			Dissolved Bismuth (Bi)	2022/07/08		100	%	80 - 120
			Dissolved Boron (B)	2022/07/08		107	%	80 - 120
			Dissolved Cadmium (Cd)	2022/07/08		101	%	80 - 120
			Dissolved Chromium (Cr)	2022/07/08		99	%	80 - 120
			Dissolved Cobalt (Co)	2022/07/08		97	%	80 - 120
			Dissolved Copper (Cu)	2022/07/08		97	%	80 - 120
			Dissolved Iron (Fe)	2022/07/08		103	%	80 - 120
			Dissolved Lead (Pb)	2022/07/08		103	%	80 - 120
			Dissolved Lithium (Li)	2022/07/08		105	%	80 - 120
			Dissolved Manganese (Mn)	2022/07/08		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2022/07/08		109	%	80 - 120
			Dissolved Nickel (Ni)	2022/07/08		98	%	80 - 120
			Dissolved Selenium (Se)	2022/07/08		106	%	80 - 120
			Dissolved Silicon (Si)	2022/07/08		NC	%	80 - 120
			Dissolved Silver (Ag)	2022/07/08		100	%	80 - 120
			Dissolved Strontium (Sr)	2022/07/08		NC	%	80 - 120
			Dissolved Thallium (Tl)	2022/07/08		102	%	80 - 120
			Dissolved Tin (Sn)	2022/07/08		103	%	80 - 120
			Dissolved Titanium (Ti)	2022/07/08		104	%	80 - 120
			Dissolved Uranium (U)	2022/07/08		120	%	80 - 120
			Dissolved Vanadium (V)	2022/07/08		101	%	80 - 120
			Dissolved Zinc (Zn)	2022/07/08		99	%	80 - 120
			Dissolved Zirconium (Zr)	2022/07/08		106	%	80 - 120
A637331	LWA	Spiked Blank	Dissolved Aluminum (Al)	2022/07/08		100	%	80 - 120
			Dissolved Antimony (Sb)	2022/07/08		105	%	80 - 120
			Dissolved Arsenic (As)	2022/07/08		106	%	80 - 120
			Dissolved Barium (Ba)	2022/07/08		101	%	80 - 120
			Dissolved Beryllium (Be)	2022/07/08		106	%	80 - 120
			Dissolved Bismuth (Bi)	2022/07/08		100	%	80 - 120
			Dissolved Boron (B)	2022/07/08		108	%	80 - 120
			Dissolved Cadmium (Cd)	2022/07/08		103	%	80 - 120
			Dissolved Chromium (Cr)	2022/07/08		100	%	80 - 120
			Dissolved Cobalt (Co)	2022/07/08		97	%	80 - 120
			Dissolved Copper (Cu)	2022/07/08		98	%	80 - 120
			Dissolved Iron (Fe)	2022/07/08		101	%	80 - 120
			Dissolved Lead (Pb)	2022/07/08		102	%	80 - 120
			Dissolved Lithium (Li)	2022/07/08		104	%	80 - 120
			Dissolved Manganese (Mn)	2022/07/08		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2022/07/08		106	%	80 - 120
			Dissolved Nickel (Ni)	2022/07/08		99	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Selenium (Se)	2022/07/08		100	%	80 - 120
			Dissolved Silicon (Si)	2022/07/08		110	%	80 - 120
			Dissolved Silver (Ag)	2022/07/08		99	%	80 - 120
			Dissolved Strontium (Sr)	2022/07/08		102	%	80 - 120
			Dissolved Thallium (Tl)	2022/07/08		101	%	80 - 120
			Dissolved Tin (Sn)	2022/07/08		103	%	80 - 120
			Dissolved Titanium (Ti)	2022/07/08		98	%	80 - 120
			Dissolved Uranium (U)	2022/07/08		112	%	80 - 120
			Dissolved Vanadium (V)	2022/07/08		99	%	80 - 120
			Dissolved Zinc (Zn)	2022/07/08		100	%	80 - 120
			Dissolved Zirconium (Zr)	2022/07/08		104	%	80 - 120
A637331	LWA	Method Blank	Dissolved Aluminum (Al)	2022/07/08	<3.0		ug/L	
			Dissolved Antimony (Sb)	2022/07/08	<0.50		ug/L	
			Dissolved Arsenic (As)	2022/07/08	<0.10		ug/L	
			Dissolved Barium (Ba)	2022/07/08	<1.0		ug/L	
			Dissolved Beryllium (Be)	2022/07/08	<0.10		ug/L	
			Dissolved Bismuth (Bi)	2022/07/08	<1.0		ug/L	
			Dissolved Boron (B)	2022/07/08	<50		ug/L	
			Dissolved Cadmium (Cd)	2022/07/08	<0.010		ug/L	
			Dissolved Chromium (Cr)	2022/07/08	<1.0		ug/L	
			Dissolved Cobalt (Co)	2022/07/08	<0.20		ug/L	
			Dissolved Copper (Cu)	2022/07/08	<0.20		ug/L	
			Dissolved Iron (Fe)	2022/07/08	<5.0		ug/L	
			Dissolved Lead (Pb)	2022/07/08	<0.20		ug/L	
			Dissolved Lithium (Li)	2022/07/08	<2.0		ug/L	
			Dissolved Manganese (Mn)	2022/07/08	<1.0		ug/L	
			Dissolved Molybdenum (Mo)	2022/07/08	<1.0		ug/L	
			Dissolved Nickel (Ni)	2022/07/08	<1.0		ug/L	
			Dissolved Selenium (Se)	2022/07/08	<0.10		ug/L	
			Dissolved Silicon (Si)	2022/07/08	<100		ug/L	
			Dissolved Silver (Ag)	2022/07/08	<0.020		ug/L	
			Dissolved Strontium (Sr)	2022/07/08	<1.0		ug/L	
			Dissolved Thallium (Tl)	2022/07/08	<0.010		ug/L	
			Dissolved Tin (Sn)	2022/07/08	<5.0		ug/L	
			Dissolved Titanium (Ti)	2022/07/08	<5.0		ug/L	
			Dissolved Uranium (U)	2022/07/08	<0.10		ug/L	
			Dissolved Vanadium (V)	2022/07/08	<5.0		ug/L	
			Dissolved Zinc (Zn)	2022/07/08	<5.0		ug/L	
			Dissolved Zirconium (Zr)	2022/07/08	<0.10		ug/L	
A637331	LWA	RPD	Dissolved Aluminum (Al)	2022/07/08	NC		%	20
			Dissolved Antimony (Sb)	2022/07/08	NC		%	20
			Dissolved Arsenic (As)	2022/07/08	0.41		%	20
			Dissolved Barium (Ba)	2022/07/08	0.88		%	20
			Dissolved Beryllium (Be)	2022/07/08	NC		%	20
			Dissolved Bismuth (Bi)	2022/07/08	NC		%	20
			Dissolved Boron (B)	2022/07/08	1.5		%	20
			Dissolved Cadmium (Cd)	2022/07/08	NC		%	20
			Dissolved Chromium (Cr)	2022/07/08	NC		%	20
			Dissolved Cobalt (Co)	2022/07/08	1.1		%	20
			Dissolved Copper (Cu)	2022/07/08	5.5		%	20
			Dissolved Iron (Fe)	2022/07/08	0.77		%	20
			Dissolved Lead (Pb)	2022/07/08	NC		%	20
			Dissolved Lithium (Li)	2022/07/08	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Manganese (Mn)	2022/07/08	0.93		%	20
			Dissolved Molybdenum (Mo)	2022/07/08	1.1		%	20
			Dissolved Nickel (Ni)	2022/07/08	0.75		%	20
			Dissolved Selenium (Se)	2022/07/08	NC		%	20
			Dissolved Silicon (Si)	2022/07/08	0.057		%	20
			Dissolved Silver (Ag)	2022/07/08	NC		%	20
			Dissolved Strontium (Sr)	2022/07/08	0.47		%	20
			Dissolved Thallium (Tl)	2022/07/08	NC		%	20
			Dissolved Tin (Sn)	2022/07/08	NC		%	20
			Dissolved Titanium (Ti)	2022/07/08	NC		%	20
			Dissolved Uranium (U)	2022/07/08	2.0		%	20
			Dissolved Vanadium (V)	2022/07/08	NC		%	20
			Dissolved Zinc (Zn)	2022/07/08	NC		%	20
			Dissolved Zirconium (Zr)	2022/07/08	NC		%	20

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.

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.

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).

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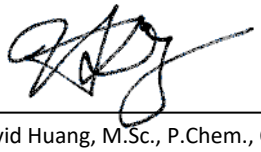
Bureau Veritas Job #: C247220
Report Date: 2022/07/08

Ralmax Group Holdings Ltd.
Client Project #: LEACHATE TANKS
Site Location: 460 STEBBINGS RD.
Sampler Initials: AD

VALIDATION SIGNATURE PAGE

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



David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Sze Yeung Fock, B.Sc., Scientific Specialist

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Bureau Veritas
Unit 1-851 Viewfield Rd, Victoria, British Columbia Canada V9A 4V2 Tel (250) 385 6112 Toll-free 800-563-6266 Fax (250) 382 6364 www.bvna.com

Page 1 of 1

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#13332 Ralmax Group Holdings Ltd.	Company Name		Quotation #	C00237	Bureau Veritas Job #	Bottle Order #:
Contact Name	Accounts Payable	Contact Name	Alana Duncan	P.O. #			658502
Address	343A Bay Street Victoria BC V8T 1P5	Address		Project #	Leachate Tanks	Chain Of Custody Record	Project Manager
Phone	(250) 940-0936 Ext: 936 Fax:	Phone	(250) 940-0936 Fax:	Project Name	460 Stebbings Rd	C#658502-01-01	Customer Solutions
Email	alanaduncan@ralmax.com	Email	alanaduncan@ralmax.com	Site #			
				Sampled By	Alana Duncan		

Regulatory Criteria:
- [x] CSR
- [ ] CCME
- [ ] BC Water Quality
- [ ] Other

Special Instructions: report copy to fpimmel@rconsulting.com EDD files (SLR Format)

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: [ ]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
1 DAY [ ] 2 Day [x] 3 Day [ ] Date Required: _____ [ ]
Rush Confirmation Number: _____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	Dissolved Metals	~~Total Suspended Solids (NFR)~~	Chloride Sulphate, Sulphide	# of Bottles	Comments
1		SHA - LE1	20220407	11:25	Water		X		X	2	Field Filter + preserved DM
2											
3											
4											
5											
6											
7											
8											
9											
10											LLE-YES

C247220_COC

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Jesus Duran / A Duncan.	2022 07 04	12:10	[illegible] / Sarah L.	2022/07/04	1210		[ ]	12, 11, 12°C	[ ] Yes [x] No N/A

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

Your P.O. #: VIC3817
Your Project #: 205.30042.00000
Site Location: BC
Your C.O.C. #: 08510863

Attention: Forest Pimm

SLR CONSULTING (CANADA) LTD
#303-3960 Quadra Street
VICTORIA, BC
CANADA V8X 4A3

Report Date: 2022/08/30
Report #: R3224060
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C262352
Received: 2022/08/19, 16:14

Sample Matrix: Water
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	4	N/A	2022/08/25	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry	4	N/A	2022/08/29	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO4-E m
Fluoride	4	N/A	2022/08/24	BBY6SOP-00048	SM 23 4500-F C m
Hardness (calculated as CaCO3)	4	N/A	2022/08/25	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV (1)	4	2022/08/25	2022/08/25	AB SOP-00084	BCMOE BCLM Oct2013 m
EPH in Water when PAH required	5	2022/08/25	2022/08/25	BBY8SOP-00029	BCMOE BCLM Sep2017 m
EPH in Water when PAH required	6	2022/08/26	2022/08/26	BBY8SOP-00029	BCMOE BCLM Sep2017 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	4	N/A	2022/08/25	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (1)	4	N/A	2022/08/24	BBY7SOP-00002	EPA 6020b R2 m
Nitrogen - Nitrate (as N)	4	N/A	2022/08/27	BBY WI-00033	Auto Calc
PAH in Water by GC/MS (SIM)	5	2022/08/25	2022/08/25	BBY8SOP-00021	BCMOE BCLM Jul2017m
PAH in Water by GC/MS (SIM)	6	2022/08/26	2022/08/27	BBY8SOP-00021	BCMOE BCLM Jul2017m
Total LMW, HMW, Total PAH Calc (2)	5	N/A	2022/08/28	BBY WI-00033	Auto Calc
Total LMW, HMW, Total PAH Calc (2)	6	N/A	2022/08/29	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	4	N/A	2022/08/22	BBY7 WI-00004	SM 23 3030B m
pH @25°C (3)	4	N/A	2022/08/25	BBY6SOP-00026	SM 23 4500-H+ B m
Total Dissolved Solids (Filt. Residue)	1	2022/08/24	2022/08/25	BBY6SOP-00033	SM 23 2540 C m
Total Dissolved Solids (Filt. Residue)	3	2022/08/25	2022/08/26	BBY6SOP-00033	SM 23 2540 C m
EPH less PAH in Water by GC/FID (4)	5	N/A	2022/08/28	BBY WI-00033	Auto Calc
EPH less PAH in Water by GC/FID (4)	6	N/A	2022/08/29	BBY WI-00033	Auto Calc

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, MELCC, 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

Your P.O. #: VIC3817
Your Project #: 205.30042.00000
Site Location: BC
Your C.O.C. #: 08510863

Attention: Forest Pimm

SLR CONSULTING (CANADA) LTD
#303-3960 Quadra Street
VICTORIA, BC
CANADA V8X 4A3

Report Date: 2022/08/30
Report #: R3224060
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C262352
Received: 2022/08/19, 16:14

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) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) Total PAHs in Water include: Quinoline, Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Acridine, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b&j)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(g,h,i)perylene.
(3) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(4) LEPH = EPH (C10 to C19) - (Acenaphthene + Acridine + Anthracene + Fluorene + Naphthalene + Phenanthrene)
HEPH = EPH (C19 to C32) - (Benzo(a)anthracene + Benzo(a)pyrene + Fluoranthene + Pyrene)

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
30 Aug 2022 16:00:48

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Veronica Laporte, B.Sc., Supervisor, Project Submissions and Support
Email: Veronica.Laporte@bureauveritas.com
Phone# (604) 734 7276

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Location: BC
Your P.O. #: VIC3817
Sampler Initials: BC

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		AZZ740		AZZ741			AZZ745		AZZ750		
Sampling Date		2022/08/18 12:00		2022/08/18 10:00			2022/08/17 14:45		2022/08/18 12:00		
COC Number		08510863		08510863			08510863		08510863		
	UNITS	**MW19-01**	**RDL**	**MW19-02**	**RDL**	**QC Batch**	**MW-3S**	**QC Batch**	**DUP-A**	**RDL**	**QC Batch**
Calculated Parameters											
Filter and HNO3 Preservation	N/A	FIELD		FIELD		ONSITE	FIELD	ONSITE	FIELD		ONSITE
Nitrate (N)	mg/L	0.739	0.020	0.501	0.020	A689705	0.296	A689705	0.747	0.020	A689705
Misc. Inorganics											
pH	pH	8.04	N/A	8.06	N/A	A694897	8.22	A694897	8.01	N/A	A694897
Total Dissolved Solids	mg/L	550	10	670	10	A694767	240	A691374	570	10	A694767
Anions											
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	A694899	<1.0	A694899	<1.0	1.0	A694899
Alkalinity (Total as CaCO3)	mg/L	240	1.0	310	1.0	A694899	130	A694899	240	1.0	A694899
Bicarbonate (HCO3)	mg/L	300	1.0	370	1.0	A694899	160	A694899	300	1.0	A694899
Carbonate (CO3)	mg/L	<1.0	1.0	<1.0	1.0	A694899	<1.0	A694899	<1.0	1.0	A694899
Dissolved Fluoride (F)	mg/L	<0.050	0.050	0.052	0.050	A692267	0.10	A692267	<0.050	0.050	A692267
Hydroxide (OH)	mg/L	<1.0	1.0	<1.0	1.0	A694899	<1.0	A694899	<1.0	1.0	A694899
Chloride (Cl)	mg/L	41	1.0	22	1.0	A697851	15	A697851	41	1.0	A697851
Sulphate (SO4)	mg/L	100	1.0	170	5.0	A697851	40	A697851	100	1.0	A697851

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C262352
Report Date: 2022/08/30

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Location: BC
Your P.O. #: VIC3817
Sampler Initials: BC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Bureau Veritas ID		AZZ740	AZZ741	AZZ742	AZZ743	AZZ744		
Sampling Date		2022/08/18 12:00	2022/08/18 10:00	2022/08/17 14:15	2022/08/17 13:10	2022/08/17 13:18		
COC Number		08510863	08510863	08510863	08510863	08510863		
	UNITS	**MW19-01**	**MW19-02**	**MW-1S**	**MW-1D**	**MW-2**	**RDL**	**QC Batch**
Calculated Parameters								
Low Molecular Weight PAH`s	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A689567
High Molecular Weight PAH`s	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A689567
Total PAH	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A689567
Polycyclic Aromatics								
Quinoline	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A693699
Naphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A693699
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A693699
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A693699
Acridine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A693699
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A693699
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A693699
Chrysene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A693699
Benzo(b&j)fluoranthene	ug/L	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	A693699
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Benzo(a)pyrene	ug/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A693699
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Dibenz(a,h)anthracene	ug/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	A693699
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A693699
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A689709
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	0.45	0.20	A689709
Ext. Pet. Hydrocarbon								
EPH (C10-C19)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A693704
EPH (C19-C32)	mg/L	<0.20	<0.20	<0.20	<0.20	0.45	0.20	A693704
RDL = Reportable Detection Limit								

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C262352
Report Date: 2022/08/30

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Location: BC
Your P.O. #: VIC3817
Sampler Initials: BC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Bureau Veritas ID		AZZ740	AZZ741	AZZ742	AZZ743	AZZ744		
Sampling Date		2022/08/18 12:00	2022/08/18 10:00	2022/08/17 14:15	2022/08/17 13:10	2022/08/17 13:18		
COC Number		08510863	08510863	08510863	08510863	08510863		
	UNITS	**MW19-01**	**MW19-02**	**MW-1S**	**MW-1D**	**MW-2**	**RDL**	**QC Batch**
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	97	95	93	99	96		A693704
D10-ANTHRACENE (sur.)	%	99	98	101	96	98		A693699
D8-ACENAPHTHYLENE (sur.)	%	99	98	101	99	102		A693699
D8-NAPHTHALENE (sur.)	%	96	95	97	91	93		A693699
TERPHENYL-D14 (sur.)	%	91	90	94	88	91		A693699
RDL = Reportable Detection Limit								

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Report Date: 2022/08/30

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Location: BC
Your P.O. #: VIC3817
Sampler Initials: BC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Bureau Veritas ID		AZZ745	AZZ746	AZZ747	AZZ748	AZZ749	AZZ750		
Sampling Date		2022/08/17 14:45	2022/08/18 20:34	2022/08/19 12:30	2022/08/19 11:20	2022/08/18 11:05	2022/08/18 12:00		
COC Number		08510863	08510863	08510863	08510863	08510863	08510863		
	UNITS	**MW-3S**	**MW-3D**	**MW-5S**	**MW-5D**	**MW-6**	**DUP-A**	**RDL**	**QC Batch**
Calculated Parameters									
Low Molecular Weight PAH`s	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A689567
High Molecular Weight PAH`s	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A689567
Total PAH	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A689567
Polycyclic Aromatics									
Quinoline	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A695195
Naphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A695195
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A695195
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Acenaphthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Fluorene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Phenanthrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A695195
Acridine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A695195
Pyrene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A695195
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A695195
Chrysene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A695195
Benzo(b&j)fluoranthene	ug/L	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	A695195
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Benzo(a)pyrene	ug/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A695195
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Dibenz(a,h)anthracene	ug/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	A695195
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A695195
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A689709
HEPH (C19-C32 less PAH)	mg/L	<0.20	0.54	<0.20	<0.20	<0.20	<0.20	0.20	A689709
Ext. Pet. Hydrocarbon									
EPH (C10-C19)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A695204
EPH (C19-C32)	mg/L	<0.20	0.54	<0.20	<0.20	<0.20	<0.20	0.20	A695204
RDL = Reportable Detection Limit									

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Bureau Veritas Job #: C262352
Report Date: 2022/08/30

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Location: BC
Your P.O. #: VIC3817
Sampler Initials: BC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (WATER)

Bureau Veritas ID		AZZ745	AZZ746	AZZ747	AZZ748	AZZ749	AZZ750		
Sampling Date		2022/08/17 14:45	2022/08/18 20:34	2022/08/19 12:30	2022/08/19 11:20	2022/08/18 11:05	2022/08/18 12:00		
COC Number		08510863	08510863	08510863	08510863	08510863	08510863		
	UNITS	**MW-3S**	**MW-3D**	**MW-5S**	**MW-5D**	**MW-6**	**DUP-A**	**RDL**	**QC Batch**
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	88	89	89	90	90	88		A695204
D10-ANTHRACENE (sur.)	%	87	89	87	88	85	87		A695195
D8-ACENAPHTHYLENE (sur.)	%	90	91	91	90	88	91		A695195
D8-NAPHTHALENE (sur.)	%	76	81	78	78	76	80		A695195
TERPHENYL-D14 (sur.)	%	80	85	79	81	80	81		A695195
RDL = Reportable Detection Limit									

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SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Location: BC
Your P.O. #: VIC3817
Sampler Initials: BC

CSR DISSOLVED METALS IN WATER WITH CV HG (WATER)

Bureau Veritas ID		AZZ740	AZZ741	AZZ745	AZZ750		
Sampling Date		2022/08/18 12:00	2022/08/18 10:00	2022/08/17 14:45	2022/08/18 12:00		
COC Number		08510863	08510863	08510863	08510863		
	UNITS	**MW19-01**	**MW19-02**	**MW-3S**	**DUP-A**	**RDL**	**QC Batch**
Calculated Parameters							
Dissolved Hardness (CaCO3)	mg/L	369	476	154	368	0.50	A689329
Elements							
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	<0.0019	0.0019	A693726
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	ug/L	<3.0	6.6	<3.0	<3.0	3.0	A692061
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.64	<0.50	0.50	A692061
Dissolved Arsenic (As)	ug/L	0.29	0.17	1.00	0.29	0.10	A692061
Dissolved Barium (Ba)	ug/L	21.7	27.7	30.3	21.4	1.0	A692061
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	A692061
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	A692061
Dissolved Boron (B)	ug/L	<50	<50	<50	<50	50	A692061
Dissolved Cadmium (Cd)	ug/L	0.041	0.024	0.174	0.045	0.010	A692061
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	A692061
Dissolved Cobalt (Co)	ug/L	0.99	<0.20	<0.20	1.01	0.20	A692061
Dissolved Copper (Cu)	ug/L	0.87	2.15	1.50	0.87	0.20	A692061
Dissolved Iron (Fe)	ug/L	118	<5.0	<5.0	119	5.0	A692061
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	A692061
Dissolved Lithium (Li)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	A692061
Dissolved Manganese (Mn)	ug/L	293	1.1	2.7	280	1.0	A692061
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	4.8	<1.0	1.0	A692061
Dissolved Nickel (Ni)	ug/L	7.6	<1.0	<1.0	7.5	1.0	A692061
Dissolved Selenium (Se)	ug/L	0.22	0.39	<0.10	0.24	0.10	A692061
Dissolved Silicon (Si)	ug/L	6540	6880	6390	6660	100	A692061
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	A692061
Dissolved Strontium (Sr)	ug/L	408	411	258	398	1.0	A692061
Dissolved Thallium (Tl)	ug/L	0.010	<0.010	0.011	0.010	0.010	A692061
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	A692061
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	A692061
Dissolved Uranium (U)	ug/L	3.70	2.97	0.97	3.70	0.10	A692061
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	A692061
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	A692061
RDL = Reportable Detection Limit							

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SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Location: BC
Your P.O. #: VIC3817
Sampler Initials: BC

CSR DISSOLVED METALS IN WATER WITH CV HG (WATER)

Bureau Veritas ID		AZZ740	AZZ741	AZZ745	AZZ750		
Sampling Date		2022/08/18 12:00	2022/08/18 10:00	2022/08/17 14:45	2022/08/18 12:00		
COC Number		08510863	08510863	08510863	08510863		
	UNITS	**MW19-01**	**MW19-02**	**MW-3S**	**DUP-A**	**RDL**	**QC Batch**
Dissolved Zirconium (Zr)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	A692061
Dissolved Calcium (Ca)	mg/L	121	153	49.7	122	0.050	A689330
Dissolved Magnesium (Mg)	mg/L	16.2	22.8	7.17	15.6	0.050	A689330
Dissolved Potassium (K)	mg/L	1.60	1.28	1.13	1.58	0.050	A689330
Dissolved Sodium (Na)	mg/L	19.2	17.2	14.6	19.1	0.050	A689330
Dissolved Sulphur (S)	mg/L	35.3	57.4	12.9	34.0	3.0	A689330
RDL = Reportable Detection Limit							

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GENERAL COMMENTS

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

Package 1	6.7°C

Sample AZZ740 [MW19-01] : No Hg bottle received in compliance with the BC MOE SAMPLE PRESERVATION & HOLDING TIME REQUIREMENTS (A glass or PTFE container with HCL preservation required) BV labs added HCL prior to analysis. Sample AZZ745-03

Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Nitrite (N) by CFA.

Sample AZZ741 [MW19-02] : Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Nitrite (N) by CFA.

Sample AZZ745 [MW-3S] : Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Nitrite (N) by CFA.

Sample AZZ750 [DUP-A] : Sample was analyzed past method specified hold time for Nitrate + Nitrite (N). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Nitrite (N) by CFA.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A693699	D10-ANTHRACENE (sur.)	2022/08/25			114	50 - 140	105	%		
A693699	D8-ACENAPHTHYLENE (sur.)	2022/08/25			113	50 - 140	106	%		
A693699	D8-NAPHTHALENE (sur.)	2022/08/25			106	50 - 140	102	%		
A693699	TERPHENYL-D14 (sur.)	2022/08/25			105	50 - 140	98	%		
A693704	O-TERPHENYL (sur.)	2022/08/25			104	60 - 140	97	%		
A695195	D10-ANTHRACENE (sur.)	2022/08/27			101	50 - 140	93	%		
A695195	D8-ACENAPHTHYLENE (sur.)	2022/08/27			104	50 - 140	95	%		
A695195	D8-NAPHTHALENE (sur.)	2022/08/27			88	50 - 140	81	%		
A695195	TERPHENYL-D14 (sur.)	2022/08/27			95	50 - 140	85	%		
A695204	O-TERPHENYL (sur.)	2022/08/26			89	60 - 140	90	%		
A691374	Total Dissolved Solids	2022/08/25	100	80 - 120	103	80 - 120	<10	mg/L	8.7	20
A692061	Dissolved Aluminum (Al)	2022/08/24	98	80 - 120	103	80 - 120	<3.0	ug/L	11	20
A692061	Dissolved Antimony (Sb)	2022/08/24	104	80 - 120	105	80 - 120	<0.50	ug/L	NC	20
A692061	Dissolved Arsenic (As)	2022/08/24	107	80 - 120	103	80 - 120	<0.10	ug/L	3.8	20
A692061	Dissolved Barium (Ba)	2022/08/24	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.13	20
A692061	Dissolved Beryllium (Be)	2022/08/24	96	80 - 120	109	80 - 120	<0.10	ug/L	NC	20
A692061	Dissolved Bismuth (Bi)	2022/08/24	91	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
A692061	Dissolved Boron (B)	2022/08/24	99	80 - 120	118	80 - 120	<50	ug/L	NC	20
A692061	Dissolved Cadmium (Cd)	2022/08/24	99	80 - 120	101	80 - 120	<0.010	ug/L	1.4	20
A692061	Dissolved Chromium (Cr)	2022/08/24	98	80 - 120	101	80 - 120	<1.0	ug/L	1.5	20
A692061	Dissolved Cobalt (Co)	2022/08/24	95	80 - 120	101	80 - 120	<0.20	ug/L	0.43	20
A692061	Dissolved Copper (Cu)	2022/08/24	95	80 - 120	99	80 - 120	<0.20	ug/L	1.7	20
A692061	Dissolved Iron (Fe)	2022/08/24	NC	80 - 120	107	80 - 120	<5.0	ug/L	0.46	20
A692061	Dissolved Lead (Pb)	2022/08/24	94	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
A692061	Dissolved Lithium (Li)	2022/08/24	90	80 - 120	100	80 - 120	<2.0	ug/L	NC	20
A692061	Dissolved Manganese (Mn)	2022/08/24	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.48	20
A692061	Dissolved Molybdenum (Mo)	2022/08/24	103	80 - 120	105	80 - 120	<1.0	ug/L	NC	20
A692061	Dissolved Nickel (Ni)	2022/08/24	95	80 - 120	101	80 - 120	<1.0	ug/L	0.047	20
A692061	Dissolved Selenium (Se)	2022/08/24	104	80 - 120	98	80 - 120	<0.10	ug/L	4.5	20
A692061	Dissolved Silicon (Si)	2022/08/24	NC	80 - 120	116	80 - 120	<100	ug/L	0.18	20
A692061	Dissolved Silver (Ag)	2022/08/24	99	80 - 120	100	80 - 120	<0.020	ug/L	NC	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A692061	Dissolved Strontium (Sr)	2022/08/24	NC	80 - 120	102	80 - 120	<1.0	ug/L	2.6	20
A692061	Dissolved Thallium (Tl)	2022/08/24	96	80 - 120	98	80 - 120	<0.010	ug/L	6.6	20
A692061	Dissolved Tin (Sn)	2022/08/24	99	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
A692061	Dissolved Titanium (Ti)	2022/08/24	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
A692061	Dissolved Uranium (U)	2022/08/24	99	80 - 120	99	80 - 120	<0.10	ug/L	4.0	20
A692061	Dissolved Vanadium (V)	2022/08/24	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
A692061	Dissolved Zinc (Zn)	2022/08/24	99	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
A692061	Dissolved Zirconium (Zr)	2022/08/24	107	80 - 120	101	80 - 120	<0.10	ug/L	7.0	20
A692267	Dissolved Fluoride (F)	2022/08/24	106	80 - 120	108	80 - 120	<0.050	mg/L	NC	20
A693699	1-Methylnaphthalene	2022/08/25			95	50 - 140	<0.050	ug/L		
A693699	2-Methylnaphthalene	2022/08/25			98	50 - 140	<0.10	ug/L		
A693699	Acenaphthene	2022/08/25			101	50 - 140	<0.050	ug/L		
A693699	Acenaphthylene	2022/08/25			103	50 - 140	<0.050	ug/L		
A693699	Acridine	2022/08/25			99	50 - 140	<0.050	ug/L		
A693699	Anthracene	2022/08/25			107	50 - 140	<0.010	ug/L		
A693699	Benzo(a)anthracene	2022/08/25			104	50 - 140	<0.010	ug/L		
A693699	Benzo(a)pyrene	2022/08/25			105	50 - 140	<0.0050	ug/L		
A693699	Benzo(b&j)fluoranthene	2022/08/25			106	50 - 140	<0.030	ug/L		
A693699	Benzo(g,h,i)perylene	2022/08/25			103	50 - 140	<0.050	ug/L		
A693699	Benzo(k)fluoranthene	2022/08/25			108	50 - 140	<0.050	ug/L		
A693699	Chrysene	2022/08/25			102	50 - 140	<0.020	ug/L		
A693699	Dibenz(a,h)anthracene	2022/08/25			105	50 - 140	<0.0030	ug/L		
A693699	Fluoranthene	2022/08/25			99	50 - 140	<0.020	ug/L		
A693699	Fluorene	2022/08/25			101	50 - 140	<0.050	ug/L		
A693699	Indeno(1,2,3-cd)pyrene	2022/08/25			106	50 - 140	<0.050	ug/L		
A693699	Naphthalene	2022/08/25			96	50 - 140	<0.10	ug/L		
A693699	Phenanthrene	2022/08/25			104	50 - 140	<0.050	ug/L		
A693699	Pyrene	2022/08/25			99	50 - 140	<0.020	ug/L		
A693699	Quinoline	2022/08/25			109	50 - 140	<0.020	ug/L		
A693704	EPH (C10-C19)	2022/08/25			118	70 - 130	<0.20	mg/L		
A693704	EPH (C19-C32)	2022/08/25			117	70 - 130	<0.20	mg/L		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A693726	Dissolved Mercury (Hg)	2022/08/25	91	80 - 120	106	80 - 120	<0.0019	ug/L	NC	20
A694767	Total Dissolved Solids	2022/08/26	99	80 - 120	102	80 - 120	<10	mg/L	4.3	20
A694897	pH	2022/08/25			101	97 - 103			0.50	N/A
A694899	Alkalinity (PP as CaCO3)	2022/08/25					<1.0	mg/L	NC	20
A694899	Alkalinity (Total as CaCO3)	2022/08/25	NC	80 - 120	97	80 - 120	<1.0	mg/L	0.38	20
A694899	Bicarbonate (HCO3)	2022/08/25					<1.0	mg/L	0.38	20
A694899	Carbonate (CO3)	2022/08/25					<1.0	mg/L	NC	20
A694899	Hydroxide (OH)	2022/08/25					<1.0	mg/L	NC	20
A695195	1-Methylnaphthalene	2022/08/27			82	50 - 140	<0.050	ug/L	NC	40
A695195	2-Methylnaphthalene	2022/08/27			86	50 - 140	<0.10	ug/L	NC	40
A695195	Acenaphthene	2022/08/27			84	50 - 140	<0.050	ug/L	NC	40
A695195	Acenaphthylene	2022/08/27			88	50 - 140	<0.050	ug/L	NC	40
A695195	Acridine	2022/08/27			91	50 - 140	<0.050	ug/L	NC	40
A695195	Anthracene	2022/08/27			87	50 - 140	<0.010	ug/L	NC	40
A695195	Benzo(a)anthracene	2022/08/27			82	50 - 140	<0.010	ug/L	NC	40
A695195	Benzo(a)pyrene	2022/08/27			91	50 - 140	<0.0050	ug/L	NC	40
A695195	Benzo(b&j)fluoranthene	2022/08/27			87	50 - 140	<0.030	ug/L	NC	40
A695195	Benzo(g,h,i)perylene	2022/08/27			83	50 - 140	<0.050	ug/L	NC	40
A695195	Benzo(k)fluoranthene	2022/08/27			84	50 - 140	<0.050	ug/L	NC	40
A695195	Chrysene	2022/08/27			78	50 - 140	<0.020	ug/L	NC	40
A695195	Dibenz(a,h)anthracene	2022/08/27			88	50 - 140	<0.0030	ug/L	NC	40
A695195	Fluoranthene	2022/08/27			82	50 - 140	<0.020	ug/L	NC	40
A695195	Fluorene	2022/08/27			83	50 - 140	<0.050	ug/L	NC	40
A695195	Indeno(1,2,3-cd)pyrene	2022/08/27			87	50 - 140	<0.050	ug/L	NC	40
A695195	Naphthalene	2022/08/27			83	50 - 140	<0.10	ug/L	NC	40
A695195	Phenanthrene	2022/08/27			84	50 - 140	<0.050	ug/L	NC	40
A695195	Pyrene	2022/08/27			81	50 - 140	<0.020	ug/L	NC	40
A695195	Quinoline	2022/08/27			101	50 - 140	<0.020	ug/L	NC	40
A695204	EPH (C10-C19)	2022/08/26			101	70 - 130	<0.20	mg/L	NC	30
A695204	EPH (C19-C32)	2022/08/26			102	70 - 130	<0.20	mg/L		
A697851	Chloride (Cl)	2022/08/29	110	80 - 120	103	80 - 120	<1.0	mg/L	5.3	20

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A697851	Sulphate (SO4)	2022/08/29	92	80 - 120	100	80 - 120	<1.0	mg/L	NC	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.

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.

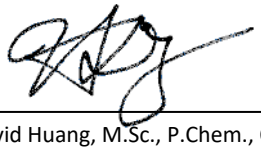
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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).

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

VALIDATION SIGNATURE PAGE

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



David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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 Signature Page.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

08510863

www.bvlab.com

4606 Canada Way, Burnaby, BC V5G 1K5
Tel: (604) 734-7276 Toll Free: (800) 665-8566

CHAIN OF CUSTODY RECORD
ENV COC - 00015v3

Page 1 of 1

C262352_COC

Invoice Information	Invoice to (requires report) ☐	Report Information (if differs from invoice)		Project Information	
Company:	SLR Consulting	Company:	Same as invoice.	Quotation #:	
Contact Name:	Forest Pinn	Contact Name:		P.O. #/ AFE#:	VIC3817
Street Address:	303-3960 Quadra St.	Street Address:		Project #:	205.30042.00000
City:	Victoria Prov: BC Postal Code: V8X4A3	City:	Prov: Postal Code:	Site #:	
Phone:	250-880-7370	Phone:		Site Location:	
Email:	fpinn@slrconsulting.com	Email:		Site Location Province:	BC
Copies:		Copies:		Sampled By:	FP/DG

Regulatory Criteria

☒ BC CSR ☐ CCME ☐ Drinking Water
☐ YUKON CSR ☒ ~~BC Water Quality~~ ☐ Other: _____

SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

Regular Turnaround Time (TAT)
☒ 5 to 7 Day ☐ 10 Day

Rush Turnaround Time (TAT) Surcharges apply
☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 4 Day

Date Required: YY MM DD

Comments

	Sample Identification	Date Sampled YY	MM	DD	Time (24hr) HH	MM	Matrix	FIELD FILTERED	FIELD PRESERVED	LAB FILTRATION REQUIRED	BTEX/VPH	VOCs	SVOC	BTEX/F1	PAHs	ELEMENTS	F2/F3	TDH	Dissolved metals	Dissolved mercury	Total metals	Total mercury	Alkalinity	TDS	Anions: nitrate, nitrite, fluoride, chloride, sulfate		# OF CONTAINERS SUBMITTED	HOLD - DO NOT ANALYZE	
1	MW19-01	22	08	18	12	00	Ground Water	X	X						X	X			X	X			X	X	X		5	
2	MW19-02	22	08	18	10	00		X	X						X	X			X	X			X	X	X		5	
3	MW-1S	22	08	17	14	15			X						X	X											1	
4	MW-1D	22	08	17	13	10			X						X	X											1	
5	MW-2	22	08	17	13	18			X						X	X											1	
6	MW-3S	22	08	17	14	45		X	X						X	X			X	X			X	X	X		5	
7	MW-3D	22	08	18	20	34			X						X	X											1	
8	MW-5S	22	08	19	12	30			X						X	X											1	
9	MW-5D	22	08	19	11	20			X						X	X											1	
10	MW-6	22	08	18	11	05			X						X	X											1	
11	DUP-A	22	08	18	12	00	—	X	X						X	X			X	X			X	X	X		5	
12																												

LAB USE ONLY	Yes	No					LAB USE ONLY	Yes	No					LAB USE ONLY	Yes	No					Temperature reading (s):
Seal present		X	x	6	5	9	Seal present			x				Seal present			x				
Seal intact		X		1	2	3	Seal intact				1	2	3	Seal intact				1	2	3	
Cooling media present	X						Cooling media present							Cooling media present							

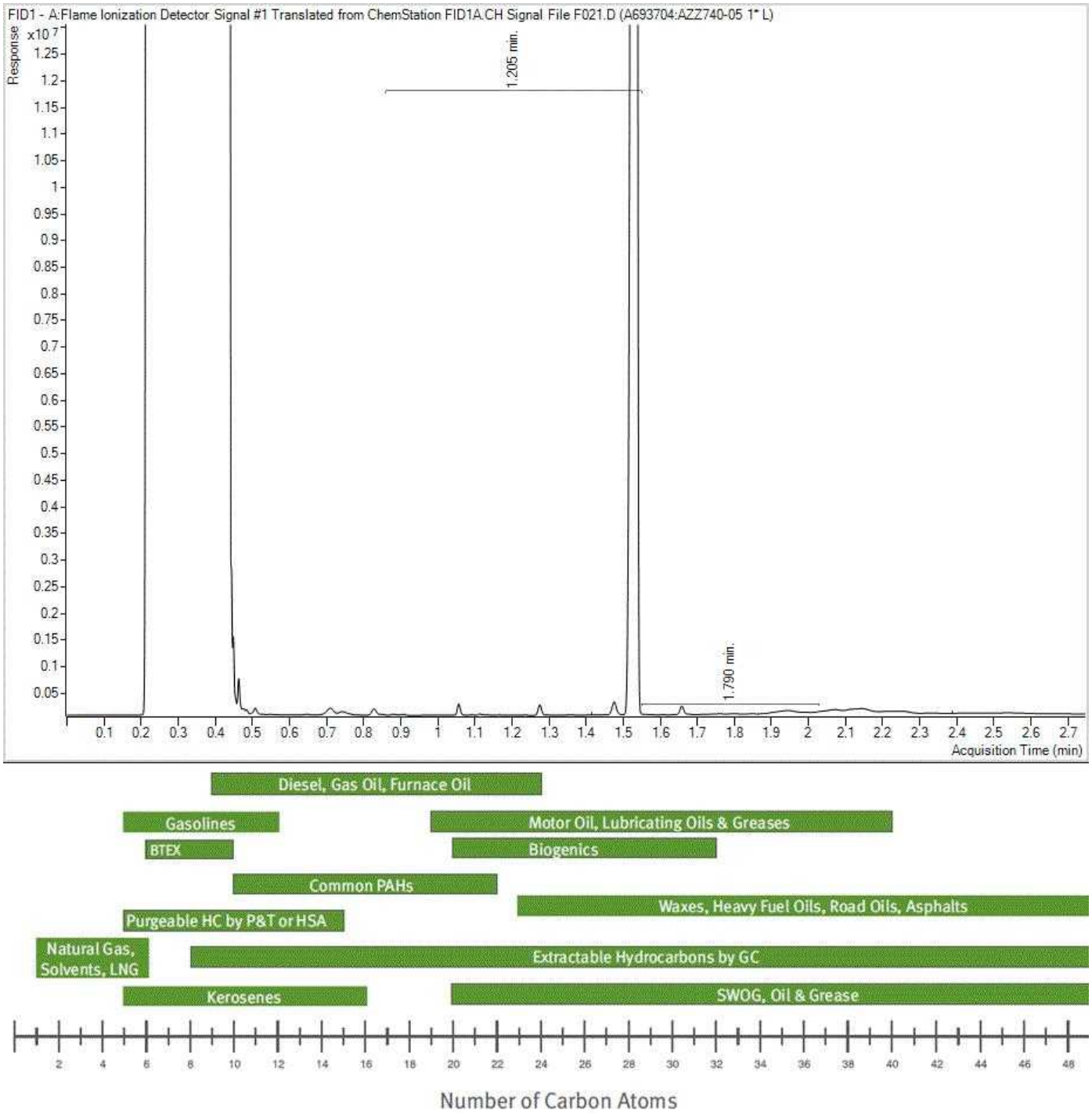
Relinquished by: (Signature/ Print)	Date YY	MM	DD	Time HH	MM	Received by: (Signature/ Print)	Date YY	MM	DD	Time HH	MM	Special Instructions
1 Forest Pinn	22	08	19	16	05	1 Silvia Shaver-Nicholsen	2022	08	19	16	14	See bottom of page.
2						2						

Anions – only report chloride, nitrate, fluoride, sulfate
Dissolved metals – include calcium, magnesium, manganese, potassium, and sodium.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ740

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW19-01

EPH in Water when PAH required Chromatogram

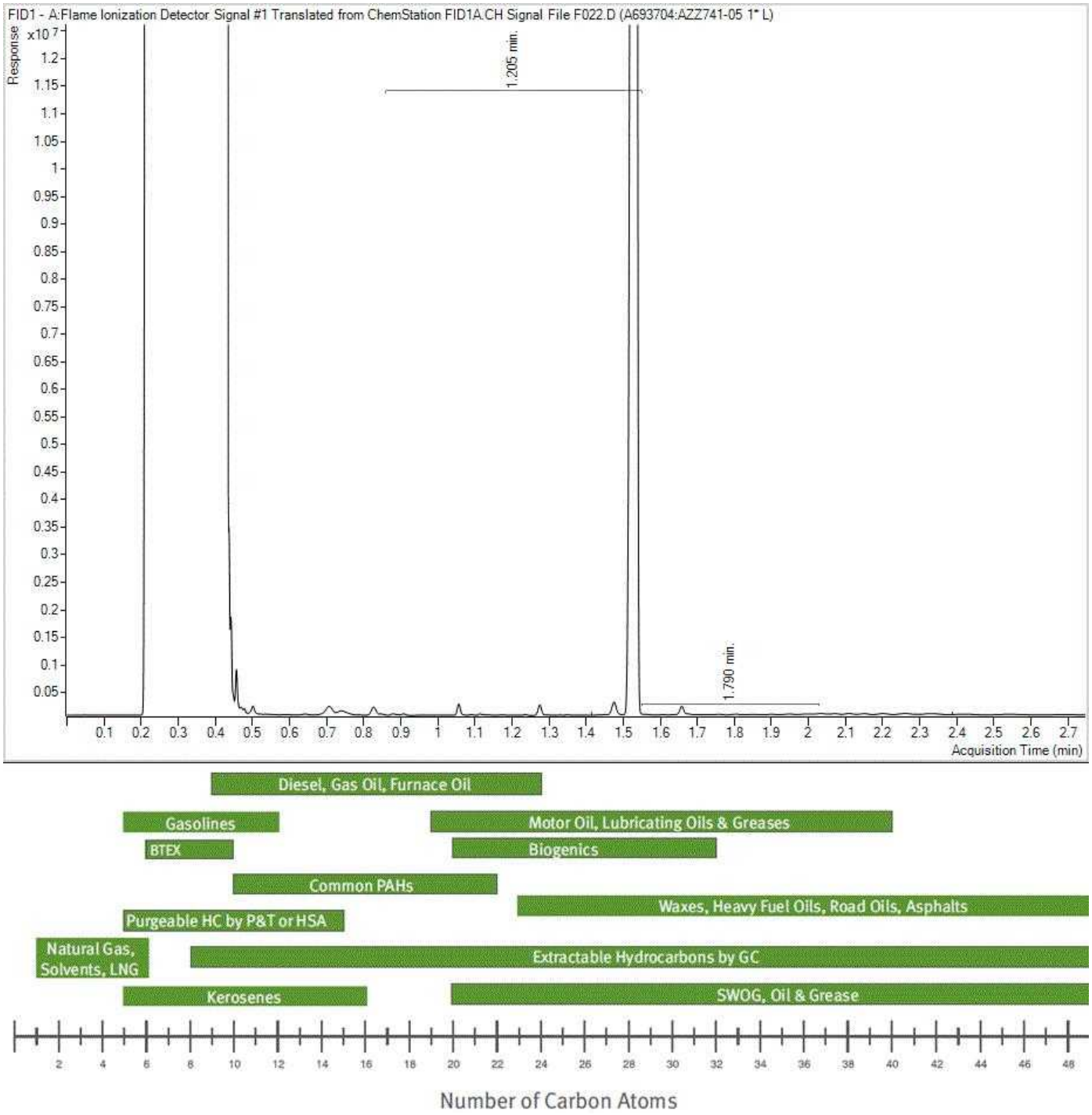


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ741

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW19-02

EPH in Water when PAH required Chromatogram

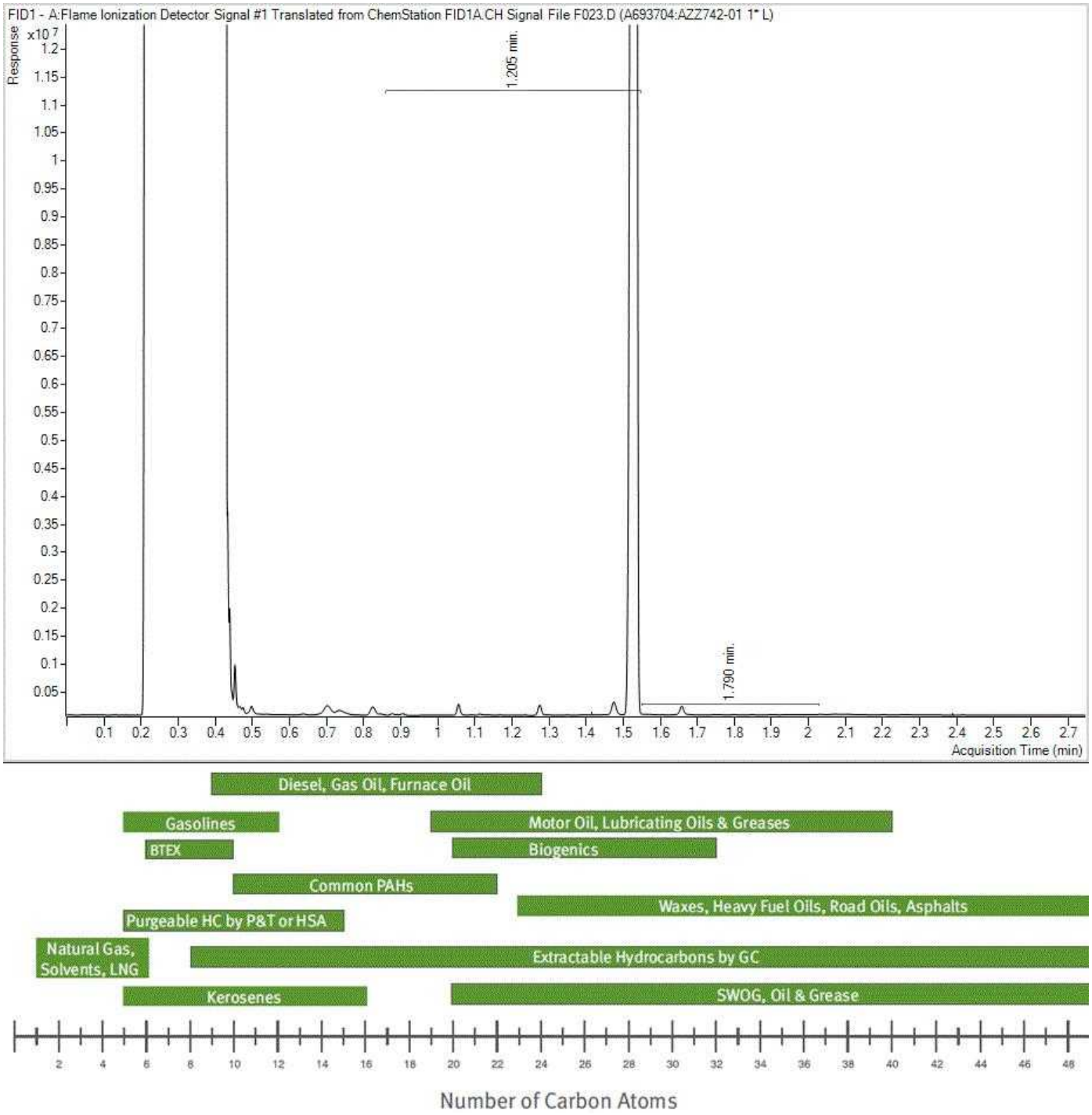


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ742

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-1S

EPH in Water when PAH required Chromatogram

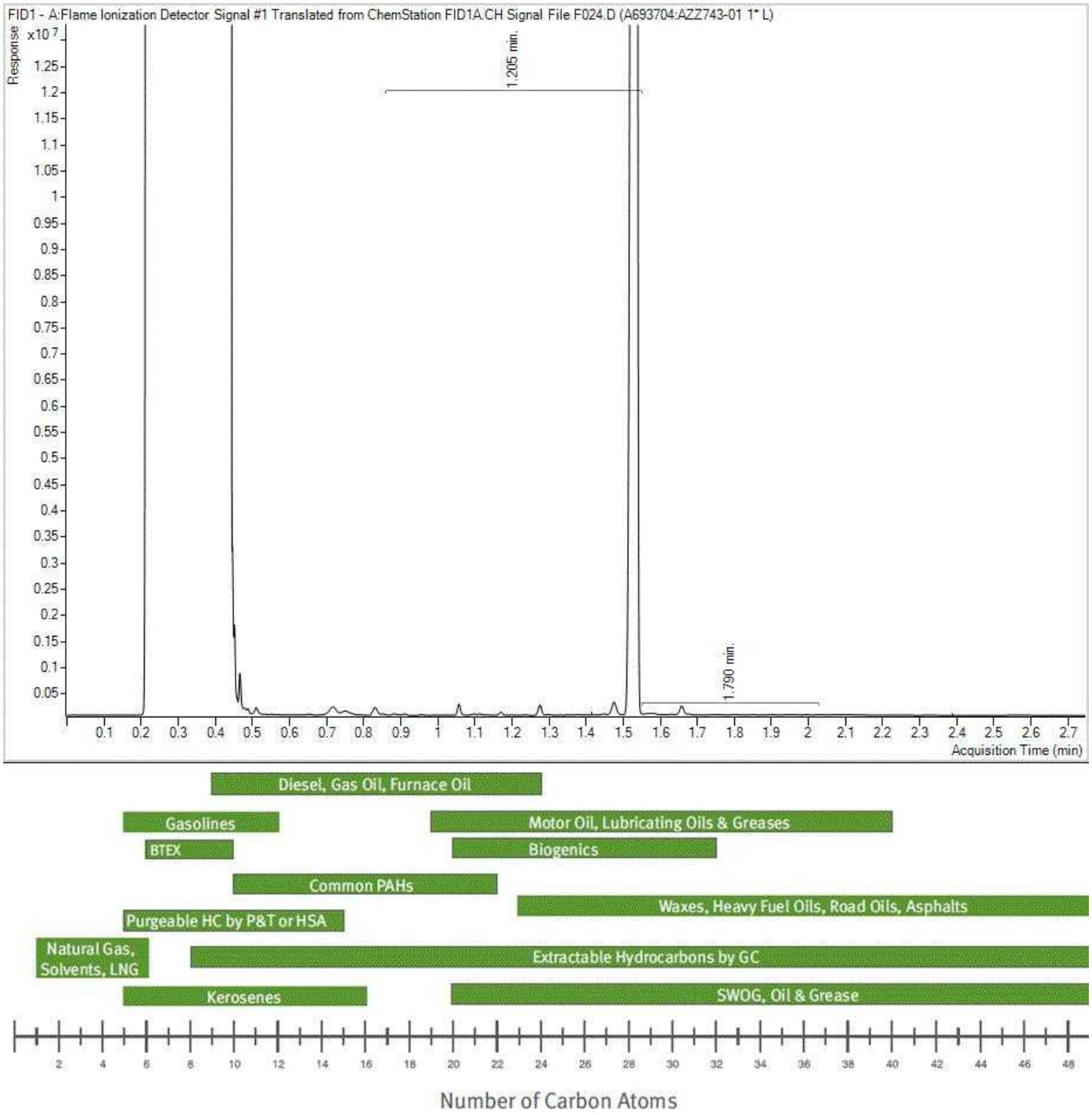


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ743

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-1D

EPH in Water when PAH required Chromatogram

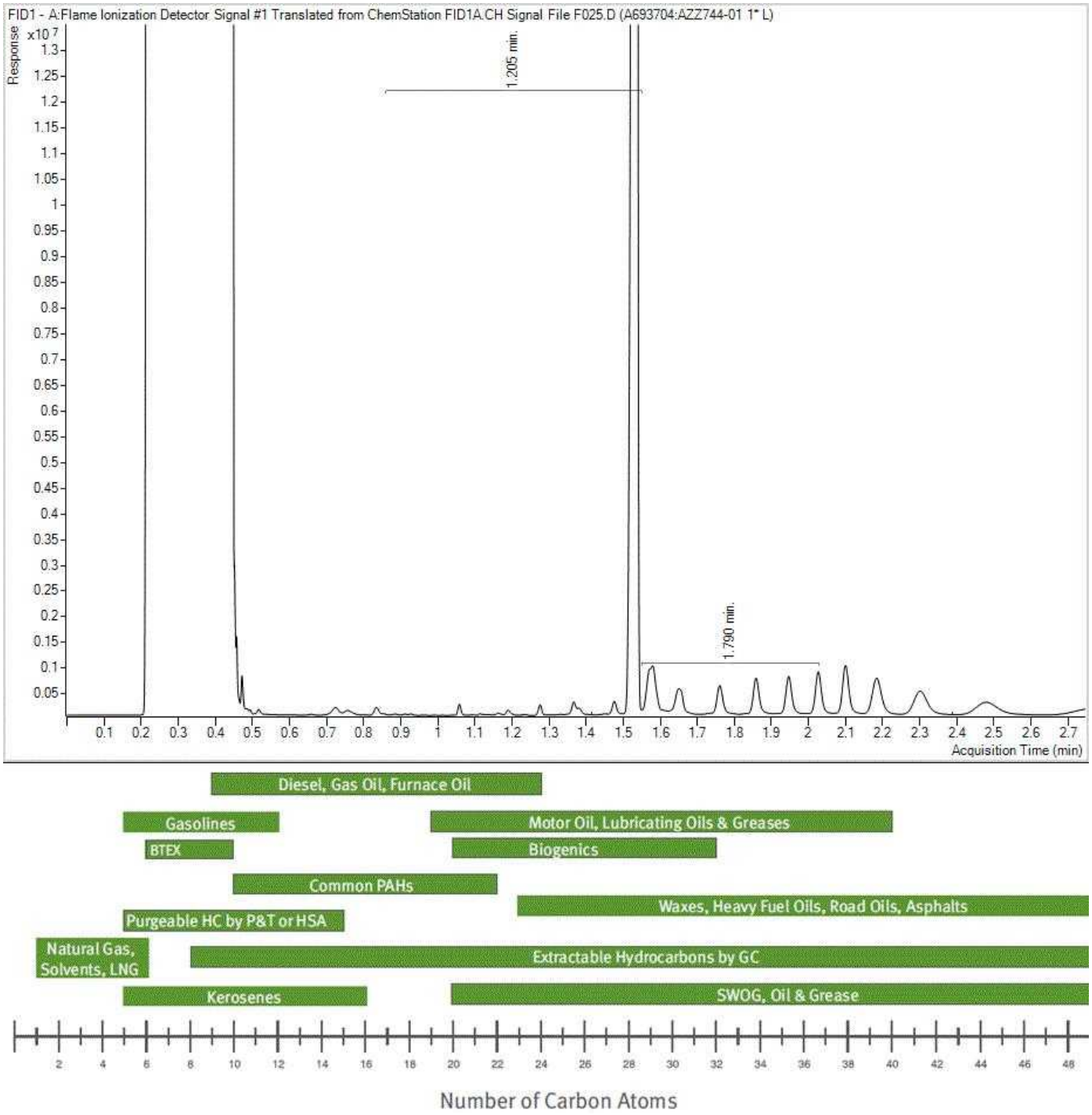


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ744

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-2

EPH in Water when PAH required Chromatogram

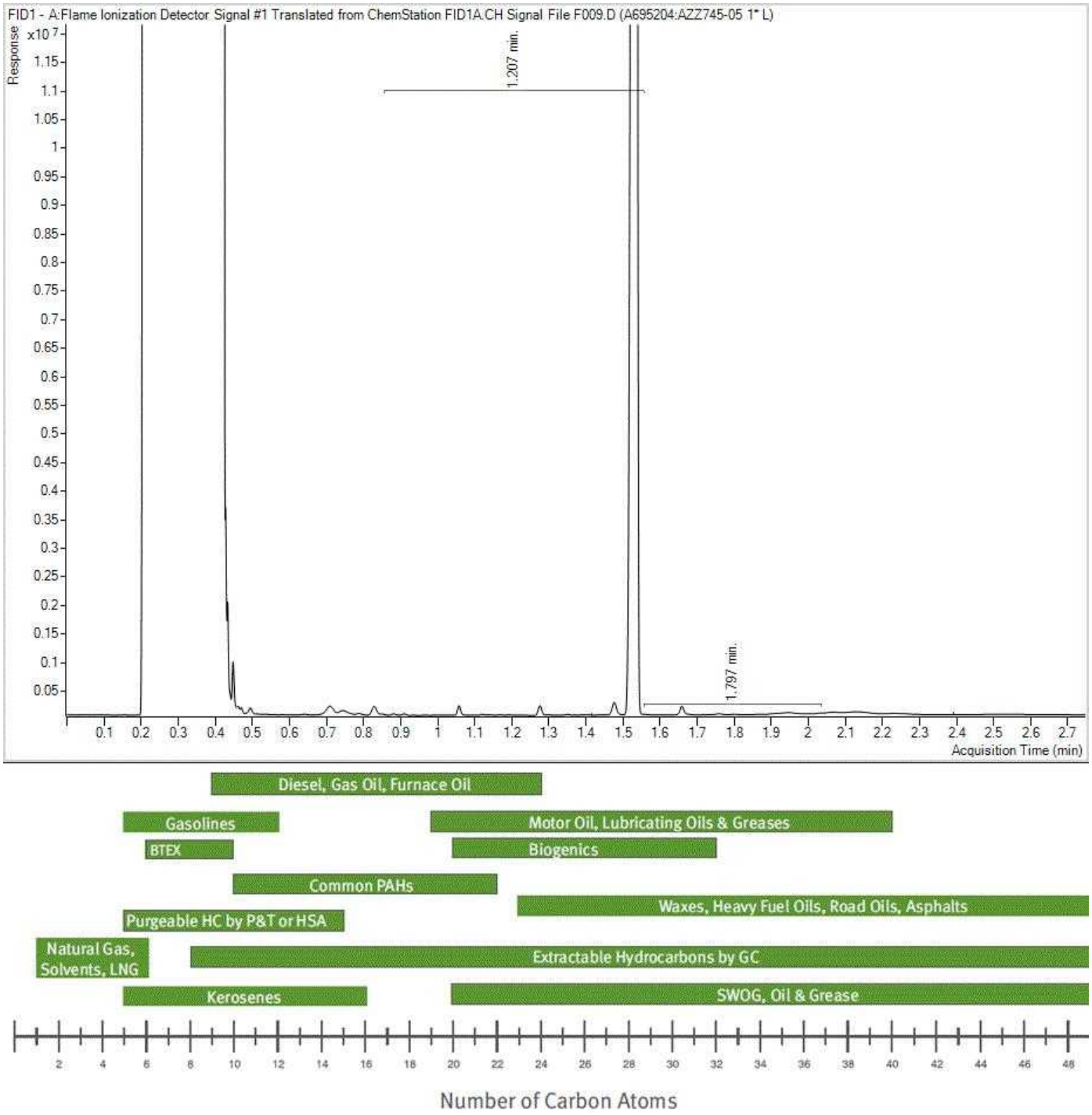


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ745

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-3S

EPH in Water when PAH required Chromatogram

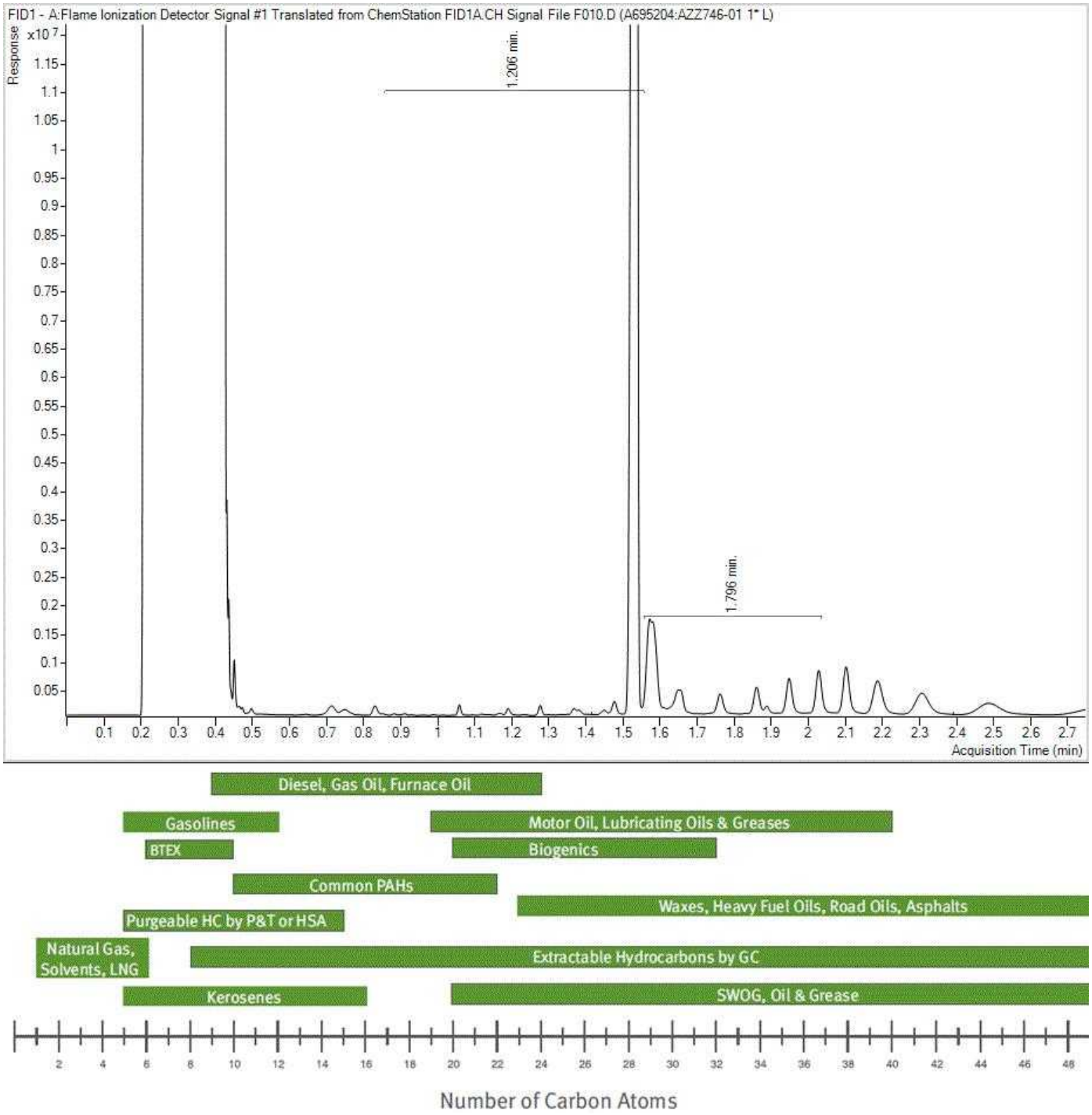


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ746

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-3D

EPH in Water when PAH required Chromatogram

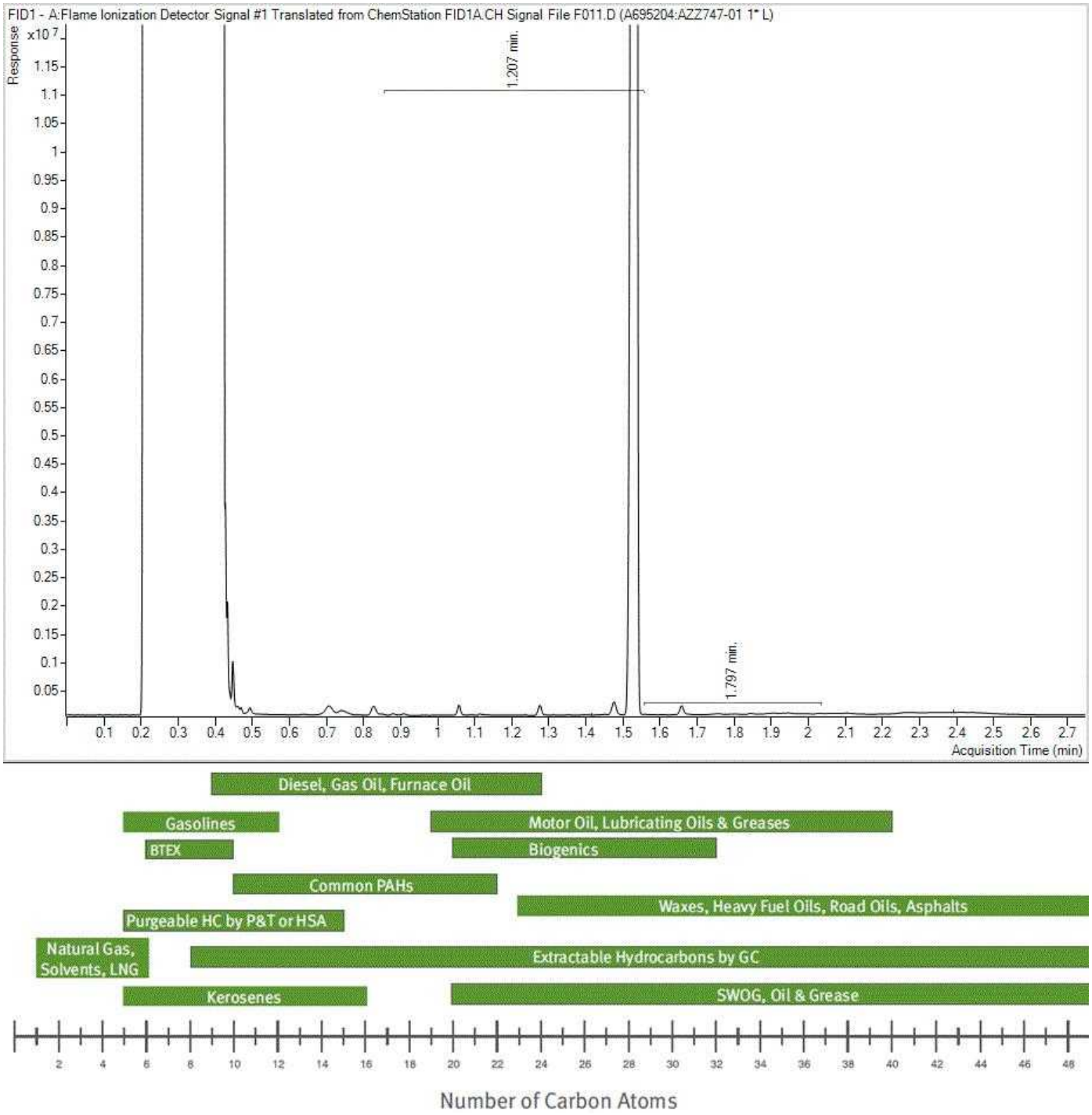


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ747

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-5S

EPH in Water when PAH required Chromatogram

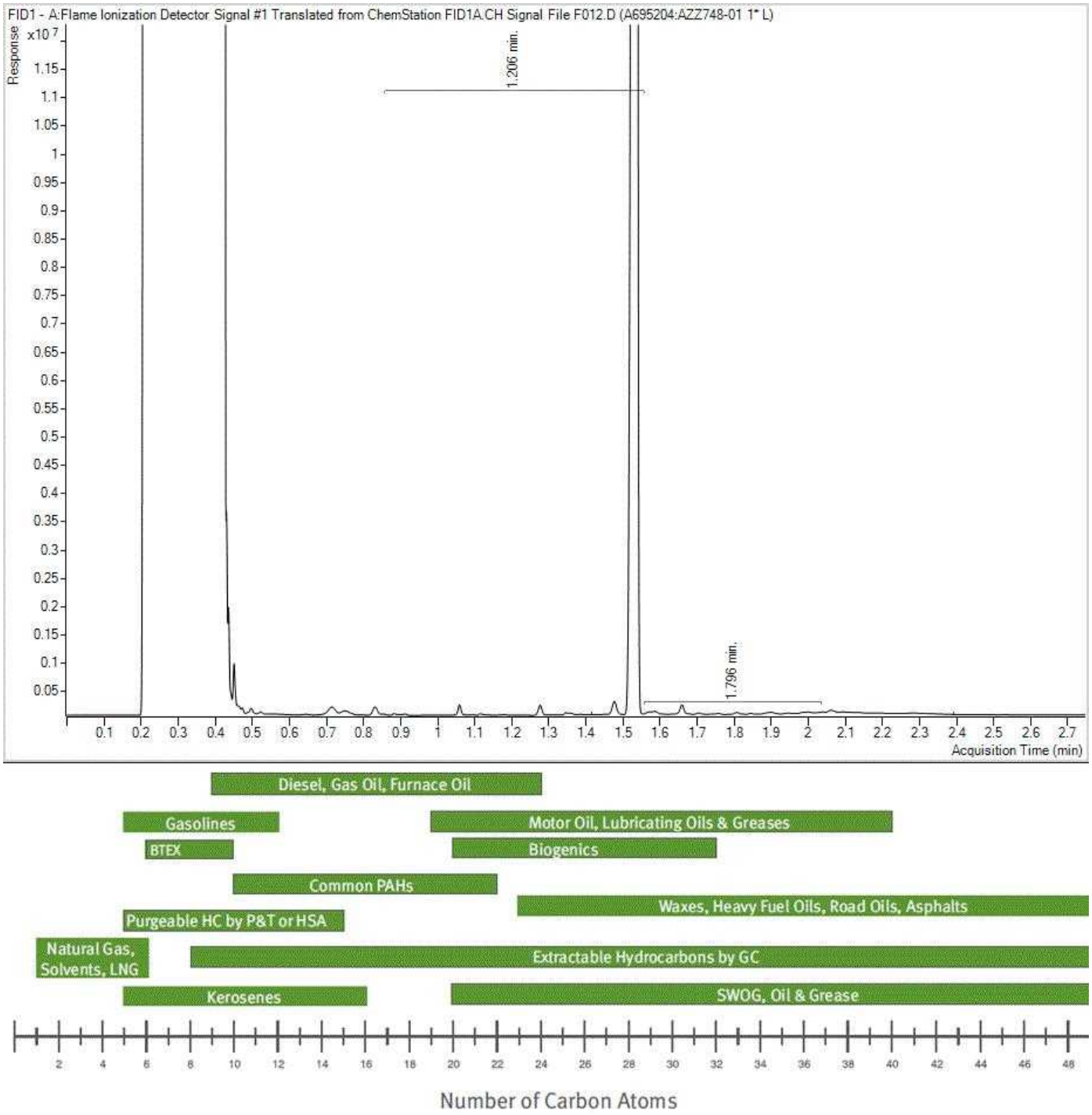


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ748

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-5D

EPH in Water when PAH required Chromatogram

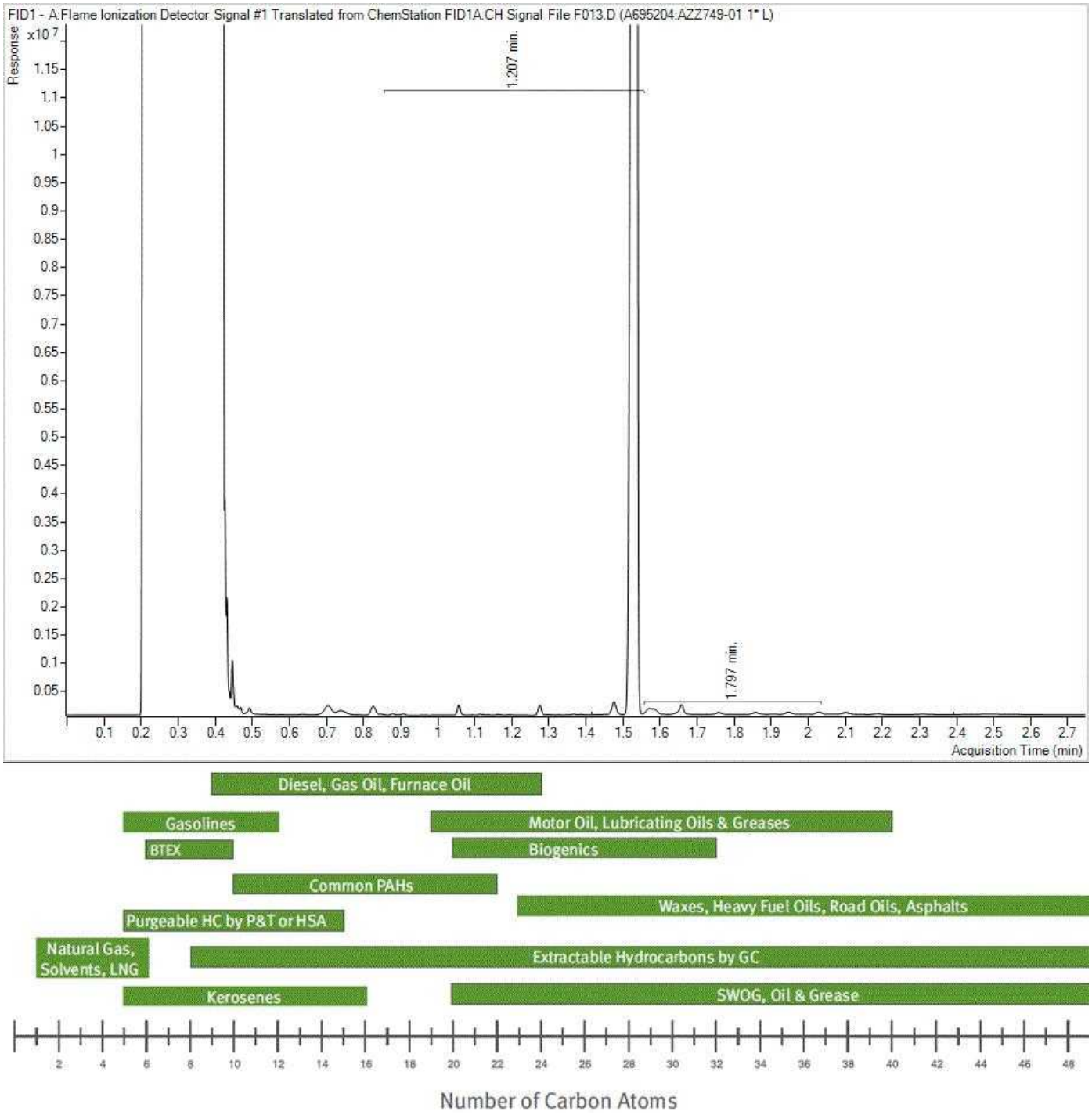


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ749

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: MW-6

EPH in Water when PAH required Chromatogram

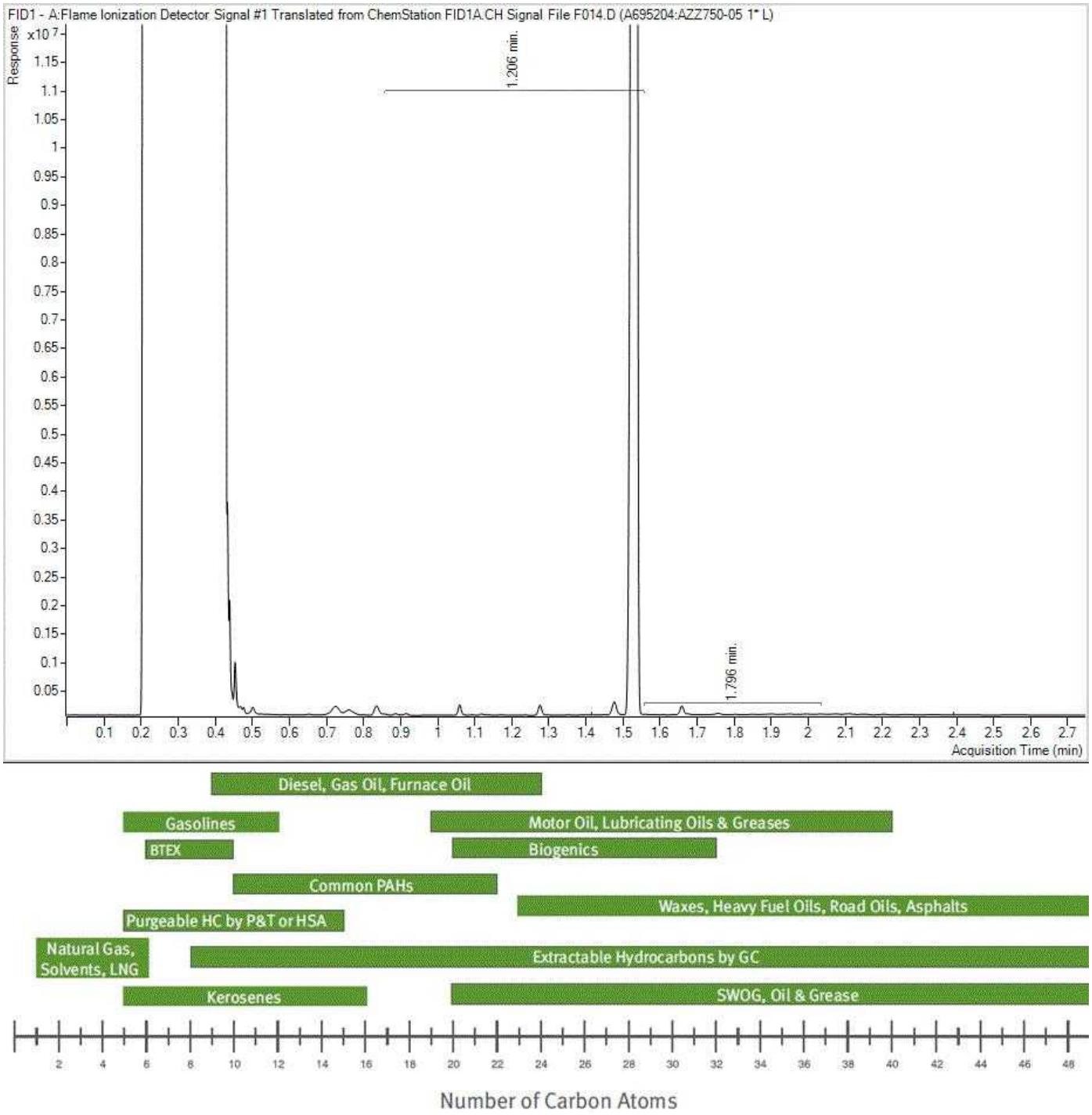


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C262352
Report Date: 2022/08/30
Bureau Veritas Sample: AZZ750

SLR CONSULTING (CANADA) LTD
Client Project #: 205.30042.00000
Site Reference: BC
Client ID: DUP-A

EPH in Water when PAH required Chromatogram



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

Appendix B Piper Plot

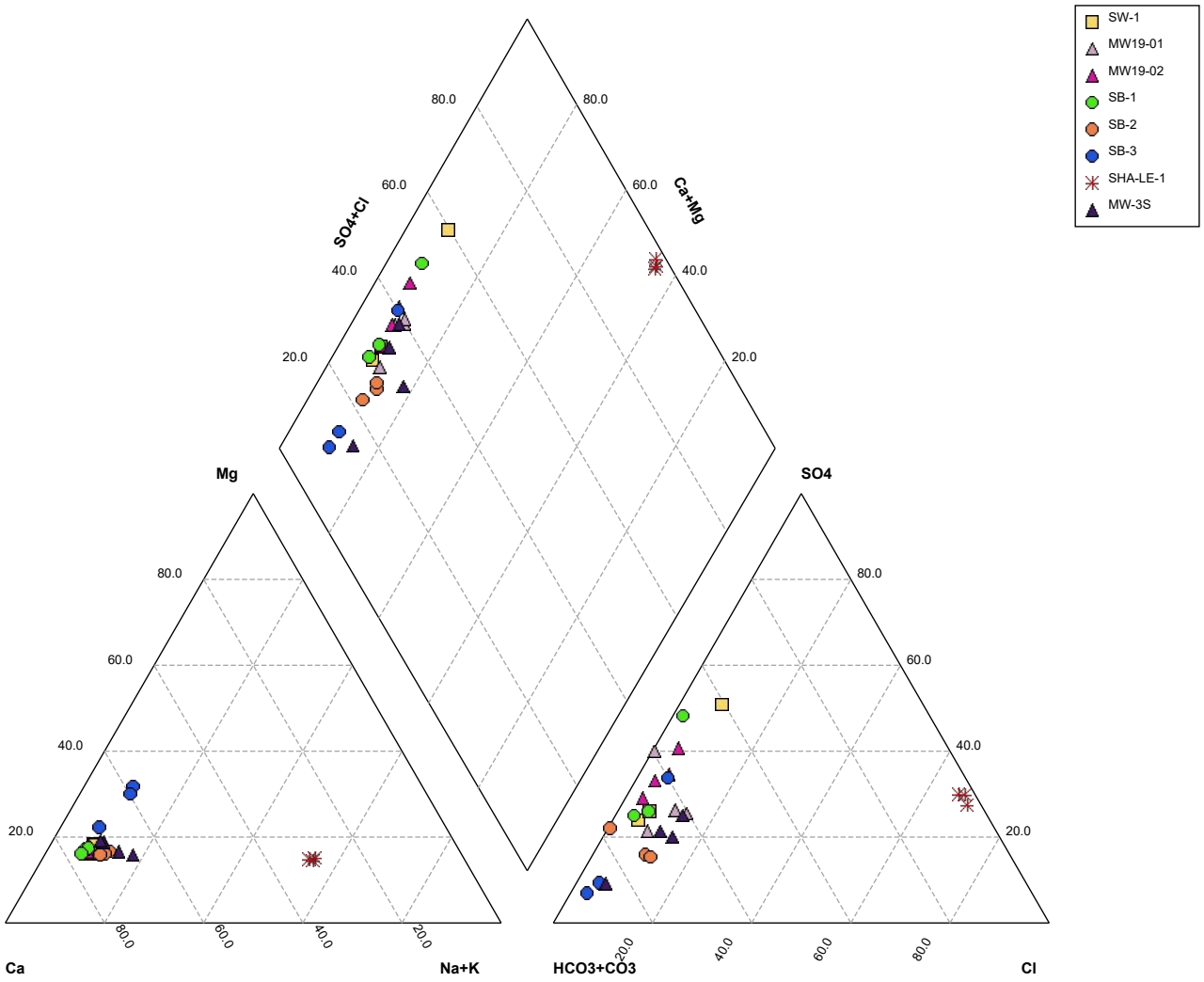
2022 Q3 Post-Closure Environmental Monitoring Report

460 Stebbings Road, Shawnigan Lake, BC

Ralmax Ventures Ltd.

SLR Project No. 205.30042.00000

October 6, 2022



SLR	2022 Q3 Post-Closure Environmental Monitoring Piper Tri-linear Plot	205.30042.00000 Ralmax Ventures Ltd. September 11, 2022

Appendix C Geotechnical Site Assessment Photographs

2022 Q3 Post-Closure Environmental Monitoring Report

460 Stebbings Road, Shawnigan Lake, BC

Ralmax Ventures Ltd.

SLR Project No. 205.30042.00000

October 6, 2022

Photo 1: View of the southern portion of the permanent encapsulated area (PEA) from the south roadway looking north (August 19, 2022).

Photo 2: View of the middle portion of the PEA from the peak of the cap looking north (August 19, 2022).

Photo 3: View of the PEA surface from the northeast corner looking southwest (August 19, 2022).

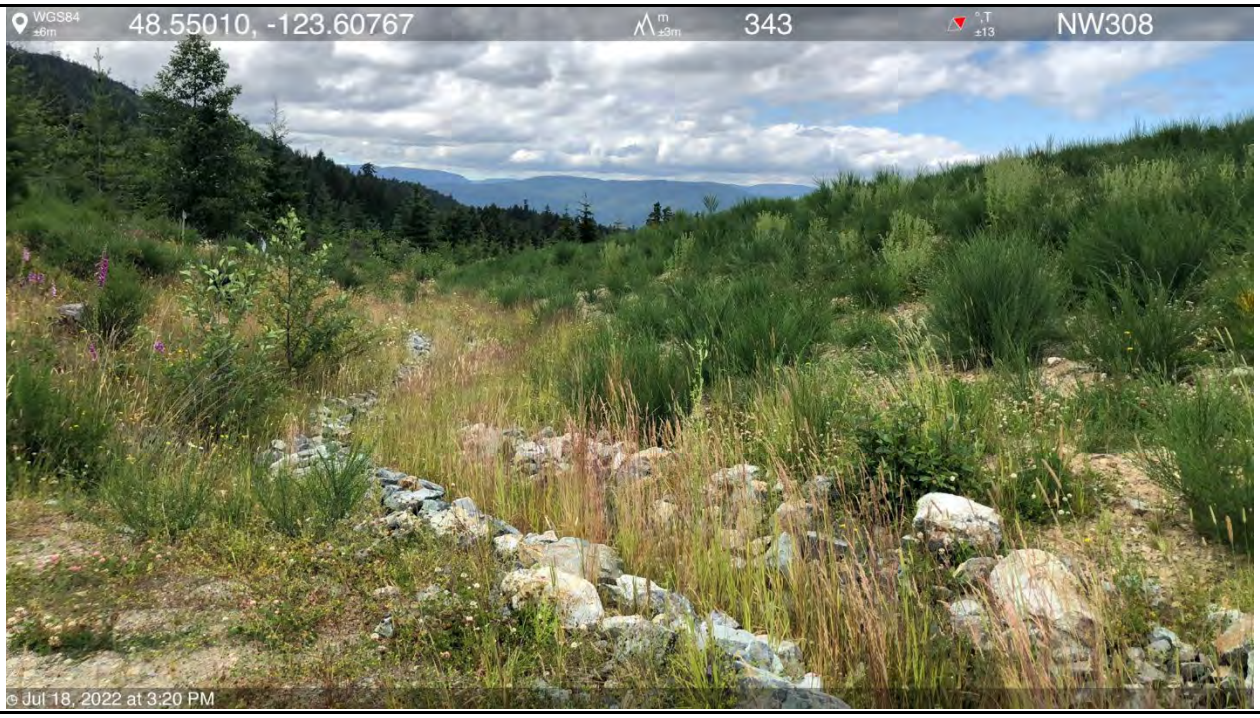


Photo 4: View of vegetation growing in the southwest drainage channel looking northwest (July 18, 2022).

Photo 5: View of the PEA surface vegetation and scoured areas with little to no vegetation from the northeast corner looking southwest (June 17, 2022).

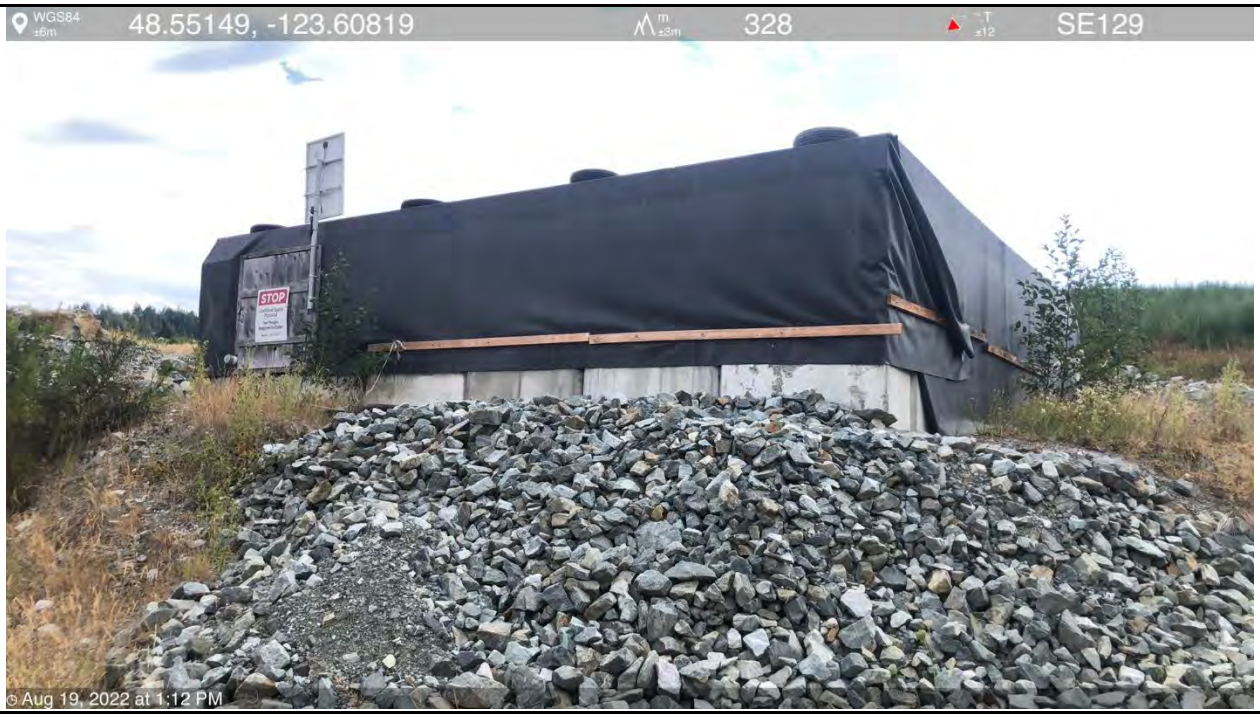


Photo 6: View of the north side of the storage tank facility looking southeast (August 19, 2022).

Photo 7: View of the south side of the storage tank facility looking west (August 19, 2022).

Photo 8: View of the storage tank facility inlet pipes and backfill (August 19, 2022).